BARTEC

User Manual - TRANSLATION

POLARIS Remote Digital

POLARIS II Remote 24”/ Remote 22"/ Remote 19.1"

Type 17-72V5-….

ATEX Zone 2

ATEX Zone 21/Zone 22

Document No.

May, 2019

Reservation: Technical data subject to change without notice. Changes, errors and misprints may not be used as a basis for any claim for damages.

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Appendix:

Declaration of Conformity

EC Type Examination Certificate

Operating Instructions for HCS Radiator

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1. Basic Safety Instructions

1.1 Notes on this manual

Please read carefully before commissioning the devices.

The user manual is a constituent part of the product. It must be kept in the direct vicinity of the device and accessible at all times to installation, operating and maintenance personnel.

It contains important notes, safety instructions and test certificates which are necessary for perfect functioning when the devices are being operated and handled.

The user manual is written for all people who carry out assembly, installation, commissioning and maintenance work on the product, whereby the directives and standards applicable to areas with a gas or dust atmosphere (2014/34/EU, EN/IEC 60079-17 and EN/IEC 60079-19) must be observed when doing such work.

Familiarity with and strict adherence to the safety instructions and warnings in this manual are essential for safe installation and commissioning. Careful handling and consistent observation of these instructions can prevent accidents, personal injuries and damage to property.

The illustrations in these operating instructions serve to make the information and descriptions more clear. They are not necessarily true to scale and may deviate slightly from the actual construction of the device.

The BARTEC company reserves the right to carry out technical changes at any time.

In no event will BARTEC company be responsible or liable for indirect or consequential damages resulting from the use or application of this user manual.

Safety instructions and warnings are specially highlighted in this manual and marked by symbols.

DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

ATTENTION

ATTENTION identifies a potentially damaging situation which, if not avoided, could damage the equipment or something in its environment.

Important instructions and information on effective, economical and environmentally compatible handling.

Languages

The original user manual is written in German. All other available languages are translations of the original user manual.

The user manual is available in German and English. If you require any other languages, please ask BARTEC or request them when placing the order.

Changes to the document

BARTEC reserves the right to alter the contents of this document without notice. No guarantee is given for the correctness of the information. In case of doubt, the German safety instructions shall apply because it is not possible to rule out errors in translation or in printing. In the event of a legal dispute, the “General Terms and Conditions” of the BARTEC group shall apply in addition.

The respective up-to-date versions of data sheets, manuals, certificates, EC Declaration of Conformity may be downloaded from the “Automation Technology” product page at www.bartec.de or ordered directly from BARTEC GmbH.

1.2 Handling the product

The product described in these operating instructions has been tested and left the factory in perfect condition as regards meeting safety requirements. To maintain this condition and ensure that this product operates perfectly and safely, it may be used only in the manner described by the manufacturer. Appropriate transportation, suitable storage and careful operation are also essential for the perfect and safe operation of this product. The POLARIS must be installed properly and securely if it is to work perfectly and correctly.

The safe and perfect mounting of the POLARIS is a precondition for faultless and correct operation.

1.3 Use in accordance with the intended purpose

1.3.1 Exclusive purpose

It is used exclusively in combination with operating devices which satisfy the requirements for Overvoltage Category I.

The POLARIS II Remote Station have been designed specially for use in hazardous (potentially explosive) areas in Zone 2 or Zones 21 and 22.

It is essential to observe the permissible operational data for the device being used.

1.3.2 Improper Use

Any other use is not in accordance with the intended purpose and can cause damage and accidents. The manufacturer will not be liable for any use beyond that of its exclusive intended purpose.

1.3.3 Owner's/Managing Operator's Obligations

The owner/managing operator undertakes to restrict permission to work with the POLARIS to people who:

– are familiar with the basic regulations on safety and accident prevention and have been instructed in the use of the POLARIS;

– have read and understood the documentation, the chapter on safety and the warnings.

The owner/managing operator must check that the safety regulations and accident prevention rules valid for the respective application are being observed

1.4 Safety Instructions

1.4.1 General Safety Instructions

- Take the device out of the hazardous area before wiping it with a dry cloth or cleaning it!
- Do not open devices in a hazardous area.
- The general statutory regulations or directives relating to safety at work, accident prevention and environmental protection legislation must be observed, e.g. the German industrial health and safety ordinance (BetrSichV) or the applicable national ordinances.
- In view of the risk of dangerous electrostatic charging, wear appropriate clothing and footwear.
- Avoid the influence of heat that is higher or lower than the specified temperature range.
- Protect the device from external influences! Do not expose the device to any caustic/aggressive liquids, vapours or mist! In the event of malfunctioning or damage to the enclosure, take the device out of the potentially explosive area immediately and bring it to a safe place.

1.5 Safety Instructions for Operation

1.5.1 Upkeep

For electrical systems the relevant installation and operating regulations must be complied with (e.g. Directive 2014/34/EU and the national applicable ordinances EN 60079-14 and the DIN VDE 0100 series)!

The disposal of this equipment must comply with the national regulations on the disposal of waste.

1.5.2 Maintenance

Regular servicing is not necessary if the equipment is operated correctly in accordance with the installation instructions and environmental conditions. In this context, please refer to Chapter "Maintenance, Inspection, Repair".

1.5.3 Inspection

Under IEC 60079-19 and EN 60079-17, the owner/managing operator of electrical installations in hazardous areas is obliged to have these installations checked by a qualified electrician to ensure that they are in a proper condition.

1.5.4 Repairs

Under EN/IEC 60079-17 and EN/IEC 60079-19, the owner/managing operator of electrical installations in hazardous areas is obliged to have these installations checked by a qualified electrician to ensure that they are in a proper condition.

1.5.5 Commissioning

Before commissioning, check that all components and documents are there.

1.6 Ex Protection Type, Certification and Standards

Markings specifying Ex protection and certification are put on the device. For Ex protection markings, see chapter 4 "Technical Data ".

The POLARIS II Remote conform to Directive 2014/34/EU for devices and protective systems for use to their intended purpose in potentially explosive areas (ATEX Directive). For the standards conformed to, see Chapter 3 "Explosion protection and approvals".

1.7 Warranty

WARNING

If components other than those specified are used, protection against explosion can no longer be assured.

- Do not take any modifications or conversions on device.
- Use only original spare parts parts.

The manufacturer grants a complete guarantee only and exclusively for the spare parts ordered from him, the manufacturer.

As a fundamental rule, our “General Conditions of Sale and Delivery” apply. These are made available to the owner/managing operator at the latest on formation of a contract. Guarantee and liability claims for personal injury and damage to property are excluded if they are due to one or more of the following reasons:

- Use of the POLARIS for a purpose other than that for which it is intended.
- Incorrect installation, commissioning, operation and maintenance.
- Non-compliance with the instructions in the manual with respect to transport, storage, assembly, commissioning, operation and maintenance.
- Structural modifications without our prior authorisation.
- inadequate monitoring of components that are subject to wear
- Repairs done incorrectly.
- Disasters due to the effects of foreign matter or Act of God (events outside human control).

We guarantee the POLARIS and its accessories for a period of 1 year starting from the BARTEC delivery date. This guarantee covers all parts of the delivery and is restricted to the replacement free of charge or the repair of the defective parts in our Bad Mergentheim factory. As far as possible, the delivery packaging should be kept for this purpose. In the event of such a claim, the product must be returned to us after written arrangement. The customer cannot claim to have the repairs done at the site of installation

2. Product Description

2.1 Definition

The **POLARIS Remote KVM Digital** device from BARTEC is a display, optionally with keyboard, mouse and touch screen which can operate a server or PC in the safe era in hazardous areas Zones 21, 22 or 2.

Illustration 1: POLARIS II Remote in the stainless-steel enclosure, rotatable/inclinable with touchscreen,

It is connected to the server or PC easily and directly by means of the local unit already included in the scope of supply.

Illustration 2: e.g. local unit with STP cable

The **POLARIS Remote KVM Digital** series is optimised for signals such as DVII/HDMI and USB. A local monitor can be connected via "HDMI Out". The touch screen is connected via USB.

2.2 Schematic design

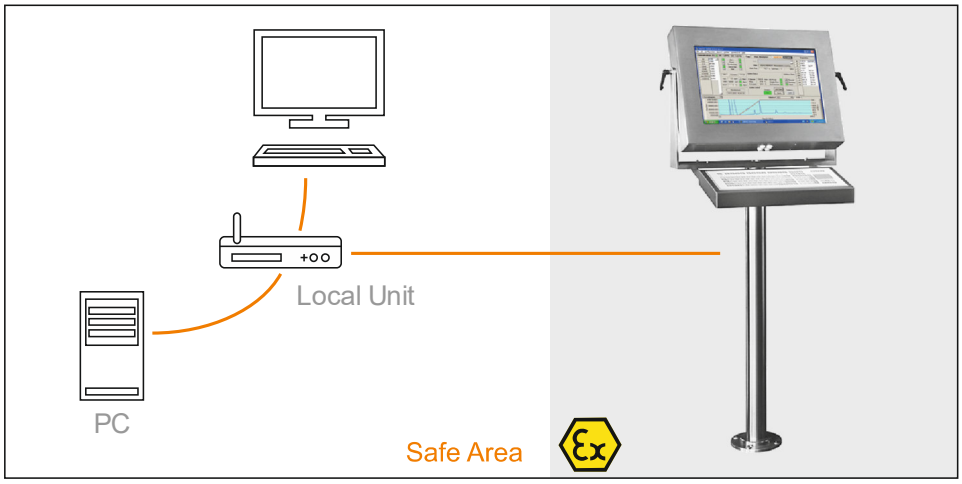


Illustration 3: Simple system structure

3. Explosion protection and approvals

3.1 Explosion protection

POLARIS II Panel PC **Typ 17-72V4-******	
ATEX	
Ex protection (maximum marking)	II 3G Ex nA ic IIC T5 Gc II3(2)G (1)G Ex nA ic [ic] [ib Gb) [op is Ga] IIC T4/5 Gc II 2D Ex ib tb IIIC T100°C Db -20 °C ≤ Ta ≤ 60 °C
Standards in accordance with EMC Directive 2014/34/EU	EN 60079-0:2012 +A11:2013 EN 60079-11:2012 EN 60079-15:2010 EN 60079-28:2015 EN 60079-31 :2014
Certification	IBExU 09 ATEX 1113 X
Special conditions	High charging mechanisms at the operation surface of the Visual units respectively accessories (for example pneumatic particle transport) must be excluded at the application.
EU-Konformität	
RoHS-Directive	2011/65/EU
Standards in accordance with EMC Directive 2014/30/EU	EN 61000-6-2:2005 EN 61000-6-4:2007 + A1:2011
Safty (IP Code)	EN 60529:1991 + A1:2000 + A2:2013
Produktkennzeichnung	CE 0044

4. Technical Data

4.1 General data

Construction	Stainless steel enclosure
Connection to the PC (Local Unit)	Direct connection to DVI/HDMI USB for Keyboard, Mouse & Touchscreen Extension by means of an STP/S 4x2x23 AWG
Conductor length	up to 100 m
POLARIS Remote II	Terminal for - Power - Optional USB for keyboard & mouse STP Cable directly with RJ45
Rated voltage	AC 110 to 230 V, 47 to 63 Hz DC 24 V
Input voltage range	AC 90 V to 253 V optional DC 24 V ± 10 %
Max. power consumption	$P_{max.}$ < 75 W
Admissible ambient temperature	Storage -25 °C to +60 °C Operation 0 °C to +50 °C
Relative air humidity	5 to 95 % non-condensing
Material	Stainless steel
Protection class	IP65
Optional accessories	Keyboard with integrated trackball 38 mm Keyboard with integrated trackball 50 mm Keyboard with integrated touchpad
Optional	Touchscreen

4.1.1 Characteristics POLARIS Remote KVM Digital 19,1"

Display	19.1" graphics-capable TFT display SXGA resolution 1.280 x 1.024 pixels 16.7 million colours Brightness 300 cd/m^2 Visible surface approx. 376 x 301 mm Contrast1300:1
Backlight	LED technology, Service life approx... 50.000 hours at +25 °
Dimensions (width x height x depth)	Display unit 610 mm x 450 mm x ca. 100 mm With Mounting adapter and keyboard 730 mm x 520 mm x 400 mm
Masse	ca. 17 kg

4.1.2 Characteristics POLARIS Remote KVM Digital PC 22"

Display	22" graphics-capable TFT display WXGA resolution 1.680 x 1.050 pixels 16.7 million colours Brightness 300 cd/m^2 Visible surface approx. 474 x 296 mm Contrast1000:1
Backlight	LED technology, Service life approx... 50.000 hours at +25 °C
Dimensions (width x height x depth)	Display unit 610 mm x 450 mm x ca. 100 mm With Mounting adapter and keyboard 730 mm x 520 mm x 400 mm
Masse	ca. 17 kg

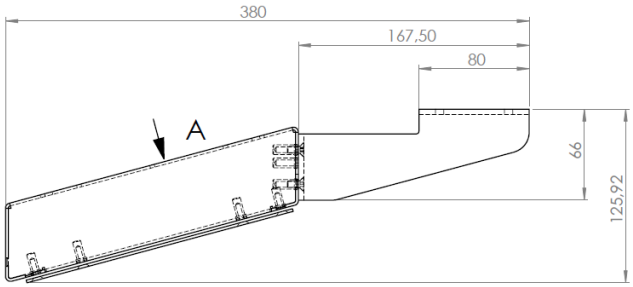
4.1.3 Characteristics POLARIS Remote KVM Digital PC 24"

Display	24" graphics-capable TFT display Full HD resolution 1.920 x 1.080 pixels 16.7 million colours Brightness 300 cd/m^2 Visible surface approx. 531 x 299 mm Contrast 5000:1
Backlight	LED technology, Service life approx... 50.000 hours at +25 °C
Dimensions (width x height x depth)	Display unit 660 mm x 450 mm x ca. 100 mm With Mounting adapter and keyboard 785 mm x 610 mm x 400 mm
Masse	ca. 17 kg

4.1.4 Technical data Keyboard

Variants	Keyboard with integrated Touchpad Keyboard with Trackball 38 mm Keyboard with Trackball 50 mm
Material (conditionally UV-resistant)	Polyester foil of Aluminium plate mounted in stainless steel enclosure
Protection class	IP65 (static)
Wight	ca. 2 kg
Other features	Keyboard available in various languages

Dimensions (mm)



width: 500 mm

4.1.5 Heating (Optional) for Version up to -20°C

Type	**HCS 40**
Ex protection type	Ex II 2G Ex db IIC T4
	Ex II 2D td IIIC T135°C
Product marking	CE
Certification	PTB 03 ATEX 1139 X
Material	Black aluminium
Power	AC 230 V
Power	50 W
Dimensions (width x height x depth)	52 mm x 50 mm x 155 mm
Switching	Via external thermostat Switch on +10°C Switch of +18°C

Is factory installed,

The Ex marking of the POLARIS II Panel PC changes with the built-in heater.
The temperature class changes from T5 to T4.

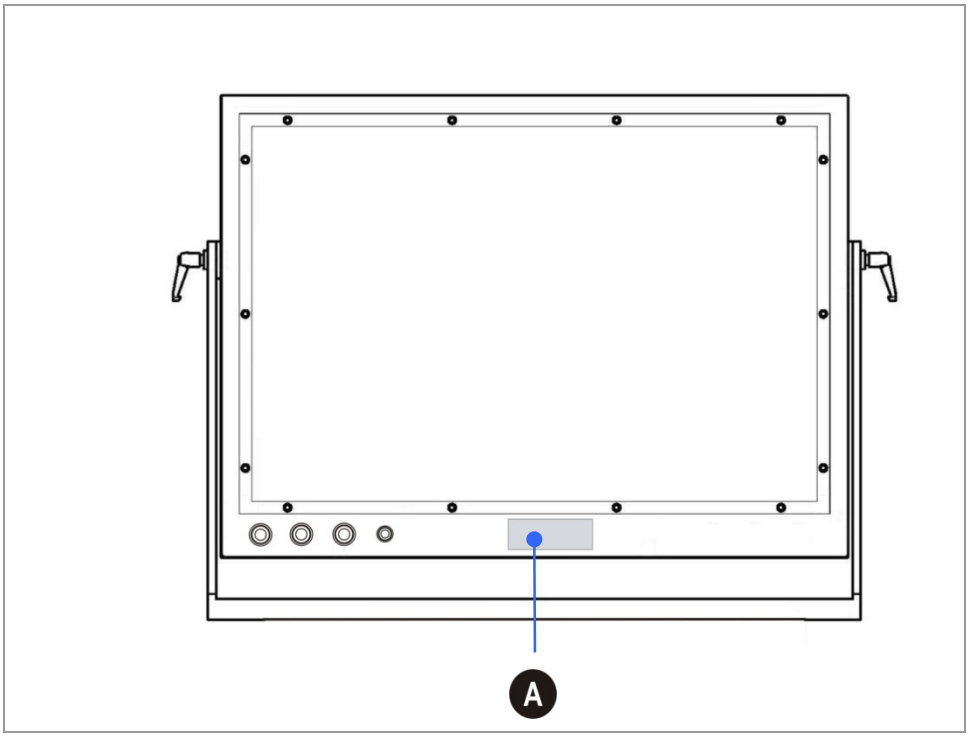
4.1.6 Speaker (optional)

Technical Details:

Type	Internal cabinet speaker
connect	Internal Audio
Mounting	Internel cabinet plate

Factory built in

4.2 Product Labelling



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Type label example

POLARIS II Panel PC 19“
Typ 17-72V4-52F20000

BARTEC
97980 Bad Mergentheim
Germany

II 2D Ex ib tb IIIC T100°C Db
CE 0044

II 3G Ex nA ic IIC T5 Gc
CE

IBExU09ATEX1113X

DC 24V +/-10%
0°C ≤ Ta ≤ +50°C
S/N: 520 /18
Built: 00D

elektrische Daten siehe Baumusterprüfbescheinigung
electrical data see EC-type examination certificate

TC RU C-DE. Г506.B.00334

5. Transport and Assembly

5.1 Transport

CAUTION

This device is heavy (approx. 17 kg).

There is a risk of injury if it is lifted or moved incorrectly.

▶ You will need help from others when transporting it.

5.2 Intermediate Storage

ATTENTION

Incorrect storage can cause damage!

▶ Comply with the correct storage temperatures.

▶ Keep the POLARIS free of moisture.

5.3 Assembly

Before assembling the device, make sure you have all the components and documents.

Scope:
1 x POLARIS II Remote
1 x Local Unit
1 x connection cable HDMI / USB
1 x RJ45-plug (Phoenix)
1 x User Manual POLARIS II Remote

Optional: Supporting system for floor, wall or table mounting

Not enclosed: Assembly material
Cable for voltage supply and data line

A written report of any transport damage or missing items must be given to the appointed forwarder and to BARTEC GmbH immediately on receipt of the delivery.

BARTEC GmbH's warranty conditions do not cover damage caused by incorrect storage.

Required Tools:
1 x Allen key 5 mm
(to fix the supporting system in place)
1 x Allen key 2,5 mm
(to open back plate, junction box)
1 x Allen key 4 mm
(Grounding screw, enclosure)
1 x Allen key 3 mm
(to mounting keyboard)

6. Installation

We recommend setting up the complete system under laboratory conditions and testing it before it is permanently installed. If a long connection cable is not available, please use a patch cable to test the basic functions.

DANGER

Electrostatic charging through a stream of particles.
There is a risk of fatal injury in an explosive atmosphere!

- ▶ Make sure there are no highly energetic charging mechanisms at the user interface on the display unit or its accessories.
- ▶ Do not install the device in the stream of particles.

DANGER

No PE connection.

Risk of fatal injury in an explosive atmosphere!!

- ▶ The POLARIS must be integrated in the equipotential bonding.

6.1 Requirements

- ▶ The surface underneath and the fastening means for the supporting system must be designed to support the weight of the POLARIS (approx. 17 kg).
- ▶ Choose the optimum height for operating the POLARIS.
- ▶ Ensure good lighting conditions for a perfectly legible display (no direct exposure to the sun's rays).
- ▶ Do not mount in direct proximity to switching or current changing devices.
- ▶ Do not install the device in the stream of particles.
- ▶ The POLARIS must be integrated in the equipotential bonding.
- ▶ At ambient temperatures below 0 °C, the POLARIS has to be heated (Heating on request).
- ▶ The supply and data line(s) are laid in the supporting system.
- ▶ The supporting system is fastened by means of the flange plate (see the following illustrations).

6.2 Mechanical installation

The POLARIS units will be delivered ready for use inside a rotable/tiltable stainless steel enclosure which can be mounted at different carry systems for Floor, Wall or Table mounting.

CAUTION

This device is heavy (approx .17 kg). Risk of injury if lifted or moved incorrectly.

Movable enclosure parts on the swivel-mounted enclosure.
There is a risk of injury by hands being crushed.

- ▶ 3 people are required to set up the POLARIS.
- ▶ Hold up the POLARIS on both sides (two people), so that the third person can lay the supply and data line(s) in the supporting system.
- ▶ When lifting the POLARIS, always pick up the swivel-mounted adapter and enclosure together.
- ▶ Make sure that your fingers do not get caught between the swivel adapter and the enclosure as you set up the POLARIS.
- ▶ Install the POLARIS on a load-bearing and stable base and use suitable mounting material to fix it in place.

Only qualified personnel, i.e. trained skilled specialists will have the necessary specialised know-how to be able to perform all the mechanical work. Familiarity with and the technically perfect implementation of the safety instructions described in this manual are preconditions for safe installation and commissioning.

Work steps:

- – Have the supply and data line(s) ready.
- – Refer to the drilling patterns to prepare to assemble the selected supporting system (see Chapter 5.2.1 Illustrations 5 - 7)
- – Lay the supply and data line(s) in the supporting system.
- – Fasten the supporting system.
- – Set up the POLARIS.

6.2.1 Floor mounting

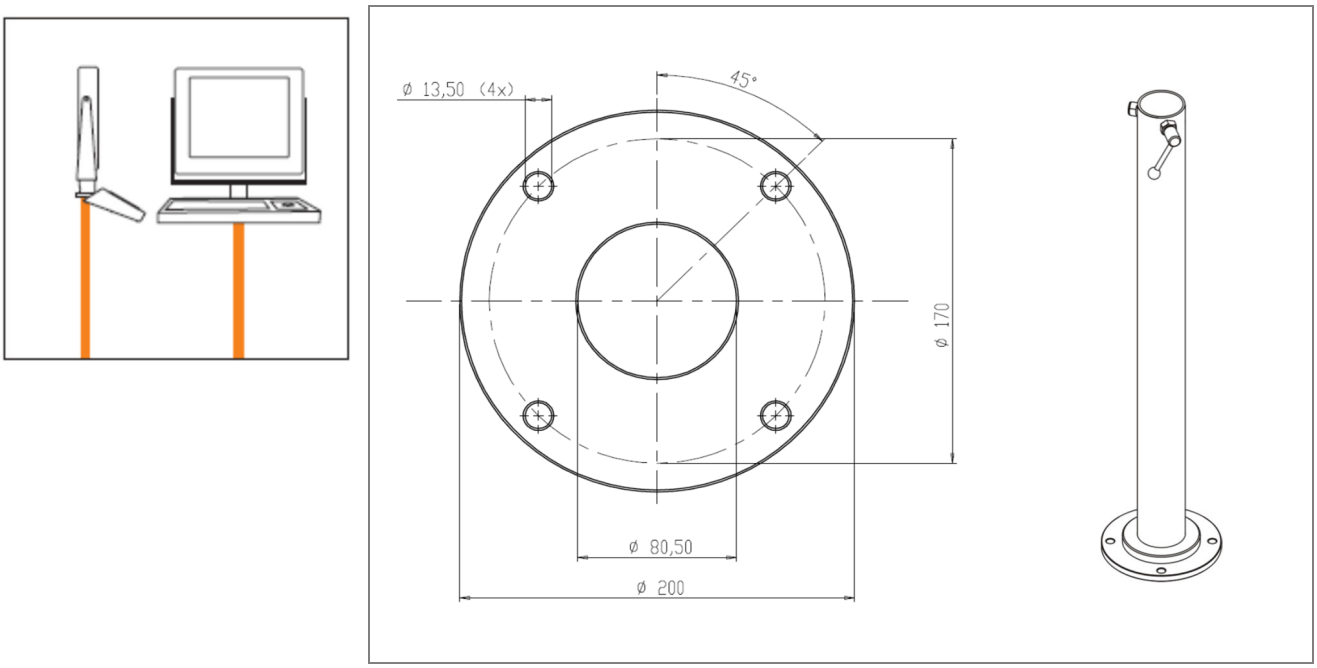


Illustration 4: Drilling pattern - supporting system for floor mounting

6.2.2 Wall mounting

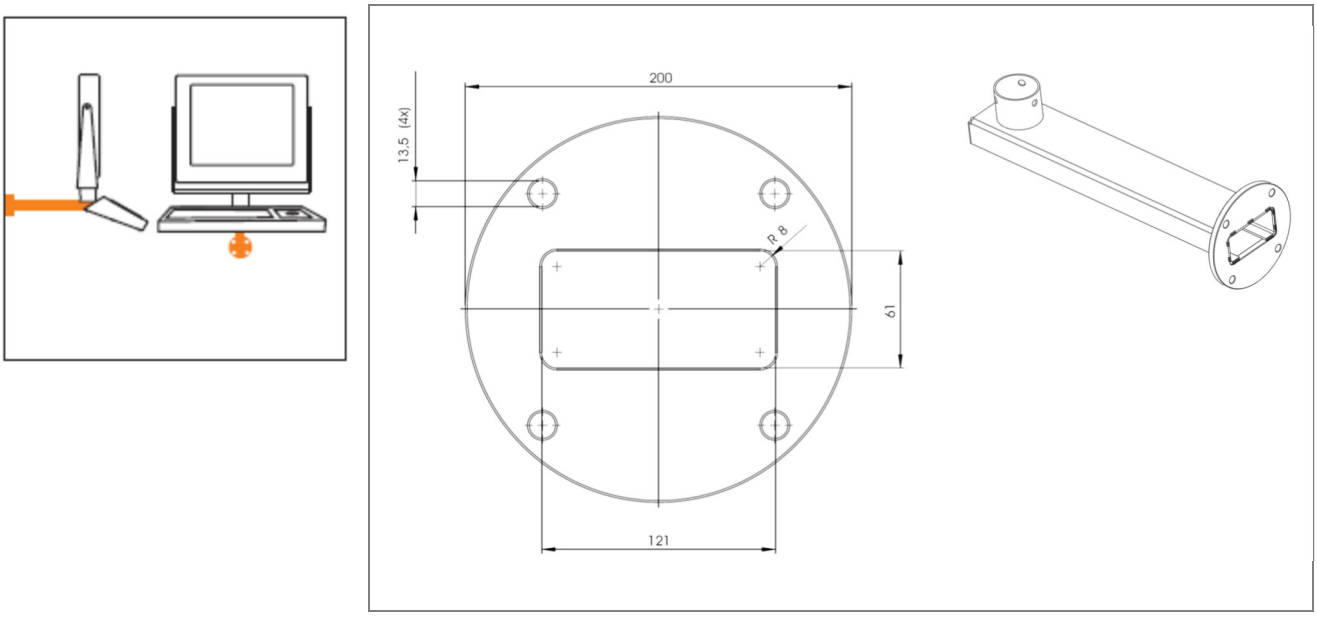
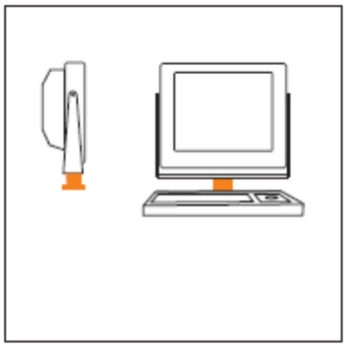


Illustration 5: Drilling pattern - supporting system for wall mounting

6.2.3 Table mounting



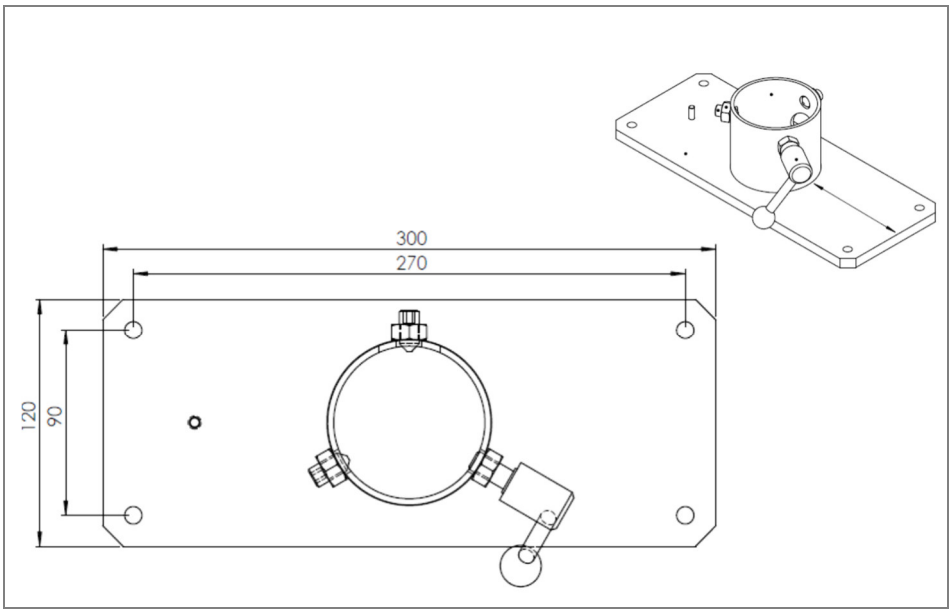
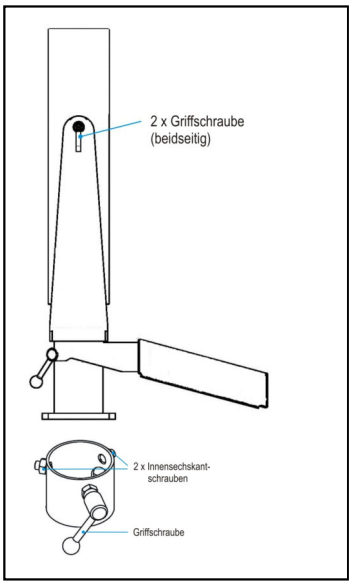


Illustration 6: Drilling pattern - supporting system for table mounting

6.2.4 Rotating/ Inclining



Rotating

The POLARIS is fixed using two side T screws.

The angle of rotation can be changed once the screws have been loosened

Inclining

The POLARIS is fixed on the carrier system using two hexagon socket screws M10 and a T screw.

The angle of rotation can be changed once the screws have been loosened.

Tools: hex key 5 mm

6.3 Electrical Installation

6.3.1 Installation guidelines

Only qualified personnel, i.e. trained electricians will have the required specialised knowledge to be able to do all the electrical work.

Familiarity with and the technically perfect implementation of the safety instructions described in this manual are preconditions for safe installation and commissioning.

(1) The user may do only the wiring at the terminals that are accessible to him/her.

(2) More extensive dismantling work on the device may be done only by the manufacturer or by persons authorised by the manufacturer for this purpose. The device is factory-sealed. Never open it!

(3) The equipotential bonding connection point must be connected to the equipotential bonding conductor in the hazardous area.

(4) The safety and accident prevention regulations applicable to the respective individual case must be observed.

(5) It must be possible at all times to disconnect the devices from the voltage supply (in fixed installations by means of an all-pole mains isolating switch or fuse).

(6) It must be ensured that the supply voltage agrees with the specifications in the manual and the tolerances must be observed.

(7) Malfunctioning cannot be ruled out if levels exceed or drop below the specified tolerances.

(8) If there is a power failure or if the power supply is interrupted, make sure the system has not been put into a dangerous, undefined condition.

(9) EMERGENCY STOP mechanisms must remain effective throughout all modes and states of operation.

(10) Connection cables (particularly data transmission cables) must be selected and laid in a way that ensures that capacitive and inductive interference will not have any adverse effect on the equipment. Appropriate measures must be taken to handle line interruptions to prevent any undefined states occurring.

(11) Wherever malfunctioning can cause material damage or personal injuries, additional external safety circuits must be provided (e.g. limit switch, mechanical interlocking devices etc.).

6.3.2 PE conductor connection

DANGER

Death or danger of injury as a result of no PE conductor connection.
There is no explosion protection.

- ▶ Equipotential bonding with a core cross-section of at least 4 mm² is to be set up for the POLARIS (see Figure).
- ▶ Secure PE conductor connections against self-loosening.
- ▶ Attach equipotential bonding to the enclosure.
- ▶ All moving parts must be earthed..

ATTENTION

Device can be damaged by differences in potential!

- ▶ Avoid differences in potential (see Chapter 6.8.5)

6.3.3 Connection cables

- ▶ The connection cables to the POLARIS are laid in the supporting system.
- ▶ The connection cable must be laid protected.
- ▶ To facilitate the wiring of the supply and data line(s), there are three cable glands on the back of the enclosure on the POLARIS II and a sealing plug (the variant without keyboard has two cable glands and two sealing plugs). If necessary, the sealing plugs can be replaced by certified M20x1.5 cable glands
- ▶ In addition, the POLARIS II has four further cable glands on the underside of the enclosure. Cable glands that are not used are closed with a certified sealing plug .

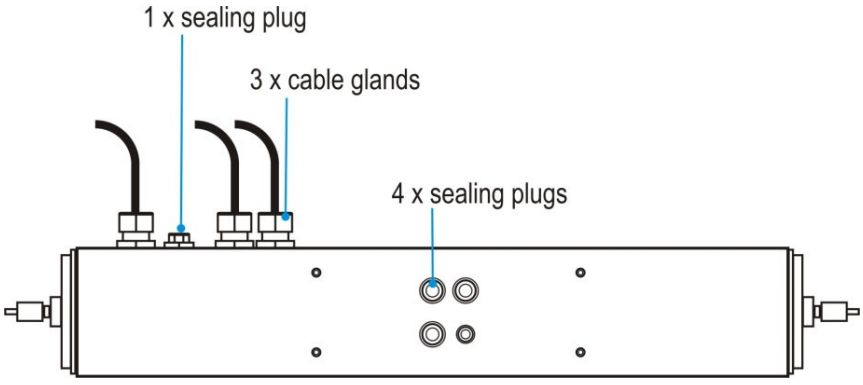


Illustration 7: Cable entries with sealing plugs on the underside of the enclosure

6.4 Junction Box

DANGER

Non-certified cable glands and non-sealed cable entries endanger the IP protection and accordingly the protection against explosions.

There is a risk of fatal injury in an explosive atmosphere!

- ▶ Use Ex-certified cable glands.
- ▶ Close non-sealed cable entries.

DANGER

When the enclosure or junction box is open.

Risk of a fatal injury by an electric shock

- ▶ Turn off the voltage supply before connecting the POLARIS and accessories.

Work steps

– Loosen all Allen-socket countersunk screws (4 x 10) at the back of the enclosure. (Connection terminal compartment for supply and data line(s)).

Required tools hex key 2,5 mm.

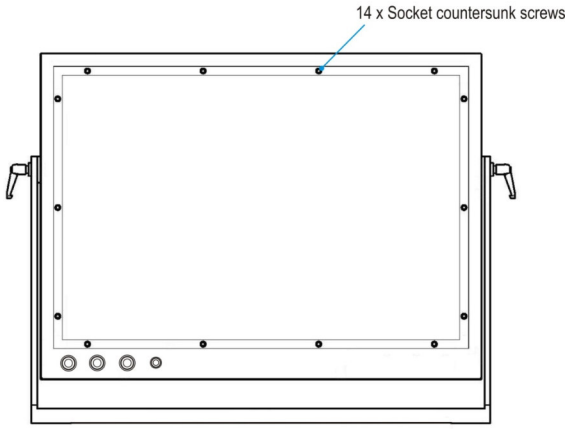


Illustration 8: Back wall of the POLARIS II Panel PC rear wall

– Remove the back of the enclosure without damaging the seals (Careful, the back of the enclosure is connected to the enclosure's equipotential bonding!)
– Run the supply and data line(s) through the cable glands into the enclosure.
– Select a sufficient length of cable so that the cables will not be damaged when the enclosure is rotated or tilted. It is also possible to mount the cable glands onto the underside of the POLARIS (see Chapter 5.2.2, illustration 8).
– Connect the supply and data line(s) (see Chapter 5.4).
– Close the back of the POLARIS enclosure after installation.

6.4.1 POLARIS Junction Box

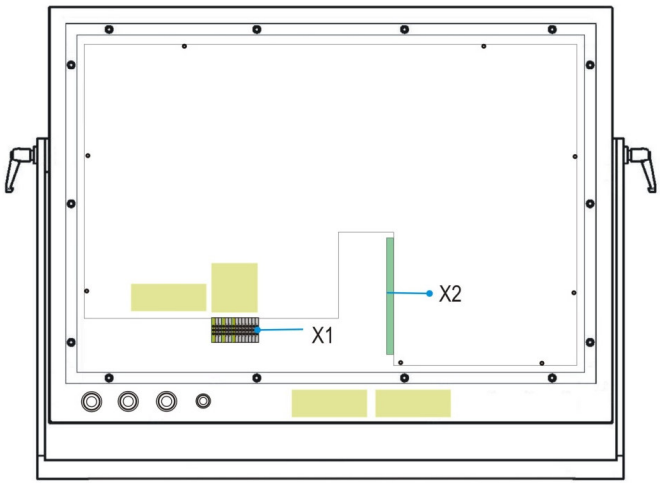


Illustration 9: POLARIS II junction box

6.4.2 Terminal assignment X1

3	Interface	AC/DC Signal	Description
X1-1	Supply	PE	Internal protective, protective earth
X1-2	Supply	L1/+	AC 230 V ± 10 %/ DC 24 V ± 10 %
X1-3	Supply	N	Neutral conductor
X1-4	Supply	PE	Protective earth
X1-5	Optional		Optional available, depending on the interface version, see internal connection diagram, number of the terminal variable.
X1-6	Optional		
X1-7	Optional		
X1-8	Optional		
X1-9	Optional		
X1-10	Optional		
X1-11	Optional		

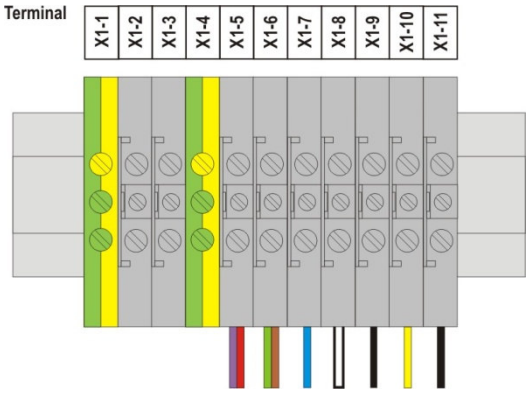


Illustration 10: Terminal assignment X1

6.4.3 Terminal assignment X1 with Heating HCS (optional)

Terminal	Interface	AC/DC Signal	Description
X1-1	Supply	PE	Internal protective, protective earth
X1-2	Supply	L1/+	AC 230 V ± 10 % or DC 24 V ± 10 %
X1-3	Supply	N	Neutral conductor
X1-4	Supply	PE	Protective earth
X1-5	Heating	L1/+	AC 230 V ± 10 %
X1-6	Heating	N	Neutral conductor
X1-7	Heating	PE	Protective earth
X1-8	Optional		Optional available, depending on the interface version, see internal connection diagram, number of the terminal variable.
X1-9	Optional		
X1-10	Optional		
X1-11	Optional		
X1-12	Optional		
X1-13	Optional		
X1-14	Optional		

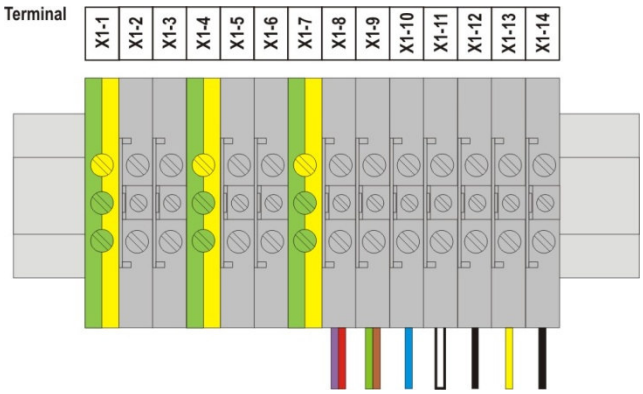


Illustration 11: Terminal assignment X1 for POLARIS II with heating

6.4.4 Terminal assignment X2 (RJ45 Connector)

For Dataconnection

Local Unit

For the POLARIS II Digital we are using the following KVM.

Please read the attached Manual of the Manufacturer carefully and also observe the warnings given by the Manufacturer.

6.4.5 Technical Data Local Unit

Enclosure	Aluminium anodised
Dimensions	ca. 106 x 98 x 41 mm (Length x Width x Height)
Max. Ambient temperature	0 °C up to +45 °C
Weight	ca. 270 g
Max. Cable Length	100 m
Power Supply	External power supply
Video	DVI/HDMI
Keyboard / Mouse / Touchscreen	USB

6.4.6 Properties of Local Unit

Keyboard- and Mouse emulation for Plug&Play-Funktionality. The PC is booting from every circumstances. Also the Plug&Play-initilisation of Keyboard and Mouse will be done.

6.4.7 Compatibility

To work under several circumstances and with the Hardware of several Manufacturers, this unit has multiple Functions and with tested with a big Amount of different Units. Even so it is impossible to guarantee a correct function with every Keyboard/Mouse and every Screen or Motherboard which is available at the Market.

6.4.8 Establishing the LAN connection

Two RJ45 connectors for customer assembly are enclosed for the connection.

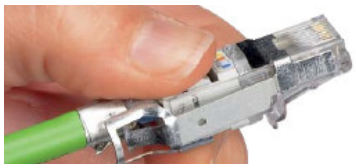
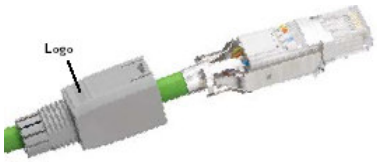
Illustration 12: RJ 45-plug

For an Ethernet connection, observe the instructions in Chapter 4.5 "EMC".

Assembly

The plug connector can be used for cables with an external diameter of 4.5...8.0 mm (suitable for LAN STP cables, CAT.7 4x2x23 AWG; part number 129543). The diameter of the core insulation may not exceed 1.6 mm! The plug connector can be rewired up to 20 times (only with the same core cross-section).

(1) Slide the pressure nut and the connector housing over the cable (Fig 1). Optional: colour coding can be put on the pressure nut.	
(2) Strip 30 mm of cable sheath length. (3) Fold the braided shielding back over the cable sheath. (4) Shorten the braided shielding to a length of approx. 8 mm and fix it in place with the enclosed adhesive shielding film (fig. 2). (5) Unravel the twisting and arrange the cores in accordance with wiring diagram.	
(6) Lift up the actuating flap and separate the shielding lugs slightly (see illustration). Do not open any actuating flap that is not necessary for the wiring. (7) Run the individual core wires into the chambers in the actuating flap. (8) Press the shielding lugs together so that they come into contact with the braided sheath (see illustration). Prevents the plug connector slipping away when the cores are being connected.	

(9) Use a small diagonal cutter to cut the core wires (see illustration).	
(10) Establish core contact by pressing the terminal blocks together (see fig.) It is also possible to use standard pliers as an aid. The actuating flap can spring back somewhat after the wiring procedure.	
(11) Now slide the connector housing over the connecter insert until it noticeably snaps into place at the latching lugs (see illustration). (12) Then turn the pressure nut to finger tightness. (see illustration).	

You will find an animated presentation of this at:

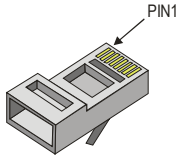
http://www.phoenixcontact.de/industriestecker/25791_27381.htm

6.4.9 Terminal assignment in conformance to T568B

The Connection between POLARIS II Remote IP and the Local Unit should be realized with a CAT 7 Cable.

Requirements to the CAT 7 Cable

Referring to EIA/TIA-568 B (standard) the cable need to be twisted and shielded as pair!
Recommended Cable: LAN STP-Cable CAT.7 4x2x23 AWG, see also accessories.

Assembly					
RJ45	**PIN**	**Colour**		**Interface**	**Signal**
	1	OG/WH		Transmit positive	TxD+
	2	OG		Transmit negative	TxD-
	3	GN/WH		Receive positive	RxD+
	4	BU			
	5	BU/WH			
	6	GN		Receive negative	RxD-
	7	BN/WH			
	8	BN			

6.5 EMC (Electromagnetic Compatibility)

6.5.1 Note

This is a class A unit and can cause radio interference in residential areas; if it does, the owner/managing operator may be required to implement suitable measures and pay for loss or damage.

Only shielded conductors may be used as connecting conductors. This applies both to the data line and to all other conductors too.

The data lines must be stranded in pairs.
Example 4 x 2 x 0.75 mm² LIYCY TP.

As far as possible, separate conductors should be used for power supply and data.

6.5.2 Voltage supply (AC- and DC- variants)

To supply voltage to the DC variant, it is necessary to use a regulated power supply unit with a power level of at least 5 A. The voltage supply at the place of installation may neither exceed nor drop below DC 24 V ± 10 %. Observe the voltage drop on the supply cable and correct if necessary.

The voltage drop in the DC variant of the supply line is calculated with the following formula:

ΔU	Voltage drop on the supply line at power supply voltage of DC 24 V	Max. 2.4 V
ΔU	Voltage drop on the supply line with maximum permissible mains adapter overvoltage DC 24 V +10 % (26.4 V)	Max. 4.8 V (until 10 % undervoltage is achieved)
I	Electricity for a POLARIS	At least 4 A
A	Cable cross-section of the supply line	
κ	Specific conductance of copper	$56\frac{m}{\Omega \cdot mm^2}$
l	Length of the supply line (consider both the outgoing and return line)	

$$R = \frac{l}{\kappa \cdot A} \quad R = \frac{\Delta U}{I} \qquad \Delta U = \frac{l}{\kappa \cdot A} \cdot I$$

If the voltage drop cannot be balanced out or the calculation produces excessive cable cross-sections, a separate mains adapter must be installed near the installation site.

Example: pressure-tight encapsulation or ex-free area on the outside of the building.

As a result of the connection of the power supply to the POLARIS, the earth for the power supply is connected to the PE. It is essential to ensure that the earth for the power supply on the POLARIS, if this is not electrically isolated, indicates no potential difference to the PE/PA.

6.5.3 Back-up fuse

We recommend protecting the POLARIS with an upstream fuse to prevent blowing the fuse inside the device. Only BARTEC can change the internal fuse.

Upstream fuse for AC: 5 AT
DC: 5 AT

6.5.4 Interference suppression

Certain basic measures must be taken to ensure freedom from interference when the POLARIS are installed:

- The interference voltages coupled into the device via power, data and signal line and the electrostatic voltage caused by contact are to be dissipated through the equipotential bonding.
- The installation point should be as far as possible away from fields of electromagnetic interference. This is especially important if there are frequency converters in the vicinity. Under certain circumstances will it be advisable to set up partitions to isolate the graphic display from interference.
- If inductive devices are fitted in the vicinity (e.g. contactor, relay or solenoid coils), especially if they are powered from the same source, protective circuits (e.g. RC elements) must be installed.
- Power supply and data cables must be laid so as to avoid interference. This can be achieved, for example, by avoiding laying such cables in close proximity to high-current carrying cables.

6.5.5 Shielding

- Only cables with braided shielding should be used (recommended cover density > 80%).
- Sheet shielding should not be used.
- Generally, connection of the shielding at both ends results in optimum damping of all interference frequencies.
- Connection of the shielding at one side only may be more advisable if a difference in potential exists and no equipotential bonding cable can be laid.

6.5.6 Connection of shielding

A low impedance connection to the circuit protective conductor is important to ensure a low current fault path.

When sub-D connectors are used, the shielding should always be connected to the metal casing of the sub-D plug.

The plug casing of some controllers is not always well connected to earth. In such cases it may prove advantageous to insulate the shielding from the sub-D plug of the controller and connect it directly to the protective earth conductor by means of a cable that should be kept as short as possible (0.75 mm² …1.5 mm²).

6.5.7 Examples of Shielding Connections

ATTENTION

POLARIS can be demaged in case of potential differences!

▶ Avoid potential difference.

Double-sided shield connection on the connecting cables:

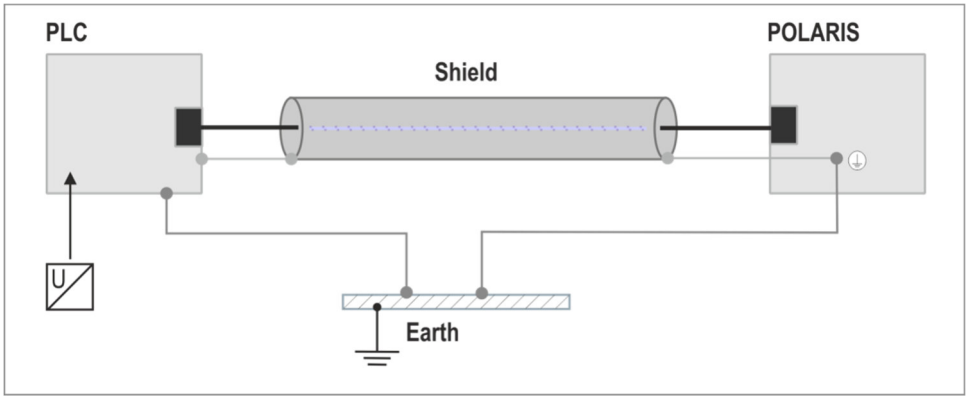


Illustration 13: Example of double-sided shield connection

Generally, connection of the shielding at both ends results in optimum damping of all interference frequencies. This method is to be recommended when there is good equipotential bonding between the individual units. In such cases it is possible to make use of the controller's voltage supply cable even if this is not electrically isolated.

Single-sided shield connection on the connecting cables

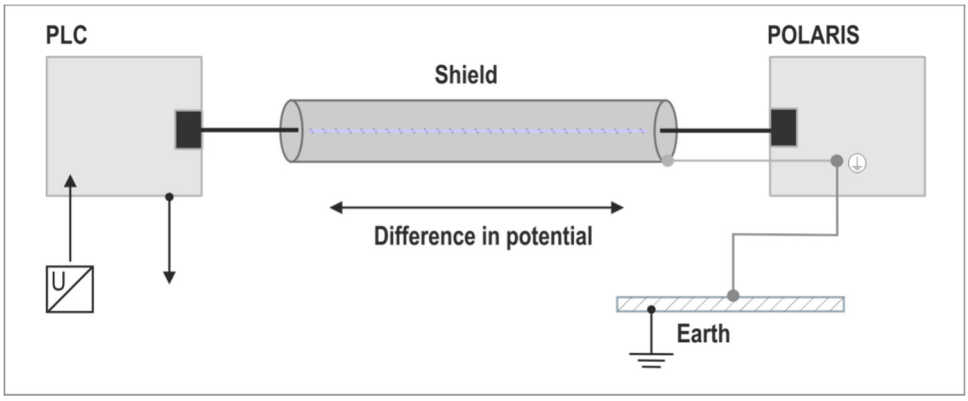


Illustration 14: Example of single-sided shield connection

Connection of the shielding at one end only is recommended when there is inadequate equipotential bonding, or none at all. In such cases an electrically isolated power supply unit must be used. Before the equipment goes into service the directions from the controller manufacturer regarding proper assembly and operation must be read carefully. They should then be applied taking full account of the recommendations we make here.

7. Commissioning

For electrical systems the relevant installation and operating specifications (e.g. Directives 99/92/EC and 94/9/EC, BetrSichV and the applicable national ordinances, IEC 60 079-14 and the DIN VDE 0100 series) must be observed.

The operator of an electrical system in a hazardous environment must keep the operating equipment in an orderly condition, operate it correctly, monitor it and do the required maintenance and repairs.

Before commissioning the devices, check that all components and documents are there.

7.1 Final Inspection

The following conditions must be met before the device may be commissioned:

- Check the POLARIS for damage to sealings, cable connections or glass pane.
- Check the supply and data line(s).
- Check all cable glands to ensure that they have been tightened securely and that all open cable entries have been closed with a sealing plug.

⚠ DANGER

An open enclosure will render the IP65 protection ineffective.
There is a risk of a fatal injury in an explosive atmosphere!

▶ Make sure that the back wall of the POLARIS is closed and all screws have been tightened correctly.

ATTENTION

▶ If the ambient temperature is under 0 °C, the heating must be put into operation 24 hours before the POLARIS is switched on.

▶ If the POLARIS is switched off at ambient temperatures under 0 °C, an advance heating time of 24 hours must be observed again.

▶ Once the heating is switched on, the POLARIS can be used at ambient temperatures from -20 °C to +50°C.

8. Operation

Once the final inspection has been carried out, the device can be put into operation.

The POLARIS series does not have any ON/OFF switch. An external power switch is used to turn the device on and off.

Compatibility

To work under several circumstances and with the Hardware of several Manufacturers, this unit has multiple Functions and with tested with a big Amount of different Units. Even so it is impossible to guarantee a correct function with every Keyboard/Mouse and every Screen or Motherboard which is available at the Market.

8.1.1 Touch Screen

Some Windows Version already recognize the Touchscontroller. If not please install the driver for the resistive EGalax Touch controller

9. Troubleshooting

Fault	Possible Cause	Remedy
No display	No signal	Check the “Power/Status” LED on the local unit
	LED on the local unit is red i.e. no communication with the POLARIS Remote device	Check the power supply connection. / (remote station and local unit) Check the data line and wiring
	LED on the local unit is orange (red and green), i.e. no monitor input signal on the local unit	No monitor connection signal No output signal on local PC
	LED on the local unit is green	Data transmission between local unit and remote station is OK. Check display resolution.
	Backlighting is defective.	Return to manufacturer
	Device is defective	Return to manufacturer
Voltage supply or current consumption too low or absent	Power supply is too low	Check diameter and length of the conductor. See Chapter 6.8
	Blown external line fuse	Check fuse.
	Blown internal fuse	Return to manufacturer.
	Device is defective.	Return to manufacturer.
There are always stripes on the display.	Display is defective.	Return to manufacturer.
Dark background	The backlighting is coming to the end of its service life.	Return to manufacturer Replace backlighting.
	Power save activated at the local PC.	Press any key.
Touch screen not working	Driver is deactivated Driver is not installed	Check driver installation / install driver
	USB cable for touch screen is not connected	Use the USB cable to connect PC to the local unit.
Mouse cursor and point of contact on the screen do not agree.	Touch screen has been calibrated incorrectly	Calibrate the touch screen

10. Maintenance, Inspection, Repair

Only trained and qualified personnel may commission and do maintenance work on the POLARIS! Trained qualified personnel are people who are familiar with the installation, assembly, commissioning and operation of the POLARIS, have been instructed about the risks and have the appropriate qualifications by virtue of the work they do.

10.1 Maintenance intervals

The mechanical status of the devices should be checked at regular intervals. The length of the maintenance intervals depends on the ambient conditions. We recommend checking at least once a year. Regular maintenance is not necessary if operated appropriately in conformance with the installation instructions and with due consideration to the ambient conditions.

⚠ DANGER

Prevent electrostatic charging in hazardous (potentially explosive) areas.
There is a risk of a fatal injury in an explosive atmosphere!

▶ Take devices out of hazardous areas before wiping them dry or cleaning them!

10.2 Inspection

Under IEC 60079-17, IEC 60079-19, EN 60079-17 and EN 60079-19, the owner/ managing operator of electrical installations in hazardous areas is obliged to have these installations checked by a qualified electrician to ensure that they are in a proper condition.

10.3 Maintenance and Repair Work

Adhere to the applicable regulations under Directive 99/92/EC, IEC 60079-19 and IEC 60079-17 when servicing, doing maintenance work on and testing associated operating equipment!

Assembly/disassembly, operating and maintenance work may be done only by trained specialists. The statutory rules and other binding directives on workplace safety, accident prevention and environmental protection must be observed.

10.3.1 Instructions for Repairs

If you wish to send in a defective device for repair, please read the RMA procedure guidance first. Then fill in and sign the RMA (Return Merchandise Authorisation) form and send it to our "Retouren Center".

E-mail: services@bartec.de
Fax: +49 7931 597-119

We cannot guarantee any contractually agreed processing times for devices that are sent in without an RMA number.

The RMA guide and the RMA form are available on our homepage for downloading.

http://www.bartec.de
> Quality and culture
> RMA form

Have you any questions? Write us an e-mail or call us.

E-mail: services@bartec.de
Phone: +49 7931 597-444

11. Disposal

The component of the POLARIS contains metal, plastic parts and electronic components.

The statutory requirements for electrical scrap must be observed therefore (e.g. disposal by an approved disposal company).

12. Dispatch and Packaging Instructions

ATTENTION

Sensitive Devices !

▶ Take the device's maximum weight into account when selecting the packaging and mode of transport.

13. Accessories, Spare Parts

Keyboard including stainless steel enclosure

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

On request

Stand for floor mounting

- Material: Stainless steel DIN 1.4301
- Rotatable
- Height approx. 1 m, Diameter 80 mm

05-0005-0078

Desk mounting for stainless steel enclosure

- Material: Stainless steel DIN 1.4301
- Rotatable
- Height approx. 140 mm, Diameter 80 mm

05-0005-0068

Supporting arm for wall mounting

- Material: Stainless steel DIN 1.4301
- Rotatable
- Length 580 mm

05-0005-0058

14. Order Numbers

14.1.1 Order Numbers

Version	Code No. A		Code No. B		Code No. C		Code No. D
POLARIS II Remote 19” Without Touchscreen	6	AC 90 to 253 V	1	German	1	Trackball 50 mm	1
POLARIS II Remote 19” With Touchscreen	5						
POLARIS II Remote 22” Without Touchscreen	4			English	2	Trackball 38 mm	2
POLARIS II Remote 22” With Touchscreen	3	DC 24 V	2				
POLARIS II Remote 24” Without Touchscreen	8			French	3	Touchpad	3
POLARIS II Remote 24” With Touchscreen	7						

Order Number: 17-72V5-AB04/CD00

Change the ABCD code with the right Number

15. Additional Information

Resistance list – polyester front foil
POLARIS series

BARTEC

Page 1 of 1

The polyester front foil material used for the POLARIS series in accordance with DIN 42115, section 2, is resistant against the testing material specified as follows:

Alcohols
Ethyl acohol
Cyclohexanone
Glycol
Glycerol
Isopropanol
Methanol

Hydrocarbons
Aliphatic hydrocarbons
General
Benzine
Benzene
Toluene
Xylene

Chlorinated hydrocarbons
Chlorofluorocarbon
Perchloroethylene
III-trichloroethane
Trichloroethylene

Ester
Ethyl acetate

Other organic solvents
Aether
Dimethyl formamide
Dioxane

Acids	
Formic acid	< 50 %
Acetic acid	
Phosphoric acid	< 30 %
Hydrochloric acid	≤ 10 %
Nitric acid	≤ 10 %

Aldehydes
Acetaldehyde
Formaldehyde

Caustic solutions	
Ammonia	< 2 %
Caustic soda	< 2 %

Saline solutions
Alkalicarbonate
Bichromate
Prussiate of potash

Different substances	
Molecular chlorine	
Liquid cresolphenole soaps	
Oxygen	
Tricresyl phosphate	
Water	< 100 °C
Hydrogen peroxide	< 25 %

Detergents, scavengers and cleaning agents
Potassium soap
Detergent solutions (tenside)
Fabric softeners

Technical oils and fats
Cutting emulsion
Diesel oil
Varnish
Heating oil
Paraffin oil
Ricinus oil
Silicone oil
Turpentine oil and turpentine oil substitute

(Where not stated otherwise: concentration = 100%)

Polyester membranes have a limited resistance to UV light and should therefore not be exposed to direct sunlight for extended periods of time.

D_BMS791.doc • Resistance list Polyester front foil • Revision 1 / Status: July, 18th 2006 • Technical data subject to change

16. EU Declaration of conformity

EU Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de conformité

Nº 11-72V4-7C0001_B

BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

Wir	We	Nous
BARTEC GmbH,		
erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
POLARIS II	**POLARIS II**	**POLARIS II**
Typ 17-72V4-**/****** **Typ 17-72V5-****/******		
auf das sich diese Erklärung bezieht den Anforderungen der folgenden **Richtlinien (RL)** entspricht	to which this declaration relates is in accordance with the provision of the following **directives (D)**	se référant à cette attestation correspond aux dispositions des **directives (D)** suivantes
ATEX-Richtlinie 2014/34/EU	**ATEX-Directive 2014/34/EU**	**Directive ATEX 2014/34/UE**
EMV-Richtlinie 2014/30/EU	**EMC-Directive 2014/30/EU**	**Directive CEM 2014/30/UE**
RoHS-Richtlinie 2011/65/EU	**RoHS-Directive 2011/65/EU**	**Directive RoHS 2011/65/UE**
und mit folgenden Normen oder normativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou documents normatifs ci-dessous

EN 60079-0:2012 + A11:2013
EN 60079-11:2012
EN 60079-15:2010
EN 60079-28:2015
EN 60079-31:2014
EN 61000-6-2:2005
EN 61000-6-4:2007 + A1:2011
EN 60529 :1991 +A1 :2000+A2 :2013

Kennzeichnung	Marking	Marquage
⟨Ex⟩	**II 2D**	**Ex ib tb IIIC T100°C Db**
	bzw.	
⟨Ex⟩	**II 3 G**	**Ex nA ic IIC T5 Gc**
⟨Ex⟩	**II 3(2)G(1)G**	**Ex ic nA [ic Gc] [ib Gb] [op is Ga] IIC T4/T5 Gc**

The marking is variable on type and components used

EU Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de conformité

Nº 11-72V4-7C0001_B

BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

Verfahren der EU-Baumuster-prüfung / Benannte Stelle	Procedure of EU-Type Examination / Notified Body	Procédure d'examen UE de type / Organisme Notifié
IBExU 09 ATEX 1113 X **0637, IBExU, Fuchsmühlenweg 7, 09599 Freiberg, D**		

CE 0044

Bad Mergentheim, den 23.07.2018

i.V. Nader Heinzuschi
VP Automation and
Communication System

i.V. Gitta Kugler
Director Global Test,
Certification &
IP Management