BARTEC

Safe.t® Technology Safe.t® Seminars Safe.t® Solutions Safe.t® Components
Safe.t® Solutions Safe.t® Components Safe.t® Systems Safe.t® Technology Safe.t® Seminars
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Safe.t® Solutions Safe.t® Components Safe.t® Systems Safe.t® Technology
Safe.t® Systems Safe.t® Technology Safe.t® Seminars Safe.t® Solutions Safe.t® Components

Automation Technology

Reservation

Technical data subject to change without notice. No claims for damages arising from alterations, errors or misprints shall be allowed. Attention is drawn to the applicable standards and regulations on safety components and systems together with the relevant operating and installation instructions.

BARTEC Catalogue Automation Technology Edition 2014 Printed in Germany

BARTEC

Table of Contents

BARTEC

POLARIS HMI Device Series

BARTEC

POLARIS HMI Device Series

POLARIS the efficient HMI system solution for zone 1 and 2 and for zone 21 and 22

With its innovative devices and system solutions, BARTEC has earned a top position among the world's suppliers of visualisation technology. Consistent product updating and further development form the basis of more and more new solutions for new fields of application and for greater convenience and safety.

Our POLARIS Human Machine Interface series is the intelligent answer to increasingly complex processes and higher demands on the functionality of machines and systems.

Perfect for harsh industrial environments in hazardous areas

With POLARIS, BARTEC offers you a one-source supply of a complete and continuous human-machine-interface portfolio and first-class devices and solutions for all tasks relating to process visualisation and for operation and observation.

From operating devices and visualisation software for machine-oriented operation and observation to the all-rounder open system for the most diverse requirements in process visualisation – all POLARIS devices are robust and compact and offer a wide variety of connection possibilities.

LED technology and daylight suitability ensure brilliant images and the utmost of comfort even in unfavourable lighting conditions. For safe and intuitive operation you can choose between keypad and touchscreen.

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POLARIS System Properties

- **Brilliant display**
  safe reading and recognition
  thanks to high-resolution displays
- **LED technology**
  for unique graphics
- **Touchscreen**
  intuitive operation
  for more convenience and safety
- **Daylight suitability**
  ensures the optimum in operating and reading comfort even in unfavourable lighting conditions
- **High-performance processors**
  comfortable work
  even in complex applications
- **Software BMS-Graf-pro 7**
  efficient visualisation software

POLARIS is available not only in a standard version but also as a customised solution. Just ask us!

Brilliant, comfortable, wireless. POLARIS.

03-0330-0648-02/2014-BAT-317215/2

POLARIS Device Series

POLARIS PROFESSIONAL

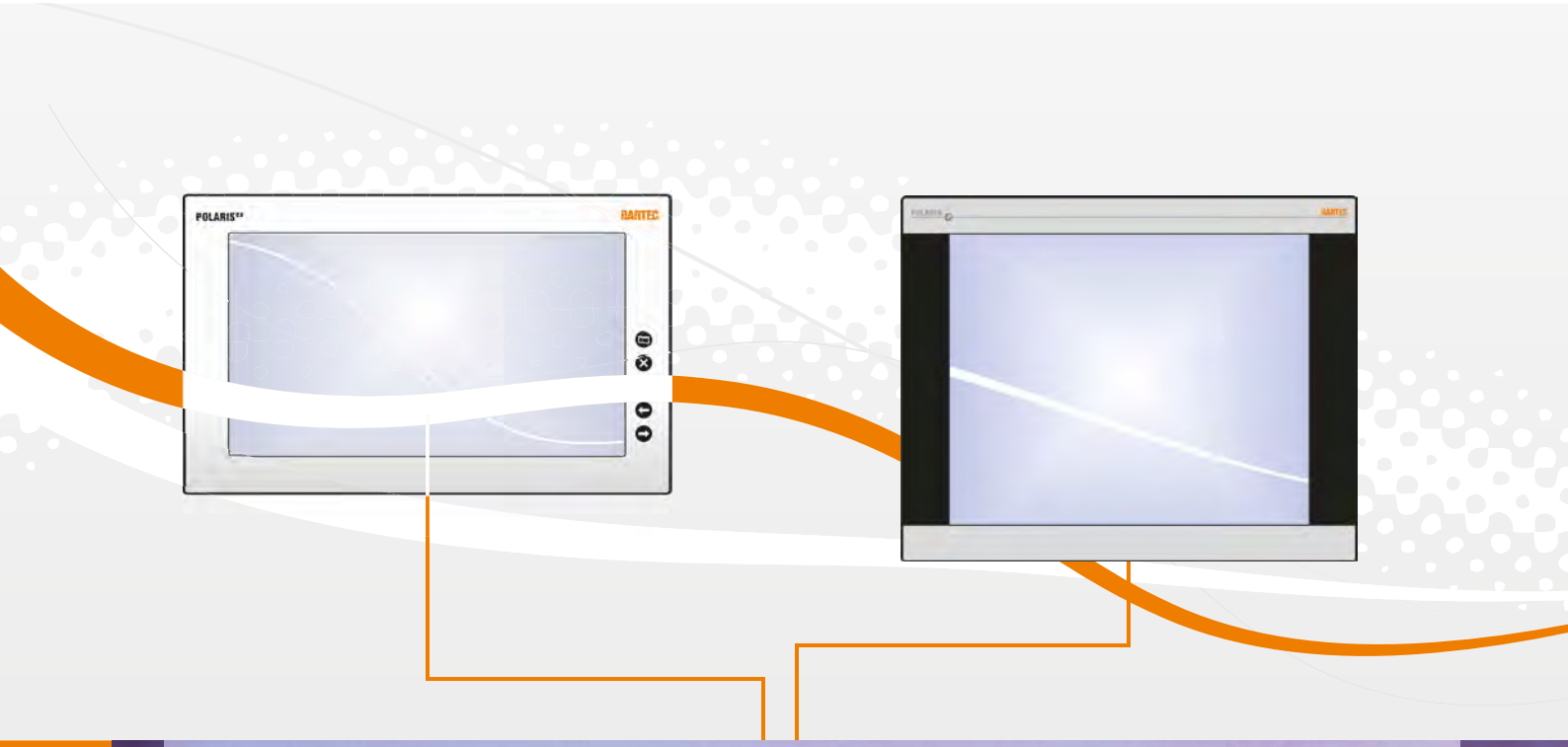
"Open System" for controlling complex installations

- TFT colour display in 10.4" to 24"
- High-performance processor
- Windows 7®
- Recovery function

POLARIS REMOTE

REMOTE-controlled solution for process control systems in safe areas

- TFT colour display in 12.1" W to 24"
- Plug and play
- KVM and remote PC solutions
- Connection to standard PCs in safe areas



Visualisation of process sequences, system controlling

03-0330-0648-09/2014-BAT-317215/3

POLARIS COMFORT

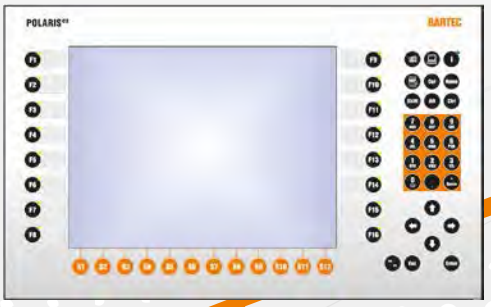
High-end version of operator stations

- Touchscreen in 5.7" to 12.1"
- Windows® XP Embedded
- LED technology

POLARIS BASIC

Excellent panels at attractive prices

- Graphics-capable TFT colour display to 12.1"
- Intrinsically safe USB interface
- Direct connection in hazardous areas



Control and operation of machinery and systems

Oil and gas

Chemicals

Pharmaceuticals

Mechanical engineering

Energy and the environment

Zone 1 and 2

Zone 21 and 22

03-0330-0648-09/2014-BAT-317215/4

POLARIS PROFESSIONAL

03-0330-0648-09/2014-BAT-317215/5

POLARIS PROFESSIONAL

"Open System" for controlling complex installations

POLARIS PROFESSIONAL is the all-rounder for machine-oriented operation and observation in hazardous areas. The panel has a high-resolution display with a touchscreen up to 24" and offers the optimum interface and brilliant images for every application.

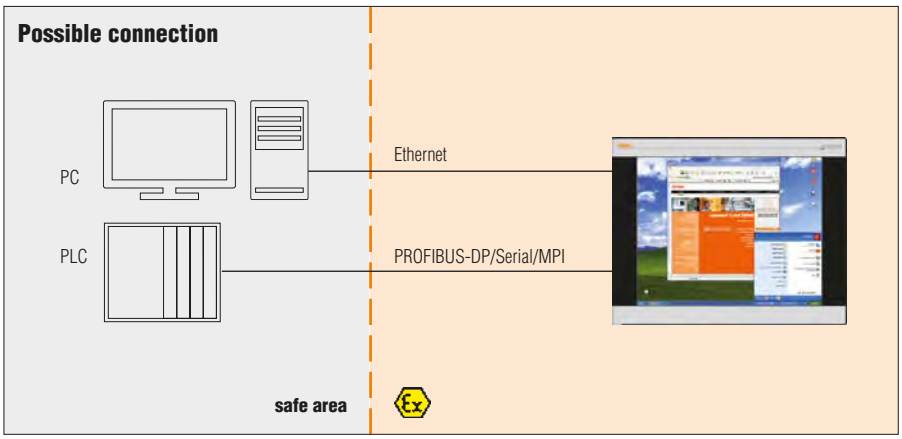
POLARIS PROFESSIONAL is open to a great number of software applications. The pre-installed, multilingual Windows 7® Ultimate operating system (optional availability of Windows 7® Embedded MUI) allows the use of their standard visualisation or the BMS-Graf-pro 7 visualisation software from BARTEC. This is facilitated by a faster Intel® Atom™ N270 Processor (1.6 GHz), which allows the optimum execution of extensive applications locally also. Robust hard disks or solid-state drives are available as storage media.

Ethernet (copper or optical waveguides), USB, PROFIBUS-DP, serial interfaces and WLAN offer secure interfaces to the control system or to the control in safe areas. High-quality keypads in various languages and various mouse versions enhance the operating comfort.

We offer the POLARIS PROFESSIONAL devices to you as a complete solution in a stainless steel enclosure for wall, table or floor-mounting. For particularly harsh areas of use with temperatures as low as down to minus 40 degrees Celsius we equip the POLARIS series with electrical heating. We produce customer-specific solutions with more command and signalling devices on request.

Features

- Open to a great number of software applications
- Microsoft-compatible
- Recovery function by means of an Ex i version of USB flash drive
- LED display sizes up to 24"
- Variant with a sunlight-readable LED display



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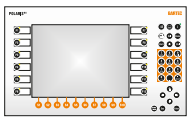
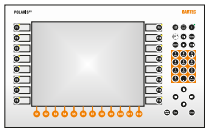
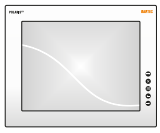
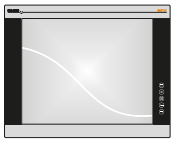
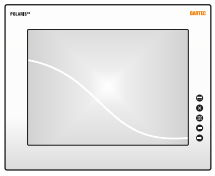
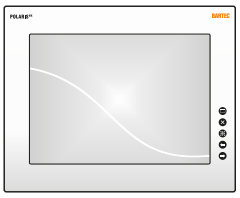
POLARIS PROFESSIONAL

POLARIS PROFESSIONAL for ATEX Zone 1 and 21

				
Size	10.4"	12.1"	12.1" W	15"
Resolution	SVGA, 800 x 600 pixels	XGA, 1024 x 768 pixels	WXGA, 1280 x 800 pixels	XGA, 1024 x 768 pixels
Backlighting	LED	LED	LED	CFL
Touchscreen	Yes	Yes	Yes	optional
Keypad	Front-panel keypad	Front-panel keypad	Front-panel keypad	optional external keypad
Additional components	Mouse Touchpad Trackball Joystick	Mouse Touchpad Trackball Joystick	Maus Touchpad Trackball Joystick	Mouse Touchpad Trackball Joystick
Interface Ex e	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.
Interface Ex i	USB, supply module hand-held scanner	USB, supply module hand-held scanner	USB, supply module hand-held scanner	USB, supply module hand-held scanner
Data transfer	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial
Power supply	DC 24 V	DC 24 V	DC 24 V	AC 90 V to 253 V, DC 24 V
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

POLARIS PROFESSIONAL for ATEX Zone 1 and 21

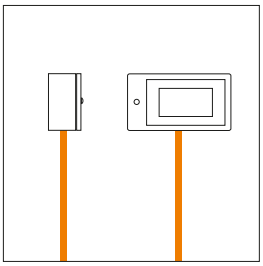
				
Size	15" Sunlight	19.1"	17.3"	24"
Resolution	XGA, 1024 x 768 pixels	SXGA, 1280 x 1024 pixels	HD 1080, 1920 x 1080 pixels	HD 1080, 1920 x 1080 pixels
Backlighting	LED	CFL	LED	LED
Touchscreen	optional	optional	optional	optional
Keypad	optional external keypad	optional external keypad	optional external keypad	optional externe Tastatur
Additional components	Mouse Touchpad Trackball Joystick	Mouse Touchpad Trackball Joystick	Mouse Touchpad Trackball Joystick	Maus Touchpad Trackball Joystick
Interface Ex e	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.
Interface Ex i	USB, supply module hand-held scanner	USB, supply module hand-held scanner	USB, supply module hand-held scanner	USB, supply module hand-held scanner
Data transfer	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial	Ethernet, PROFIBUS-DP, serial
Power supply	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

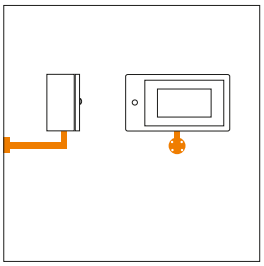
03-0330-0648-09/2014-BAT-317215/7

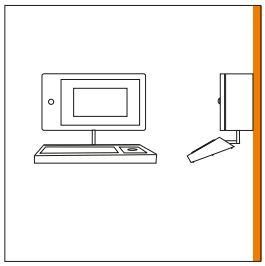
POLARIS PROFESSIONAL for ATEX Zone 2 and ATEX Zone 21/22

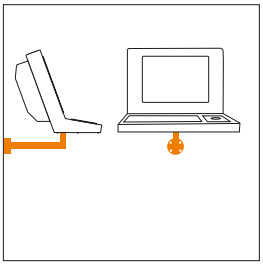
Size	19.1"	22"	24"
Resolution	SXGA, 1280 x 1024 pixels	WSXGA+, 1680 x 1050 pixels	Full HD, 1920 x 1080 pixels
Backlighting	CFL	CFL	LED
Touchscreen	optional	optional	optional
Keypad	optional external keypad	optional external keypad	optional external keypad
Additional components	Touchpad Trackball	Touchpad Trackball	Touchpad Trackball
Interface Ex e	Ethernet (copper or optical waveguides) RS422 etc.	Ethernet (copper or optical waveguides) RS422 etc.	Ethernet (copper or optical waveguides) RS422 etc.
Data transfer	Ethernet, serial	Ethernet, serial	Ethernet, serial
Power supply	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V
Approvals	ATEX, GOST-R	ATEX, GOST-R	ATEX, GOST-R

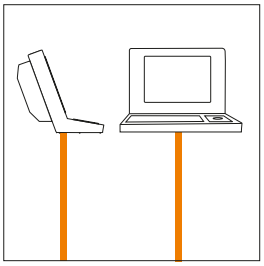
Types of fastening
for ATEX Zone 1 and 21

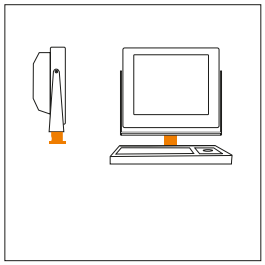




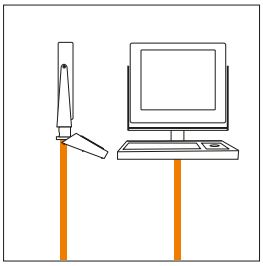


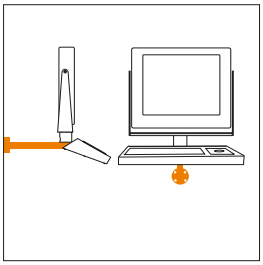






Types of fastening for
ATEX Zone 2,
ATEX Zone 21 and 22





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POLARIS Panel PC 10.4"

Features

- LED technology
- Higher screen resolution
- Touchscreen
- Processor 1.6 GHz
- Remote desktop solution
- Presentation of HTML pages
- Direct connection in hazardous areas
- Option of Windows 7®
- Integrated keyboard customisation

Description

The POLARIS Panel PC 10.4" is an innovative further development of the POLARIS PROFESSIONAL series.

High-resolution displays with LED technology and touchscreen for intuitive as well as comfortable operation are available now in the standard variant.

State-of-the-art LED display technology ensures the optimum contrast even with a large viewing angle.

This Panel PC has been equipped as standard with the latest generation processor, the Intel® Atom™ with 1.6 GHz. Windows® XP Professional or Windows 7® can be used as an operating system. Thanks to the integrated keyboard customisation for Windows®, Siemens WinCC flexible®, RS View® or BMS-Graf-pro, the POLARIS Touch Panel can be used for all visualisation tasks.

They can be connected to the control or the process control system through Ethernet, PROFIBUS-DP or various serial COM interfaces.

Of course, here too the user can work with the latest BMS-Graf-Pro Version 7, allowing for example the transfer of projects through Ethernet, the use of graphics lists and the integrated user administration.

Wired electrical connections are facilitated by integrated terminal compartments.

The front-panel fitting design ensures easy installation. On request, the devices are also available as ready-made system solutions in stainless steel enclosures for wall, floor or ceiling mounting.

They also feature an intrinsically safe USB interface for a USB Ex i flash drive. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX II 2G Ex db eb qb [ib op pr] IIC T4
II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front-panel fitting

Display
- 10.4" TFT graphic display
- 262,144 colours
- Resolution SVGA 800 x 600 pixels
- Brightness 400 cd/m²
- Visible surface approx. 211 x 158 mm
- Contrast 700:1
- Touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 10 special keys
- 12 function keys able to be labelled with LEDs

Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex i PS/2 for intrinsically safe mouse

Optional interfaces
1 x Ex i Supply module for hand-held scanners

Dimensions (width x height x depth)
400 mm x 246 mm x approx. 130 mm

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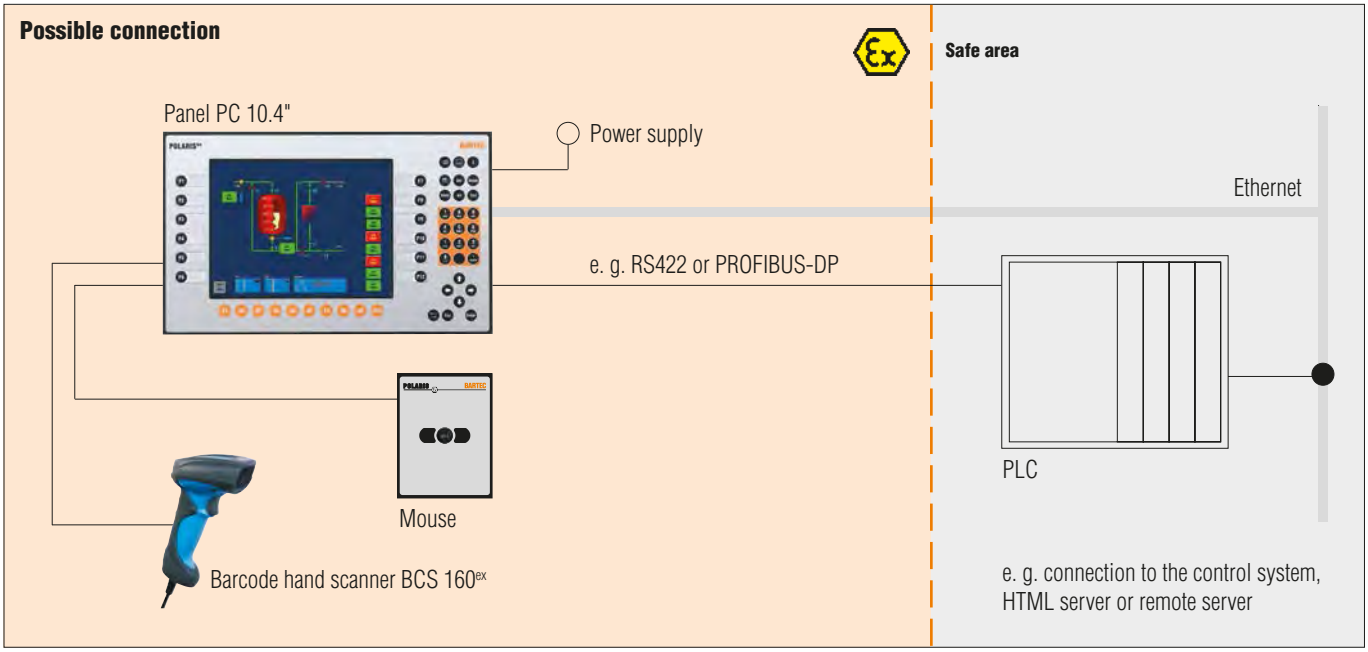
Possible connection



Wall cut-out
386 mm x 226 mm + 0.5 mm

Weight
approx. 14 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 % to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Interfaces	Code no.
POLARIS PROFESSIONAL Panel PC 10.4"	RS422	**00**
	BARTEC PROFIBUS-DP	**02**
	RS422, supply module for hand-held scanners	**04**
	BARTEC PROFIBUS-DP, supply module for hand-held scanners	**06**
	RS232	**09**
	TTY	**11**
	RS232, supply module for hand-held scanners	**13**
	TTY, supply module for hand-held scanners	**15**
	BARTEC PROFIBUS-DP, Ex d-USB	**33**
	USB Ex e/RS422	**37**
	Further Interface combinations on request	**XX**

Complete order no. 17-71V1-90 □□ / □ 000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessoires with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	**P**
Windows 7® Ultimate	**U**
Windows 7® Embedded MUI	**F**

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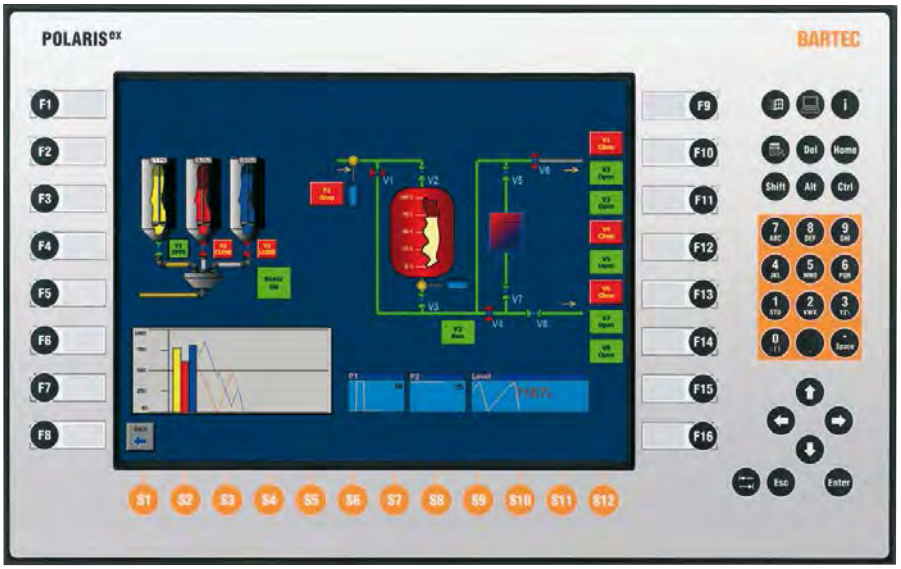

POLARIS Panel PC 12.1"

Features

- LED technology
- Higher screen resolution
- Touchscreen
- Processor 1.6 GHz
- Remote desktop solution
- Presentation of HTML pages
- Direct connection in hazardous areas
- Option of Windows 7®
- Integrated keyboard customisation

Description

The POLARIS Panel PC 12.1" is an innovative further development of the POLARIS PROFESSIONAL Serie.

High-resolution displays with LED technology and touchscreen for intuitive as well as comfortable operation are available now in the standard variant.

State-of-the-art LED display technology ensures the optimum contrast even with a large viewing angle.

This Panel PC has been equipped as standard with the latest generation processor, the Intel® Atom™ with 1.6 GHz.

Windows® XP Professional or Windows 7® can be used as an operating system. Thanks to the integrated keyboard customisation for Windows®, Siemens WinCC flexible®, RS View® or BMS-Graf-pro, the POLARIS Touch Panel can be used for all visualisation tasks. They can be connected to the control or the process control system through Ethernet, PROFIBUS-DP or various serial COM interfaces.

Of course, here too the user can work with the latest BMS-Graf-Pro Version 7, allowing for example the transfer of projects through Ethernet, the use of graphics lists and the integrated user administration.

Wired electrical connections are facilitated by integrated terminal compartments.

The front-panel fitting design ensures easy installation. On request, the devices are also available as ready-made system solutions in stainless steel enclosures for wall, floor or ceiling mounting.

They also feature an intrinsically safe USB interface for a USB Ex i flash drive. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and Zone 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front-panel fitting

Display
- 12.1" TFT graphic display
- 262,144 colours
- Resolution XGA 1024 x 768 pixels
- Brightness 500 cd/m²
- Visible surface approx. 246 x 184 mm
- Contrast 700:1
- Touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 12 cursor keys
- 16 function keys able to be labelled with LEDs

Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex i PS/2 for intrinsically safe mouse

Optional interfaces
1 x Ex i Supply module for hand-held scanners

Dimensions (width x height x depth)
440 mm x 275 mm x approx. 130 mm

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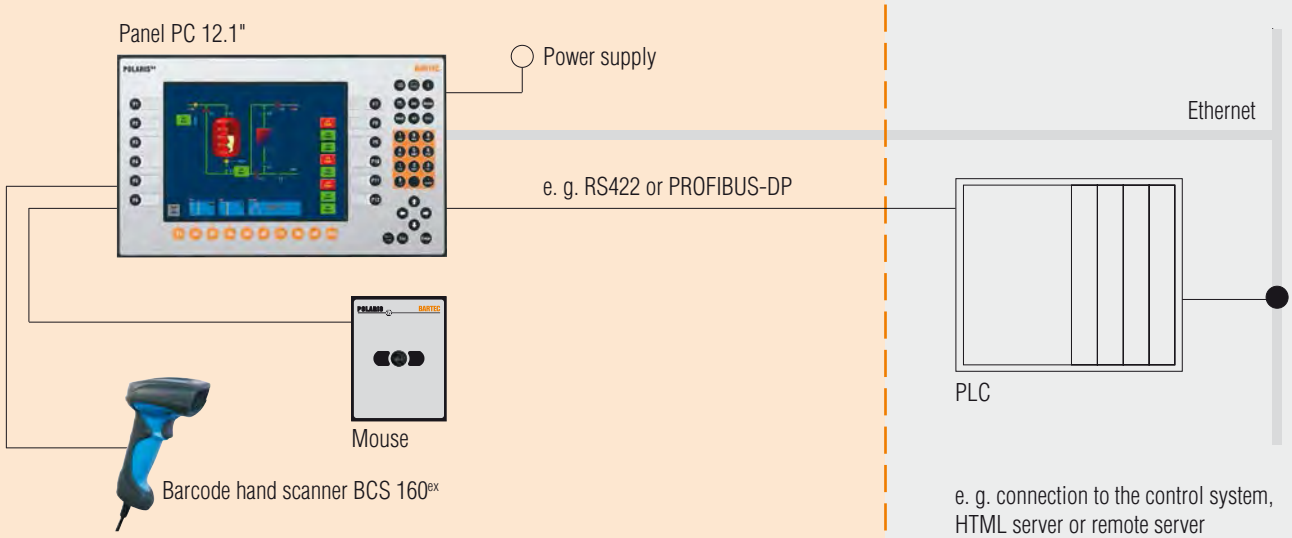
Possible connection



Wall cut-out
425 mm x 255 mm + 0.5 mm

Weight
approx. 18 kg

Supply voltage
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 35 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 % to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

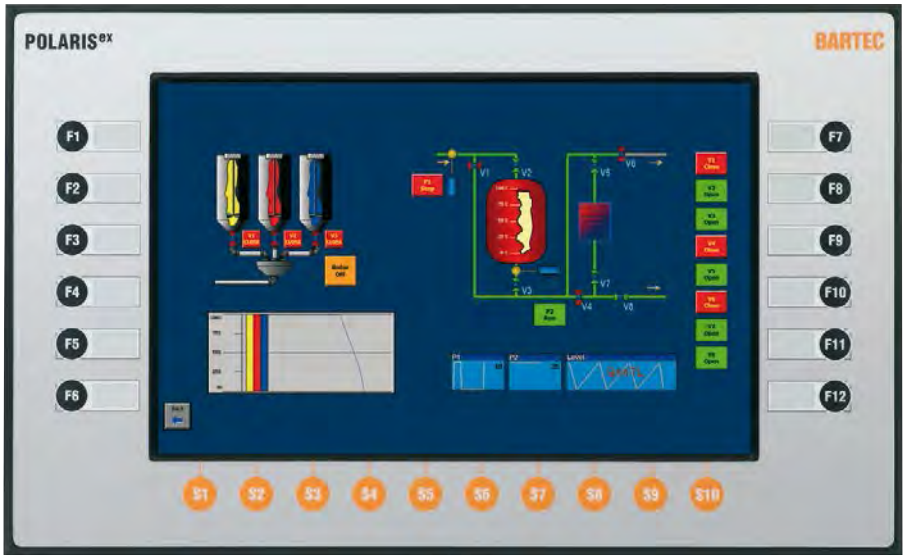
Version	Interfaces	Code no.
POLARIS PROFESSIONAL Panel PC 12.1"	RS422	**00**
	BARTEC PROFIBUS-DP	**02**
	RS422, supply module for hand-held scanners	**04**
	BARTEC PROFIBUS-DP, supply module for hand-held scanners	**06**
	Siemens PROFIBUS-DP/MPI	**08**
	RS232	**09**
	TTY	**11**
	RS232, supply module for hand-held scanners	**13**
	TTY, supply module for hand-held scanners	**15**
	BARTEC PROFIBUS-DP, Ex d USB	**33**
	USB Ex e/RS422	**37**
	Further Interface combinations on request	**XX**

Complete order no. 17-71V1-80 ☐☐/☐000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	**P**
Windows 7® Ultimate	**U**
Windows 7® Embedded MUI	**F**

03-0330-0708-02/2014-BAT-344829/2



POLARIS Panel PC 12.1" W

Features

- LED technology
- High screen resolution
- Touchscreen
- 1.6 GHz processor power
- Direct connection in hazardous areas
- Option of Windows 7®
- Integrated keyboard customisation

Description

The POLARIS Panel PC 12.1" W is an innovative new development of the POLARIS PROFESSIONAL series.

The high-resolution display with LED backlighting and touchscreen allow intuitive and comfortable operation. Even with wide viewing angles or when lighting is poor, the state-of-the-art LED display technology assures the optimum in contrast.

This Panel PC has been equipped as standard with the latest generation processor, the Intel® Atom™ with 1.6 GHz. Windows® XP Professional or Windows 7® can be used as an operating system.

Thanks to the integrated keyboard customisation for Windows®, Siemens WinCC flexible®, RS View® or BMS-Graf-pro, the POLARIS Touch Panel can be used for all visualisation tasks. They can be connected to the control or the process control system through Ethernet, PROFIBUS-DP or various serial COM interfaces.

Of course, here too the user can work with the latest BMS-Graf-Pro Version 7, allowing for example the transfer of projects through Ethernet, the use of graphics lists and the integrated user administration.

Wired electrical connections are facilitated by integrated terminal compartments.

The front-panel fitting design ensures easy installation. On request, the devices are also available as ready-made system solutions in stainless steel enclosures for wall, floor or ceiling mounting.

They also feature an intrinsically safe USB interface for a USB Ex i flash drive. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX ⟨Ex⟩ II 2G Ex db eb qb [ib op pr] IIC T4
⟨Ex⟩ II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 12.1" W graphics-capable TFT colour display
- 262,144 colours
- WXGA resolution, 1280 x 800 pixels
- Brightness 400 cd/m²
- Visible surface approx. 264 x 166 mm
- Contrast 1200:1
- touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Front-panel keys
- 10 special keys
- 12 inscribable function keys with LEDs

Optional variant: without front-panel keys

Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT (FO optional)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i flash drive
- 1 x Ex i PS/2 for intrinsically safe mouse

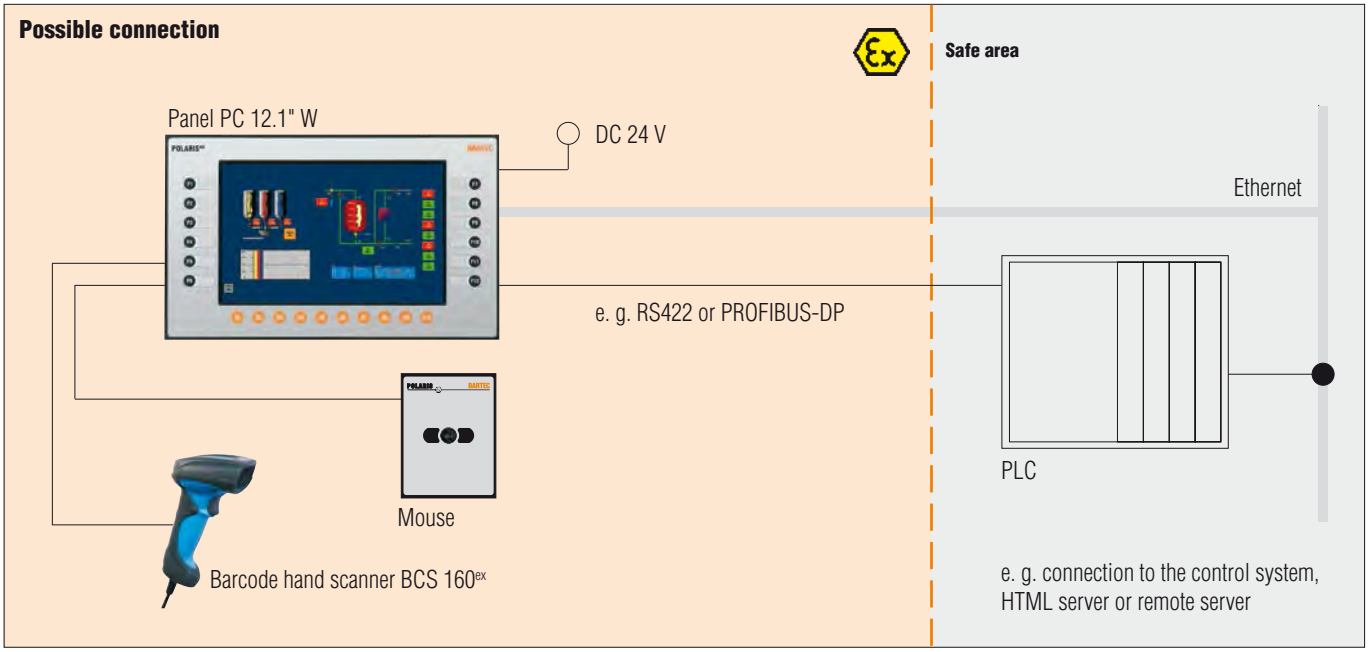
Variant without front-panel keys: 2 x Ex i PS/2

Optional interfaces
1 x Ex i supply module for
hand-held scanners

Dimensions (width x height x depth)
400 mm x 246 mm x approx. 130 mm

03-0330-0709-07/2014-BAT-344835/1

Possible connection



Wall cut-out
386 mm x 226 mm + 0.5 mm

Weight
approx. 14 kg

Supply voltage
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 35 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 % to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart POLARIS PROFESSIONAL Panel PC 12.1" W

Keys	Code no.	Interfaces	Code no.
with front-panel keys	0	RS422	00
		BARTEC PROFIBUS-DP	02
		RS422, supply module for hand-held scanners	04
		BARTEC PROFIBUS-DP, supply module for hand-held scanners	06
		Siemens PROFIBUS-DP/MPI	08
		RS232	09
without front-panel keys	4	TTY	11
		RS232, supply module for hand-held scanners	13
		TTY, supply module for hand-held scanners	15
		BARTEC PROFIBUS-DP, Ex d USB	33
		USB Ex e/RS422	37
		Further Interface combinations on request	XX

Complete order no. 17-71V1-B□□□/□ 000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0709-07/2014-BAT-344835/2

POLARIS Panel PC 15"

Features

- Ethernet interface
- Easy front panel fitting
- Intrinsically safe USB interface
- Graphics-capable TFT colour display
- Direct linkage in explosive areas
- Optional touchscreen
- Optional WLAN
- Siemens PROFIBUS-DP/MPI interface

Description

The Panel PC 15" is based on a fast Intel® Atom™ processor.

The Ethernet interface can be used to connect individual computers or network devices, e. g. a printer, to an existing local network (LAN) (WLAN is also an optional possibility) or local networks can be set up completely wirelessly.

This facilitates a high-performance visualization and operation of the processes directly on site.

The wired electrical connections are realized via a terminal compartment of the “e” type of protection (increased safety).

The state-of-the-art display technology guarantees an optimum contrast, even with large viewing angle.

The front panel fitting assures easy installation. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

An intrinsically safe USB interface is available for a USB Ex i memory stick.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touchscreen offers the optimum in operating comfort.

Windows® XP Professional or Windows 7® can be used as an operating system. The Panel PCs therefore support the installation of numerous software packages, such as customer-specific software or other commercially available standard visualisation software.
Of course, here too the operator can also work with the BARTEC “BMS-Graf-pro“ programming package (Version 7.xxx or newer).

The BARTEC PROFIBUS-DP interface can only be used in connection with the BARTEC “BMS-Graf-pro“ software.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 15" graphics-capable TFT colour display
- 16.7 million colours
- XGA resolution, 1024 x 768 pixels
- Brightness up to 350 cd/m²
- Visible area approx. 304 x 228 mm
- Contrast 700:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- CFL technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

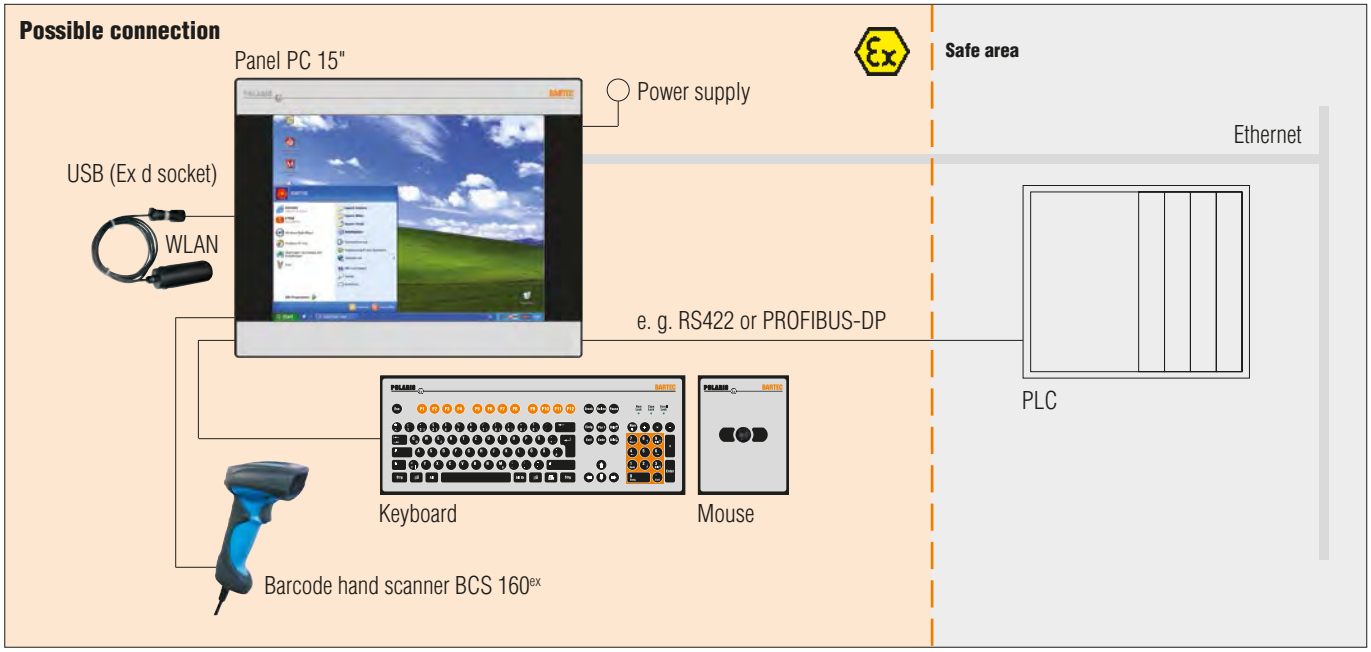
Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Interface (Basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional interface modules
- 1 x Ex i Supply module for hand-held scanner
- 1 x Ex d USB direct connection (via Ex d socket) e. g. connection through WLAN

Dimensions (width x height x depth)
411 mm x 332 mm x approx. 135 mm

03-0330-0402-07/2014-BAT-236274/1



Wall cut-out
394.5 mm x 315.5 mm + 0.5 mm

Weight
approx. 23 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 70 W

Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Interfaces	Code no.
Panel PC 15" without touchscreen	4	RS422	00
		BARTEC PROFIBUS-DP	04
		RS422, supply module for hand-held scanner	08
		BARTEC PROFIBUS-DP, supply module for hand-held scanner	12
		RS232	32
		TTY	36
Panel PC 15" with touchscreen	6	RS232, supply module for hand-held scanner	40
		TTY, supply module for hand-held scanner	44
		Siemens PROFIBUS-DP/MPI	64
		USB Ex e	72
		Further Interface combinations on request	XX

Complete order no. 17-71V1- □0□□/□000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0402-07/2014-BAT-236274/2

POLARIS Panel PC 15" Sunlight

Features

- Sunlight readable display
- Ethernet interface
- Easy front panel fitting
- Intrinsically safe USB interface
- Direct linkage in explosive areas
- Optional touchscreen
- Optional WLAN

Description

The POLARIS Panel PC 15" Sunlight is enhanced with industrial LED backlighting, which reaches a very high brightness of 1,000 cd/m².

Combined with the special characteristics of the front polarizer, this allows excellent readability even under strong sunlight and it is therefore ideal for use outdoors. The Panel PC 15" Sunlight is based on a fast Intel® Atom™ Processor.

The Ethernet interface can be used to connect individual computers or network devices, e. g. a printer, to an existing local network (LAN) (WLAN is also an optional possibility) or local networks can be set up completely wirelessly.

This facilitates a high-performance visualization and operation of the processes directly on site.

The wired electrical connections are realized via a terminal compartment of the “e” type of protection (increased safety).

The state-of-the-art display technology guarantees an optimum contrast, even with large viewing angle. The front panel fitting assures easy installation. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

An intrinsically safe USB interface is available for a USB Ex i memory stick.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touchscreen offers the optimum in operating comfort.

Windows® XP Professional or Windows 7® can be used as an operating system. The Panel PCs therefore support the installation of numerous software packages, such as customer-specific software or other commercially available standard visualisation software.

Of course, here too the operator can also work with the BARTEC “BMS-Graf-pro“ programming package (Version 7.xxx or newer).

The BARTEC PROFIBUS-DP interface can only be used in connection with the BARTEC “BMS-Graf-pro“ software.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 15" graphics-capable TFT colour display
- 262,144 colours
- XGA resolution, 1024 x 768 pixels
- Brightness up to 1000 cd/m²
- Visible area approx. 304 x 228 mm
- Contrast 700:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Interface (Basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional interface modules
- 1 x Ex i Supply module for hand-held scanner
- 1 x Ex d USB direct connection (via Ex d socket) e. g. connection through WLAN

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Dimensions (width x height x depth)
411 mm x 332 mm x approx. 135 mm

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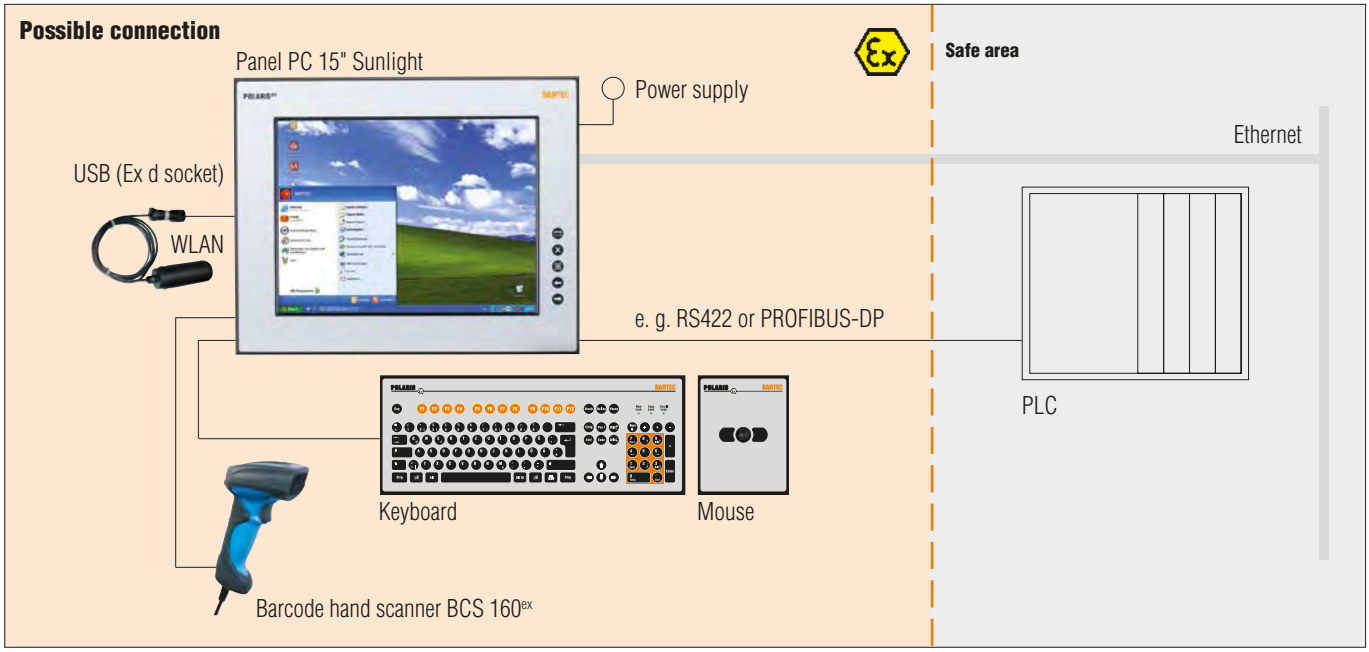


Wall cut-out
394.5 mm x 315.5 mm + 0.5 mm

Weight
approx. 23 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 70 W

Admissible ambient temperature
Storage -20 °C to +60 °C
Operation -20 °C to +60 °C

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Interfaces	Code no.
Panel PC 15" Sunlight without touchscreen	4	RS422	00
		BARTEC PROFIBUS-DP	04
		RS422, supply module for hand-held scanner	08
		BARTEC PROFIBUS-DP, supply module for hand-held scanner	12
		RS232	32
Panel PC 15" Sunlight with touchscreen	6	TTY	36
		RS232, supply module for hand-held scanner	40
		TTY, supply module for hand-held scanner	44
		Siemens PROFIBUS-DP/MPI	64
		USB Ex e	72
		Further Interface combinations on request	XX

Complete order no. 17-71V1- ☐ **2** ☐☐ **/** ☐ **000**

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0651-02/2014-BAT-318609/2

POLARIS Panel PC 17.3"

Features

- Ethernet interface
- Easy front panel fitting
- Intrinsically safe USB interface
- Full HD resolution
- Direct linkage in explosive areas
- Optional touchscreen
- Optional WLAN
- Siemens PROFIBUS-DP/MPI-Interface

Description

The POLARIS Panel PC 17.3" is based on a fast Intel® Atom™ Processor.

The Ethernet interface can be used to connect individual computers or network devices, e. g. a printer, to an existing local network (LAN) (WLAN is also an optional possibility) or local networks can be set up completely wirelessly.

This facilitates a high-performance visualization and operation of the processes directly on site.

The wired electrical connections are realized via a terminal compartment of the “e” type of protection (increased safety).

The state-of-the-art display technology guarantees an optimum contrast, even with large viewing angle.

The front panel fitting assures easy installation. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

An intrinsically safe USB interface is available for a USB Ex i memory stick.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touchscreen offers the optimum in operating comfort.

Windows® XP Professional or Windows 7® can be used as an operating system. The Panel PCs therefore support the installation of numerous software packages, such as customer-specific software or other commercially available standard visualisation software.

Of course, here too the operator can also work with the BARTEC “BMS-Graf-pro“ programming package (Version 7.xxx or newer).

The BARTEC PROFIBUS-DP interface can only be used in connection with the BARTEC “BMS-Graf-pro“ software.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 17.3" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x 1080 pixels
- Brightness 400 cd/m²
- Visible area approx. 382 x 215 mm
- Contrast 600:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
LED illumination

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

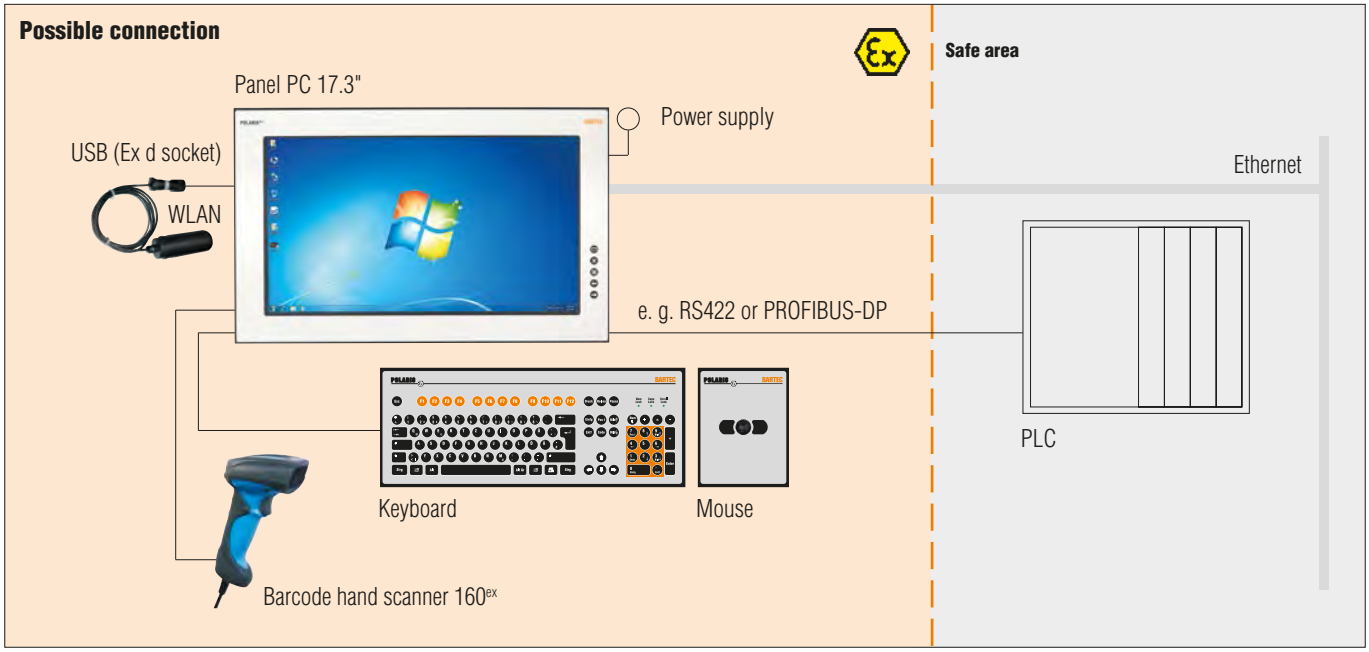
Interface (Basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional interface modules
- 1 x Ex i Supply module for hand-held scanner
- 1 x Ex d USB direct connection (via Ex d socket) e. g. connection by means of WLAN
- 1 x Ex e USB

Dimensions (width x height x depth)
503 mm x 314 mm x approx. 135 mm

Wall cut-out
489 mm x 300 mm + 0.5 mm

03-0330-0784-05/2014-BAT-364905/1



Weight
approx. 33 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 100 W depending on the variant

Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Interfaces	Code no.
Panel PC 17.3" without touchscreen	E	RS422	00
		BARTEC PROFIBUS-DP	04
		RS422, supply module for hand-held scanner	08
		BARTEC PROFIBUS-DP, supply module for hand-held scanner	12
		RS232	32
Panel PC 17.3" with touchscreen	F	TTY	36
		RS232, supply module for hand-held scanner	40
		TTY, supply module for hand-held scanner	44
		Siemens PROFIBUS-DP/MPI	64
		USB Ex e/RS422	76
		Further Interface combinations on request	XX

Complete order no. 17-71V1- ☐ 0 ☐☐ / ☐ 000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0784-05/2014-BAT-364905/2

POLARIS Panel PC 19.1"

Features

- Ethernet interface
- Easy front panel fitting
- Intrinsically safe USB interface
- Graphics-capable TFT colour display
- Direct linkage in explosive areas
- Optional touchscreen
- Optional WLAN
- Siemens PROFIBUS-DP/MPI-Interface

Description

The POLARIS Panel PC 19.1" is based on a fast Intel® Atom™ processor.

The Ethernet interface can be used to connect individual computers or network devices, e. g. a printer, to an existing local network (LAN) (WLAN is also an optional possibility) or local networks can be set up completely wirelessly.

This facilitates a high-performance visualization and operation of the processes directly on site.

The wired electrical connections are realized via a terminal compartment of the “e” type of protection (increased safety).

The state-of-the-art display technology guarantees an optimum contrast, even with large viewing angle.

The front panel fitting assures easy installation. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

An intrinsically safe USB interface is available for a USB Ex i memory stick.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touchscreen offers the optimum in operating comfort.

Windows® XP Professional or Windows 7® can be used as an operating system. This means that the PCs are open for many different software packages, for example customized software or various types of commercially available standard visualisation software.

Of course, here too the operator can also work with the BARTEC ”BMS-Graf-pro“ programming package (Version 7.xxx or newer).

The BARTEC PROFIBUS-DP interface can only be used in connection with the BARTEC ”BMS-Graf-pro“ software.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 19.1" graphics-capable TFT colour display
- 16.7 million colours
- SXGA resolution, 1280 x 1024 pixels
- Brightness 300 cd/m²
- Visible area approx. 380 x 305 mm
- Contrast 1300:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- CFL illumination
- Service life approx. 40,000 hours (at +25 °C)

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Interface (Basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional interface modules
- 1 x Ex i Supply module for hand-held scanner
- 1 x Ex d USB direct connection (via Ex d socket) e. g. connection by means of WLAN

Dimensions (width x height x depth)
498 mm x 400 mm x approx. 135 mm

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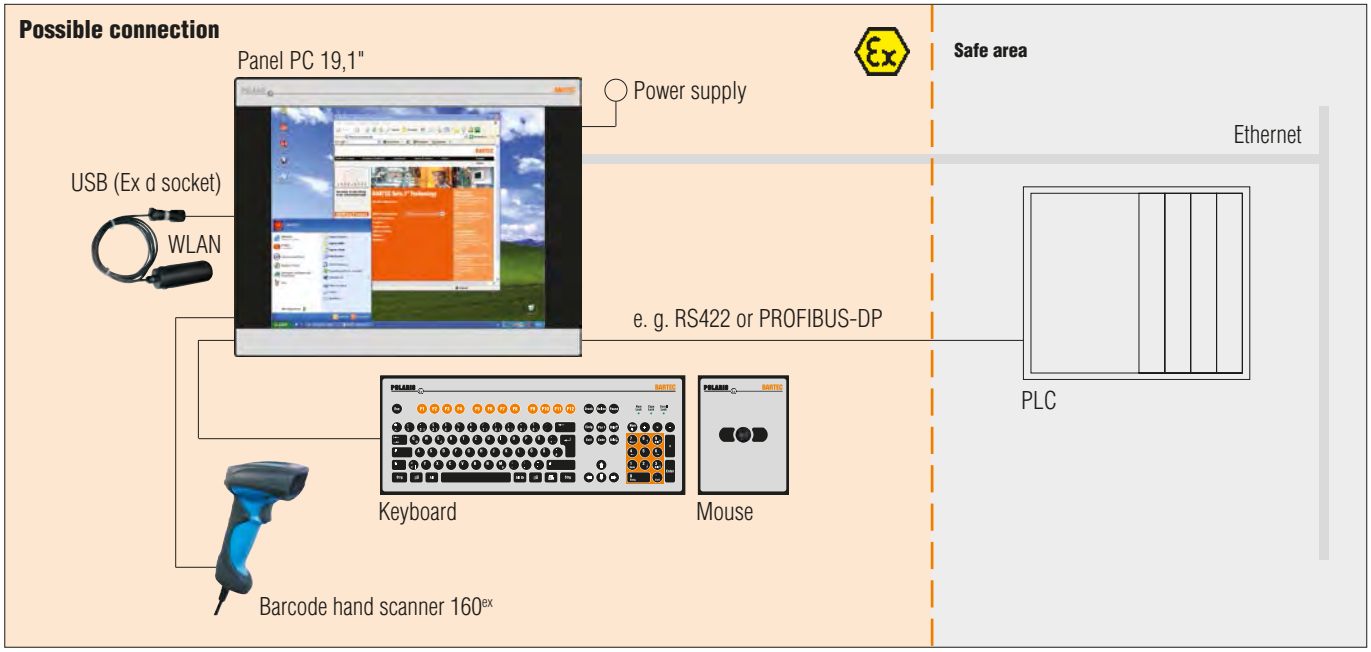


Wall cut-out
484 mm x 386.5 mm + 0.5 mm

Weight
approx. 33 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 70 W

Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Interfaces	Code no.
Panel PC 19.1" without touchscreen	5	RS422	00
		BARTEC PROFIBUS-DP	04
		RS422, supply module for hand-held scanner	08
		BARTEC PROFIBUS-DP, supply module for hand-held scanner	12
		RS232	32
		TTY	36
Panel PC 19.1" with touchscreen	7	RS232, supply module for hand-held scanner	40
		TTY, supply module for hand-held scanner	44
		Siemens PROFIBUS-DP/MPI	64
		USB Ex e	72
		Further Interface combinations on request	XX

Complete order no. 17-71V1-☐0☐☐/☐000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0401-02/2014-BAT-236273/2

POLARIS Panel PC 24"

Features

- Ethernet interface
- Easy front panel fitting
- Intrinsically safe USB interface
- Full HD resolution
- Direct linkage in explosive areas
- Optional touchscreen
- Optional WLAN
- Siemens PROFIBUS-DP/MPI-Interface

Description

The POLARIS Panel PC 24" is based on a fast Intel® Atom™ Processor.

The Ethernet interface can be used to connect individual computers or network devices, e. g. a printer, to an existing local network (LAN) (WLAN is also an optional possibility) or local networks can be set up completely wirelessly.

This facilitates a high-performance visualization and operation of the processes directly on site.

The wired electrical connections are realized via a terminal compartment of the “e” type of protection (increased safety).

The state-of-the-art display technology guarantees an optimum contrast, even with large viewing angle.

The front panel fitting assures easy installation. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

An intrinsically safe USB interface is available for a USB Ex i memory stick.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touchscreen offers the optimum in operating comfort.

Windows® XP Professional or Windows 7® can be used as an operating system. The Panel PCs therefore support the installation of numerous software packages, such as customer-specific software or other commercially available standard visualisation software.

Of course, here too the operator can also work with the BARTEC “BMS-Graf-pro“ programming package (Version 7.xxx or newer).

The BARTEC PROFIBUS-DP interface can only be used in connection with the BARTEC “BMS-Graf-pro“ software.

Explosion protection

Ex protection type for Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 24" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x 1080 pixels
- Brightness 300 cd/m²
- Visible area approx. 531 x 299 mm
- Contrast 3000:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
LED illumination

Computer capacity
Intel® Atom™ N270, 1.6 GHz,
2 GB RAM/100 GB HDD

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

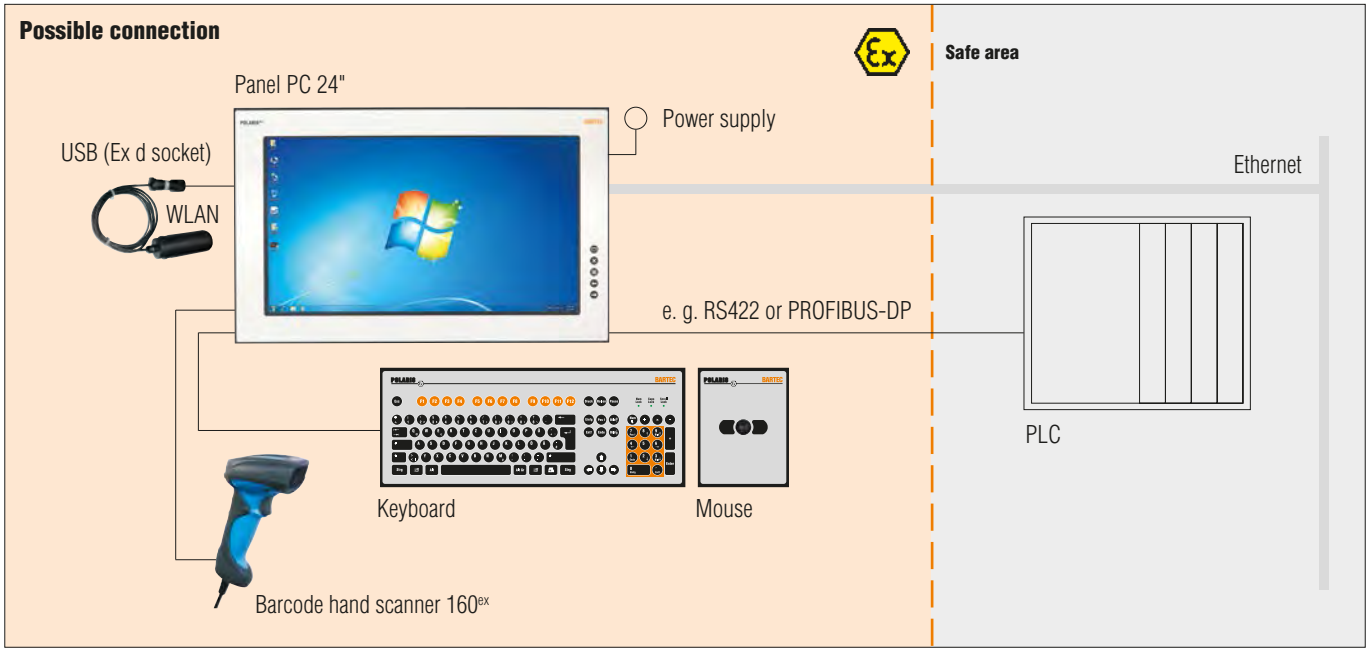
Interface (Basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional interface modules
- 1 x Ex i Supply module for hand-held scanner
- 1 x Ex d USB direct connection (via Ex d socket) e. g. connection by means of WLAN
- 1 x Ex e USB

Dimensions (width x height x depth)
644 mm x 406 mm x approx. 135 mm

Wall cut-out
630 mm x 392 mm + 0.5 mm

03-0330-0687-02/2014-BAT-334208/1



Weight
approx. 40 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 100 W depending on the variant

Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Interfaces	Code no.
Panel PC 24" without touchscreen	C	RS422	00
		BARTEC PROFIBUS-DP	04
		RS422, supply module for hand-held scanner	08
		BARTEC PROFIBUS-DP, supply module for hand-held scanner	12
		RS232	32
Panel PC 24" with touchscreen	D	TTY	36
		RS232, supply module for hand-held scanner	40
		TTY, supply module for hand-held scanner	44
		Siemens PROFIBUS-DP/MPI	64
		USB Ex e/RS422	76
		Further Interface combinations on request	XX

Complete order no. 17-71V1- ☐ 0 ☐☐ / ☐ 000

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

Operating system	Code no.
Windows® XP Professional	P
Windows 7® Ultimate	U
Windows 7® Embedded MUI	F

03-0330-0687-02/2014-BAT-334208/2

POLARIS II Panel PC 19.1"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Ethernet interface
- Graphics-capable TFT colour display
- Direct linkage in hazardous areas
- Optional touchscreen
- Optional WLAN

Description

The POLARIS II Panel PC 19.1" is based on a fast AMD G-Serie T40 E dual-core Processor.

The Ethernet interface enables individual computers or network devices such as for example a printer to be connected to an existing local network (LAN) (optionally through WLAN also) or local networks to be set up completely wirelessly.

Allows high-performance visual display and operation of the processes directly on site.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

To allow the greatest ease in utilisation the devices are available for wall, floor or table mounting.

A keyboard with integrated trackball or touchpad can be connected. There is also the option of a touchscreen for the ultimate in operating ease.

Windows® XP Professional or Windows 7® can be used as an operating system. This means that the PCs are open for many different software packages, for example customized software or various types of commercially available standard visualisation software.

Explosion protection

Ex protection type Zone 2
ATEX Ⓔx II 3G Ex nA II T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
ATEX Ⓔx II 2D Ex tD A21 IP65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 19.1" graphics-capable TFT colour display
- 16.7 million colours
- SXGA resolution, 1280 x of 1024 pixels
- Brightness 300 cd/m²
- Visible surface approx. 376 x 301 mm
- Contrast 1300:1
- Option of touchscreen (resistive)

Backlighting
- CFL technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
- AMD G-Serie T40 E dual-core 1.0 GHz
- 2 GB RAM
- 64 GB SSD
- further memory variants available on request

Interfaces (basic version)
- 2 x Ethernet 100BaseT
- 2 x PS/2 for keyboard and mouse
- 2 x RS232 Sub D (2 x RS232 optional)
- 4 x USB

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Dimensions (width x height x depth)
610 mm x 450 mm x approx. 100 mm

Weight
approx. 17 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

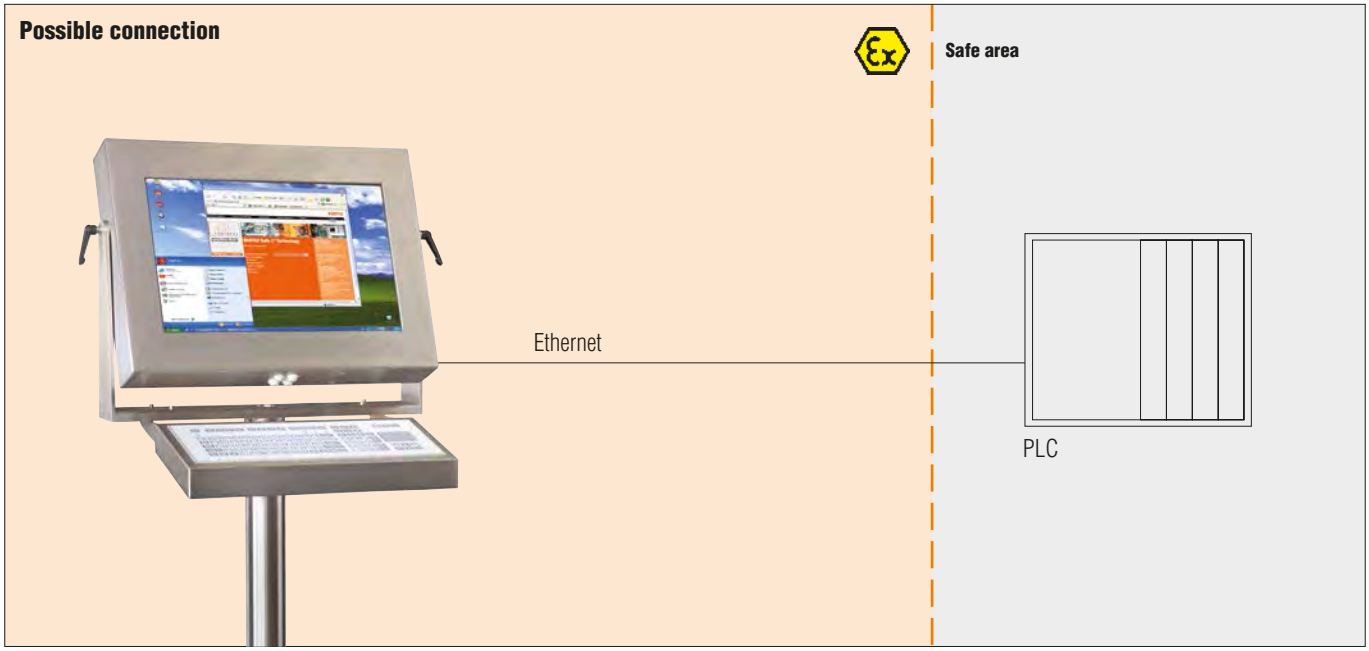
Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0649-09/2014-BAT-317216/1



Selection chart

Ex area	Code no.	Version	Code no.	Input voltage	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	**1**	POLARIS II Panel PC 19.1" without touchscreen	**6**	AC 90 to 253 V	**1**	German	**1**	Trackball 50 mm	**1**
						English	**2**	Trackball 38 mm	**2**
Zone 2	**2**	POLARIS II Panel PC 19.1" with touchscreen	**5**	DC 24 V	**2**	French	**3**	Touchpad	**4**

Complete order no. 17-7 ☐ V4- ☐ ☐ ☐ 2/ ☐ ☐ 00

Please insert correct code.
Technical data subject to change.

Operating system	Code no.
Windows® XP Professional	**P**
Windows 7® Ultimate	**U**
Windows 7® Embedded MUI	**F**

03-0330-0649-09/2014-BAT-317216/2

POLARIS II PANEL PC 22"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Ethernet interface
- Graphics-capable TFT colour display
- Direct linkage in hazardous areas
- Optional touchscreen
- Optional WLAN

Description

The POLARIS II Pancel PC 22" is based on a fast AMD G-Serie T40 E dual-core Processor.

The Ethernet interface enables individual computers or network devices such as for example a printer to be connected to an existing local network (LAN) (optionally through WLAN also) or local networks to be set up completely wirelessly.

Allows high-performance visual display and operation of the processes directly on site.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

To allow the greatest ease in utilisation the devices are available for wall, floor or table mounting.

A keyboard with integrated trackball or touchpad can be connected. There is also the option of a touch screen for the ultimate in operating ease.

Windows® XP Professional or Windows 7® can be used as an operating system. This means that the PCs are open for many different software packages, for example customized software or various types of commercially available standard visualisation software.

Explosion protection

Ex protection type Zone 2
ATEX Ⓔx II 3G Ex nA II T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
ATEX Ⓔx II 2D Ex tD A21 IP65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 22" graphics-capable TFT colour display
- 16.7 million colours
- WSXGA+ resolution, 1680 x of 1050 pixels
- Brightness 300 cd/m²
- Visible surface approx. 474 x 296 mm
- Contrast 1000:1
- Option of touchscreen (resistive)

Backlighting
- CFL technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
- AMD G-Serie T40 E dual-core 1.0 GHz
- 2 GB RAM
- 64 GB SSD
- further memory variants available on request

Interfaces (basic version)
- 2 x Ethernet 100BaseT
- 2 x PS/2 for keyboard and mouse
- 2 x RS232 Sub D (2 x RS232 optional)
- 4 x USB

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Dimensions (width x height x depth)
610 mm x 450 mm x approx. 100 mm

Weight
approx. 17 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

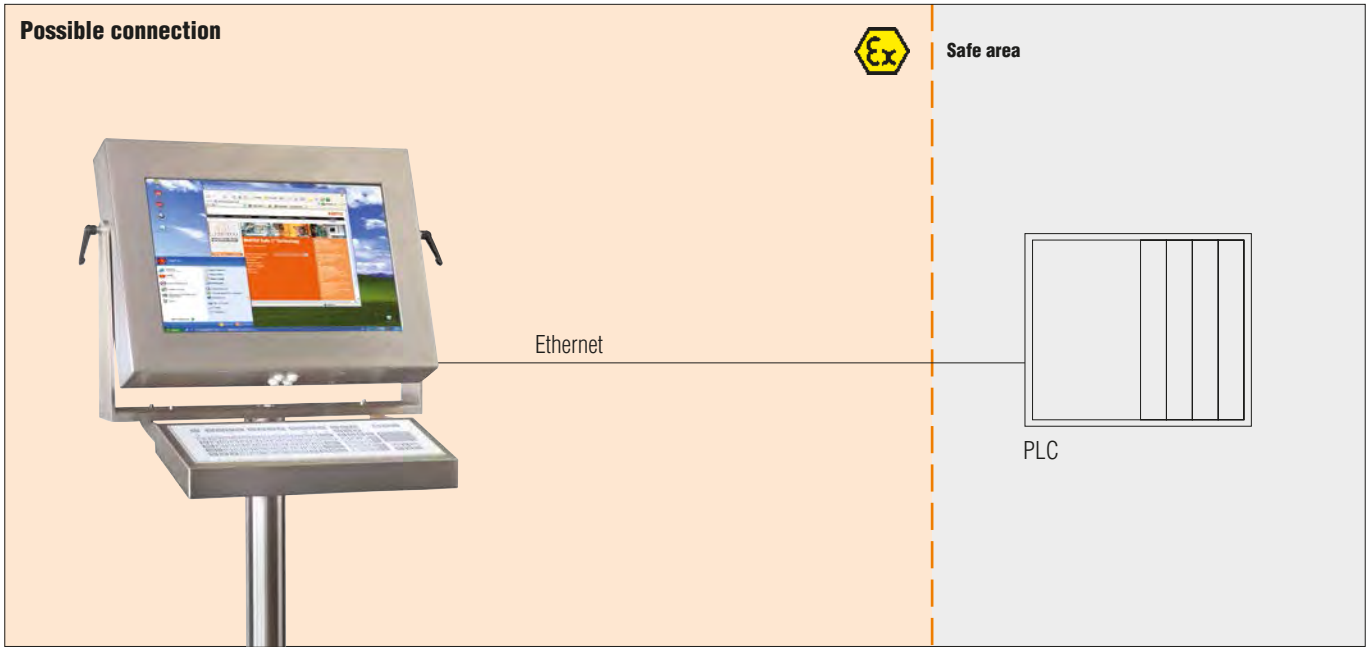
Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0539-09/2014-BAT-291440

Possible connection



Selection chart

Ex area	Code no.	Version	Code no.	Input voltage	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	**1**	POLARIS II Panel PC 22" without Touchscreen	**4**	AC 90 to 253 V	**1**	German	**1**	Trackball 50 mm	**1**
						English	**2**	Trackball 38 mm	**2**
Zone 2	**2**	POLARIS II Panel PC 22" with Touchscreen	**3**	DC 24 V	**2**	French	**3**	Touchpad	**4**

Complete order no. 17-7 ☐ V4- ☐ ☐ ☐ 2/ ☐ ☐ 00

Please insert correct code.
Technical data subject to change.

Operating system	Code no.
Windows® XP Professional	**P**
Windows 7® Ultimate	**U**
Windows 7® Embedded MUI	**F**

03-0330-0539-09/2014-BAT-291440

POLARIS II PANEL PC 24"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Ethernet interface
- Graphics-capable TFT colour display
- Direct linkage in hazardous areas
- Optional touchscreen
- Optional WLAN

Description

The POLARIS II Pancel PC 24" is based on a fast AMD G-Serie T40 E dual-core Processor.

The Ethernet interface enables individual computers or network devices such as for example a printer to be connected to an existing local network (LAN) (optionally through WLAN also) or local networks to be set up completely wirelessly.

Allows high-performance visual display and operation of the processes directly on site.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

To allow the greatest ease in utilisation the devices are available for wall, floor or table mounting.

A keyboard with integrated trackball or touchpad can be connected.

Windows® XP Professional or Windows 7® can be used as an operating system. This means that the PCs are open for many different software packages, for example customized software or various types of commercially available standard visualisation software.

Explosion protection

Ex protection type Zone 2
ATEX Ⓔx II 3G Ex nA II T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
ATEX Ⓔx II 2D Ex tD A21 IP65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 24" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x of 1080 pixels
- Brightness 300 cd/m²
- Visible surface approx. 531 x 299 mm
- Contrast 5000:1

Backlighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
- AMD G-Serie T40 E dual-core 1.0 GHz
- 2 GB RAM
- 64 GB SSD
- further memory variants available on request

Interfaces (basic version)
- 2 x Ethernet 100BaseT
- 2 x PS/2 for keyboard and mouse
- 2 x RS232 Sub D (2 x RS232 optional)
- 4 x USB

Operating system
Windows® XP Professional or
Windows 7® Ultimate or
Windows 7® Embedded MUI

Dimensions (width x height x depth)
670 mm x 450 mm x approx. 100 mm

Weight
approx. 19 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

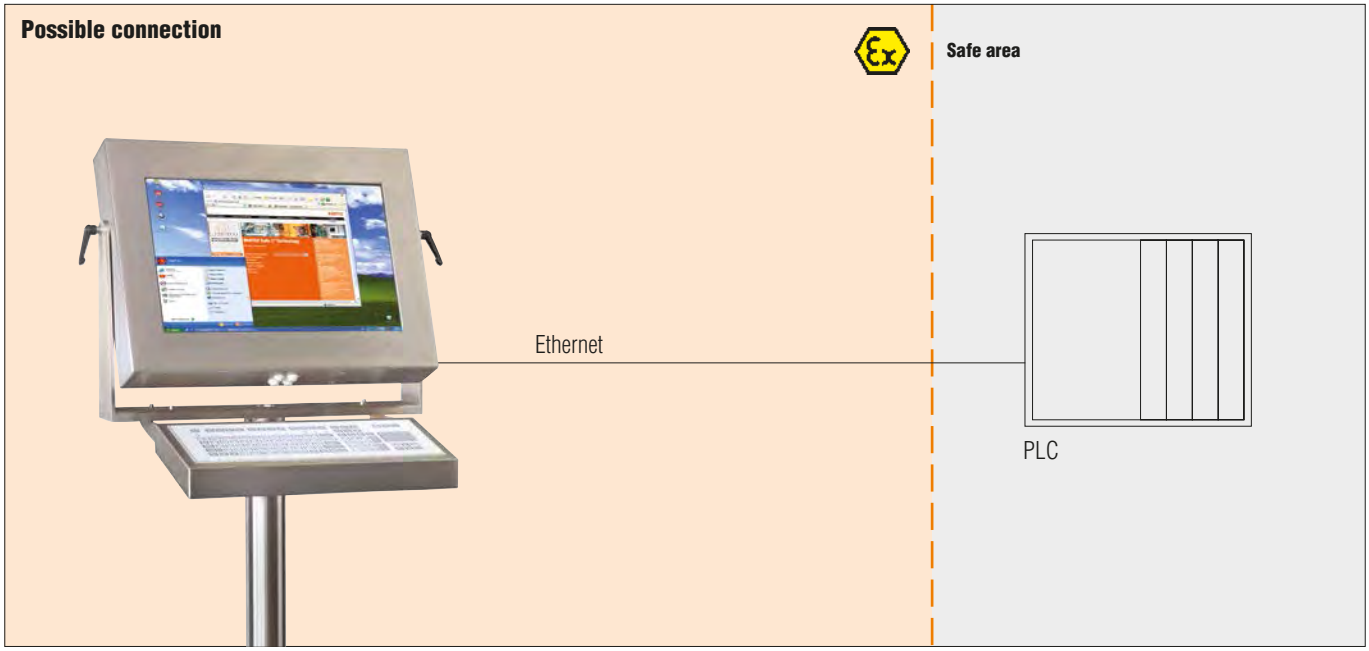
Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0791-10/2014-BAT-365179/1

Possible connection



Selection chart

Ex area	Code no.	Input voltage	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	**1**	AC 90 to 253 V	**1**	German	**1**	Trackball 50 mm	**1**
				English	**2**	Trackball 38 mm	**2**
Zone 2	**2**	DC 24 V	**2**	French	**3**	Touchpad	**4**

Complete order no. 17-7 ☐ V4-8 ☐ ☐ 2/ ☐ ☐ 00

POLARIS II Panel PC 24"

without touchscreen

Please insert correct code. Technical data subject to change.

Operating system	Code no.
Windows® XP Professional	**P**
Windows 7® Ultimate	**U**
Windows 7® Embedded MUI	**F**

03-0330-0791-10/2014-BAT-365179/2

Keyboard

Features

- Easy front panel fitting
- Modular construction

Description

The intrinsically safe keyboard and the mouse variants are intended for POLARIS Professional and POLARIS Remote for zone 1 and 2 and for zone 21 and 22.

They are connected directly to the POLARIS Panel PC or POLARIS Remote. The chemically resistant polyester foil is easy to clean and resistant to a lot of aggressive fluids. The keyboard is available in various languages. A stainless steel desktop housing for the keyboard and mouse is available as an optional accessory.

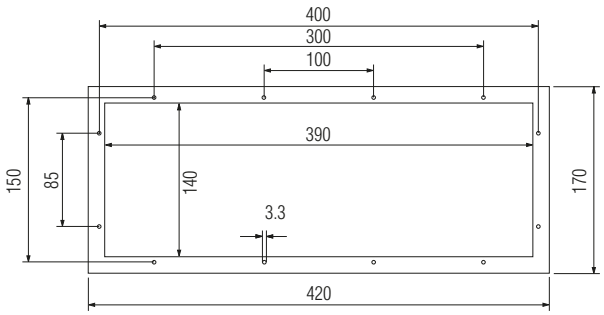
Explosion protection

Ex protection type ATEX	Ⓔx II 2G Ex ib IIC T4 Ⓔx II 2D ib IIIC T120 °C
	Certification IBExU 05 ATEX 1117 X
Ex protection type IECEx	Ex ib IIC T4 Ex ib IIIC T120 °C
	Certification IECEx IBE 11.0007 X
Further approvals	INMETRO, GOST-R
Protection class	IP 65

Technical data

Construction	Front panel fitting
Material	Polyester foil on aluminium sheet (conditionally UV-resistant)
Dimensions	420 mm x 170 mm (width x height)
Wall cut-out	390 mm x 140 mm
Installation depth	18 mm
Weight	approx. 700 g

Dimensions and wall cut-out for keyboard (in mm)



all hole diameter: 3.3 mm

Selection chart Keyboard

Language	Code no.
German	1
English	2
French	3

Complete order no. 17-71VZ-40 ☐ 0

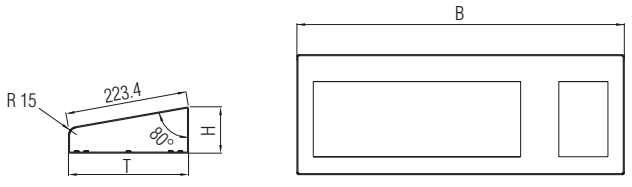
Others on request. Please insert correct code.
Technical data subject to change without notice.

Enclosure *for mouse and keyboard*

Technical data

Material	Stainless steel 1.4301; AISI 304
Dimensions (B x H x T)	600 mm x 85 mm x 220 mm
Protection class	IP 65

Dimensions (in mm)



Order no.
Enclosure 05-0041-0277

Complete solution with installed equipment on request.
Technical data subject to change without notice.

03-0330-0407-02/2014-BAT-242769

Mouse

Explosion protection

Ex protection type

ATEX II 2G Ex ib IIC T4
II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 270 g

Trackball Joystick

Explosion protection

Ex protection type

ATEX II 2G Ex ib IIC T4
II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class

Trackball	static	IP 65 (front side)
	dynamic	IP 56 (front side)
Joystick		IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
43 mm

Weight
approx. 500 g

Touchpad

Explosion protection

Ex protection type

ATEX II 2G Ex ib IIC T4
II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Capacitive touchpad for front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

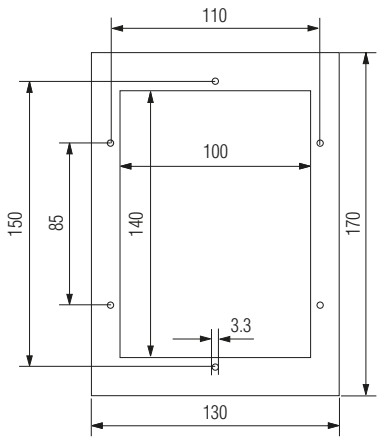
Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 250 g

Dimensions and wall cut-out (mm)



all hole diameter: 3.3 mm

Selection chart

Description	Code no.
Mouse	**1**
Trackball	**2**
Touchpad	**3**
Joystick with button	**9**

Complete order no. 17-71VZ-☐000

Please insert correct code.
Technical data subject to change without notice.

03-0330-0445-10/2014-BAT-242770

USB device WLAN

Features

- Real time data access
- Safe separation between safe area and ex area over transmit-strain

Description

By means of wireless LAN technology (optional), data can be exchanged wirelessly for the first time via an internal USB interface.

Explosion protection

Ex protection type

ATEX Ⓔx II 2G Ex qb IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

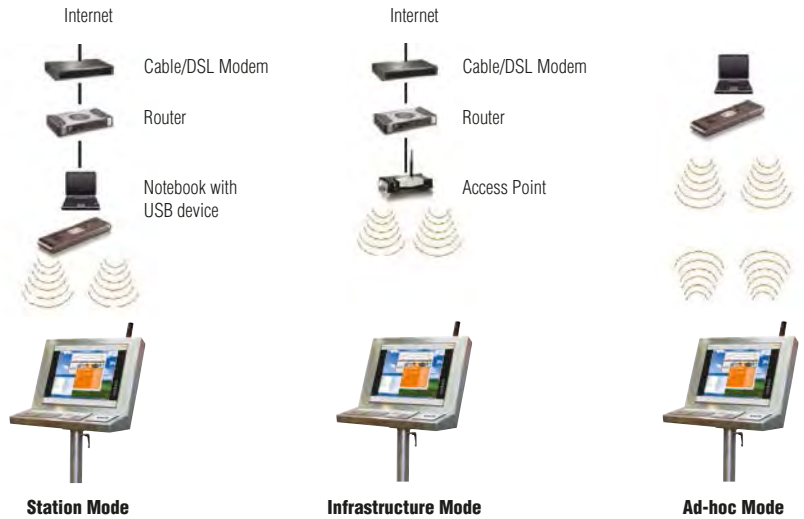
Certification
IBExU 05 ATEX 1188 X

IECEx Ex qb IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 12.0016X

Protection class (screw base)
IP 54

Product diagram



Technical data

Antenna WLAN

Standards
IEEE 802.11b; IEEE 802.11g

Bus Type
USB 2.0 Type A

Emissions Type
DSSS

Frequency band
2.4 ~ 2.483 MHz

Data rate
Auto Fallback
54, 48, 36, 24, 19, 12, 9, 6 Mbps
11, 5,5, 2, 1 Mbps

Modulation type
OFDM mit BPSK, QPSK, 16QAM,
64 QAM (11g), BPSK, QPSK, CCK (11b)

Media Access Protokoll
CSMA/CA

Antenna
Internal

Transmit power
12 dBm (typical)

Channel number
1 ~ 11 channels (North America)
1 ~ 13 channels (EU)
1 ~ 14 channels (Japan)

Security support
64/128-bit WEP/WPA-TKIP
IEEE 802.1x authentication
AES Encryption

Working mode
Infrastructure, Ad-hoc, Stations mode

Power supply
DC 5 V ± 10 %, 500 mA

Dimensions
∅ 50 mm x 139.5 mm

Admissible operating temperature
-20 °C ≤ T_a ≤ 60 °C

Weight
Approx. 500 g

Note
For using the USB device the USB connection (Ex d-socket) must exist at the POLARIS series Professional and Comfort.

Order no.
USB device WLAN
17-71VZ-6000/0100

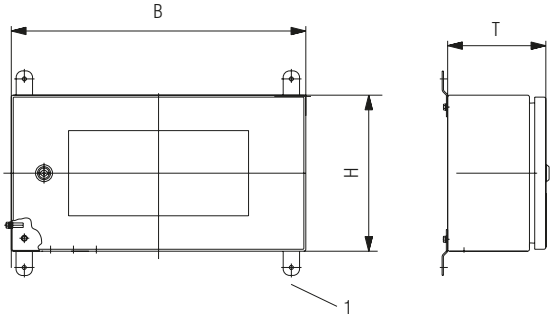
Technical data subject to change without notice.

03-0330-0458-02/2014-BAT-243447

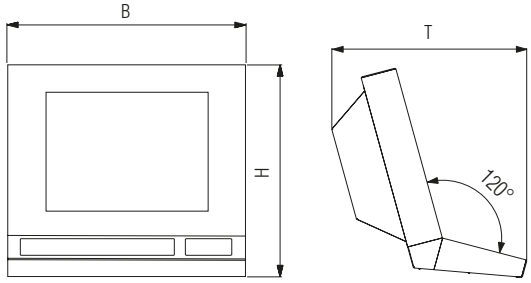
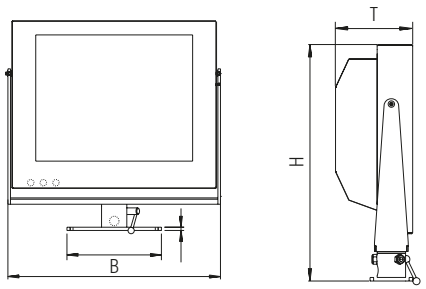
Selection chart Accessories

Illustration	Description		Order no.
	**Ex i USB Stick** for ATEX/IECEx Zone 1 and Zone 21		
	Ex i 4 GB memory flash drive		**17-71VZ-5000/0100**
	Ex i recovery flash drive Built 007		**17-71VZ-5000/0107**
	**Connection cable for keyboard and mouse variants**		
	Keyboard and mouse	1.8 m	**05-0068-0163**
	Keyboard and mouse	3.0 m	**05-0068-0204**
	Keyboard and trackball/joystick	1.8 m	**05-0068-0172**
	Keyboard and trackball/joystick	3.0 m	**05-0068-0205**
	Keyboard and touchpad	1.8 m	**05-0068-0183**
	Keyboard and touchpad	3.0 m	**05-0068-0206**
	**Reinforcement frame**		
	POLARIS series 10.4"		**04-0205-0008**
	POLARIS series 12.1"		**04-0205-0007**
	POLARIS series 12.1" W		**05-0205-0008**
	POLARIS series 15"		**05-0205-0009**
	POLARIS series 17.3"		**05-0205-0013**
	POLARIS series 19.1"		**05-0205-0010**
	POLARIS series 24"		**05-0205-0012**
	**Mounting clamp set**		
	4 pieces		**05-0091-0111**
	6 pieces		**05-0091-0112**
	**LAN STP cable**		
	CAT.7 4 x 2 x 23 AWG, outer diameter: 7.9 mm		**02-4082-0002**
	CAT.7 4 x 2 x 22 AWG, outer diameter: 18 mm; armoured		**02-4082-0004**
	Note: additional cable glands required for armouring.		
	Original packaging		
	POLARIS series 10.4"		**04-9035-0005**
	POLARIS series 12.1"		**04-9035-0006**
	POLARIS series 12.1" W		**04-9035-0005**
	POLARIS series 15"		**04-9035-0007**
	POLARIS series 17.3"		**on request**
	POLARIS series 19.1"		**04-9035-0008**
	POLARIS series 24"		**on request**

Selection chart Standard stainless steel enclosure

Illustration	Description	Order no.
	**Standard stainless steel enclosure** **Technical data** Material Stainless steel 1.4404; AISI 316 L Surface brushed Protection class IP 65	
	■ **for floor mounting with stand**	
		Dimensions in mm (B x H x T)
	POLARIS series 10.4"	560 x 320 x 200 **07-56D7-9611/9002**
	POLARIS series 12.1"	600 x 350 x 200 **07-56D7-9711/9002**
	POLARIS series 12.1" W	560 x 320 x 200 **07-56D7-9611/9002**
	Complete solutions with fitted components	**on request**
	■ **with adapter connection without stand**	
		Dimensions in mm (B x H x T)
	POLARIS series 15"	650 x 500 x 150 **05-0041-0395**
	POLARIS series 15" Sunlight	650 x 500 x 150 **05-0041-0395**
	POLARIS series 17.3"	660 x 600 x 150 **on request**
	POLARIS series 19.1"	760 x 600 x 150 **05-0041-0994**
	POLARIS series 24"	885 x 625 x 150 **05-0041-0993**
	■ **for wall mounting with mounting straps**	
		Dimensions in mm (B x H x T)
	POLARIS series 10.4"	560 x 320 x 200 **07-56D7-9611/9001**
	POLARIS series 12.1"	600 x 350 x 200 **07-56D7-9711/9001**
	POLARIS series 12.1" W	560 x 320 x 200 **07-56D7-9611/9001**
	POLARIS series 15"	650 x 500 x 210 **07-56D7-0B11/9001**
	POLARIS series 15" Sunlight	650 x 500 x 210 **07-56D7-0B11/9001**
	POLARIS series 19.1"	760 x 600 x 210 **07-56D7-9A11/9001**
		
	1 mounting strap for wall mounting	

Selection chart Exclusive II stainless steel enclosure

Illustration	Description	Order no.
	**Exclusive II stainless steel enclosure** - Material: stainless steel grade 1.4301 ■ **with adapter connection**	
		Dimensions in mm (B x H x T)
	POLARIS series 15"	650 x 578 x 543 — **05-0041-0354**
	POLARIS series 17.3"	650 x 598 x 543 — **on request**
	POLARIS series 19.1"	650 x 598 x 543 — **05-0041-0353**
	POLARIS series 24"	885 x 625 x 543 — **05-0041-0406**
		
	■ **Stainless steel enclosure - swivel/tilt without desktop mount** - Material: stainless steel grade 1.4301	
		Dimensions in mm (B x H x T)
	POLARIS series 15"	770 x 685 x 218 — **05-0041-0356**
	POLARIS series 19.1"	770 x 685 x 218 — **05-0041-0355**
		

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Selection chart Stainless steel enclosure Accessories

Illustration	Description	Order no.
	**Stand for floor mounting for Exclusive II stainless steel enclosure** ■ Material: stainless steel grade 1.4301 ■ swivel ■ Height approx. 900 mm, diameter 80 mm	**05-0005-0050**
	**Stand for floor mounting for Standard stainless steel enclosure from 15" series and POLARIS II** ■ Material: stainless steel grade 1.4301 ■ swivel ■ height approx. 1000 mm, diameter 80 mm	**05-0005-0078**
	Desktop mount for stainless steel enclosure for POLARIS 15" series/19.1" series ■ Material: stainless steel grade 1.4301 ■ swivel ■ Length approx. 140 mm, Durchmesser 80 mm	**05-0005-0070**
	**Support arm for wall mounting** ■ Material: stainless steel grade 1.4301 ■ swivel ■ Length approx. 580 mm	**05-0005-0058**

Selection chart Special solutions

Illustration	Description	Order no.
	■ **Standard stainless steel enclosure with additional fitted components** ■ Material: stainless steel ■ suitable for all POLARIS devices ■ optional for fitting switch modules and/or heating ■ for wall mounting with mounting straps or support arm or for floor mounting with stand	**on request**

03-0330-0658-08/2014-BAT-318903/4

BARTEC

POLARIS REMOTE

03-0330-0648-09/2014-BAT-317215/9

POLARIS REMOTE

REMOTE-controlled solution for process control systems in safe areas

The POLARIS REMOTE serie is the ideal solution if you wish to use process control systems in safe areas in hazardous areas also without restriction.

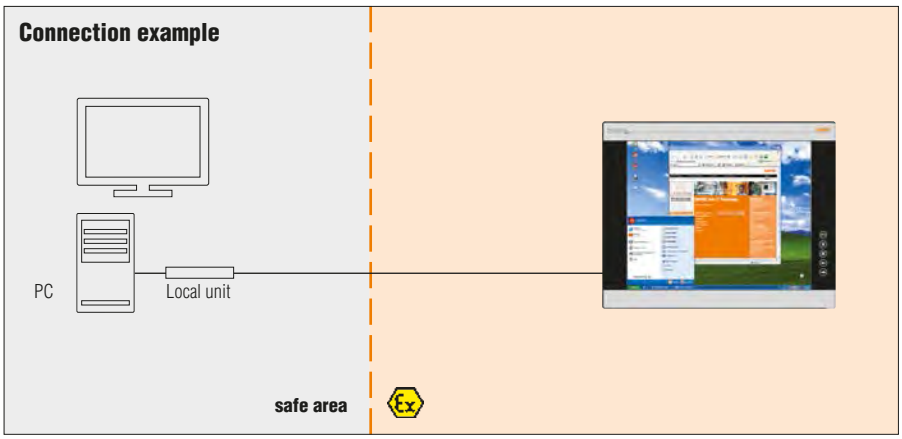
The connection to the server or the PC is established easily and directly by means of a local unit already included in the scope of supply and there is therefore no need for software engineering. If you wish to switch several local units one after another (cascading), you can access many different POLARIS REMOTE panels on a server or PC without needing to use more software licences. Both analog and digital data transfers assure an excellent quality of image and operation. The electrical connection is established by means of a standard CAT 7 cable or an optical waveguide.

As an alternative to KVM solution POLARIS Zero Client series is the modern secure remote PC solution for the Zone 1 hazardous areas. The connection is based on the RDP7 protocol to control a remote computer. The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

We supply the POLARIS REMOTE series as a complete solution in a stainless steel enclosure with first-class Ex i keypads in various languages and diverse mouse variants. An electrically heated version is available for use in a particularly harsh environment with temperatures as low as down to minus 40 degree Celsius. We produce customer-specific solutions with more command and signalling devices on request.

Features

- Simple cascading
- KVM (Keyboard-Video-Mouse) technology, software engineering no longer required
- Easy front-panel installation
- Distances of up to 10,000 m
- Customer-specific solutions



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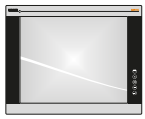
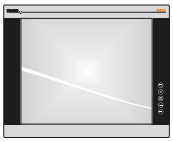
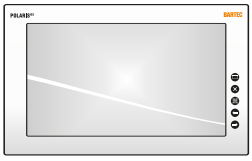
POLARIS REMOTE

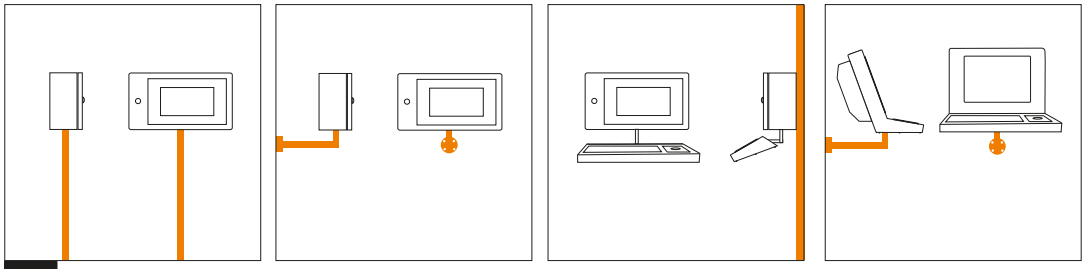
POLARIS REMOTE for ATEX Zone 1 and 21

			
Size	15"	19.1"	24"
Resolution	XGA, 1024 x 768 pixels	SXGA, 1280 x 1024 pixels	Full HD 1080, 1920 x 1080 pixels
Backlighting	CFL	CFL	LED
Touchscreen	optional	optional	optional
Keypad	optional external keypad	optional external keypad	optional external keypad
Additional components	Mouse, Touchpad, Trackball, Joystick	Mouse, Touchpad, Trackball, Joystick	Mouse, Touchpad, Trackball, Joystick
Interface KVM Box	2 x PS/2 input, 2 x PS/2 output, 1 x VGA input, 1 x VGA output, 1 x RS232 input	2 x PS/2 input, 2 x PS/2 output, 1 x VGA input, 1 x VGA output, 1 x RS232 input	1 x DVI In, 1 x DVI Out, 1 x USB
Data transfer	CAT7/LWL	CAT7/LWL	CAT7/LWL
Supply voltage	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

POLARIS REMOTE for ATEX Zone 2 and ATEX Zone 21/22

			
Size	19.1"	22"	24"
Resolution	SXGA, 1280 x 1024 pixels	WSXGA+, 1680 x 1050 pixels	Full HD, 1920 x 1080 pixels
Backlighting	CFL	CFL	LED
Touchscreen	optional	optional	optional
Keypad	optional external keypad	optional external keypad	optional external keypad
Additional components	Touchpad, Trackball	Touchpad, Trackball	Touchpad, Trackball
Interface KVM Box	1 x Keyboard in, 1 x Monitor in, 1 x Monitor out	1 x Keyboard in, 1 x Monitor in, 1 x Monitor out	1 x Keyboard in, 1 x Monitor in, 1 x Monitor out
Data transfer	CAT7/LWL	CAT7/LWL	CAT7/LWL
Supply voltage	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V	AC 90 V to 253 V, DC 24 V
Approvals	ATEX, GOST-R	ATEX, GOST-R	ATEX, GOST-R

Types of fastening for ATEX Zone 1 and 21



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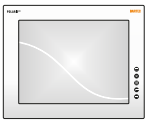
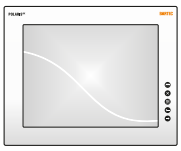
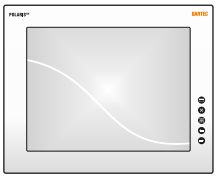
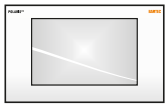
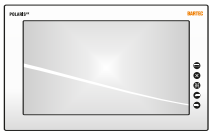
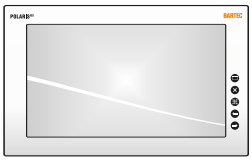
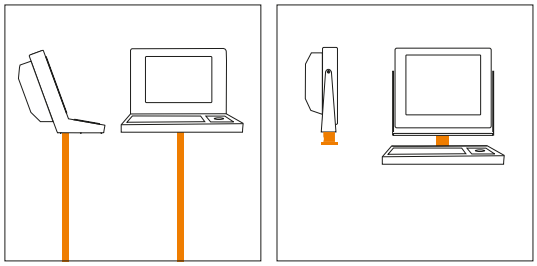
POLARIS REMOTE ZeroClient for ATEX Zone 1 and 21

			
Size	15"	15" Sunlight	19.1"
Resolution	XGA, 1024 x 768 pixels	XGA, 1024 x 768 pixels	SXGA, 1280 x 1024 pixels
Backlighting	LED	LED	CFL
Keypad	optional external keypad	optional external keypad	optional external keypad
Additional components	Mouse, Touchpad, Trackball, Joystick, Hand scanner on request	Mouse, Touchpad, Trackball, Joystick, Hand scanner on request	Mouse, Touchpad, Trackball, Joystick, Hand scanner on request
Interface KVM Box	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad
Supply voltage	AC 90 V to 253 V or DC 24 V ± 10 %	AC 90 V to 253 V or DC 24 V ± 10 %	AC 90 V to 253 V or DC 24 V ± 10 %
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

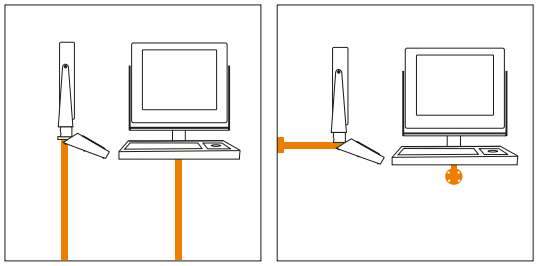
POLARIS REMOTE ZeroClient for ATEX Zone 1 and 21

			
Size	12.1" W	17.3"	24"
Resolution	WXGA, 1280 x 800 pixels	Full HD, 1920 x 1080 pixels	Full HD, 1920 x 1080 pixels
Backlighting	LED	LED	LED
Keypad	optional external keypad	optional external keypad	optional external keypad
Additional components	Mouse, Touchpad, Trackball, Joystick Hand scanner on request	Mouse, Touchpad, Trackball, Joystick Hand scanner on request	Mouse, Touchpad, Trackball, Joystick Hand scanner on request
Interface KVM Box	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad	1 x Ex e Ethernet 100/10BaseT (optional LWL), 1 x Ex e USB, 1 x Exi USB, 2 x Ex i PS/2 for intrinsically safe mouse and keypad
Supply voltage	DC 24 V ± 10 %	AC 90 V to 253 V or DC 24 V ± 10 %	AC 90 V to 253 V or DC 24 V ± 10 %
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

Types of fastening for ATEX Zone 1 and 21



Types of fastening for ATEX Zone 2, ATEX Zone 21/22



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POLARIS Remote 15"

Features

- Easy front panel fitting
- Graphic-capable TFT colour display
- Easy wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- OSD menu, with setting keys on the front
- Reduction in costs by cascading several POLARIS remote devices to one PC

Description

The POLARIS Remote 15" unit by BARTEC is a display with keyboard and mouse with which a PC can be operated in safe areas of hazardous areas.

Distances of up to 10,000 m are possible.

POLARIS Remote 15" offers the user the possibility of using any currently available PC-based process control system, without any restrictions in the Ex area.

The front panel installation assures ease of mounting. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

The screen of the Remote 15" is a TFT display with an XGA resolution and is characterised by its excellent brilliance and a very large reading angle.

Intrinsically safe input devices can be connected also. Optionally, a touchscreen (intrinsically safe), assuring an absolutely maximum operator convenience, is available.

Connection in the safe area is realized via a local unit (included in delivery).

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120°C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant for Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 15" graphic-capable TFT colour display
- 16.7 million colours
- XGA resolution 1024 x 768 pixels
- Brightness 350 cd/m²
- Visible area approx. 304 x 228 mm
- Contrast 700:1
- Antireflection coating glass pane
- Optional touchscreen

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Connection to the PC
- Connection to VGA
- PS/2 keyboard und PS/2 mouse port
- via cable STP/S; 4 x 2 x 23 AWG optionally via fibre optic

Requirement to the base station
Keyboard and mouse with a PS/2connector; VGA connection or graphics card with the following technical data:
- VGA, SVGA, XGA, SXGA resolution
- Vertical sync frequency 60 to 75 Hz

Transmission distance
- up to 300 m via STP/S copper cable
- up to 400 m via 50 µm multi-mode fibre optic cable
- up to 10,000 m via 9 µm single-mode fibre optic cable (on request)

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 60 W

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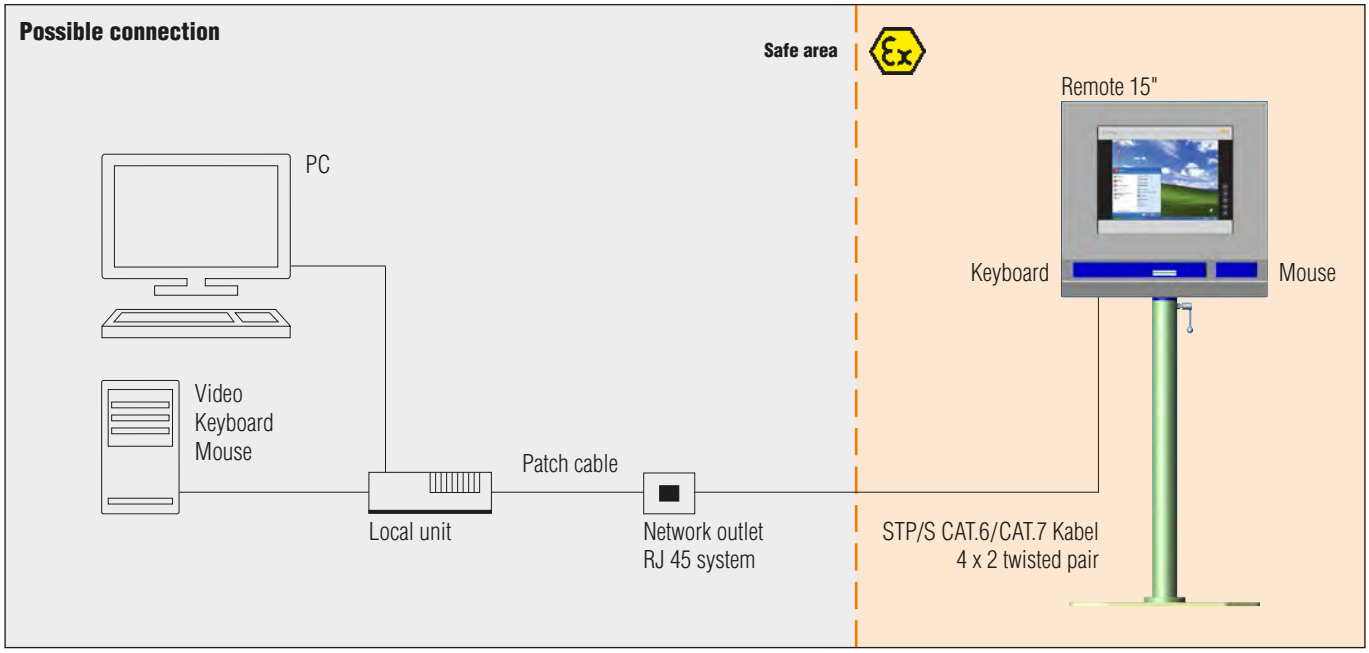


Dimensions (width x height x depth)
411 mm x 332 mm x approx. 135 mm

Wall cut-out
394.5 mm x 315.5 mm + 0.5 mm

Weight
Approx. 23 kg

Admissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back galvanised sheet steel, bichromated

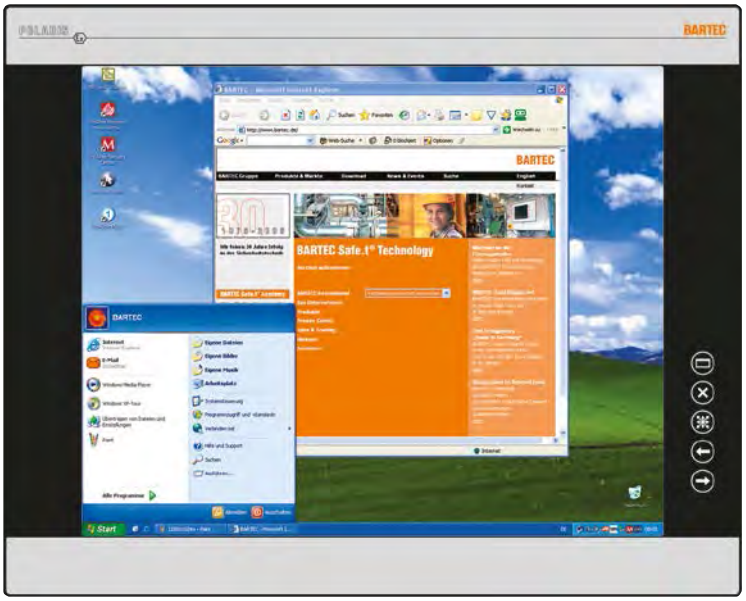
Selection chart

Version	Code no.	Interfaces	Code no.
Remote 15" without touchscreen	4	for STP/S copper cable (up to max. 300 m)	00
		for STP/S copper cable (up to max. 300 m) supply module for hand-held scanner*	04
Remote 15" with touchscreen	6	for 50 µm multi-mode fibre optic cable (up to max. 400 m)	08
		for 50 µm multi-mode fibre optic cable (up to max. 400 m), supply module for hand-held scanner*	12

*(not with touchscreen)

Complete order no. 17-71V2-☐ 0 ☐☐
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0407-07/2014-BAT-236279/2



POLARIS Remote 19.1"

Features

- Easy front panel fitting
- Graphic-capable TFT colour display
- Easy wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- OSD menu, with setting keys on the front
- Reduction in costs by cascading several POLARIS remote devices to one PC

Description

The POLARIS Remote 19.1" unit by BARTEC is a display with keyboard and mouse with which a PC can be operated in safe areas of hazardous areas.

Distances of up to 10,000 m are possible.

POLARIS Remote 19.1" offers the user the possibility of using any currently available PC-based process control system, without any restrictions in the Ex area.

The front panel installation assures ease of mounting. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

The screen of the Remote 19.1" is a TFT display with an SXGA resolution and is characterised by its excellent brilliance and a very large reading angle.

Intrinsically safe input devices can be connected also. Optionally, a touchscreen (intrinsically safe), assuring an absolutely maximum operator convenience, is available.

Connection in the safe area is realized via a local unit (included in delivery).

Explosion protection

Ex protection type Zone 1 and 21

ATEX II 2G Ex db eb qb [ib op pr] IIC T4
II 2D Ex tb IIIC T120°C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant for Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 19.1" graphic-capable TFT colour display
- 16.7 million colours
- SXGA resolution 1280 x 1024 pixels
- Brightness 300 cd/m²
- Visible area approx. 380 x 305 mm
- Contrast 1300:1
- Antireflection coating glass pane
- Optional touchscreen

Backlight illumination
- LED technology
- Service life approx. 40,000 hours (at +25 °C)

Connection to the PC
- Connection to VGA
- PS/2 keyboard and PS/2 mouse port
- via cable STP/S; 4 x 2 x 23 AWG optionally via fibre optic cable

Requirement to the base station
Keyboard and mouse with a PS/2 connector; VGA connection or graphics card with the following technical data:
- VGA, SVGA, XGA, SXGA resolution
- Vertical sync frequency 60 to 75 Hz

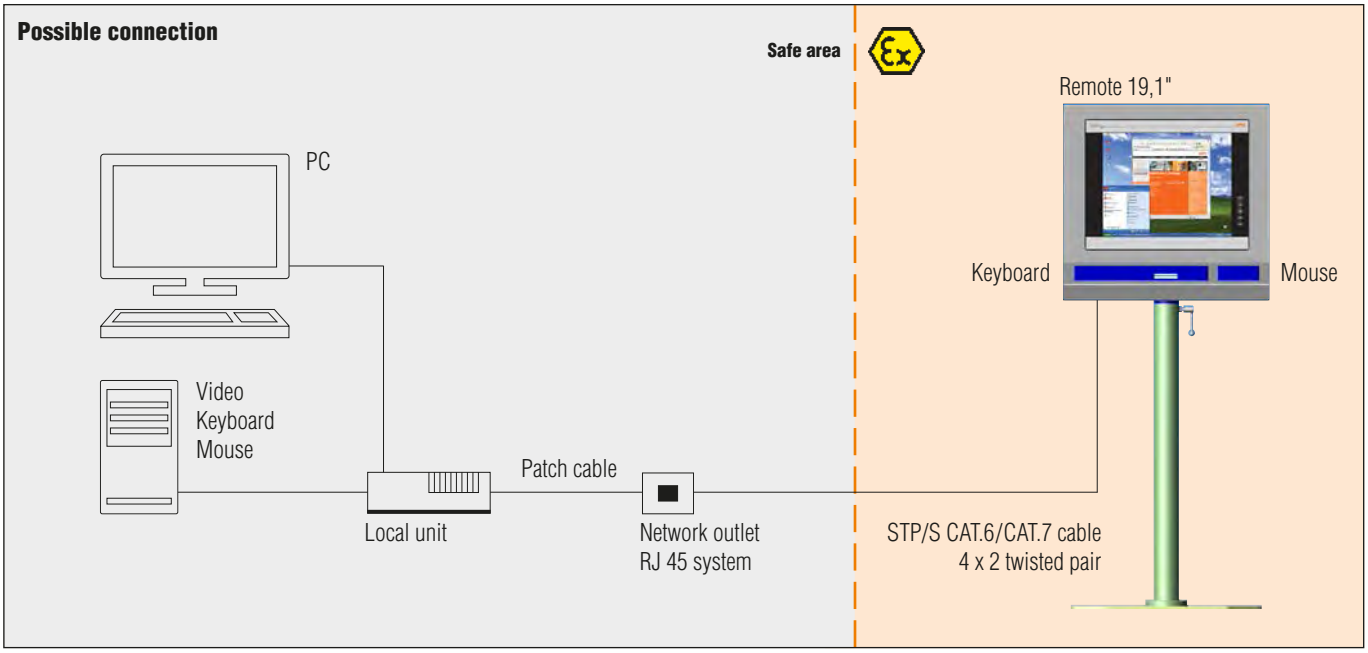
Transmission distance
- up to 300 m via STP/S copper cable
- up to 400 m via 50 µm multi-mode fibre optic cable
- up to 10,000 m via 9 µm single-mode fibre optic cable (on request)

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.} < 60$ W

03-0330-0408-02/2014-BAT-236280/1

Possible connection



Dimensions (width x height x depth)
498 mm x 400 mm x approx. 135 mm

Wall cut-out
484 mm x 386.5 mm + 0.5 mm

Weight
approx. 33 kg

Admissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back galvanised sheet steel, bichromated

Selection chart

Version	Code no.	Interfaces	Code no.
Remote 19.1" without touchscreen	5	for STP/S copper cable (up to max. 300 m)	00
		for STP/S copper cable (up to max. 300 m) supply module for hand-held scanner*	04
Remote 19.1" with touchscreen	7	for 50 µm multi-mode fibre optic cable (up to max. 400 m)	08
		for 50 µm multi-mode fibre optic cable (up to max. 400 m), supply module for hand-held scanner*	12

*(not with touchscreen)

Complete order no. 17-71V2-☐ 0 ☐☐
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0408-02/2014-BAT-236280/2

POLARIS Remote 24"

Features

- Easy front panel fitting
- Full HD resolution
- Easy wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- OSD menu, with setting keys on the front

Description

The POLARIS Remote 24" unit by BARTEC is a display with keyboard and mouse with which a PC can be operated in safe areas of hazardous areas.

Distances of up to 10,000 m are possible.

POLARIS Remote 24" offers the user the possibility of using any currently available PC-based process control system, without any restrictions in the Ex area.

The front panel installation assures ease of mounting. Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

The screen of the Remote 24" is a TFT display with an Full HD resolution and is characterised by its excellent brilliance and a very large reading angle.

Intrinsically safe input devices can be connected also. Optionally, a touchscreen (intrinsically safe), assuring an absolutely maximum operator convenience, is available.

Connection in the safe area is realized via a local unit (included in delivery).

Explosion protection

Ex protection type Zone 1 and 21

ATEX II 2G Ex db eb qb [ib op pr] IIC T4
II 2D Ex tb IIIC T120°C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant for Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 24“ graphic-capable TFT colour display
- 16.7 million colours
- Full HD resolution 1920 x 1080 pixels
- Brightness 300 cd/m²
- Visible area approx. 531 x 299 mm
- Contrast 3000:1
- Antireflection coating glass pane
- Optional touchscreen

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Connection to the PC
with local unit (plug & play)
by means of STP/S cables 4 x 2 x 23 AWG
- 1 x DVI in
- 1 x DVI out (local monitor)
- 1 x USB for keyboard/mouse/touchscreen and option of hand-held scanner

Cable length
- up to 100 m of STP/S copper cable on request
- up to 500 m of 50 µm multi-mode
- up to 10 000 m of 9 µm single-mode

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

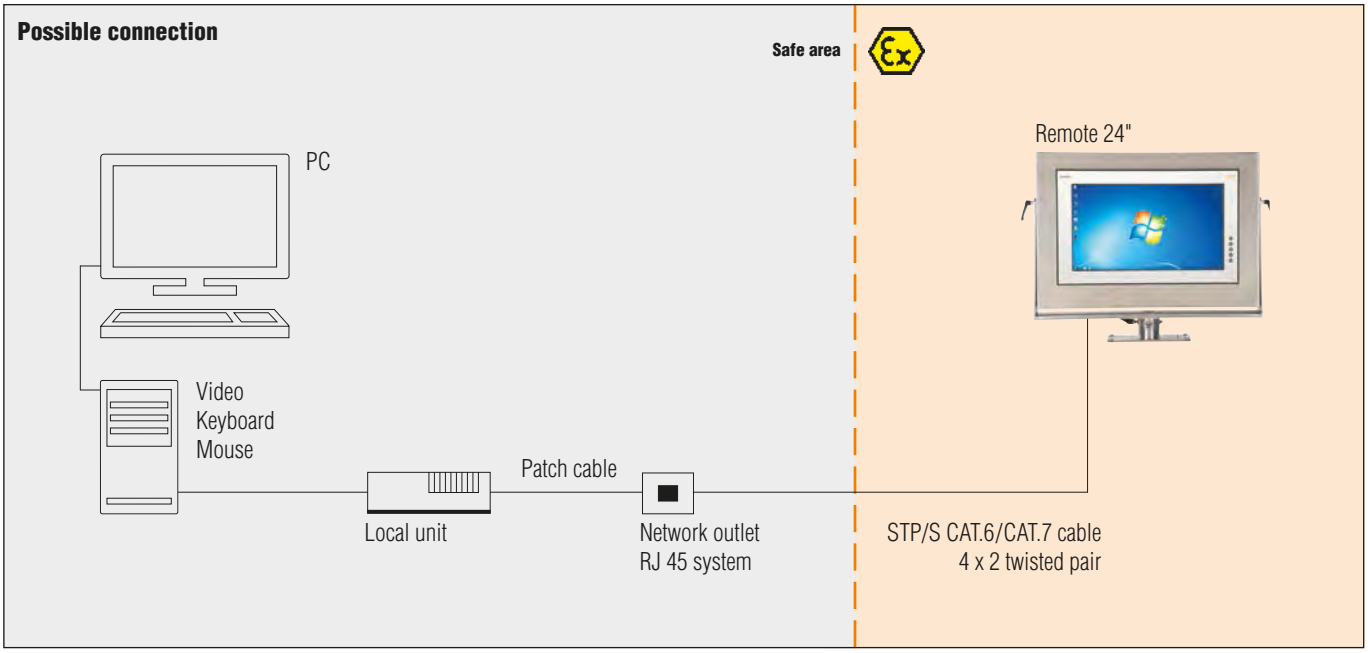
Max. power consumption
$P_{max.}$ < 60 W

Dimensions (width x height x depth)
644 mm x 406 mm x approx. 135 mm

Wall cut-out
630 mm x 392 mm + 0.5 mm

03-0330-0688-07/2014-BAT-334209/1

Possible connection



Weight
approx. 40 kg

Admissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back galvanised sheet steel, bichromated

Selection chart

Version	Code no.	Interfaces	Code no.
Remote 24" without touchscreen	C	for STP/S copper cable (up to max. 100 m)	17
		for STP/S copper cable (up to max. 100 m) supply module for hand-held scanner*	18
Remote 24" with touchscreen	D	for 50 µm multi-mode fibre optic cable (up to max. 500 m)	on request
		for 50 µm multi-mode fibre optic cable (up to max. 500 m), supply module for hand-held scanner*	on request

*(not with touchscreen)

Complete order no. 17-71V2-☐ 0 ☐☐
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0688-07/2014-BAT-334209/2

POLARIS ZeroClient 12.1" W

Features

- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touch screen offers the ultimate in operating comfort.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 12.1" W graphics-capable TFT colour display
- 262,144 colours
- WXGA resolution, 1280 x 800 pixels
- Brightness 400 cd/m²
- Visible surface approx. 264 x 166 mm
- Contrast 1200:1
- Touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
400 mm x 246 mm x approx. 130 mm

Wall cut-out
386 mm x 226 mm + 0.5 mm

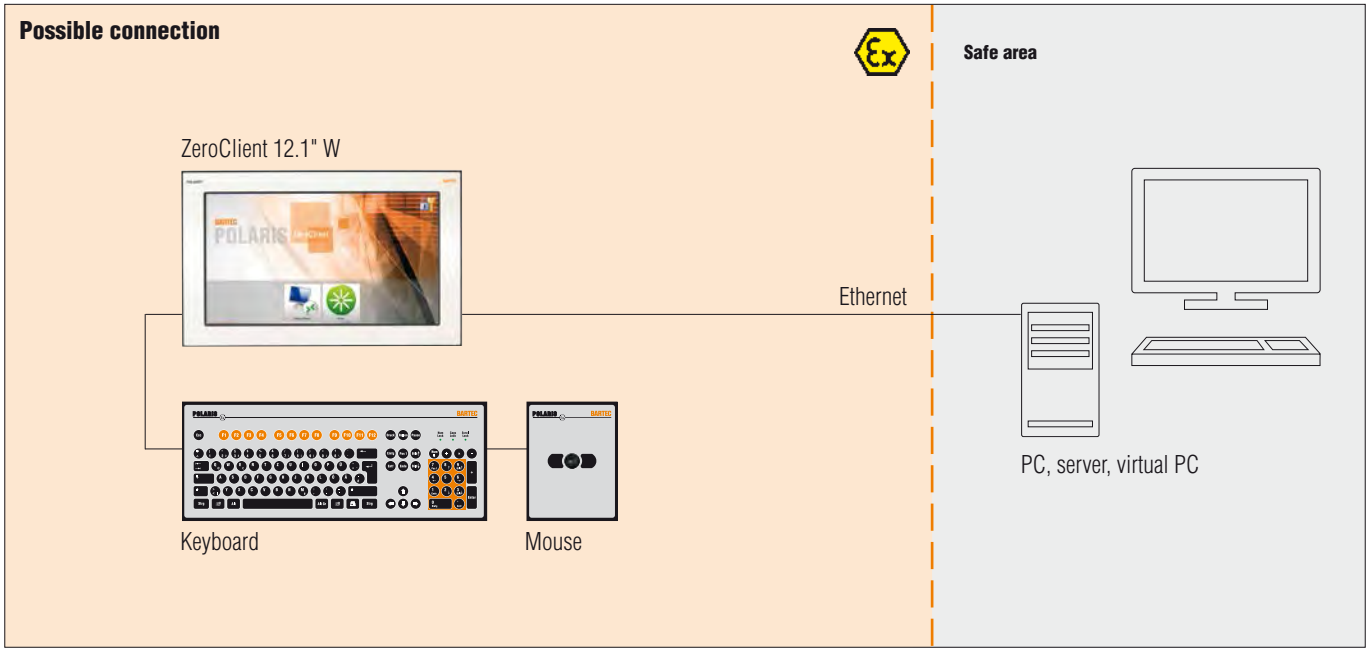
Weight
approx. 14 kg

Supply voltage
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 35 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

03-0330-0819-07/2014-BAT-372482/1



Relative air humidity
5 % to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material

Front	Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back	bichromated sheet steel

Order no.

POLARIS REMOTE ZeroClient 12.1" W with touch screen
17-71V1-B436/Z000

Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0819-07/2014-BAT-372482/2

POLARIS ZeroClient 15"

Features

- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touch screen offers the ultimate in operating comfort.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 15" graphic-capable TFT colour display
- 16.7 Mio. colours
- XGA resolution 1024 x 768 pixels
- Brightness up to 350 cd/m²
- Visible area approx. 304 x 228 mm
- Contrast 700:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
411 mm x 332 mm x approx. 135 mm

Wall cut-out
394.5 mm x 315.5 mm + 0.5 mm

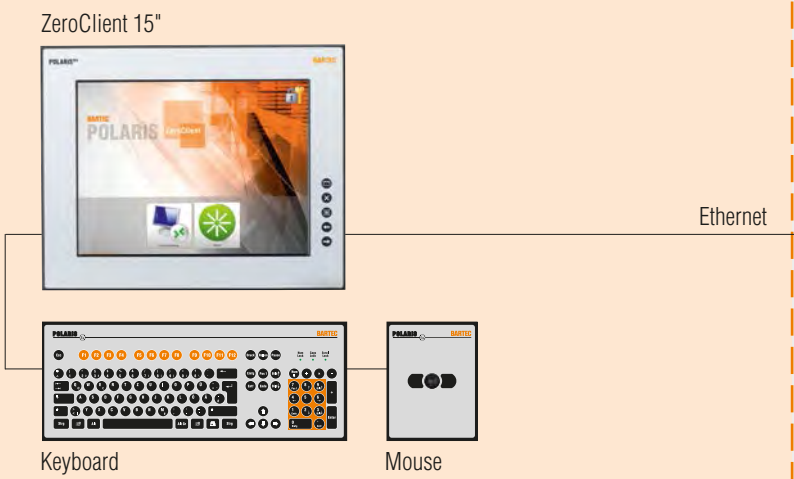
Weight
approx. 23 kg

Supply voltage
DC 24 V ± 10 %
AC 100 to 230 V, 50 to 60 Hz

Input voltage range
DC 24 V ± 10 %
AC 90 V to 253 V

03-0330-0817-07/2014-BAT-372480/1

Possible connection



Max. power consumption

$P_{max.}$ < 70 W

Admissible ambient temperatures

Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

System solution with heating on request.

Humidity

5 to 95 % non-condensing

Vibration

0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock

15 g/11 ms pulse in all 3 axes

Material

Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back galvanised sheet steel, bichromated

Selection chart

Version	Code no.	Input voltage range	Code no.
ZeroClient 15" without touchscreen	**4**	AC 90 to 253 V	**0**
ZeroClient 15" with touchscreen	**6**	DC 24 V	**2**

Complete order no. 17-71V1-☐072/Z000/☐200

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0817-07/2014-BAT-372480/2

POLARIS ZeroClient 15" Sunlight

Features

- Sunlight readable display
- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 15" graphics-capable TFT colour display
- 262,144 colours
- XGA resolution, 1024 x 768 pixels
- Brightness up to 1000 cd/m²
- Visible area approx. 304 x 228 mm
- Contrast 700:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
411 mm x 332 mm x approx. 135 mm

Wall cut-out
394.5 mm x 315.5 mm + 0.5 mm

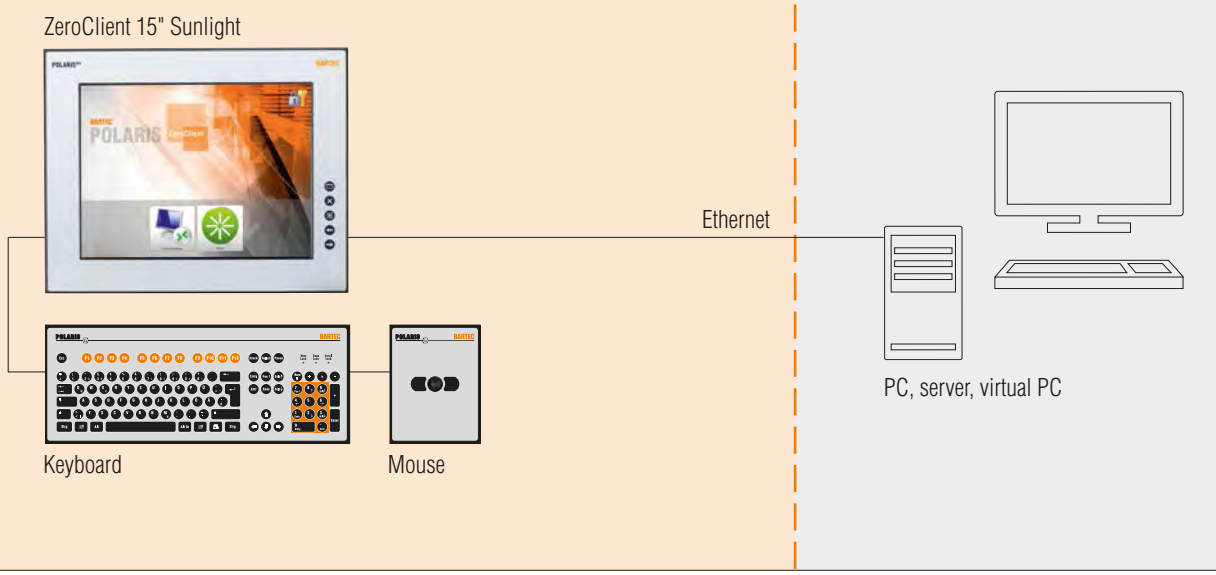
Weight
approx. 23 kg

Supply voltage
DC 24 V ± 10 %
AC 100 to 230 V, 50 to 60 Hz

Input voltage range
DC 24 V ± 10 %
AC 90 V to 253 V

03-0330-0820-07/2014-BAT-372483/1

Possible connection



Max. power consumption

$P_{max.}$ < 70 W

Admissible ambient temperatures

Storage -20 °C to +60 °C
Operation -20 °C to +60 °C
System solution with heating on request.

Humidity

5 to 95 % non-condensing

Vibration

0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock

15 g/11 ms pulse in all 3 axes

Material

Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back galvanised sheet steel, bichromated

Selection chart

Version	Input voltage range	Code no.
ZeroClient 15" Sunlight with touchscreen	AC 90 to 253 V	**0**
	DC 24 V	**2**

Complete order no. 17-71V-6272/Z000/ ☐ 200

Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0820-07/2014-BAT-372483/2

POLARIS ZeroClient 17.3"

Features

- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touch screen offers the ultimate in operating comfort.

Explosion protection

Ex protection type Zone 1 and 21

ATEX ⟨Ex⟩ II 2G Ex db eb qb [ib op pr] IIC T4
⟨Ex⟩ II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 17.3" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x 1080 pixels
- Brightness 400 cd/m²
- Visible area approx. 382 x 215 mm
- Contrast 600:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED illumination
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
503 mm x 314 mm x approx. 135 mm

Wall cut-out
489 mm x 300 mm + 0.5 mm

Weight
approx. 33 kg

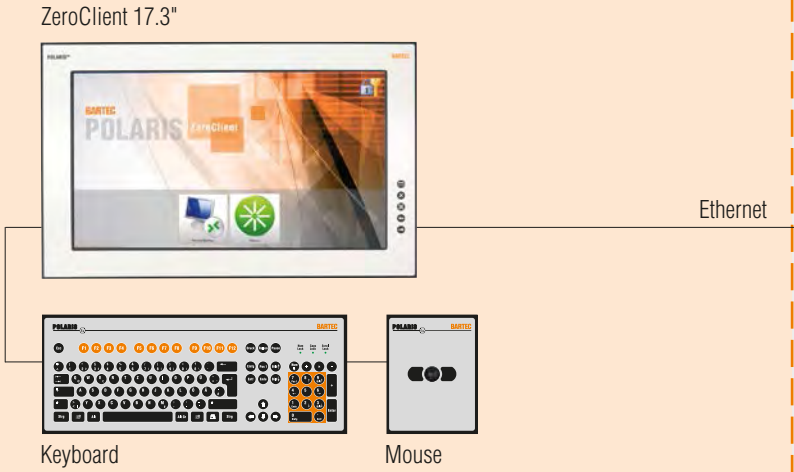
Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 70 W depending on the variant

Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

03-0330-0822-07/2014-BAT-372485/1

Possible connection



Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Input voltage range	Code no.
ZeroClient 17.3" without touchscreen	**E**	AC 90 to 253 V	**0**
ZeroClient 17.3" with touchscreen	**F**	DC 24 V	**2**

Complete order no. 17-71V1-☐072/Z000/☐200
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0822-07/2014-BAT-372485/2

POLARIS ZeroClient 19.1"

Features

- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touch screen offers the ultimate in operating comfort.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 19.1" graphics-capable TFT colour display
- 16.7 million colours
- SXGA resolution, 1280 x 1024 pixels
- Brightness 300 cd/m²
- Visible area approx. 380 x 305 mm
- Contrast 1300:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
498 mm x 400 mm x approx. 135 mm

Wall cut-out
484 mm x 386.5 mm + 0.5 mm

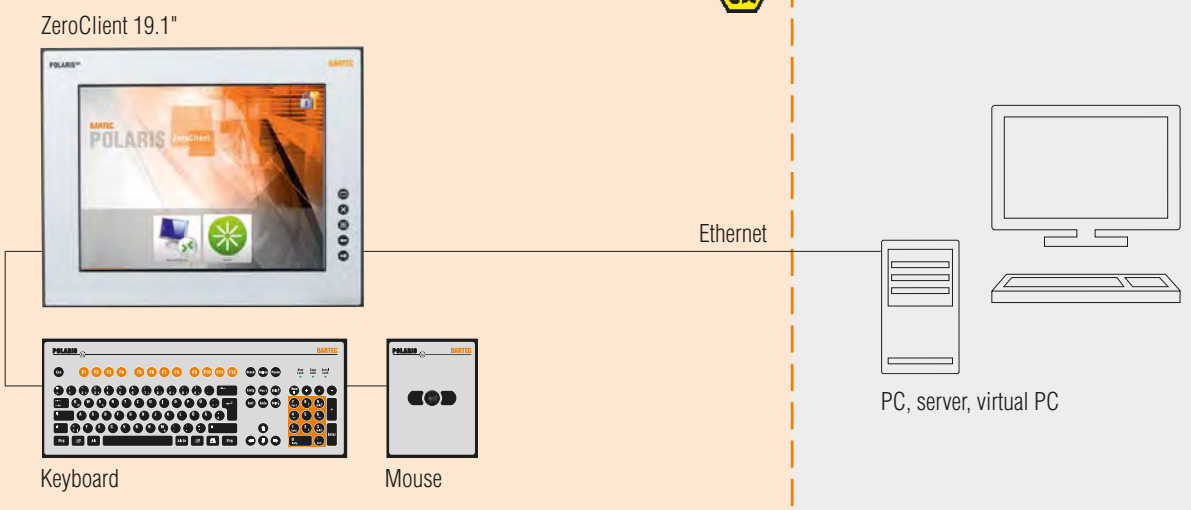
Weight
approx. 33 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 70 W

03-0330-0818-07/2014-BAT-372481/1

Possible connection



Admissible ambient temperature
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Code no.	Input voltage range	Code no.
ZeroClient 19.1" without touchscreen	**5**	AC 90 to 253 V	**0**
ZeroClient 19.1" with touchscreen	**7**	DC 24 V	**2**

Complete order no. 17-71V1-☐072/Z000/☐200
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0818-07/2014-BAT-372481/2

POLARIS ZeroClient 24"

Features

- Safety principle
- Direct linkage in explosive areas
- Ethernet interface
- Easy front panel fitting
- Graphic-capable TFT colour display

Description

The POLARIS ZeroClient series is the modern safe remote HMI series for the Zone 1 hazardous area.

The connection is based on the RDP7 protocol to control a remote computer.

The ZeroClient shell, developed by BARTEC itself, comes in a user-friendly tile look and was designed in conformance to today's safety standards to prevent any risks emanating from the user or the network.

The wired electrical connections are made via a terminal compartment in the "e" (increased safety) type of protection.

State-of-the-art display technology provides optimum contrast even with a large viewing angle.

The front-panel fitting assures easy installation. On request, the devices are also available as turn-key system solutions in stainless-steel enclosures as wall, floor or ceiling mounting versions.

Intrinsically safe input devices can be connected also. The optional (intrinsically safe) touch screen offers the ultimate in operating comfort.

Explosion protection

Ex protection type for Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- 24" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x 1080 pixels
- Brightness 300 cd/m²
- Visible area approx. 531 x 299 mm
- Contrast 3000:1
- Antireflection coating glass pane
- Optional touchscreen (resistive)

Backlight illumination
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Interfaces
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e USB
- 1 x Ex i USB
- 2 x Ex i PS/2 for intrinsically safe keyboard and mouse

Optional accessories
Hand-held scanner on request

Dimensions (width x height x depth)
644 mm x 406 mm x approx. 135 mm

Wall cut-out
630 mm x 392 mm + 0.5 mm

Weight
approx. 40 kg

Power supply
AC 90 to 253 V, 50 to 60 Hz
DC 24 V ± 10 % on request

Max. power consumption
$P_{max.}$ < 100 W depending on the variant

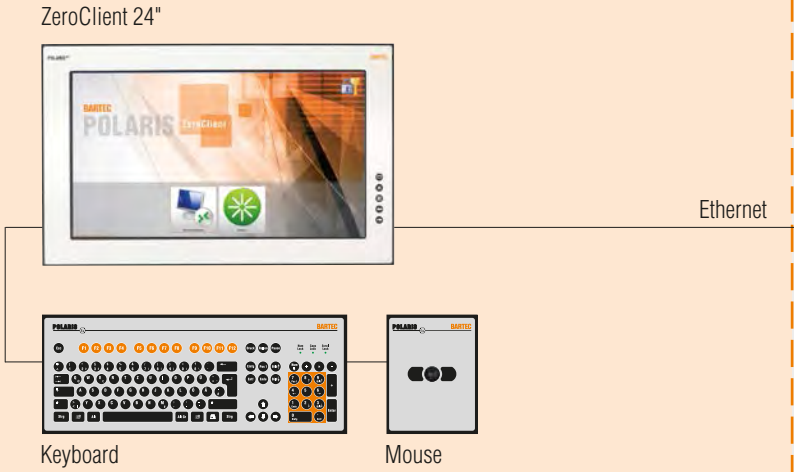
Admissible ambient temperature

Storage	-20 °C to +50 °C
Operation	0 °C to +50 °C

System solution with heating on request.

03-0330-0816-07/2014-BAT-372474/1

Possible connection



Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material

Front	Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back	bichromated sheet steel

Selection chart

Version	Code no.	Input voltage range	Code no.
ZeroClient 24" without touchscreen	**C**	AC 90 to 253 V	**0**
ZeroClient 24" with touchscreen	**D**	DC 24 V	**2**

Complete order no. 17-71V1-☐072/Z000/☐200
Please insert correct code.
Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0816-07/2014-BAT-372474/2

POLARIS II Remote 19.1"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Graphics-capable TFT colour display
- Simple wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- Cost reduction by cascading several POLARIS II Remote devices to one PC

Description

The POLARIS II Remote 19.1" from BARTEC is a display which enables a PC to be operated in safe areas of hazardous areas.

Distances of up to 300 m are possible.

POLARIS II Remote 19.1" allows the user the possibility of utilising any currently available PC-based process control systems without restrictions in the Ex areas.

On request the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or table mounting.

The screen on the POLARIS II Remote 19.1" is a TFT display with SXGA resolution and is characterised by its outstanding brilliance and a very large reading angle.

A keyboard with integrated trackball or touchpad is available. An optional touch screen offering the ultimate in operating ease is also obtainable.

Linking in the safe area is established through a local unit (included in the scope of supply).

Explosion protection

Ex protection type Zone 2
Ⓔx II 3G Ex nA II T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
Ⓔx II 2D Ex tD A21 IP 65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 19.1" graphics-capable TFT colour display
- 16.7 million colours
- SXGA resolution, 1280 x of 1024 pixels
- Brightness 300 cd/m²
- Visible surface approx. 376 x 301 mm
- Contrast 1300:1
- Option of touchscreen (resistive)

Backlighting
- CFL technology
- Service life approx. 40,000 hours (at +25 °C)

Conductor length
up to 300 m through STP cable VGA/PS2
up to 130 m through STP cable DVI/USB
up to 500 m through multi-mode fibre-optic cable DVI/USB
up to 20 km through single-mode fibre-optic cable DVI/USB

Dimensions (width x height x depth)
610 mm x 450 mm x approx. 100 mm

Weight
approx. 17 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

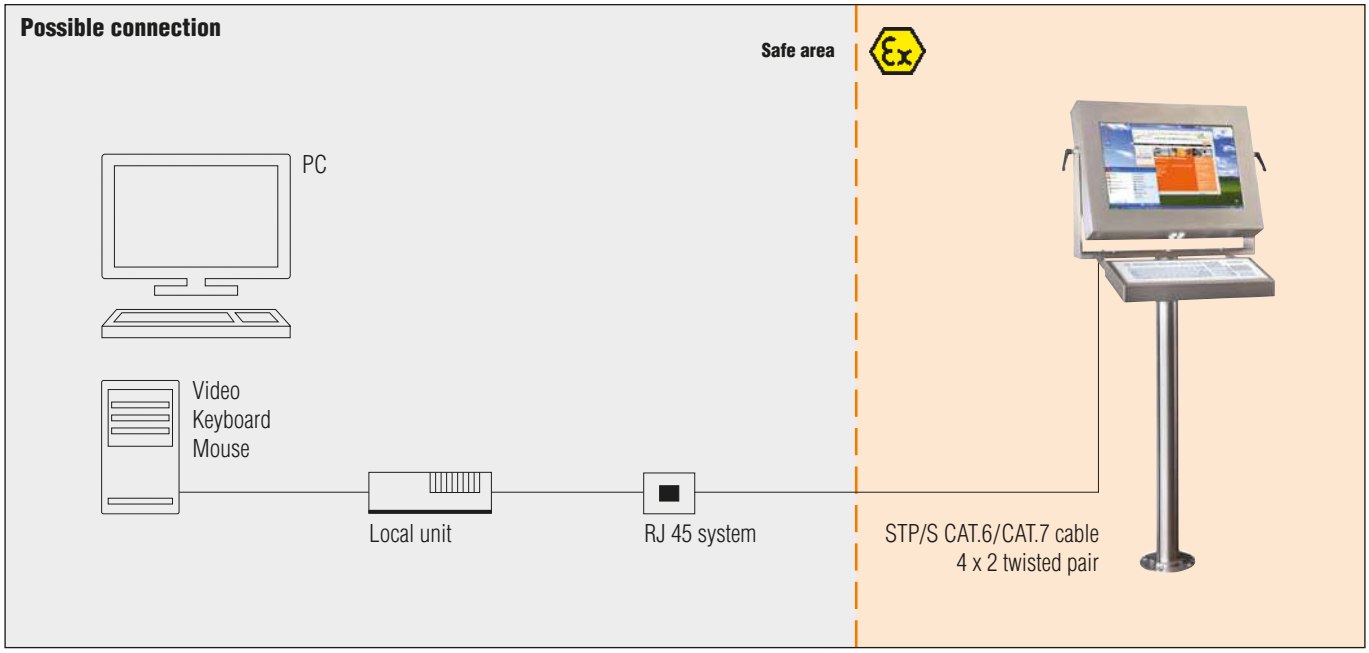
Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0552-02/2014-BAT-292153/1

Possible connection



Selection chart

Ex area	Code no.	Version	Code no.	Input voltage	Code no.	Conductor length	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	**1**	POLARIS II Remote 19.1“ without touchscreen	**6**	AC 90 to 253 V	**1**	up to 300 m through STP cable VGA/PS2	**0**	German	**1**	Trackball 50 mm	**1**
						up to 130 m through STP cable DVI/USB	**4**	English	**2**	Trackball 38 mm	**2**
Zone 2	**2**	POLARIS II Remote 19.1“ with touchscreen	**5**	DC 24 V	**2**	up to 500 m through multi-mode fibre-optic cable DVI/USB	**5**				
						up to 20 km through single-mode fibre-optic cable DVI/USB	**6**	French	**3**	Touchpad	**4**

Complete order no. 17-7 ☐ V5- ☐ ☐ 0 ☐ / ☐ ☐ 00

Please insert correct code.
Technical data subject to change.

03-0330-0552-02/2014-BAT-292153/2

POLARIS II REMOTE 22"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Graphics-capable TFT colour display
- Simple wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- Cost reduction by cascading several POLARIS II Remote devices to one PC

Description

The POLARIS II Remote 22" from BARTEC is a display which enables a PC to be operated in safe areas of hazardous areas.

Distances of up to 200 m are possible.

POLARIS II Remote 22" allows the user the possibility of utilising any currently available PC-based process control systems without restrictions in the Ex areas.

On request the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or table mounting.

The POLARIS II Remote 22" screen is a TFT display with WSXGA+ resolution and is distinguished by its outstanding brilliance and a very large reading angle.

A keyboard with integrated trackball or touchpad is available. An optional touch screen offering the ultimate in operating ease is also obtainable.

Linking in the safe area is established through a local unit (included in the scope of supply).

Explosion protection

Ex protection type Zone 2
Ⓔx II 3G Ex nA IIC T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
Ⓔx II 2D Ex tD A21 IP65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 22" graphics-capable TFT colour display
- 16.7 million colours
- WSXGA+ resolution, 1680 x 1050 pixels
- Brightness 300 cd/m²
- Visible surface approx. 474 x 296 mm
- Contrast 600:1
- Option of touchscreen (resistive)

Backlighting
- CFL technology
- Service life approx. 50,000 hours (at +25 °C)

Conductor length
up to 300 m through STP cable VGA/PS2
up to 130 m through STP cable DVI/USB
up to 500 m through multi-mode fibre-optic cable DVI/USB
up to 20 km through single-mode fibre-optic cable DVI/USB

Dimensions (width x height x depth)
610 mm x 450 mm x approx. 100 mm

Weight
approx. 17 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

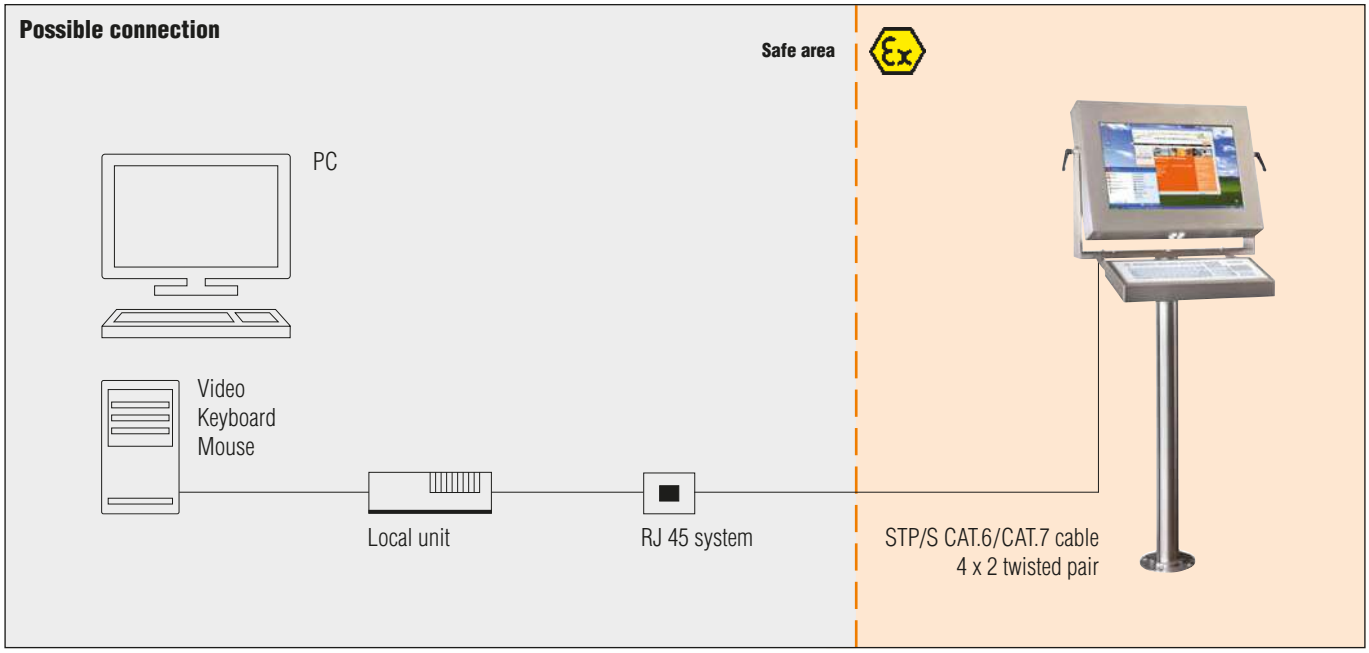
Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0553-05/2014-BAT-292154/1

Possible connection



Selection chart

Ex area	Code no.	Version	Code no.	Input voltage	Code no.	Conductor length	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	1	POLARIS II Remote 22" without touchscreen	4	AC 90 to 253 V	1	up to 300 m through STP cable VGA/PS2	0	German	1	Trackball 50 mm	1
						up to 130 m through STP cable DVI/USB	4	English	2	Trackball 38 mm	2
Zone 2	2	POLARIS II Remote 22" with touchscreen	3	DC 24 V	2	up to 500 m through multi-mode fibre-optic cable DVI/USB	5				
						up to 20 km through single-mode fibre-optic cable DVI/USB	6	French	3	Touchpad	4

Complete order no. 17-7 ☐ V5- ☐☐ 0 ☐ / ☐☐ 00

Please insert correct code.
Technical data subject to change.

03-0330-0553-05/2014-BAT-292154/2

POLARIS II REMOTE 24"

for ATEX Zone 2 and ATEX Zone 21/22

Features

- In the stainless enclosure tiltable
- Graphics-capable TFT colour display
- Simple wiring
- Connection of standard PCs in non-hazardous areas
- Optional touchscreen
- Transmission through fibre optical waveguide or copper
- Cost reduction by cascading several POLARIS II Remote devices to one PC

Description

The POLARIS II Remote 24" from BARTEC is a display which enables a PC to be operated in safe areas of hazardous areas.

Distances of up to 20 km are possible.

POLARIS II Remote 24" allows the user the possibility of utilising any currently available PC-based process control systems without restrictions in the Ex areas.

On request the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or table mounting.

The POLARIS II Remote 24" screen is a TFT display with WSXGA+ resolution and is distinguished by its outstanding brilliance and a very large reading angle.

A keyboard with integrated trackball or touchpad is available. An optional touch screen offering the ultimate in operating ease is also obtainable.

Linking in the safe area is established through a local unit (included in the scope of supply).

Explosion protection

Ex protection type Zone 2
Ⓔx II 3G Ex nA IIC T5

Certification
IBExU 09 ATEX B009

Ex protection type Zone 21/22
Ⓔx II 2D Ex tD A21 IP65 T100 °C
-25 °C ≤ T_a ≤ +50 °C

Certification
IBExU 09 ATEX 1113 X

Other approvals and certificates, see www.bartec-group.com

Protection class
IP 65

Technical data

Construction
Stainless steel enclosure

Display
- 24" graphics-capable TFT colour display
- 16.7 million colours
- Full HD resolution, 1920 x 1080 pixels
- Brightness 300 cd/m²
- Visible surface approx. 474 x 296 mm
- Contrast 5000:1
- Option of touchscreen (resistive)

Backlighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Conductor length
up to 130 m through STP cable DVI/USB
up to 500 m through multi-mode fibre-optic cable DVI/USB
up to 20 km through single-mode fibre-optic cable DVI/USB

Dimensions (width x height x depth)
670 mm x 450 mm x approx. 100 mm

Weight
approx. 19 kg

Rated voltage
AC 110 to 230 V, 47 to 63 Hz
DC 24 V

Input voltage range
AC 90 to 253 V
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 75 W

Permissible ambient temperatures
Storage -25 °C to +60 °C
Operation 0 °C to +50 °C

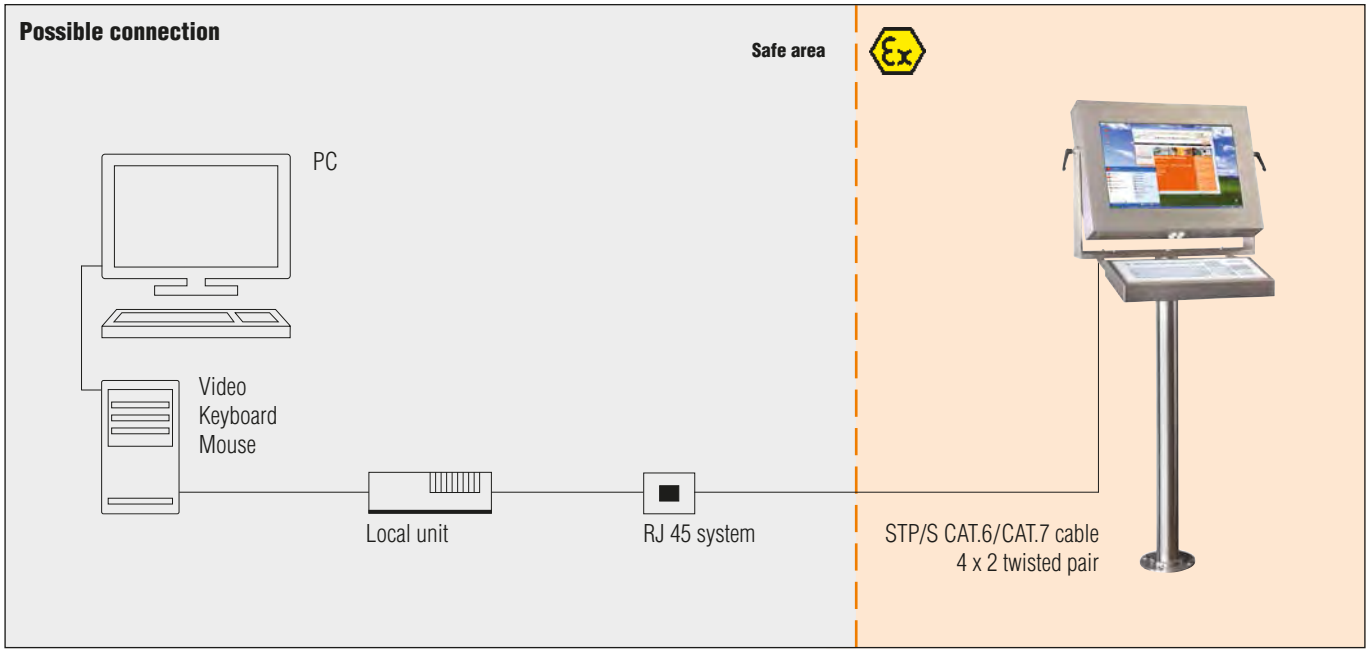
Relative air humidity
5 to 95 % non-condensing

Material
Stainless steel

Optional accessories
- Keyboard with integrated trackball 38 mm
- Keyboard with integrated trackball 50 mm
- Keyboard with integrated touchpad

03-0330-0792-10/2014-BAT-365387/1

Possible connection



Selection chart

Ex area	Code no.	Input voltage	Code no.	Conductor length	Code no.	Keyboard language	Code no.	Insert unit	Code no.
Zone 21/22	**1**	AC 90 to 253 V	**1**	up to 130 m through STP cable DVI/USB	**4**	German	**1**	Trackball 50 mm	**1**
				up to 500 m through multi-mode fibre-optic cable DVI/USB	**5**	English	**2**	Trackball 38 mm	**2**
Zone 2	**2**	DC 24 V	**2**	up to 20 km through single-mode fibre-optic cable DVI/USB	**6**	French	**3**	Touchpad	**4**

Complete order no. 17-7 ☐ V5-8 ☐ 0 ☐ / ☐ ☐ 00

Please insert correct code.
Technical data subject to change.

03-0330-0792-10/2014-BAT-365387/2

Keyboard

Features

- Easy front panel fitting
- Modular construction

Description

The intrinsically safe keyboard and the mouse variants are intended for POLARIS Professional and POLARIS Remote for zone 1 and 2 and for zone 21 and 22.

They are connected directly to the POLARIS Panel PC or POLARIS Remote. The chemically resistant polyester foil is easy to clean and resistant to a lot of aggressive fluids. The keyboard is available in various languages. A stainless steel desktop housing for the keyboard and mouse is available as an optional accessory.

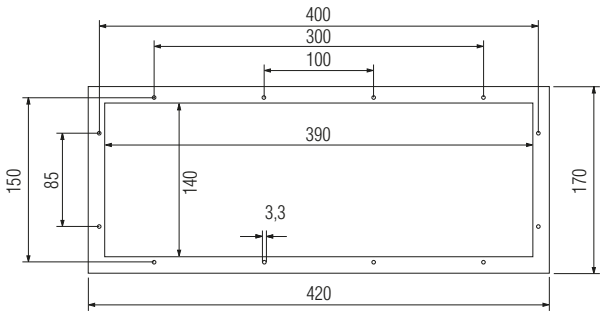
Explosion protection

Ex protection type ATEX	Ⓔx II 2G Ex ib IIC T4 Ⓔx II 2D ib IIIC T120 °C
	Certification IBExU 05 ATEX 1117 X
Ex protection type IECEx	Ex ib IIC T4 Ex ib IIIC T120°C
	Certification IECEx IBE 11.0007 X
Further approvals	INMETRO, GOST-R
Protection class	IP 65

Technical data

Construction	Front panel fitting
Material	Polyester foil on aluminium sheet (conditionally UV-resistant)
Dimensions	420 mm x 170 mm (width x height)
Wall cut-out	390 mm x 140 mm
Installation depth	18 mm
Weight	approx. 700 g

Dimensions and wall cut-out for keyboard (in mm)



all hole diameter: 3.3 mm

Selection chart Keyboard

Language	Code no.
German	1
English	2
French	3

Complete order no. 17-71VZ-40 ☐ 0

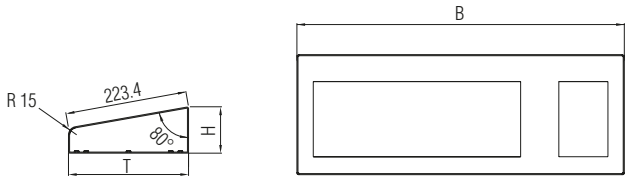
Others on request. Please insert correct code.
Technical data subject to change without notice.

Enclosure *for mouse and keyboard*

Technical data

Material	Stainless steel 1.4301; AISI 304
Dimensions	600 mm x 85 mm x 220 mm (B x H x T)
Protection class	IP 65

Dimensions (in mm)



Order no.
Enclosure 05-0041-0277

Complete solution with installed equipment on request.
Technical data subject to change without notice.

Mouse

Explosion protection

Ex protection type

ATEX (Ex) II 2G Ex ib IIC T4
(Ex) II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 270 g

Trackball Joystick

Explosion protection

Ex protection type

ATEX (Ex) II 2G Ex ib IIC T4
(Ex) II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class

Trackball	static	IP 65 (front side)
	dynamic	IP 56 (front side)
Joystick		IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
43 mm

Weight
approx. 500 g

Touchpad

Explosion protection

Ex protection type

ATEX (Ex) II 2G Ex ib IIC T4
(Ex) II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Capacitive touchpad for front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

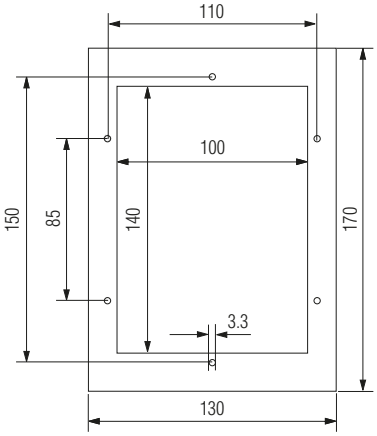
Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 250 g

Dimensions and wall cut-out (mm)



all hole diameter: 3.3 mm

Selection chart

Description	Code no.
Mouse	**1**
Trackball	**2**
Touchpad	**3**
Joystick with button	**9**

Complete order no. 17-71VZ-☐ 000

Please insert correct code.
Technical data subject to change without notice.

03-0330-0445-10/2014-BAT-242770

Selection chart Accessories

Illustration	Description		Order no.
	**Connection cable for keyboard and mouse variants**		
	Keyboard and mouse	1.8 m	**05-0068-0163**
	Keyboard and mouse	3.0 m	**05-0068-0204**
	Keyboard and trackball/joystick	1.8 m	**05-0068-0172**
	Keyboard and trackball/joystick	3.0 m	**05-0068-0205**
	Keyboard and touchpad	1.8 m	**05-0068-0183**
	Keyboard and touchpad	3.0 m	**05-0068-0206**
	**Reinforcement frame**		
	POLARIS series 15”		**05-0205-0009**
	POLARIS series 19.1”		**05-0205-0010**
	POLARIS series 24”		**05-0205-0012**
	**Mounting clamp set**		
	4 pieces		**05-0091-0111**
	6 pieces		**05-0091-0112**
	**LAN STP cable**		
	CAT.7 4 x 2 x 23 AWG, outer diameter: 7.9 mm		**02-4082-0002**
	CAT.7 4 x 2 x 22 AWG, outer diameter: 18 mm; armoured		**02-4082-0004**
	Note: additional cable glands are necessary for armouring.		
	**Power pack for local unit**		
	- for CAT cable with keyboard usage		**03-9911-0018**
	- for CAT cable without keyboard usage		**03-9911-0020**
	- for fibre optic cable		**on request**
	**19" rack mounting set for local unit**		
	- for CAT cable		**03-8931-0037**
	- for fibre optic cable		**03-8931-0038**

Selection chart Accessories

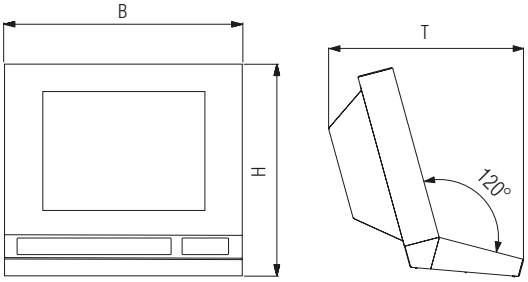
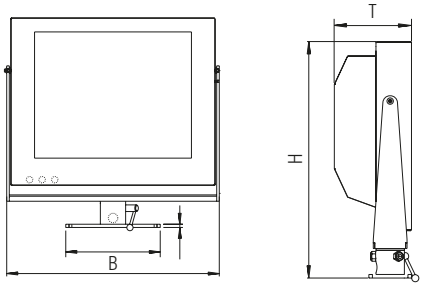
Illustration	Description	Order no.
	**USB to PS/2 adapter** for mouse and keyboard, for non-hazardous areas	**03-9829-0007**
	**Local Unit/STP cable** "Black Box" make with RS232 interface	**03-9840-0091**
	**Local Unit/STP cable** "IHSE" make with RS232 interface	**03-9840-0079**
	**KVM cable** - VGA, PS/2 keyboard, PS/2 mouse, lengths 3 m - VGA, AT keyboard, serial mouse, lengths 3 m	**05-0068-0218** **05-0068-0220**
	Original packaging POLARIS series 15" POLARIS series 19.1"	**04-9035-0007** **04-9035-0008**

Selection chart Standard stainless steel enclosure

Illustration	Description	Order no.
	**Standard stainless steel enclosure** **Technical data** Material: Stainless steel 1.4404; AISI 316 L Surface: brushed Protection class: IP 65 ■ **with adapter connection without stand**	
	Dimensions in mm (B x H x T) POLARIS series 15": 650 x 500 x 150 POLARIS series 19.1": 760 x 600 x 150 POLARIS series 24": 885 x 625 x 150	 **05-0041-0395** **05-0041-0994** **05-0041-0993**

03-0330-0659-08/2014-BAT-318904/2

Selection chart Exklusiv II stainless steel enclosure

Illustration	Description	Order no.
	**Exclusive II stainless steel enclosure** - Material: stainless steel grade 1.4301 ■ **with adapter connection** Dimensions in mm (B x H x T) POLARIS series 15" — 650 x 578 x 543 POLARIS series 19.1" — 650 x 598 x 543 POLARIS series 24" — 885 x 625 x 543 	**05-0041-0354** **05-0041-0353** **05-0041-0406**
	■ **Stainless steel enclosure - swivel/tilt without desktop mount** - Material: stainless steel grade 1.4301 Dimensions in mm (B x H x T) POLARIS series 15" — 770 x 685 x 218 POLARIS series 19.1" — 770 x 685 x 218 	**05-0041-0356** **05-0041-0355**

Selection chart Stainless steel enclosure Accessories

Illustration	Description	Order no.
	**Stand for floor mounting for Exclusive II stainless steel enclosure** ■ Material: stainless steel grade 1.4301 ■ swivel ■ Height approx. 900 mm, diameter 80 mm	**05-0005-0050**
	Stand for floor mounting for Standard stainless steel enclosure from 15" series and POLARIS II ■ Material: stainless steel grade 1.4301 ■ swivel ■ height approx. 1000 mm, diameter 80 mm	**05-0005-0078**
	**Desktop mount for stainless steel enclosure for POLARIS 15" series/19.1" series** ■ Material: stainless steel grade 1.4301 ■ swivel ■ Length approx. 140 mm, Durchmesser 80 mm	**05-0005-0070**
	**Support arm for wall mounting** ■ Material: stainless steel grade 1.4301 ■ swivel ■ Length approx. 580 mm	**05-0005-0058**

Selection chart Special solutions

Illustration	Description	Order no.
	■ **Standard stainless steel enclosure with additional fitted components** ■ Material: stainless steel ■ suitable for all POLARIS devices ■ optional for fitting switch modules and/or heating ■ for wall mounting with mounting straps or support arm or for floor mounting with stand	**on request**

03-0330-0659-08/2014-BAT-318904/4

POLARIS COMFORT

POLARIS COMFORT

High-end version of operator stations

All POLARIS COMFORT Panels have high-resolution displays and touchscreens as standard. They not only offer the utmost in operating comfort, they can also be ideally integrated into every application. Even in poor lighting conditions or from unfavourable viewing angles, state-of-the-art LED display technology assures an exceptionally brilliant image quality.

The POLARIS COMFORT operating devices work with BMS-Graf-pro 7, the new generation of BARTEC visualisation software. The computer performance is sufficient for comfortably managing all tasks such as image presentation and communication for controlling or transferring projects through Ethernet. The project files can be transferred by means of an Ethernet connection or BARTEC's Ex i version of USB flash drive. Alternatively, the presentation of HTML pages or the use as a remote client is possible.

If a customer-specific application requires a higher computer power, an Intel® Atom™ processor with 1.6 GHz and Windows® 7 Embedded is available as an option. For demanding visualisation tasks the new operating devices are totally open thanks to the integrated keypad customisation for Windows®, Siemens WinCC flexible®, RS View® or BMS-Graf-pro.

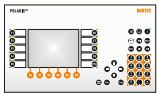
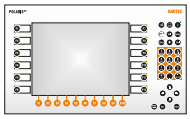
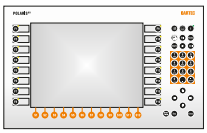
A direct connection to the control or the process control system is possible through Ethernet, PROFIBUS-DP or serial COM interfaces. Ex i mouse, trackball, joystick or touchpad are available as options.

The standard method of installing the POLARIS COMFORT panel is to fit it as a front panel, which can be done quickly and with little effort. On request, we also supply the operating devices as turn-key system solutions in stainless steel enclosures for mounting on walls, ceilings or floors.

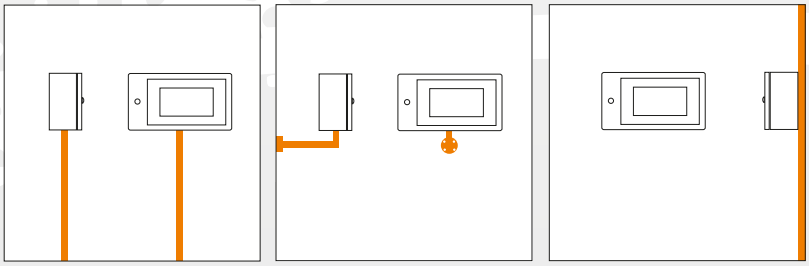
Features

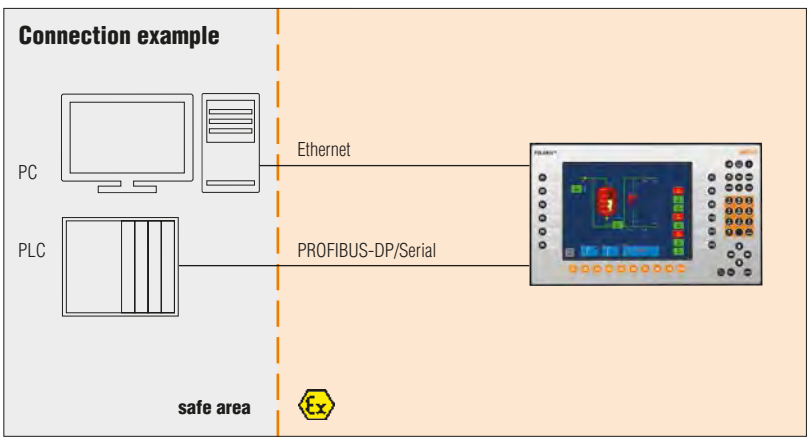
- LED technology
- High screen resolution
- Touchscreen
- Direct connection in hazardous areas

03-0330-0648-02/2014-BAT-317215/13

POLARIS COMFORT for ATEX Zone 1 and Zone 21			
			
Size	5.7"	10.4"	12.1"
Resolution	VGA, 640 x 480 pixels	SVGA, 800 x 600 pixels	XGA, 1024 x 768 pixels
Backlighting	LED	LED	LED
Touchscreen	Yes	Yes	Yes
Keypad	Front-panel keypad	Front-panel keypad	Front-panel keypad
Interface Ex e	Ethernet PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.	Ethernet (copper or optical waveguides) PROFIBUS-DP, RS422 etc.
Interface Ex i	USB	USB, power pack hand-held scanner	USB, power pack hand-held scanner
Data transfer	Ethernet PROFIBUS-DP, serial	Ethernet PROFIBUS-DP, serial	Ethernet PROFIBUS-DP, serial
Supply voltage	DC 24 V	DC 24 V	DC 24 V
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

Types of fastening





03-0330-0648-02/2014-BAT-317215/14

POLARIS Touch Panel 5.7"

Features

- LED technology
- Higher screen resolution
- Touchscreen
- Remote desktop solution
- Presentation of HTML pages
- Direct connection in hazardous areas

Description

The POLARIS Touch Panel 5.7" is an innovative further development of the POLARIS Panel PCs 5.7".

High-resolution displays with LED technology and touchscreen for intuitive as well as comfortable operation are available now in the standard variant.

State-of-the-art LED display technology ensures the optimum contrast even with a large viewing angle.

The proven LX800 offers sufficient computer capacity for presenting HTML pages or functioning as a remote client.

Of course, here too the user can work with the latest "BMS-Graf-pro" Runtime 7 under Windows® XP Embedded, for example for the transmission of projects over the Ethernet, the use of graphics lists or an integrated user administration.

Allows a high-performance visual display and operation of the processes directly on site.

The front-panel fitting makes mounting easy. On request, the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or ceiling mounting.

An intrinsically safe USB interface is available for a USB Ex i memory stick. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front-panel fitting

Display
- 5.7" TFT graphic display
- 262,144 colours
- Resolution VGA 640 x 480 pixels
- Brightness 700 cd/m²
- Visible surface approx. 115 x 86 mm
- Contrast 800:1
- Touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
LX800 processor, 500 MHz
Compact Flash 4 GB

Operating system
Windows® XP Embedded (pre-installed)

Keyboard (short-stroke keys)
- alphanumeric key block
- 4 cursor keys
- 6 special keys
- 10 function keys able to be labelled with LEDs

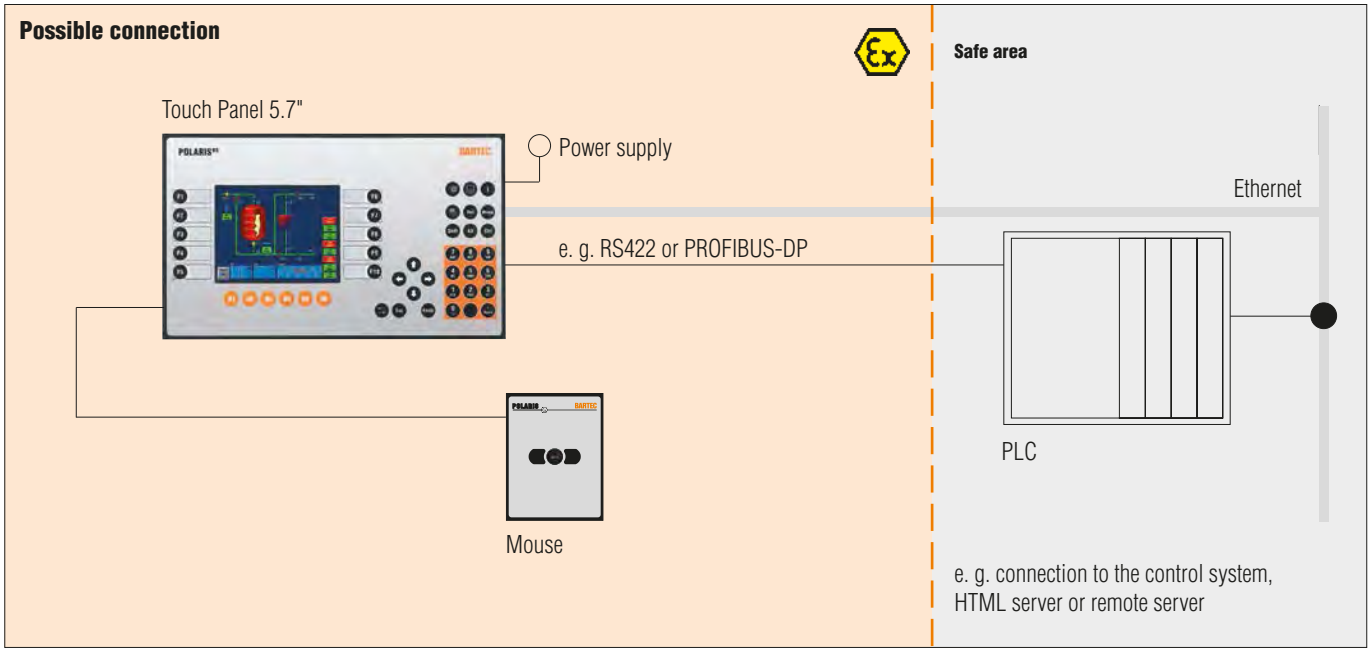
Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex i PS/2 for intrinsically safe mouse

Dimensions (width x height x depth)
335 mm x 199 mm x approx. 130 mm

Wall cut-out
321 mm x 179 mm + 0.5 mm

Weight
approx. 10 kg

03-0330-0608-02/2014-BAT-307295/1



Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Interfaces	Code no.
Touch Panel 5.7"	RS422	**00**
	BARTEC PROFIBUS-DP	**02**
	RS232	**09**
	TTY	**11**
	BARTEC PROFIBUS-DP, Ex d-USB	**33**
	RS422/Ex e USB	**37**
	Further Interface combinations on request	**XX**

Complete order no. 17-71V1-A0 ☐☐ /X000
Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0608-02/2014-BAT-307295/2

POLARIS Touch Panel 10.4"

Features

- LED technology
- Higher screen resolution
- Touchscreen
- Remote desktop solution
- Presentation of HTML pages
- Direct connection in hazardous areas

Description

The POLARIS Touch Panel 10.4" is an innovative further development of the POLARIS Panel PCs 10.4".

High-resolution displays with LED technology and touchscreen for intuitive as well as comfortable operation are available now in the standard variant.

State-of-the-art LED display technology ensures the optimum contrast even with a large viewing angle.

The proven LX800 offers sufficient computer capacity for presenting HTML pages or functioning as a remote client.

Of course, here too the user can work with the latest "BMS-Graf-pro" Runtime 7 under Windows® XP Embedded, for example for the transmission of projects over the Ethernet, the use of graphics lists or an integrated user administration.

Allows a high-performance visual display and operation of the processes directly on site.

The front-panel fitting makes mounting easy. On request, the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or ceiling mounting.

An intrinsically safe USB interface is available for a USB Ex i memory stick. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib op pr] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front-panel fitting

Display
- 10.4" TFT graphic display
- 262,144 colours
- Resolution SVGA 800 x 600 pixels
- Brightness 400 cd/m²
- Visible surface approx. 211 x 158 mm
- Contrast 700:1
- Touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
LX800 processor, 500 MHz
Compact Flash 4 GB

Operating system
Windows® XP Embedded (pre-installed)

Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 10 special keys
- 12 function keys able to be labelled with LEDs

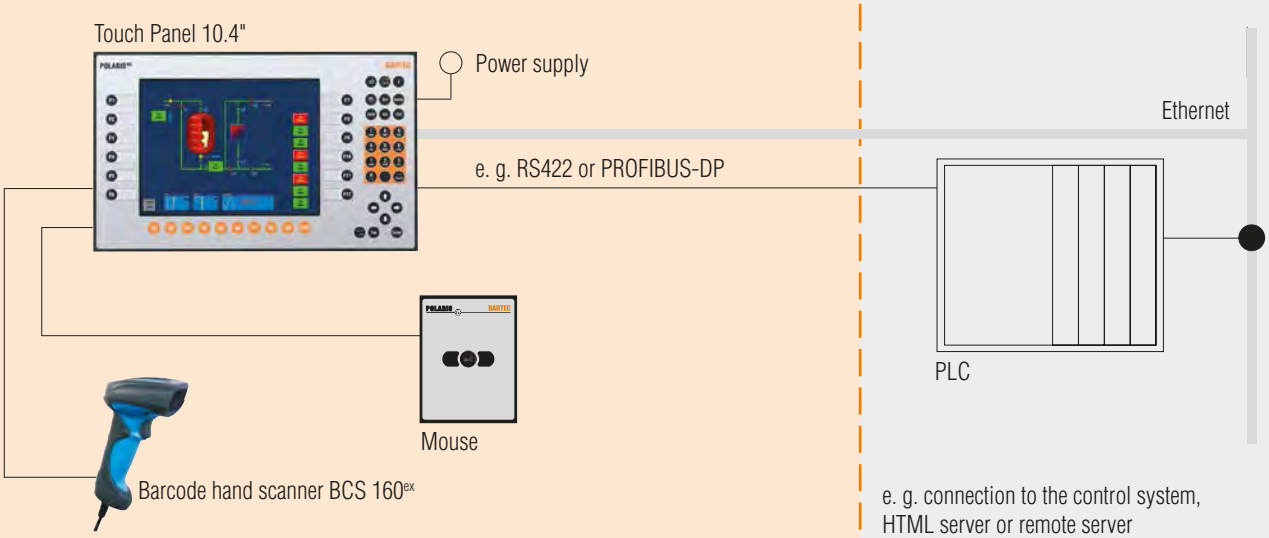
Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex i PS/2 for intrinsically safe mouse

Optional interfaces
1 x Ex i Supply module for hand-held scanners

Dimensions (width x height x depth)
400 mm x 246 mm x approx. 130 mm

03-0330-0609-02/2014-BAT-307296/1

Possible connection



Wall cut-out
386 mm x 226 mm + 0.5 mm

Weight
approx. 14 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

Version	Interfaces	Code no.
Touch Panel 10.4"	RS422	**00**
	BARTEC PROFIBUS-DP	**02**
	RS422, supply module for hand-held scanners	**04**
	BARTEC PROFIBUS-DP, supply module for hand-held scanners	**06**
	RS232	**09**
	TTY	**11**
	RS232, supply module for hand-held scanners	**13**
	TTY, supply module for hand-held scanners	**15**
	BARTEC PROFIBUS-DP, Ex d-USB	**33**
	RS422/Ex e USB	**37**
	Further Interface combinations on request	**XX**

Complete order no. 17-71V1-90 □□ /X000
Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0609-02/2014-BAT-307296/2

POLARIS Touch Panel 12.1"

Features

- LED technology
- Higher screen resolution
- Touchscreen
- Remote desktop solution
- Presentation of HTML pages
- Direct connection in hazardous areas

Description

The POLARIS Touch Panel 12.1" is an innovative further development of the POLARIS Panel PCs 12.1".

High-resolution displays with LED technology and touchscreen for intuitive as well as comfortable operation are available now in the standard variant.

State-of-the-art LED display technology ensures the optimum contrast even with a large viewing angle.

The proven LX800 offers sufficient computer capacity for presenting HTML pages or functioning as a remote client.

Of course, here too the user can work with the latest "BMS-Graf-pro" Runtime 7 under Windows® XP Embedded, for example for the transmission of projects over the Ethernet, the use of graphics lists or an integrated user administration.

The front-panel fitting makes mounting easy. On request, the devices are also available as turn-key system solutions in a stainless steel enclosure for wall, floor or ceiling mounting.

An intrinsically safe USB interface is available for a USB Ex i memory stick. Intrinsically safe input devices can be connected also.

Explosion protection

Ex protection type Zone 1 and 21

ATEX II 2G Ex db eb qb [ib op pr] IIC T4
II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib op pr] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front-panel fitting

Display
- 12.1" TFT graphic display
- 262,144 colours
- Resolution XGA 1024 x 768 pixels
- Brightness 500 cd/m²
- Visible surface approx. 246 x 184 mm
- Contrast 700:1
- Touchscreen (resistive)

Background lighting
- LED technology
- Service life approx. 50,000 hours (at +25 °C)

Computer capacity
LX800 processor, 500 MHz
Compact Flash 4 GB

Operating system
- Windows® XP Embedded (pre-installed)

Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 12 cursor keys
- 16 function keys able to be labelled with LEDs

Interfaces (basic version)
- 1 x Ex e Ethernet 100/10BaseT (option of optical fibres)
- 1 x Ex e RS422
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex i PS/2 for intrinsically safe mouse

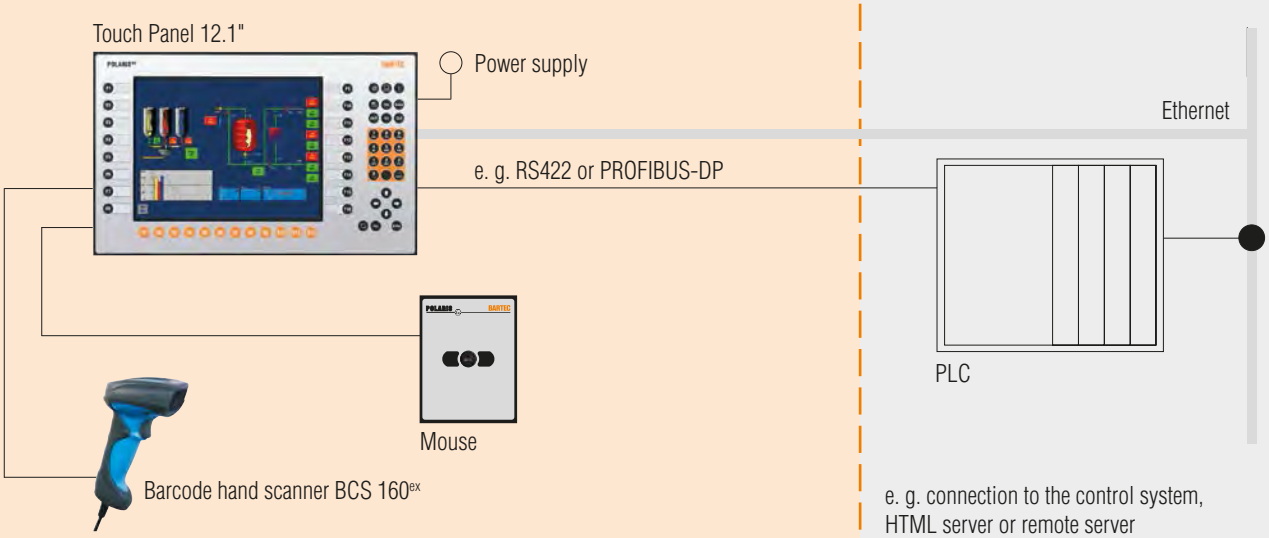
Optional interfaces
1 x Ex i Supply module for hand-held scanners

Dimensions (width x height x depth)
440 mm x 275 mm x approx. 130 mm

Wall cut-out
425 mm x 255 mm + 0.5 mm

03-0330-0610-02/2014-BAT-307297/1

Possible connection



Weight
approx. 18 kg

Supply voltage
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 35 W

Permissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C

Variant
Operation -20 °C to +50 °C
on request (without external heating)

Relative air humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

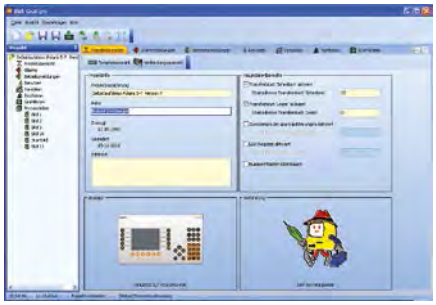
Material
Front Polyester foil on anodised aluminium plate (conditionally UV-resistant)
Back bichromated sheet steel

Selection chart

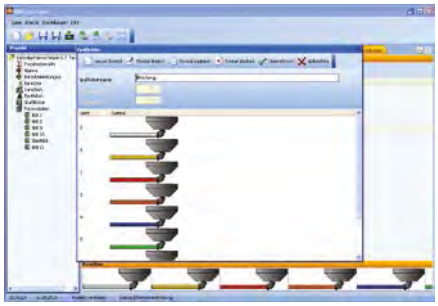
Version	Interfaces	Code no.
Touch Panel 12.1"	RS422	**00**
	BARTEC PROFIBUS-DP	**02**
	RS422, supply module for hand-held scanners	**04**
	BARTEC PROFIBUS-DP, supply module for hand-held scanners	**06**
	RS232	**09**
	TTY	**11**
	RS232, supply module for hand-held scanners	**13**
	TTY, supply module for hand-held scanners	**15**
	BARTEC PROFIBUS-DP, Ex d-USB	**33**
	RS422/Ex e USB	**37**
	Further Interface combinations on request	**XX**

Complete order no. 17-71V1-80 ☐☐/X000
Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0610-02/2014-BAT-307297/2



Project engineering



Graphics list

Image editor

BMS-Graf-pro 7 Visualization Software

Features

- Intuitive operation
- Touch-sensitive
- Comfortable handling
- Downward compatibility
- Use of old project data
- Process connection through Ethernet
- User administration
- Graphics lists
- Operating messages

Description

The BMS-Graf-pro programming package enables a simple and comfortable creation of process visualisation for POLARIS Comfort and POLARIS Professional.

Alarm signals, operating messages, variables, user administration, text lists, and graphics lists can be generated in one project for animation and process images. With the aid of high-performance objects, from the line to touch buttons, the process images can be conveniently produced on a user friendly interface.

The BMS-Graf-pro Runtime is optimised to the quickest reaction times. This benefits the presentation of the process images and also the communication for control. Communication protocols such as Modbus/TCP support this optimisation too.

In the course of the development, particular attention was paid to ensuring that an existing project from older BMS Graf and BMS-Graf-pro versions could be opened easily and if necessary transferred into the new device with very little adjustments required.

Technical data

Technical characteristic figures

Images	500
Fields per image	100
Variables per image	100

Graphics objects

Curves	50
Graphics lists	over 100
Text lists	over 100

Variables	over 1000
Messages	250
Message text	250
Size of message buffer	2000

User administration

User levels	25

Communication

PROFIBUS DP
Modbus/TCP Client
Modbus RTU Master
Modbus RTU Slave

System requirements

- Windows® XP or higher
- Processor at least 2 GHz
- Graphics at least XGA

POLARIS requirements

- Windows® XP Embedded or higher
- Processor at least 500 MHz
- Graphics at least VGA

Order no.
17-28TF-0075
for all available languages.
Technical data subject to change without notice.

03-0330-0613-02/2014-BAT-307306

Mouse

Explosion protection

Ex protection type

ATEX Ⓔx II 2G Ex ib IIC T4
Ⓔx II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 270 g

Trackball Joystick

Explosion protection

Ex protection type

ATEX Ⓔx II 2G Ex ib IIC T4
Ⓔx II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class

Trackball	static	IP 65 (front side)
	dynamic	IP 56 (front side)
Joystick		IP 65

Technical data

Construction
Front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
43 mm

Weight
approx. 500 g

Touchpad

Explosion protection

Ex protection type

ATEX Ⓔx II 2G Ex ib IIC T4
Ⓔx II 2D ib IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex ib IIC T4
Ex ib IIIC T120°C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65

Technical data

Construction
Capacitive touchpad for front panel fitting

Material
Polyester foil on aluminium sheet (conditionally UV-resistant)

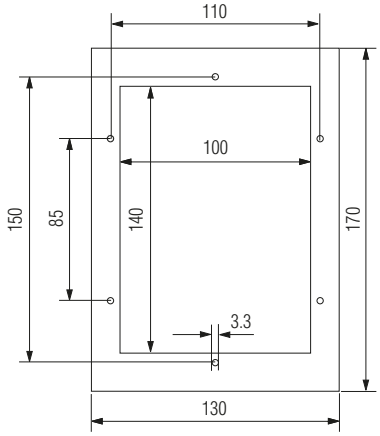
Dimensions
130 mm x 170 mm (width x height)

Wall cut-out
100 mm x 140 mm

Installation depth
15 mm

Weight
approx. 250 g

Dimensions and wall cut-out (mm)



all hole diameter: 3.3 mm

Selection chart

Description	Code no.
Mouse	**1**
Trackball	**2**
Touchpad	**3**
Joystick with button	**9**

Complete order no. 17-71VZ-☐ 000

Please insert correct code.
Technical data subject to change without notice.

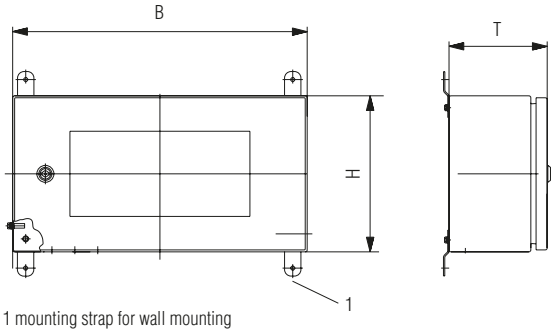
03-0330-0445-10/2014-BAT-242770

Selection chart Accessories

Illustration	Description	Order no.
	**Ex i USB-Stick** ATEX/IECEx Zone 1 and Zone 21	
	Ex i memory stick 4 GB	**17-71VZ-5000/0100**
	Ex i recovery stick Built 008	**17-71VZ-5000/0108**
	**Reinforcement frame**	
	Touch Panel 5.7"	**05-0205-0006**
	Touch Panel 10.4"	**05-0205-0008**
	Touch Panel 12.1"	**05-0205-0007**
	**Mounting clamps set**	
	4 pieces	**05-0091-0111**
	6 pieces	**05-0091-0112**
	**LAN STP cable**	
	CAT.7 4 x 2 x 23 AWG, outer diameter: 7.9 mm	**02-4082-0002**
	CAT.7 4 x 2 x 22 AWG, outer diameter: 18 mm; armoured	**02-4082-0004**
	Note: Additional cable glands for armouring necessary	
	Original packing	
	Touch Panel 5.7"	**04-9035-0004**
	Touch Panel 10.4"	**04-9035-0005**
	Touch Panel 12.1"	**04-9035-0006**

Selection chart Stainless steel enclosure Standard

Illustration	Description	Order no.
	**Stainless steel enclosure Standard** **Technical data** Material: Stainless steel 1.4404; AISI 316 L Surface: brushed Protection class: IP 65 ■ **for floor mounting with stand** Dimensions in mm (B x H x T) Touch Panel 5.7" — 500 x 280 x 200 — **07-56D7-9011/9002** Touch Panel 10.4" — 560 x 320 x 200 — **07-56D7-9611/9002** Touch Panel 12.1" — 600 x 350 x 200 — **07-56D7-9711/9002** Complete solution with installed equipment — **on request**	
	■ **for wall mounting including mounting straps** Dimensions in mm (B x H x T) Touch Panel 5.7" — 500 x 280 x 200 — **07-56D7-9011/9001** Touch Panel 10.4" — 560 x 320 x 200 — **07-56D7-9611/9001** Touch Panel 12.1" — 600 x 350 x 200 — **07-56D7-9711/9001** Complete solution with installed equipment — **on request**	



1 mounting strap for wall mounting

POLARIS BASIC

Photo: Company NETZSCH

POLARIS BASIC

Excellent panels at attractive prices

Nowadays, visualisation is standard in most machines. The cost factor plays an important role in particular in stand-alone machinery, such as mixers, dryers or fuel-filling stations; operating devices with basic functions are sufficient here as a rule. Our POLARIS BASIC Panels have been designed for this need. Concentrating on the essential, they offer basic functionality at an attractive price.

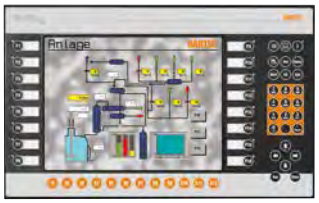
The POLARIS BASIC Panels can be configured with the BMS-Graf-pro 6 visualisation software, which has proven successful over many years. No matter whether hardware, software or project planning, they offer the user the best possible compatibility.

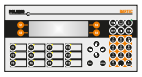
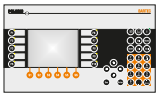
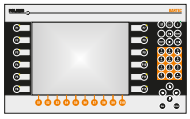
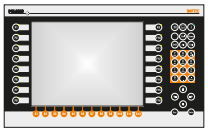
If the requirements change, projects can be easily transferred to other POLARIS devices. The project files are transferred simply through a serial interface or by means of the BARTEC Ex i version of USB flash drive. A direct connection to the control or to the process control system is assured by the PROFIBUS-DP or various serial COM interfaces. Protocols to older controls. e.g. S5, are still supported also.

The standard method of installing the POLARIS BASIC Panel is to fit it as a front panel, which can be done quickly and with little effort. On request, we also supply the operating devices as turn-key system solutions in stainless steel enclosures for mounting on walls, ceilings or floors.

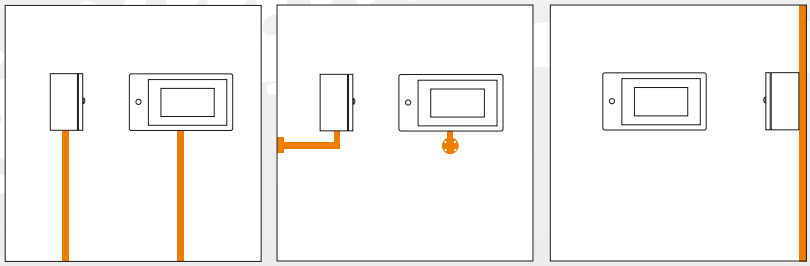
Features

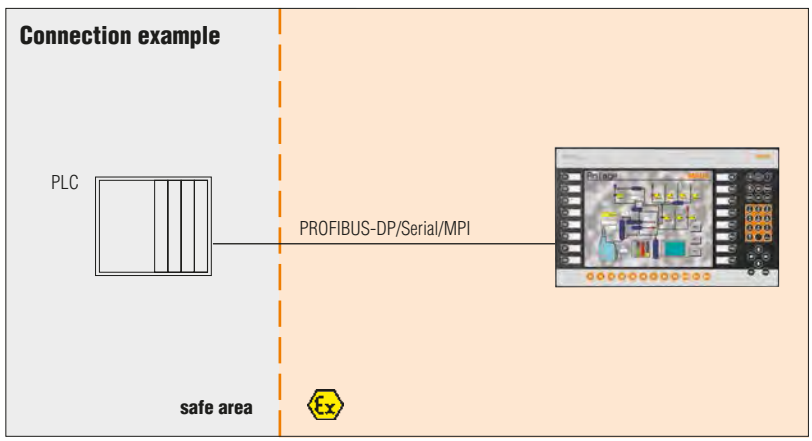
- Easy front-panel installation
- Intrinsically safe USB interface
- Graphics-capable TFT colour display
- Direct connection in hazardous areas



POLARIS BASIC for ATEX Zone 1 and Zone 21				
				
Size	Control	5.7"	10.4"	12.1"
Resolution	240 x 64 pixels	QVGA, 320 x 240 pixels	VGA, 640 x 480 pixels	SVGA, 800 x 600 pixels
Backlighting	LED	CFL	CFL	CFL
Keypad	Front-panel keypad	Front-panel keypad	Front-panel keypad	Front-panel keypad
Interface Ex e	RS422/485, PROFIBUS-DP RS232, TTY	RS422/485, PROFIBUS-DP RS232, TTY	RS422/485, PROFIBUS-DP RS232, TTY	RS422/485, PROFIBUS-DP RS232, TTY
Interface Ex i	USB	USB	USB, power pack hand-held scanner	USB, power pack hand-held scanner
Data transfer	PROFIBUS-DP serial: MPI, Modbus etc.	PROFIBUS-DP serial: MPI, Modbus etc.	PROFIBUS-DP serial: MPI, Modbus etc.	PROFIBUS-DP serial: MPI, Modbus etc.
Supply voltage	DC 24 V	DC 24 V	DC 24 V	DC 24 V
Approvals	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO	ATEX, IECEx, GOST-R, INMETRO

Types of fastening





03-0330-0648-02/2014-BAT-317215/16

POLARIS Control

Features

- Graphic-capable, readable daylight blue-colour display
- Easy front panel fitting
- Intrinsically safe USB interface
- Direct linkage in explosive areas

Description

The POLARIS Control is the ideal solution for all simple applications requiring texts and small-scale graphics.

For the display, an extremely conveniently readable daylight blue-colour display is utilised.

With the Control, process visualizations can be directly connected in explosive areas without the need for additional intrinsically safe isolation cards. The laying of blue lines for intrinsically safe circuits is dropped. A separate wiring of the data line is not necessary.

The POLARIS Control can be directly connected to the PROFIBUS-DP or the communication interface of the control station. Available are e. g. RS422/ RS485, PROFIBUS-DP.

An intrinsically safe USB interface for a USB Ex i-memory stick enables the device configuration's easy transferability.

On request the devices are also available as a ready-to-use system solution in a stainless steel enclosure for wall, floor or ceiling mounting.

The visualisation is created with the "BMS-Graf-pro" programming package (Version 6.xxx), which has been specially developed and optimised for that purpose.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

Display
- LCD display
- 2 colours white/blue
- 240 x 64 pixels
- Visible area approx. 133 x 40 mm
- Antireflection coating glass pane
- Daylight display technology

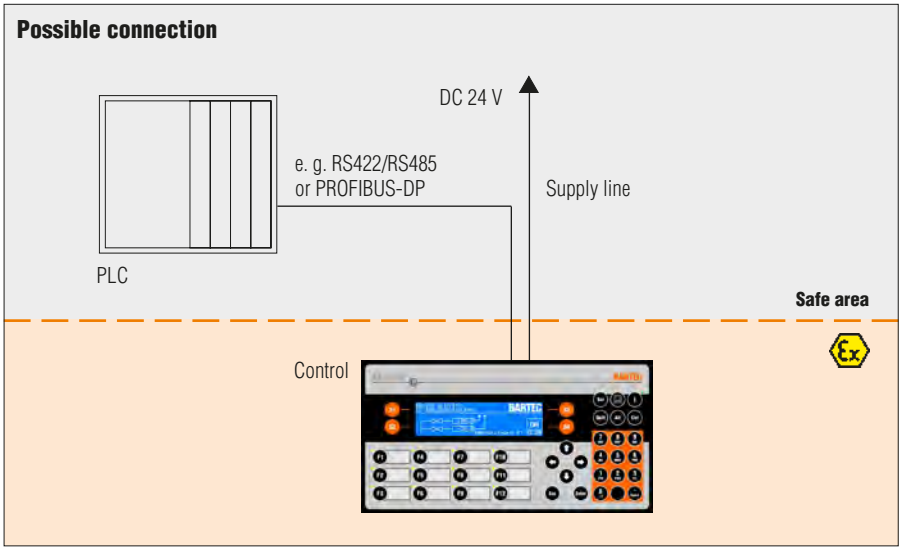
Backlight illumination
LED technology

Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 special keys
- 12 function keys able to be labelled with LEDs

Interface (Basic version)
- 1 x Ex i USB for Ex i memory stick
- 1 x Ex e RS422/RS485

03-0330-0406-02/2014-BAT-236278/1

Possible connection



Dimensions (width x height x depth)
290 mm x 151 mm x approx. 130 mm

Wall cut-out
275 mm x 131 mm + 0.5 mm

Weight
approx. 6 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 15 W

Admissible ambient temperatures
Storage -20 °C to +50 °C
Operation 0 °C to +50 °C
System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material
Front Polyester foil on anodised aluminium plate (conditionally UV resistant)
Rear panel galvanised sheet steel bichromated

Selection chart

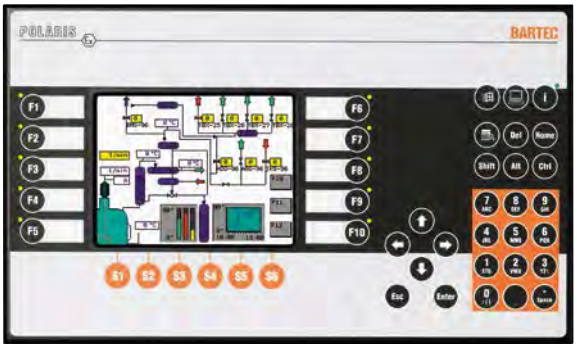
Version	Interfaces	Code no.
POLARIS Control	RS422/RS485	**0**
	PROFIBUS-DP*	**1**
	RS232	**2**
	TTY	**3**

* Download only via USB Ex i-memory stick.

Complete order no. 17-71V0-000☐

Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0406-02/2014-BAT-236278/2



POLARIS Panel PC 5.7"

Features

- Easy front panel fitting
- Intrinsically safe USB interface
- Graphic-capable TFT colour display
- Direct linkage in explosive areas

Description

The POLARIS Panel PC 5.7" is a consistent further development of the BAT 300 but still retains downward compatibility.

State-of-the-art TFT technology is used for the display with a very high view angle, which attains a level of brightness of 400 cd/m² in the Ex applications.

With the Panel PC 5.7", process visualizations can be directly connected in explosive areas without the need for additional intrinsically safe isolation cards.

The laying of blue lines for intrinsically safe circuits is dropped. A separate wiring of the data line is not necessary.

The Panel PC can be directly connected to the PROFIBUS-DP or the communication interface of the control station.

Available features include e.g. RS422/RS485, PROFIBUS-DP, RS232 or TTY. An intrinsically safe USB interface for a USB Ex i-memory stick enables the device configuration's easy transferability.

Upon request, the devices are also available as turn-key system solutions in a stainless steel enclosure as wall, floor or ceiling mounting versions.

The visualisation is created with the "BMS-Grafpro" programming package (Version 6.xxx), which has been specially developed and optimised for that purpose.

Explosion protection

Ex protection type Zone 1 and 21

ATEX II 2G Ex db eb qb [ib] IIC T4
II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

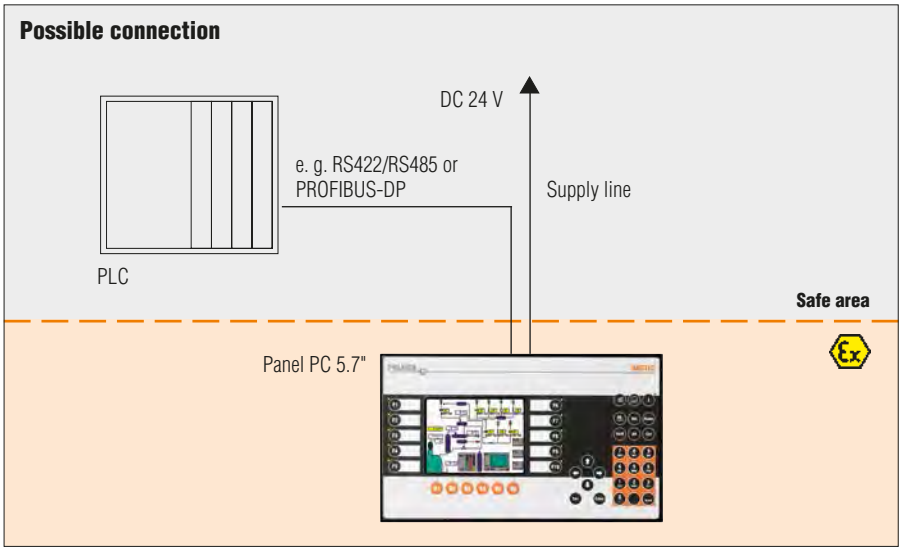
Display
- 5.7" graphic-capable TFT colour display
- 262,144 colours
- QVGA resolution 320 x 240 pixels
- Brightness 400 cd/m²
- Visible area approx. 116 x 88 mm
- Contrast 300:1
- Antireflection coating glass pane

Backlight illumination
- CFL illumination
- Service life approx. 25,000 hours (at +25 °C)

Computer capacity
- Processor 500 MHz
- 256 MB RAM
- Compact Flash CF 512 MB

03-0330-0405-02/2014-BAT-236277/1

Possible connection



Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 6 special keys
- 10 function keys able to be labelled with LEDs

Interface (Basic version)
- 1 x Ex e RS422/RS485
- 1 x Ex i USB for Ex i memory stick

Dimensions (width x height x depth)
335 mm x 199 mm x approx. 130 mm

Wall cut-out
321 mm x 179 mm + 0.5 mm

Weight
approx. 10 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Admissible ambient temperatures

Storage	-20 °C to +50 °C
Operation	0 °C to +50 °C

System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material

Front	Polyester foil on anodised aluminium plate (conditionally UV resistant)
Rear panel	galvanised sheet steel bichromated

Selection chart

Version	Interfaces	Code no.
Panel PC 5.7"	RS422/RS485	**00**
	PROFIBUS-DP*	**02**
	RS232	**09**
	TTY	**11**

* Download only via USB Ex i-memory stick.

Complete order no. 17-71V1-10 ☐☐

Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0405-02/2014-BAT-236277/2

POLARIS Panel PC 10.4"

Features

- Easy front panel fitting
- Intrinsically safe USB interface
- Graphic-capable TFT colour display
- Direct linkage in explosive areas

Description

The POLARIS Panel PC 10.4" is a consistent further development of the BAT 600 but still retains downward compatibility.

State-of-the-art TFT technology is used for the display, which attains a brightness level of 450 cd/m² in Ex applications. As an option, the POLARIS Panel PC 10.4" is also available with a daylight readable display.

The Panel PC 10.4" allows process visualisations to be connected directly in explosive areas without the need for any additional intrinsically safe isolation cards. The laying of blue lines for intrinsically safe circuits is dispensed with and there is no need for separate data line wiring either.

The Panel PCs can be connected directly to the PROFIBUS-DP or the control station's communication interface. Available features include e.g. RS422/485 or PROFIBUS-DP and the option of a supply module for hand-held scanners.

An intrinsically safe USB interface for a USB Ex i memory stick makes it easy to transfer the device's configuration.

On request the devices are also available as a ready-to-use system solution in a stainless steel enclosure for wall, floor or ceiling mounting.

The visualisation is created with the „BMS-Grafpro" programming package (Version 6.xxx), which has been specially developed and optimised for that purpose.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant for Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

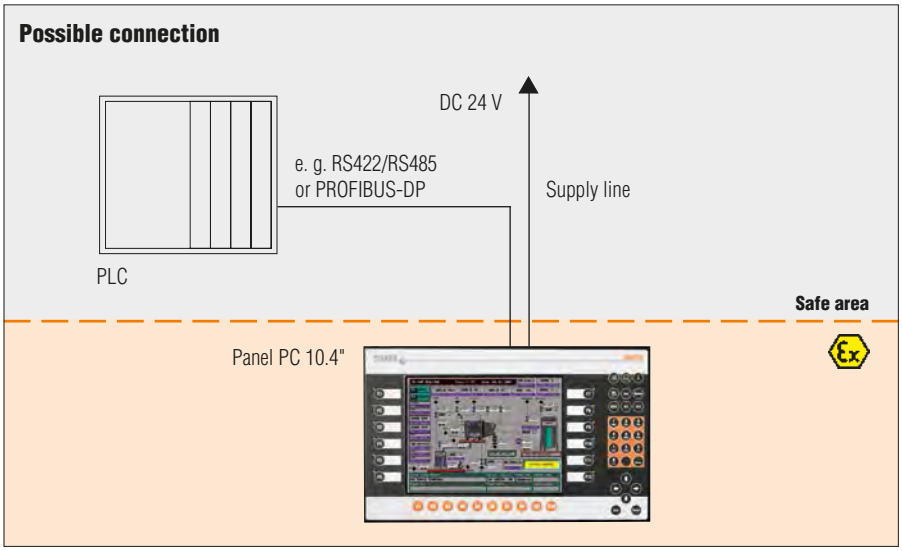
Construction
Front panel fitting

Display
- 10.4" graphic-capable TFT colour display
- 262,144 colours
- VGA resolution 640 x 480 pixels
- Brightness up to 450 cd/m²
- Visible area approx. 211 x 158 mm
- Contrast 600:1
- Antireflection coating glass pane

Backlight illumination
- CFL technology
- Service life approx. 25,000 hours (at +25 °C)

Computer capacity
- Processor 500 MHz
- 256 MB RAM
- Compact Flash CF 512 MB

Possible connection



Keyboard (short-stroke keys)
- Alphanumeric key block
- 4 cursor keys
- 10 cursor keys
- 12 function keys able to be labelled with LEDs

Interface (Basic version)
- 1 x Ex e RS422/RS485
- 1 x Ex i USB for Ex i memory stick

Optional interface modules
1 x Ex i Supply module for hand-held scanner

Dimensions (width x height x depth)
400 mm x 246 mm x approx. 130 mm

Wall cut-out
386 mm x 226 mm + 0.5 mm

Weight
approx. 14 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Admissible ambient temperatures

Storage	-20 °C to +50 °C
Operation	0 °C to +50 °C

System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material

Front	Polyester foil on anodised aluminium plate (conditionally UV resistant)
Rear panel	galvanised sheet steel bichromated

Selection chart

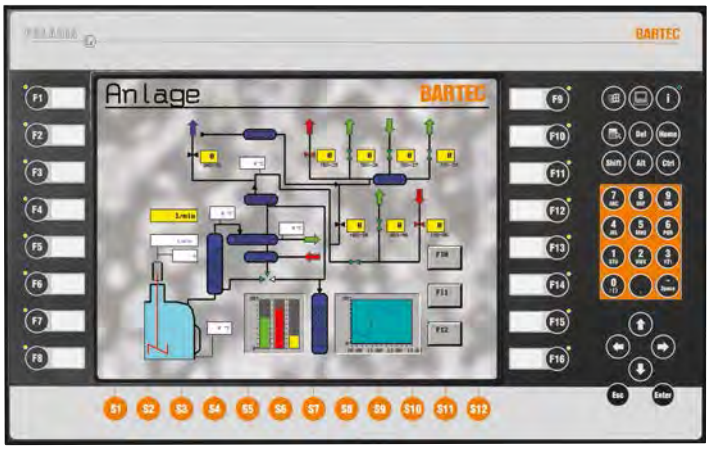
Version	Interfaces	Code no.
Panel PC 10.4"	RS422/RS485	00
	PROFIBUS-DP*	02
	RS422/RS485, supply module for hand-held scanner	04
	PROFIBUS-DP, supply module for hand-held scanner*	06
	RS232	09
	TTY	11
	RS232, supply module for hand-held scanner	13
	TTY, supply module for hand-held scanner	15

* Download only via USB Ex i-memory stick.

Complete order no. 17-71V1-20 ☐☐

Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0403-02/2014-BAT-236276/2



POLARIS Panel PC 12.1"

Features

- Easy front panel fitting
- Intrinsically safe USB interface
- Graphic-capable TFT colour display
- Direct linkage in explosive areas

Description

The POLARIS Panel PC 12.1" is a consistent further development of the BAT 800 but still retains downward compatibility.

State-of-the-art TFT technology is used for the display.

The Panel PC 12.1" allows process visualisations to be connected directly in explosive areas without the need for any additional intrinsically safe isolation cards.

The laying of blue lines for intrinsically safe circuits is dispensed with and there is no need for separate data line wiring either.

The Panel PCs can be connected directly to the PROFIBUS-DP or the control station's communication interface. Available features include e. g. RS422/ RS485 or PROFIBUS-DP and the option of a supply module for hand-held scanners.

An intrinsically safe USB interface for a USB Ex i memory stick makes it easy to transfer the device's configuration.

On request the devices are also available as a ready-to-use system solution in a stainless steel enclosure for wall, floor or ceiling mounting.

The visualisation is created with the „BMS-Graf-pro" programming package (Version 6.xxx), which has been specially developed and optimised for that purpose.

Explosion protection

Ex protection type Zone 1 and 21

ATEX Ⓔx II 2G Ex db eb qb [ib] IIC T4
Ⓔx II 2D Ex tb IIIC T120 °C

Certification
IBExU 05 ATEX 1117 X

IECEx Ex db eb qb [ib] IIC T4
Ex tb IIIC T120 °C

Certification
IECEx IBE 11.0007 X

Further approvals
INMETRO, GOST-R

Protection class
IP 65 (front)
IP 54 (back)

Variant Zone 2
see BARTEC Internet: www.bartec-group.com

Technical data

Construction
Front panel fitting

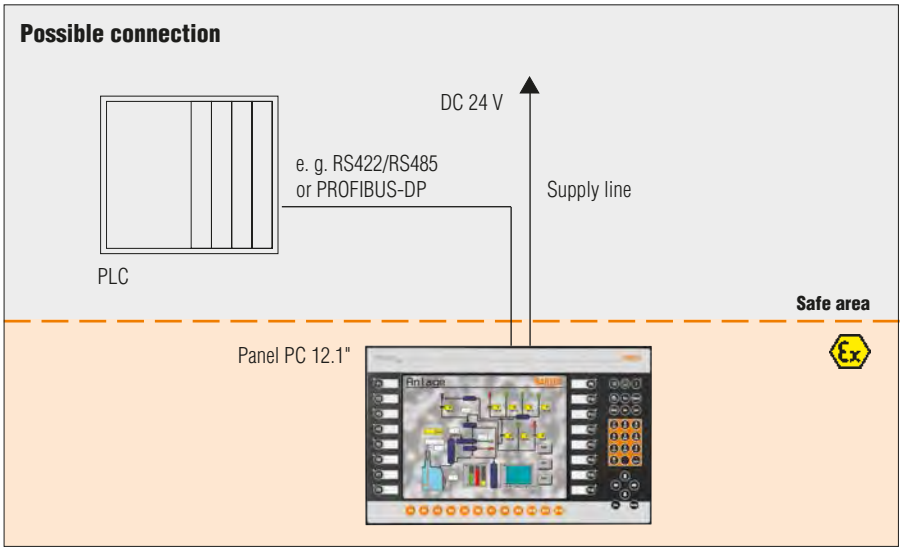
Display
- 12.1" graphic-capable TFT colour display
- 262,144 colours
- SVGA resolution 800 x 600 pixels
- Brightness 350 cd/m²
- Visible area approx. 249 x 188 mm
- Contrast 400:1
- Antireflection coating glass pane

Backlight illumination
- CFL technology
- Service life approx. 25,000 hours (at +25 °C)

Computer capacity
- Processor 500 MHz
- 256 MB RAM
- Compact Flash CF 512 MB

03-0330-0403-01/2014-BAT-236275/1

Possible connection



Keyboard (short-stroke keys)
- alphanumerischer Tastenblock
- 4 cursor keys
- 12 Cursortasten
- 16 function keys able to be labelled with LEDs

Interface (Basic version)
- 1 x Ex e RS422/RS485
- 1 x Ex i USB for Ex i memory stick

Optional interface modules
1 x Ex i Supply module for hand-held scanner

Dimensions (width x height x depth)
440 mm x 275 mm x approx.130 mm

Wall cut-out
425 mm x 255 mm + 0.5 mm

Weight
approx. 18 kg

Power supply
DC 24 V ± 10 %

Max. power consumption
$P_{max.}$ < 30 W

Admissible ambient temperatures

Storage	-20 °C to +50 °C
Operation	0 °C to +50 °C

System solution with heating on request.

Humidity
5 to 95 % non-condensing

Vibration
0.7 g/1 mm; 5 Hz to 500 Hz pulse in all 3 axes

Shock
15 g/11 ms pulse in all 3 axes

Material

Front	Polyester foil on anodised aluminium plate (conditionally UV resistant)
Rear panel	galvanised sheet steel bichromated

Selection chart

Version	Interfaces	Code no.
Panel PC 12.1"	RS422/RS485	00
	PROFIBUS-DP*	02
	RS422/RS485, supply module for hand-held scanner	04
	PROFIBUS-DP, supply module for hand-held scanner*	06
	RS232	09
	TTY	11
	RS232, supply module for hand-held scanner	13
	TTY, supply module for hand-held scanner	15

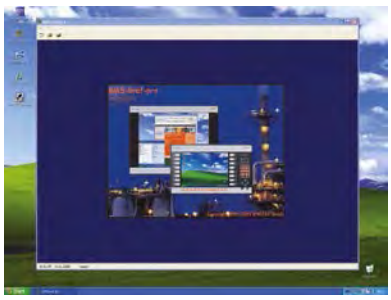
* Download only via USB Ex i-memory stick.

Complete order no. 17-71V1-30 ☐☐

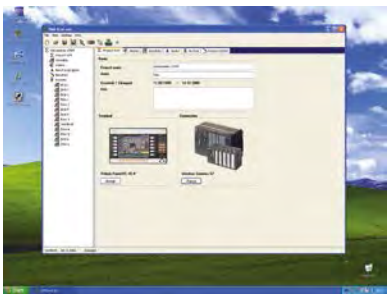
Please insert correct code. Technical data subject to change without notice.
You will find the accessories with order details on the accessories pages.

03-0330-0403-01/2014-BAT-236275/2

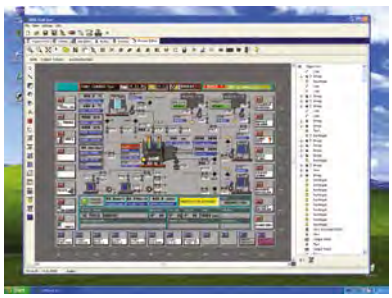
BMS-Graf-pro 6 Visualization Software



Starting page



Project planning



Conditioning

Description

The BMS-Graf-pro software package is a very convenient tool for the generation of process representations.

Individual images and projects are created on the PC and stored in the POLARIS Panel PC, POLARIS Control. The programme ensures that the single images use only very small amount of memory space.

This allows the storage of over 100 images. The well established and highly reliable functions of the BMS Graf are still available for example: input and output fields, bar graphs and vector graphics. All existing projects/application can be integrated within the new software.

The completely new WINDOWS based platform is suitable for most popular versions of WINDOWS NT, WIN 2000 and XP.

With the selection of the correct protocol driver (please refer to table) connections to various PLC systems are possible. BARTEC is continuously increasing the number of protocols available.

Selection chart BMS-Graf-pro 6	
Language	**Code no.**
German	**1**
English	**2**
French	**3**

Complete order no. 17-28TF-0071/0 ☐ 00

Please insert correct code.
Technical data subject to change without notice.

Logic controllers for serial coupling	
Description	**PLC**
AS511 on S5 Programming Port	S5-95U to 115U
MPI on S7 Programming Port	S7-300 S7-400 with MPI-Box
3964R with RK 512	S5 with communication processor CP524 to CP544 S7-300 with CP341 S7-400 with CP441-2
Modbus RTU, Slave and Master	Telemechanique TSX-Series with communication processor TSXSCG1131 April AEG A-series with Modbus module, AEG Modicon, AEG Quantum Allen Bradley SLC500 with Pro Soft module (3150MCM) PLC5/40 or PLC5/60 with comminicaions board 17-71-DBMM HIMA H51, H41, H11 Yokogawa SMCC Micro XL with communication processor PX1 Centrum CS with communication processor ACM11 GE-FANUC 90-30 with communication processor CMM311E 90-70 with communication processor CMM711 or PCM711 DCS Eurotherm, DCS Fisher&Porter SistemSix Foxboro DCS 80E, AS21 Honeywell TDC3000 Fisher Rosemount Delta V Saia PCD
Mitsubishi A	Mitsubishi A with communication processor ASJ71C24
COMLI	Sattcontrol Alfa Laval
Hostlink	OMRON SYSMAC CQM1
Logic controllers for PROFIBUS-DP	
Description	**PLC**
Siemens	S5-95U with PROFIBUS-DP Master interface S5-135U with PROFIBUS-DP Master interface EM308C S7-300 with CPU 315-2 DP (Master) S7-400 with CPU 416-2 DP (Master) PCS 7
Hartmann & Braun	Freelance 2000 with field controller
Schneider	TSX Premium with PROFIBUS coupling unit AEG Quantum with PROFIBUS coupling unit

Software BMS Graf pro is including the latest handling units. For more possibilities ask us.

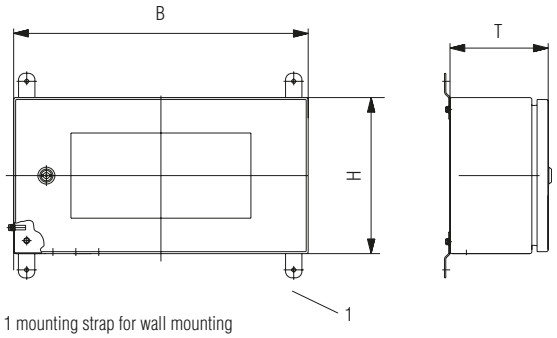
03-0330-0443/A-02/2014-BAT-242768/1

Selection chart Accessories

Illustration	Description	Order no.
	**Ex i memory stick** for POLARIS Panel PC and POLARIS Control	**17-71VZ-5000**
	**Reinforcement frame**	
	Control	**05-0205-0011**
	Panel PC 5.7"	**05-0205-0006**
	Panel PC 10.4"	**05-0205-0008**
	Panel PC 12.1"	**05-0205-0007**
	**Mounting clamps set**	
	4 pieces	**05-0091-0111**
	6 pieces	**05-0091-0112**
	Original packing	
	Control	**04-9035-0003**
	Panel PC 5.7"	**04-9035-0004**
	Panel PC 10.4"	**04-9035-0005**
	Panel PC 12.1"	**04-9035-0006**

03-0330-0661-02/2014-BAT-318916/1

Selection chart Stainless steel enclosure Standard

Illustration	Description	Order no.
	**Stainless steel enclosure Standard** **Technical data** Material: Stainless steel 1.4404; AISI 316 L Surface: Brushed Protection class: IP 65 ■ **for floor mounting with stand**	
	Dimensions in mm (B x H x T)	
	Control: 450 x 240 x 150	**07-56D7-2B00/9002**
	Panel PC 5.7": 500 x 280 x 200	**07-56D7-9011/9002**
	Panel PC 10.4": 560 x 320 x 200	**07-56D7-9611/9002**
	Panel PC 12.1": 600 x 350 x 200	**07-56D7-9711/9002**
	Complete solution with installed equipment	**on request**
	■ **for wall mounting including mounting straps**	
	Dimensions in mm (B x H x T)	
	Control: 450 x 240 x 150	**07-56D7-2B00/9001**
	Panel PC 5.7": 500 x 280 x 200	**07-56D7-9011/9001**
	Panel PC 10.4": 560 x 320 x 200	**07-56D7-9611/9001**
	Panel PC 12.1": 600 x 350 x 200	**07-56D7-9711/9001**
	Complete solution with installed equipment	**on request**
	 1 mounting strap for wall mounting	

BARTEC

Mobile Computing

BARTEC

Mobile Computing

Identification

■ Barcode- and RFID Reading ■ WLAN ■ Bluetooth

For use in explosion-proof areas we have developed the explosion-protected version of the Mobile Computer series in co-operation with Motorola.

These high-performance Mobile Computers are IECEx, ATEX and UL certified for use in hazardous areas.

The MC device series is easy to handle, based on the usual Windows® Mobile environment and the real-time data exchange through WLAN or Bluetooth.

Application

The well-known Mobile Computer from BARTEC work successful for years in optimizing work processings in Ex areas.

Pharmaceuticals

Manufacturers and suppliers of raw materials required for production e. g. medication

Petrochemicals

Production, processing, delivery

Automotive industry

Manufacturers and suppliers of coatings, paint shops

Food and beverages

Manufacturers and suppliers of aromatic substances

Make your decision for a strong partner! BARTEC, you can rely on for safe and comfortable Mobile Computer.

BARTEC. Innovative. Efficient.

03-0330-0636-10/2013-BAT-D316909/1

MC 92N0ex-IS

- WLAN
- Bluetooth
- RFID frequency LF, HF, UHF
- Colour display with touch screen
- Various scan engines
- Barcode- and RFID-reader in one device
- Barcode reading up to 12 m distance

MC 92N0ex-NI

- WLAN
- Bluetooth
- RFID frequency LF, HF, UHF
- Various scan engines
- Barcode- and RFID-reader in one device
- Barcode reading up to 12 m distance

MC 959xex-NI

- GPS
- WWAN-GSM/CDMA
- RFID frequency LF, HF, UHF
- 3.0 Megapixel camera
- Colour display with touch screen and LED backlighting
- Various scan engines
- VoIP (Voice over IP)

MC 75Axex-NI

- GPS
- WWAN-GSM/CDMA
- RFID frequency HF
- 3.2 Megapixel camera
- Colour display with touch screen and LED backlighting
- Various scan engines
- VoIP (Voice over IP)

03-0330-0636-10/2013-BAT-D316909/2

MC 92NO^{ex}-G

with 1D-Long Range Scan Engine
or 1D-/2D Imager Engine

Features

- International approvals for global usability
- Barcode capture up to 12 m
- WLAN radio standard IEEE 802.11 a/b/g/n
- Easy battery changing in the Ex area
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Compatibility with MC92NO from Motorola
- Service contracts

Description

The MC 92NO^{ex}-G Mobile Computer with its pistol grip is a robust device for reliable barcode scanning in hazardous (potentially explosive) areas.

The scan trigger is conveniently positioned at the pistol grip. Thus barcodes can be captured with only one hand. The integrated radio module enables real time data access to your host system.

The MC 92NO^{ex}-G combines the strength of Microsoft's Pocket PC platform with the power of the TI OMAC 4430 dual-core® processor with 1 GHz.

A further highlight is the large easy-to-read 3,7" VGA colour display with touchscreen technology. The MC 92NO^{ex}-G is working with the IEEE 802.11a/b/g/n radio standard.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

Explosion protection

Ex protection type

ATEX Ⓔx II 2G Ex q [ib] IIC T4 Gb

Certification
PTB 13 ATEX 2019 X

IECEx Ex q [ib] IIC T4 Gb

Certification
IECEx PTB13.0043X

Other variants are available for:
- Brazil, Japan, Canada, Russia, South Africa and USA
- Mining EU

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 1524: 1D-Long Range Scan Engine
Reading range: up to 12 m

SE 4500-SR: 1D-/2D Imager Engine
Reading range: up to 60 cm

Other variants available, see user's manual.

Dimensions (height x width x depth)
231 mm x 91 mm x 193 mm
9.1 inch x 3.6 inch x 7.6 inch

Weight
approx. 1060 g
approx. 34 oz

Ambient temperature
-20 °C to +40 °C
-4 °F to +104 °F

Storage temperature
-40 °C to +70 °C
-40 °F to +158 °F

Charging temperature
0 °C to +40 °C
+32 °F to +104 °F

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 54

Processor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery 17-A1Z0-0001
with 7.4 V/2200 mAh
Battery can be changed in the Ex area!

03-0330-0762-04/2014-BAT-357132/1

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

Application development
EMDK available from Motorola Solutions Homepage

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN)

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW

Antenna
Integrated in the device

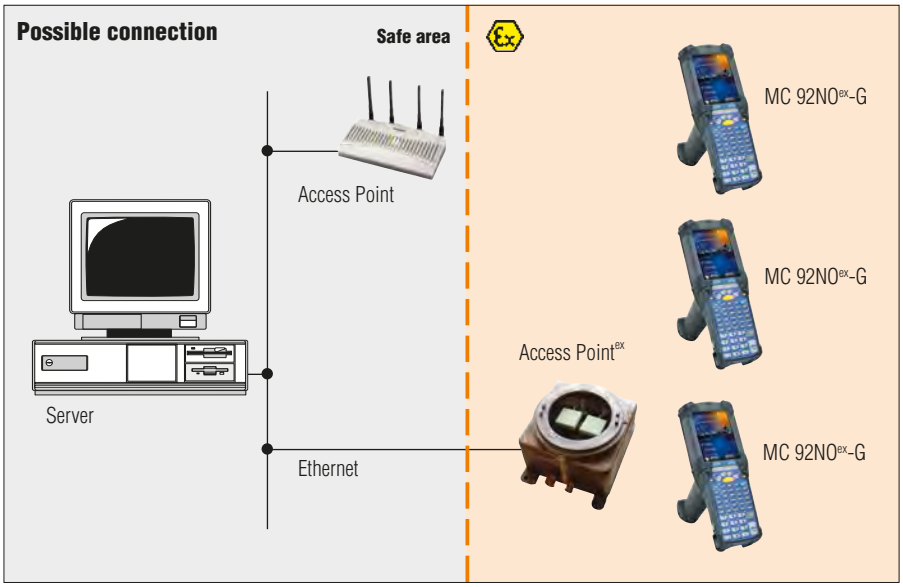
Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth version 2.1 with EDR (including manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the device



The MC 92NO^{ex}-G Mobile Computer with the 1D-Long Range Scan Engine or the 1D-/2D Imager Engine recognises the following barcodes:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D-Codes: (only with 1D-/2D-Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417 PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
PDF-417	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Selection chart

Barcode options	Code no.	Version	Code no.	Operating system	Code no.
SE 1524 1D-Long Range Scan Engine	**J**	28 keys, numeric	**A**	Windows Embedded Handheld 6.5.3	**Q**
		43 keys, numeric with (F) function keys	**F**		
		53 keys, alphanumeric	**E**		
SE 4500-SR 1D-/2D Imager Engine	**3**	53 keys, alphanumeric with layout for VT emulation	**G**	Windows CE 7.0	**Y**
		53 keys, alphanumeric with layout for 3270 emulation	**H**		
		53 keys, alphanumeric with layout for 5250 emulation	**J**		

Complete order no. 17-A1A3-0G ☐ 0/SY ☐ ☐ A600
MC 92NO^{ex}-G including Li-ion battery (1 piece).

Please insert correct code. Technical data subject to change without notice. Note: All variants without accessories.
You will find the accessories with order details on the accessories pages.

03-0330-0762-04/2014-BAT-357132/2

MC 92NO^{ex}-K with
1D-Standard Range Scan Engine
or 1D/2D Imager Engine

Features

- International approvals for global usability
- WLAN radio standard IEEE 802.11 a/b/g/n
- Easy battery changing in the Ex area
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Based on MC92NO from Motorola
- Service contracts

Description

The MC 92NO^{ex}-K Mobile Computer is a robust device for reliable barcode scanning in hazardous (potentially explosive) areas.

The scan trigger is positioned in such a way that barcodes can be captured very conveniently. The integrated radio module enables real time data access to your host system.

The MC 92NO^{ex}-K combines the strength of Microsoft's Pocket PC platform with the power of the TI OMAC 4430 dual-core® processor with 1 GHz.

A further highlight is the large easy-to-read 3.7" VGA colour display with touchscreen technology. The MC 92NO^{ex}-K is working with the IEEE 802.11a/b/g/n radio standard.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

Explosion protection

ATEX **Ex protection type**
Ⓔx II 2G Ex q [ib] IIC T4 Gb

Certification
PTB 13 ATEX 2019 X

IECEx **Ex protection type**
Ex q [ib] IIC T4 Gb

Certification
IECEx PTB13.0043X

Other variants are available for:
- Brazil, Japan, Canada, Russia, South Africa and USA
- Mining EU

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 965: 1D-Standard Range Scan Engine
Reading range: up to 2.5 m

SE 4500-SR: 1D-/2D Imager Engine
Reading range: up to 60 cm

Other variants available, see user's manual.

Dimensions (height x width x depth)
231 mm x 91 mm x 59 mm
9.1 inch x 3.6 inch x 2.3 inch

Weight
approx. 980 g
approx. 31 oz

Ambient temperature
-20 °C to +40 °C
-4 °F to +104 °F

Storage temperature
-40 °C to +70 °C
-40 °F to +158 °F

Charging temperature
0 °C to +40 °C
+32 °F to +104 °F

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 54

Prozessor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery 17-A1Z0-0001
with 7.4 V/2200 mAh
Battery can be changed in the Ex area!

03-0330-0764-04/2014-BAT-357134/1

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

Application development
EMDK available from Motorola Solutions Homepage

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN)

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW

Antenna
Integrated in the device

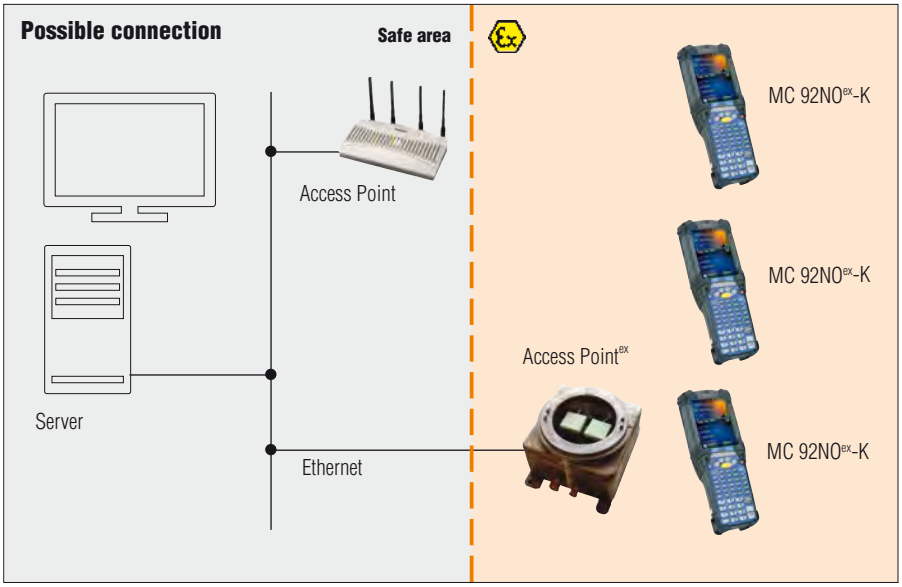
Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth version 2.1 with BT Explorer (including manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the device



The MC 92NO^{ex}-K Mobile Computer with the 1D-Standard Range Scan Engine or the 1D-/2D-Imager Engine recognises the following barcodes:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D-Codes: (only with 1D-/2D Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417 PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
PDF-417	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Selection chart

Barcode options	Code no.	Version	Code no.	Operating system	Code no.
SE 965 1D-Standard Range Scan Engine	**A**	28 keys, numeric	**A**	Windows Embedded Handheld 6.5.3	**Q**
		43 keys, numeric with (F) function keys	**F**		
		53 keys, alphanumeric	**E**		
SE 4500-SR 1D-/2D Imager Engine	**3**	53 keys, alphanumeric with layout for VT emulation	**G**	Windows CE 7.0	**Y**
		53 keys, alphanumeric with layout for 3270 emulation	**H**		
		53 keys, alphanumeric with layout for 5250 emulation	**J**		

Complete order no. 17-A1A3-0K ☐ 0/SY ☐ ☐ A600
MC 92NO^{ex}-K including Li-ion battery (1 piece).

Note: All variants without accessories. You will find the accessories with order details on the accessories pages.
Please insert correct code. Technical data subject to change without notice.

03-0330-0764-04/2014-BAT-357134/2

MC 92N0ex-G and -K with extended RFID Reader

Description

This unique idea enables a combination of state-of-the-art technologies and so it was possible to integrate barcode data capture and RFID technology in this one device.

Thanks to the modular keyboard and colour display, the data can be processed directly on the mobile computer. The data is transmitted to other corporate divisions via WLAN or Bluetooth. This means that the data is available in real time for further processing.

The software we offer for individual application development is an open source demo version and an SDK file. The SDK file is available for the C# programming language and contains all necessary resources for specific application development.

On the one hand, the open source demo serves to demonstrate the reading and writing of RFID tags; on the other hand, it offers application developers a good basis for customised reader programming.

The MC 92N0ex-IS can be retrofitted with the RFID option in the factory. It cannot be retrofitted by the customer himself.

Features

- International approvals for global usability
- RFID/UHF with a large reading range
- RFID reader and scanner in one device
- WLAN radio standard IEEE 802.11 a/b/g/n
- Easy battery changing in the Ex area
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Service contracts

Explosion protection

ATEX Ex protection type

Ⓔx II 2G Ex q [ib] IIC T4 Gb
Ⓔx II 2G Ex q [ib] IIB T4 Gb
(with mounted antenna)

Certification
PTB 13 ATEX 2019 X

For further details see IECEx Certificate of Conformity.

IECEx Ex protection type

Ex q [ib] IIC T4 Gb
Ex q [ib] IIB T4 Gb
(with mounted antenna)

Certification
IECEx PTB13.0043X

For further details see IECEx Certificate of Conformity.

Other variants are available for:
- USA, Canada

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 965: 1D-Standard Range Scan Engine
Reading range: up to 2.5 m

SE 4500: 1D-/2D Imager Engine
Reading range: up to 60 cm

only for MC 92N0ex-G
SE 1524: 1D-Long Range Scan Engine
Reading range: up to 12 m
Other variants available, see user's manual.

Dimensions (height x width x depth)
MC 92N0ex-K
231 mm x 115 mm x 105 mm
(9.1 inch x 4.5 inch x 4.1 inch)

MC 92N0ex-G
231 mm x 115 mm x 193 mm
(9.1 inch x 4.5 inch x 7.6 inch)

Weight
MC 92N0ex-K
approx. 1320 g (approx. 46 oz)

MC 92N0ex-G
approx. 1400 g (approx. 49 oz)

Ambient temperature
-20 °C to +40 °C (-4 °F to +104 °F)

Storage temperature
-40 °C to +70 °C (-40 °F to +158 °F)

Charging temperature
0 °C to +40 °C (+32 °F to +104 °F)

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 54

Prozessor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery 17-A1Z0-0001
with 7.4 V/2200 mAh
Battery can be changed in the Ex area!

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

03-0330-0781-01/2014-BAT-362915/1

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN)

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW (Germany and International)

Antenna
Integrated in the device

Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth version 2.1 with BT Explorer (including manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the device

LF Reader extended		
Supported standards		HITAG S256, HITAG S 2 kbit, HITAG 1, HITAG 2, Q5, ATA5567, EM4305, HDX - RO, HDX (Multipage), EM4xxx (UNIQUE), FDX-B, BDE, ISO 117845, ISO Animal, EM 4450/4550, EM4xxx (UNIQUE), FDX-B, BDE, ISO 11784/5, ISO Animal
Nominal reading/writing distance		approx. 5 cm/approx. 1.9 inches
Antenna		ferrite antenna or air coil antenna
Frequency range		125/134 kHz
Transmitting power		100 mW ± 2dB
HF Reader extended		
Supported standards		HF ISO 15693 e.g. I-Code SLI, Tag-IT HFI, my-d vicinity, STM LRI512 HF ISO 14443 e.g. mifare, mifare Ultra Light, my-d proximity, I-Code 1 (optional)
Nominal reading/writing distance HF ISO 15693 HF ISO 14443		 approx. 7 to 12 cm/approx. 2.75 to 4.72 inch approx. 1 to 6 cm/approx. 0.4 to 2.36 inch (with tags in cheque card format)
Antenna		integrated
Frequency range		13.56 MHz
Transmitting power		250 mW ± 2 dB
UHF Reader extended		
Supported standards		EPC Class 1 Gen 2 tag
Nominal reading range		approx. 30 to 50 cm/approx. 11.8 to 19.6 inch
Nominal writing distance		approx. 30 to 50 cm/approx. 11.8 to 19.6 inch
Antenna		integrated
Frequency range	Europa USA	865.6 to 867.5 MHz (EN 302 208) 902.0 to 928.0 MHz (FCC CFR 47 part 15.247)
Transmitting power		200 mW ± 2dB
UHF Reader extended with mounted antenna		
Supported standards		EPC Class 1 Gen 2 tag
Nominal reading range		approx. 150 cm/approx. 59 inches
Nominal writing distance		approx. 150 cm/approx. 59 inches
Antenna		external (UPM Raflatac)
Frequency range	Europa USA	865.6 to 867.5 MHz (EN 302 208) 902.0 to 928.0 MHz (FCC CFR 47 part 15.247)
Transmitting power		200 mW ± 2dB

Selection chart MC 92N0ex-IS with extended RFID Reader

Barcode options	Code no.	RFID options	Code no.	Version	Code no.	Operating system	Code no.
SE 965 1D-Standard Range Scan Engine	A	RFID LF Reader	2	28 keys, numeric	A	Windows Embedded Handheld 6.5.3	Q
		RFID HF Reader	4	43 keys, numeric with (F) function keys	F		
SE 4500-SR 1D-/2D Imager Engine	3	RFID UHF (US) Reader	5	53 keys, alphanumeric	E		
		RFID UHF (EU) Reader	6	53 keys, alphanumeric with layout for VT emulation	G	Windows CE 7.0	Y
SE 1524 1D Long Range Scan Engine (only MC 92N0ex-G)	J	RFID UHF (US) Reader and mounted antenna	7	53 keys, alphanumeric with layout for 3270 emulation	H		
		RFID UHF (EU) Reader and mounted antenna	8	53 keys, alphanumeric with layout for 5250 emulation	J		

Complete order no.

MC 92N0ex

Version GUN **17-A1A3-RG** ☐☐ **/SY** ☐☐ **A600**

Version BRICK **17-A1A3-RK** ☐☐ **/SY** ☐☐ **A600** including Li-ion battery (1 piece).

Note: All variants without accessories. You will find the accessories with order details on the accessories pages.
Please insert correct code. Technical data subject to change without notice.

03-0330-0781-01/2014-BAT-362915/2

MC 92NO^{ex}-G

with 1D-Long Range Scan Engine
or 1D-/2D Imager Engine

Features

- International approvals for global usability
- Barcode capture up to 12 m
- WLAN radio standard IEEE 802.11 a/b/g/n
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Based on MC92NO from Motorola
- Service contracts

Description

The MC 92NO^{ex}-G Mobile Computer with its pistol grip is a robust device for reliable barcode scanning in hazardous (potentially explosive) areas.

The scan trigger is conveniently positioned at the pistol grip. Thus barcodes can be captured with only one hand. The integrated radio module enables real time data access to your host system.

The MC 92NO^{ex}-G combines the strength of Microsoft's Pocket PC platform with the power of the TI OMAC 4430 dual-core® processor with 1 GHz.

A further highlight is the large easy-to-read 3.7" VGA colour display with touchscreen technology. The MC 92NO^{ex}-G is working with the IEEE 802.11a/b/g/n radio standard.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

Explosion protection

UL **Ex protection type**
Class I Div 2 Group A, B, C, D T6
Class II Div 2 Group F, G
Class III

Certification
UL File E321557 Vol. 1 Sec. 5

ATEX **Ex protection type**
Ⓔx II 3G Ex nA IIC T6 Gc
Ⓔx II 3D Ex tc IIIC T80 °C Dc
-20 °C ≤ T_a ≤ +50 °C

Declaration of conformity
B1-A2A3-7C0001, B1-A2A3-7C0002

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 1524: 1D-Long Range Scan Engine
Reading range: up to 12 m

SE 4500-SR: 1D/2D Imager Engine
Reading range: up to 60 cm

Other variants available, see user's manual.

Dimensions (height x width x depth)
231 mm x 91 mm x 193 mm
9.1 inch x 3.6 inch x 7.6 inch

Weight
approx. 765 g
approx. 27 oz

Ambient temperature
-20 °C to +50 °C
-4 °F to +122 °F

Storage temperature
-40 °C to +70 °C
-40 °F to +158 °F

Charging temperature
0 °C to +40 °C
+32 °F to +104 °F

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 64

Processor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery B7-A2Z0-0006
with 7.4 V/2200 mAh

03-0330-0766-04/2014-BAT-357389/1

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

Application development
EMDK available from Motorola Solutions Homepage

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN)

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW

Antenna
Integrated in the device

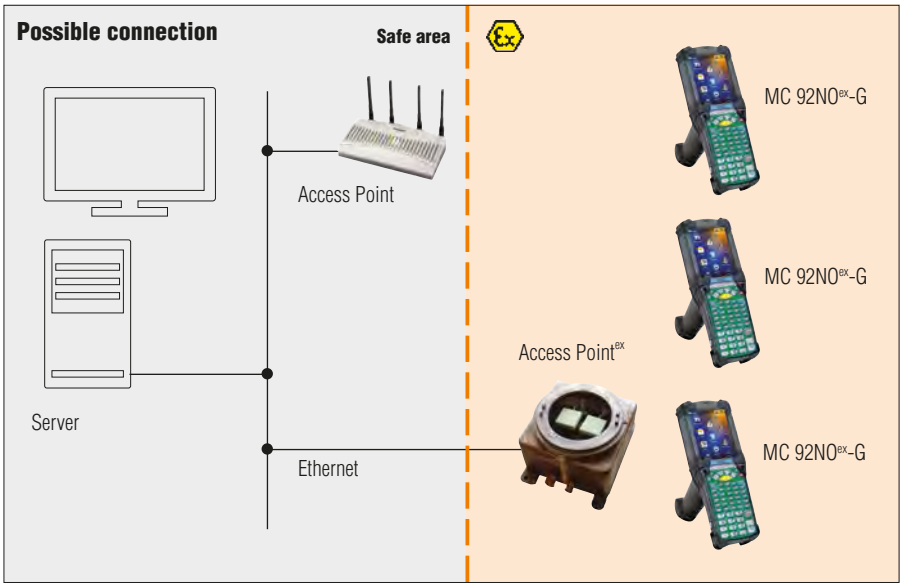
Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth version 2.1 with EDR (including manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the devicet



The MC 92NO^{ex}-G Mobile Computer with the 1D-Long Range Scan Engine or the 1D-/2D Imager Engine recognises the following barcodes:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D-Codes: (only with 1D-/2D-Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417 PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
PDF-417	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Selection chart

Barcode options	Code no.	Version	Code no.	Operating system	Code no.
SE 1524 1D-Long Range Scan Engine	**J**	28 keys, numeric	**A**	Windows Embedded Handheld 6.5.3	**Q**
		43 keys, numeric with (F) function keys	**F**		
		53 keys, alphanumeric	**E**		
SE 4500-SR 1D-/2D Imager Engine	**3**	53 keys, alphanumeric with layout for VT emulation	**G**	Windows CE 7.0	**Y**
		53 keys, alphanumeric with layout for 3270 emulation	**H**		
		53 keys, alphanumeric with layout for 5250 emulation	**J**		

Complete order no. B7-A2A4-0G ☐ 0/SY ☐ ☐ A600
MC 92NO^{ex}-G including Li-ion battery (1 piece).

Note: All variants without accessories. You will find the accessories with order details on the accessories pages.
Please insert correct code. Technical data subject to change without notice.

03-0330-0766-04/2014-BAT-357389/2

MC 92NO^{ex}-K

with 1D-Standard Range Scan Engine or 1D-/2D Imager Engine

Features

- International approvals for global usability
- WLAN radio standard IEEE 802.11 a/b/g/n
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Based on MC92NO from Motorola
- Service contracts

Description

The MC 92NO^{ex}-K Mobile Computer is a robust device for reliable barcode scanning in hazardous (potentially explosive) areas.

The scan trigger is positioned in such a way that barcodes can be captured very conveniently. The integrated radio module enables real time data access to your host system.

The MC 92NO^{ex}-K combines the strength of Microsoft's Pocket PC platform with the power of the TI OMAC 4430 dual-core® processor with 1 GHz.

A further highlight is the large easy-to-read 3.7" VGA colour display with touchscreen technology. The MC 92NO^{ex}-K is working with the IEEE 802.11a/b/g/n radio standard.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

Explosion protection

UL Ex protection type
Class I Div 2 Group A, B, C, D T6
Class II Div 2 Group F, G
Class III

Certification
UL File E321557 Vol. 1 Sec. 5

ATEX Ex protection type
Ⓔx II 3G Ex nA IIC T6 Gc
Ⓔx II 3D Ex tc IIIC T80 °C Dc
-20 °C ≤ T_a ≤ +50 °C

Declaration of conformity
B1-A2A3-7C0001, B1-A2A3-7C0002

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 965: 1D-Standard Range Scan Engine
Reading range: up to 2.5 m

SE 4500-SR: 1D-/2D Imager Engine
Reading range: up to 60 cm

Other variants available, see user's manual.

Dimensions (height x width x depth)
231 mm x 91 mm x 59 mm
9.1 inch x 3.6 inch x 2.3 inch

Weight
approx. 700 g
approx. 22 oz

Ambient temperature
-20 °C to +50 °C
-4 °F to +122 °F

Storage temperature
-40 °C to +70 °C
-40 °F to +158 °F

Charging temperature
0 °C to +40 °C
+32 °F to +104 °F

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 64

Processor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery B7-A2Z0-0006
with 7.4 V/2200 mAh

03-0330-0767-01/2014-BAT-357390/1

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

Application development
EMDK available from Motorola Solutions Homepage

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN)

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW

Antenna
Integrated in the device

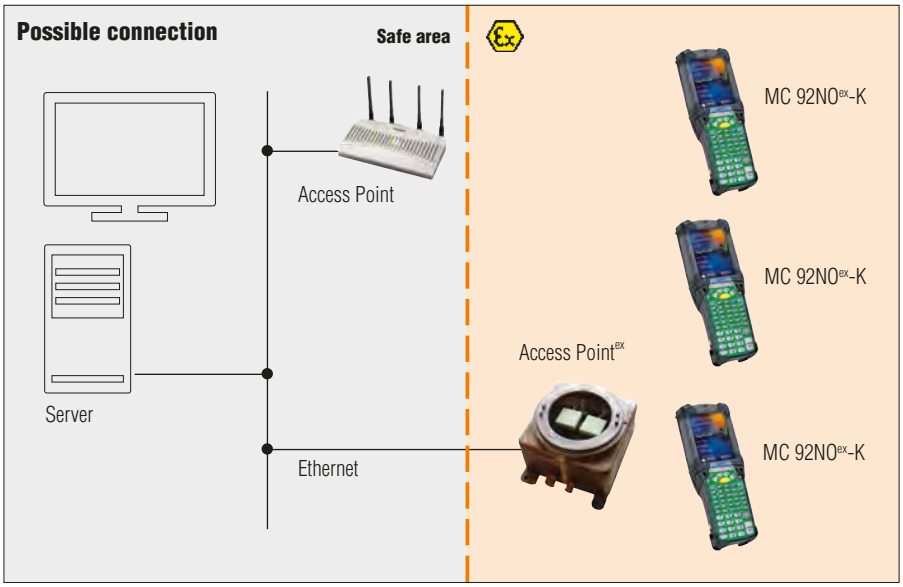
Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth Version 2.1 mit EDR (inklusive Manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the device



The MC 92NO^{ex}-G Mobile Computer with the 1D-Standard Range Scan Engine or the 1D-/2D Imager Engine recognises the following barcodes:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D-Codes: (only with 1D-/2D Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417 PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
PDF-417	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Selection chart

Barcode options	Code no.	Version	Code no.	Operating system	Code no.
SE 965 1D-Standard Range Scan Engine	**A**	28 keys, numeric	**A**	Windows Embedded Handheld 6.5.3	**Q**
		43 keys, numeric with (F) function keys	**F**		
		53 keys, alphanumeric	**E**		
SE 4500-SR 1D-/2D Imager Engine	**3**	53 keys, alphanumeric with layout for VT emulation	**G**	Windows CE 7.0	**Y**
		53 keys, alphanumeric with layout for 3270 emulation	**H**		
		53 keys, alphanumeric with layout for 5250 emulation	**J**		

Complete order no. B7-A2A4-0K ☐ 0/SY ☐ ☐ A600
MC 92NO^{ex}-K including Li-ion battery (1 piece).

Note: All variants without accessories. You will find the accessories with order details on the accessories pages.
Please insert correct code. Technical data subject to change without notice.

03-0330-0767-01/2014-BAT-357390/2

MC 92N0ex-G and -K with extended RFID Reader

Description

This unique idea enables a combination of state-of-the-art technologies and so it was possible to integrate barcode data capture and RFID technology in this one device.

Thanks to the modular keyboard and colour display, the data can be processed directly on the mobile computer. The data is transmitted to other corporate divisions via WLAN or Bluetooth. This means that the data is available in real time for further processing.

The software we offer for individual application development is an open source demo version and an SDK file. The SDK file is available for the C# programming language and contains all necessary resources for specific application development.

On the one hand, the open source demo serves to demonstrate the reading and writing of RFID tags; on the other hand, it offers application developers a good basis for customised reader programming.

The MC 92N0ex-IS can be retrofitted with the RFID option in the factory. It cannot be retrofitted by the customer himself.

Features

- International approvals for global usability
- RFID/UHF with a large reading range
- RFID reader and scanner in one device
- WLAN radio standard IEEE 802.11 a/b/g/n
- Easy battery changing in the Ex area
- Expanded storage capacity with replaceable SD card
- Various versions of replaceable keyboards
- Service contracts

Explosion protection

UL Ex protection type
Class I Div. 2 Groups A, B, C, D T6
Class II Div. 2 Groups F, G
Class III

Certification
UL File E321557 Vol. 1 Sec. 5

ATEX Ex protection type
Ⓔx II 3G Ex nA IIC T6 Gc
Ⓔx II 3D Ex tc IIIC T80 °C Dc
-20 °C ≤ T_a ≤ +50 °C

Ⓔx II 3G Ex nA IIB T6 Gc
Ⓔx II 3D Ex tc IIIB T80 °C Dc
-20 °C ≤ T_a ≤ +50 °C
(with mounted antenna)

Declaration of conformity
B1-A2A3-7C0001, B1-A2A3-7C0002

Technical data

Keyboard version
- 28 keys, numeric
- 43 keys, numeric with (F) function keys
- 53 keys, alphanumeric

Display
3.7" VGA colour display
with touchscreen 480 x 640 pixels

Barcode options
SE 965: 1D-Standard Range Scan Engine
Reading range: up to 2.5 m

SE 4500: 1D-/2D Imager Engine
Reading range: up to 60 cm

only for MC 92N0ex-G
SE 1524: 1D-Long Range Scan Engine
Reading range: up to 12 m
Other variants available, see user's manual.

Dimensions (height x width x depth)
MC 92N0ex-K
231 mm x 115 mm x 105 mm
(9.1 inch x 4.5 inch x 4.1 inch)

MC 92N0ex-G
231 mm x 115 mm x 193 mm
(9.1 inch x 4.5 inch x 7.6 inch)

Weight
MC 92N0ex-K
approx. 980 g (approx. 34.5 oz)

MC 92N0ex-G
approx. 1120 g (approx. 39.5 oz)

Ambient temperature
-20 °C to +50 °C (-4 °F to +122 °F)

Storage temperature
-40 °C to +70 °C (-40 °F to +158 °F)

Charging temperature
0 °C to +40 °C (+32 °F to +104 °F)

Humidity
5 % to 95 % (non-condensing)

Protection class (EN 60529)
IP 64

Prozessor
TI OMAC 4430 dual-core® processor/1 GHz

Memory
1 GB/2 GB flash RAM/ROM with the option of expansion with SD card: up to 32 GB

Operating system
Windows Embedded Handheld 6.5.3
or Windows CE 7.0

Power supply
Li-ion battery B7-A2Z0-0006
with 7.4 V/2200 mAh

Backup battery
Ni-MH battery (rechargeable)
2.4 V/15 mAh

Interfaces
- RS232
- USB

03-0330-0782-04/2014-BAT-362984/1

Audio System
Integrated microphone and loudspeaker

Voice support
Voice over IP

Wireless data communication (WLAN

Radio standard
IEEE 802.11a/b/g/n

Data rate/frequency range
IEEE802.11a: up to 54 Mbit/s - 5 GHz
IEEE802.11b: up to 11 Mbit/s - 2.4 GHz
IEEE802.11g: up to 54 Mbit/s - 2.4 GHz
IEEE802.11n: up to 600 Mbit/s - 2.4/5 GHz

Output power
100 mW (Germany and International)

Antenna
Integrated in the device

Note
The respective radio frequencies and usable channels depend on the country-specific regulations.

Bluetooth (WPAN)

Bluetooth version 2.1 with BT Explorer (including manager)

Max. data rate
2.1 Mbit/s

Antenna
Integrated in the device

LF Reader extended and internal		
Supported standards		HITAG S256, HITAG S 2 kbit, HITAG 1, HITAG 2, Q5, ATA5567, EM4305, HDX - RO, HDX (Multipage), EM4xxx (UNIQUE), FDX-B, BDE, ISO 117845, ISO Animal, EM 4450/4550, EM4xxx (UNIQUE), FDX-B, BDE, ISO 11784/5, ISO Animal
Nominal reading/writing distance		approx. 5 cm/approx. 1.9 inches
Antenna		ferrite antenna or air coil antenna
Frequency range		125/134 kHz
Transmitting power		100 mW ± 2dB
HF Reader extended		
Supported standards		HF ISO 15693 e.g. I-Code SLI, Tag-IT HFI, my-d vicinity, STM LRI512 HF ISO 14443 e.g. mifare, mifare Ultra Light, my-d proximity, I-Code 1 (optional)
Nominal reading/writing distance HF ISO 15693 HF ISO 14443		 approx. 7 to 12 cm/approx. 2.75 to 4.72 inch approx. 1 to 6 cm/approx. 0.4 to 2.36 inch (with tags in cheque card format)
Antenna		integrated
Frequency range		13.56 MHz
Transmitting power		250 mW ± 2 dB
UHF Reader extended		
Supported standards		EPC Class 1 Gen 2 tag
Nominal reading range		approx. 30 to 50 cm/approx. 11.8 to 19.6 inch
Nominal writing distance		approx. 30 to 50 cm/approx. 11.8 to 19.6 inch
Antenna		integrated
Frequency range	Europa USA	865.6 to 867.5 MHz (EN 302 208) 902.0 to 928.0 MHz (FCC CFR 47 part 15.247)
Transmitting power		200 mW ± 2dB
UHF reader extended with mounted antenna		
Supported standards		EPC Class 1 Gen 2 tag
Nominal reading range		approx. 150 cm/approx. 59 inches
Nominal writing distance		approx. 150 cm/approx. 59 inches
Antenna		external (UPM Raflatac)
Frequency range	Europa USA	865.6 to 867.5 MHz (EN 302 208) 902.0 to 928.0 MHz (FCC CFR 47 part 15.247)
Transmitting power		200 mW ± 2dB

Selection chart MC 92N0ex-NI with extended and internal RFID Reader

Barcode options	Code no.	RFID options	Code no.	Version	Code no.	Operating system	Code no.
none**	0	RFID LF Reader internal*	1	28 keys, numeric	A	Windows Embedded Handheld 6.5.3	Q
		RFID LF Reader	2	43 keys, numeric with (F) function keys	F		
SE 965 1D-Standard Range Scan Engine	A	RFID HF Reader	4	53 keys, alphanumeric	E		
		RFID UHF (US) Reader	5	53 keys, alphanumeric with layout for VT emulation	G		
SE 4500-SR 1D-/2D Imager Engine	3	RFID UHF (EU) Reader	6	53 keys, alphanumeric with layout for 3270 emulation	H	Windows CE 7.0	Y
SE 1524 1D Long Range Scan Engine (only MC 92N0ex-G)	J	RFID UHF (US) Reader and mounted antenna	7	53 keys, alphanumeric with layout for 5250 emulation	J		
		RFID UHF (EU) Reader and mounted antenna	8				

* available only without the scan engine

** combinable only with internal RFID LF reader.

Complete order no. MC 92N0ex

Version GUN B7-A2A4-RG ☐☐/SY ☐☐ A600

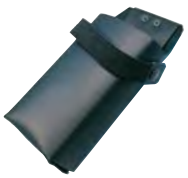
Version BRICK B7-A2A4-RK ☐☐/SY ☐☐ A600

including Li-ion battery (1 piece).

Note: All variants without accessories. You will find the accessories with order details on the accessories pages.
Please insert correct code. Technical data subject to change without notice.

03-0330-0782-04/2014-BAT-362984/2

Selection chart Accessories for the MC 92NO[ex] Series

Illustrations	Description	Order no.
	**Spare battery** for ATEX/IECEx Zone 1 7.4 V/2200 mAh, lithium ion battery	**17-A1Z0-0001**
	for UL Class I, II, III Division 1 7.4 V/2200 mAh, lithium ion battery	**17-A1Z0-0002**
	**Spare battery** for ATEX Zone 2 and Zone 22 Class I, II, III Division 2 7.4 V/2200 mAh, lithium ion battery	**B7-A2Z0-0025**
	**Addition of a memory card** IS: Certified Industrial Grade SD card with NI: Recommended ATP Industrial Grade SD card with	
	1 GB	**17-28BE-F006/0002**
	2 GB	**17-28BE-F006/0003**
	4 GB	**17-28BE-F006/0004**
	8 GB	**17-28BE-F006/0005**
	16 GB	**17-28BE-F006/0006**
	32 GB	**17-28BE-F006/0007**
	**Display protection film** for gas groups IIA and IIB 5 units per pack	**17-A1Z0-0003**
	**Spare keyboard with green overlay** for ATEX Zone 2 and Zone 22 UL Class I, II, III Division 2	
	with 28 keys, numerical	**05-0080-0577**
	with 43 keys, numerical, (F) Function keys	**05-0080-0578**
	with 53 keys, numerical	**05-0080-0579**
	with 53 keys, alphanumerical for VT emulation	**05-0080-0580**
	with 53 keys, alphanumerical for 3270 emulation	**05-0080-0581**
	with 53 keys, alphanumerical for 5250 emulation	**05-0080-0582**
	**Spare keyboard with blue overlay** for ATEX Zone 1 UL Class I, II, III Division 1	
	with 28 keys, numerical	**05-0080-0438**
	with 43 keys, numerical, (F) Function keys	**05-0080-0440**
	with 53 keys, numerical	**05-0080-0441**
	with 53 keys, alphanumerical for VT emulation	**05-0080-0442**
	with 53 keys, alphanumerical for 3270 emulation	**05-0080-0443**
	with 53 keys, alphanumerical for 5250 emulation	**05-0080-0444**
	**Holster** made of leather, for attaching to a belt; also suitable for use in a potentially explosive atmosphere.	
	- for MC 92NO[ex]-K RFID	**03-9809-0023**
	- for MC 92NO[ex]-G RFID	**03-9809-0024**
	- for MC 92NO[ex]-G and MC 92NO[ex]-K with belt clip and rotary part	**03-9809-0026**
	Rotary part for holster	**03-9809-0027**

Selection chart Accessories for the MC 92NO[ex] Series

Illustrations	Description	Order no.
	**Single Slot Cradle** for a non-potentially explosive atmosphere, for the docking station to communicate with the PC - for data synchronisation - for installing software **including:** - RS232 connection cable Cradle <-> PC - USB connection cable Cradle <-> PC - Charging port for lithium ion battery - Power pack and DC line cord (EU)	**05-0079-0018**
	**4-fold Ethernet Cradle** for a non-potentially explosive atmosphere Please order individual parts required separately: - 4-fold Ethernet cradle - Power pack - Connection cable from power pack to the cradle - AC line cord, 3-core, for the specific country EU version US version	**03-9849-0026** **03-9911-0021** **03-9919-0010** **03-9609-0011** **03-9609-0021**
	**4-fold charging station** for a non-potentially explosive atmosphere Please order individual parts required separately: - 4-fold charging station - Power pack - Connection cable from power pack to the cradle - AC line cord, 3-core, EU - AC line cord, 3-core, US	**03-9849-0052** **03-9911-0021** **03-9919-0010** **03-9609-0011** **03-9609-0021**
	**4-fold fast charging station UBC2000** for a non-potentially explosive atmosphere **Including:** - Power pack - DC line cord Power pack <-> UBC2000 Please order individual parts required separately: - Battery adapter for UBC2000 (maximum of 4 units per UBC2000) - AC line cord, 3-core, for the specific country EU version US version	**03-9915-0004** **03-9919-0007** **03-9609-0011** **03-9609-0021**
	**Spare stylus for MC 92NO[ex]-K** - 3 units per pack - 3 units per pack, with rubber loop - 3 units per pack, spare rubber loop	 **03-9849-0041** **03-9849-0039** **03-9849-0047**
	**Spare stylus for MC 92NO[ex]-G** - 10 units per pack - 3 units per pack, grey with rubber loop	 **03-9849-0070** **03-9849-0043**
	**Spare wrist strap for MC 92NO[ex]-G** - 3 units per pack **Spare wrist strap for MC 92NO[ex]-K** - 3 units per pack - 1 fastener for strap	 **03-9849-0068** **03-9849-0067** **03-9849-0056**

03-0330-0797-04/2014-BAT-368573/2

MC 959x[ex]-NI

for ATEX/IECEx Zone 2 and 22

Features

- Option of WWAN-GSM-HSDPA/CDMA-EVDO
- GPS
- WLAN radio standard IEEE 802.11 a/b/g Tri-mode radio standard
- Comprehensive voice-over IP support
- Various barcode applications with different scan engines
- Option of a 3-megapixels camera
- Easy battery changing
- Expanded storage capacity due to replaceable Micro SD card
- Various keypad variants
- Compatibility with the MC95xx from Motorola

Description

The MC 959x[ex]-NI offers the characteristic features of the robust MC 9090[ex] mobile computer series and numerous new capabilities in addition. These were modified specially by BARTEC for use in ATEX/IECEx Zone 2 and 22 hazardous areas.

The result is a device which sets new standards both in technology and in design: it is an innovative product with an unsurpassed selection of functions which take mobile computing innovation to a completely new level.

The MC 959x[ex]-NI offers a more robust design, extended options for data capture, more intelligent functions, greater processing power and better ergonomics.

Thanks to the ergonomically mounted scan triggers on the MC 959x[ex]-NI, data can be captured easily in one-hand operation.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

Several technologies are available for data communication with other systems and company divisions.

- Wireless WAN (WWAN)
- Wireless LAN (WLAN)
- Wireless PAN (WPAN) (Bluetooth)
- IrDA connection

These modules, which are integrated in the device, allow a seamless transmission of voice and data and are easy to integrate into the company's network.

Further advantages when using it are its robust construction, easy-to-read 3.7" VGA colour display with touch technology and a high-performance lithium ion battery.

In the MC 959x[ex]-NI, the Marvell PXA320 processor with 806 MHz ensures fast process execution and the Microsoft® Windows Mobile® 6.5 operating system in conjunction with the Enterprise Mobility Developer Kit (EMDK) from Motorola facilitates an easy development of applications.

256 MB RAM integrated in the device and 1 GB flash memory are available for storing user-defined applications and data. For larger applications and volumes of data, BARTEC offers micro SD memory cards.

03-0330-0619-04/2014-BAT-309541/1

The MC 959x[ex]-NI Mobile Computer recognises the following bar codes with the 1D Standard Range Scan Engine or the 1D/2D Imager Engine:

1D-Codes:

Code 11	Interleaved 2 of 5
Code 39	MSI
Code 93	UPCA
Code 128	UPCE
Codabar	UPC/EAN supplementals
Coupon Code	Trioptic 39
Chinese 2 of 5	RSS-14
Discrete 2 of 5	RSS Expanded
EAN-8	RSS Limited
EAN-13	Webcode

2D codes: (only 1D/2D Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417
Canadian 4-state	microQR
Composite AB	Maxi Code
Composite C	QR Code
Chinese 2 of 5	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Explosion protection

Ex protection type

ATEX Ⓔx II 3G Ex ic IIC T6 Gc
Ⓔx II 3D Ex ic IIIC T90 °C Dc

Certification
EPS 13 ATEX 1 588 X

IECEx Ex ic IIC T6 Gc
Ex ic IIIC T90 °C Dc

Certification
IECEx EPS13.0028X

Technical data

Physical features

Dimensions (lenght x width x depth)
234 mm x 89 mm x 51 mm
9.2 inch x 3.5 inch x 2 inch

Weight (including battery)
623 g (approx. 22 oz.)

Display
3.7" VGA colour display (TFT) with 640 x 480 pixels

Touchscreen
analog-resistive touchscreen made of polycarbonate

Display backlighting
LED technology

Keyboard options modular
- alphanumeric keypad
- Alpha keypad
- numeric keypad (Phone)
- numeric keypad (Calculator)

Notifications
- Programmable LEDs
- Audio notifications
- Vibrator alert

Performance characteristics

CPU	Marvell PXA320 at 806 MHz
Operating system	Windows Mobile® 6.5 (Classic and Professional)

Memory
256 MB RAM/1 GB Flash
with the option of expansion with Micro SD card: up to 32 GB

User environment

Operating temperature
-20 °C to +50 °C
-4 °F to +122 °F

Storage temperature (at 95 % RH)
-40 °C to +70 °C
-40 °F to +158 °F

Protection class
IP 64

Air humidity
5 to 95 %, non-condensing

Light immunity
Readability

Incandescent lamps	4,844 lux
Sunlight	86,111 lux
Fluorescent lamps	4,844 lux

Battery

Capacity
Rechargeable lithium ion battery 4800 mAh at 3.7 V and state of charge and health indicators

Standby time
150 hours

Talk time
8 hours (minimum/suspend mode)

Voice and data communication over wireless WAN

WWAN wireless module GPS
option of GSM-HSDPA or CDMA-EVDO

Integrated stand-alone or assisted GPS (A-GPS) through SUPL; SiRFstarIII GSC3f/L chip set

03-0330-0619-04/2014-BAT-309541/2

Voice and data communication over wireless LAN

WLAN wireless module
Tri-mode IEEE® 802.11a/b/g

Supported data transmission rates
1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps

Operating channels

Channels 8 - 165	(5040 - 5825 MHz)
Channels 1 - 13	(2412 - 2472 MHz)
Channel 14	(2484 MHz) Japan only

The actual operating channels and frequencies depend on the applicable rules and certification authorities.

Security
WPA2, WEP (40 or 128 bits), TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP Ver. 2), TTLS (CHAP), TTLS-MD5, TTLS-PAP, PEAP-TLS, PEAP (MS-CHAPv2), AES LEAP, CCXv4 certification, FIPS-140-2 certification

Antenna
internal

Interactive Sensor Technology

Motion sensor
Three-axis accelerometer for motion-sensing applications for dynamic screen orientation, power monitoring and free-fall detection.

Data capture options

Available options
1D Laser scanner
1D/2D Imager
1D Laser scanner and camera
1D/2D Imager and camera

Colour camera

Resolution
3 megapixels

Illumination
Flash (user-controllable)

Lens
Autofocus

1D laser scanner (SE950)

Range on 100 % UPC-A
60 cm

Resolution
4 mm minimum width

Roll
± 35° from the vertical

Pitch angle
± 65° from normal

Skew tolerance
± 50° from normal

Ambient light immunity
107,640 lux

Scan rate
104 (± 12) scans/sec. (bi-directional)

Scan angle
47° ± 3° standard
35° ± 3° reduced

1D/2D Imager (SE4500SR)

Focal distance
From the centre of the scan window:
SR - 19 cm

Sensor resolution
752 x 480 pixels

Field of view

Horizontal	40°
Vertical	25°

Skew tolerance
± 60°

Pitch tolerance
± 60°

Roll tolerance
360°

Ambient light immunity
96,900 lux

Aiming LED (VLD)
655 ± 10 Nm lasers

Illumination element (LED)
625 ± 5 Nm LEDs (2 x)

Selection chart MC 9590[ex]-NI without WWAN

Data capture	Code no.	Version keypad	Code no.
SE950 1D Laser Scan Engine	A	52 keys, alphanumeric keypad	B
SE4500 1D/2D Imager	B	40 keys, Alpha keypad	C
SE950 1D Laser with camera	C	26 keys, numeric keypad (Phone)	D
SE4500 1D/2D Imager with camera	D	26 keys, numeric keypad (Calculator)	E

Complete order no. B7-A293-0 ☐ 0D/A ☐ 100000
MC 9590[ex]-NI without WWAN including Li-ion battery (1 pc.)
Please insert correct code.

Selection chart MC 9596[ex]-NI with GSM-HSDPA

Data capture	Code no.	Version keypad	Code no.
SE950 1D Laser Scan Engine	A	52 keys, alphanumeric keypad	B
SE4500 1D/2D Imager	B	40 keys, Alpha keypad	C
SE950 1D Laser with camera	C	26 keys, numeric keypad (Phone)	D
SE4500 1D/2D Imager with camera	D	26 keys, numeric keypad (Calculator)	E

Complete order no. B7-A293-6 ☐ AE/A ☐ 100000
MC 9596[ex]-NI with GSM-HSDPA including Li-ion battery (1 pc.)
Please insert correct code.

Selection chart MC 9598[ex]-NI with CDMA-EVDO

Data capture	Code no.	CDMA-EVDO	Code no.	Version keypad	Code no.
SE950 1D Laser Scan Engine	A	Verizon	B	52 keys, alphanumeric keypad	B
SE4500 1D/2D Imager	B			40 keys, Alpha keypad	C
SE950 1D Laser with camera	C	Sprint	C	26 keys, numeric keypad (Phone)	D
SE4500 1D/2D Imager with camera	D			26 keys, numeric keypad (Calculator)	E

Complete order no. B7-A293-8 ☐ ☐ E/A ☐ 100000
MC 9598[ex]-NI with CDMA-EVDO including lithium ion battery (1 battery).Please insert correct code.

03-0330-0619-04/2014-BAT-309541/4

RFID Snap-on Module

for Mobile Computer MC 959x[ex]-NI series

Features

- Innovative addition to the MC 959x[ex]-NI
- Power is supplied by the MC 959x[ex]-NI

Description

The module can be simply plugged onto the cradle contacts of the MC 959x[ex]-NI. The scan trigger is ergonomically mounted on the mobile computer, permitting simple recording of various RFID standards in the frequency ranges LF, HF or UHF with single-handed operation.

No extra power supply is required for the RFID module. An SDK is available for application development using the programming languages C# as Open Source Code, including demo.

Explosion protection

Test certification component
EPS 13 ATEX 1 588 X
IECEx EPS 13.0028X
UL File E321557 Vol. 1 Sec. 2

Ex protection type Ex ic
Class I Div. 2 Groups A, B, C and D
Class II Div. 2 Groups F and G
Class III

Temperature class
T5

Supported RFID standards	
LF Reader: Type B7-A2Z0-0020	
HITAG S256	ISO 117845
HITAG S 2 kb	ISO Animal
HITAG 1	ISO 11784/5
HITAG 2	EM 4450/4550
Q5	EM4xxx (UNIQUE)
ATA5567	HDX-RO
EM4305	HDX (Multipage)
BDE	FDX-B
HF Reader: Type B7-A2Z0-0021	
ISO 14443 (e. g. Mifare Ultralight)	
ISO 15693	
UHF EU and US Reader: Type B7-A2Z0-0022, B7-A2Z0-0023	
EPC Gen 2	

Technical data

Dimensions (length x width x height)
80 mm x 61 mm x 31 mm
3.15 inch x 2.4 inch x 1.22 inch

Weight
approx. 75 g
approx. 0.165 oz

Ambient temperature
-20 °C to +50 °C (-4 °F to +122 °F)

Storage temperature
-40 °C to +70 °C (-40 °F to +158 °F)

Air humidity
5 % to 95 % (non-condensing)

Protection class
IP 54 (snap-on)

Antenna
internal

- **LF module**
  Reading range up to approx. 5 cm
  (up to approx. 1.9 inch)

  Frequency range
  125/134 KHz

- **HF module**
  Reading range HF ISO 15693:
  up to approx. 6 cm (up to approx. 2.36 inch)

  Reading range HF ISO 14443:
  up to approx. 6 cm (up to approx. 2.36 inch)

  Frequency range
  13.56 MHz

- **UHF module**
  Reading range up to approx. 30 cm
  (up to approx. 11.8 inch)

  Frequency range
  865.6 to 867.5 MHz (Europe)
  902 to 928 MHz (North America)

Application development
Software Development Kit (SDK) for programming languages C# for the Windows Mobile operating system

Selection chart

RFID Reader	Code no.
LF	**0**
HF	**1**
UHF North America	**2**
UHF EU	**3**

Complete order no. B7-A2Z0-002 ☐
Please insert correct code.

Technical data subject to change without notice.

RFID Snap-on Module

for Mobile Computer MC 959x-Series

Features

- Innovative addition to the MC 959x
- Power is supplied by the MC 959x

Description

The module can be simply plugged onto the cradle contacts of the MC 959x. The scan trigger is ergonomically mounted on the mobile computer, permitting simple recording of various RFID standards in the frequency ranges LF, HF or UHF with single-handed operation.

No extra power supply is required for the RFID module. An SDK is available for application development using the programming languages C# as Open Source Code, including demo.

Technical data

Marking

CE cULus LISTED

Certification UL
UL File E233150 Vol. X1 Sec. 1

Low Voltage Directive
2006/95/CE

Dimensions (length x width x height)
80 mm x 61 mm x 31 mm
3.15 inch x 2.4 inch x 1.22 inch

Weight
approx. 75 g
approx. 0.165 g (approx. 2.65 oz)

Ambient temperature
-20 °C to +50 °C (-4 °F to +122 °F)

Storage temperature
-40 °C to +70 °C (-40 °F to +158 °F)

Air humidity
5 % to 95 % (non-condensing)

Supported RFID standards	
LF Reader: Type G7-A0Z0-0001	
HITAG S256	ISO 117845
HITAG S 2 kb	ISO Animal
HITAG 1	ISO 11784/5
HITAG 2	EM 4450/4550
Q5	EM4xxx (UNIQUE)
ATA5567	HDX-RO
EM4305	HDX (Multipage)
BDE	FDX-B
HF Reader: Type G7-A0Z0-0002	
ISO 14443 (e. g. Mifare Ultralight)	
ISO 15693	
UHF EU and US Reader: Type G7-A0Z0-0003, G7-A0Z0-0004	
EPC Gen 2	

Protection class
IP 54 (mounted)

Antenna
internal

- **LF module**
  Reading range up to approx. 5 cm
  (up to approx. 1.9 inch)

  Frequency range
  125/134 KHz

- **HF module**
  Reading range HF ISO 15693:
  up to approx. 6 cm (up to approx. 2.36 inch)

  Reading range HF ISO 14443:
  up to approx. 6 cm (up to approx. 2.36 inch)

  Frequency range
  13.56 MHz

- **UHF module**
  Reading range up to approx. 30 cm
  (up to approx. 11.8 inch)

  Frequency range
  865.6 to 867.5 MHz (Europe)
  902 to 928 MHz (North America)

Application development
Software Development Kit (SDK) for programming languages C# for the Windows Mobile operating system

Selection chart

RFID Reader	Code no.
LF	**1**
HF	**2**
UHF EU	**3**
UHF North America	**4**

Complete order no. G7-A0Z0-000 ☐

Please insert correct code.
Technical data subject to change without notice.

Selection chart Accessories for MC 959x[ex] series

Illustration	Description	Order no.
	**Spare battery for MC 959x[ex]** for ATEX Zone 2 and Zone 22 UL Class I, II, III Division 2 Groups A, B, C, D, F and G 3.7 V/4800 mAh, Li-ion battery	**B7-A2Z0-0011**
	**Trigger handle** for ATEX Zone 2 and Zone 22 UL Class I, II, III Division 2 Groups A, B, C, D, F and G Operation temperature -15 °C to +50 °C - Simple installation - Interlock mechanism locks the handle in place and enables dismantling without tools - Camera of the MC 959x[ex]-NI can still be used with mounted handle - MC 959x[ex]-NI can be used in Motorola Docking stations with mounted handle - Handle trigger is controlled using a robust mechanism	**B7-A2Z0-0024**
	**Special tool for the battery latch release** for ATEX Zone 2 and Zone 22	**03-5510-0008**
	**Expanded Memory** certified ATP Industrial Grade Micro SD Card with 1 GB 2 GB 4 GB 8 GB	 **17-C1Z0-0007** **17-C1Z0-0008** **17-28BE-F006/000A** **17-28BE-F006/000B**
	**Keypad with overlay (green)** for ATEX Zone 2 and Zone 22 UL Class I, II, III Division 2 Groups A, B, C, D, F and G - keypad with 52 keys, alphanumeric - keypad with 40 keys, alpha - keypad with 26 keys, numeric, telephony - keypad with 26 keys, numeric, calculator	 **05-0080-0498** **05-0080-0497** **05-0080-0496** **05-0080-0495**
	Leather Holster for MC 959x[ex]-NI - without keypad protection foil with 2 ears to hang it on a belt or a shoulder belt - with keypad protection foil with 2 ears to hang it on a belt or a shoulder belt	 **03-9809-0028** **03-9809-0029**
	**Protective display foil** 5 pcs per package	**B7-A2Z0-0017**

Selection chart Accessories for MC 959x[ex] series

Illustration	Description	Order no.
	**Single Slot USB Cradle Set** for non-hazardous area Docking station for communication with PC - for charging the unit - for data synchronization - for software installation - including power supply Required components please ordered separately:	**03-9915-0009**
	- Micro USB-Active Sync cable Cradle <-> PC - AC line cord, 3 wired, according to operating conditions Version EU Version US	**03-9919-0013** **03-9609-0011** **03-9609-0021**
	**Single Slot Charging Station** for non-hazardous area no communication with the PC possible - including power supply Required components please ordered separately: - AC line cord, 3 wired, according to operating conditions Version EU Version US	**03-9915-0011** **03-9609-0011** **03-9609-0021**
	**4-Slot Charging Station** for non-hazardous area - for spare battery - without accessories - for charging of the MC 959x[ex] battery Required components please ordered separately: - Power supply for 4-slot charger - AC line cord, 3 wired, according to operating conditions Version EU Version US	**03-9915-0006** **03-9911-0015** **03-9609-0011** **03-9609-0021**
	**4-Slot Ethernet Cradle** for non-hazardous area - including 4-slot Ethernet Cradle Required components please ordered separately: - Power supply - Connection cable from power supply to cradle - Mounting bracketfor desk mounting - Mounting bracketfor for wall mounting - AC line cord, 3 wired, according to operating conditions Version EU Version US	**03-9915-0016** **03-9911-0021** **03-9919-0010** **03-9869-0016** **03-9669-0015** **03-9609-0011** **03-9609-0021**
	**Wall Mounting Bracket** - for 4-slot charger/4-slot Ethernet Cradle	 **03-9869-0015**
	**Desk Mounting Bracket** - for 4-slot charger	 **03-9869-0016**
	Spare Stylus 3 pcs per package	**03-9849-0059**
	Spare Hand Strap 5 pcs per package	**03-9849-0060**

03-0330-0646-04/2014-BAT-317013/2

MC 75Ax^{ex}-NI

for ATEX/IECEx Zone 2 and 22

Features

- Option of WWAN-GSM-HSDPA/ CDMA-EVDO
- Optional GPS (only devices with GSM HSDPA or CDMA EVDO)
- WLAN radio standard IEEE 802.11 a/b/g Tri-mode radio standard
- Comprehensive voice-over IP support
- Various barcode applications with different scan engines
- Option of a 3.2 megapixels camera
- Easy battery changing
- Expanded storage capacity due to replaceable Micro SD card
- Various keypad variants
- Compatibility with the MC75Ax from Motorola

Description

The MC 75Ax^{ex}-NI Mobile Computer is a 3.5G Worldwide Enterprise Digital Assistant (EDA) device and was specially modified by BARTEC for use in ATEX Zone 2 and Zone 22 hazardous areas. This means that the extensive communication options which are already standard in other areas are available to the user in hazardous areas also.

Its ergonomic design and easy operation make it an ideal support in attaining fast data availability in enterprise processes. A keypad is available in various variant versions for manual data capture.

Other available data capture options are an integrated 1D or 1D/2D Scan Engine for capturing bar codes and an optional 3.2 megapixel camera.

The ergonomically mounted scan triggers on the MC 75Ax^{ex}-NI allow data to be captured easily in one-hand operation. Several technologies are available for data communication with other systems and company divisions.

- Wireless WAN (WWAN)
- Wireless LAN (WLAN)
- Wireless PAN (WPAN) (Bluetooth)
- IrDA connection

These modules, which are integrated in the device, allow a seamless transmission of voice and data and are easy to integrate into the company's network.

Further advantages when using it are its robust construction, easy-to-read 3.5" VGA colour display with touch technology and a high-performance lithium ion battery.

In the MC 75Ax^{ex}-NI, the PXA320 processor with 806 MHz ensures fast process execution and the Microsoft® Windows Mobile® 6.5 operating system in conjunction with the Enterprise Mobility Developer Kit (EMDK) from Motorola facilitates an easy development of applications.

256 MB RAM integrated in the device and 1 GB flash memory are available for storing user-defined applications and data. For larger applications and volumes of data, BARTEC offers micro SD memory cards.

Market	Applications	Users
Automobile industry suppliers of paintwork, for paint shops, etc. **Food and beverages** suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** suppliers of the individual components required for the production of e. g. medication	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

03-0330-0616/A-07/2013-BAT-309267/1

The MC 75Ax[ex]-NI Mobile Computer recognises the following bar codes with the 1D Standard Range Scan Engine or the 1D-/2D Imager Engine:

1D codes:

Code 11	UPCA
Code 39	UPCE
Code 93	UPC/EAN supplementals
Code 128	Trioptic 39
Codabar	Webcode
Coupon Code	GS1 Databar
Chinese 2 of 5	GS1 Databar Expanded
Discrete 2 of 5	GS1 Databar Expanded Stacked
EAN-8	GS1 Databar Stacked
EAN-13	GS1 Databar Stacked Omni
Interleaved 2 of 5	GS1 Databar Limited
MSI	GS1 Databar Trumcated

2D codes: (only 1D-/2D Imager Engine)

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417
Canadian 4-state	PDF 417
Composite AB	Maxi Code
Composite C	QR Code
Chinese 2 of 5	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Explosion protection

Ex protection type

ATEX II 3G Ex ic IIC T6 Gc
II 3D Ex ic IIIC T80 °C Dc

Certification
EPS 12 ATEX 1 481 X

IECEx Ex ic IIC T6 Gc
Ex ic IIIC T80 °C Dc

Certification
IECEx EPS 12.0029 X

Technical data

Physical features

Dimensions (height x width x depth)
WWAN: 7 inch x 3.3 inch x 1.7 inch
178 mm x 84 mm x 44 mm
WLAN: 6 inch x 3.3 inch x 1.7 inch
152 mm x 84 mm x 44 mm

Weight (including 1.5 x battery)
WWAN version:
approx. 483 g (approx. 17.0 oz.)
WLAN version:
approx. 398 g (approx. 14.0 oz.)

Display
transflective colour 3.5" VGA display
480 x 640 pixels

Touchscreen
glass analog-resistive touchscreen

Backlight
LED technology

Battery (1.5 x)
Rechargeable lithium ion battery
(3.7 V, 3600 mAh, smart battery management)

optional: Battery (2.5 x)
(3.7 V, 4800 mAh, smart battery management)

Backup battery
NiMH battery (rechargeable),
15 mAh, 2.4 V (not accessible from outside)

Network connections
Ethernet (via charging station);
Full-speed USB, host or client

Signalling
Vibrator and LED

Keypad variants
Numeric, QWERTY

Audio
VoWWAN; VoWLAN;
TEAM express-compatible; Support for wired and wireless (Bluetooth) headsets;
Headset, handset and speaker modes

Interactive Sensor Technology
Three-axis accelerometer for motion-sensing applications for dynamic screen orientation, power monitoring and free-fall detection.

Performance characteristics

CPU
PXA320 processor with 806 MHz

Operating system
Microsoft® Windows Mobile® 6.5
(MC 75A0[ex]-NI Classic,
MC 75A6[ex]-NI Professional,
MC 75A8[ex]-NI Professional)

Memory
256 MB RAM;1 GB Flash

Extension slot
Micro SD slot with SDHC support (up to 32 GB)

Interface
RS232, USB 1.1

03-0330-0616/A-07/2013-BAT-309267/2

User environment

Operating temperature
-10 °C to +50 °C (+14 °F to +122 °F)

Storage temperature
-40 °C to +70 °C (without battery)
-40 °F to +158 °F

Air humidity
5 % to 95 %, non-condensing

Protection class
IP 54

IrDA
Infrared port for connection to printers and other devices

Light immunity (readability)

Incandescent lamps	4,844 lux
Sunlight	86,111 lux
Fluorescent lamps	4,844 lux

Battery performance

Standby time
150 hours

Talk time
5 hours

Voice and data communication over wireless WAN

WWAN wireless modul GPS
option of GSM-HSDPA or CDMA-EVDO

Integrated stand-alone or assisted GPS (A-GPS) through SUPL; SiRFstarIII GSC3f/L chip set

over wireless LAN

WLAN wireless module
Tri-mode IEEE® 802.11a/b/g

Supported data transmission rates
1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps

Operating channels

Channels 8 - 165	(5040 - 5825 MHz)
Channels 1 - 13	(2412 - 2472 MHz)
Channel 14	(2484 MHz) Japan only

The actual operating channels and frequencies depend on the applicable rules and certification authorities.

Security
WPA2, WEP (40 or 128 bits), TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP Ver. 2), TTLS (CHAP), TTLS-MD5, TTLS-PAP, PEAP-TLS, PEAP (MS-CHAPv2), AES LEAP, CCXv4 certification, FIPS-140-2 certification

Antenna
internal for LAN, external for WAN

Voice communication
Voice-over IP integrated and ready (P2P, PBX, PTT),
WLAN to IEEE 802.11a/b/g with Wi-Fi™ certification and DSSS

over wireless PAN

Bluetooth
Class II, Version 2.1 with EDR (Enhanced Data Rate); integrated antenna

Data capture options

Scanning
1D Laser Scanner; 1D/2D Imager; autofocus flash-enabled colour camera (3.2-megapixels) and decoding software for bar codes

Four available options
1D Laser Scanner
1D/2D Imager
1D Laser Scanner and camera
1D/2D Imager and camera

Colour camera

Resolution
3.2 megapixels

Illumination
Flash (user-controllable)

Lens
Autofocus

1D Laser Scanner (SE950)

Range on 100 % UPC-A
60 cm

Resolution
4 mil minimum width

Roll
± 35° from the vertical

Pitch angle
± 65° from normal

Skew tolerance
± 50° from normal

Ambient light immunity
107,644 lux

Scan rate
104 (±12) scans/sec. (bi-directional)

Scan angle
47° ± 3° standard
35° ± 3° reduced

1D/2D Imager (SE4500SR)

Focal distance
From the centre of the scan window:
SR - 19 cm

Sensor resolution
752 x 480 pixels, H x V (grayscale)

Field of view

Horizontal	40°
Vertical	25°

Skew tolerance
± 60°

Pitch tolerance
± 60°

Roll tolerance
360°

Ambient light immunity
96,900 lux

Aiming LED (VLD)
655 ± 10 nm laser

Illumination element (LED)
625 ± 5 Nm LEDs (2x)

Delivery includes
1 x MC 75Ax^ex-NI
1 x battery 1.5 x
1 x battery door
1 x Stylus
1 x User Manual

Order no. B7-A273-☐☐☐S/W☐RA9W00
MC 75Ax^ex-NI including Li-ion battery 1.5 x (1 pc.) and battery door.
The complete order number can be requested by your local BARTEC sales representative.

03-0330-0616/A-07/2013-BAT-309267/3

MC 75Ax^{ex}-NI HF

for ATEX/IECEx Zone 2 and 22

Features

- RFID/HF 13.56 MHz
- With WWAN-GSM-HSDPA
- GPS
- WLAN radio standard IEEE 802.11 a/b/g Tri-mode radio standard
- Comprehensive voice-over IP support
- With a 3.2 megapixels camera
- Easy battery changing
- Expanded storage capacity due to replaceable Micro SD card
- Compatibility with the MC75A6 HF from Motorola

Description

The MC 75Ax^{ex}-NI HF Mobile Computer is a 3.5-G Worldwide Enterprise Digital Assistant (EDA device with an integrated RFID/HF reader. BARTEC has modified the device specially for use in hazardous (potentially explosive) areas in ATEX Zone 2 and 22. This means that the extensive communication options which are already standard in other areas are available to the user in hazardous areas also.

Its ergonomic design and easy operation make it an ideal support in attaining fast data availability in enterprise processes. A keypad is available for manual data capture.

The integrated RFID/HF reader and the integrated 1D/2D scan engine for capturing bar codes and a 3.2-megapixel camera are available as further means of data acquisition.

The ergonomically mounted scan triggers on the MC 75Ax^{ex}-NI HF allow data to be captured easily in one-hand operation. Several technologies are available for data communication with other systems and company divisions.

- Wireless WAN (WWAN)
- Wireless LAN (WLAN)
- Wireless PAN (WPAN) (Bluetooth)
- IrDA connection

These modules, which are integrated in the device, allow a seamless transmission of voice and data and are easy to integrate into the company's network.

Further advantages when using it are its robust construction, easy-to-read 3.5" VGA colour display with touch technology and a high-performance lithium ion battery.

In the MC 75Ax^{ex}-NI HF, the PXA320 processor with 806 MHz ensures fast process execution and the Microsoft® Windows Mobile® 6.5 operating system in conjunction with the Enterprise Mobility Developer Kit (EMDK) from Motorola facilitates an easy development of applications.

256 MB RAM integrated in the device and 1 GB flash memory are available for storing user-defined applications and data. For larger applications and volumes of data, BARTEC offers micro SD memory cards.

Market	Applications	Users
Automobile industry Automobile industry (suppliers of paintwork, for paint shops, etc.) **Food and beverages** Suppliers of aromatic substances, etc. **Petrochemicals** from production through further processing to delivery **Pharmaceuticals** (suppliers of the individual components required for the production of e. g. medication)	Material flow monitoring Production control Supplier chain management Incoming/outgoing goods, inventory management Safety tests Spare parts tracking Maintenance/repair work Workshop communication Conformity verification Task allocation	**Dispatch, receiving and stock management departments** Personnel who have been instructed on the handling of potentially explosive substances **Maintenance and repair** Personnel who have been instructed on work in potentially explosive substances. **Production area** Personnel who have been instructed on the handling of potentially explosive substances.

03-0330-0627-07/2013-BAT-314148/1

The MC 75Ax^{ex} HF-NI Mobile Computer recognises the following bar codes with the 1D-/2D Imager Engine:

1D-Codes:

Code 11	UPCA
Code 39	UPCE
Code 93	UPC/EAN supplementals
Code 128	Trioptic 39
Codabar	Webcode
Coupon Code	GS1 Databar
Chinese 2 of 5	GS1 Databar Expanded
Discrete 2 of 5	GS1 Databar Expanded Stacked
EAN-8	GS1 Databar Stacked
EAN-13	GS1 Databar Stacked Omni
Interleaved 2 of 5	GS1 Databar Limited
MSI	GS1 Databar Trumcated

2D-Codes:

Aztec	(Macro) Micro PDF-417
Australian 4-state	Micro PDF-417
Canadian 4-state	PDF 417
Composite AB	Maxi Code
Composite C	QR Code
Chinese 2 of 5	TLC39
Data Matrix	UK 4-state
Dutch Kix	US Planet
Japanese 4-state	US Postnet
Macro PDF-417	USPS 4-state (US4CB)

Explosion protection

Ex protection type

ATEX II 3G Ex ic IIC T6 Gc
II 3D Ex ic IIIC T80 °C Dc

Certification
EPS 12 ATEX 1 481 X

IECEx Ex ic IIC T6 Gc
Ex ic IIIC T80 °C Dc

Certification
IECEx EPS 12.0029 X

Technical data

Physical features

Dimensions (height x width x depth)
WWAN: 7 inch x 3.3 inch x 1.9 inch
178 mm x 84 mm x 48 mm

Weight (including 2.5 x battery)
WWAN version: approx. 467 g (approx. 16.5 oz.)

Display
transflective colour 3.5" VGA display
(480 x 640 pixels)

Touchscreen
glass analog-resistive touchscreen

Display backlight
LED technology

Battery (2.5 x)
(3.7 V, 4800 mAh, smart battery management)

Backup battery
NiMH battery (rechargeable),
15 mAh, 2.4 V (not accessible from outside)

Network connections
Ethernet (via charging station);
Full-speed USB, host or client

Notification
Vibrator and LED

Keypad variants
Numeric

Audio
VoWWAN; VoWLAN;
TEAM express-compatible; Support for wired and wireless (Bluetooth) headsets;
Headset, handset and speaker modes

Interactive Sensor Technology
Three-axis accelerometer for motion-sensing applications for dynamic screen orientation, power monitoring and free-fall detection.

Performance characteristics

CPU
PXA320 processor with 806 MHz

Operating system
Microsoft® Windows Mobile® 6.5 (Professional)

Memory
256 MB RAM; 1 GB Flash

Extension slot
Micro SD slot with SDHC support (up to 32 GB)

Interface
RS232, USB 1.1

User environment

Operating temperature
-10 °C to +50 °C (+14 °F to +122 °F)

Storage temperature
-40 °C to +70 °C (without battery)
-40 °F to +158 °F

Air humidity
5 % to 95 %, non-condensing

Protection class
IP 54

IrDA
Infrared port for connection to printers and other devices

03-0330-0627-07/2013-BAT-314148/2

IrDA
Infrared port for connection to printers and other devices

Light immunity (readability)

Incandescent lamps	4,844 lux
Sunlight	86,111 lux
Fluorescent lamps	4,844 lux

Battery performance

Standby time
150 hours

Talk time
5 hours

Voice and data communication over wireless WAN

WWAN wireless modul GPS
with GSM-HSDPA

Integrated stand-alone or assisted GPS (A-GPS) through SUPL; SiRFstarIII GSC3f/L chip set

Voice and data communication over wireless LAN

WLAN wireless module
Tri-mode IEEE® 802.11a/b/g

Supported data transmission rates
1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48 and 54 Mbps

Operating channels

Channels 8 - 165	(5040 - 5825 MHz)
Channels 1 - 13	(2412 - 2472 MHz)
Channel 14	(2484 MHz) Japan only

The actual operating channels and frequencies depend on the applicable rules and certification authorities.

Security
WPA2, WEP (40 or 128 bits), TKIP, TLS, TTLS (MS-CHAP), TTLS (MS-CHAP Ver. 2), TTLS (CHAP), TTLS-MD5, TTLS-PAP, PEAP-TLS, PEAP (MS-CHAPv2), AES LEAP, CCXv4 certification, FIPS-140-2 certification

Antenna
internal for LAN, external for WAN

Voice communication
Voice-over IP integrated and ready (P2P, PBX, PTT), WLAN to IEEE 802.11a/b/g with Wi-Fi™ certification and DSSS

Voice and data communication over wireless PAN

Bluetooth
Class II, Version 2.1 with EDR (Enhanced Data Rate); integrated antenna

Data capture options

Scanning
1D/2D Imager; autofocus flash-enabled colour camera (3.2-megapixels) and decoding software for bar codes

Colour camera

Resolution
3.2 megapixels

Illumination
Flash (user-controllable)

Lens
Autofocus

1D/2D Imager (SE4500SR)

Focal distance
From the centre of the scan window:
SR - 19 cm

Sensor resolution
752 x 480 pixels, H x V (grey scale)

Field of view

Horizontal	40°
Vertical	25°

Skew tolerance
± 60°

Pitch tolerance
± 60°

Roll tolerance
360°

Ambient light immunity
96,900 lux

Aiming LED (VLD)
655 ± 10 nm laser

Illumination element (LED)
625 ± 5 Nm LEDs (2 x)

RFID HF Specifications

Frequency
13.56 MHz

Reading range
0 to 5 cm
0 to 1.96 inch

Supported Standards
ISO 14443-A: MIFARE™ (Classic, Ultra Light, DESFire)

ISO 14443-B Calypso® (GTML, GTML2, CD21, CD Light, CDS3, CD97, CD97BX, TanGO, Celego-Citi, CT2000) ASK CT256 and CTS512, STMicroelectronics SRI FeliCa®

ISO 15693: NXP I. Code SLI, TI Tag-it

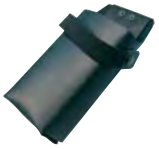
Order no.
B7-A273-64CS/WRRAAR00
MC 75Ax^ex-NI HF
with GSM HSDPA (WWAN)
incl. lithium ion battery 2.5 x (1 battery).

03-0330-0627-07/2013-BAT-314148/3

Selection chart Accessories for the MC 75Axex NI Series

Illustrations	Description	Order no.
	**Spare battery 1.5 x for MC 75Axex** for ATEX Zone 2 und Zone 22 UL Class I, II, III Division 2 Groups A, B, C, D, F and G 3.7 V/3600 mAh, lithium ion battery	**B7-A2Z0-0007**
	Spare battery 2.5 x for MC 75Axex for ATEX Zone 2 and Zone 22 UL Class I, II, III Division 2 Groups A, B, C, D, F and G 3.7 V/4800 mAh, lithium ion battery	**B7-A2Z0-0008**
	**Battery cover 1.5 x** for ATEX Zone 2 and Zone 22	**03-9860-0082**
	Battery cover 2.5 x for ATEX Zone 2 and Zone 22	**03-9860-0083**
	Screwdriver Torx T10 for battery cover for ATEX Zone 2/22	**03-5520-0034**
	**Addition of a memory card** Recommended ATP Industrial Grade Micro SD-card with 1 GB 2 GB 4 GB 8 GB	 **17-C1Z0-0007** **17-C1Z0-0008** **17-28BE-F006/000A** **17-28BE-F006/000B**
	**Display protection film** 5 units	**B7-A2Z0-0016**
	**Single Slot USB cradle set** for a non-potentially explosive atmosphere Docking-Station to communicate with the PC including power pack - for charging a device - for data synchronisation - for installing software	**03-9915-0015**
	Micro USB-Active Sync cable cradle <-> PC **AC line cord** - 3-core - EU **AC line cord** - 3-core - US	**03-9919-0014** **03-9609-0011** **03-9609-0021**
	**4-fold charging station** for a non-potentially explosive atmosphere including power pack - no communication with the PC possible - for charging a device	**03-9915-0014**
	AC line cord - 3-core - EU **AC-line cord** - 3-core - US	**03-9609-0011** **03-9609-0021**

Selection chart Accessories for the MC 75Ax^ex NI Series

Illustrations	Description	Order no.
	**4-fold battery charging station set (Toaster)** for a non-potentially explosive atmosphere Including power pack, DC connection cable and battery adapter for charging the MC 75Ax^ex battery	**03-9915-0012**
	AC line cord - 3-core - EU	**03-9609-0011**
	AC line cord - 3-core - US	**03-9609-0021**
	**Holster made from leather** with phone holder button	**03-9809-0015**
	plastic clip for phone holder button	**03-9809-0017**
	belt loop with clip for phone holder button	**03-9809-0016**
	**Spare stylus** 3 units per pack	**03-9849-0061**
	Access Point for a potentially explosive atmosphere customised versions available on request	**on request**
	Voltage supply - PoE (Power over Ethernet) or 230 V - internal or external antenna - customized The precise number of access points required can only be determined through radio measurement.	

Hand-held scanner BCS 160ex

for 1D and PDF barcodes

Features

- Insensitive to direct sunlight (100 000 lux)
- High level of impact resistance
- Wide range of decoding capabilities
- All standard 1D and PDF barcodes
- 500 scans per second
- RS232/RS422 or USB interface via power pack
- Good-read feedback with signal LED, acoustic signal and vibration

Description

The sturdy wired Hand-held scanner BCS 160ex offers the highly developed ergonomic and functional features required in industrial applications.

The scan line is wider than in conventional laser scanners and therefore easier to see. This makes aiming at the barcode much easier – even on hard-to-access objects. Its high scanning and decoding frequency of 500 Hz enables easy scanning of a large number of barcodes in quick succession.

The BCS 160ex has a robust enclosure that can withstand use even in the toughest conditions. Even dropping it onto the ground several times from a height of 2 m will not damage this scanner.

Design

The BCS 160ex hand-held scanner with integrated decoder is suitable for a plug-in connection to the power pack. The power pack is installed directly in the hazardous area. It contains a module for the intrinsically safe supply (barrier) for the hand-held scanner and an isolator (evaluation barrier) for the data lines.

The data lines can be connected directly in hazardous areas to non-Ex systems, e.g. PCs, PLC or microprocessors. This applies to Zone 1, 2 and to Zone 21, 22.

Explosion protection

Ex protection type

Ex II 2G Ex ib IIC T4 Gb
-20 °C ≤ T_a ≤ +50 °C

Ex II 2D Ex ib IIIC T135 °C Db

Certification

IBExU 13 ATEX 1083

Technical data

Ambient temperature

-20 °C to +50 °C

Storage temperature

-30 °C to +70 °C

Code reading capabilities

all standard 1D barcodes,
PDF barcodes only with a PDF scan engine

Good-read feedback

LED signal, acoustic signal and vibration

Scan rate

500 scans per second

Light source

visible red light 630 nm

Reading distance

up to 80 cm (for 0.5 mm code)

Connection of scanner to the supply unit

can be plugged in using connection cable

RS232	maximum length	9.8 m
USB	maximum length	3.8 m

Supply unit to the host

RS232	maximum length	20 m
RS422	maximum length	1000 m
USB	maximum length	5 m

Weight

ca. 200 g without cable

Air humidity

5 % to 95 % (non-condensing)

Dimensions (height x width x depth)

104 mm x 76 mm x 185 mm

Protection class

IP 65

Operating voltage/power requirements

U = 4.9 V
supply via corresponding power pack.

Accessories for BCS 160ex

- power pack
- extension cable plug/socket 4.5 m or 6 m
- connection cable with 1.8 m or 3.8 m
- bracket for wall/desk-top installation

03-0330-0740-04/2014-BAT-353386/1

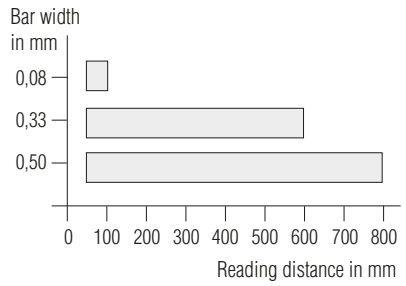
1D barcodes captured:

Codabar	Mainland China Postal Code
Code 11	
Code 32	MSI/Plessey
Code 39	UK/Plessey
Code 93	Standard and Industrial 2 of 5
Code 128	
German ITF Postal Code	Telepen
Interleaved & Matrix 2 of 5	UPC-A
Limited/Expanded GS1 DataBar	UPC-E
	UCC/EAN-128

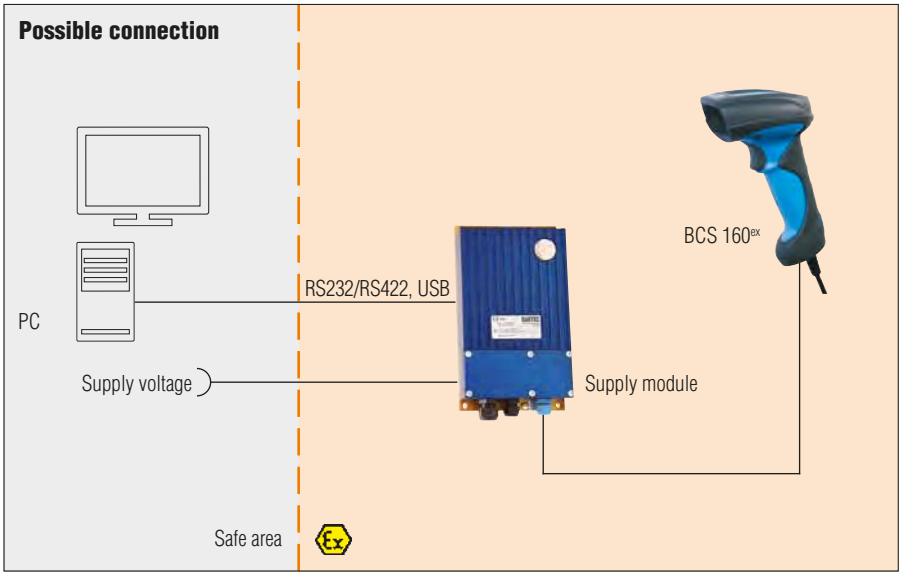
PDF barcodes captured:
(only with PDF Scan Engine)

Composite (type-dependent)
PDF417
MicroPDF417
Codablock F

Reading field



Possible connection



Selection chart

Barcode options	Code no.
1D Scan Engine	**R**
1D/PDF Scan Engine	**T**

Complete order no. 17-21BA-M31S/ ☐ 000
Hand-held scanner BCS 160ex without connection cable

Note: Further accessories must be ordered separately.
Please insert correct code. Technical data subject to change without notice.

03-0330-0740-04/2014-BAT-353386/2

Selection chart Accessories for Barcode Hand-held scanner BCS 160ex

Illustration	Description	Order no.
	**Connection cable** ■ RJ45 to BCS 160ex Barcode Hand-held scanner ■ assembled with 4 pin plug to power pack	
	- Scanner cable, RS232, plane, 1.8 m	**03-9828-0034**
	- Scanner cable, RS232, spiral, 3.8 m	**03-9828-0035**
	- Scanner cable, USB, plane, 1.8 m	**03-9828-0036**
	- Scanner cable, USB, spiral, 3.8 m	**03-9828-0037**
	Extension cable (plane) ■ 6.0 m ■ assembled with plug/coupling	**03-9828-0038**
	Extension cable (spirale cable) ■ 4.5 m ■ assembled with plug/coupling	**03-9828-0039**
	Connection cable to following systems: ■ POLARIS power modul ■ Power pack of BCS 302ex Type 17-21BB-0217 bis 17-21BB-0220 ■ Power pack of BCS 3800ex Type 17-21BB-1700 bis 17-21BB-1702 ■ RJ45 to BCS 160ex hand-held scanner ■ assembled with 4 pin plug to power pack	
	- Scanner cable, RS232, plane, 1.8 m	**17-21BE-M000/0000**
	- Scanner cable, RS232, spiral, 3.8 m	**17-21BE-M010/0000**
	Desk holder	**03-9849-0065**
	Tripod holder	**03-9849-0066**

03-0330-0799-04/2014-BAT-368580

Radio hand-held scanner BCS 160ex BT for 1D and PDF barcodes

Features

- Insensitive to direct sunlight (100 000 lux)
- High level of impact resistance
- Reads a wide range of barcodes
- All standard 1D and PDF barcodes
- 500 scans per second
- RS232/RS422 or USB interface via base station
- Good-read feedback with LED signal, acoustic signal and vibration
- Base station also usable in hazardous areas
- Connection of up to 7 BCS 160ex BT Radio hand-held scanners to one base station

Description

The sturdy radio hand-held scanner BCS 160ex BT from BARTEC offers all the highly developed ergonomic and functional features required in industrial applications.

The scan line is wider than in conventional laser scanners and therefore easier to see. This makes aiming at the barcode much easier – even on hard-to-access objects. Its high scanning and decoding frequency of 500 Hz enables easy scanning of a large number of barcodes in quick succession.

The BCS 160ex BT has a robust enclosure that can withstand use even in the toughest conditions. Even dropping onto the ground several times from a height of 2 m will not damage this scanner.

Design

The Radio hand-held scanner BCS 160ex BT with integrated decoder is designed for wireless data capture in real time and ensures a highly efficient operation in manufacturing halls, warehouses and other sites.

When capturing data, the user can move freely up to a radius of 30 m around the base station. The Radio hand-held scanner BCS 160ex BT is produced with the "intrinsically safe" type of protection and can be used directly in hazardous areas Zone 1, 2 and Zone 21, 22.

Base station

The base station is the charging station (cradle) and also serves as a radio receiver station and can be installed in either hazardous or non-hazardous areas. The RS232 or USB cable enables a connection to all standard hosts.

Explosion protection

Ex protection type

Ex II 2G Ex ib IIC T4 Gb
-20 °C ≤ T_a ≤ +50 °C

Ex II 2D Ex ib IIIC T135 °C Db

Certification

IBExU 13 ATEX 1084

Technical data

Ambient temperature

-20 °C to +50 °C

Storage temperature

-30 °C to +70 °C

Charging temperature

0 °C to +50 °C

Decoding capabilities

all standard 1D barcodes,
PDF barcodes only with PDF scan engine

Scan rate

ca. 500 scans per second

Good-read feedback

LED signal, acoustic signal and vibration

Light source

630 nm laser diode

Reading distance

up to 80 cm (for 0.5-mm code)

Connection of

Ex base station to the supply unit

RS232	maximum length	9.8 m
USB	maximum length	3.8 m

Non-Ex base station to the host

RS232	maximum length	9.8 m
USB	maximum length	3.8 m

Supply unit to the host

RS232	maximum length	20 m
RS422	maximum length	1000 m
USB	maximum length	5 m

Radio specifications

Radio range

max. 30 m (with unobstructed view)

Frequency

Bluetooth V2.1 EDR Class 2
2.4 to 2.4835 GHz (ISM Band)

Weight

approx. 266 g incl. battery

Air humidity

5 % to 95 % (non-condensing)

Dimensions (height x width x depth)

104 mm x 76 mm x 185 mm

Protection class

IP 65

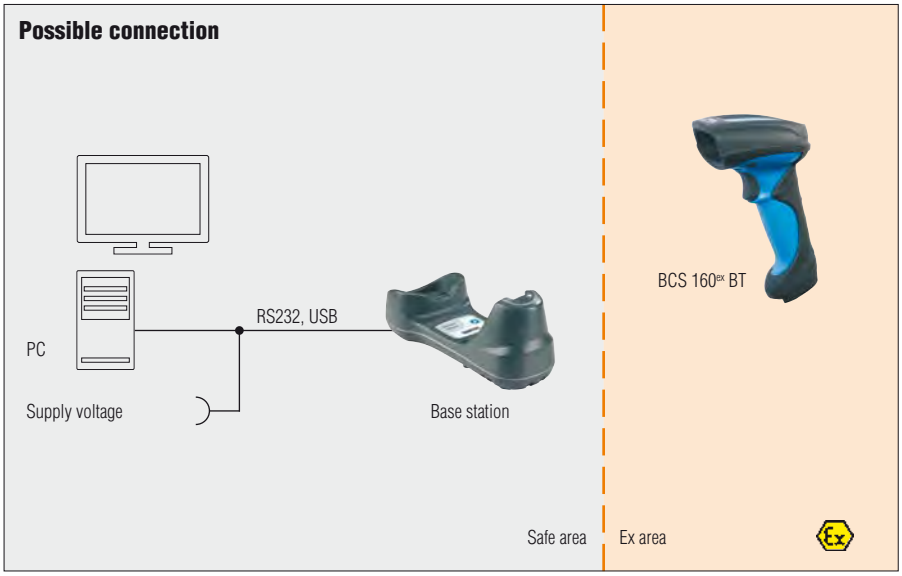
03-0330-0741-04/2014-BAT-353387/1

Operating voltage Bluetooth base station
4.9 V to 5.6 V
Supply to the Ex version via corresponding power pack

Battery
Lithium-ion battery 3.6 V, 2250 mAh
BARTEC Type: 17-21BE-M040/0000

Accessories for BCS 160BTex
- Base station with data transmission and charging function in Ex or non-Ex
- charging station
- Supply unit
- Connecting cable
- Bracket for wall/desk-top installation

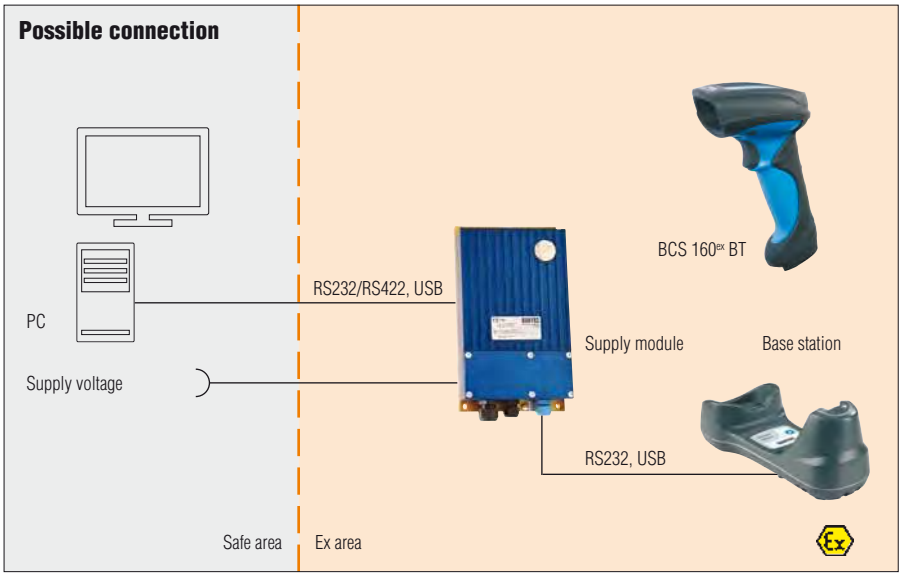
Possible connection



1D barcodes captured:

Codabar	Mainland China Postal Code
Code 11	
Code 32	MSI/Plessey
Code 39	UK/Plessey
Code 93	Standard and Industrial 2 of 5
Code 128	
German ITF Postal Code	Telepen
Interleaved & Matrix 2 of 5	UPC-A
Limited/Expanded GS1 DataBar	UPC-E
	UCC/EAN-128

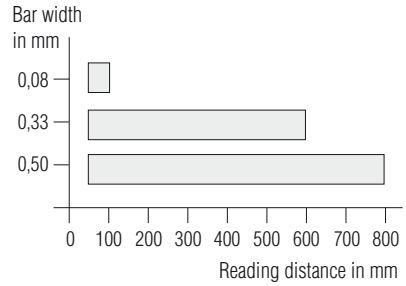
Possible connection



PDF barcodes captured:
(only with PDF Scan Engine)

Composite (type-dependent)
PDF417
MicroPDF417
Codablock F

Reading field



Selection chart

Barcode options	Code no.
1D Scan Engine	**R**
1D/PDF Scan Engine	**T**

Complete order no. 17-21BA-M32S/ ☐ 000
Radio hand-held scanner BCS 160ex BT
without connection cable or base station

Note: further accessories must be ordered separately.
Please insert correct code. Technical data subject to change without notice.

03-0330-0741-04/2014-BAT-353387/2

Selection chart Accessories for Barcode Bluetooth Hand-held scanner BCS 160ex BT

Illustration	Description	Order no.
	**Ex base station** for use in Ex area Zone 1/21 ■ RS232/RS422 or USB-interface ■ without connection cable ■ Installation in hazardous area ■ Power supply via power supply module Type 17-21BB-170x	**17-21BB-1707/0000**
	**Connection cable** ■ RJ45 to Ex-base station ■ assembled with 4 pin plug to power pack - Scanner cable, RS232, plane, 1.8 m - Scanner cable, RS232, spiral, 3.8 m - Scanner cable, USB, plane, 1.8 m - Scanner cable, USB, spiral, 3.8 m	 **03-9828-0044** **03-9828-0045** **03-9828-0046** **03-9828-0047**
	**Non Ex base station** ■ RS232 or USB-interface ■ without connection cable and power supply ■ Installation outside hazardous area	**03-9849-0064**
	Power supply for non Ex-base station and charging station ■ use only outside of hazardous area ■ Input: AC 90 to 250 V/Output: DC 5 V	**03-9911-0039**
	**Connection cable** ■ RJ45 to non Ex-base station ■ assembled for connection to RS232 or USB interface - Scanner cable, RS232, plane, 1.8 m - Scanner cable, RS232, spiral, 3.8 m - Scanner cable, USB, plane, 1.8 m - Scanner cable, USB, spiral, 3.8 m	 **03-9828-0040** **03-9828-0041** **03-9828-0042** **03-9828-0043**
	**Non Ex charging station** ■ Charging only outside of hazardous area ■ without power supply ■ for charging the BCS 160ex BT	**03-9849-0063**
	Power supply for non Ex-base station and charging station ■ use only outside of hazardous area ■ Input: AC 90 to 250 V/Output: DC 5 V	**03-9911-0039**

03-0330-0798-09/2014-BAT-368574/1

Selection chart Accessories for Barcode Bluetooth Hand-held scanner BCS 160ex BT

Illustration	Description	Order no.
	**Spare battery** - explosion proofed version - 3.6 V/2250 mAh Li-Ion	**17-21BE-M040/0000**
	**Connection cable** to following systems: - POLARIS power modul - Power pack of BCS 302ex Type 17-21BB-0217 bis 17-21BB-0220 - Power pack of BCS 3800ex Type 17-21BB-1700 bis 17-21BB-1702 - RJ45 to BCS 160ex hand-held scanner - assembled with 4 pin plug to power pack - Scanner cable, RS232, plane, 1.8 m	**17-21BE-M020/0000**
	- Scanner cable, RS232, plane, 1.8 m	**17-21BE-M030/0000**
	Desk holder	**03-9849-0065**
	Tripod holder	**03-9849-0066**

Supply Module for Hand-held Scanner

for RS232/RS422 and USB interfaces

Features

- No external isolators required
- Direct mounting in ATEX Zone 1 and 21

Description

The supply module ensures an intrinsically safe supply and it isolates the data line for the BCS 160ex.

Two variants of the supply module are available for the hazardous (potentially explosive) area:

- AC 100 V to AC 250 V
- DC 24 V

All variants are equipped with an RS232/RS422 interface or USB interface.

In the hazardous areas of Zone 1 and 21, the supply module is joined to the hand-held scanner by means of a plug-in connection.

Explosion protection

Ex protection type ATEX Zone 1 and 21
Ⓔx II 2G Ex e q [ib] IIC T4 Gb
Ⓔx II 2D Ex tb IIIC T135 °C Db

Certification
IBExU 09 ATEX 1091

Technical data

Ambient temperature
-25 °C to +60 °C

Storage temperature
-40 °C to +60 °C

Maximum range
Supply module to the host
RS232 interface
up to 20 m

RS422 interface
up to 1000 m

USB interface
up to 5 m

Nominal voltage/power consumption
AC 100 V to AC 250 V/approx. 3.3 W
DC 24 V/approx. 4.0 W

Input voltage range
AC 90 V to AC 253 V, 50 to 60 Hz
DC 18 V to 30 V

Maximum fault voltage
U_m = 253 V

Maximum output voltage
U_0 = 4.9 V

Maximum output current
I_0 = 440 mA

Maximum output power
P_0 = 1.20 W

Maximum external capacitance
C_0 = 113 µF

Maximum external inductance
L_0 = 0.1 mH

Dimensions (height x width x depth)
250 mm x 140 mm x 56 mm

Weight
approx. 3.1 kg

Enclosure material
Aluminium

Protection class (EN 60529)
IP 64

Selection chart Supply module for the BCS 160ex hand-held scanner

Version	Code no.
DC 24 V, RS232/RS422 interface	**3**
DC 24 V, USB interface	**4**
AC 100 V to 250 V, RS232/RS422 interface	**5**
AC 100 V to 250 V, USB interface	**6**

Complete order no. 17-21BB-170 ☐ /0000
Please insert correct code. Technical data subject to change without notice.

03-0330-0772-04/2014-BAT-358636

BARTEC

ANTARES
Remote I/O Solutions

BARTEC

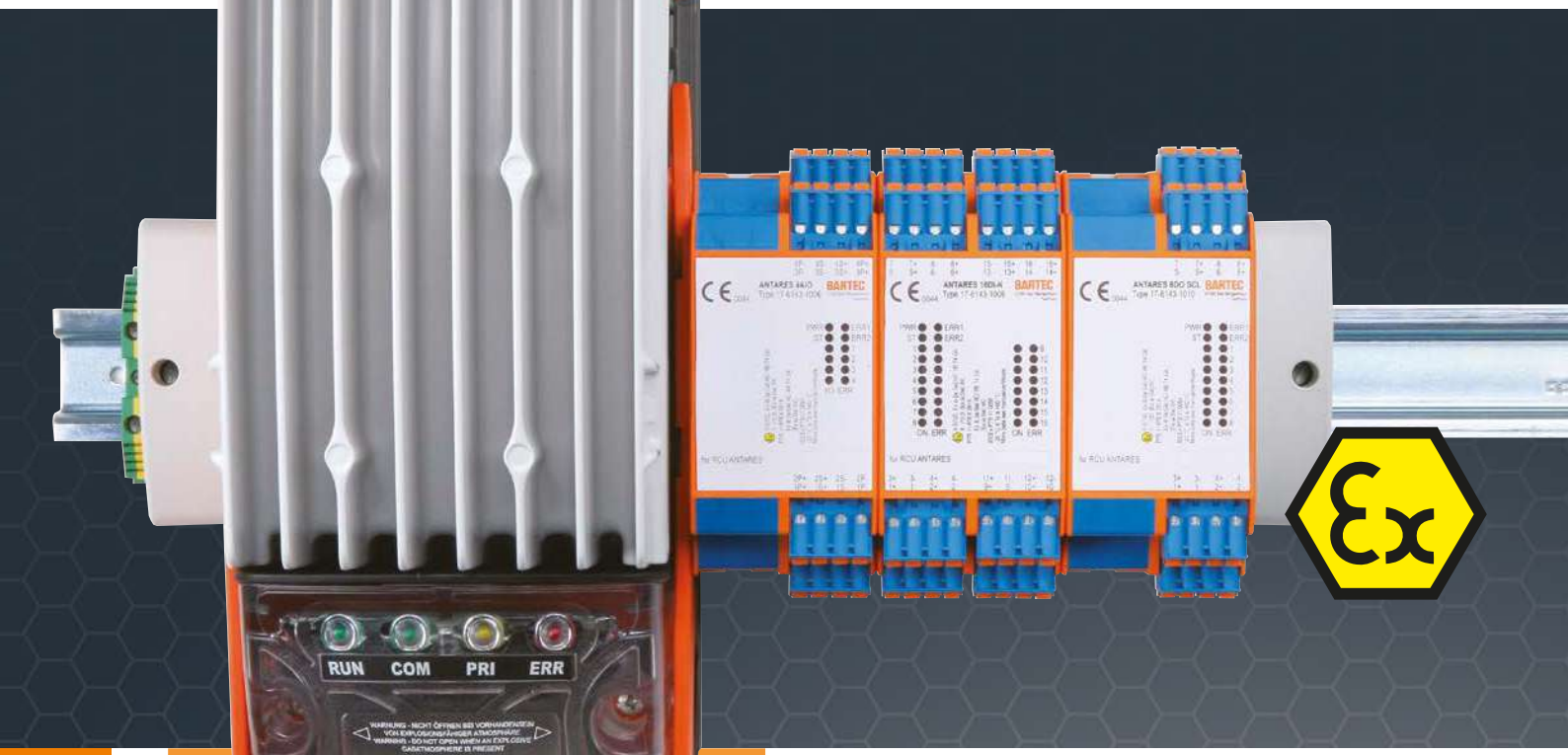
BARTEC

ANTARES Remote I/O Solutions

ANTARES Cutting-edge Remote-I/O automation solutions for Zone 1 + 2 and Zone 21 + 22

Innovative solutions are required for the automation of industrial installations and plants to increase productivity and thus economical efficiency in a sustainable way.

ANTARES is BARTEC's cutting-edge response to the ever growing industry demands for more flexible, reliable and cost effective automation solutions using Remote-I/O systems. ANTARES offers maximum performance, convenience and savings in an extremely attractive design.



Systems design

The ANTARES Remote-I/O system is installed directly into the Ex area. The core unit of the system is the Rail Control Unit (RCU) accommodating host communication, Ethernet switching, power management and I/O data processing.

For the ease of integration, a multitude of open communication standards are supported, from fully redundant PROFIBUS-DP to Ethernet based standards such as PROFINET, MODBUS TCP and EtherNet/IP. Complex Ex repeaters and separate bus topologies are no longer needed. A range of ANTARES I/O modules is available to build any desirable configuration.

ANTARES is treading new grounds without compromising the security of established project execution practices.

03-0330-0738-07/2014-BAT-352489/1

Intuitive project planning

Due to the smart concept of ANTARES, project planning processes remain identical as if conventional systems solutions were chosen. A comprehensive software tool simplifies the design and verification of the ANTARES system, while automatically monitoring critical system factors such as power management, spacing, etc.

Maximum design freedom

With a large power reserve, efficient and compact I/O configurations are no issue with ANTARES, even when the system is mounted directly into Zone 1. Up to 32 multi channel I/O modules can be powered by one single Rail Control Unit. Additionally, rail extension options are available to enable truly distributed I/O configurations.

Flexible systems approval

Requirements for rigid and unique system approvals are history thanks to the smart design of the ANTARES system. For the majority of the application areas, general purpose mechanical protection is sufficient. For the ease of project execution, I/O changes can be facilitated without violating existing approvals for the system.

Easy project implementation

ANTARES makes installation easy. Thanks to the smart approval concept of the system, assembly as well as installation can be done following general installation practices for hazardous areas. With this approach, there is no longer a need for Ex authorized personnel on site for the assembly of systems subject to approval.

Highest systems availability

Genuine communication redundancy for PROFIBUS-DP is available to secure uninterrupted operation with host systems. In a redundant configuration, both communication lines are live to guarantee availability and to enable hot standby in case one line or module fails. ANTARES supports hot swap functionality to eliminate I/O downtime.

Optimum life cycle security

State of the art designs, technologies and components secure the future of ANTARES and the use of it in any installation. ANTARES provides the most reliable concept through continuous design improvements. The choice for open bus communication with global support and industry know-how further preserves any investment with ANTARES.

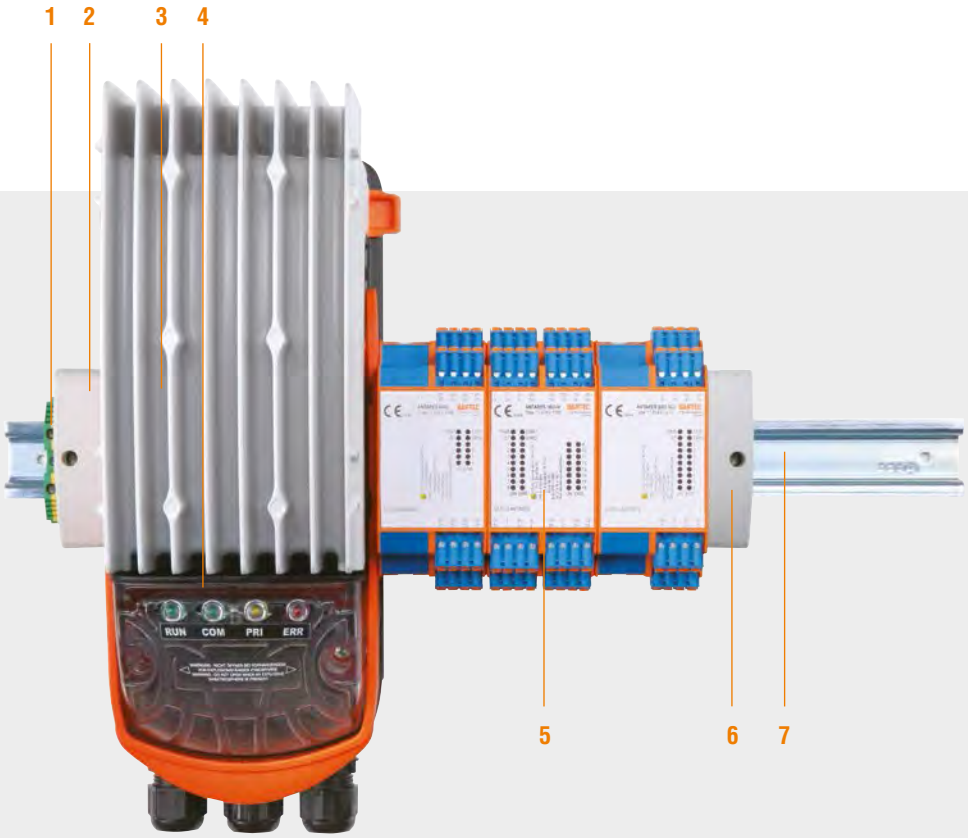
03-0330-0738-07/2014-BAT-352489/2

ANTARES System

ANTARES System Configuration

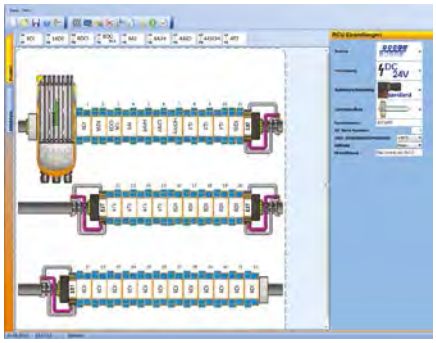
The configuration of the ANTARES system is highly flexible. The system can be adjusted to suit customer-specific requirements. A wide variety of modules and host communication system form the basis of almost unlimited configuration possibilities.

The ANTARES system consists of the RCU (Rail Control Unit) including bus beginning and bus end module, earth conductor terminal and various remote I/O modules. The RCU is the central unit in the system. It consists of the head module and the connection module. The system components can be easily latched onto a mounting rail and joined together.



1 Earth conductor terminal
2 Bus beginning module
3 Head module
4 Connection module
5 Remote I/O module
6 Bus end module
7 Mounting rail

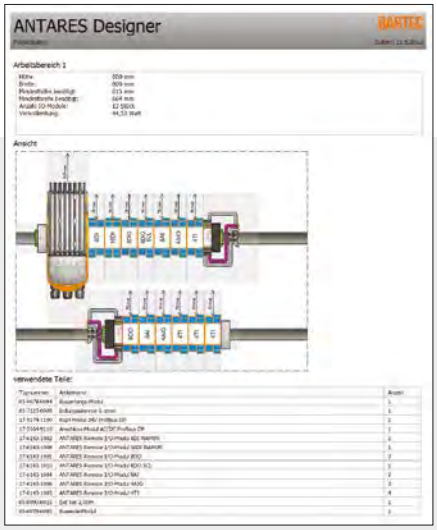
- An appropriate RCU is available for each host communication
- Easy setting of system parameters with the software “ANTARES Designer“
- A standard enclosure is sufficient for Zone 1 (gas)
- Combinable with MODEX components
- Configuration data can be stored as a backup on an SD card in the connection module
- The ExtSet allows extensions onto several mounting rails at any time



Software “ANTARES Designer“

The software “ANTARES Designer“ makes it possible to design a system quickly and easily. Its ability to operate intuitively allows a system to be planned and configured with just a few mouse clicks. The software independently generates the bill of materials, which can be used for an enquiry or for documentation.

The system construction is displayed in true-to-scale images. The size of the work space for a system can be individually defined. An ANTARES system can be distributed among up to four mounting rails. The extension modules (ExtSet) are inserted automatically by the software. The lengths of the cables can be selected individually but the maximum overall length is 20 metres.



Documentation

The project documentation is created automatically and contains a detailed bill of materials, the system construction graphics are displayed for each workspace.

The ANTARES Designer is available for downloading at the following address:
http://bartec.de/automation-download/antares.htm

Online Diagnosis

The ANTARES Designer allows an easy and convenient online diagnosis of the ANTARES system.

All parameters such as settings, any fault alarms, PROFIBUS address, software and hardware versions, are shown for each module.

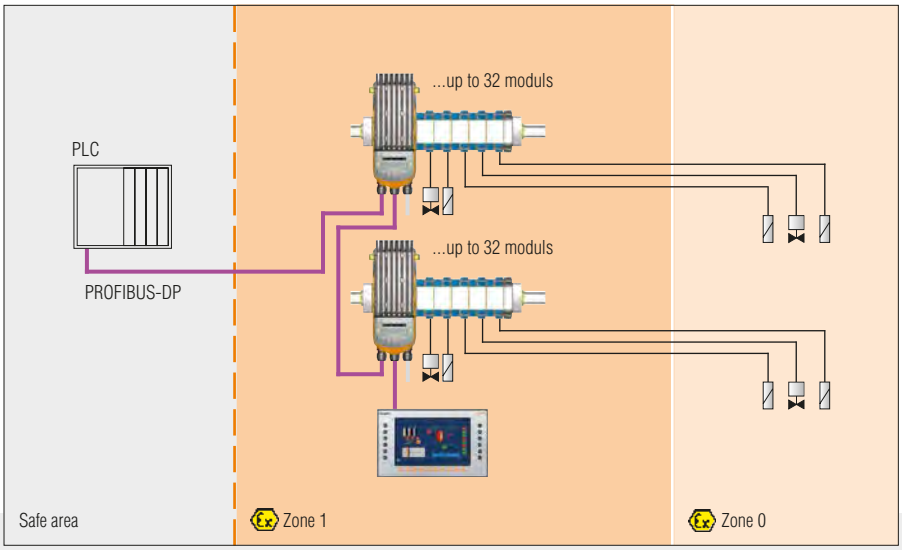
Selection chart ANTARES components

Type	Description	➡ Order no.
RCU (Rail Control Unit)		
PROFIBUS-DP	Connection module	**17-5164-9110**
PROFIBUS-DP armoured	Connection module	**17-5164-9120**
Ethernet	Connection module	**17-5164-9910**
Ethernet armoured	Connection module	**17-5164-9920**
PROFIBUS-DP	Head module	**17-5174-1100**
PROFINET	Head module	**17-5174-1200**
MODBUS TCP	Head module	**17-5174-1300**
EtherNet/IP	Head module	**17-5174-1400**
Remote I/O Modules		
8DI-N	8 digital inputs in conformance to NAMUR	**17-6143-1002/0000**
16DI-N	16 digital inputs in conformance to NAMUR	**17-6143-1008/0000**
8DO	8 digital outputs Ex i, short-circuit-proof, max. 30 mA per channel (total current limited)	**17-6143-1001/0000**
8DO-SCL	8 digital outputs Ex i, short-circuit-proof, max. 20 mA per channel (individual channel current limited)	**17-6143-1010/0000**
8AI	8 analog inputs 4 to 20 mA, inputs active	**17-6143-1004/0000**
8AIH	8 analog inputs 4 to 20 mA, inputs active, HART	**17-6143-1005/0000**
4AIO	4 analog in/outputs, configurable 4 to 20 mA, active or passive	**17-6143-1006/0000**
4AIOH	4 analog in/outputs, configurable 4 to 20 mA, active or passive, HART	**17-6143-1007/0000**
4TI	4 analog inputs, 2-, 3-, 4-conductor technology, Pt100, Pt1000	**17-6143-1003/0000**

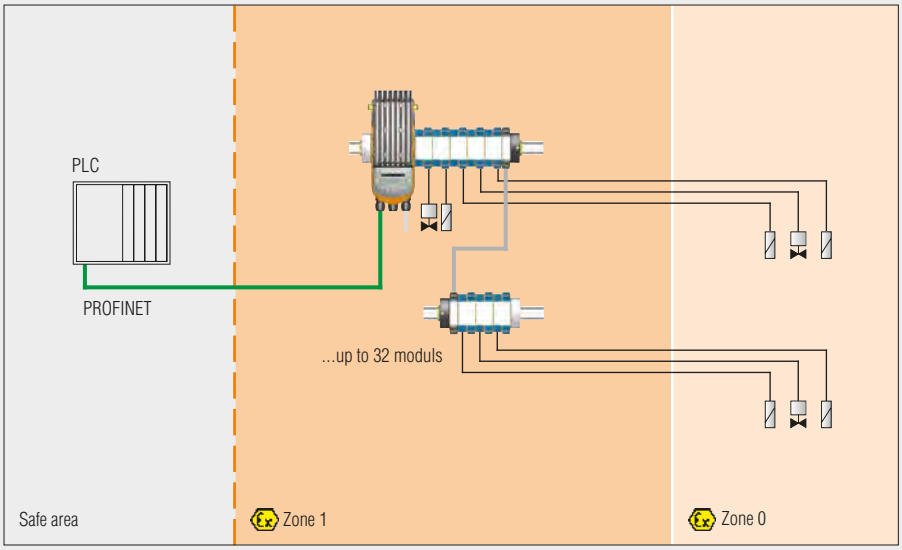
03-0330-0739-07/2014-BAT-352500/2

ANTARES System **Possible connections**

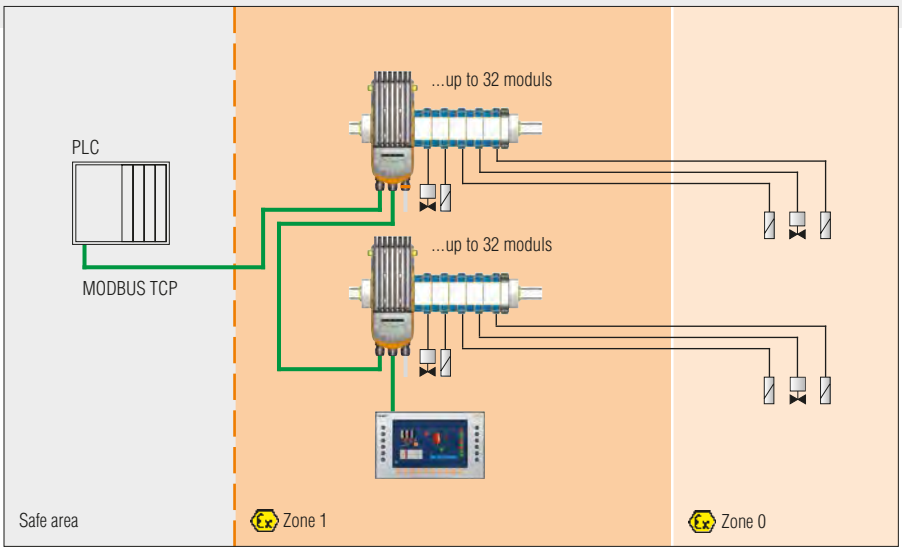
■ PROFIBUS-DP and POLARIS HMI



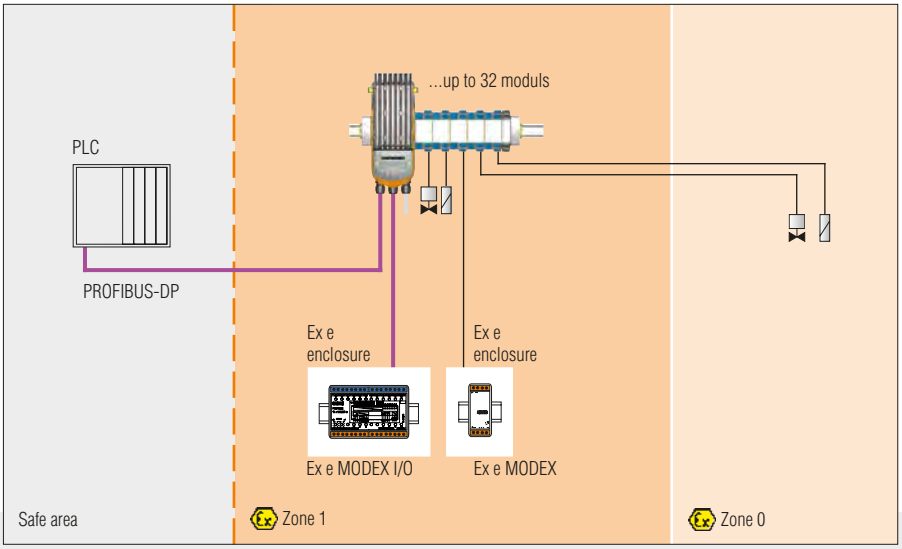
■ PROFINET and DIN rail transition



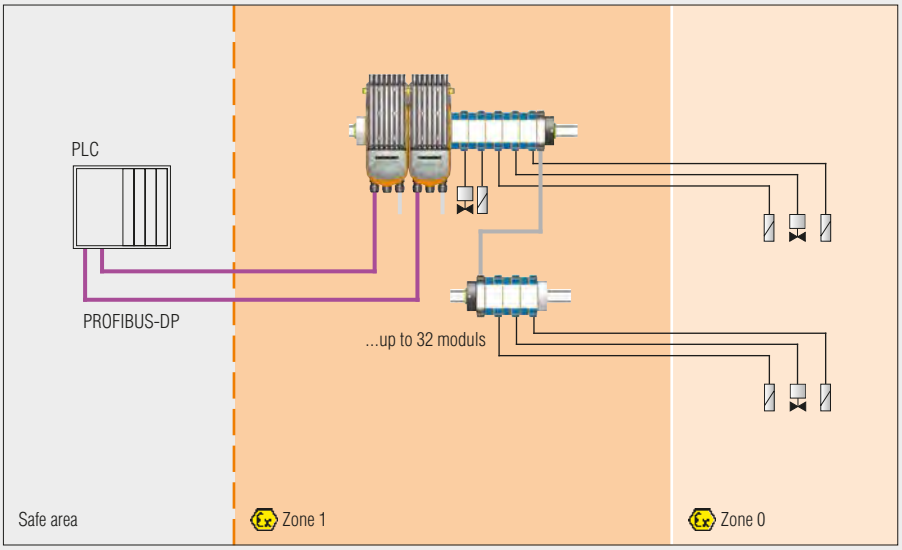
■ MODBUS TCP and POLARIS HMI



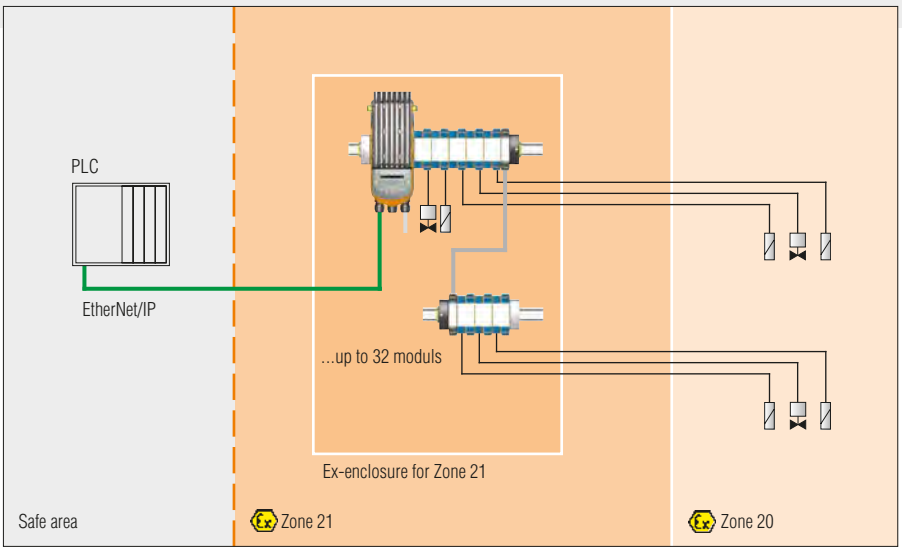
PROFIBUS-DP and MODEX components



PROFIBUS-DP and redundant system structure



EtherNet/IP in Zone 21, Dust-Explosion protection



RCU (Rail Control Unit) ANTARES

Features

- No isolating repeater needed
- Up to 32 remote I/O modules can be connected
- PROFIBUS-DP, PROFINET, MODBUS TCP and EtherNet/IP
- Integrated power supply unit
- Integrated Ethernet switch
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot swap (head module exchangeable without disconnection from voltage)
- Optional SD card for data back-up
- Redundancy with PROFIBUS-DP

Description

The Rail Control Unit (RCU) ANTARES is the central unit in the ANTARES system. It consists of the head module and the connection module.

Various field bus and Ethernet-based head modules are available. There is no need to use an isolating repeater to connect them.

Redundancy with no single point of failure is achieved by connecting two PROFIBUS-DP RCUs.

The head module, consisting of the CPU, the communication interface and an integrated power supply unit, is produced with the Ex d type of protection and is plugged into the corresponding connection module.

The innovative interlocking technology ensures a reliable connection. The hot swap capability allows the head module to be replaced even in an Ex atmosphere.

The connection module has an integrated Ex e junction box. A version is also available for armoured leads.

The system is configured by means of Software ANTARES Designer through the USB interface.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type

ATEX Ⓔx II 2 G Ex d e [ib] IIC T4 Gb

Certification
PTB 11 ATEX 2009 X

IECEx Ex d e [ib] IIC T4 Gb

Certification
IECEx PTB 11.0051 X

Ambient temperature
-20 °C to +60 °C

Protection class (EN 60529)

- RCU	IP 54
- Internal system bus (in the ANTARES system construction)	IP 30

Technical data

Enclosure material

Connection module	PA
Head module	aluminium die-casting PA

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)
flush on mounting plate

Supply I/O modules
up to max. 32 modules (module dependent)

Electrical connections Ex e
Data and power supply cable through tension spring clamp up to 2.5 mm²

Displays
LED connection modules

Operation	LED RUN
Communication	LED COM
Redundancy (primary)	LED PRI
Error	LED ERR

Rated voltage
DC 24 V -15 %, +25 %

Power consumption
max. 100 W

Overvoltage category
II

Degree of contamination
2

Dimension RCU (W x H x D)
114 mm x 192 mm x 298 mm

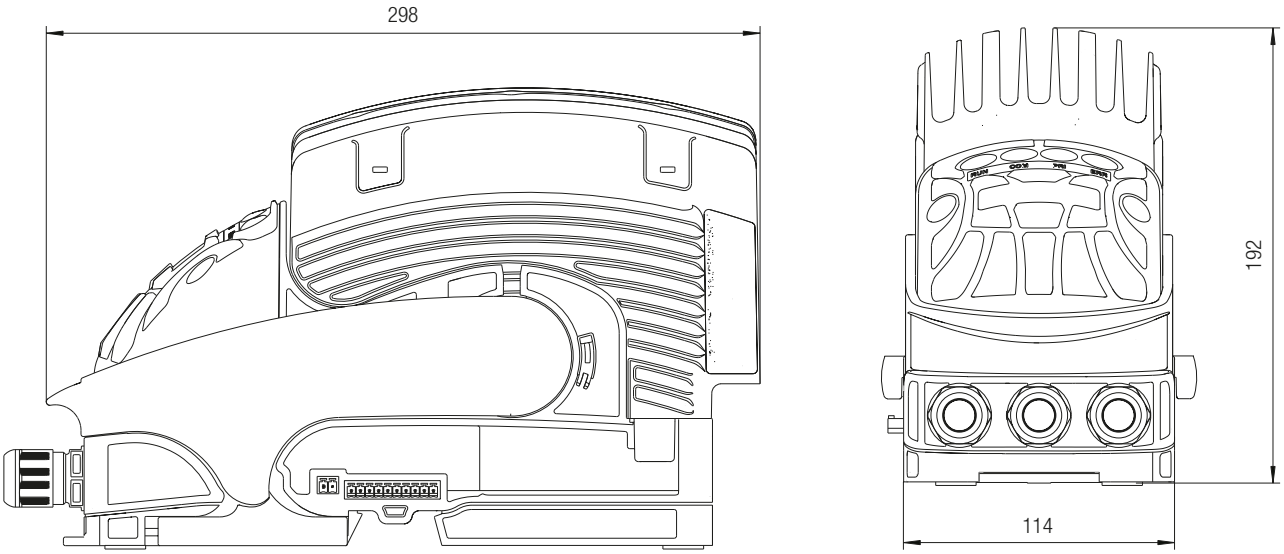
Weight
approx. 5 kg

Storage and transport temperature
-25 °C to +70 °C

Humidity
5 to 95 %, non-condensing

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Dimensions



Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

■ Process connection

Internal Bus communication
10 + 2 pole connector

PROFIBUS-DP
Full redundancy possible up to 1.5 Mbit/s

Ethernet 100BaseT with integrated switch
- PROFINET
- MODBUS/TCP
- EtherNet/IP

■ Configuration

Interface
USB

Software
ANTARES Designer

Back up
SD card

Selection chart

Interfaces	Code no.
PROFIBUS-DP	1
PROFINET	2
MODBUS/TCP	3
EtherNet/IP	4

17-5174-1 ☐ 00
Complete order no.
Head Module ANTARES
Please insert correct code.

Selection chart

Interfaces	Code no.	Cable gland	Code no.
PROFIBUS-DP	1	not armoured	1
Ethernet	9	armoured	2

17-5164-9 ☐ ☐ 0
Complete order no.
Connection Module ANTARES
Please insert correct code.

03-0330-0541-07/2014-BAT-291527/2

ANTARES 8DI-N

Features

- 8 channel digital in Ex ia IIC
- 2 channels programmable as counters
- For NAMUR sensors DIN EN 60947-5-6
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps
- 2 LED displays per channel

Description

The Remote I/O Module ANTARES 8DI-N is operated and supplied with power by means of the Rail Control unit (RCU) ANTARES.

This module is suitable for connecting 8 intrinsically safe binary signals in hazardous areas NAMUR sensors, optocouplers, mechanical contacts or other actuating elements can be connected with intrinsic safety.

The hot swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

Each channel can be programmed with the Software ANTARES Designer.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2015

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0055

Ambient temperature range
-20 °C to +60 °C

Safety data per transmission channel
U_0 = 9.9 V
I_0 = 11.2 mA
P_0 = 27.7 mW
C_i = negligibly low
L_i = negligibly low

Ex ia IIC: C_0 = 3.2 µF; L_0 = 20 µH or
C_0 = 0.47 µF; L_0 = 100 mH

Ex ia IIB: C_0 = 22 µF; L_0 = 10 µH or
C_0 = 2.5 µF; L_0 = 100 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring-loaded clamp, 4-pole
- to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 380 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz
in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

03-0330-0542-07/2014-BAT-291528/1

Electrical data

Number of channels
NAMUR to DIN EN 60947-5-6
- 8 digital inputs Ex i (short-circuit-proof)
- Channel 7 and Channel 8 configurable as counters (max. count rate 5 kHz)

Galvanic isolation
between inputs and the internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Sensor supply
8.2 V

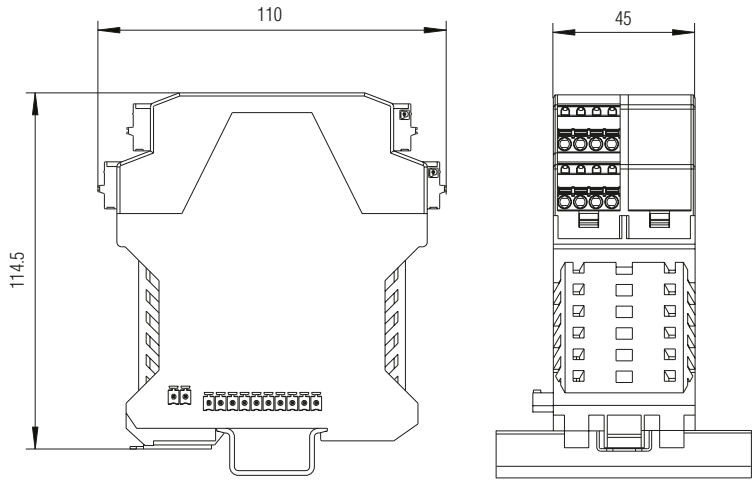
Switching thresholds

damped	< 1.2 mA
not damped	> 2.1 mA
Open circuit	< 0.3 mA
Short-circuit	> 225 Ω

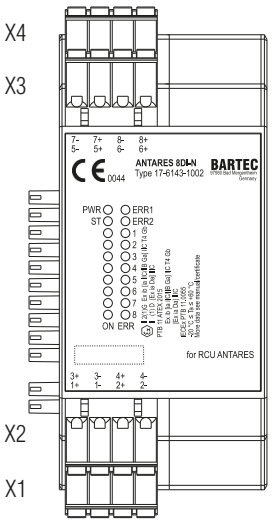
Displays
LEDs in enclosure front:

Status	PWR, ST, ERR1, ERR2	
Inputs	2 LEDs per channel	
	1 x LED yellow	Channel active
	1 x LED red	Channel error

Dimensions



Wiring diagram/terminal assigment



Terminal block	Terminal	Terminal	
X4	7-	Minus terminal	Channel 7
	7+	Plus terminal	Channel 7
	8-	Minus terminal	Channel 8
	8+	Plus terminal	Channel 8
X3	5-	Minus terminal	Channel 5
	5+	Plus terminal	Channel 5
	6-	Minus terminal	Channel 6
	6+	Plus terminal	Channel 6
X2	3+	Plus terminal	Channel 3
	3-	Minus terminal	Channel 3
	4+	Plus terminal	Channel 4
	4-	Minus terminal	Channel 4
X1	1+	Plus terminal	Channel 1
	1-	Minus terminal	Channel 1
	2+	Plus terminal	Channel 2
	2-	Minus terminal	Channel 2

LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-8	GE	Channel switched on
ERR 1-8	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 8DI-N
17-6143-1002/0000

ANTARES 16DI-N

Features

- 16 channels digital in Ex ia IIC
- For NAMUR sensors DIN EN 60947-5-6
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps
- 2 LED displays per channel

Description

The Remote I/O Module ANTARES 16DI-N is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module allows 16 binary signals to be connected in the Ex area. NAMUR sensors, optocouplers, mechanical contacts or other actuating elementscan be connected with intrinsic safety.

The hot swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The module is programmed with Software ANTARES Designer.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2015

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0055

Ambient temperature range
-20 °C to +60 °C

Safety data per transmission channel
U_0 = 9.9 V
I_0 = 11.2 mA
P_0 = 27.7 mW
C_i = negligibly low
L_i = negligibly low

Ex ia IIC: C_0 = 3.2 µF; L_0 = 20 µH or
C_0 = 0.47 µF; L_0 = 100 mH

Ex ia IIB: C_0 = 22 µF; L_0 = 10 µH or
C_0 = 2.5 µF; L_0 = 100 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring-loaded clamp, 4-pole
- to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 490 g

Storage and transport temperature
-25 °C to +85 °C

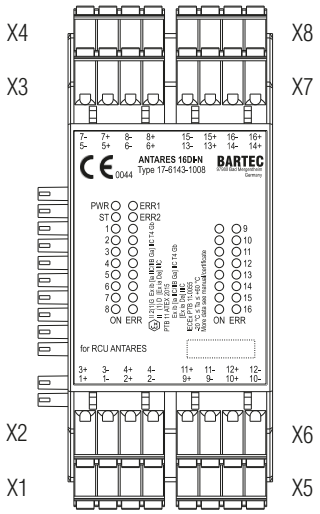
Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Wiring diagram/terminal assigment



Terminal block	Terminal	Description	Terminal block	Terminal	Description
X4	7-	Minus terminal channel 7	X8	15-	Minus terminal channel 15
	7+	Plus terminal channel 7		15+	Plus terminal channel 15
	8-	Minus terminal channel 8		16-	Minus terminal channel 16
	8+	Plus terminal channel 8		16+	Plus terminal channel 16
X3	5-	Minus terminal channel 5	X7	13-	Minus terminal channel 13
	5+	Plus terminal channel 5		13+	Plus terminal channel 13
	6-	Minus terminal channel 6		14-	Minus terminal channel 14
	6+	Plus terminal channel 6		14+	Plus terminal channel 14
X2	3+	Plus terminal channel 3	X6	11+	Plus terminal channel 11
	3-	Minus terminal channel 3		11-	Minus terminal channel 11
	4+	Plus terminal channel 4		12+	Plus terminal channel 12
	4-	Minus terminal channel 4		12-	Minus terminal channel 12
X1	1+	Plus terminal channel 1	X5	9+	Plus terminal channel 9
	1-	Minus terminal channel 1		9-	Minus terminal channel 9
	2+	Plus terminal channel 2		10+	Plus terminal channel 10
	2-	Minus terminal channel 2		10-	Minus terminal channel 10

Electrical data

Number of channels
NAMUR to DIN EN 60947-5-6
16 digital inputs Ex i (short-circuit-proof)

Galvanic Isolation
between inputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Sensor supply
8.2 V

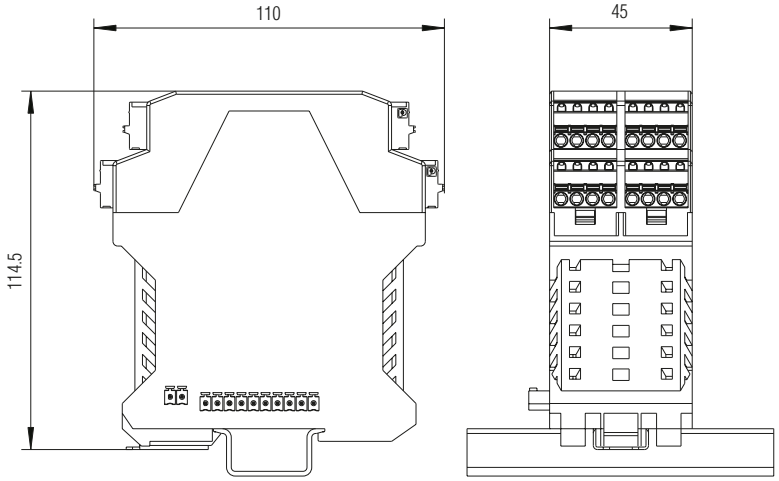
Switching thresholds

damped	< 1.2 mA
not damped	> 2.1 mA
Open circuit	< 0.3 mA
Short-circuit	> 225 Ω

Displays
LEDs in enclosure front:

Status	PWR, ST, ERR1, ERR2	
Inputs	2 LEDs per channel	
	1 x LED yellow	Channel active
	1 x LED red	Channel error

Dimensions



LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-16	GE	Channel switched on
ERR 1-16	RT	Channel error line break/ short circuit

Order no.

Remote I/O Module ANTARES 16DI-N
17-6143-1008/0000

ANTARES 8DO

Features

- 8 channel digital out Ex ia IIC
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and the system
- Line break/short circuit monitoring
- Plug-in and codable spring clamps
- 2 LED displays per channel

Description

The Remote I/O-Module ANTARES 8DO is operated and supplied with power by means of the ANTARES Rail Control Unit (RCU).

This module is suitable for the direct control of up to 8 intrinsically safe solenoid valves in hazardous areas.

The hot swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows the module to be programmed and the output load to be calculated automatically.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2014

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0054

Ambient temperature range
-20 °C to +50 °C
-20 °C to +60 °C
(in conjunction with a distance module)

Safety data per transmission channel
U_0 = 27.5 V
I_0 = 104 mA
P_0 = 715 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 80 nF; L_0 = 0.2 mH or
C_0 = 60 nF; L_0 = 0.53 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 244 nF; L_0 = 11 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 % non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz
in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data

Number of channels
8 digital outputs Ex i (short-circuit-proof)

Galvanic Isolation
between outputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

No-load voltage
DC 24 V

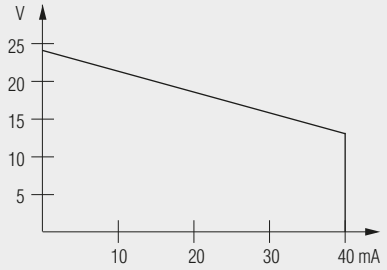
Total current of all 8 channels
max. 160 mA (limited)

Output current
max. 40 mA per channel

Internal resistance
271 Ω

Rated output current
I_N = 20 mA (U_N = 18.5 V)

Output level



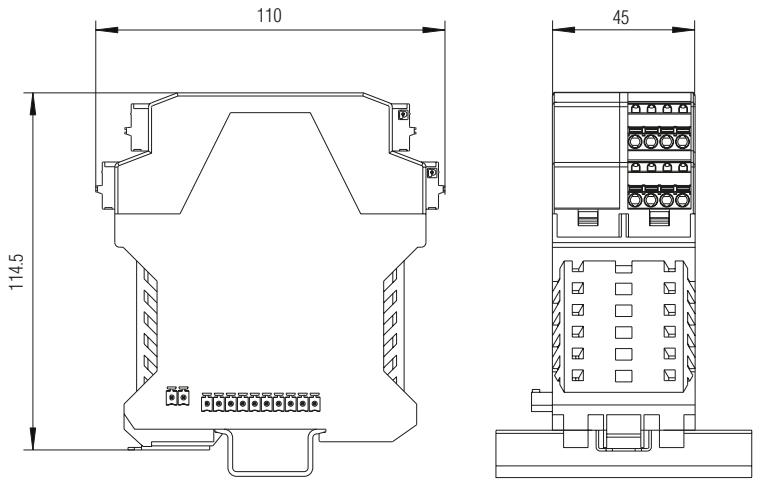
Currents between 40 mA and 70 mA can be supplied to each channel also. For this purpose, the short-circuit monitoring for the channel concerned must be switched off in the Antares Designer. However, in each individual case, this must be checked in relation to the corresponding requirement.

The total current of 160mA for the module continues to apply in each case. Accordingly, if the channel current is high, the number of available outputs per module will be reduced.

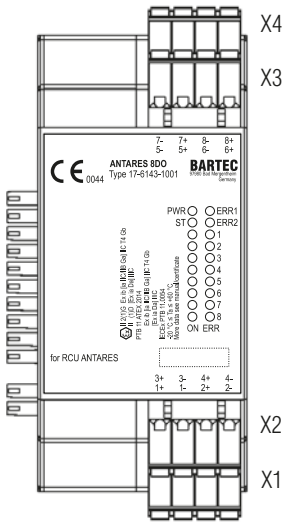
Displays
LEDs in enclosure front:

Status	PWR, ST, ERR1, ERR2	
Outputs	2 LEDs per channel	
	1 x LED yellow	Channel active
	1 x LED red	Channel error

Dimensions



Wiring diagram/terminal assigment



Terminal block	Terminal	Description	
X4	7-	Minus terminal	Channel 7
	7+	Plus terminal	Channel 7
	8-	Minus terminal	Channel 8
	8+	Plus terminal	Channel 8
X3	5-	Minus terminal	Channel 5
	5+	Plus terminal	Channel 5
	6-	Minus terminal	Channel 6
	6+	Plus terminal	Channel 6
X2	3+	Plus terminal	Channel 3
	3-	Minus terminal	Channel 3
	4+	Plus terminal	Channel 4
	4-	Minus terminal	Channel 4
X1	1+	Plus terminal	Channel 1
	1-	Minus terminal	Channel 1
	2+	Plus terminal	Channel 2
	2-	Minus terminal	Channel 2

LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-8	GE	Channel switched on
ERR 1-8	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 8DO
17-6143-1001/0000

ANTARES 8DO-SCL

Features

- 8 channels digital out Ex ia IIC
- Single Channel Current Limitation
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and the system
- Line break/short circuit monitoring
- Plug-in and codable spring clamps
- 2 LED displays per channel

Description

The Remote I/O Module ANTARES 8DO-SCL (single channel limitation) is operated and supplied with power through the Rail Control Unit (RCU) ANTARES.

This module is suitable for the direct control of up to 8 intrinsically safe solenoid valves in the explosion hazardous area.

The hot swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows the module to be programmed and the output load to be calculated automatically.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2014

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0054

Ambient temperature range
-20 °C to +50 °C
-20 °C to +60 °C
(in conjunction with a distance module)

Safety data per transmission channel
U_0 = 27.5 V
I_0 = 104 mA
P_0 = 715 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 80 nF; L_0 = 0.2 mH or
C_0 = 60 nF; L_0 = 0.53 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 244 nF; L_0 = 11 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data

Number of channels
8 digital outputs Ex i (short-circuit-proof)

Galvanic isolation
between outputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

No-load voltage
DC 24 V

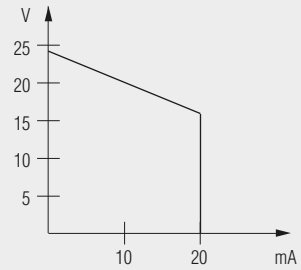
Total current of all 8 channels
max. 160 mA

Output current
max. 20.5 mA per channel (limited)

Internal resistance
271 Ω

Rated output current
I_N = 20 mA (U_N = 18.5 V)

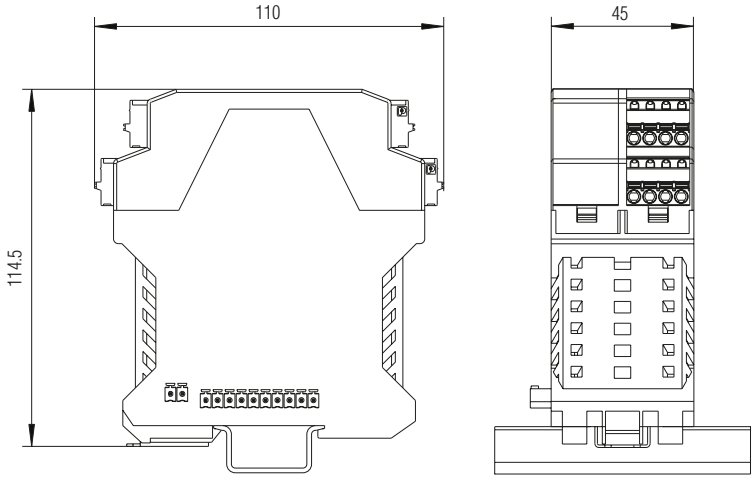
Output level



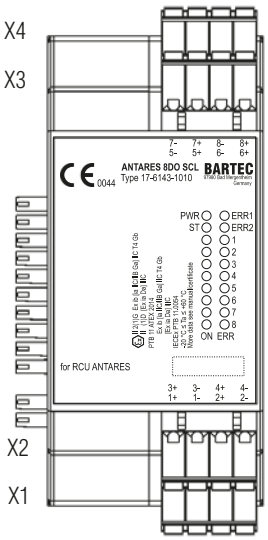
Displays
LEDs in enclosure front:

Status	PWR, ST, ERR1, ERR2
Outputs	2 LEDs per channel
	1 x LED yellow Channel active
	1 x LED red Channel error

Dimensions



Wiring diagram/terminal assigment



Terminal block	Terminal	Description
X4	7-	Minus terminal Channel 7
	7+	Plus terminal Channel 7
	8-	Minus terminal Channel 8
	8+	Plus terminal Channel 8
X3	5-	Minus terminal Channel 5
	5+	Plus terminal Channel 5
	6-	Minus terminal Channel 6
	6+	Plus terminal Channel 6
X2	3+	Plus terminal Channel 3
	3-	Minus terminal Channel 3
	4+	Plus terminal Channel 4
	4-	Minus terminal Channel 4
X1	1+	Plus terminal Channel 1
	1-	Minus terminal Channel 1
	2+	Plus terminal Channel 2
	2-	Minus terminal Channel 2

LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-8	GE	Channel switched on
ERR 1-8	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 8DO-SCL
17-6143-1010/0000

ANTARES 8AI

Features

- 8 channel analog in Ex ia IIC
- Two-conductor transmitter
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and the system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps

Description

The Remote I/O-Module ANTARES 8AI is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module is suitable for the direct connection of 8 intrinsically safe two-conductor transmitters.

The hot-swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows parameters to be set for the signal range and a 4-stage input filter for each channel.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2017

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0059

Ambient temperature range
-20 °C to +50 °C
-20 °C to +60 °C
(in conjunction with a distance module)

Safety data per transmission channel
U_0 = 27.5 V
I_0 = 87 mA
P_0 = 598 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 79 nF; L_0 = 0.2 mH or
C_0 = 37 nF; L_0 = 1.7 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 264 nF; L_0 = 16 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data

Number of channels
8 analog inputs Ex i (short-circuit-proof)

Galvanic Isolation
between inputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Signal range
4 to 20 mA

Signal
min. 0 mA
max. 20.5 mA

Short-circuit current
max. 20.8 mA

Input resistance
R_i = 10 Ω

Resolution
16 bit (15 bit + prefix)

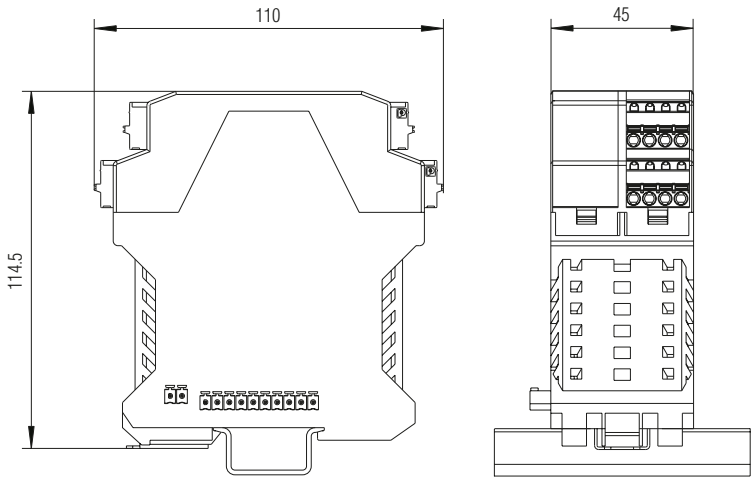
Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

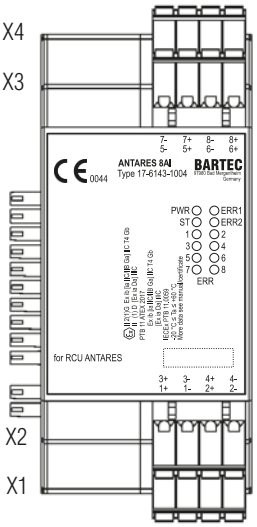
Minimum voltage at 20 mA
16 V

Displays
LEDs in enclosure front:
Status PWR, ST, ERR1, ERR2
Inputs for each channel 1 LED ERR

Dimensions



Wiring diagram/terminal assigment



Terminal block	Terminal	Description	
X4	7-	Minus terminal	Channel 7
	7+	Plus terminal	Channel 7
	8-	Minus terminal	Channel 8
	8+	Plus terminal	Channel 8
X3	5-	Minus terminal	Channel 5
	5+	Plus terminal	Channel 5
	6-	Minus terminal	Channel 6
	6+	Plus terminal	Channel 6
X2	3+	Plus terminal	Channel 3
	3-	Minus terminal	Channel 3
	4+	Plus terminal	Channel 4
	4-	Minus terminal	Channel 4
X1	1+	Plus terminal	Channel 1
	1-	Minus terminal	Channel 1
	2+	Plus terminal	Channel 2
	2-	Minus terminal	Channel 2

LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ERR 1-8	RT	Channel error line break/ short circuit

Order no.

Remote I/O Module ANTARES 8AI
17-6143-1004/0000

ANTARES 8AIH

Features

- 8 channel analog in HART Ex ia IIC
- Two-conductor transmitter
- 8 fold HART Multiplexer
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and the system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps

Description

The Remote I/O Module ANTARES 8AIH is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module allows 8 intrinsically safe two-conductor transmitters to be linked directly.

In addition to analog signal transmission, the Remote I/O Module also offers the possibility of HART communication with the connected transmitters.

The hot-swap capability allows the module to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows parameters to be set for the signal range, HART function through DTM and a 4-stage input filter for each channel.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2017

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0059

Ambient temperature range
-20 °C to +50 °C
-20 °C to +60 °C
(in conjunction with a distance module)

Safety data per transmission channel
U_0 = 27.5 V
I_0 = 87 mA
P_0 = 598 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 79 nF; L_0 = 0.2 mH or
C_0 = 37 nF; L_0 = 1.7 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 264 nF; L_0 = 16 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

03-0330-0546-07/2014-BAT-291532/1

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data

Number of channels
8 analog inputs Ex i HART
(short-circuit-proof)

Galvanic Isolation
between inputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Signal range
4 to 20 mA

Signal
min. 0 mA
max. 20.5 mA

Short-circuit current
max. 21 mA

Input resistance
R_i = 10 Ω

Resolution
16 bit (15 bit + prefix)

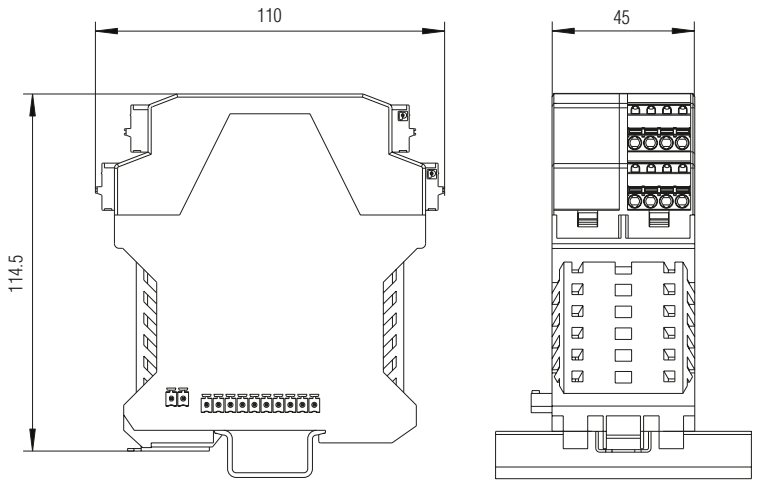
Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

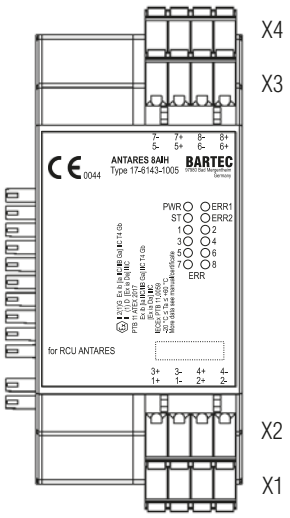
Minimum voltage at 20 mA
16 V

Displays
LEDs in enclosure front:
Status PWR, ST, ERR1, ERR2
Inputs per channel 1 LED ERR

Dimensions



Wiring diagram/terminal assigment



Terminal block	Terminal	Description	
X4	7-	Minus terminal	Channel 7
	7+	Plus terminal	Channel 7
	8-	Minus terminal	Channel 8
	8+	Plus terminal	Channel 8
X3	5-	Minus terminal	Channel 5
	5+	Plus terminal	Channel 5
	6-	Minus terminal	Channel 6
	6+	Plus terminal	Channel 6
X2	3+	Plus terminal	Channel 3
	3-	Minus terminal	Channel 3
	4+	Plus terminal	Channel 4
	4-	Minus terminal	Channel 4
X1	1+	Plus terminal	Channel 1
	1-	Minus terminal	Channel 1
	2+	Plus terminal	Channel 2
	2-	Minus terminal	Channel 2

LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ERR 1-8	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 8AIH
17-6143-1005/0000

ANTARES 4AIO

Features

- 4 channels analog in/out Ex ia IIC
- 4 channels freely configurable as In or Out
- Inputs active or passive
- 2-, 3-, 4-conductor technology
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs/outputs and the system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps

Description

The Remote I/O Module ANTARES 4AIO is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module allows the direct linking of 4 intrinsically safe 2-, 3-, 4-conductor transmitters or the output of 0 up to 20 mA or 4 up to 20 mA signals.

The hot-swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

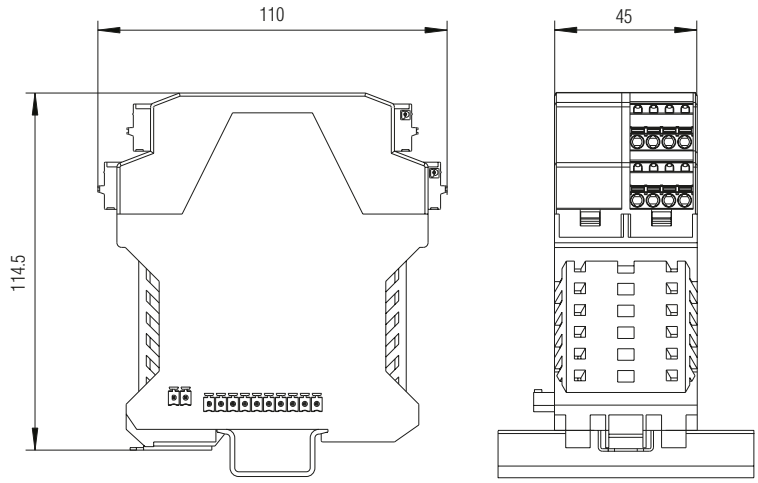
The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows parameters to be set for the signal range, channel type (in or out) and a 4-stage input filter for each channel.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Dimensions



Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2018

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0061

Ambient temperature range
-20 °C to +60 °C

Safety data per transmission channel
U_0 = 27.5 V
I_0 = 87 mA
P_0 = 598 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 79 nF; L_0 = 0.2 mH or
C_0 = 37 nF; L_0 = 1.7 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 264 nF; L_0 = 16 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data Inputs/Outputs

Number of channels
4 inputs or outputs Ex i (short-circuit-proof)
Inputs active/passive

Galvanic Isolation
between inputs or outputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Data input channels

Signal range
0 to 20 mA or
4 to 20 mA

Signal
min. 0 mA
max. 21 mA

Short-circuit current
max. 21.3 mA

Input resistance
R_i = 10 Ω

Resolution
16 bit (15 bit + prefix)

Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

Minimum voltage at 20 mA
16 V

Data output channels

Signal range
0 to 20 mA or
4 to 20 mA

Signal
min. 0 mA
max. 21 mA

Short-circuit current
max. 21.3 mA

Load
max. 750 Ω

Resolution
14 bit

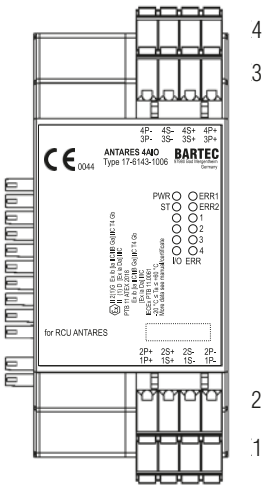
Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

Displays
LEDs in enclosure front:

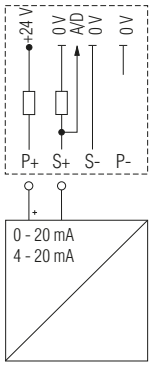
Status	PWR, ST, ERR1, ERR2	
Inputs/ Outputs	2 LEDs per channel	
	1 x LED gelb	channel setting
	1 x LED rot	channel error

Wiring diagram/terminal assigment

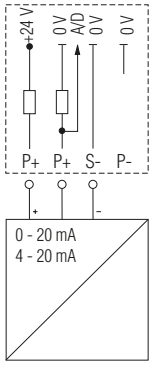


Terminal block	Terminal	Description	
X4	4P-	Supply -	Channel 4
	4S-	Signal -	Channel 4
	4S+	Signal +	Channel 4
	4P+	Supply +	Channel 4
X3	3P-	Supply -	Channel 3
	3S-	Signal -	Channel 3
	3S+	Signal +	Channel 3
	3P+	Supply +	Channel 3
X2	2P+	Supply +	Channel 2
	2P+	Signal +	Channel 2
	2S-	Signal -	Channel 2
	2P-	Supply -	Channel 2
X1	1P+	Supply +	Channel 1
	1S+	Signal +	Channel 1
	1S-	Signal -	Channel 1
	1P-	Supply -	Channel 1

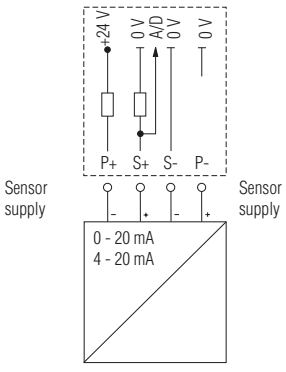
Passive sensors/2 conductor transmitter



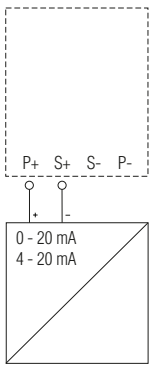
Passive sensors/3 conductor transmitter



Active sensors/4 conductor transmitter



Analog outputs/2 conductor actuators



LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-4	GE	Differentiation input/ output module
ERR 1-4	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 4AI0
17-6143-1006/0000

03-0330-0547-07/2014-BAT-291533/2

ANTARES 4AIOH

Description

The Remote I/O Module ANTARES 4AIOH is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module allows the direct linking of 4 intrinsically safe 2-, 3-, 4-conductor transmitters or the output of 0 up to 20 mA or 4 up to 20 mA signals.

The hot-swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows parameters to be set for the signal range, channel type (in or out), HART function through DTM and a 4-stage input filter for each channel.

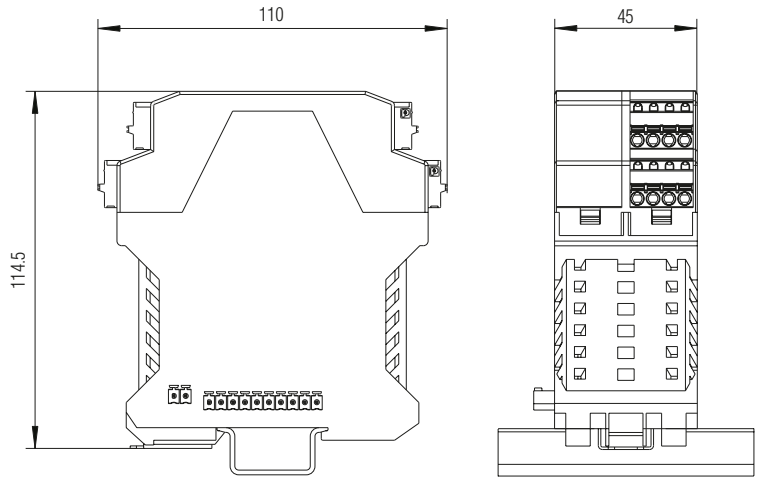
See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Features

- 4 channels analog in/out HART Ex ia IIC
- 4 channels freely configurable as In or Out
- Inputs active or passive
- 2-, 3-, 4-conductor technology
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs/outputs and the system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps

Dimensions



Explosion protection

Ex protection type

ATEX

Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2018

IECEx

Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0061

Ambient temperature range

-20 °C to +50 °C
-20 °C to +60 °C
(in conjunction with a distance module)

Safety data per transmission channel

U_0 = 27.5 V
I_0 = 87 mA
P_0 = 598 mW
C_i = 6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 79 nF; L_0 = 0.2 mH or
C_0 = 37 nF; L_0 = 1.7 mH

Ex ia IIB: C_0 = 666 nF; L_0 = 0.1 mH or
C_0 = 264 nF; L_0 = 16 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections

- plug-in tension spring clamp 4-pole
- up to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 390 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data Inputs/Outputs

Number of channels
4 inputs or outputs Ex i (short-circuit-proof)
Inputs active/passive

Galvanic Isolation
between inputs or outputs and internal bus

Line break/short-circuit
settable for each channel with
Software ANTARES Designer

Data input channels

Signal range
0 to 20 mA or
4 to 20 mA

Signal
min. 0 mA
max. 21 mA

Short-circuit current
max. 21.3 mA

Input resistance
R_i = 10 Ω

Resolution
16 bit (15 bit + prefix)

Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

Minimum voltage at 20 mA
16 V

Data output channels

Signal range
0 to 20 mA or
4 to 20 mA

Signal
min. 0 mA
max. 21 mA

Short-circuit current
max. 21.3 mA

Load
max. 750 Ω

Resolution
14 bit

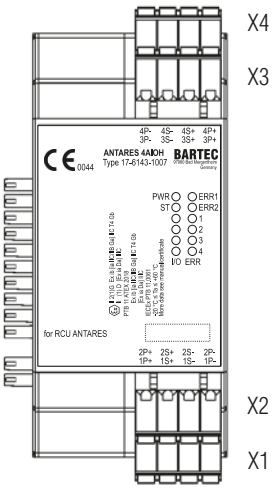
Tolerance
± 0.1 % of the measuring range
at +25 °C

Influence of the ambient temperature
± 0.01 %/K of the measuring range

Displays
LEDs in enclosure front:

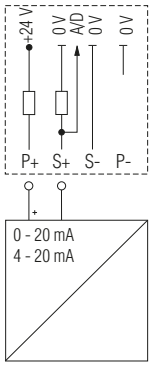
Status	PWR, ST, ERR1, ERR2	
Inputs/	2 LEDs per channel	
Outputs	1 x LED yellow	channel setting
	1 x LED red	channel error

Wiring diagram/terminal assigment

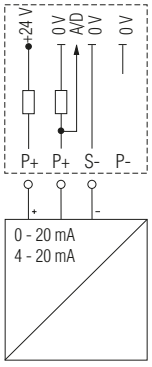


Terminal block	Terminal	Description	
X4	4P-	Supply -	Channel 4
	4S-	Signal -	Channel 4
	4S+	Signal +	Channel 4
	4P+	Supply +	Channel 4
X3	3P-	Supply -	Channel 3
	3S-	Signal -	Channel 3
	3S+	Signal +	Channel 3
	3P+	Supply +	Channel 3
X2	2P+	Supply +	Channel 2
	2P+	Signal +	Channel 2
	2S-	Signal -	Channel 2
	2P-	Supply -	Channel 2
X1	1P+	Supply +	Channel 1
	1S+	Signal +	Channel 1
	1S-	Signal -	Channel 1
	1P-	Supply -	Channel 1

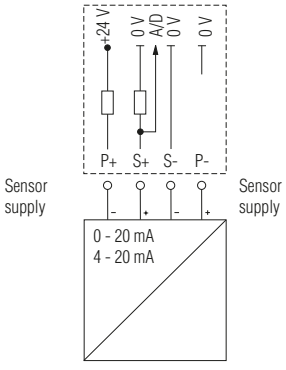
Passive sensors/2 conductor transmitter



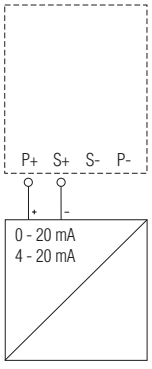
Passive sensors/3 conductor transmitter



Active sensors/4 conductor transmitter



Analog outputs/2 conductor actuators



LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-4	GE	Differentiation input/ output module
ERR 1-4	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 4AIOH
17-6143-1007/0000

03-0330-0548-07/2014-BAT-291534/2

ANTARES 4TI

Features

- 4 channels temperature in
- Pt100, Pt1000 or restistor up to 10 kΩ
- 2-, 3-, 4-conductor technology
- Integrated bus rail
- Installation in ATEX Zone 1/2 or Zone 21/22
- Hot-Swap
- Galvanic isolation between the inputs and the system
- Line break/short-circuit monitoring
- Plug-in and codable spring clamps

Description

The Remote I/O Module ANTARES 4TI is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES.

This module allows 4 Pt100, Pt1000, resistors or potentiometers to be connected with intrinsic safety.

The hot-swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an Ex atmosphere.

The internal and galvanically isolated bus connection is established by simply joining the modules to the RCU. A bus rail is not necessary.

Line break/short-circuit monitoring can be programmed for each channel.

The bus status messages and individual messages per channel are displayed through the LEDs. This facilitates diagnosis at the module as well.

The Software ANTARES Designer allows parameters to be set for the sensor type.

See the system description for installation instructions.

Note: More approvals and data are available at www.bartec-group.com

Explosion protection

Ex protection type
ATEX
Ⓔx II 2(1) G Ex ib [ia IIC/IIB Ga] IIC T4 Gb
Ⓔx II (1) D [Ex ia Da] IIIC

Certification
PTB 11 ATEX 2016

IECEx
Ex ib [ia IIC/IIB Ga] IIC T4 Gb
[Ex ia Da] IIIC

Certification
IECEx PTB 11.0058

Ambient temperature range
-20 °C to +60 °C

Safety data per transmission channel
U_0 = 6.5 V
I_0 = 25.9 mA
P_0 = 42.1 mW
C_i = 16.6 nF
L_i = negligibly low

Ex ia IIC: C_0 = 24.9 µF; L_0 = 2 µH or
C_0 = 593 nF; L_0 = 73 mH

Ex ia IIB: C_0 = 569 µF; L_0 = 2 µH or
C_0 = 4.68 µF; L_0 = 100 mH

Technical data

Enclosure material
PA

Protection class (EN 60529)
Enclosure: IP 30
in the ANTARES system construction

Electrical connections
- plug-in tension spring clamp 4-pole
- to 2.5 mm²
- optional coding and numbering

Mounting rail
TH 35-15 DIN EN 60715
(Metal, galvanized steel)

Device and terminal designation
see accessories

Dimensions (W x H x D)
45 mm x 110 mm x 114.5 mm

Weight
approx. 380 g

Storage and transport temperature
-25 °C to +85 °C

Humidity
5 to 95 %, non-condensing

Degree of contamination
2

Vibration (EN 60068-2-6)
2 g/7 mm; 5 Hz to 200 Hz in all 3 axes

Shock (EN 60068-2-27)
15 g, 11 ms, ± 3 shocks per direction

Electrical data

Number of channels
4 inputs Ex i (short-circuit-proof)

Supply voltage
through internal bus

Galvanic isolation
between inputs and internal bus

Line break/short-circuit
settable for each channel with Software ANTARES Designer

Measurement range
Potentiometer 0 up to 10 kΩ
Temperature -150 °C to +850 °C

Sensors
Pt100, Pt1000, Potentiometer with 2-, 3-, 4-conductor technology

Readings
Temperature (Pt100, Pt1000) in °C, K or °F
Potentiometer in Ω, settable for each channel with software ANTARES Designer

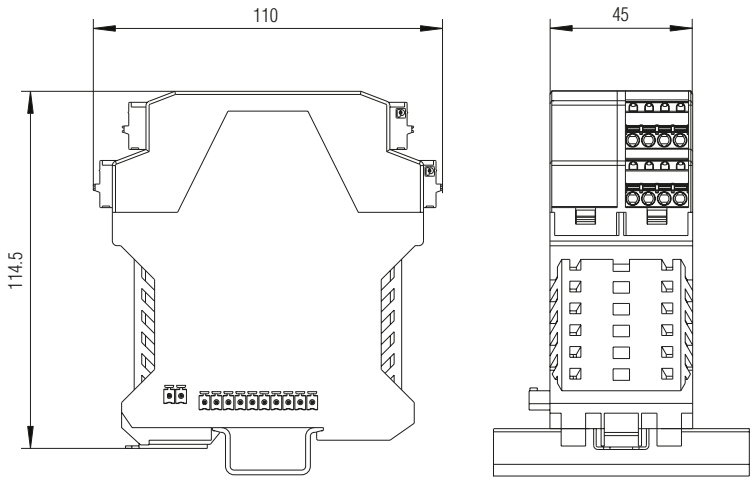
Tolerance for 4-conductor wiring
± 0.10 % of the measuring range at +25 °C

Tolerance of the resistor
± 0.15 % of the measuring range at +25 °C

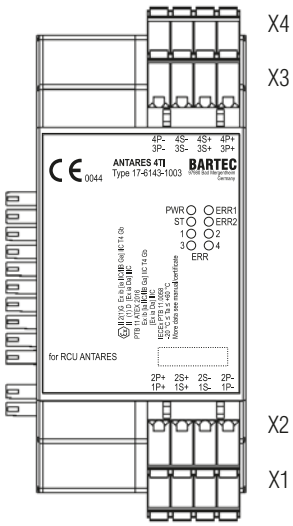
Influence of the ambient temperature
± 0.01 %/K of the measuring range

Displays
LEDs in enclosure front:
Status PWR, ST, ERR1, ERR2
Inputs for each channel 1 x LED Error

Dimensions

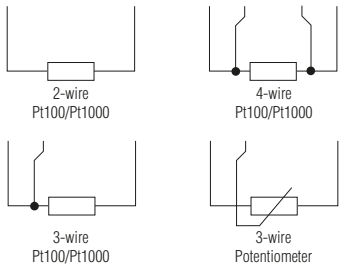


Wiring diagram/terminal assigment



Terminal block	Terminal	Description	
X4	4P-	Supply -	Channel 4
	4S-	Signal -	Channel 4
	4S+	Signal +	Channel 4
	4P+	Supply +	Channel 4
X3	3P-	Supply -	Channel 3
	3S-	Signal -	Channel 3
	3S+	Signal +	Channel 3
	3P+	Supply +	Channel 3
X2	2P+	Supply +	Channel 2
	2P+	Signal +	Channel 2
	2S-	Signal -	Channel 2
	2P-	Supply -	Channel 2
X1	1P+	Supply +	Channel 1
	1S+	Signal +	Channel 1
	1S-	Signal -	Channel 1
	1P-	Supply -	Channel 1

Connection examples



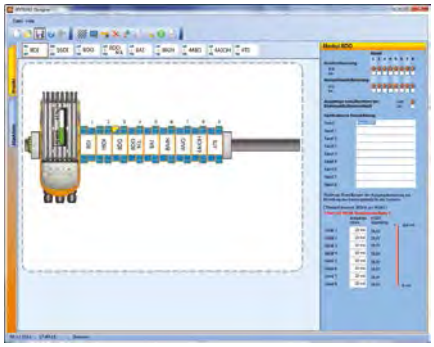
LED	Colour	Meaning
PWR	GN	Supply okay, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ERR 1-4	RT	Channel error line break/ short circuit

Order no.
Remote I/O Module ANTARES 4TI
17-6143-1003/0000

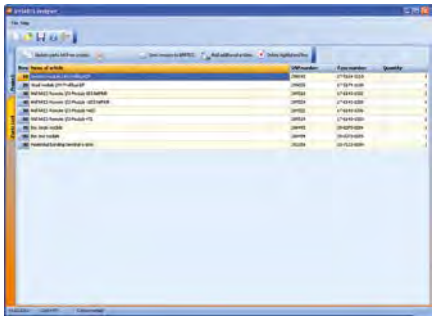
ANTARES Accessories

Illustration	Description	Order no.
	**Distance module** Dimensions (W x H x D) 22.5 mm x 110 mm x 114.5 mm	**05-0078-0106**
	ANTARES ExtSet Rail extension set for distribution of Remote I/O modules to mutiple DIN-rails	
	ANTARES ExtSet **2 m** ANTARES ExtSet **10 m** ANTARES ExtSet **20 m**	**05-0090-0015** **05-0090-0014** **05-0090-0016**
	**Bus beginning module** **Bus end module** Mechanical fastening of the modules on the mounting rail and as termination for the internal data bus	**05-0078-0084** **05-0078-0085**
	**Plug bridge** For connetion of two RCUs for PROFIBUS-DP in redundancy operation	**05-0078-0086**
	**SD Card** For storing the RCU configuration data, ATP Industrial Grade SD card with 1 GB	**17-28BE-F006/0002**
	**Coding pins** Coding for plug-in tension spring clamps in the remote I/O modules, Packing unit 100 pieces	
	Plug **Socket**	**03-7239-0019** **03-7239-0020**
	**Earth conductor terminal** 6 mm²	**03-7123-0009**
	Mounting rail 2 m TH 35-15 DIN EN 60715 (Metall) Packing unit 5 pieces	**02-2010-0012**
	**System label for ANTARES** DC 24 V, +40 °C, Zone 1 DC 24 V, +45 °C, Zone 1 DC 24 V, +50 °C, Zone 1 DC 24 V, +55 °C, Zone 1 DC 24 V, +60 °C, Zone 1 DC 24 V, +40 °C, Zone 21, EN 60079-31 DC 24 V, +45 °C, Zone 21, EN 60079-31 DC 24 V, +50 °C, Zone 21, EN 60079-31 DC 24 V, +55 °C, Zone 21, EN 60079-31 DC 24 V, +60 °C, Zone 21, EN 60079-31 DC 24 V, +40 °C, Zone 21, EN 61241-1 DC 24 V, +45 °C, Zone 21, EN 61241-1 DC 24 V, +50 °C, Zone 21, EN 61241-1 DC 24 V, +55 °C, Zone 21, EN 61241-1 DC 24 V, +55 °C, Zone 21, EN 61241-1	**05-0044-0021** **05-0044-0022** **05-0044-0023** **05-0044-0024** **05-0044-0025** **05-0044-0026** **05-0044-0027** **05-0044-0028** **05-0044-0029** **05-0044-0030** **05-0044-0031** **05-0044-0032** **05-0044-0035** **05-0044-0036** **05-0044-0037**
	Label holder Dimensions: 106 mm x 84 mm	**05-0705-0010**
	Spring force connector blue	**03-9320-0158**

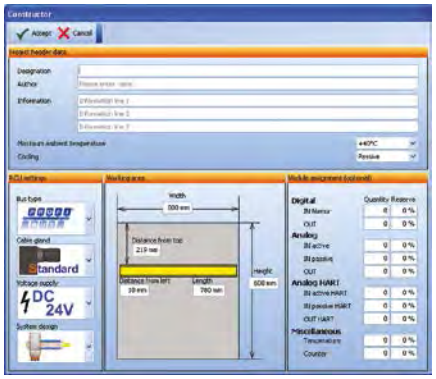
Software ANTARES Designer



Project Planning



Parts list



Constructor

Description

The Software ANTARES Designer is one of BARTEC's own developments.

As it can operate intuitively, the system's project planning and configuration is accomplished with just a few mouse clicks. The user can view his/her real system configuration in true-to-scale images throughout the setting-up process.

During the creation process, the program monitors the observation of particular limit values, such as e.g. spacing, power management and the maximum data length at the PROFIBUS.

Further functions such as e.g. the generation of parts lists automatic enquiry by e-mail are possible too.

The software is also equipped with a

CONSTRUCTOR

(project or system generator), which calculates the required inputs and outputs including the necessary reserves for the most cost-effective, i.e. optimum, system.

The software is of particular assistance for the digital remote I/O output modules, where it can automatically calculate the current output load.

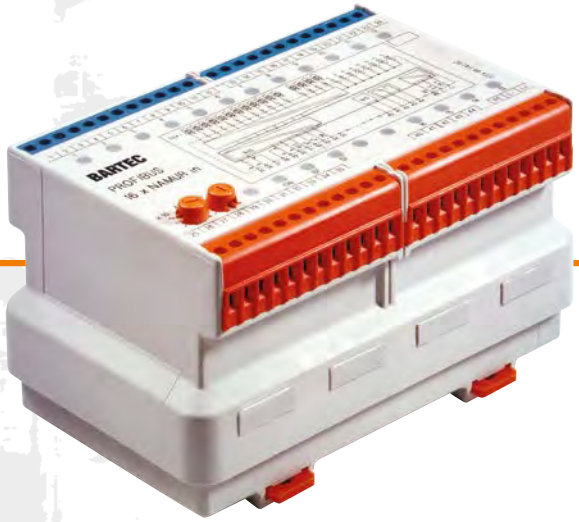
The software was developed for use with WINDOWS® XP or WINDOWS® 7.

Order no.
Software ANTARES Designer
17-28TF-0074

03-0330-0551-07/2014-BAT-291537

BARTEC

BARTEC



Bus and Interface Technology

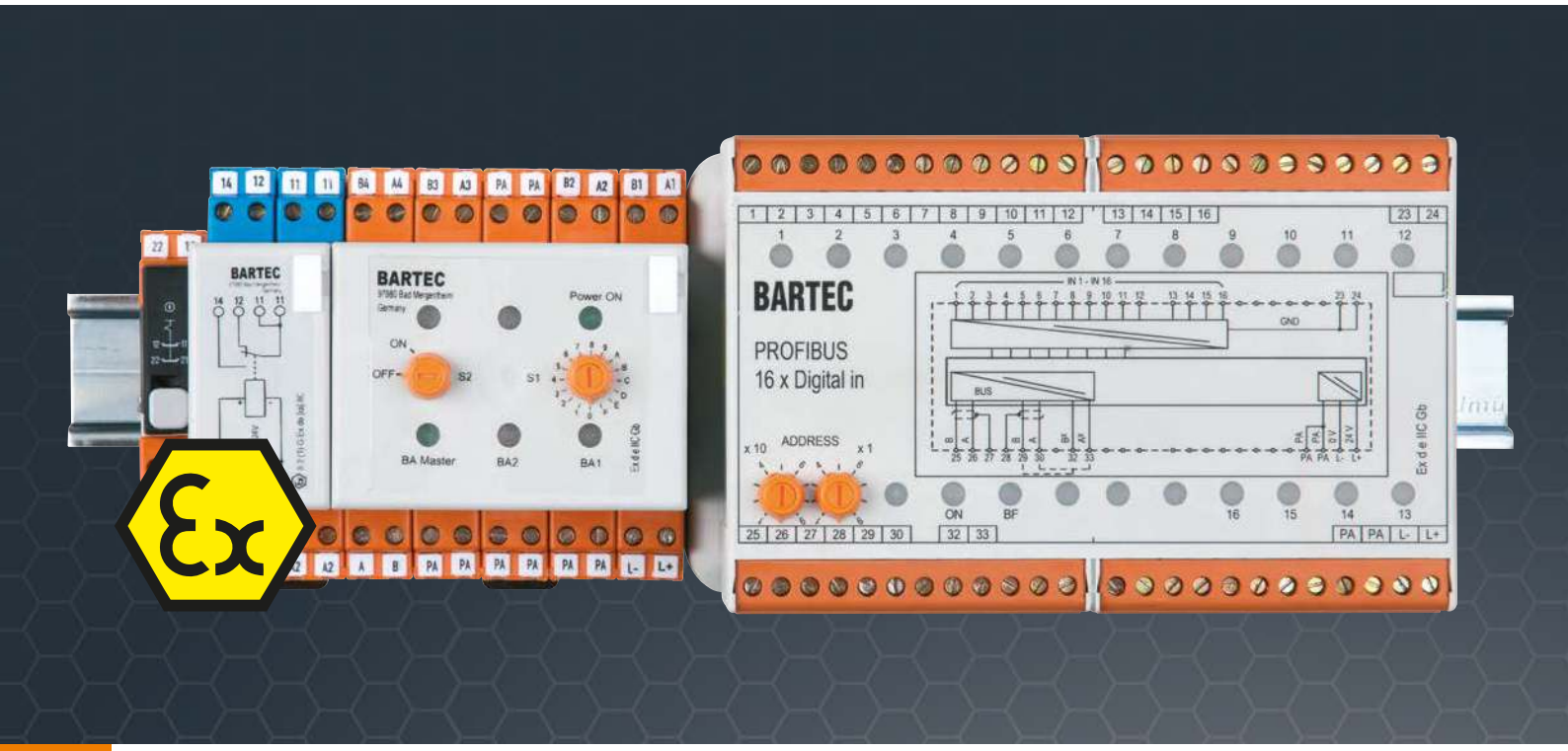
BARTEC

BARTEC

Bus and Interface Technology

Plant construction today

As a rule, plants are still constructed in a conventional way nowadays. This means that not only PLC/PCS with input and output cards but also isolating cards and a routing level are installed in the control centre in the safe area. This necessitates very extensive wiring both in the control cabinet and into the field. Having a lot of terminal points in the routing level in the main distributors and field distributors is complicated and carries risks of errors. Extensions and alterations require long-term planning.



Theory and Practice

The desire for the ideal field bus in which a lot of actuators and sensors are networked in one system can only become reality with intricate work and great expense. Simple components, such as e.g. proximity initiators and end-position switches, would become much more expensive than they usually are at present if they had to be provided with an international interface for communication on the bus. These high costs stand in the way of the fulfilment of the dream of an ideal field bus.

Innovative and practice-oriented

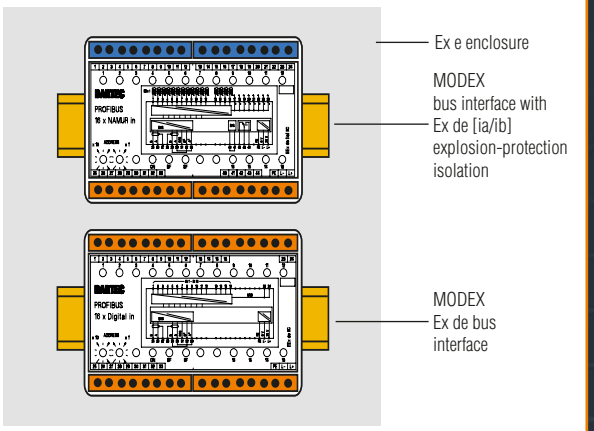
MODEX bus modules make it possible to conduct standard bus systems continuously from safe areas into hazardous (potentially explosive) areas.

- Significant space savings in the control area
- MODEX replaces the I/O level, explosion-protection isolation, routing levels, main and field distributors
- Bus cables replace extensive parallel cabling or master cables
- Flexibility in planning and engineering
- Significant cost reductions
- Standard PROFIBUS DP

The intrinsic safety type of protection is often used for components with low power requirements. The advantage of intrinsic safety lies in the handling or, to be more precise, in the replacement of sensor and actuator technology. However, motors, valves and heating are operated in addition to intrinsically-safe sensors in hazardous areas. These require much higher levels of power than can be switched with intrinsically-safe circuits.

Using standard bus systems in hazardous areas

By using MODEX bus modules, it is possible to conduct standard bus systems continuously from safe to hazardous areas – simply and without much work or expense. It is merely necessary to observe IEC 60079-14, which regulates the installation of electrical installations in hazardous areas.



Combination is the key word

You have measuring and control circuits with varying types of protection and wish to connect them through one system. BARTEC offers the solution in the form of a combination of types of protection, bringing you the benefits of:

- flexibility, functionality and a high degree of safety
- for intrinsically-safe measuring circuits with a low level of power
- to supply to consumers with a high level of power

Local control stations

Decentralised MODEX local control stations are stainless-steel, polyester or aluminium enclosures into which varying MODEX-components are installed to suit the respective task.

All BARTEC enclosures are certified in accordance with the European standard and satisfy a range of requirements including impact resistance, ageing, antistatics and the IP degree of protection. The fitted MODEX I/O and interface components and the combination of enclosures and modules as local control stations have also been granted approval.

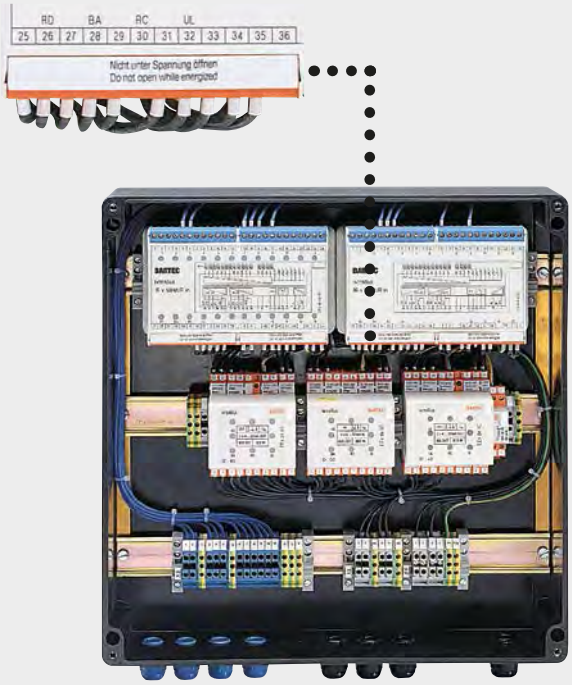
03-0330-0830-10/2014-BAT-374398/2

On-site installation

The MODEX local control stations are installed in the vicinity of the sensor-actuator technology directly in the hazardous area. They replace the I/O level, explosion-proof isolation, routing distribution and other field distributors.

Sensors and actuators are connected directly in the control stations. Individual control stations are linked to each other and also to the control centre by means of a standard bus system.

The direct networking considerably reduces the costs of planning, installation and testing.



MODEX proves successful on site

The great number of different MODEX modules allows a very flexible implementation of solutions for different tasks. BARTEC fits MODEX into Ex e terminal boxes to suit customer-specific requirements and supplies these as Ex-certified local controllers.

Thanks to the decentralised use of MODEX controllers, installations can be set up, tested and completed in modular fashion. To increase the availability of the system, both the voltage supply and the bus cabling can be designed with redundancy.

Commissioning/Servicing/Maintenance

Indicator lamps on the MODEX modules show the different operating states, such as the presence of voltage, BUS ok, channel active and a lot more directly and clearly.

Signals can be transmitted locally through floating relay contacts and all the usual signals in bus systems are available at the control centre too, of course.

03-0330-0830-10/2014-BAT-374398/3

MODEX modules

MODEX modules are electronic construction units in enclosures with the “d“ and “e“ degrees of protection. Terminals in an increased degree of safety allow the electric connection of the individual modules. All modules in the MODEX range are tested and approved by PTB (the German national metrology institute) in compliance with Ex de IIC or Ex de [ia/ib] IIC.

Selection chart PROFIBUS DP

	Application Sensor/Actuator	**Signals**	**Explosion protection**	**Channels**
	Switch	digital in	Ex e/Ex i	16
	Proximity initiator	digital in	Ex e/Ex i	16
	Electronic switch	digital in	Ex e/Ex i	16
	Solenoid valve	digital out	Ex e/Ex i	16
	Optical signals	digital out	Ex e/Ex i	16
	Acoustic signals	digital out I/O	Ex e	16
			Ex i	16 or 8/4 I/O
	Transmitter	analog in	Ex i	8 or 4/4
	Power sources	analog in I/O	Ex i	8 or 4/4 I/O
	I/- Converter	analog out	Ex e/Ex i	8
	Positioner	analog out	Ex e/Ex i	8
	Switch	Relais out	Ex e/Ex i	8

03-0330-0830-10/2014-BAT-374398/4

Enclosure sizes MODEX modules			
Enclosure size	**Length (mm)**	**Width (mm)**	**Height (mm)**
I	60	15	75
II	60	30	75
III	90	30	94
IV	90	75	94
V	100	170	94

Selection chart MODEX PROFIBUS modules

Type	Device features	Enclosure size	Order number
16 digital in	16 digital inputs DC 24 V direct activation of limit switches	V	**07-7331-2302/0000**
16 digital in NAMUR	16 inputs for proximity initiators or mechanical contacts	V	**07-7331-2303/.000**
16 x digital out	16 digital outputs DC 24 V 500 mA; direct activation of encapsulated solenoid valves	V	**07-7331-2301/0000**
16 x digital out	16 intrinsically-safe outputs	V	**07-7331-2301/1.00**
8 x 4 to 20 mA	8 analog inputs 4 to 20 mA Ex i for two-wire transmitters	V	**07-7331-2304/0000**
8 x 4 to 20 mA	8 analog inputs for two-wire transmitters or active 4 to 20 mA	V	**07-7331-230H/0000**
8 x 4 to 20 mA in passive	8 analog inputs 4 to 20 mA for four-wire transmitters	V	**07-7331-2304/2000**
8 x analog out	8 analog outputs 4 to 20 mA Ex i; Load 0 to 500 Ω	V	**07-7331-2306/.000**
4 x 4 to 20 mA analog in/analog out	4 analog inputs and 4 analog outputs	V	**07-7331-230H/1010**
Valve control module 4 out/8 in	4 digital outputs for Ex i valves 8 digital inputs for end-position signals	V	**07-7331-2305/.000**
4 x RTD in	4 Pt100/Pt1000 or potentiometer; temperature sensors, two- or three-wire technology	V	**07-7331-2307/0000**
8 x relays out	8 outputs AC 250 V/5 A or DC 100 V/2 A Mech. service life 10 mn switching cycles	V	**07-7331-2308/0000**
8 x relays out	8 change-over contacts for Ex i circuits, mech. service life: 10 mn switching cycles	V	**07-7331-2308/1000**
Couplers/Repeaters	coupler: signal refresh repeater: signal refresh and time refresh	V	**07-7311-9.WP/....**
FO coupler	bridging of great distances noise-immune signal transmission	IV	**07-7311-97WP/....**
Terminator	active PROFIBUS bus terminator resistor	III	**07-7311-93WP/0000**

Other approvals can be found on our homepage: www.bartec-group.com

03-0330-0830-10/2014-BAT-374398/5

PROFIBUS DP

The most frequently used form of transmission is that in conformance to PROFIBUS DP. The range of applications covers all areas in which a high speed of transmission and simple, cost-effective installation technology is required. A twisted, shielded copper cable with a pair of conductors is used.

PROFIBUS-DP transmission technology is easily to handle. You do not need any expertise to install the twisted cable. The bus structure makes it possible to couple and decouple the stations non-reactively and to commission the system gradually. Subsequent extensions do not have any influence on stations which are already in operation. The transmission speed can be selected within the range of 9.6 kbit/s and 1.5 Mbit/s. It is selected uniformly for all devices on the bus during system commissioning.

Installation notes

All devices are connected in a bus structure (line). Up to 32 stations (master or slaves) can be switched together in one segment. At the beginning and at the end of each segment the bus is terminated by an active bus terminator.

Both bus terminators must be supplied with voltage always to prevent problems arising during operation. The bus terminator is usually produced to be connectible in the devices or in the bus plug-in connector. If there are more than 32 stations or if the network is to be expanded, repeaters (power amplifiers) must be used to connect the individual bus segments. The max. cable length depends on the transmission speed. The details relating to cable length are based on standard PROFIBUS DP with the following parameters:

- wave impedance 135 to 165 Ω
- capacitance per unit length < 30 pF/m
- loop resistance 110 W/km
- core diameter 0.64 mm
- core cross-section > 0.34 mm²

Range depending on the speed of transmission							
Baud rate (kbits/s)	9.6	19.2	93.75	187.5	500	1500	12000
Reichweite	1200 m	1200 m	1200 m	1000 m	400 m	200 m	100 m

03-0330-0830-10/2014-BAT-374398/6

PROFIBUS cables

are offered by several reputable manufacturers. When connecting the stations, it is important to take care that the data lines do not get mixed up. To ensure that the system is highly immune to radiated interference, it is essential to use a shielded data line.

As far as possible, the shield should be connected to protective ground on both sides and with good conductivity via large-area shield clamps. Care must also be given to laying the data line separately from all high-voltage cables as far as possible. Where data rates > 1.5 Mbit/s, it is essential to avoid stubs.

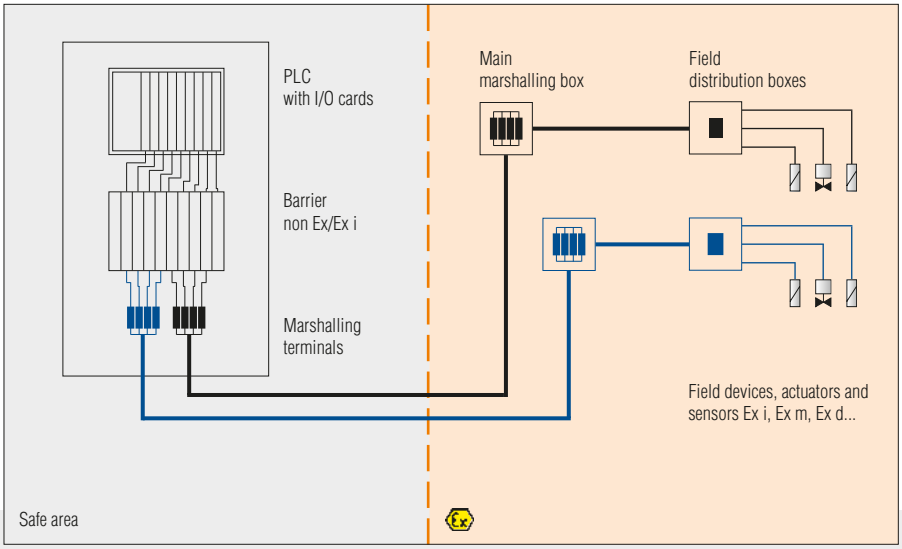
Fibre-optic cables (FO)

For applications in environments subject to high levels of interference radiation, fibre-optic cables can be used with PROFIBUS for electrical isolation or to increase the range at high transmission speeds. There are various fibre types available whose characteristic features vary with respect to range, price and scope of application. An overview of those currently available can be found in the table. PROFIBUS segments in fibre-optic cable technology can be set up either in star or in ring topology.

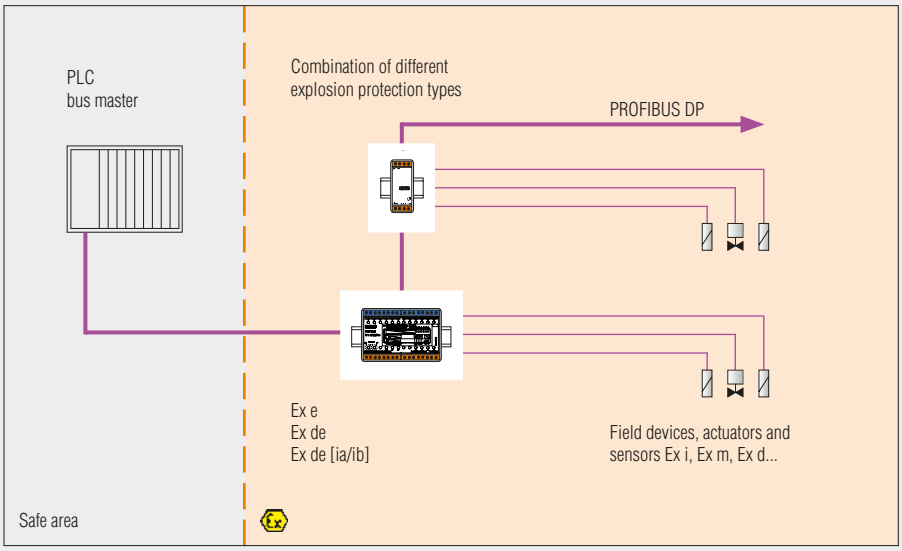
The PROFIBUS fibre-optic cable components from some manufacturers also allow redundant optical waveguide transmission paths to be set up with automatic switch-over to the alternative physical transmission path if a fault occurs. A lot of manufacturers therefore offer couplers between PROFIBUS DP transmission paths and optical waveguides. This allows switching between PROFIBUS DP and fibre-optic transmission at any time within one system. The PROFIBUS fibre-optic cable transmission specification is included in the DIN EN 60079-28 directive for explosive atmospheres.

Properties of the fibre-optic cable	
Fibre type	**Properties**
Multimode fibreglass	Medium range 2 to 3 km range
Monomode fibreglass	Long range > 15 km range
Plastic fibres	Short range < 80 m range
PCS/HCS fibres	Short range approx. 500 m range

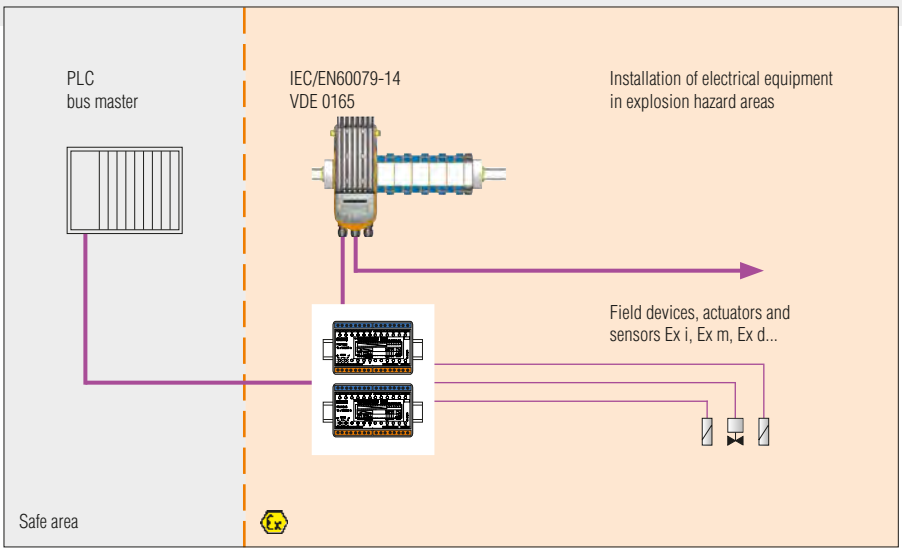
Standard cabling



PROFIBUS DP with MODEX components



PROFIBUS DP with MODEX and ANTARES



PROFIBUS-Interface

Features

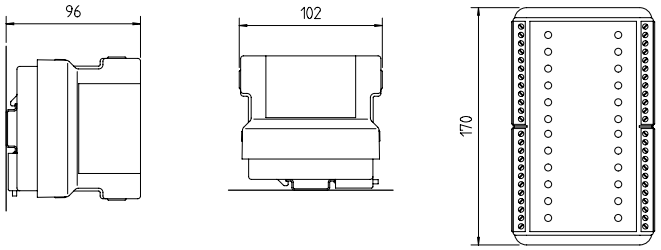
- 16 channels
- 24 V/500 mA outputs
- Direct control of solenoid valves
- Galvanic isolation
- LED display
- EMC according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Programmable address on front panel

Description

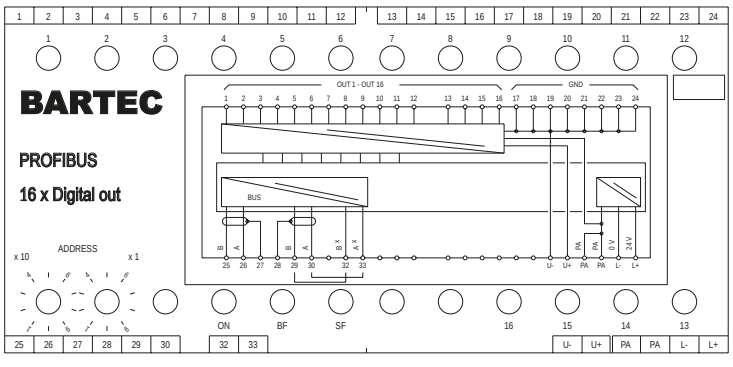
This module allows the activation of 16 actuators in the hazardous area via PROFIBUS-DP.

For example, encapsulated solenoid valves or indicator lamps can be directly activated with 24 V/500 mA. LEDs on the front of the module output bus status as well as output states.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 1.5 W

Galvanic isolation
power supply//bus//electronic//outputs

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF, SF
Outputs	16 x LED yellow, active

Output data

Supply voltage (U+, U-)
DC 24 V (18 to 30 V)

Power consumption
P = 240 W (max.)

Power dissipation
$P_{V\,tot.}$ = 7.3 W

Reverse voltage protection
Yes

Short-circuit protection
conditionally short-circuit-proof

Output voltage
Supply voltage -0.18 V

Output current
500 mA at T_U = +40 °C
400 mA at T_U = +60 °C

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
CSA 2011-2484303U
INMETRO UL-BR 13.0397U

Notes

- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2901.gsd

Order no.
07-7331-2301/0000

Technical data subject to change without notice.

03-0330-0136/F-08/2014-BAT-127309/2

PROFIBUS-Interface

Features

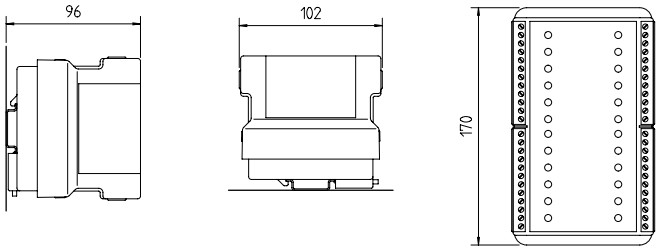
- 16 channels
- Direct control of solenoid valves
- Galvanic isolation
- LED display
- EMC according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Programmable address on front panel

Description

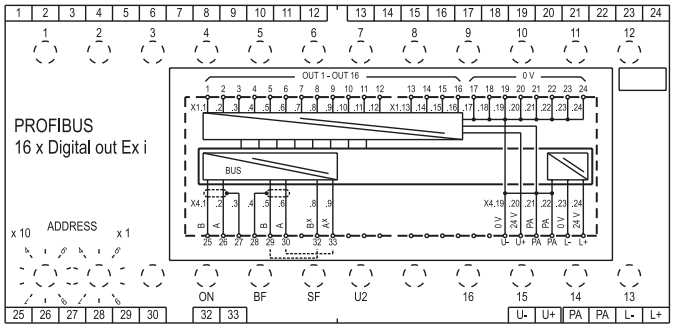
This module is used for the control of intrinsically safe actuators in the Ex area via PROFIBUS-DP.

It is, for example, possible to directly connect intrinsically safe solenoid valves or indicator lights. LEDs on the front of the module output bus status as well as output states.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-, U+, U-)
DC 20 V to DC 30 V

Power consumption

P = 2.5 W	(L+, L-)
P = 15 W (max.)	(U+, U-)

Power dissipation
$P_{V\,tot.}$ = 8 W

Reverse voltage protection
Yes

Galvanic isolation
L+, L-//Bus//U+, U-, outputs

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF, SF, U2
Outputs	LED yellow, active
	LED red, short-circuit

Output data

Short-circuit protection
conditionally short-circuit-proof

Output voltage
DC 18.1 V (bei U+ ≥ 22 V)

Output datas

I_N = 30 mA	R_i = 220 Ω	0
I_N = 35 mA	R_i = 180 Ω	1

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ib] IIC/IIB Gb
Ex d e [ib] I Mb
Class I Zone 1 IIC
A/Ex d e [ib] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 00 ATEX 1649
IECEx TUN 11.0035X
INMETRO UL-BR 13.0669X
CSA 2011-2484303U

Fitting
Type 17-6583-.10./....
Type 17-6583-.11./....
Ⓔx II (2) G / II (2) D
[Ex ib Gb] IIC/IIB
[Ex ib Db] IIIC/IIIB
For further data see verification certificates.

Safety data 0
Type 17-6583-.10./....
U_0 = 21 V
I_0 = 111.6 mA
P_0 = 586 mW
U_m = 253 V
L_0 = 3.2 mH (IIC)/12 mH (IIB)
C_0 = 188 nF (IIC)/1.27 µF (IIB)

Safety data 1
Type 17-6583-.11./....
U_0 = 21 V
I_0 = 139.2 mA
P_0 = 731 mW
U_m = 253 V
L_0 = 1.8 mH (IIC)/8 mH (IIB)
C_0 = 188 nF (IIC)/1.27 µF (IIB)

Notes

- Last bus modul in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2301.gsd

Order no.
07-7331-2301/1 ☐ 00
Please insert correct code.

Technical data subject to change without notice.

03-0330-0277/D-08/2014-BAT-203184/2

PROFIBUS-Interface

Features

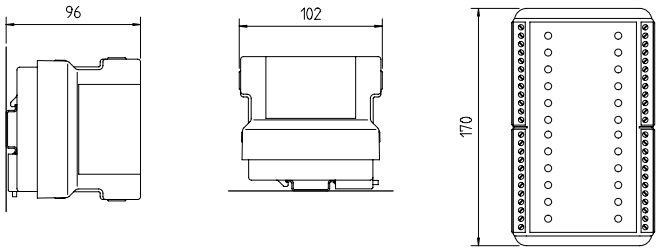
- 16 channels
- 24 V inputs
- Direct control via Ex-limit switches
- Galvanic isolation
- LED display
- EMC according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Programmable address on front panel

Description

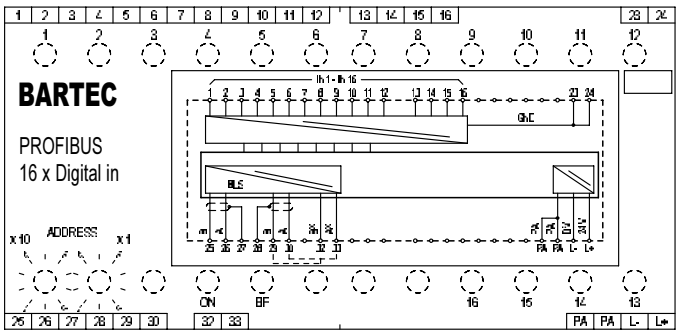
This module allows the connection of 16 digital signals to the PROFIBUS-DP within the hazardous area. Signals from flameproof encapsulated limit switches and control devices can be injected directly.

In case of NAMUR sensors or other signalling contacts that are controlled in an intrinsically safe way, barriers or isolator amplifiers are connected on line side. LEDs on the front of the module output the input states as well as important status messages.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure
for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V
(verpolungssicher)

Power consumption
P = 4.6 W

Power dissipation
P_v = 4.6 W

Galvanic isolation
power supply//bus//inputs

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF
Inputs	16 x double LED, active sensor

Input data

Switching threshold

0 - Signal	0 V to +5 V
1 - Signal	+10 V to +30 V

Power input
typ. 5 mA at 24 V
min. 4 mA at 20 V

Reverse voltage protection
conditionally protected against
polarity reversal

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
CSA 2011-2484303U

Notes

- Last bus modul in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2900.gsd

Order no.
07-7331-2302/0000

Technical data subject to change without notice.

03-0330-0137/E-07/2014-BAT-127310/2

PROFIBUS-Interface

Features

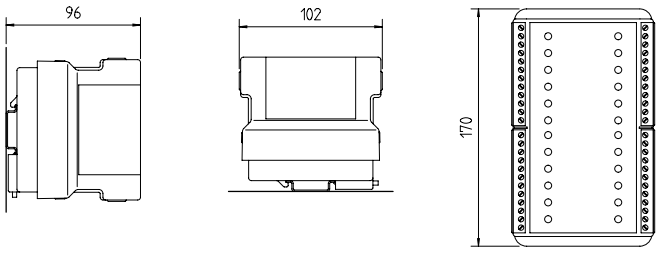
- 16 channels
- LED display
- for NAMUR sensors DIN EN 60947-5-6
- for mechanical contact
- galvanic isolation
- group error messages
- Ex ia/ib
- Cable monitoring (can be disabled)
- Programmable address on front panel

Description

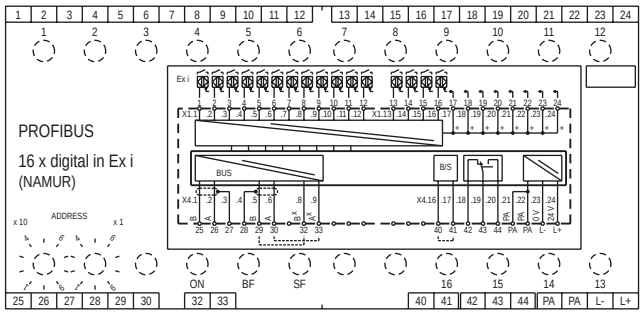
This module allows 16 digital signals to be coupled to PROFIBUS-DP in the hazardous area. NAMUR sensors, optocouplers, mechanical contacts or other actuating elements can be connected by means of intrinsically safe equipment.

The bus power supply and the inputs are galvanically isolated. The states of the individual inputs, the usual bus status messages and open circuit / short circuit are indicated by LEDs. When the module is wired to contacts, cable monitoring can be switched off.

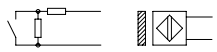
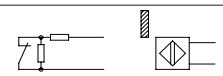
Dimensions/mounting positions



Wiring diagram/terminal assignment



Status chart

Input		Data bit 0000	Data bit 1000	Bus message "Error I/O" Jumper B/S removed	Bus message "Error I/O" Jumper B/S connected
damped		1	0	0	0
undamped		0	1	0	0
open circuit		1	0	1	0
short circuit		0	1	1	0

Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Enclosure	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 5.1 W

Power dissipation
P_V = 5.1 W

Galvanic isolation
power supply//inputs//bus//electronic

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF, SF
Inputs	16 x double LED
	LED yellow, damped
	LED red, open/short circuit

Sensor power supply
U_a = 8.2 V

Switching threshold

open circuit	< 0.23 mA
damped	< 1.2 mA
undamped	> 2.1 mA
short circuit	> 7.4 mA

Transmittable frequency
100 Hz

Cable monitoring
Group error message via bus and
contact assembly AC 230 V/3 A/100 VA

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 98 ATEX 1355 X
IECEx TUN 11.0024X
INMETRO UL-BR 13.0677X
CSA 2011-2484303U

Fitting
Type 17-6583-33../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
For further data see verification certificates.

Safety data

U_0	=	12.3 V
I_0	=	31.8 mA
$P_{max.}$	=	97.8 mW
U_m	=	253 V
L_0	=	31 mH (IIC)/115 mH (IIB)
C_0	=	1.28 µF (IIC)/8.1 µF (IIB)

Notes

- To disable open/short circuit monitoring, bridge terminals 40 and 41
- Use a 1 kΩ/10 kΩ resistive coupling element type 17-9Z62-0002 for open/short circuit monitoring during contact scan
- With 9-16 sensors also use external terminals
- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2903.gsd

Order no.

07-7331-2303/0000
07-7331-2303/1000

Technical data subject to change without notice.

03-0330-0138/F-07/2014-BAT-127311/2

PROFIBUS-Interface

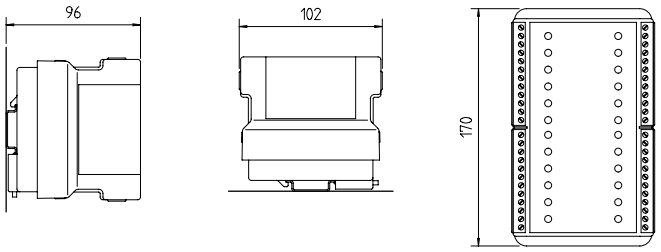
Features

- 8 channels
- Ex ia/ib
- 12 bit resolution
- Galvanic isolation
- LED display
- Programmable address on front panel

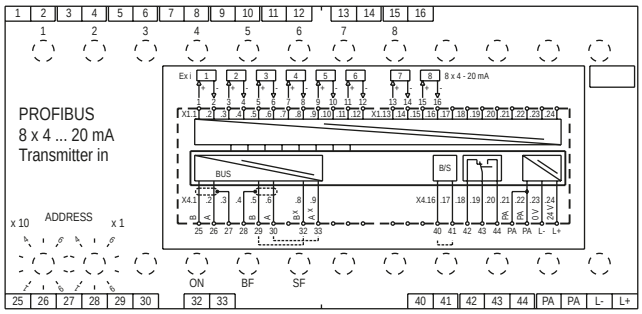
Description

This module allows the connection of 8 intrinsically safe transmitters to PROFIBUS-DP in the hazardous area. The input signal is transmitted with 12 bit resolution and high-noise immunity.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with covers	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption
P = 7.6 W

Power dissipation
P_V = 5.1 W

Galvanic isolation
power supply//inputs//bus//electronic

Bus interface
RS485 with screw-clamping terminals

Display

Bus status	ON, BF, SF
Inputs	8 x double LED LED yellow, sensor active LED red, open circuit/ short circuit

Transmitter power supply
U_a = 15 V at 20 mA single channels
conditionally short-circuits-proof

Signal range
4 to 20 mA
4 mA = 655 dec.
20 mA = 3276 dec.

Transmission range
0 to 25 mA

Input resistance
R_i = 100 Ω

Conversion time
< 1 ms

Resolution
12 bit

Accuracy (with shielded cable)
± 0.2 %

Cable monitoring
Group error message via bus and
contact assembly AC 250 V/3 A/100 V

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 98 ATEX 1367 X
IECEx TUN 11.0032X
INMETRO UL-BR 13.0680X
CSA 2011-2484303U

Fitting
Type 17-6583-34../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
For further data see verification certificates.

Safety data
U_0 = 26 V
U_m = 253 V
P_0 = 549 mW
I_0 = 84.3 mA
L_0 = 5.3 mH (IIC)/20 mH (IIB)
C_0 = 99 nF (IIC)/770 nF (IIB)
P = 549 mW

Notes

- To disable open/short circuit monitoring, bridge terminals 40 and 41
- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2902.gsd

Order no.
07-7331-2304/0000

Technical data subject to change without notice.

03-0330-0139/D-07/2014-BAT-127312/2

PROFIBUS-Interface

Features

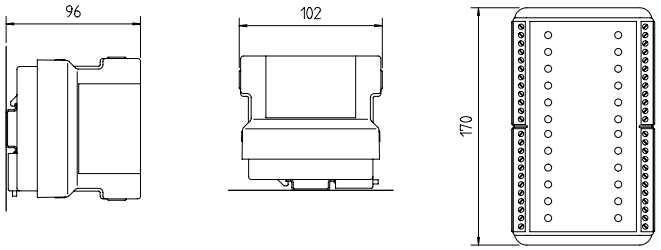
- 8 Channels
- 12 bit resolution
- Galvanic isolation
- LED display
- Programmable address on front panel

Description

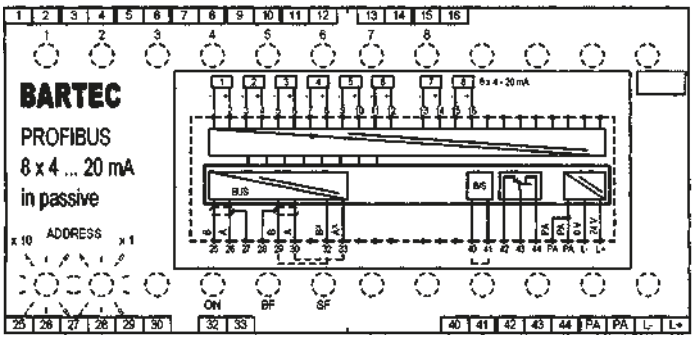
This module allows the connection of 8 transmitters to PROFIBUS-DP in the hazardous area.

The input signal is transmitted with 12 bit resolution and high-noise immunity.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with covers	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption
P = 7.6 W

Power dissipation
P_V = 4.1 W

Galvanic isolation
power supply//inputs//bus//electronic

Bus interface
RS485 with screw-clamping terminals

Display

Bus status	ON, BF, SF
Inputs	8 x double LED
	LED yellow, sensor active
	LED red, open/short circuit

Signal range
4 to 20 mA
4 mA = 655 dec.
20 mA = 3276 dec.

Transmission range
0 to 25 mA

Input resistance
R_i = 100 Ω

Conversion time
< 1 ms

Resolution
12 bit

Accuracy (with shielded cable)
± 0.2 %

Cable monitoring
Group error message via bus and
contact assembly AC 250 V/3 A/100 VA

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
CSA 2011-2484303U

Notes

- To disable open/short circuit monitoring, bridge terminals 40 and 41
- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2902.gsd

Order no.
07-7331-2304/2000

Technical data subject to change without notice.

03-0330-0283/D-07/2014-BAT-207713/2

PROFIBUS-Interface

Features

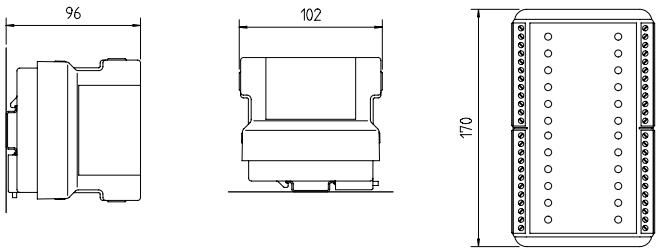
- 8 channels
- 12 bit resolution
- Galvanic isolation
- LED display
- Programmable address on front panel

Description

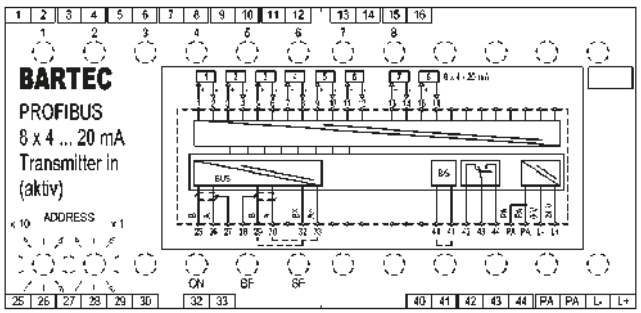
This module allows the connection of 8 transmitters to PROFIBUS-DP in the hazardous area. Two wire transmitters can be connected.

The input signal is transmitted with 12 bit resolution and high-noise immunity.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption
P = 7.6 W

Power dissipation
P_V = 5.1 W

Galvanic isolation
power supply//inputs//bus//electronic

Bus interface
RS485 with screw-clamping terminals

Display

Status Bus	ON, BF, SF
Inputs	8 x double LED LED yellow, active LED red, open circuit/ short circuit

Transmitter power supply
U_a = 15 V at 20 mA
single channels conditionally
short-circuits-proof

Signal range
4 to 20 mA
4 mA = 655 dec.
20 mA = 3276 dec.

Transmission range
0 to 25 mA

Input resistance
R_i = 100 Ω

Conversion time
< 1 ms

Resolution
12 bit

Accuracy (with shielded cable)
± 0.2 %

Cable monitoring
Group error message via bus and
contact assembly AC 250 V/3 A/100 V

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
CSA 2011-2484303U

Notes

- Bridge B/S-terminals 40 and 41 to disable open/short circuit monitoring
- Last bus module in system:
  Brücke A-A^X (terminals 30, 33)
  Brücke B-B^X (terminals 29, 32)
- GSD-file: BARX2902.gsd

Order no.
07-7331-2304/3000

Technical data subject to change without notice.

PROFIBUS-Interface

Features

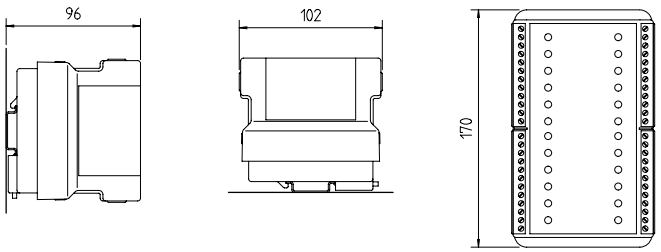
- 4 outputs
- 8 Ex i inputs DIN EN 60947-5-6
- EMC according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Galvanic isolation
- Ex ia/ib
- LED display
- Programmable address on front panel

Description

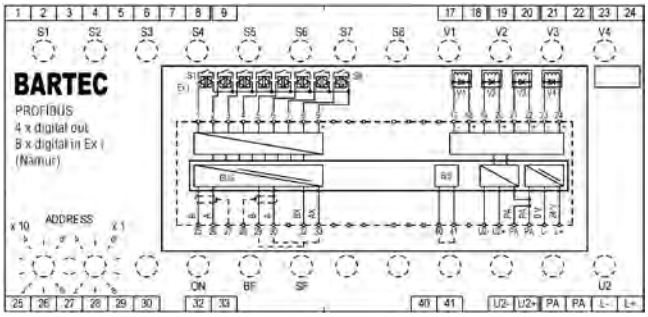
This module can be used for the activation of encapsulated solenoid valves within the hazard-ous area by means of the PROFIBUS with the ability to monitor the end of stroke positions. Four valves can be activated, 8 final positions can be monitored via the inputs for the NAMUR sensors.

The current status and final position are indicated by means of LEDs. As additional feature, open or short circuits are monitored for the 8 input channels.

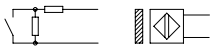
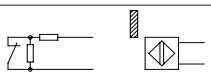
Dimensions/mounting positions



Wiring diagram/terminal assignment



Status chart

Input		Data bit	Bus message "Error I/O"	
			Jumper B/S removed	Jumper B/S removed
damped		1	0	0
undamped		0	0	0
open circuit		1	1	0
short circuit		0	1	0

Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Terminals
2.5 mm², fine stranded

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-, U2+, U2-)
DC 20 V to DC 30 V

Power consumption
P = 60 W (at max. current output)

Power dissipation
$P_{V\,tot.}$ = 3.5 W

Galvanic isolation
L+, L-//Bus//U2+, U2- output//input
NAMUR

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF, SF, U2
Inputs	8 x double LED
	LED yellow, damped
	LED red, open circuit/short circuit
Outputs	4 x double LED
	LED yellow, active

Sensors
8 NAMUR sensors, mechanical
contacts or others (EN 60947-5-6)

Function
damped/undamped
open/short circuit detection

Characteristics
U_N = 8.2 V

Valve/output control
4 x U2 - 0.2 V/500 mA

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 98 ATEX 1355 X
IECEx TUN 11.0024X
INMETRO UL-BR 13.0677X
CSA 2011-2484303U

Fitting
Type 17-6583-.50./....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
For further data see verification certificates.

Safety data (in)
U_0 = 11.8 V
I_0 = 31 mA
P_0 = 90 mW
L_0 = 34 mH (IIC)/130 mH (IIB)
C_0 = 1.5 µF (IIC)/9.9 µF (IIB)

Notes

- Bridge B/S-terminals 40 and 41 to disable open/short circuit monitoring
- Use a 1kΩ/10KΩ resistive coupling element type 17-9Z62-0002 for open/short circuit monitoring during contact scan
- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2305.gsd

Order no.
07-7331-2305/0000

Technical data subject to change without notice.

03-0330-0232/E-07/2014-BAT-201612/2

PROFIBUS-Interface

Features

- 4 Ex i valves
- 8 Ex i inputs DIN EN 60947-5-6
- EMC according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Galvanic isolation
- LED display
- Ex ia/ib
- Programmable address on front panel

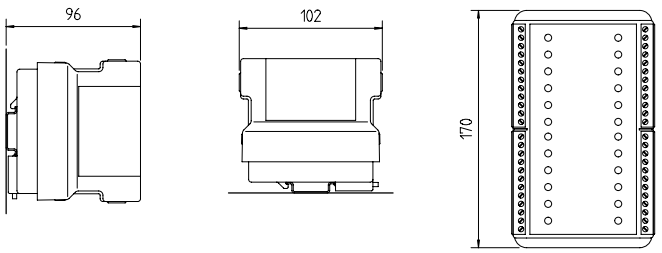
Description

This module can be used for the activation of intrinsically safe valves within the hazardous area by means of the PROFIBUS with the ability to monitor the end of stroke positions.

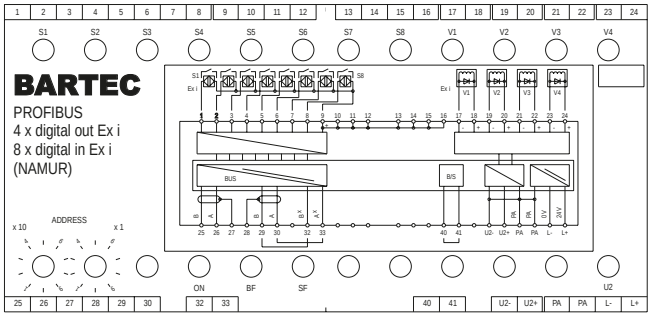
Four intrinsically safe valves can be activated, 8 final positions can be monitored via the inputs for the NAMUR sensors. The current status and final position are indicated by means of LEDs.

As additional feature, open or short circuits are monitored for the 8 input channels.

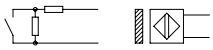
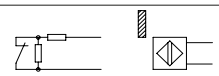
Dimensions/mounting positions



Wiring diagram/terminal assignment



Status chart

Input		Data bit	Bus message „Error I/O“	
			Jumper B/S removed	Jumper B/S connected
damped		1	0	0
undamped		0	0	0
open circuit		1	1	0
short circuit		0	1	0

Technical data

Construction
Flameproof, clip-on enclosure for TS 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 6.5 W

Power dissipation
$P_{V\,tot.}$ = 4.5 W

Galvanic isolation
L+, L-//Bus//U2+, U2- output//
input NAMUR

Bus interface
RS485 with screw-clamping terminals

Display

Status	ON, BF, SF, U2
Inputs	8 x double LED
	LED yellow, damped
	LED red, open circuit/short circuit
Outputs	4 x double LED
	LED yellow, active
	LED red, short circuit

Sensors
8 NAMUR sensors, mechanical
contacts or others (EN 60947-5-6)

Function
damped/undamped
open/short circuit detection

Characteristics
U_N= 8.2 V

Valve/output control
4 x DC 22 V (at U2 ≥ 24 V); R_i = 301 Ω

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 98 ATEX 1355 X
IECEx TUN 11.0024X
INMETRO UL-BR 13.0677X
CSA 2011-2484303U

Fitting
Type 17-6583-.51./....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
For further data see verification certificates.

Safety data (in)
U_0 = 11.8 V
I_0 = 31 mA
P_0 = 90 mW
U_m = 253 V
L_0 = 34 mH (IIC)/130 mH (IIB)
C_0 = 1.5 µF (IIC)/9.9 µF (IIB)

Satety data (out)
U_0 = 26.8 V
I_0 = 97 mA
U_m = 253 V
R_i = 301 Ω
P_0 = 650 mW
L_0 = 3.9 mH (IIC)/15 mH (IIB)
C_0 = 92 nF (IIC)/720 nF (IIB)

Notes

- Bridge B/S-terminals 40 and 41 to disable open/short circuit monitoring
- Use a 1kΩ/10KΩ resistive coupling element type 17-9Z62-0002 for open/short circuit monitoring during contact scan
- GSD-file: BARX2305.gsd

Order no.
07-7331-2305/1000

Technical data subject to change without notice.

03-0330-0146/E-07/2014-BAT-127597/2

PROFIBUS-Interface

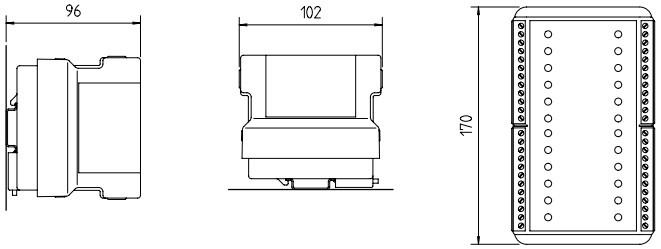
Features

- 8 channels
- Outgoing isolator for 4 to 20 mA
- Short-circuit-proof outputs
- Ex ia/ib or non-intrinsically safe
- 12 bit resolution
- Galvanic isolation
- LED display
- Programmable address on front panel

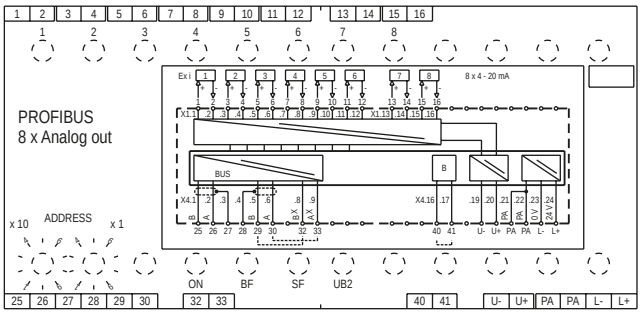
Description

This module is used for the direct output of 8 intrinsically safe or non-intrinsically safe 4 to 20 mA signals via the PROFIBUS-DP.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure
for TH 35 rail

Enclosure material
High-quality thermoplastics

Terminals
2.5 mm², fine stranded

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with covers	IP 30/IEC 60529

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to max. DC 30 V

Power consumption
P = 1.8 W

Galvanic isolation
power supply//U+, U- outputs//
bus//electronic

Bus interface
RS485 with screw-clamping terminals

Cable monitoring
Group error message via bus

Display

Status	ON, BF, SF, UB2
Outputs	8 x double LED
	LED yellow, output ok
	LED red, open circuit/
Status error	SF, LED red

Output data

Supply voltage (U+, U-)
DC 20 V to max. DC 30 V

Power consumption
P = 5.7 W

Power dissipation
$P_{V\,tot}$ = 7.5 W

Signal range
4 to 20 mA
4 mA = 655 dez.
20 mA = 3276 dez.

Resolution
12 bit

Quantising
3.91 µA/LSB

Load
0 to 500 Ω

Response characteristics

Basic error
at T_U = 25 °C ± 0.2 %

Linearity
± 0.2 %

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type Ex i = Version 0
Ex II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Ex protection type Ex e = Version 1
Ex II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 99 ATEX 1426
IECEx TUN 11.0033X
INMETRO UL-BR 13.0681X
CSA 2011-2484303U

Fitting
Type 17-6583-3600
Ex II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
For further data see verification certificates.

Safety data
U_0 = 21.4 V
I_0 = 93.9 mA
P_0 = 503 mW
C_0 = 176 nF (IIC)/1.2 µF (IIB)
L_0 = 3.4 mH (IIC)/13.9 mH (IIB)
U_m = 253 V

Notes

- To disable open/short circuit monitoring, bridge terminals 40 and 41
- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2306.gsd

07-7331-2306/ □ 000
Order no.
Please insert correct version.

Technical data subject to change without notice.

03-0330-0140/E-07/2014-BAT-127486/2

PROFIBUS-Interface

Features

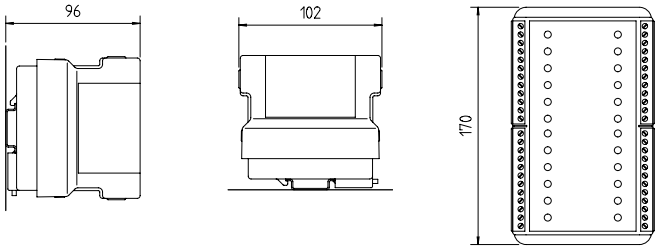
- 4 Channels
- Pt100, Pt1000, Potentiometer, Resistors
- Ex ia/ib
- Galvanic isolation
- LED display
- Programmable address on front panel

Description

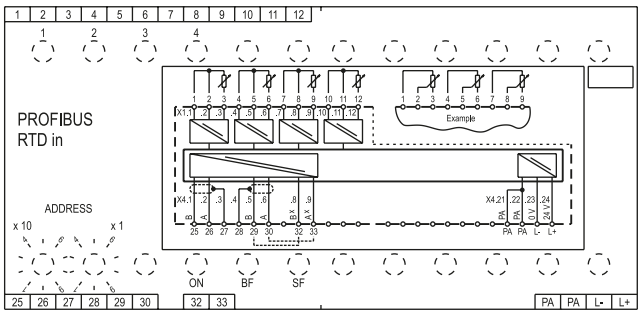
This modul allows the intrinsically safe connection of 4 Pt100, Pt1000, resistors or potentiometers at PROFIBUS-DP.

The inputs themselves, power supply and the bus are galvanically isolated.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Operating mode	Response time	
4 x Pt100	380 ms (*1)	320 ms (*2)
4 x Pt1000	380 ms (*1)	320 ms (*2)
4 x Potentiometer	80 ms (*3)	
4 x Resistor	80 ms (*3)	
2 x Pt100 (channel 1 and 2); 2 x Potentiometer (channel 3 and 4)	380 ms (*1)	320 ms (*2)
2 x Pt100 (channel 1 and 2); 2 x Resistor (channel 3 and 4)	380 ms (*1)	320 ms (*2)
2 x Pt1000 (channel 1 and 2); 2 x Potentiometer (channel 3 and 4)	380 ms (*1)	320 ms (*2)
2 x Pt1000 (channel 1 and 2); 2 x Resistor (channel 3 and 4)	380 ms (*1)	320 ms (*2)
all values 0 (dez.)		
all values 32767 (dez.)		

(*1) Filter on 50 Hz adjusted
(*2) Filter on 60 Hz adjusted
(*3) Filter on 250 Hz

Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastic

Protection class

Enclosure	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2,5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption
P = 4 W

Power dissipation
P_V = 4 W

Galvanic isolation
power supply//inputs (one below the other)
//bus//electronic

Bus interface
RS485 with screw-clamping terminals

Sensor power
200 µA

Display

Bus status	ON, BF, SF
Inputs	4 x double LED
	LED yellow, sensor aktive
	LED red, open/short circuit

Measuring range
Temperature (Pt100, Pt1000)
-150 °C to 850 °C
Potentiometer 500 Ω to 5 kΩ
Resistor 0 Ω to 5 kΩ

Account

Temperature	-1500 to 8500 (dec.)
Potentiometer	0000 to 1000 (dec. 0-100 %)
Resistor	0000 to 5000 (dec.)

Cable resistor
R ≤ 50 Ω

Accuracy
0.2 %

Temperature drift
0.05 %/10 K

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC/IIB Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 01 ATEX 1668
IECEx TUN 11.0028X
INMETRO UL-BR 13.0664X
CSA 2011-2484303U

Fitting
Type 17-6583-.7../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC/IIB
[Ex ia Da] IIIC/IIIB
For further data see verification certificates.

Safety data
U_0 = 7.2 V
U_m = 253 V
I_0 = 6 mA
P_0 = 11 mW
L_0 ≤ 25 mH (IIC)/50 mH (IIB)
C_0 ≤ 1.1 µF (IIC)/5.7 µF (IIB)

Notes

- Last bus modul in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2307.gsd

Order no.
07-7331-2307/0000

Technical data subject to change without notice.

03-0330-0141/C-07/2014-BAT-127487/2

PROFIBUS-Interface

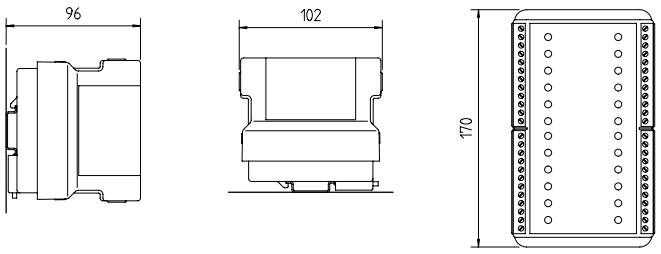
Features

- 8 channels
- Relay outputs AC 250 V/DC 100 V
- Galvanic isolation
- LED display
- EMV according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Programmable address on front panel

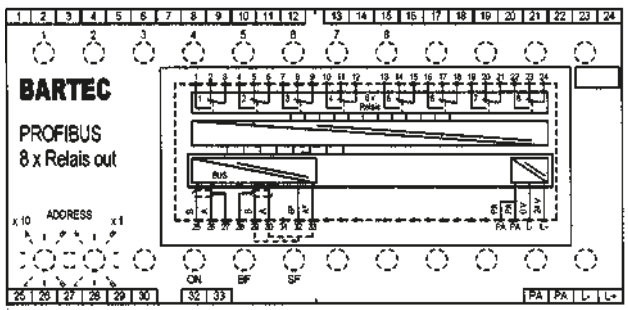
Description

The MODEX PROFIBUS interface with its 8 relay outputs offers volt free switching in zone 1 Ex areas. For example, encapsulated solenoid valves, indicator lamps or other certificated devices up to 6 A can be directly activated. Output states and the bus status messages are indicated by LEDs.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 3.2 W

Power dissipation
$P_{V\,tot.}$ = 6 W

Galvanic isolation
power supply//bus//electronic//outputs

Bus interface
RS485 with screw clamping terminals

Display

Bus status	ON, BF, SF
Outputs	8 x LED yellow, active

Output data

Output relay
1 changeover contact

U_A	$I_{max.}$	
AC 250 V (max.)	6.0 A	cos φ = 1
DC 100 V	0.5 A	ohmic load
DC 60 V	1.0 A	
DC 30 V	6.0 A	
DC 5 V	6.0 A	

Mechanical service life
10 million operations

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ex II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
CSA 2011-2484303U

Notes

- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2308.gsd

Order no.
07-7331-2308/0000

Technical data subject to change without notice.

03-0330-0142/D-07/2014-BAT-127488/2

PROFIBUS-Interface

Features

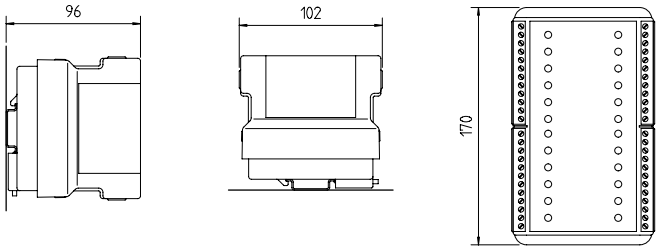
- 8 channels
- Relay outputs, 1 changeover contact
- Galvanic isolation
- LED display
- EMV according to DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007
- Programmable address on front panel

Description

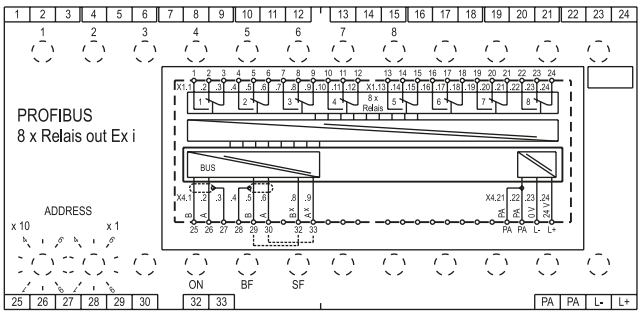
This module is used for the control of intrinsically safe actuators in the Ex area Zone 1 via PROFIBUS-DP.

It is, for example, possible to directly connect intrinsically safe solenoid valves or indicator lights. LEDs on the front of the module output bus status as well as output states.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 3.2 W

Power dissipation
$P_{V\,tot.}$ = 6 W

Galvanic isolation
power supply//bus//electronic//outputs

Bus interface
RS485 with screw clamping terminals

Display

Bus status	ON, BF, SF
Outputs	8 x LED yellow, active

Output data

Output relay
1 changeover contact
max. 40 W
max. 4 A

Mechanical service life
10 million operations

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 99 ATEX 1457
IECEx TUN 11.0034X
INMETRO UL-BR 13.0684X
CSA 2011-2484303U

Fitting
Type 17-6583-.8../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC

For further data see verification certificates.

Electrical data
U_m = 253 V

Maximum value per circuit: U_i = 60 V
The values for total voltage of two relay contact circuits, place side by side, must not exceed 60 V. Inductors and capacitors contained in the sources must not taken into account!

Notes

- Last bus module in system:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file: BARX2308.gsd

Order no.
07-7331-2308/1000

Technical data subject to change without notice.

03-0330-0278/D-07/2014-BAT-203185/2

PROFIBUS-Interface

Features

- 8 input channels/4 input channels and 4 output channels
- Ex ia/ib
- 16 bit resolution
- Galvanic isolation
- LED indicators
- Programmable address on front panel

Description

8 x 4 to 20 mA in

This module is used for direct connection of 8 x 4 to 20 mA signals to PROFIBUS-DP.

2-wire transmitters or active 4 to 20 mA signals can be connected. The input signal is resolved with 16 bits and is transmitted with high resistance to interference.

4 x 4 to 20 mA in/out

This module is equipped with 4 x 4 to 20 mA inputs with the same properties as above and additional 4 x 4 to 20 mA outputs for normal actuators.

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC/IIB Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 01 ATEX 1724
IECEx TUN 11.0026X
INMETRO UL-BR 13.0679X
CSA 2011-2484303U

Fitting
Type 17-6583-.H../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC/IIB
[Ex ia Da] IIIC/IIIB
For further data see verification certificates.

Safety data
U_0 = 26.7 V
I_0 = 89.9 mA
P_0 = 600 mW
L_0 = 5 mH (IIC)/18 mH (IIB)
C_0 = 93 nF (IIC)/720 nF (IIB)

External 4 to 20 mA-signals
U_i = 50 V
I_i = 87.7 mA

Technical data

Construction
Flameproof, clip-on enclosure to TH 35

Enclosure material
High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 7.8 W

Power consumption dissipation
P_V = 4.9 W

Galvanic isolation
Power supply//Inputs and circuit//Bus

Bus interface
RS485 with terminal screws

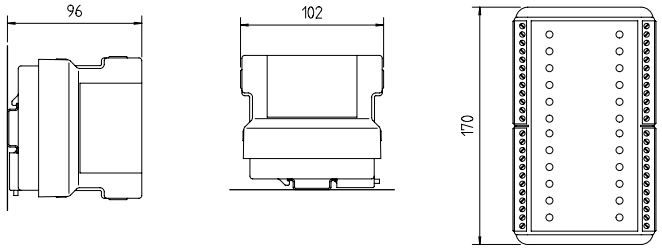
Display

Status	ON, BF, SF
In-/Outputs	8 x double LED LED yellow, sensor active LED red, open loop/short circuit

Cable monitoring
Error message for each channel via bus

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



■ Data input/output channels

Signal range
4 to 20 mA

Transmission range
0 to 24 mA
4 mA = 10922 dez.
20 mA = 54612 dez.
24 mA = 65535 dez.

Resolution
16 bit

Precision
± 0.1 % (with screened cable)

■ Input channel data

Supply for 2-wire transmitter
U_a = 16 V to 20 mA
all channels are short-circuit proof at the same time

Input resistance
External 4 to 20 mA-signals:
R_i = 234 Ω + approx. 2 V (3 diodes)

Transformation time
< 70 ms

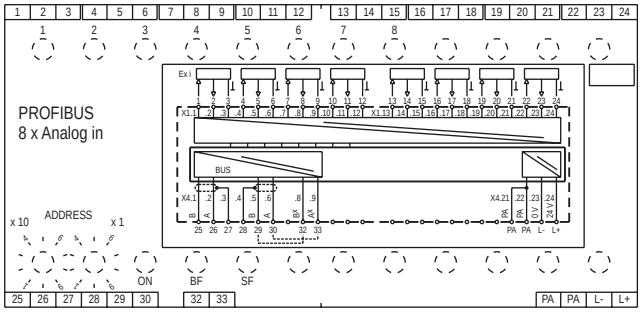
■ Output channels

Output resistance
R_i = 367 Ω

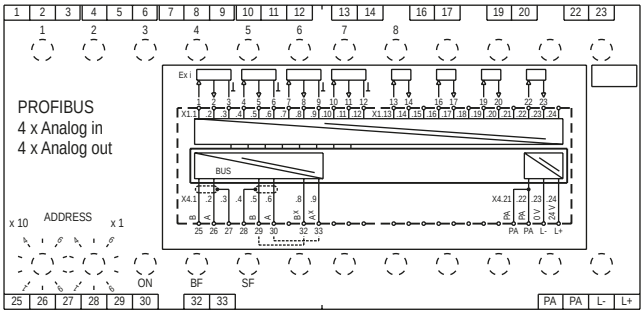
Quantification
366.2 nA/LSB

Load
< 500 Ω

Wiring diagram/terminal assignment 8 x 4 to 20 mA in



Wiring diagram/terminal assignment 4 x 4 to 20 mA in/out



Notes

- Last bus modul:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file:
  BARX2302.gsd (8 x 4 to 20 mA in)
  BARX2303.gsd (4 x 4 to 20 mA in/out)

Order no.

07-7331-230H/0000
8 x 4 to 20 mA in

07-7331-230H/1010
4 x 4 to 20 mA in/out

Technical data subject to change without notice.

03-0330-0285/E-07/2014-BAT-208351/2

PROFIBUS-Interface

Features

- Data in standard format
- 8 input channels/4 input channels and 4 output channels
- Ex ia/ib
- 15 bit plus sign
- Galvanic isolation
- LED indicators
- Programmable address on front panel

Description

8 x 4 to 20 mA in

This module is used for direct connection of 8 x 4 to 20 mA signals to PROFIBUS-DP.

2-wire transmitters or active 4 to 20 mA signals can be connected. The input signal is resolved with 15 bits plus sign and is transmitted with a high resistance to interference.

4 x 4 to 20 mA in/out

This module is equipped with 4 x 4 to 20 mA inputs with the same properties as above and additional 4 x 4 to 20 mA outputs for normal actuators.

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC/IIB Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U
TÜV 01 ATEX 1724
IECEx TUN 11.0026X
INMETRO UL-BR 13.0679X
CSA 2011-2484303U

Fitting
Type 17-6583-.H../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC/IIB
[Ex ia Da] IIIC/IIIB
For further data see verification certificates.

Safety data
U_0 = 26.7 V
I_0 = 89.9 mA
P_0 = 600 mW
L_0 = 5 mH (IIC)/18 mH (IIB)
C_0 = 93 nF (IIC)/720 nF (IIB)

External 4 to 20 mA-signals
U_i = 50 V
I_i = 87.7 mA

Technical data

Construction
Flameproof, clip-on enclosure to TH 35

Enclosure material
High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage (L+, L-)
DC 20 V to DC 30 V

Power consumption
P = 7.8 W

Power consumption dissipation
P_V = 4.9 W

Galvanic isolation
Power supply//Inputs and circuit//Bus

Bus interface
RS485 with terminal screws

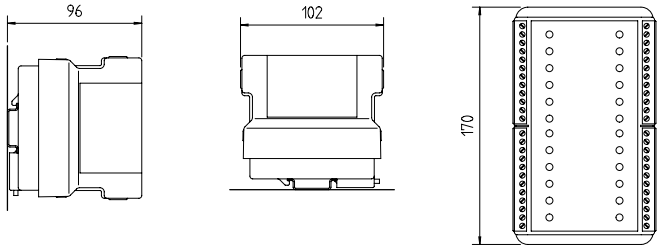
Display

Status	ON, BF, SF
In-/Outputs	8 x double LED LED yellow, sensor active LED red, open loop/short circuit

Cable monitoring
Error message for each channel via bus

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



03-0330-0711-07/2014-BAT-346038/1

■ Data input/output channels

Signal range
4 to 20 mA

Transmission range

Current	Range 4 to 20 mA		
21.5 mA	7380_{hex}	29568 dec.	Value at short circuit $7FFF_{hex}$
20 mA	6000_{hex}	27648 dec.	
4 mA	0000_{hex}	0 dec.	Value at open circuit 8000_{hex}
3.5 mA	8000_{hex}	-32768 dec.	

Resolution
15-bit plus sign

Precision
± 0.1 % (with screened cable)

■ Input channel data

Supply for 2-wire transmitter
U_a = 16 V to 20 mA
all channels are short-circuit proof at the same time

Input resistance
External 4 to 20 mA-signals:
R_i = 234 Ω + approx. 2 V (3 diodes)

Transformation time
< 70 ms

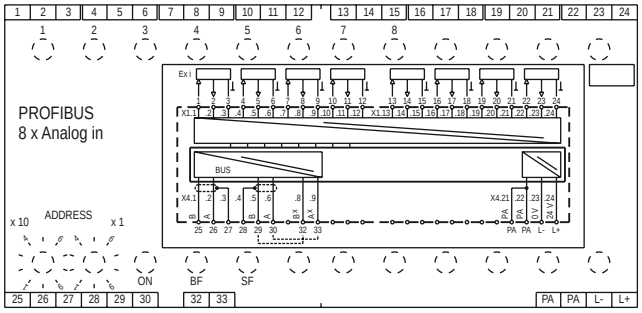
■ Output channels

Output resistance
R_i = 367 Ω

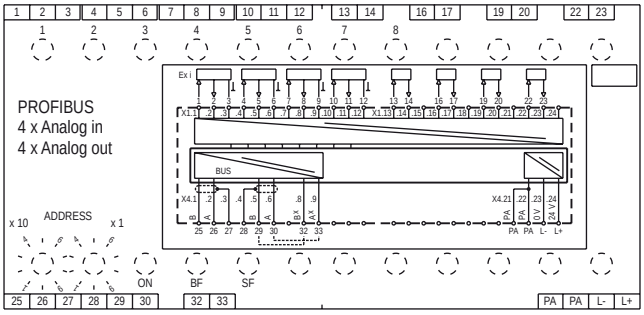
Quantification
366.2 nA/LSB

Load
< 500 Ω

Wiring diagram/terminal assignment 8 x 4 to 20 mA in



Wiring diagram/terminal assignment 4 x 4 to 20 mA in/out



Notes

- Last bus modul:
  Bridge A-A^X (terminals 30, 33)
  Bridge B-B^X (terminals 29, 32)
- GSD-file:
  BARX2302.gsd (8 x 4 to 20 mA in)
  BARX2303.gsd (4 x 4 to 20 mA in/out)

Order no.

07-7331-230H/0001
8 x 4 to 20 mA in

07-7331-230H/1011
4 x 4 to 20 mA in/out

Technical data subject to change without notice.

03-0330-0711-07/2014-BAT-346038/2

PROFIBUS Koppler

PROFIBUS Repeater

Features

- Time flow refresh signal
- PROFIBUS coupler/PROFIBUS repeater also for hazardous areas of Zone 1.
- Galvanically isolated bus segments for PROFIBUS-DP and PROFIBUS-IS.
- Availability of couplers for PROFIBUS-DP as well as for PROFIBUS-IS (intrinsically safe).

Description

The PROFIBUS couplers and PROFIBUS repeaters have been particularly dimensioned for the industrial requirements of hazardous areas of zone 1.

PROFIBUS couplers and PROFIBUS repeaters are used for the separation or generation of new segments, converting the RS485 typical line structure into an open and flexible tree structure. Downstream stations can be coupled to and de-coupled from the superior bus system in a non-reactive and break/short-circuit tolerant manner, even during running bus operation.

The devices facilitate a duplication of the signal to realize a redundant connection to a master.

The devices are available as PROFIBUS-DP and as PROFIBUS-IS (intrinsically safe).

Module tasks:

- Separation of bus segments or generation of new segments
- Creation of complex networks in line, star and tree structures
- PROFIBUS-conforming regeneration of the bus signals in amplitude and time
- Increase of station number
- Segment cascading for range increase
- Provision of intrinsically safe bus segments for Ex i version according with RS485 IS.

Explosion protection

Ex protection type Ex i
Ⓔx II 2 G / I M2
Ex d e [ib] IIC Gb
Ex d e [ib] I Mb
Class I Zone 1 IIC
A/Ex d e [ib] IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
CSA 2011-2484303U

Fitting
Type 17-6583-.3..
Ⓔx II (2) G [Ex ib Gb] IIC
Ⓔx II (2) D [Ex ib Db] IIIC
IBExU05ATEX1074
IECEx IBE 12.0021
INMETRO UL-BR 14.0357

Ex protection type Ex e
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb
For further data see verification certificates.

Technical data

Construction
Flameproof, clip-on enclosure for TH 35

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
2.5 mm², fine stranded

Labelling
written marking labels

Displays

LED green	Operational readiness
LED green/yellow	Bus activity

Ambient temperature
-25 °C to +60 °C at T4

Storage temperature
-25 °C to +70 °C

Electrical data

Supply voltage
DC 20 V to 30 V

Nominal current input
max. 70 mA

Operational readiness indication
LED green

RS485 interface
PROFIBUS-DP, PROFIBUS-IS,
EN 61158-2; EN 61784-1

Connection resistance

Ex e	PROFIBUS-DP	Standard
Ex i	PROFIBUS-IS	Standard
Input	manual connectable	
Output	Set	

Data direction switching
automatic

Bus activity
dynamic

Transmission rate Ex e
Kbit/s- 4, 8/9, 6/19, 2/45, 45/93,
75/187, 5/250/375/500/750
Mbit/s- 1.0/1.5/2.0/3.0/6.0/12.0

Transmission rate Ex i
Kbit/s- 4, 8/9, 6/19, 2/45, 45/93,
75/187, 5/250/375/500/750
Mbit/s- 1.0/1.5

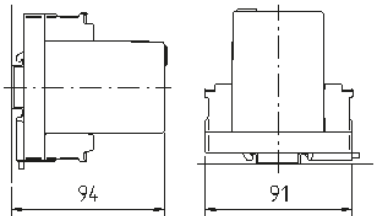
Transmission rate switchover
manual

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Weight
Module width 30 mm: 180 g
Module width 75 mm: 250 g

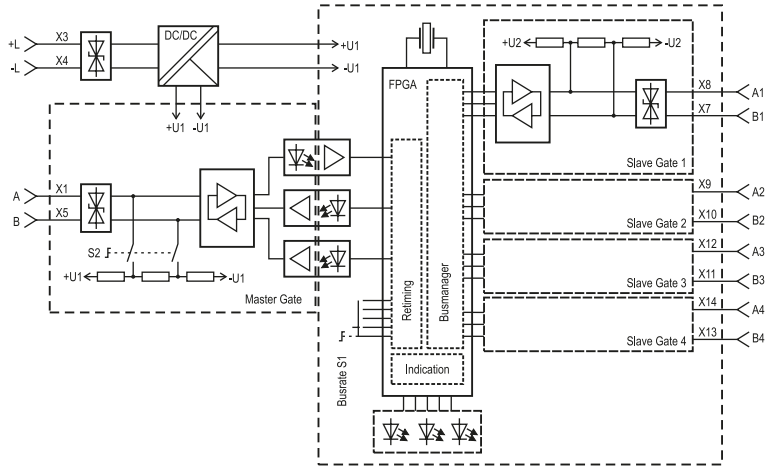
Dimensions (height x width x depth)
94 mm x 30 mm x 91 mm
94 mm x 75 mm x 91 mm

Dimensions/Mounting positions



Modul width: 30 mm/75 mm

e. g. function plan for 4 channel, intrinsically safe circuits



PROFIBUS-DP Coupler - increased safe

Description	Options	Module width	Order no.
PROFIBUS-DP Coupler	Ex e, 1 output	30 mm	**07-7311-93WP/K1N0**
PROFIBUS-DP Coupler	Ex e, 2 outputs	30 mm	**07-7311-93WP/K2N0**
PROFIBUS-DP Coupler	Ex e, 4 outputs	75 mm	**07-7311-97WP/K4N0**

PROFIBUS-IS Coupler - intrinsically safe

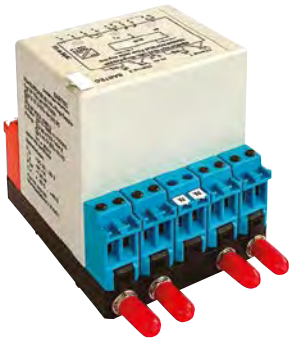
Description	Options	Module width	Order no.
PROFIBUS-IS Coupler	Ex i, 1 output	75 mm	**07-7311-97WP/K1E0**
PROFIBUS-IS Coupler	Ex i, 2 outputs	75 mm	**07-7311-97WP/K2E0**
PROFIBUS-IS Coupler	Ex i, 4 outputs	75 mm	**07-7311-97WP/K4E0**

PROFIBUS-DP Repeater - increased safe

Description	Options	Module width	Order no.
PROFIBUS-DP Repeater	Ex e, 1 output	30 mm	**07-7311-93WP/R1N0**
PROFIBUS-DP Repeater	Ex e, 2 outputs	30 mm	**07-7311-93WP/R2N0**
PROFIBUS-DP Repeater	Ex e, 4 outputs	75 mm	**07-7311-97WP/R4N0**

Technical data subject to change without notice.

03-0330-0415/E-08/2014-BAT-239830/2



LWL T-coupler

Description

The RS485/PROFIBUS LWL T-coupler reroutes the PROFIBUS from copper conductors to optical waveguides. The LWL T-coupler is a passive bus participant. In plants, the LWL T-coupler allows the bridging of great distance with PROFIBUS without noice interference.

The electronics for the signal conversion are accomodated in the flameproof MODEX enclosure. Transmitter and receiver for the LWL-coupler are intrinsically safe headed.

The intrinsically safe control transmitter and receiver of the electronic system guarantee that the transmitter rate does not go beyond maximum value limits.

Features

- Bridging of great distances
- Noice-immune signal transmission
- Galvanic isolation

Explosion protection

Ex protection type

Ex II 2 G / I M2
Ex d e [ib] IIC Gb
Ex d e [ib] I Mb
Class I Zone 1 IIC
A/Ex d e [ib] IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
TÜV 99 ATEX 1404 X
IECEx TUN 12.0024X
INMETRO UL-BR 14.0356X
CSA 2011-2484303U

Fitting

Type 17-1923-1133/0000
Ex II (2) G / II (2) D
[Ex ib Gb] IIC
[Ex ib Db] IIIC

Optical waveguide

Transmitter

Type 17-2114-0002
Ex II 2 G / II 2 D
Ex ib op is IIC T4 Gb
Ex ib IIIC TX* °C Db

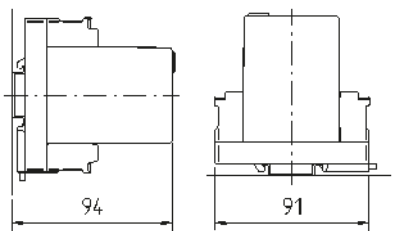
Receiver

Type 17-2114-0003
Ex II 2 G / II 2 D
Ex ib IIC T4 Gb
Ex ib IIIC TX* °C Db

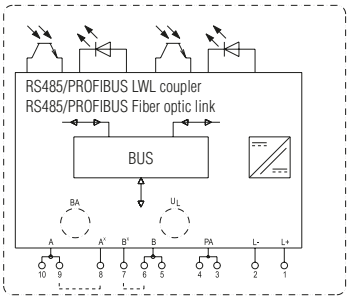
Further safety data see EC type examination certificate.

* Details see instruction manual.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Clip-on enclosure to TH 35

Enclosure material
High-quality thermoplastic

Protection class
minimum IP 20

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +70 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
600 g

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption dissipation
P_V = 0.90 W

Galvanic isolation
Bus//power supply//optical waveguide

Bus input/output
2-wire remote bus with screw terminals

LWL input/output
FSMA LWL plug-in connectors or
ST LWL plug-in connectors

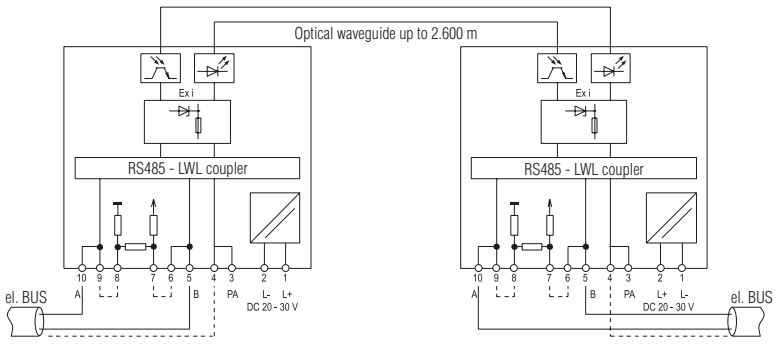
Wavelength
850 nm/glass

Displays
operation LED green
active bus LED yellow

Distance
1400 m; 50.0 µm fibre/glass
2600 m; 62.5 µm fibre/glass

Guidelines
Directive 2004/108/CE
Directive 94/9/CE

Examples of LWL T-coupler

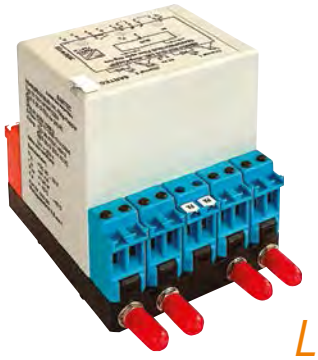


Order no.

07-7311-97WP/4000	**T-coupler**	**FSMA**
07-7311-97WP/4010	**T-coupler**	**ST**

Technical data subject to change without notice.

03-0330-0394/C-08/2014-BAT-234374/2



LWL Ring-coupler

Description

The RS485/PROFIBUS LWL Ring-coupler reroutes the PROFIBUS from copper conductors to optical waveguides. The LWL Ring-coupler is a passive bus participant.

In plants, the LWL Ring-coupler allows the bridging of great distance with PROFIBUS without noice interference.

The electronics for the signal conversion are accomodated in the flameproof MODEX enclosure. Transmitter and receiver for the LWL-coupler are intrinsically safe headed. The intrinsically safe control transmitter and receiver of the electronic system guarantee that the transmitter rate does not go beyond maximum value limits.

Configuration

According to topology, it is possible to connect several items of equipment in a ring. A master (item of equipment) needs to be included in the ring. All the other items of equipment should be configurated as slaves. The master needs to be connected to the higher level (e. g. control unit).

Features

- Bridging of great distances
- Noice-immune signal transmission
- Galvanic isolation

Explosion protection

Ex protection type

Ⓔx II 2 G / I M2
Ex d e [ib] IIC Gb
Ex d e [ib] I Mb
Class I Zone 1 IIC
A/Ex d e [ib] IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
TÜV 99 ATEX 1404 X
IECEx TUN 12.0024X
INMETRO UL-BR 14.0356X
CSA 2011-2484303U

Fitting

Type 17-1923-1122/0000
Ⓔx II (2) G / II (2) D
[Ex ib Gb] IIC
[Ex ib Db] IIIC

Optical waveguide

Transmitter

Type 17-2114-0002
Ⓔx II 2 G / II 2 D
Ex ib op is IIC T4 Gb
Ex ib IIIC TX* °C Db

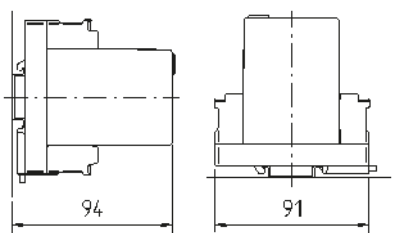
Receiver

Type 17-2114-0003
Ⓔx II 2 G / II 2 D
Ex ib IIC T4 Gb
Ex ib IIIC TX* °C Db

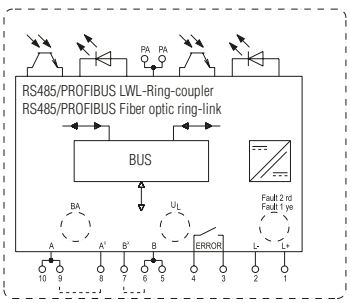
Further safety data see EC type examination certificate.

* Details see instruction manual.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Clip-on enclosure to TH 35

Enclosure material
High-quality thermoplastic

Protection class
minimum IP 20

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +70 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
600 g

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption dissipation
P_V = 1.50 W

Galvanic isolation
Bus//power supply//optical waveguide

Bus input/output
2-wire remote bus with screw terminals

LWL input/output
FSMA LWL plug-in connectors or
ST LWL plug-in connectors

Wavelength
850 nm/glass

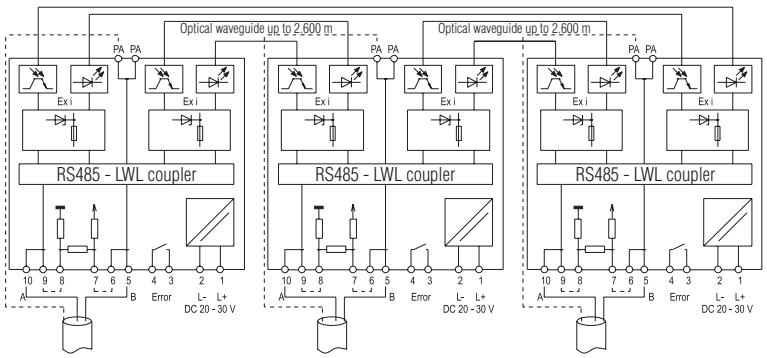
Displays

operation	LED green
active bus	LED yellow

Distance
1400 m; 50.0 µm fibre/glass
2600 m; 62.5 µm fibre/glass

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Examples of LWL Ring-coupler



Order no.

07-7311-97WP/5400	**Master/Slave***	**FSMA**
07-7311-97WP/5410	**Master/Slave***	**ST**

***is configurate through an electrical bridge at the terminal Master/MA**

Technical data subject to change without notice.

03-0330-0392/C-08/2014-BAT-234372/2

LWL PP-coupler

Description

The RS485/PROFIBUS LWL PP-coupler reroutes the PROFIBUS from copper conductors to optical waveguides. The LWL PP-coupler is a passive bus participant.

In plants, the LWL PP-coupler allows the bridging of great distance with PROFIBUS without noice interference.

The electronics for the signal conversion are accomodated in the flameproof MODEX enclosure. Transmitter and receiver for the LWL-coupler are intrinsically safe headed during the execution. The intrinsically safe control transmitter and receiver of the electronic system guarantee that the transmitter rate does not go beyond maximum value limits.

Features

- Bridging of great distances
- Noice-immune signal transmission
- Galvanic isolation

Explosion protection

Ex protection type

Ⓔx II 2 G / I M2
Ex d e [ib] IIC Gb
Ex d e [ib] I Mb
Class I Zone 1 IIC
A/Ex d e [ib] IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
TÜV 99 ATEX 1404 X
IECEx TUN 12.0024X
INMETRO UL-BR 14.0356X
CSA 2011-2484303U

Fitting

Type 17-1923-1133/0000
Ⓔx II (2) G / II (2) D
[Ex ib Gb] IIC
[Ex ib Db] IIIC

Optical waveguide

Transmitter

Type 17-2114-0002
Ⓔx II 2 G / II 2 D
Ex ib op is IIC T4 Gb
Ex ib IIIC TX* °C Db

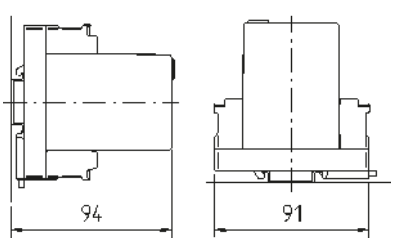
Receiver

Type 17-2114-0003
Ⓔx II 2 G / II 2 D
Ex ib IIC T4 Gb
Ex ib IIIC TX* °C Db

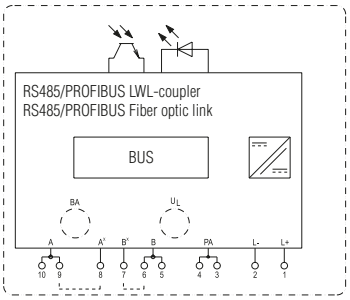
Further safety data see EC type examination certificate.

* Details see instruction manual.

Dimensions/mounting positions



Wiring diagram/terminal assignment



Technical data

Construction
Clip-on enclosure to TH 35

Enclosure material
High-quality thermoplastic

Protection class
minimum IP 20

Terminals
2.5 mm², fine stranded

Labelling
front panel label for markings

Display
LEDs on front panel

Storage temperature
-40 °C to +70 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
600 g

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption dissipation
P_V = 0.85 W

Galvanic isolation
Bus//power supply//optical waveguide

Bus input/output
2-wire remote bus with screw terminals

LWL input/output
F-SMA LWL plug-in connectors or
ST LWL plug-in connectors

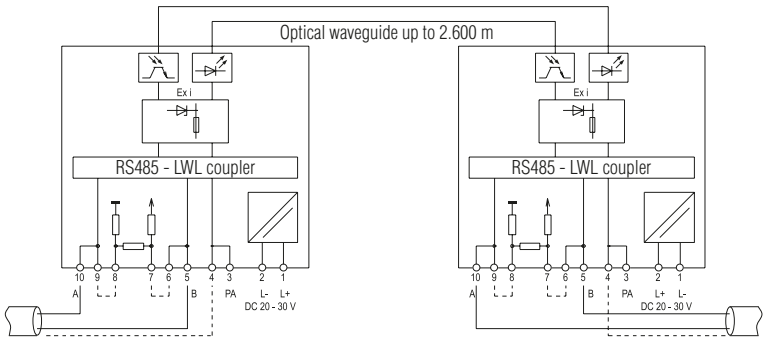
Wavelength
850 nm/glass

Displays
operation LED green
active bus LED yellow

Distance
1400 m; 50.0 µm fibre/glass
2600 m; 62.5 µm fibre/glass

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Example of LWL PP-coupler



Order no.

07-7311-97WP/6000	**LWL PP-coupler**	**FSMA**
07-7311-97WP/6010	**LWL PP-coupler**	**ST**

Technical data subject to change without notice.

03-0330-0393/C-08/2014-BAT-234373/2

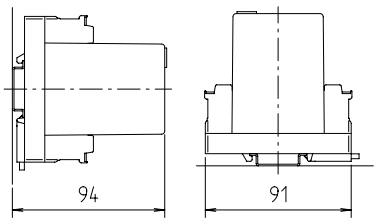
Terminator

Description

The PROFIBUS Interface Terminator is an active bus terminator. Its essential benefit is the fact that bus devices can be switched off, removed or replaced without impairing data transfer.

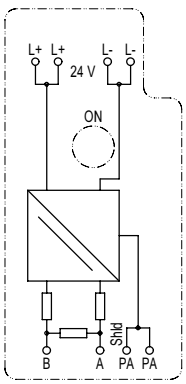
This especially applies to bus devices on both ends of the bus line through which terminal resistances previously had to be switched and supplied.

Dimensions/mounting position



Module width: 30 mm

Wiring diagram/terminal assigment



Explosion protection

Ex protection type

Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
CSA 2011-2484303U

Technical data

Enclosure material

High-quality thermoplastics

Protection class

Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TH 35 x 7.5 (15) EN 60715

Labelling

front panel label for markings

Ambient temperature

-25 °C to +60 °C at T4

Storage temperature

-40 °C to +70 °C

Weight

0.250 kg

Electrical data

Supply voltage

DC 20 V to 30 V

Power consumption

$P_{tot.}$ = 0.3 W

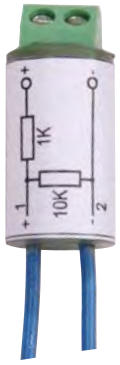
Guidelines

Directive 2004/108/EC
Directive 94/9/EC

Order no.

07-7311-93WP/0000

Technical data subject to change without notice!



Resistive coupling element

Description

The 1 kΩ/10 kΩ resistive coupling element is used to monitor open and short circuits in isolator amplifier circuits controlled by mechanical contacts.

The coupling element is installed directly to the control contact or inside its terminal box.

Function

Numerous isolator amplifiers can monitor the connected sensor line for open or short circuit conditions thanks to the employment of electronic proximity switches to which current can be applied in both damped and undamped status (DIN EN 60947-5-6). Current values outside the specified range are identified as open or short circuits.

If simple mechanical contacts are used, it is not possible to identify a short circuit. Neither can be distinguished between open circuit and open contact.

This problem can be solved by installing a resistor combination at the end of the sensor line immediately before the switch.

This combination provides a closed-circuit current even when the contacts is open.

At closed contact it restricts the current to a value which lies clearly below the response threhold for short circuit.

Four states can be detected:

- Open circuit (broken cable)
- Open switch
- Closed switch
- Short circuit

Technical data

Resistance
1 kΩ/0.6 W
10 kΩ/0.6 W

Terminals
1.5 mm²

Connection cable
0.75 mm²

Supply voltage
max. DC 20 V

Ambient temperature
-40 °C to +60 °C

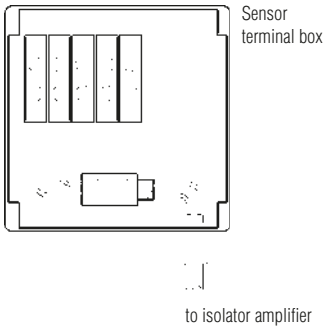
Storage temperature
-40 °C to +70 °C

The resistive coupling element can be used with all isolator amplifiers featuring open and short circuit monitoring, e. g.

BARTEC, CEAG, Hartmann & Braun, Pepperl + Fuchs

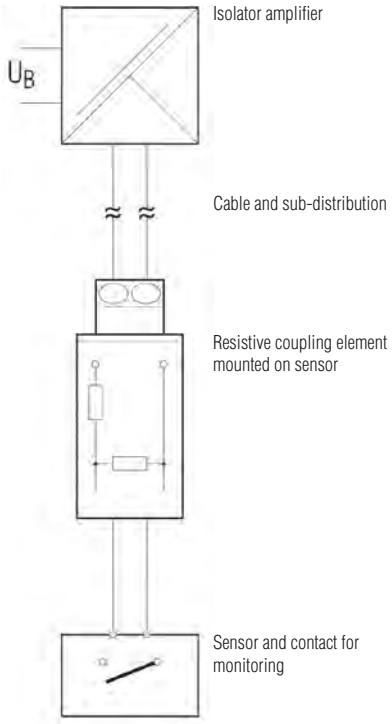
Installation

for example, in the sensor terminal box

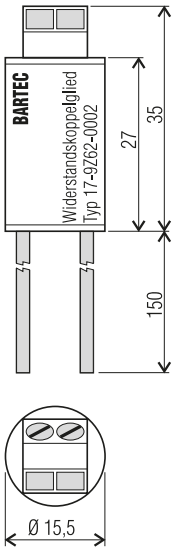


Application

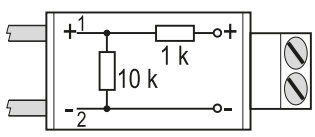
Open/short circuit monitoring for isolator amplifiers with contact control.



Dimensions



Wiring diagram



Order no.
17-9Z62-0002
Other variants on request.

Technical data subject to change without notice.

03-0330-0178/A-07/2014-BCS-200057

Resistive coupling element

Technical data

Resistance
1 kΩ/0.6 W
10 kΩ/0.6 W

Terminals
2.5 mm²

Mounting rail
TH 35

Supply voltage
max. DC 20 V

Ambient temperature
-40 °C to +60 °C

Storage temperature
-40 °C to +60 °C

To the use in intrinsically safe electric circuits to temperature class T5.

The resistive coupling element can be used with all isolator amplifiers featuring open and short circuit monitoring.

Description

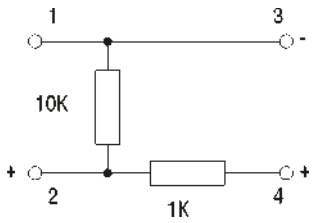
The 1 kΩ/10 kΩ resistive coupling element is used to monitor open and short circuits in isolator amplifier circuits controlled by mechanical contacts.

The coupling element is installed directly to the control contact or inside its terminal box.

Four states can be detected:

- Open circuit (broken cable)
- Open switch
- Closed switch
- Short circuit

Wiring diagram/terminal assigment



Function

Numerous isolator amplifiers can monitor the connected sensor line for open or short circuit conditions thanks to the employment of electronic proximity switches to which current can be applied in both damped and undamped status DIN EN 60947-5-6.

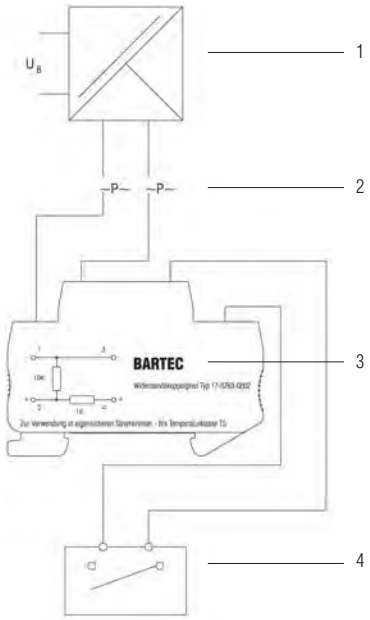
Current values outside the specified range are identified as open or short circuits.

If simple mechanical contacts are used, it is not possible to identify a short circuit. Neither can be distinguished between open circuit and open contact. This problem can be solved by installing a resistor combination at the end of the sensor line immediately before the switch.

This combination provides a closed-circuit current even when the contacts is open. At closed contact it restricts the current to a value which lies clearly below the response threhold for short circuit.

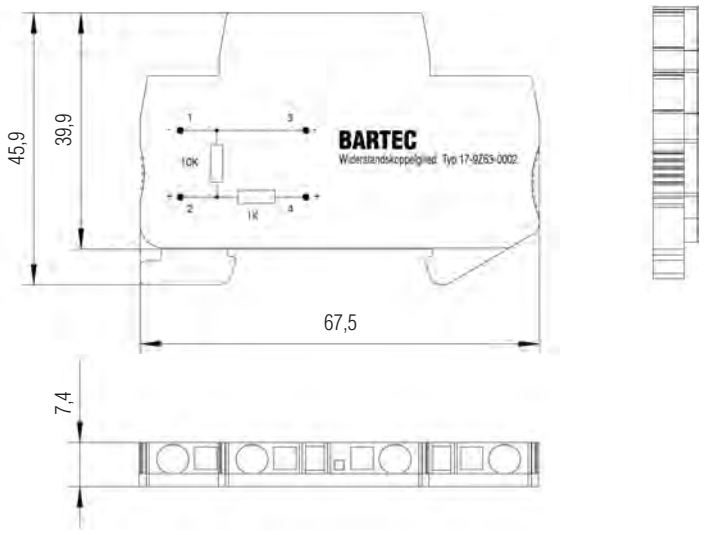
Application

Open/short circuit monitoring for isolator amplifiers with contact control.



1 Isolator amplifier
2 Cable and sub-distribution
3 Resistive coupling element mounted on sensor
4 Sensor and contact for monitoring

Dimensions



Order no.
17-9Z63-0002

Other variants on request.

Technical data subject to change without notice!

BARTEC

Control units MODEX

Control units MODEX

Isolator terminal

Description

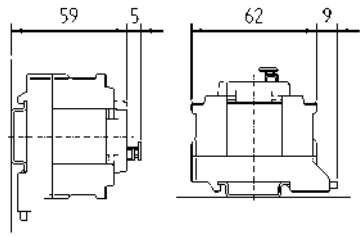
The MODEX series offers an isolator terminal which can be used both for service and test jobs as well as for conventional, manual switching functions. Thanks to the visibly clear distinction between switching positions and extremely small enclosure with 4 integrated terminals, the isolator terminal is very easy to install. The labelling options are the same as for rail-mounted terminals. The MODEX isolator terminal is installed directly in an Ex e enclosure and installed like a rail-mounted terminal.

Being a terminal with positive opening operation, it offers additional safety. All conducting parts are protected against accidental contact which allows you to open the Ex e enclosure and to operate the switch by hand when voltage is applied and within the Ex area. Any actuators or sensors are isolated by the double poles and can thus be replaced under hazardous conditions providing local regulations allow this.

Features

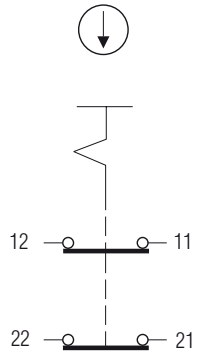
- IP 30 terminal cover
- Positive opening contact, 2-pole
- Safety isolation of Ex e power circuits
- Replaced system shutdown or fire-work-permission

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram (I-position)/ terminal assignment (I-position)



Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 98 ATEX 1020 U
IECEx PTB 11.0087U
CSA 2011-2484303U
INMETRO TÜV 13.1678U

Technical data

Enclosure material
High-quality thermoplastic and duroplastic

Protection class

Module	IP 54
Terminals	IP 20
Terminals with cover	IP 30

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +70 °C

Storage temperature
-40 °C to +70 °C

Weight
0.245 kg

Electrical data

Switching elements
2-pole positive opening contact

Service life
electrical/mechanical 0.6 $\geq 10^4$ switching cycles

Contact material
pure silver, gold-plated

Contact version
positive opening contact

Contact type
2-pole NC contact

Rated isolation voltage
400 V

Short-circuit protection
fuse-links
characteristic - quick-acting: 10 A

Mechanical life
1 x 10^6 switching cycles

Electrical life
1 x 10^4 switching cycles

Conventional thermal current
7 A at $T_a \leq +40$ °C

Utilization categories
AC-15 for 400 V/2 A
DC-13 for 250 V/0.15 A

Switching capacity according to EN 61058-1
see table

Rated operating current		
Alternating current 40 to 80 Hz		
Load U	Ohmic load I/AC-12 A	Inductive load I/AC-15 A
125 V	5 A	
250 V	4 A	4.0 A
400 V	2 A	2.0 A

Direct current		
	Ohmic load	Inductive load
30 V	7 A	approx. 5 A
250 V	0.6 A	0.15 A

Guidelines
Directive 94/9/EC

Notes
- Adhere to VBG 4 § 6 par. 2 when working on the unit
- Provide IP 30 covers on terminals 11 and 21 (enclosed)
- Only terminals 12 and 22 can be worked with
- Protect against unintentional reclosing/seal isolator terminal
- Ensure isolation from supply (pay attention to valves and fittings with energy storage mechanism)
- Cover neighboring, conducting parts

Order no. 07-7311-6131/EE00

Technical data subject to change without notice.

03-0330-0153/F-08/2014-BAT-128925

Fuse

Description

Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists. The increasing automation of functions and processes make it necessary to install the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals. This allows the input and output voltage to be used further by the MODEX componentt.

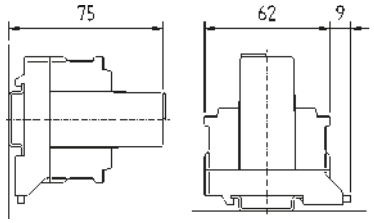
Please indicate the desired current value with your order (see selection chart).

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

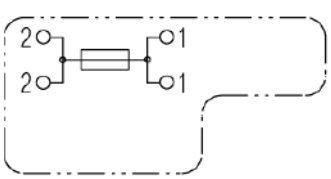
Certification
PTB 98 ATEX 1010 U
IECEx PTB 11.0086U
CSA 2011-2484303U
INMETRO TÜV 13.1677U

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +50 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.055 kg

Electrical data see selection chart

Nominal voltage
250 V

Switching capability
at 250 V, 50 Hz, cos φ = 1
80 A for (M) 0.1 A to 1.25 A
35 A for (T) 0.1 A to 1.25 A

Guidelines
Directive 94/9/EC

Selection chart

Nominal current	Code no.	Characteristic	Code no.
0.1 A	**5**	medium time-lag	**M**
0.2 A	**8**		
0.25 A	**9**		
0.5 A	**C**	time-lag	**T**
1.0 A	**G**		
1.25 A	**H**		

07-7311-61J2 / ☐☐ 20
Complete order no.
Please enter code number.
Technical data subject to change without notice.

Fuse

Description

Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists.

The increasing automation of functions and processes make it necessary to install the standard protective devices on-site. An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals.

This allows the input and output voltage to be used further by the MODEX component. Please indicate the desired current value with your order (see selection chart).

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 98 ATEX 1010 U
IECEx PTB 11.0086U
CSA 2011-2484303U
INMETRO TÜV 13.1677U

Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +50 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.055 kg

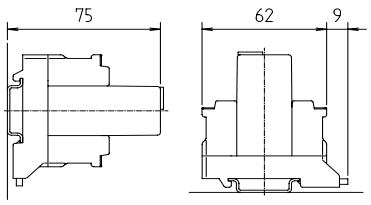
Electrical data see selection chart

Nominal voltage
250 V

Switching capability
at 250 V, 50 Hz, cos φ = 1
35 A for (T) 0.032 A to 1.25 A

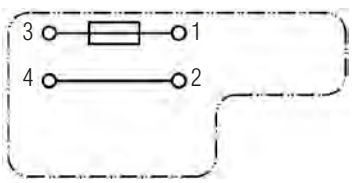
Guidelines
Directive 94/9/EC

Dimensions/mounting positions



Module width: 15 mm

Wiring diagram/terminal assignment



Selection chart

Nominal current (time-lag)	Code no.
0.032 A	1
0.050 A	2
0.063 A	3
0.08 A	4
0.1 A	5
0.125 A	6
0.16 A	7
0.2 A	8
0.25 A	9
0.315 A	A
0.4 A	B
0.5 A	C
0.63 A	E
0.8 A	F
1.0 A	G
1.25 A	H

07-7311-61J2 / ☐ TA0
Complete order no.

Please enter code number.
Technical data subject to change without notice.

Fuse

Description

Fused modules are required to protect equipment and power circuits in areas in which an explosion hazard exists. The increasing automation of functions and processes make it necessary to install the standard protective devices on-site.

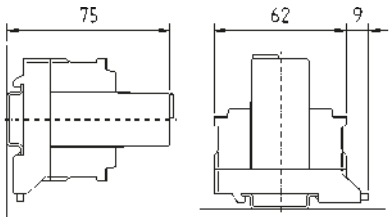
An advantage of MODEX fuses is that they are fitted in explosion-protected enclosures with integrated double terminals.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

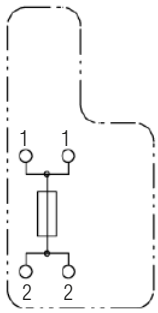
Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +50 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.120 kg

Electrical data see selection chart

Nominal voltage
250 V

Switching capability
at 250 V, 50 Hz, cos φ = 1
1000 A for (M) 1.6 A to 2.5 A
35 A for (T) 1.6 A to 2.5 A

Guidelines
Directive 94/9/EC

Selection chart

Nominal current	Code no.	Characteristic	Code no.
1.6 A	J	medium time lag	M
2.0 A	K		
2.5 A	L	time lag	T

07-7311-63J2/ □□ 00
Complete order no.

***07-7311-63J2/LT00 not available!**
Please enter code number.
Technical data subject to change without notice.

Fuse

Description

Fused modules are required to protect equipment and circuits in hazardous areas. With the increasing automation of functions and processes requires the installation of the standard protective devices on-site.

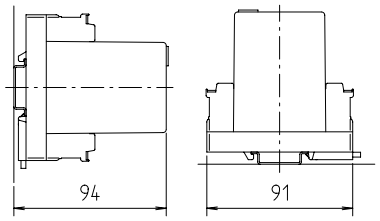
An advantage of MODEX fuses is that they are fitted in flameproof enclosures with integrated double terminals. This allows the input and output voltage to be used by other MODEX components, too.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

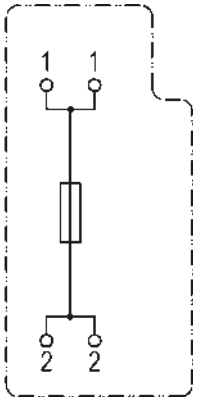
Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +50 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.250 kg

Electrical data
see selection chart

Nominal voltage
250 V

Switching capacity
at 250 V, 50 Hz, cos φ = 1
1000 A for (M) 3.15 A to 6.3 A
35 A for (T) to 3.15 A
40 A for (T) 4 A
50 A for (T) 5 A
63 A for (T) 6.3 A

Guidelines
Directive 94/9/EC

Selection chart

Nominal current	Code no.	Characteristic	Code no.
3.15 A	M	time lag	T
4.0 A	N		
5.0 A	P	medium time lag	M
6.3 A	Q		

07-7311-93J2/ □□ 00
Complete order no.
Please enter code number.
Technical data subject to change without notice.

Fuse

Description

Fused modules are required to protect equipment and circuits in hazardous areas. With the increasing automation of functions and processes requires the installation of the standard protective devices on-site.

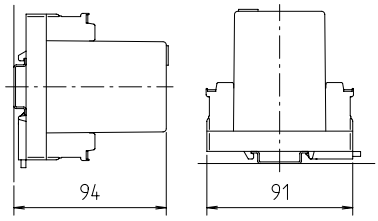
An advantage of MODEX fuses is that they are fitted in flameproof enclosures with integrated double terminals. This allows the input and output voltage to be used by other MODEX components, too.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

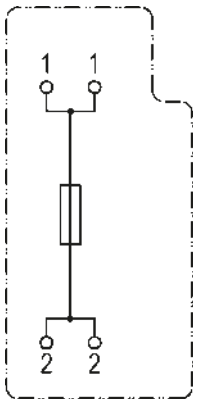
Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-40 °C to +50 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.250 kg

Electrical data
see selection chart

Rated voltage
250 V

Switching capacity
at 250 V, 50 Hz, cos φ = 1
35 A for 3.15 A
40 A for 4 A
63 A for 6.3 A

Guidelines
Directive 94/9/EC

Selection chart

Nominal current	Code no.	Characteristic	Code no.
2.5 A	**L**	quick-acting	**F**
4.0 A	**N**		
6.3 A	**Q**		

07-7311-93J2 / ☐☐ 00
Complete order no.
Please enter code number.

Technical data subject to change without notice.

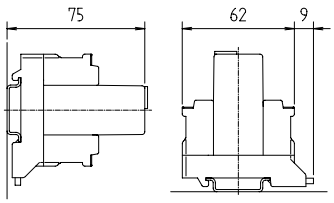
Freewheeling diode

Description

A freewheeling diode acting as a suppressor, this module can be installed in series or in parallel to an electrical circuit just like any modular terminal.

There are two connection points on either side to facilitate wiring to other MODEX modules or direct connection.

Dimensions/mounting position



Module width: 15 mm

Explosion protection

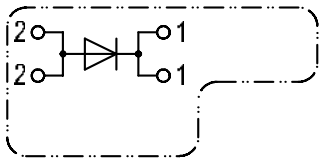
Ex protection type

Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification

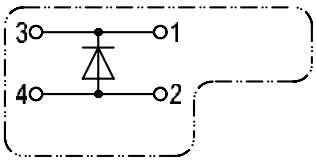
PTB 98 ATEX 1010 U
IECEx PTB 11.0086U
CSA 2011-2484303U
INMETRO TÜV 13.1677U

Wiring diagram 1/terminal assignment 1



Variant 1

Wiring diagram 2/terminal assignment 2



Variant 2

Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +60 °C at T4

Storage temperature
-40 °C to +70 °C

Weight
0.055 kg

Electrical data

Rated voltage
400 V

Reverse voltage
1000 V

Current
0.7 A

Type 1 N 4007
other types on request

Guidelines
Directive 94/9/EC

Selection chart

Variants	Code no.
Variant 1	**0**
Variant 2	**1**

07-7311-61GF/54 ☐ 0
Complete order no.
Please enter code number.
Technical data subject to change without notice.

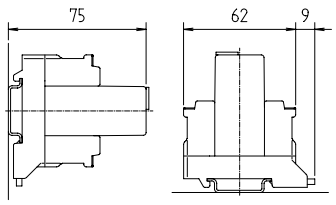
Freewheeling diode

Description

Suppressors for electrical and electronic control systems.

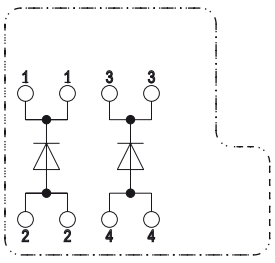
Spark suppressors for the prevention of overvoltage in inductive loads such as solenoids, DC relays etc.

Dimensions/mounting position



Module width: 30 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type
- II 2 G / I M2
- Ex d e IIC Gb
- Ex d e I Mb
- Class I Zone 1 IIC
- A/Ex d e IIC Gb

Certification
- PTB 97 ATEX 1068 U
- IECEx PTB 11.0083U
- CSA 2011-2484303U
- INMETRO TÜV 13.1683U

Technical data

Enclosure material
high-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +60 °C at T4

Storage temperature
-40 °C to +70 °C

Weight
0.250 kg

Electrical data

Rated voltage
400 V

Reverse voltage
1000 V

Current
Type 1N4007 max. 0.6 A
Other types on request

Guidelines
Directive 94/9/EC

Order no.
07-7311-63GF/5300

Technical data subject to change without notice.

03-0330-0070/C-08/2014-BAT-124611

Resistor

Description

For general use throughout the field of measuring and control engineering for hazardous areas (e. g. monitoring switching contacts, open circuit monitoring).

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 98 ATEX 1010 U
IECEx PTB 11.0086U
CSA 2011-2484303U
INMETRO TÜV 13.1677U

Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +60 °C at T4

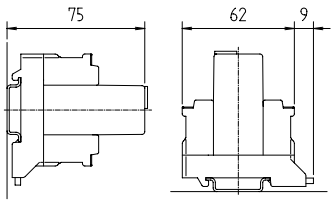
Storage temperature
-40 °C to +70 °C

Weight
0.050 kg

Electrical data see selection chart

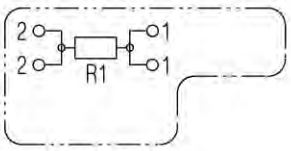
Guidelines
Directive 94/9/EC

Dimensions/mounting position

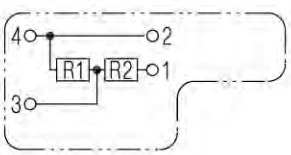


Module width: 15 mm

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Selection chart

Rating	Spacing	Wiring diagram terminal assigment	Code no.
R1 10 kΩ ± 1 % $I_{max.}$ = 6 mA R2 1 kΩ ± 1 % $I_{max.}$ = 6 mA	without	2	**0**
R1 3.3 kΩ ± 1 % $I_{max.}$ = 8 mA R2 1.8 kΩ ± 1 % $I_{max.}$ = 8 mA	without	2	**1**
R1 4.7 kΩ ± 5 % $I_{max.}$ = 12 mA	without	1	**2**
R1 120 Ω ± 1 % $I_{max.}$ = 60 mA	without	1	**3**
R1 1 kΩ ± 1 % $I_{max.}$ = 25 mA	without	1	**4**
R1 250 Ω ± 0,1 % $I_{max.}$ = 50 mA	without	1	**5**
R1 2 kΩ ± 1 % $I_{max.}$ = 6 mA R2 1 kΩ ± 1 %	without	2	**6**
R1 249 Ω ± 1 % $I_{max.}$ = 50 mA R2 100 Ω ± 1 %	without	2	**7**
R1 10 kΩ ± 1 % $I_{max.}$ = 6 mA R2 2 kΩ ± 1 %	without	2	**8**
R1 8.2 kΩ ± 1 % $I_{max.}$ = 8 mA R2 1.5 kΩ ± 1 % $I_{max.}$ = 19 mA	without	2	**9**

Complete order no. 07-7311-61TW/0 ☐ 00
Please enter code number. Technical data subject to change without notice.

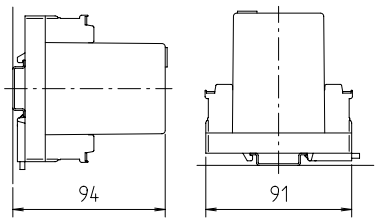
Lamp test diode module

Description

This module combines a given number of diodes on a single printed board. The diodes are connected to terminals.

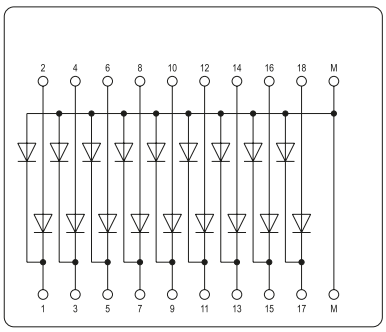
Typical applications:
Signal isolation in lamp testing. The diodes are connected in pairs and can be supplied with either a common cathode or anode.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +60 °C at T4

Storage temperature
-40 °C to +70 °C

Weight
0.400 kg

Electrical data

Reverse voltage
max. DC 300 V

Reverse voltage
1 000 V

Diode current
0.3 A max per lamp
Type 1 N 4007

Guidelines
Directive 94/9/EC

Order no.
07-7311-97GW/E3K0

Technical data subject to change without notice.

03-0330-0072-08/2014-BAT-124613

(Precision) Resistors

Description

For general use throughout the field of measuring and control engineering for hazardous areas (e. g. monitoring switching contacts, open circuit monitoring).

Explosion protection

Ex protection type

Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material

High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529

Terminals

2.5 mm², fine stranded

Mounting rail

TS 35 x 7.5 (15) EN 60715

Terminal designation

written marking labels

Ambient temperature

-25 °C to +60 °C at T4

Storage temperature

-40 °C to +70 °C

Weight

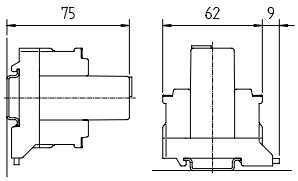
0.110 kg

Electrical data see selection chart

Guidelines

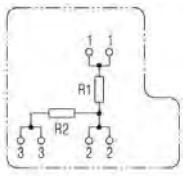
Directive 94/9/EC

Dimensions/mounting positions

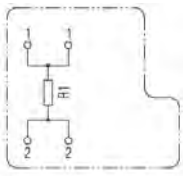


Module width: 30 mm

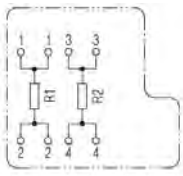
Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Wiring diagram 3/terminal assignment 3



Selection chart

Rating	Spacing	Wiring diagram terminal assignment	Code no.
R1 4.7 kΩ ± 10 % $I_{max.}$ = 5 mA R2 10 kΩ ± 10 % $I_{max.}$ = 5 mA	without	1	**01A0**
R1 100 Ω ± 1 % $I_{max.}$ = 50 mA R2 100 Ω ± 1 % $I_{max.}$ = 50 mA	without	3	**0251**
R1 2.2 kΩ ± 1 % $I_{max.}$ = 15 mA R2 680 Ω ± 5 % $I_{max.}$ = 35 mA	8 mm	3	**03A0**
R1 680 Ω ± 5 % $I_{max.}$ = 35 mA	without	2	**04A0**
R1 1 kΩ ± 1 % $I_{max.}$ = 20 mA R2 10 kΩ ± 1 % $I_{max.}$ = 5 mA	without	3	**05G0**
R1 820 Ω ± 5 % $I_{max.}$ = 35 mA	without	2	**0600**
R1 3.3 kΩ ± 5 % $I_{max.}$ = 17 mA	without	2	**0700**
R1 2.7 kΩ ± 5 % $I_{max.}$ = 19 mA	without	2	**0800**
R1 3 kΩ ± 1 % $I_{max.}$ = 10 mA R2 4.3 kΩ ± 1 % $I_{max.}$ = 9 mA	without	3	**0900**
R1 82 Ω ± 1 % $I_{max.}$ = 70 mA R2 100 Ω ± 1 % $I_{max.}$ = 60 mA	without	3	**1000**
R1 120 Ω ± 1 % $I_{max.}$ = 60 mA R2 150 Ω ± 1 % $I_{max.}$ = 50 mA	without	3	**1100**
R1 6.8 kΩ ± 1 % $I_{max.}$ = 3.5 mA R2 820 Ω ± 1 % $I_{max.}$ = 29 mA	without	3	**1200**
R1 680 Ω ± 2 % $I_{max.}$ = 25 mA R2 3.3 kΩ ± 2 % $I_{max.}$ = 10 mA	without	1	**1300**
R1 2.2 kΩ ± 1 % $I_{max.}$ = 15 mA R2 3.3 kΩ ± 1 % $I_{max.}$ = 10 mA	without	1	**1400**
R1 6.8 kΩ ± 1 % $I_{max.}$ = 9 mA R2 6.8 kΩ ± 1 % $I_{max.}$ = 9 mA	without	3	**1500**
R1 3 kΩ ± 1 % $I_{max.}$ = 10 mA R2 3 kΩ ± 1 % $I_{max.}$ = 10 mA	without	1	**1600**
R1 22 kΩ ± 1 % $I_{max.}$ = 5 mA	without	2	**17A0**
R1 15 kΩ ± 1 % $I_{max.}$ = 5 mA R2 15 kΩ ± 1 % $I_{max.}$ = 5 mA	without	3	**1800**
R1 1.8 kΩ ± 1 % $I_{max.}$ = 2 mA R2 4.7 kΩ ± 1 % $I_{max.}$ = 10 mA	without	3	**1900**
R1 1.5 kΩ ± 1 % $I_{max.}$ = 19 mA R2 2.2 kΩ ± 1 % $I_{max.}$ = 16 mA	without	1	**2000**
R1 8.2 kΩ ± 1 % $I_{max.}$ = 12 mA R2 1.5 kΩ ± 1 % $I_{max.}$ = 28 mA	without	3	**2100**
R1 51.1 kΩ ± 1 % $I_{max.}$ = 3 mA R2 51.1 kΩ ± 1 % $I_{max.}$ = 3 mA	without	3	**2200**

Complete order no. 07-7311-63TW / ☐☐☐☐

Please enter code number. Technical data subject to change without notice.

03-0330-0068/H-08/2014-BAT-124609/2

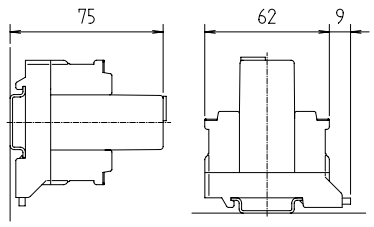
Miniature switching relay

Description

The relay modules of the MODEX series offer most up-to-date switching configurations. A suppressor diode on the coil protects the power circuit from peak voltages. High shock and vibration resistance is just as important as the IP 66 protection of the contacts.

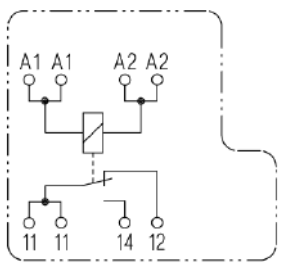
The MODEX relay switches circuits up to 5 A and is used as an isolator between low-current control circuits and high-current switching circuits.

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type
- (Ex) II 2 G / I M2
- Ex d e IIC Gb
- Ex d e I Mb
- Class I Zone 1 IIC
- A/Ex d e IIC Gb

Certification
- PTB 97 ATEX 1068 U
- IECEx PTB 11.0083U
- CSA 2011-2484303U
- INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TS 35 x 7.5 (15) EN 60715

Labelling
written marking labels

Ambient temperature
-40 °C to +40 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.250 kg

Electrical data

Coil data
AC/DC 11.2 V to 16 V/0.53 VA/0.37 W
AC/DC 21.5 V to 28 V/0.43 VA/0.33 W
AC/DC 42 V to 60.5 V/0.53 VA/0.4 W
AC/DC 54 V to 72 V/0.41 VA/0.3 W
AC 96 V to 144 V; 50/60 Hz/0.85 VA
AC 176 V to 264 V; 50 Hz/1.5 VA

Contact material
AgCdO

Max. switching voltage
AC 250 V/DC 300 V

Max. switching capacity
(ohmic load)
1 250 VA (50 W)

Test voltage
Coil-contact 4 kV

Mechanical life
min. 3 x 10^6 switching cycles

Electrical life
> 1 x 10^5 switching cycles/
AC 220 V, 5 A ohmic load

Operating frequency
7 200 switching cycles/h

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Selection chart

Voltage				Code no.
AC/DC	11.2 V	to	16 V	**2**
AC/DC	21.5 V	to	28 V	**3**
AC/DC	42 V	to	60.5 V	**4**
AC/DC	54 V	to	72 V	**5**
AC	96 V	to	144 V	**7**
AC	176 V	to	264 V	**8**

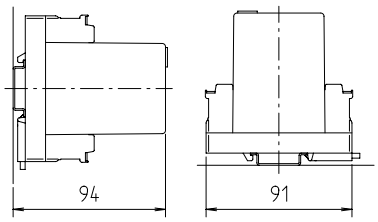
07-7311-6371/ ☐ 000
Complete order no.
Please insert correct code.

Technical data subject to change without notice.

03-0330-0085/E-08/2014-BCS-124626

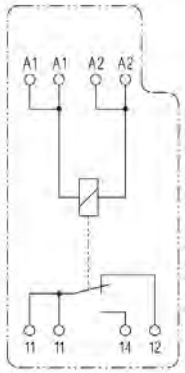
Relay

Dimensions/mounting positions

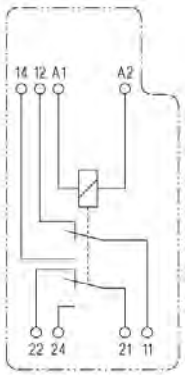


Module width: 30 mm

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 1



Description

The relay modules of the MODEX series offer most up-to-date switching configurations. A suppressor diode on the coil protects the power circuit from peak voltages.

The MODEX relay serves for the switching of power circuits up to 6 A. Thanks to its low power consumption it can be controlled by means of electronic circuits, optorelays from BARTEC or standard power circuits.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Labelling
written marking labels

Storage temperature
-40 °C to +70 °C

Ambient temperature
-20 °C to +40 °C

Weight
0.250 kg

Electrical data

Coil

AC/DC 12 V ± 10 %	AC/DC 24 V ± 10 %
0.45 W 0.6 VA	0.46 W 0.56 VA
AC 110 V +10 %	**AC 120 V +10 %/60 Hz**
1.2 VA	1.0 VA
	AC 230/240 V + 10 %
	1.2 VA

Contact data Contact material AgCdO

U_A	$I_{max.}$	$P_{max.}$	(1 changeover contact)
AC 400 V	2.0 A	700 VA	cos φ = 1
AC 250 V	6.0 A	1400 VA	ohmic load
DC 125 V	0.6 A	75 W	cos φ = 1
DC 50 V	3.0 A	150 W	ohmic load

U_A	$I_{max.}$	$P_{max.}$	(2 changeover contacts)
AC 400 V	1.0 A	350 VA	cos φ = 1
AC 250 V	3.0 A	700 VA	ohmic load
DC 125 V	0.25 A	30 W	cos φ = 1
DC 50 V	1.5 A	75 W	ohmic load

Making current (16 ms)
20 A (1 changeover contact)
10 A (2 changeover contacts)

Test voltage
Coil-contact 4 kV

Mechanical life
> 20 x 10^6 switching cycles

Electrical life
> 1 x 10^5 switching cycles/AC 230 V
6 A ohmic load (1 changeover contact)
> 1 x 10^5 switching cycles/AC 230 V
3 A ohmic load (2 changeover contacts)

Operating frequency
1 800 switching cycles/h

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Selection chart

Contacts	Code no.	Voltage	Code no.
1 change-over	1	AC/DC 12 V	2
		AC/DC 24 V	3
		AC 110 V	7
2 change-overs	2	AC 120 V/60 Hz	H
		AC 230 V/240 V	9

07-7311-937 ☐ / ☐ 000
Complete order no.

Please insert correct code.
Technical data subject to change without notice.

Relay, 2 changeover contacts also available in AC/DC 48 V. **Order no. 07-7311-9372/4000**

03-0330-0014/F-08/2014-BAT-107006

Power relay

Description

Relay modules in the MODEX system offer modern switch features in explosive areas.

The MODEX power relay is used to switch load-current circuits to 12 A, e. g. heating circuits or smaller motors.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
Mounted in sequence on TH
at ≥ 16 mm spacing
-25 °C to +40 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.500 kg

Electrical data

Coil data
DC 24 V ± 10 %
AC 230 V ± 10 %

Nominal power
DC 24 V approx. 1.25 W
AC 230 V approx. 1.9 VA

Contact data
Contact material AgCdO

Max. switching voltage
AC 400 V

Max. switching current (ohmic load)
12 A

Max. switching capacity (ohmic load)
4 560 VA

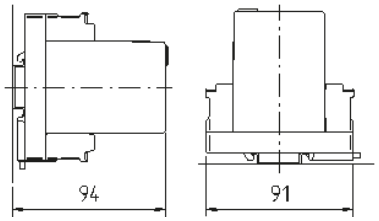
Test voltage
Coil contact 2.5 kV effective
15/10 ms

Mechanical life
20 x 10^6 switching cycles

Switching frequency
6 000 switching cycles/h without load
1 000 switching cycles/h at nominal load

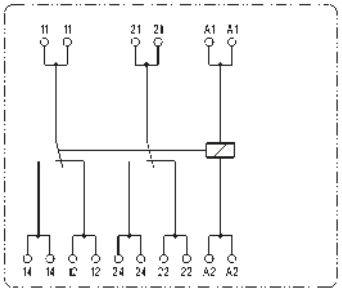
Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Selection chart

Voltage	Code no.
DC 24 V	3
AC 230 V	H

07-7311-9772/ ☐ 310
Complete order no.
Please enter code number.

Technical data subject to change without notice.

Isolator relay

Description

This relay is used as an isolator between non-intrinsically safe and intrinsically safe circuits. Various coil and contact configurations are available. Several intrinsically safe circuits can be connected to the contact circuits, provided that intrinsic safety is maintained.

Safe galvanic isolation in conformance to DIN EN 60079-11 up to 375 V is provided between the coil and contacts.

Explosion protection

Ex protection type
Ⓔx II 2(1)G Ex de [ia] IIC

Certification
PTB 97 ATEX 1068 U
PTB 03 ATEX 2169 X
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking label

Storage temperature
-40 °C to +70 °C

Ambient temperature
-25 °C to +55 °C (DC 12 V/24 V)
at T6 and 15 mm distance

Weight
0.250 kg

Electrical data

Coil data
DC 12 V; 60 mA (9 to 14 V)
DC 24 V; 30 mA (18 to 28 V)
DC 48 V; 15 mA (36 to 56 V)

Contact data (non-intrinsically safe)

Single-pole contact
Contact material AgCuNi

Max. switching voltage
AC 250 V

Max. switching current
4 A

Max. switching current (AC)
100 VA/cos φ = 1

Max. switching capacity (at switching voltage up to DC 24 V)
96 W/ohmic load

Contact data (intrinsically safe)

Double contact
Contact material AgCuNi, hard gold plated

Max. switching voltage
AC 46 V
DC 65 V

Max. switching current
2 A

Max. switching current (AC)
92VA/cos φ = 1

Max. switching capacity
48 W/ohmic load

Test voltages

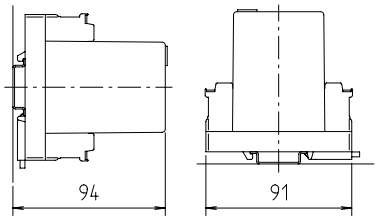
Coil-contact	5000 V_{rms}
Contact assembly-contact assembly	2500 V_{rms}
Contact open	1000 V_{rms}

Mechanical life
> 50 x 10^6 switching cycles

Electrical life
3 x 10^5 switching cycles
(single-pole contact, AC 250 V; 4 A; cos φ = 1; 360 switching cycles/h)

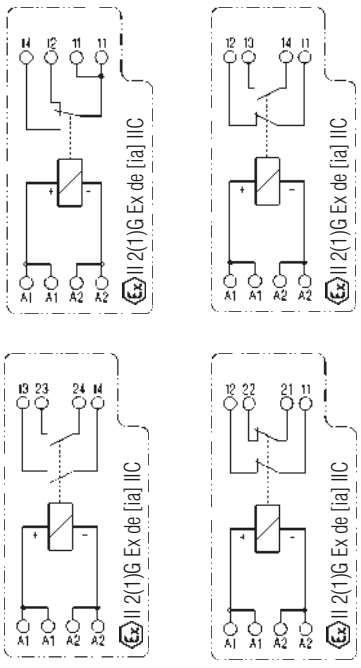
Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Selection chart

Contacts (non-intrinsically safe)	Code no.	Voltage (intrinsically safe)	Code no.
1 changeover	1	DC 12 V	V5
2 NO	4		
2 NC	6	DC 24 V	W5
1 NO 1 NC	7	DC 48 V	X5
(intrinsically safe)		(non-intrinsically safe)	
1 changeover	E	DC 12 V	N6
1 NO 1 NC	F		
2 NO	G	DC 24 V	Q6
2 NC	H	DC 48 V	R6

07-7311-937 ☐ / ☐ ☐ 00

Complete order no.
Please enter correct code.

Technical data subject to change without notice.

03-0330-0088/G-08/2014-BAT-124629

Cradle relay

Description

Cradle relay for direct and alternating voltages, neutral, monostable. High-quality cradle relays for different AC and DC voltage ranges are encapsulated flameproof and installed in the MODEX enclosure. Protection class IP 66 guarantees that the contacts are protected against aggressive atmospheres.

Applications:
Switching of measuring and control circuits in industrial plants.

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastics

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +50 °C at T6
mounted in sequence on TH at 5 mm spacing

Storage temperature
-40 °C to +70 °C

Weight
0.500 kg

Electrical data

Operating data (coil circuit)

U_N	I_N (8 contact decks)
DC 15 V	60 mA
DC 24 V	27 mA
DC 48 V	17 mA
AC 110 V	25 mA
AC 120 V/50 Hz	28 mA
AC 120 V/60 Hz	25 mA
AC 220 V	13 mA
AC 230/240 V	13 mA

Contact data
Switching voltage: $U_{A\,max.}$ = AC/DC 125 V
Switching current: $I_{max.}$ = 1 A (per contact)

Switching capacity
$P_{max.}$ = 40 W/50 VA

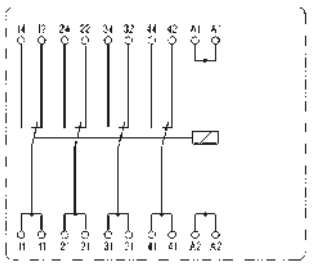
Contact material
silver, gold-flashed

Contact arrangement
4 changeovers; 8 NO;
4 NO; 4 NC

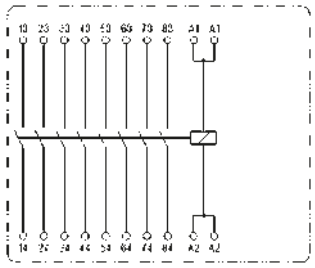
Guidelines
Directive 2004/108/EC
Directive 94/9/EC

03-0330-0028/J-08/2014-BAT-108406/1

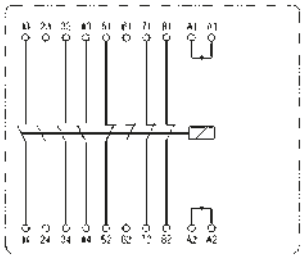
Wiring diagrams/terminal assignments



4 changeovers

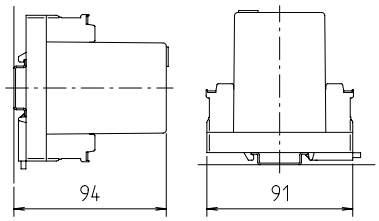


8 NO



4 NO/4 NC

Dimensions/mounting positions



Module width: 75 mm

Note

- For use with inductive loads the relays can be connected with an effective suppressor in order to protect the contacts.

Other data		AC types	DC types
Max. switching frequency	(switching cycles/sec.)	20	50
Mech. service life	(switching cycles)	approx.10^7	approx.10^8
Test voltage:	coil/contact (V~ $_{rms}$)	500 at $U_N \leq 60$ V	500
		2 000 at $U_N > 60$ V	
	contact/contact (V~ $_{rms}$)	500	500

Selection chart

Contacts	Code no.	Voltage	Code no.
4 changeovers	**4**	DC 15 V	**8**
		DC 24 V	**3**
8 NO	**C**	DC 48 V	**4**
		AC 110 V	**G**
		AC 220 V	**H**
4 NO, 4 NC	**H**	AC 230 V/240 V	**J**
		AC 120 V/60 Hz	**R**

Complete order no. 07-7311-977 ☐ / ☐ 100

Please enter code number. Technical data subject to change without notice.

03-0330-0028/J-08/2014-BAT-108406/2

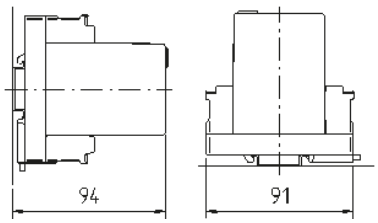
Transformer

Description

The control transformer steps down mains voltage to low voltage. Input and output are electrically isolated.

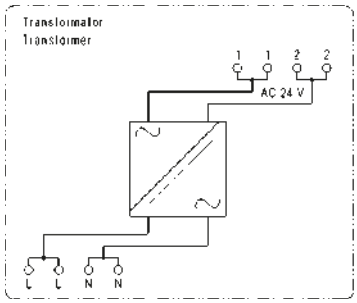
Especially suitable for supplying low power AC devices in zone 1 hazardous areas.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type
- Ex II 2 G / I M2
- Ex d e IIC Gb
- Ex d e I Mb
- Class I Zone 1 IIC
- A/Ex d e IIC Gb

Certification
- PTB 97 ATEX 1068 U
- IECEx PTB 11.0083U
- CSA 2011-2484303U
- INMETRO TÜV 13.1683U

Technical data

Enclosure material
- High-quality thermoplastic

Protection class
- Module IP 66/IEC 60529
- Terminals IP 20/IEC 60529

Terminals
- 2.5 mm², fine stranded

Mounting rail
- TH 35 x 7.5 (15) EN 60715

Terminal designation
- written marking labels

Ambient temperature
- -25 °C to +60 °C at T4

Storage temperature
- -40 °C to +60 °C

Weight
- 0.900 kg

Electrical data

Input voltage
- AC 230 V ± 10 %, 50 Hz

Output voltage
- AC 24 V ± 10 %

Output current
- max. 500 mA

Power
- 12 VA

Guidelines
- Directive 2004/108/EC
- Directive 94/9/EC

Order no.
07-7311-97S3/H3N0

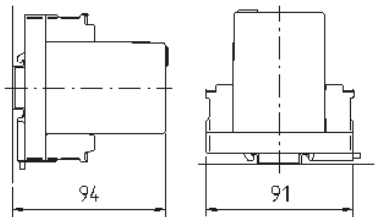
Technical data subject to change without notice.

Converter

Description

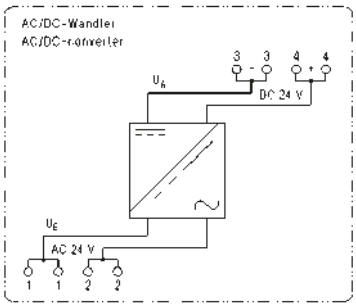
The power supply module is ideal for instrumentation and process control engineering PLCs as well as for Ex de loads with DC connection. The power supply unit has a stabilzed output and offers short-circuit protection.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagramm/terminal assignment



Explosion protection

Ex protection type
- Ex II 2 G / I M2
- Ex d e IIC Gb
- Ex d e I Mb
- Class I Zone 1 IIC
- A/Ex d e IIC Gb

Certification
- PTB 97 ATEX 1068 U
- IECEx PTB 11.0083U
- CSA 2011-2484303U
- INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminal IP 20/IEC 60529

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-20 °C to +40 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.400 kg

Electrical data

Input voltage
AC 24 V + 15 % - 5 %, 50/60 Hz

Output voltage
DC 24 V ± 5 %

Output current
450 mA

Power dissipation
≤ 2.5 W

Residual ripple
≤ 20 mV_{SS}

Power consumption
max. 13 W

Guidelines
Directive 2004/108/EC
in connection with a transformer
Type 07-7311-97S3/H3N0
Directive 94/9/EC

Order no.
07-7311-97S7/AAM0

Technical data subject to change without notice.

Power supply unit

Description

This power supply unit is universally applicable and offers a wide input range.

The DC output voltage is stabilized, galvanically isolated and permanently protected against short-circuits.

Explosion protection

Ex protection type
Ⓔx II 2G Ex de IIC
Ⓔx I M2 Ex de I

Certification
PTB 97 ATEX 1066 U
IECEx PTB 11.0082U
INMETRO UL-BR 13.0397U

Technical data

Construction
Flameproof, clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastic

Protection class

Module	IP 66
Terminals	IP 20
Terminals with cover	IP 30

Terminals
2.5 mm², fine stranded

Terminal designation
written marking labels

Display
LEDs on front panel

Storage temperature
-25 °C to +60 °C

Ambient temperature
-25 °C to +60 °C at T4

Weight
2.1 kg

Electrical data

Supply voltage
AC 110 to 250 V, 47 to 63 Hz

Input voltage range
AC 94 to 265 V

Nominal input current
0.6 A at AC 230 V/1.1 A at AC 120 V

Power consumption
P = 66 W (max.)

Power dissipation
$P_{V\,tot.}$ = 7.3 W

Galvanic isolation
Input//Output

Display

Operation	LED green
Overload > 3 A resp. short-circuit	LED green flashing

Output data

Output voltage
DC 24 V +/-3 %

Output current
2 A at T_u < +50 °C

Power derating
2.5 %/K > +50 °C

Nominal output power
P_a = 48 W

Residual ripple
< 50 mV at T_u = -10 °C to +60 °C

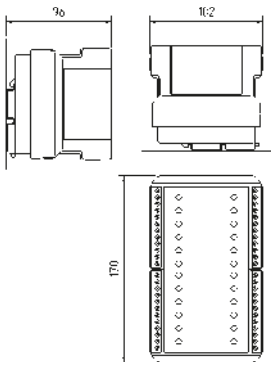
Protection and monitoring
Permanent short-circuit protection
Overload proof

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

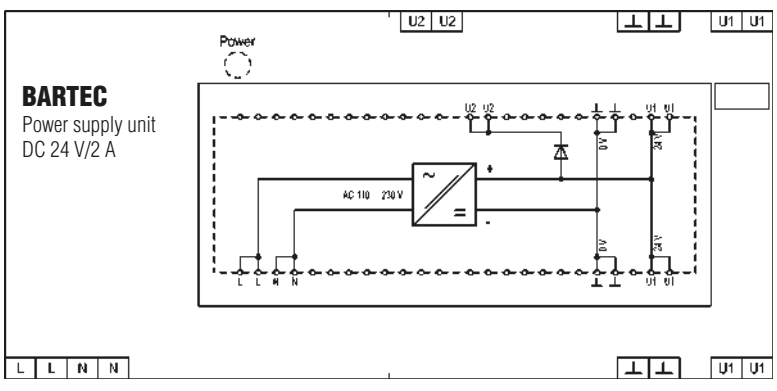
Features

- Wide input range AC 94 V to 264 V
- High efficiency
- Interference immunity in according with DIN EN 61000-4-2: 2001, DIN EN 61000-4-3: 2008, DIN EN 61000-4-4: 2003, DIN EN 61000-4-6: 2007

Dimensions/mounting positions



Wiring diagram/terminal assignment



Note

- A clearance of 40 mm must be ensured around the power supply unit.

Order no.
07-7331-1201/0000

Technical data subject to change without notice.

Power supply unit

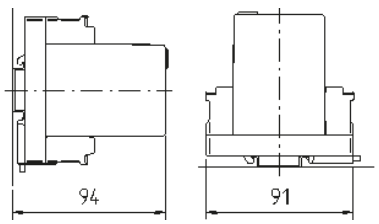
Description

This power supply can be universally used with either AC or DC voltage on the input side.

The output voltage is stabilized and conditionally short-circuit and overload-protected.

An additional output circuit protection is recommended.

Dimensions/mounting positions



Module width: 75 mm

Explosion protection

Ex protection type

Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
max. 2.5 mm², fine stranded

Mounting rail
TH 35 x 15 (7.5) EN 60715

Terminal designation
written marking labels

Ambient temperature
mounted on rail with 8 mm spacing
-20 °C to +40 °C at T6

Storage temperature
-20 °C to +65 °C

Weight
0.600 kg

Electrical data see selection chart

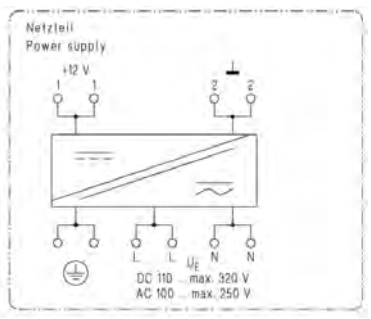
Input voltage
DC 110 V to max. 320 V
AC 100 V to max. 250 V 50/60 Hz

Residual ripple
max. 150 mV_{SS}

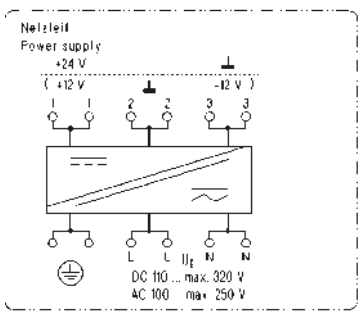
Power dissipation
max. 3 W

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Wiring diagram 1/terminal assignment 1



Wiring diagram 2/terminal assignment 2



Selection chart

Output voltage	Output current	Code no.
DC 12 V ± 5 %	440 mA	**5L**
DC 24 V ± 5 % resp. DC +12 V/-12 V ± 5 %	220 mA ± 220 mA	**6G**

07-7311-97S9/J □□ 0
Complete order no.
Please enter code number.

Technical data subject to change without notice.

03-0330-0106/E-08/2014-BAT-124647

Optocoupler

Description

This optocoupler provides for a safe galvanic isolation between a non-intrinsically safe incoming circuit (transmitter) and the output connected to an intrinsically safe circuit (receiver), which is clearly identified by means of light blue terminals.

The two channels are also safely galvanically isolated among each other.

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
CSA 2011-2484303U
TÜV 01 ATEX 1715
IECEx TUN 11.0029X
INMETRO UL-BR 14.0255X

Fitting
Type 17-9135-4.../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC

For further data see verification certificates.

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 7.5 (15) EN 60715

Terminal designation
written marking labels

Ambient temperature
-20 °C to +40 °C at T6

Storage temperature
-40 °C to +70 °C

Weight
0.250 kg

Electrical data

Total power dissipation
$P_{max.}$ = 0.8 W

No capacities and inductances

Input data

Input voltage
DC 20 to 28 V (non-interchangeable)

Input current
5.5 mA to 9.2 mA

Output data

Voltage
DC 4 V to max. 30 V

Saturation voltage
0.9 V

Current
max. 50 mA (only for connecting to certified intrinsically safe circuits. Ci and Li negligible)

Transmission data

Switching frequency
max. 5 kHz (with U_A = 10 V)

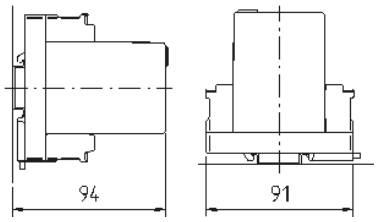
Switching times measured at
U_E = 20 V_{SS}; U_A = 10 V_{SS}; I_A = 50 mA

Rise time	approx. 15 µs
Drop-out time	approx. 13 µs
Switch-on time	approx. 18 µs
Switch-off time	approx. 19 µs

Galvanic isolation transmitter/receiver
max. 375 V (peak value)

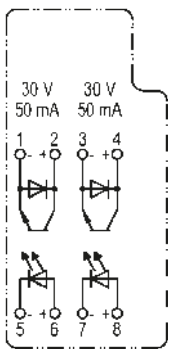
Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Order no.
07-7311-93QH/C5M0

Technical data subject to change without notice.

Isolator amplifier

Features

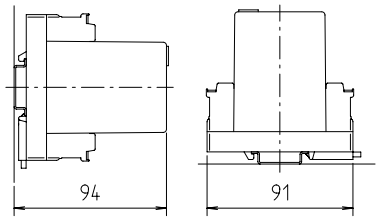
- 4-channel
- For NAMUR sensors EN 60947-5-6
- For mechanical contacts
- Galvanic isolation EN 60079-11
- LED displays
- Ex ia/ib
- Active transistor outputs
- Additional group fault signal output
- Standard or inverted

Description

4 NAMUR sensors, optocouplers, mechanical contacts or other operating elements can be connected to the isolator amplifier in an intrinsically safe way.

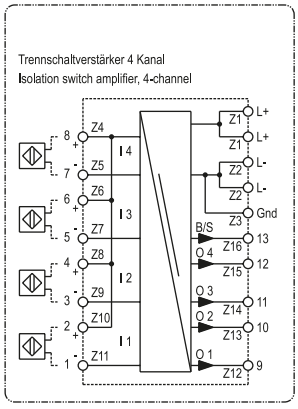
The intrinsically safe inputs are safely galvanically isolated from the supply voltage and the outputs in accordance with EN 60079-11. Open- and short-circuits of the sensor lines are detected and signaled via an additional transistor output as group fault signal. LEDs display the output states.

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Explosion protection

Ex protection type

Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification

PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
CSA 2011-2484303U
TÜV 97 ATEX 1211 X
IECEx TUN 11.0027X
INMETRO UL-BR 14.0254X

Fitting

Type 17-5521-4.../....
Ⓔx II (1) G / II (1) D
[Ex ia Ga] IIC
[Ex ia Da] IIIC
U_m = 253 V
I_0 = 30 mA
U_0 = 11.55 V
P_0 = 86.4 mW

For further data see verification certificates.

03-0330-0128/E-08/2014-BAT-127171/1

Technical data

Construction
Clip-on enclosure for TH 35 rail

Enclosure material
High-quality thermoplastics

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529
Terminals with cover	IP 30/IEC 60529

Terminals
max. 2.5 mm², fine stranded

Mounting rail
TH 35 x 15 (7.5) EN 60715

Terminal designation
written marking labels

Ambient temperature
-20 °C to +50 °C

Storage temperature
-40 °C to +60 °C

Weight
0.640 kg

Electrical data

Supply voltage
DC 20 V to DC 30 V

Power consumption
max. 580 mA

Power dissipation
P_V = max. 2.4 W

Galvanic isolation
Inputs//power supply, outputs

Input data

Voltage
U_a = 8.2 V

Switching thresholds

open circuit	< 0.26 mA
damped	< 1.2 mA
undamped	> 2.1 mA
short circuit	> 7.4 mA

Output data

Transistor outputs

output current	channel max. 100 mA
signal level	1 - signal = Ub - 1 V 0 - signal = 0.9 V
switching frequency	1.5 kHz

Displays
LED's for all outputs

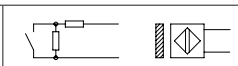
Line monitoring
always active, separate fault signal output

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Notes

- Observe the terminal assignment
- Transistor output is not short-circuit proof
- For open/short-circuit monitoring with contact call-up, use 1 kΩ/10 kΩ resistive coupling link; Type 17-9Z62-0002

Status chart

Input		B/S	Out	B/S	Out	B/S	Out
damped		0	1	0	0	1	1
undamped		0	0	0	1	1	0
open circuit		1	1	1	0	0	1
short circuit		1	0	1	1	0	0
	Code no.	12		22		32	

Complete order no. 07-7311-97MT/BA □□

Please insert correct code. Technical data subject to change without notice.

Measuring transducer

Features

- For Pt100
- Analog output 4 to 20 mA
- Fault detector
- Ex ia/ib
- Two-, three-wire senors
- EMV according to DIN EN 61000-6-3: 2005; DIN EN 61000-6-4: 2002; DIN EN 61000-6-1: 2002; DIN EN 61000-6-2: 2006

Description

The MODEX series includes a temperature measuring transducer mounted on-site in the same way as a modular terminal. The module transforms the signal received from the Pt100 temperature sensor into a proportional, load-in-dependent 4 to 20 mA output signal. The sensor circuit is intrinsically safe according to Ex protection type Ex ia.

An output current exceeding the 4 to 20 mA range signals a senor fault (open/short circuit). The Pt100 temperature sensor can be operate in 2- or 3-wire circuits within Zone 0 or 1.

Explosion protection

Ex protection type
Ⓔx II 2 (1) G / I M2
Ex d e [ia Ga] IIC/IIB Gb
Ex d e [ia Ma] I Mb
Class I Zone 1 IIC
A/Ex d e [ia] IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
INMETRO TÜV 13.1683U
CSA 2011-2484303U
TÜV 97 ATEX 1204 X
IECEx TUN 11.0030X

Fitting
Pt100 measuring transducer
Type 17-6582-1.../....
Ⓔx II (1) G [Ex ia Ga] IIC/IIB
Ⓔx II (1) D [Ex ia Da] IIIC/IIIB
For further data see verification certificates.

Safety data
U_m = 253 V
I_0 = 63.1 mA
U_0 = 21 V
P = 331 mW

Ex ia	IIC	IIB
L_0 (mH) ≤	9	35
C_0 (nF) ≤	170	1250

Technical data

Enclosure material
High-quality thermoplastic

Protection class
Module IP 66/IEC 60529
Terminals IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 15 (7.5) EN 60715

Terminal designation
written marking labels

Ambient temperature
-25 °C to +60 °C at T4

Stockage temperature
-40 °C to +60 °C

Weight
0.250 kg

Electrical data

Operating voltage
DC 24 V + 10 %, - 15 %

Power consumption
0.6 W

Sensor
Pt100 temperature sensor
2- or 3-wire circuits

Output
Load independent current: 4 to 20 mA
Max. load: ≤ 400 Ω

Temperature range
-50 °C to +100 °C
0 °C to +200 °C
0 °C to +400 °C

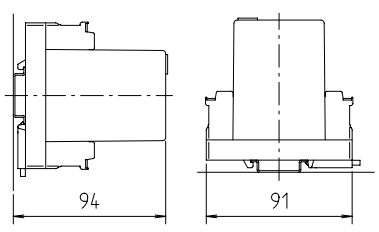
Accuracy
± 1 % of upper value

Function test
Connect 100 Ω resistance to terminal 15-16 and bridge terminals 16 and 17. Apply current between L- and terminal 31.

Guidelines
Directive 2004/108/EC
Directive 94/9/EC

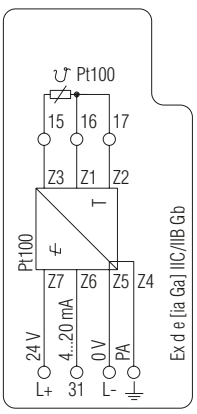
Note: Observe terminal assignment.

Dimensions/mounting positions



Module width: 30 mm

Wiring diagram/terminal assignment



Selection chart

Temperature range			Code no.
-50 °C	to	+100 °C	5
0 °C	to	+200 °C	7
0 °C	to	+400 °C	9
0 °C	to	+150 °C	A

Complete order no.
07-7311-93T4/ ☐ 350
Please insert correct code.

Technical data subject to change without notice.

Two-position controller

Description

MODEX controller module for more switching configurations in the Ex area. The standard two-position controller monitors limit values (limit monitor). The analog input signal is compared with the potentiometer setpoint.

A floating relay changeover contact is provided as output. The two-point controller is available with overcurrent/undercurrent detection, current output and signalling relay. The current output allows you to loop in (input current balancing) further devices up to a total load of 400 Ω into power circuit (4 to 20 mA).

Explosion protection

Ex protection type
Ⓔx II 2 G / I M2
Ex d e IIC Gb
Ex d e I Mb
Class I Zone 1 IIC
A/Ex d e IIC Gb

Certification
PTB 97 ATEX 1068 U
IECEx PTB 11.0083U
CSA 2011-2484303U
INMETRO TÜV 13.1683U

Technical data

Enclosure material
High-quality thermoplastic

Protection class

Module	IP 66/IEC 60529
Terminals	IP 20/IEC 60529

Terminals
2.5 mm², fine stranded

Mounting rail
TH 35 x 15 (7.5) EN 60715

Terminal designation
written marking labels

Ambient temperature
mounted on rail
with spacing ≥ 16 mm:
-20 °C to +40 °C

Storage temperature
-40 °C to +60 °C

Weight
0.500 kg

Electrical data

Supply voltage
DC 24 V + 15 %

Nominal power
max. 2.5 W

Input signal
0 to 35 mA
≤ 3.5 mA - undercurrent
≥ 25 mA - overcurrent
4 to 20 mA ≙ 0 to 100 %
Load: 200 Ω

Hysteresis
2 mA

Repeat accuracy
± 0.5 % of under range limit (20 mA)

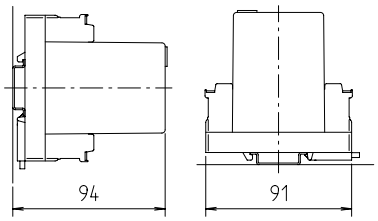
Ambient temperature
Influence: ≤ 0.008 %/K

Outputs
Relay output:
Load: AC 250 V, 3 A, 750 VA

Optional
Signal relay: AC 250 V, 1 A, 250 VA
Sensor fault relay: AC 250 V, 1 A, 250 VA
Current output: 4 to 20 mA
Load: 400 Ω

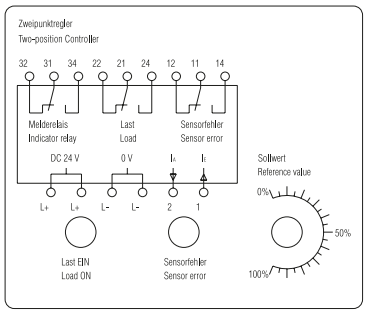
Guidelines
Directive 2004/108/EC
Directive 94/9/EC

Dimensions/mounting positions



Module width: 75 mm

Wiring diagram/terminal assignment



Selection chart

Options	Code no.
Standard	0
With make/break monitor current output and signal relay	5

07-7311-97ER/31 □□ 0
Complete order no.
Please enter code number.

Technical data subject to change without notice.

03-0330-0105/D-08/2014-BAT-124646

BARTEC

Process Monitor

Process Monitor PM 420ex

Features

- Version in Ex i
- Five-digit transreflective graphics display
- No additional voltage supply needed
- Bar graph capability

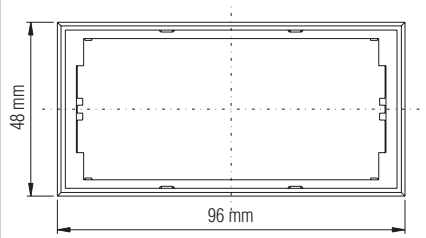
Description

The process monitor is a 5-digit intrinsically safe display unit.

It can be used to show electricity flowing out of a 4 mA up to 20 mA field circuit into technical units.

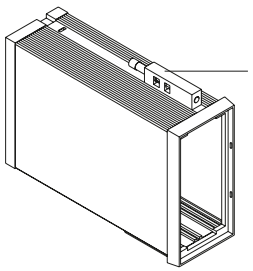
No additional voltage supply or battery is needed for operation.

Dimensions/mounting positions



Depth: 82 mm

Mounting



Input mode unit			
Parameter	Unit	Parameter	Unit
0	°C	13	t
1	A	14	ph
2	mA	15	ppm
3	V	16	rpm
4	mV	17	mbar
5	n	18	bar
6	mm	19	kPa
7	cm	20	1/min
8	m	21	µS/cm
9	km	22	mS/cm
10	m^3	23	m^3/h
11	%	24	Nm^3/h
12	kg		

Explosion protection

Ex protection type
Ⓔx II 2(1)G Ex [ia Ga] IIC T5 Gb

Certification
IBExU 09 ATEX 1095 X

Ambient temperature
-20 °C ≤ T_a ≤ +60 °C

Safety retated data
U_i ≤ DC 30 V
I_i ≤ 100 mA
L_i ≤ insignificant
C_i ≤ 12 nF

Technical data

Structure
front-panel fitting

Enclosure material
high-quality thermoplastics

Protection class
front installation IP 40
terminals IP 20

Display
Type height 13 mm

Connecting terminals
2,5 mm^2, fine-stranded

Storage temperature
-40 °C up to +80 °C

Dimensions (width x height x depth)
96 mm x 48 mm x 82 mm

Wall cut-out
91 mm x 44 mm + 0,5 mm

Weight
120 g

Electrical data

Measuring range
4 up to 20 mA

Measured variable
Current

Error of indication
< 0.1 % of the display range

Temperature drift
< 0.01 %/K

Order no.
17-71MM-1002

Technical data subject to change without notice.

03-0330-0535-09/2013-BAT-291436

BARTEC

Network Technology

Optical Transceiver BNT 100ex

Features

- Fibre optic cable (FOC) buffer stage for ATEX Zone 1, 21 and ATEX M2
- Redundant DC 10 to 30 V power supply
- Connects easily to additional devices
- Connector types SC and ST available
- Range 2000 m

Description

The optical transceivers in the BNT series are characterised by their intrinsically safe fibre optic cable connections. The common connector types SC and ST are available, as is the possibility of a redundant power supply.

The optical transfer in the BNT series guarantees safe communication in potentially explosive atmospheres.

Selection chart

Version	Code no.
BNT 100ex with SC connector	**11**
BNT 100ex with ST connector	**12**

Complete order no. 07-7362-1 ☐☐ 0

Please insert correct code. Technical data subject to change without notice.

Explosion protection

Ex protection type

Mining
Ex I (M1) [Ex op is Ma] I

Gas
Ex II (1)G [Ex op is Ga] IIC T4

Dust
Ex II (1)D [Ex op is Da] IIIC T135 °C

Certification
IBExU 13 ATEX 1132

Technical data

Network specifications
- Optical transceiver
- Output of opis compliant signals
- SC and ST connectors available
- Up to 100 Mbit/s data throughput
- LED display: Power

Operating temperature
-40 °C to +80 °C

Power supply
DC 10 to 30 V, redundant

Recommended fusing
1 AT (time-lag)

Connections
1 x 100 Mbit FOC input
1 x 100 Mbit FOC intrinsically safe output
1 x power supply

Recommended optical fibre
Multimode 50/125 µm

Dimensions (height x width x depth)
114 mm x 29 mm x 104 mm

Weight
325 g

03-0330-0785-02/2014-BAT-364923

Optical Transceiver BNT 1000ex

Features

- Fibre optic cable (FOC) buffer stage for ATEX Zone 1, 21 and ATEX M2
- Redundant DC 10 to 30 V power supply
- Connects easily to additional devices
- Connector type LC
- Range up to 550 m

Description

The optical transceivers in the BNT series are characterised by their opis compliant fibre optic cables. The common connector type LC is available, as is the possibility of a redundant power supply.

The optical transfer in the BNT series guarantees safe communication in potentially explosive atmospheres.

Explosion protection

Ex protection type

Mining
Ⓔx I (M1) [Ex op is Ma] I

Gas
Ⓔx II (1)G [Ex op is Ga] IIC T4

Dust
Ⓔx II (1)D [Ex op is Da] IIIC T135 °C

Certification
IBExU 13 ATEX 1132

Technical data

Network specifications
- Optical transceiver
- Output of intrinsically safe signals
- LC connector
- Up to 1000 Mbit/s data throughput
- LED display: Power

Operating temperature
-40 °C to +80 °C

Power supply
DC 10 to 30 V, redundant

Recommended fusing
1 AT (time-lag)

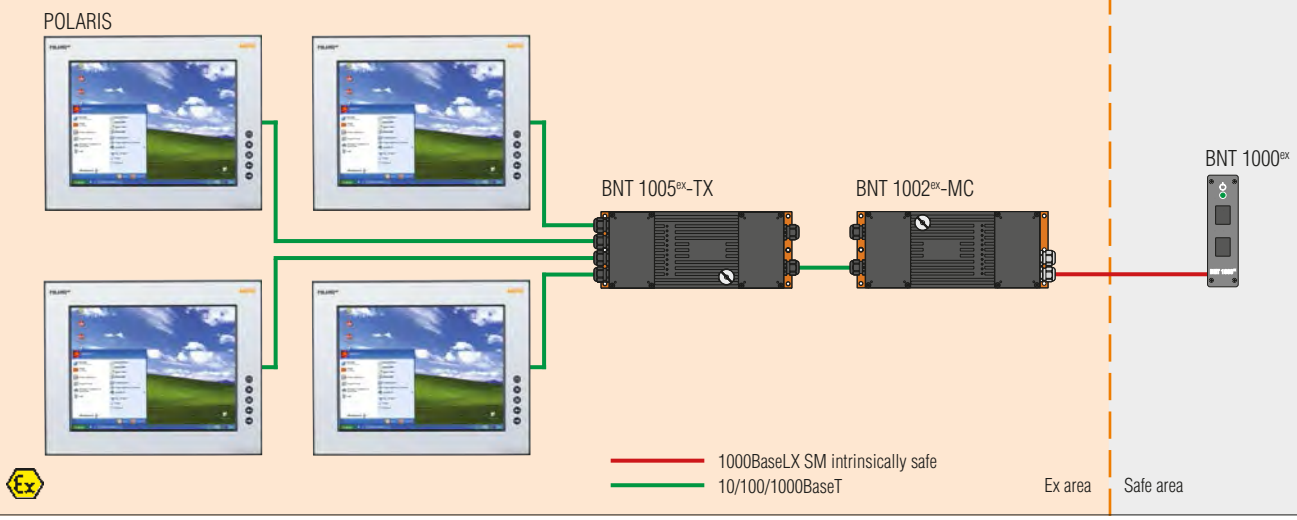
Connections
1 x 1000 Mbit FOC input
1 x 1000 Mbit FOC intrinsically safe output
1 x power supply

Recommended optical fibre
Multimode 50/125 µm

Dimensions (height x width x depth)
111 mm x 24.5 mm x 106.5 mm

Weight
300 g

Connection possibility



Order no.
07-7362-1330

Technical data subject to change without notice.

Media Converter/Optical Transceiver BNT 1000ex-SM10

Features

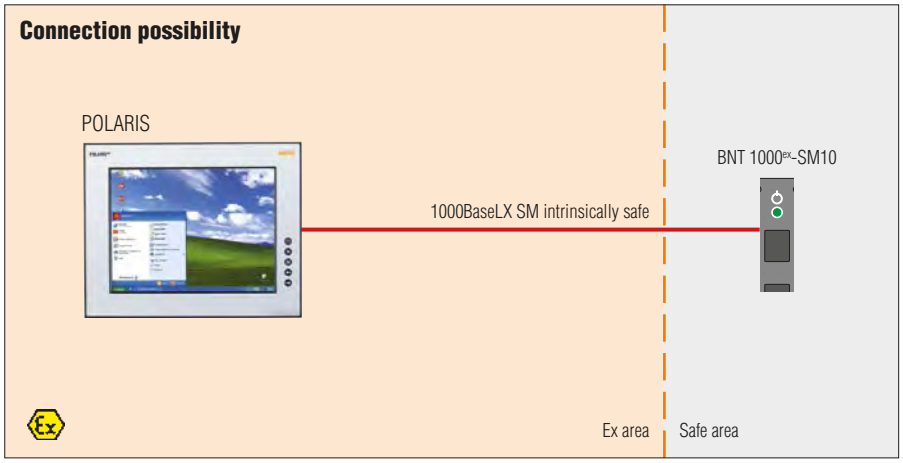
- Single mode intrinsically safe transceiver for 10 km
- Input side selectable: TX; single mode fibre or multimode fibre
- Fibre optic cable (FOC) buffer stage for ATEX Zone 1, 21 and ATEX M1
- Redundant DC 10 to 30 V power supply

Description

The optical transceivers in the BNT series are characterised by their intrinsically safe fibre optic cable connections. The common connector types LC and TX are available, as is the possibility of a redundant power supply.

The optical transfer in the BNT series guarantees safe communication in potentially explosive atmospheres.

Connection possibility



Selection chart input connector

Version	Code no.
BNT 1000ex-SM10 with LC connector (multimode)	**3**
BNT 1000ex-SM10 with LC connector (signal mode)	**4**
BNT 1000ex-SM10 with RJ45 connector (copper)	**5**

Complete order no. 07-7362-2 ☐ 40

Please insert correct code. Technical data subject to change without notice.

Explosion protection

Ex protection type

Mining
Ⓔx I (M1) [Ex op is Ma] I

Gas
Ⓔx II (1)G [Ex op is Ga] IIC T4

Dust
Ⓔx II (1)D [Ex op is Da] IIIC T135 °C

Certification

IBExU 13 ATEX 1132

Technical data

Network specifications

- Optical transceiver, media converter
- Output of intrinsically safe signals
- LC connector
- Up to 1000 Mbit/s data throughput
- LED display: Power, RX loss, TX fault

Operating temperature

-40 °C to +80 °C

Power supply

DC 10 to 30 V, redundant

Recommended fusing

1 AT (time-lag)

Connections

1 x 1000 Mbit FOC/copper input
1 x 1000 Mbit FOC intrinsically safe output
1 x power supply

Recommended optical fibre

Single mode 9/125 µm

Dimensions (height x width x depth)

111 mm x 24.5 mm x 105.5 mm

Weight

340 g

03-0330-0787-02/2014-BAT-364925

Ethernet Switch BNT 1002ex-MC

Features

- Direct installation in ATEX Zone 1 and 21 as well as ATEX M2
- No additional explosion protection enclosure required
- No additional mains adapter required
- Connects easily to additional devices
- Full functionality of the main product
- Range max. 550 m with Multimode

Description

The Ethernet switches and media converters in the BNT series are used as stationary devices in potentially explosive atmospheres of device groups I and II.

They are used to transfer optical or electronic data signals up to a maximum bandwidth of 2 Gbit/s.

They are available in two different models, with aluminium housing for use in ATEX Zone 1 and 21 and the stainless steel housing for use in the ATEX M2 area.

Explosion protection

Ex protection type

Mining M2
Ⓔx I M2 (M1) Ex eb qb [op is] I

Gas Zone 1
Ⓔx II 2(1)G Ex eb qb [op is] IIC T4

Dust Zone 21
Ⓔx II 2(1)D Ex tb [op is] IIIC T135 °C

Certification

IBExU 13 ATEX 1131

Technical data

Main device

N-TRON 1002MC

Network specifications

- Unmanaged switch, media converter
- Fully IEEE 802.3, 3u, 3z and 3ab compliant
- 1 x 10/100/1000BaseT connection and 1 x 1000BaseSX multimode FOC
- ST connector
- Full/half duplex operation
- Up to 2 Gbit/s data throughput
- Auto-sensing
- Supports up to 1,024 MAC addresses
- Store-and-Forward technology
- LED display: Link/Activity

Operating temperature

-40 °C to +80 °C

Reliability

> 2 million MTBF hours

Power supply

DC 10 to 30 V, redundant
AC 90 to 253 V, external

Connections

1 x Gigabit TX
1 x Gigabit FOC, ST connector
1 x power supply

Recommended optical fibre

Multimode 50/125 µm

Supported network protocols

Ethernet/IP
ProfiNET IO

Range (applies only at 1,000 Mbit/s)

max. 550 m (fibre optic "ST") with Multimode

Average forwarding time

1580 ns

Dimensions (height x width x depth)

140 mm x 380 mm x 56 mm

Weight

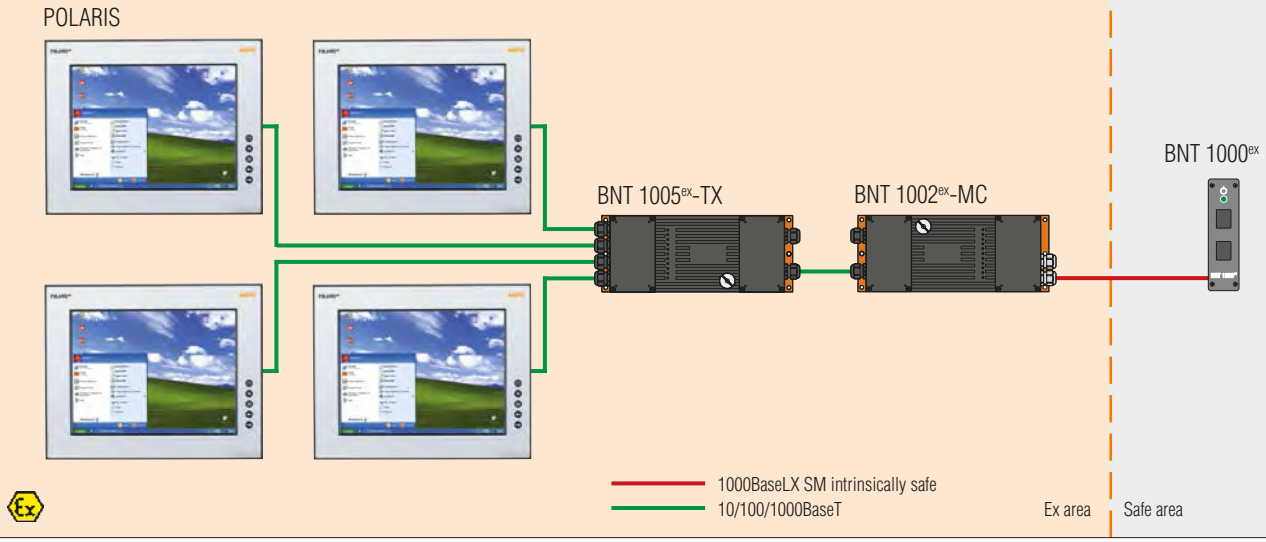
4.5 kg for Zone 1, 21
7.2 kg for M2

Protection class (EN 60529)

IP 64

03-0330-0788-02/2014-BAT-364927/1

Connection possibility



Selection chart BNT 1002ex-MC

Power supply	Code no.
AC 90 V to 230 V	1
DC 10 V to 30 V	2

Complete order no.

BNT 1002ex-MC **for ATEX Zone 1 and 21** **07-7382-11 ☐ 2/0000**

for ATEX M2 **07-7382-23 ☐ 2/0000**

Please insert correct code. Technical data subject to change without notice.

Gigabit Ethernet Switch BNT 1005ex-TX

Features

- Direct installation in ATEX Zone 1 and 21 as well as ATEX M2
- No additional explosion protection enclosure required
- No additional mains adapter required
- Connects easily to additional devices
- Full functionality of the main product
- Max. range 100 m

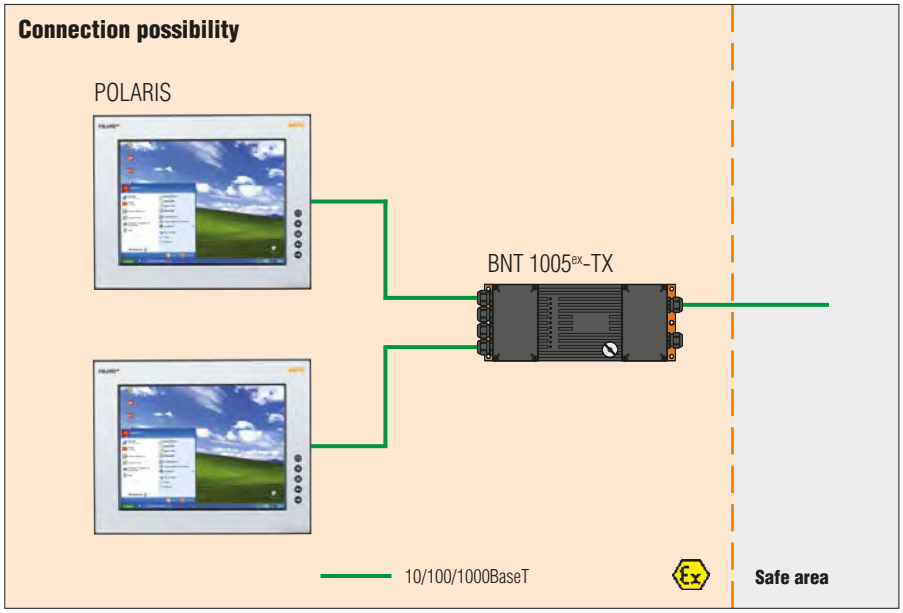
Description

The Ethernet switches and media converters in the BNT series are used as stationary devices in potentially explosive atmospheres of device groups I and II.

They are used to transfer optical or electronic data signals up to a maximum bandwidth of 10 Gbit/s.

They are available in two different models, with aluminium housing for use in ATEX Zone 1 and 21 and the stainless steel housing for use in the ATEX M2 area.

Connection possibility



Selection chart BNT 1005ex-TX

Power supply	Code no.
AC 90 V to 230 V	1
DC 10 V to 30 V	2

Complete order no.

BNT 1005ex-TX **for Zone 1 and 21** **07-7382-11 ☐ 1/0000**

for M2 **07-7382-23 ☐ 1/0000**

Please insert correct code. Technical data subject to change without notice.

Explosion protection

Ex protection type

Mining M2
Ex I M2 Ex eb qb I

Gas Zone 1
Ex II 2G Ex eb qb IIC T4

Dust Zone 21
Ex II 2D Ex tb IIIC T135°C

Certification

IBExU 13 ATEX 1131

Technical data

Main device

N-TRON 1005TX

Network specifications

- Unmanaged switch
- Fully IEEE 802.3, 3u and 3ab compliant
- 5 x 10/100/1000BaseT connections
- Full/half duplex operation
- Up to 10 Gbit/s data throughput
- Auto-sensing
- Supports up to 4,000 MAC addresses
- Store-and-Forward technology
- LED display: Link/Activity

Operating temperature

-40 °C to +80 °C

Reliability

> 2 million MTBF hours

Power supply

DC 10 to 30 V, redundant
AC 90 to 253 V, external

Connections

5 x Gigabit TX
1 x power supply

Supported network protocols

Ethernet/IP
ProfiNET IO

Range (applies only at 1,000 Mbit/s)

max. 100 m (copper Cat5e)

Average forwarding time

1580 ns

Dimensions (height x width x depth)

140 mm x 380 mm x 56 mm

Weight

4.5 kg for Zone 1, 21
7.2 kg for M2

Protection class (EN 60529)

IP 64

03-0330-0790-07/2014-BAT-364929

Ethernet Switch BNT 1003ex-GX2

Features

- Direct installation in ATEX Zone 1 and 21 as well as ATEX M2
- No additional explosion protection enclosure required
- No additional mains adapter required
- Connects easily to additional devices
- Full functionality of the main product
- Range max. 550 m with Multimode

Description

The Ethernet switches and media converters in the BNT series are used as stationary devices in potentially explosive atmospheres of device groups I and II.

They are used to transfer optical or electronic data signals up to a maximum bandwidth of 6 Gbit/s.

They are available in two different models, with aluminium housing for use in ATEX Zone 1 and Zone 21 and the stainless steel housing for use in the ATEX M2 area.

Explosion protection

Ex protection type

Mining M2
Ex I M2 (M1) Ex eb qb [op is] I

Gas Zone 1
Ex II 2(1)G Ex eb qb [op is] IIC T4

Dust Zone 21
Ex II 2(1)D Ex tb [op is] IIIC T135 °C

Certification

IBExU 13 ATEX 1131

Technical data

Main device

N-TRON 1003GX2

Network specifications

- Unmanaged switch
- Fully IEEE 802.3, 3u, 3z and 3ab compliant
- 1 x 10/100/1000BaseT connection and 2 x 1000BaseSX multimode FOC
- ST connector
- Full/half duplex operation
- Up to 6 Gbit/s data throughput
- Auto-sensing
- Supports up to 1,024 MAC addresses
- Store-and-Forward technology
- LED display: Link/Activity

Operating temperature

-40 °C to +80 °C

Reliability

> 2 million MTBF hours

Power supply

DC 10 to 30 V, redundant
AC 90 to 253 V, external

Connections

1 x Gigabit TX
2 x Gigabit FOC, ST connector
1 x power supply

Recommended optical fibre

Multimode 50/125 µm

Supported network protocols

Ethernet/IP
ProfiNET IO

Range (applies only at 1,000 Mbit/s)

max. 550 m (fibre optic "ST") with Multimode

Average forwarding time

1580 ns

Dimensions (height x width x depth)

140 mm x 380 mm x 56 mm

Weight

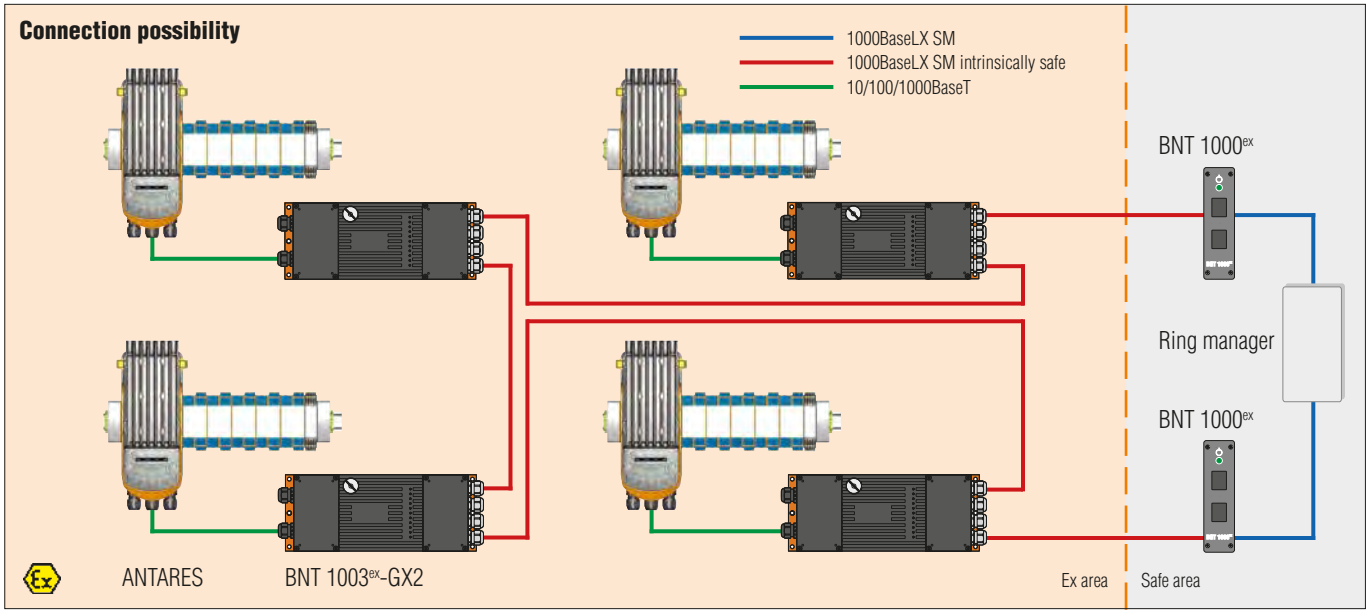
4.5 kg for Zone 1, 21
7.2 kg for M2

Protection class (EN 60529)

IP 64

03-0330-0789-02/2014-BAT-364928/1

Connection possibility



Selection chart BNT 1003ex-GX2

Power supply	Code no.
AC 90 V to 230 V	**1**
DC 10 V to 30 V	**2**

Complete order no.

BNT 1003ex-GX2 for Zone 1 and 21 **07-7382-11 ☐ 3/0000**

for M2 **07-7382-23 ☐ 3/0000**

Please insert correct code. Technical data subject to change without notice.

03-0330-0789-02/2014-BAT-364928/2

Power Supply 100 W

Features

- Wide-range input AC 90 V to 253 V
- High efficiency factor
- Automatic disconnection
- Use in Zone 1 + 2 and Zone 21 + 22

Description

This power supply unit is universally usable and offers a wide-range input.

The DC output voltage is stabilised and switches off in the event of overcurrent or short circuit.

The power supply unit switches on again automatically once the rated current is reached.

The wired connections are established by means of an integrated terminal compartment in the „e“ increased safety type of protection.

Explosion protection

Ex protection type
Ⓔx II 2G Ex eq IIC T4
Ⓔx II 2D Ex tD 21 IP 64 T135 °C

Certification
IBExU 09 ATEX 1092

Guidelines
Directive 94/9/EC
Directive 2004/108/EC

Technical data

Structure
Aluminium enclosure

Protection class
IP 64

Connecting terminals
2.5 mm², fine-stranded

Terminal marking
printed

Storage temperature
-20 °C up to +60 °C

Ambient temperature
-20 °C up to +60 °C

Dimensions (width x depth x height)
140 mm x 250 mm x 86 mm

Weight
3 kg

Electrical data

Rated voltage
AC 110 up to 230 V, 47 up to 63 Hz

Input voltage range
AC 90 up to 253 V

Input rated current
max. 0.5 A at U_N = 230 V
1 A at U_N = 110 V

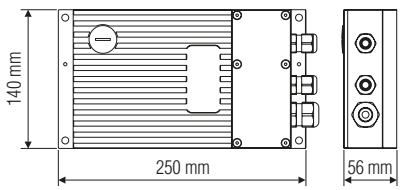
Power consumption
P = max. 120 W

Power dissipation
$P_{V\,tot.}$ = 18 W

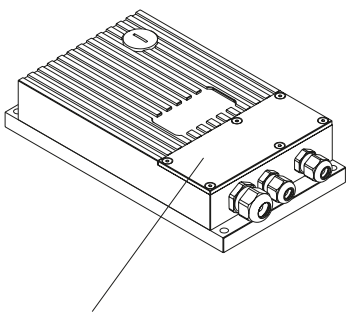
Outputs

Output voltage (regulated)
DC 24 V ± 2 % at 4.2 A
DC 12 V ± 2 % at 8.5 A
DC 5 V ± 2 % at 20 A

Dimensions



Structure



Terminal connection chamber in increased safety

Selection chart

Output voltage	Code no.
DC 24 V	3
DC 12 V	2
DC 5 V	1

Complete order no. 07-7381-1 ☐ 00
Please insert correct code. Technical data subject to change without notice.

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