BARTEC

ATEX Version **Zone 2 and Zone 21/22**

User Manual

POLARIS PROFESSIONAL

POLARIS II Panel PC 22"/ Panel PC 19.1" Type 17-71V4.....
Type 17-72V4.....

BARTEC

User Manual - TRANSLATION

POLARIS PROFESSIONAL

POLARIS II Panel PC 22"/ Panel PC 19.1"

Type 17-71V4-….

Type 17-72V4-….

ATEX Zone 2

ATEX Zone 21/Zone 22

Document No. 11-71V4-7D0001

Revision 0 / April, 26th, 2012

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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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. It is written for technically qualified personnel.

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.

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.

1.1.1 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.

1.1.2 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-group.com 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 Panel PCs 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 ATEX (SILAS) Pressurised Cabinet;
- 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 99/92/EC, Directive 94/9/EC and the national applicable ordinances IEC 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

Repairs on explosion-protected operating equipment may be done only by authorised persons working in accordance with the latest developments in technology and using original spare parts. The applicable regulations must be observed.

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 3 "Technical Data".

The POLARIS II Panel PCs conform to Directive 94/9/EC 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 "Technical Data".

1.7 Warranty

WARNING

It is not permissible to make any modifications or implement any conversions unless the manufacturer gives his approval in writing.

If components other than those specified are used, protection against explosion can no longer be assured. It cannot be guaranteed that parts procured from other suppliers have been designed and produced in conformance to safety requirements and with the necessary stress tolerance.

▶ Before implementing any modifications or conversions, contact the manufacturer and obtain approval. Use only original spare parts and original expendable 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 on the date of delivery from the Bad Mergentheim factory. 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 II Panel PCs are based on a fast Intel® Atom™ 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. A touchscreen is available as an optional extra. It offers the utmost in operating convenience.

To allow the greatest ease in utilisation, a supporting system is available for mounting the POLARIS II Panel PCs on the wall, floor or ceiling.

As standard, the POLARIS II Panel PCs has pre-installed Windows® XP Professional (Windows 7® on request). 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.

Illustration 1: POLARIS II Panel PC in the stainless-steel enclosure, rotatable/inclinable with touchscreen, keyboard with integrated touchpad

2.2 Schematic diagram

Illustration 2: Example for possible connection

3. Technical Data

3.1 POLARIS II Panel PC

3.1.1 Explosion Protection

Type	**17-71V4-*****
Ex protection type Zone 21/Zone 22	II 2D Ex tD A21 IP65 T100°C
Product marking	CE 0044
Certification	IBExU 09 ATEX 1113 X
Standards	EN 61241-0:2006 EN 61241-1:2004 EN 61000-6-2:2005 EN 61000-6-4:2007 EN 61000-6-4:2007 EN 55022:2006 + A1:2007 Kl. A EN 55024:1998 + A1:2001 + A2:2003 EN 60529:1991 + A1:2000
Directives	94/9/EC 2002/95/EC 2004/108/EC

Type	**17-72V4-*****
Ex protection type Zone 2	II 3G Ex nA IIC T5
Product marking	CE
Certification	IBExU 09 ATEX B009
Standards	EN 60079-0:2006 EN 60079-15:2005 EN 61000-6-2:2005 EN 61000-6-4:2007 EN 55022:2006 + A1:2007 Kl. A EN 55024:1998 + A1:2001 + A2:2003 EN 60529:1991 + A1:2000
Directives	94/9/EC 2002/95/EC 2004/108/EC

3.1.2 General data

Construction	Stainless steel enclosure
Computer capacity	– Intel® Atom™ Processor 1.6 GHz – 1 GB RAM – 8 GB CF memory – further memory variants available on request
Operating system	Windows® XP Professional (pre-installed), Windows 7 optional
Interface (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
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
Below +10 °C the unit has to be heated in order to guarantee the lifetime of the backlight illumination.	

3.1.3 Characteristics

Illustration 3: POLARIS II Panel PC with stand

POLARIS II Panel PC 19.1"

Display	– 19.1" graphics-capable TFT display – SXGA resolution 1.280 x 1.024 pixels – 16.7 million colours – Brightness 300 cd/m² – Visible surface approx. 376 x 301 mm – Contrast1300:1
Dimensions (width x height x depth)	610 mm x 450 mm x approx. 100 mm
Weight	approx. 17 kg
Backlighting	CFL technology, Service life approx. 50,000 hours (at +25 °C)

POLARIS II Panel PC 22"

Display	– 22" graphics-capable TFT display – WSXGA+ resolution 1.680 x 1.050 pixels – 16.7 million colours – Brightness 300 cd/m² – Visible surface approx. 474 x 296 mm – Contrast 1000:1
Dimensions (width x height x depth)	610 mm x 450 mm x approx. 100 mm
Weight	approx. 17 kg
Backlighting	CFL technology, Service life approx. 40,000 hours (at +25 °C)

3.2 Heating (Optional)

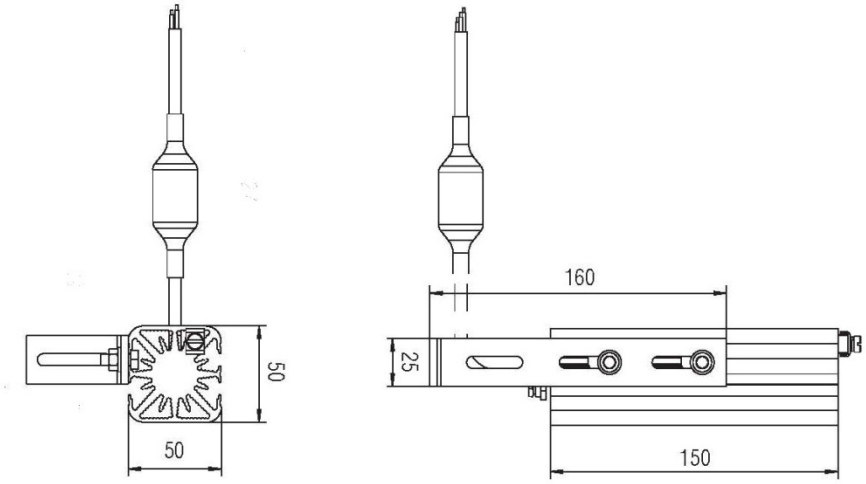
3.2.1 Explosion protection

Type	**HCS 50**
Ex protection type	II 2 G EEx d IIC alt. dm IIC T4
	II 2 D IP 65 T 135°C
Product marking	CE
Certification	PTB 03 ATEX 1139 X
Directives	94/9/EC

3.2.2 Characteristics

Illustration 4: Radiator HCS

Type	HCS 50 Radiator
Material	black anodized aluminium, resistant to sea water
Nominal voltage	AC 230 V
Connection	Hose line EWKF 3 x 1.5 mm²; Ø 8.1 mm; length 3 m
Switching hysteresis	with anti-freezing protective device +10 °C ON +18 °C OFF
Dimensions (length x width x height)	52 mm x 50 mm x 155 mm



3.3 POLARIS II Panel PC with Integrated HCS Radiator

3.3.1 Explosion protection

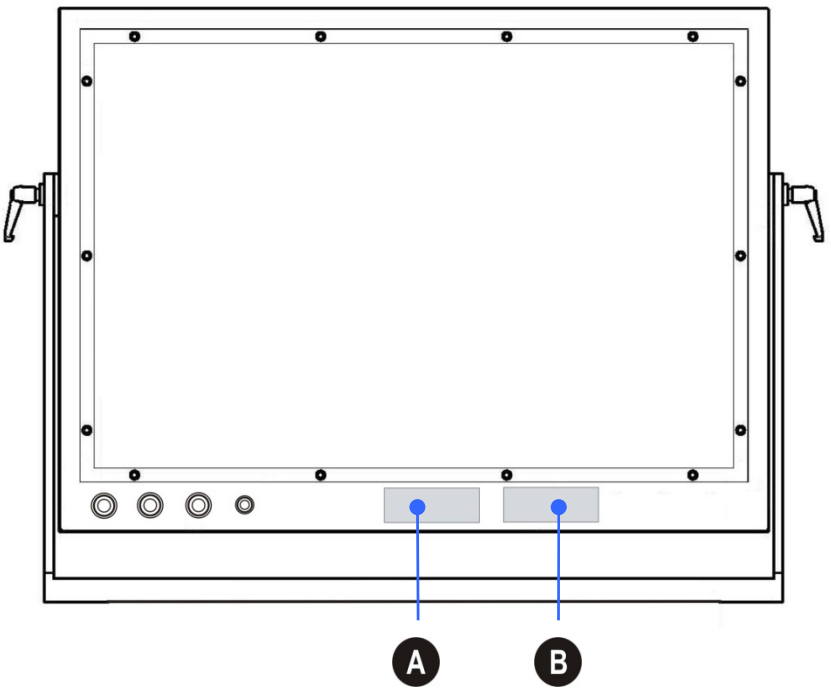
The manufacturer grants a complete guarantee only and exclusively for the spare parts ordered from him, the manufacturer.

The Ex protection marking on the POLARIS II Panel PCs is changed due to the installation of the HCS radiator.

The temperature class changes from T5 to T4.

Type	**17-72V4-….**
Ex protection type ATEX Zone 2	Ex II 3 G Ex na II T4
Product marking	CE
Certification	IBExU 09 ATEX 1113 X
Temperature range	-20 °C to + 50 °C
Standards	EN 60079-0:2006 EN 60079-15:2005 EN 61000-6-2:2005 EN 55022:2006 + A1:2007 Kl. A EN 55024:1998 + A1:2001 + A2:2003 EN 60529:1991 + A1:2000
Directive	94/9/EC 2002/95/EC 2004/108/EC

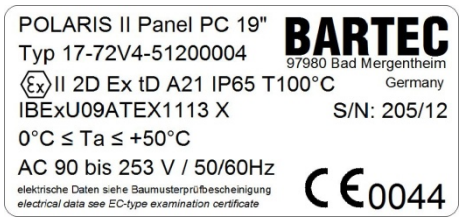
3.4 Product Labelling



A

Type label for Zone 2

Type label for Zone 21/22



B

Licence sticker

e. g.

4. Transport and Assembly

4.1 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.

4.2 Intermediate Storage

ATTENTION

Incorrect storage can cause damage!

▶ Comply with the correct storage temperatures.

▶ Keep the POLARIS free of moisture.

4.3 Assembly

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

Scope: 1 x POLARIS II Panel PC
2 x RJ45-plug (Phoenix)
1 x Driver CD for touchscreen
1 x User Manual POLARIS II Panel PC

Optional: Supporting system for floor, wall or table mounting
Radiator HCS

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 hex key 5 mm
(to fix the supporting system in place)
1 x hex key 3 mm
(for opening the junction box)

5. 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

The instrinsically safe circuits and the enclosure are galvanically connected. Equipotential bonding must be maintained throughout the entire installation of the instrinsically safe circuits.

No PE connection. Risk of fatal injury in an explosive atmosphere!!

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

5.1 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).
- Below +10°C the POLARIS needs to be heated to maintain the lifetime of the backlight illumination.
- 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).

5.2 Mechanical installation

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.

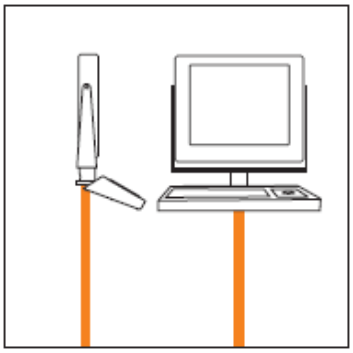
Work steps:

- – 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.

5.2.1 Supporting systems

The POLARIS devices are ready-to-operate system devices in a rotatable/inclinable stainless-steel enclosure with different supporting systems.

Floor mounting



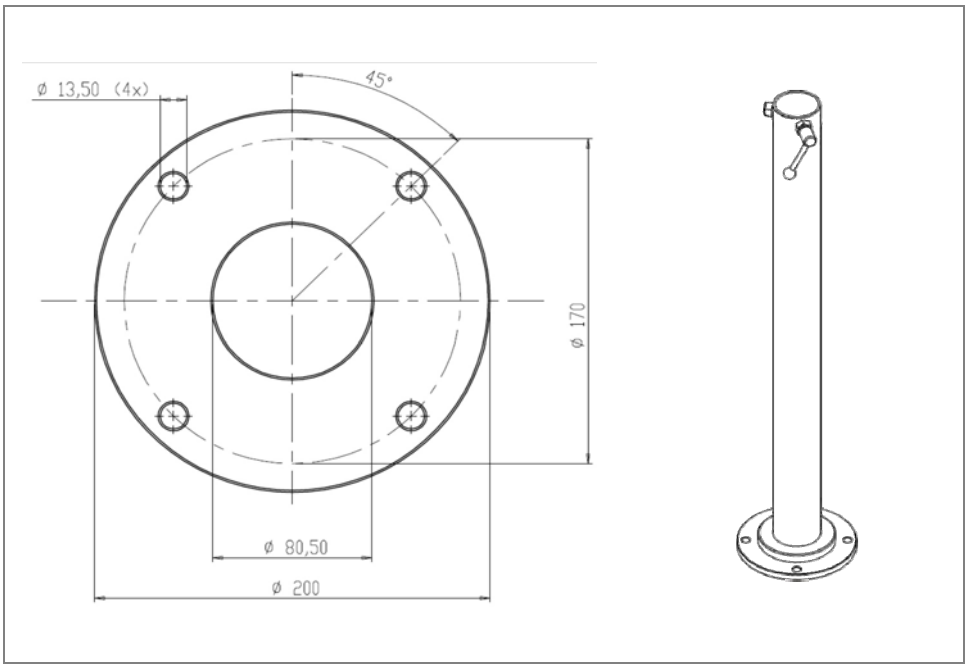
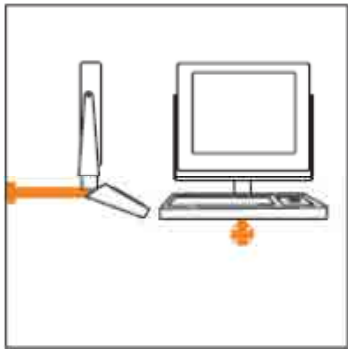


Illustration 5: Drilling pattern - supporting system for floor mounting

Wall mounting



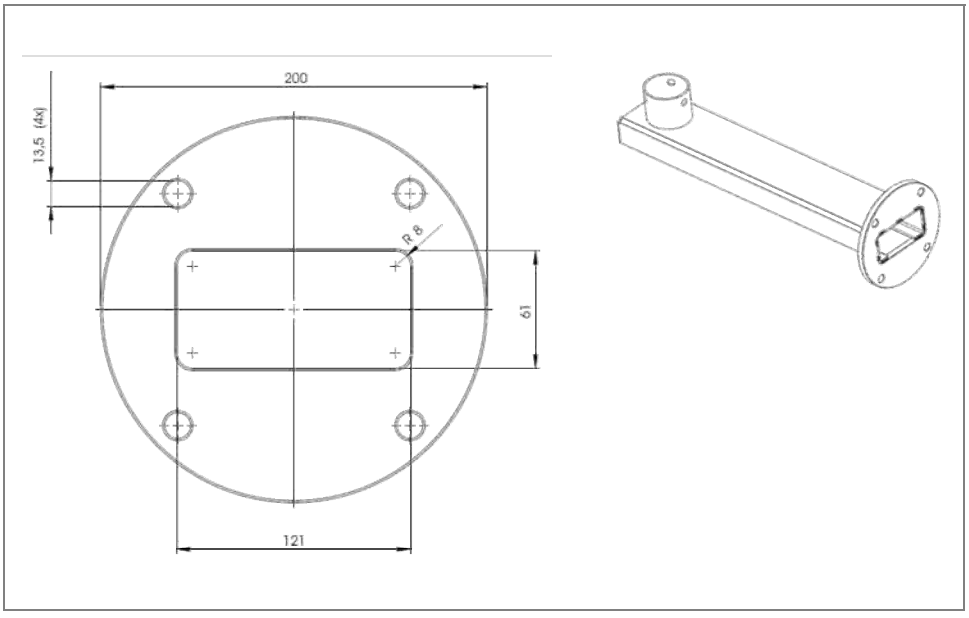


Illustration 6: Drilling pattern - supporting system for wall mounting

Table mounting

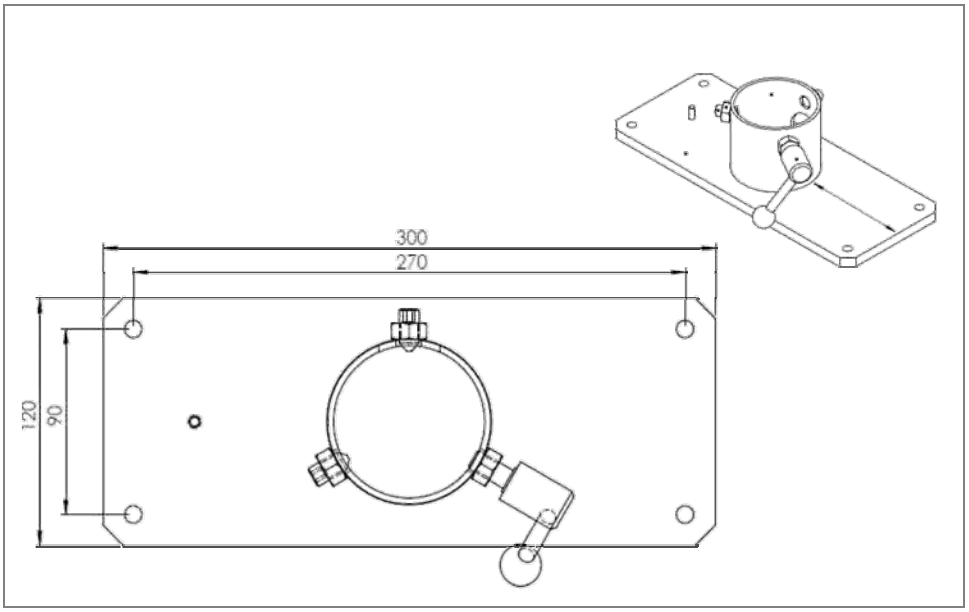


Illustration 7: Drilling pattern - supporting system for table mounting

5.2.2 Connection cables

- The connection cables to the POLARIS are laid in the supporting system.
- 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 Panel PC 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 M20x1.5 cable glands (IP65 type of protection).
- In addition, the POLARIS II Panel PC has four further cable glands on the underside of the enclosure. Cable glands that are not used are closed with a sealing plug (IP65).

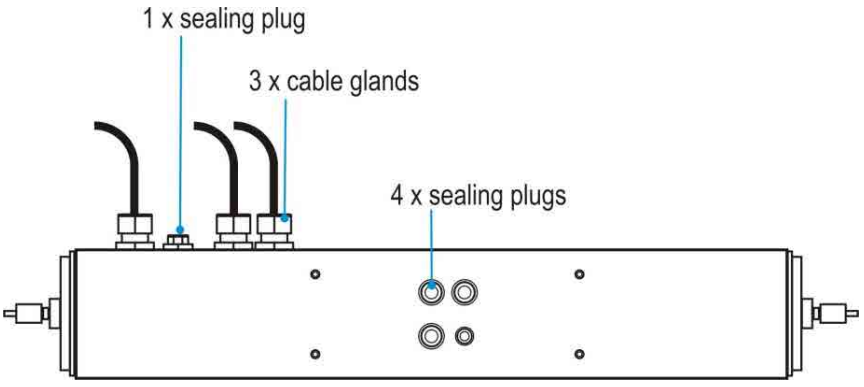


Illustration 8: Cable entries with sealing plugs on the underside of the enclosure

⚠ DANGER

Open cable glands or openings will render the IP65 protection ineffective. There is a risk of a fatal injury in an explosive atmosphere!

▶ Cable glands/openings that are not used must be closed with sealing plugs.

5.2.3 Rotating/Inclining

Rotating

– The POLARIS is fixed in position on the supporting system by means of two hexagon socket-head screws (M10) and a handle screw.

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

Tools: hex key 5 mm

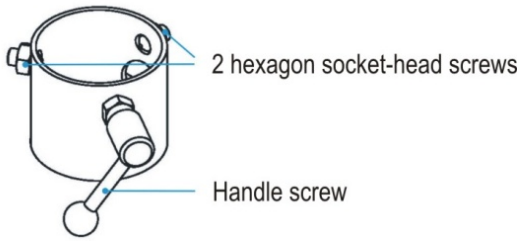


Illustration 9: Swivel-mounted adapter

Inclining

– The POLARIS is fixed in position by means of the two side handle screws.

– The angle of inclination can be changed once both handle screws have been loosened.

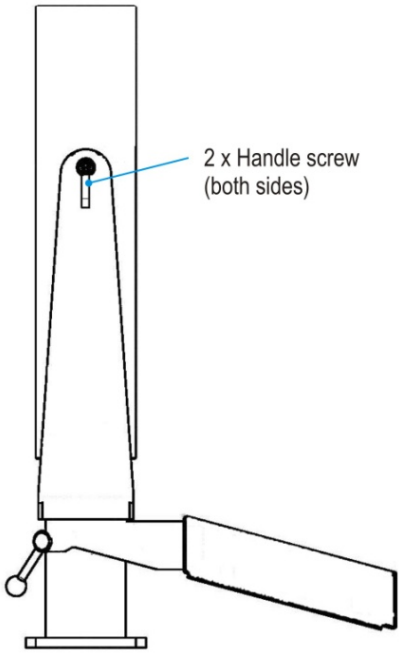


Illustration 10: Side handle screw

5.3 Electrical Installation

5.3.1 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. Since the intrinsically safe circuits are galvanically connected to earth, equipotential bonding is required throughout the entire installation of the instrinsically safe circuits.

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

(5) Devices must be properly installed first before they may be operated.

(6) 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).

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

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

(9) 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.

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

(11) 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.

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

5.4 Junction Box

5.4.1 Open Junction Box

DANGER

Risk of a fatal injury by an electric shock, when the enclosure or junction box is open.

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

Work steps

– Loosen all hex-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 3 mm.

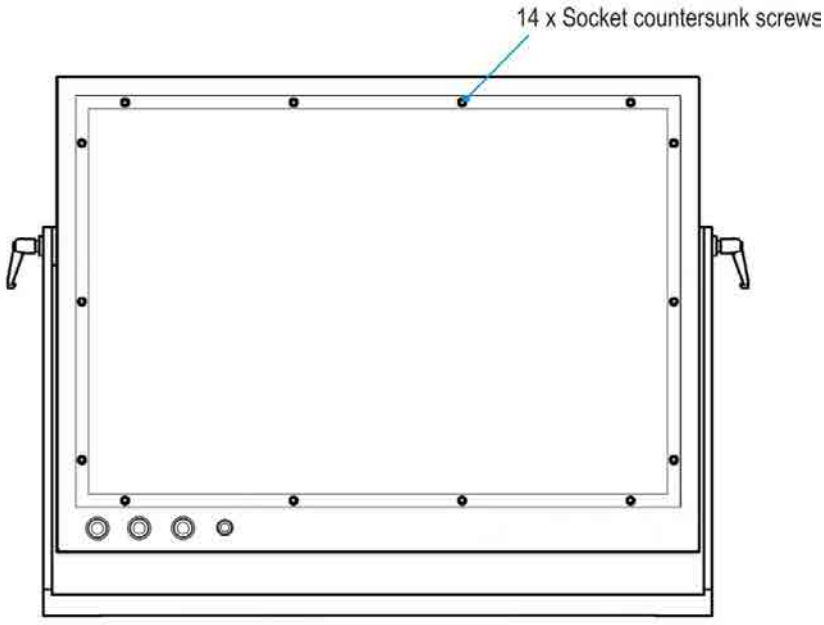


Illustration 11: Back wall of the POLARIS II Panel PC rear wall

– 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 4.4).
– Close the back of the POLARIS enclosure after installation.

5.4.2 POLARIS Junction Box

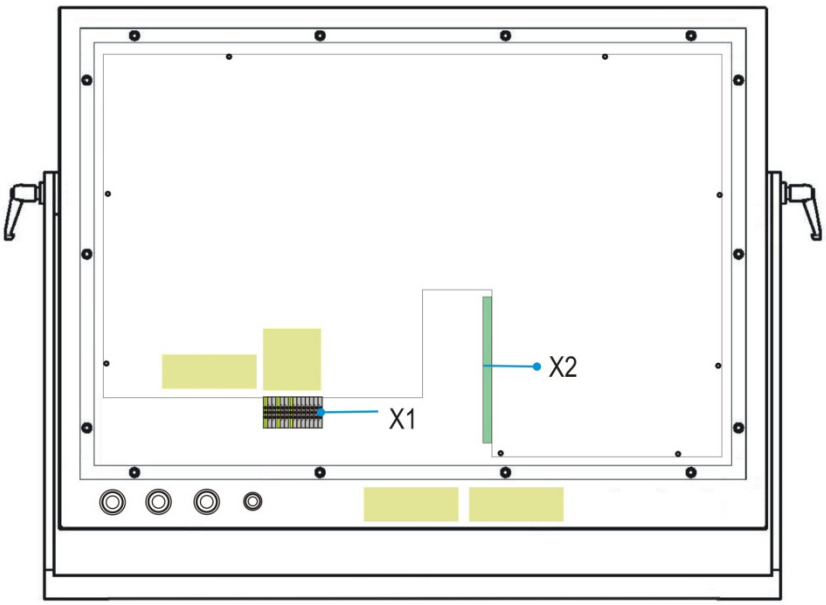


Illustration 12: POLARIS II Panel PC junction box

5.4.3 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	PS2/supply	5V	RD/PK
X1-6	PS2/supply	GND	BR/GN
X1-7	PS2/data keyboard	Kb_Data	BU
X1-8	PS2/data keyboard	Kb_CLK	WH
X1-9	PS2/data mouse	Ms_Data	BK
X1-10	PS2/data mouse	Ms_CLK	YE
X1-11	PS2/shield	Shield	Black “shrinkable tubing”

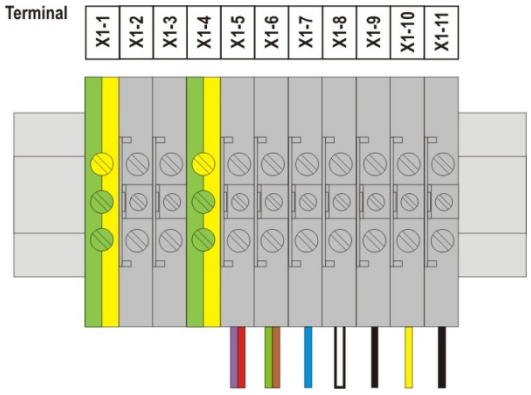


Illustration 13: Terminal assignment X1

5.4.4 Terminal assignment X1 with Radiator HCS (optional)

Terminal	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	Heating	L1/+	AC 230 V ± 10 %/ DC 24 V ± 10 %
X1-6	Heating	N	Neutral conductor
X1-7	Heating	PE	Protective earth
X1-8	PS2/data keyboard	5V	RD/PK
X1-9	PS2/data keyboard	GND	BR/GN
X1-10	PS2/data mouse	Kb_Data	BU
X1-11	PS2/data mouse	Kb_CLK	WH
X1-12	PS2/shield	Ms_Data	BK
X1-13	PS2/data keyboard	Ms_CLK	YE
X1-14	PS2/data keyboard	Shield	Black “shrinkable tubing”

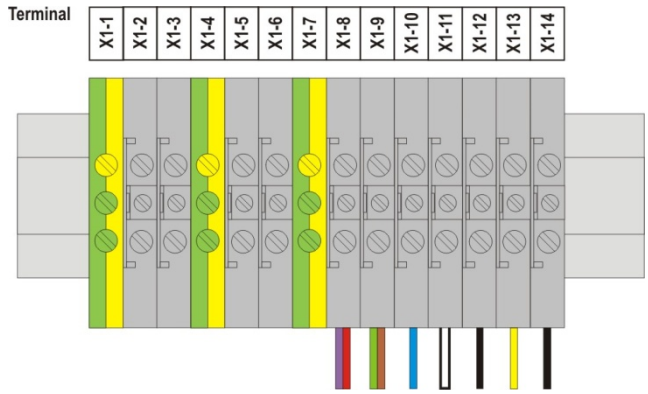


Illustration 14: Terminal assignment X1 for POLARIS with heating

5.4.5 Terminal assignment X2

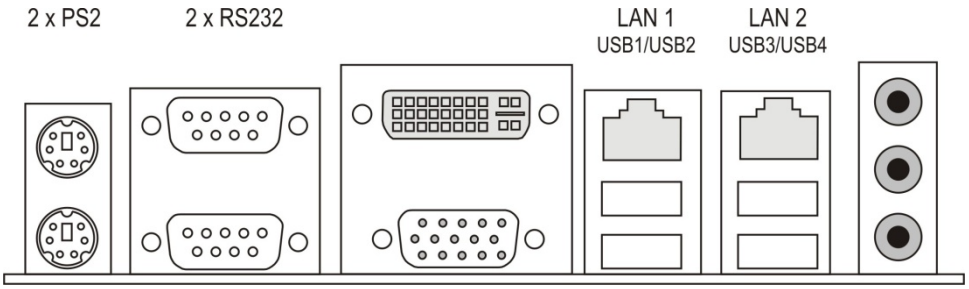


Illustration 15: Terminal assignment X2

5.4.6 Establishing the LAN connection

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

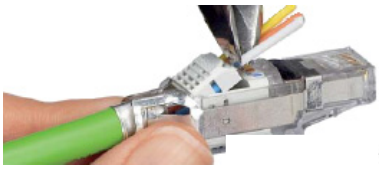
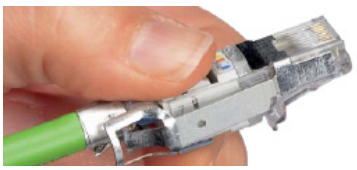
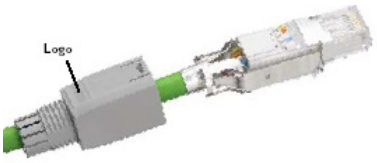
Illustration 16: RJ 45-plug

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).

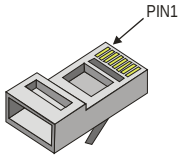
(1) Slide the pressure nut and the connector housing over the cable (Fig 1). Optional: colour coding can be put on the pressure nut.	
(2) Strip 30 mm of cable sheath length. (3) Fold the braided shielding back over the cable sheath. (4) Shorten the braided shielding to a length of approx. 8 mm and fix 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

5.4.7 Terminal assignment in conformance to T568B

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			

5.5 EMC (Electromagnetic Compatibility)

5.5.1 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.

5.5.2 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.

5.5.3 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.

5.5.4 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).

5.5.5 Examples of Shielding Connections

Connection of shielding at one end of connecting cables between the host and the POLARIS:

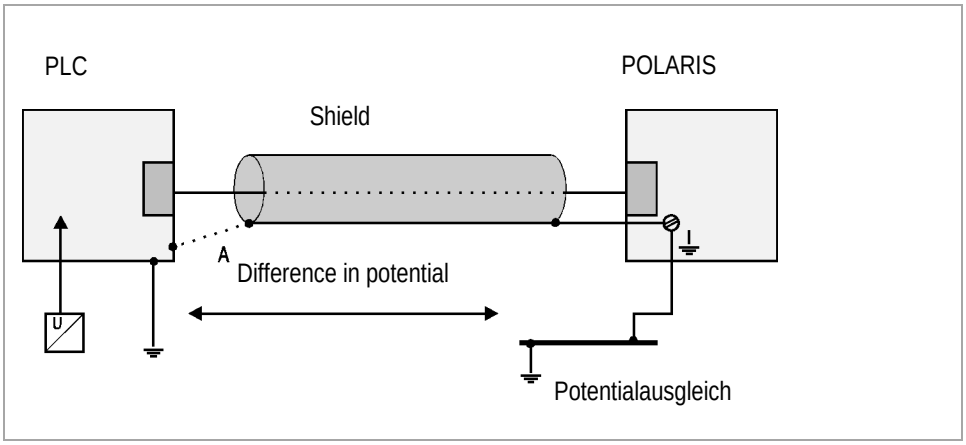


Illustration 17: Shielding connection

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.

6. 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.

6.1 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.

7. 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.

7.1 General Information

7.1.1 Operating system

The POLARIS series are fully pre-installed with the Windows® XP Professional or optional Windows 7® operating systems. The license sticker is affixed on the back of the POLARIS, next to the type plate. Please note that according to the license issued for Windows® XP Embedded the application of this system as an Office PC is not permitted.

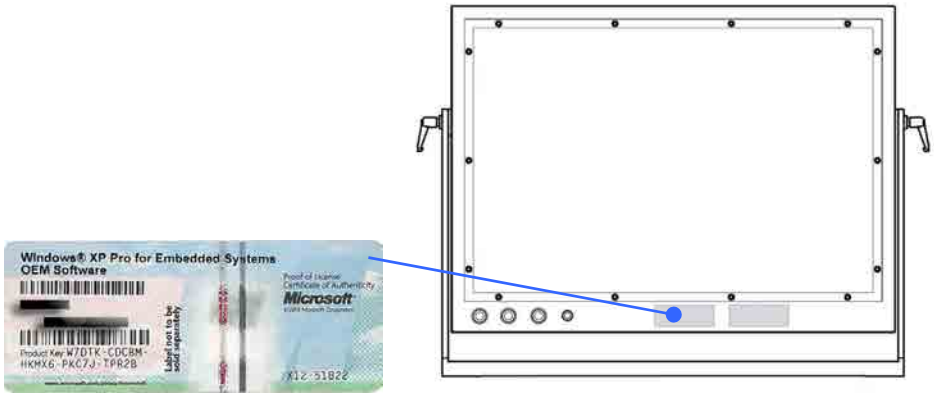


Illustration 18: License sticker

7.2 Recovery Stick

To restore the POLARIS to its original state again, you will need a recovery stick, which is available as an optional extra. This recovery stick contains the factory image with which the system can be restored to delivery status within a very short time.

Support: support-polaris@bartec.de

Subject: Recovery stick for POLARIS II

Only with the recovery stick can the POLARIS be restored to its original state.

As an option, the recovery stick can also contain backup software with which you can save your own device configuration.

7.3 Backup

We expressly point out that it is the user's responsibility to make a backup of the POLARIS and of all its functions!

We expressly recommend that such a backup of the POLARIS be saved onto an external storage medium (USB stick (recovery stick), CD, DVD or suchlike) and/or in the company network!

7.3.1 Backup on USB Stick

– Insert the recovery/reset/backup stick into the USB port.
– Boot up the POLARIS and follow the instructions.

7.4 Switching Off and Shutting Down

Irrespective of the application, the Microsoft® Windows® operating system saves important data in the working memory during system operation. Before the PC or the POLARIS is switched off, this data must be saved on the hard disk.

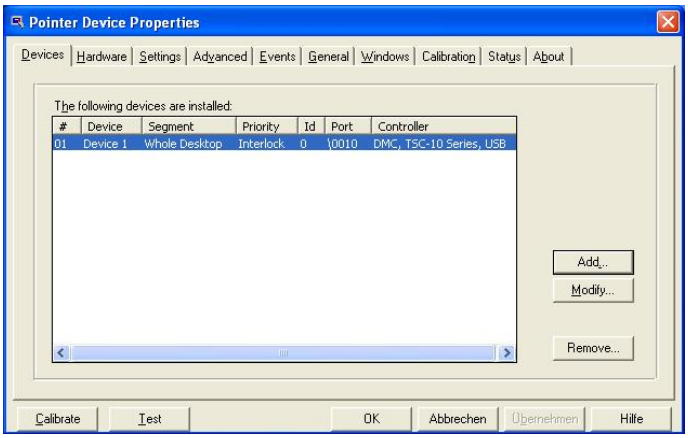
ATTENTION

Shutting down the POLARIS in an orderly fashion prevents malfunctioning in the operating system.

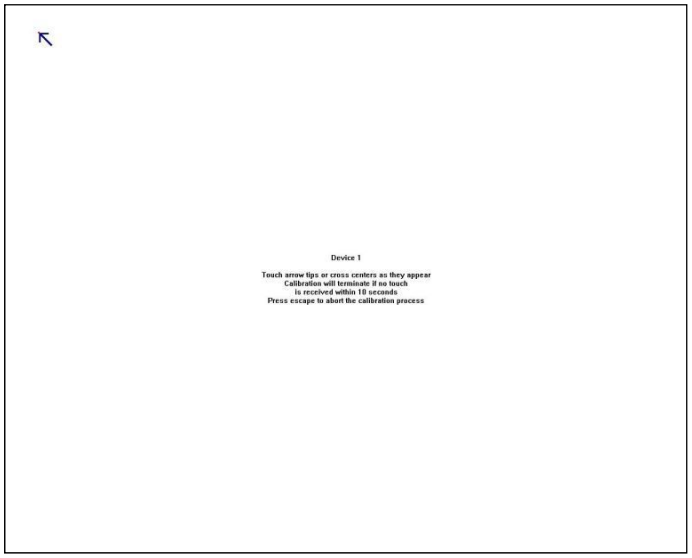
▶ Use the Windows® button to shut down or switch off the POLARIS.
▶ Do not switch off the POLARIS until Windows® informs the user that the data has been saved (appearance of the logout script).

7.5 Calibration of Touch Screen

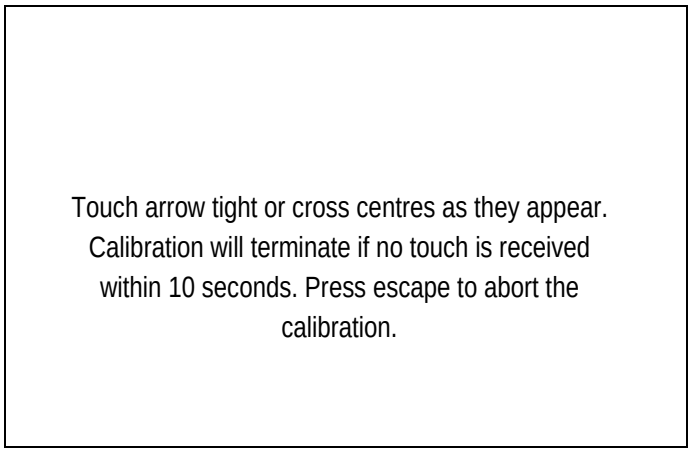
▶ <Double click> on the touch screen symbol in the notification area. The following window opens:



▶ Select the function “Calibrate” (bottom left) to open the following window:



▶ The following is displayed on the screen:



7.5.1 Touch screen signs and symbols in notification area

The mouse symbol indicates which mouse key function is carried out when the touch screen is touched. In this case it is the left mouse button. When the symbol is touched once, the function changes once to the right mouse button until it is touched again. Then the standard settings apply again.

The touch screen symbol indicates that the touch screen software is installed and that it is ready for operation. Should the symbol with a red star appear then there is no connection to the touch screen or the touch screen is not detected.

8. Troubleshooting

No image	– Check voltage connection.
No network recognised	– Check Ethernet connection to the POLARIS. – Check connection cable to the network; it might not be connected.
No remote access	– Check the host computer's IP address. – The host computer must be set up to allow remote access. – The host computer and the POLARIS must both be in the same subnet mask - particularly in a point-to-point connection. – Even without a network connection a log-in name and a password must be set up on the host computer.

9. 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.

9.1 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!

9.2 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.

9.3 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.

9.3.1 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

10. 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).

11. Dispatch and Packaging Instructions

ATTENTION

Sensitive Devices !

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

12. Accessories, Spare Parts

Keyboard including stainless steel enclosure

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

Stand for floor mounting

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

Desk mounting for stainless steel enclosure 05-0005-0068

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

Supporting arm for wall mounting 05-0005-0058

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

13. Order Numbers

Selection chart

Version	Code no.	Input voltage	Code no.	Description	Code no.	Keyboard language	Code no.	Insert unit	Code no.
POLARIS II Panel PC 22" without touchscreen	3	AC 90 to 253 V	1	Base unit, tilt	0	German	1	Trackball 50 mm	1
POLARIS II Panel PC 19 1" without touchscreen	4			Table mounting, swivel/tilt	1	English	2	Trackball 38 mm	2
POLARIS II Panel PC 22" with touchscreen	5	DC 24 V	2	Floor mounting, swivel/tilt	2				
POLARIS II Panel PC 19 1" with touchscreen	6			Wall mounting, swivel/tilt	3	French	3	Touchpad	4

Complete order no. 17-7 ☐ V4- ☐☐☐ 0/ ☐☐ 00

Please insert correct code.
Technical data subject to change.

Ex area	Code no.
Zone 21/22	1
Zone 2	2

14. 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_BM9791.doc • Resistance list Polyester front foil • Revision 1 / Status: July, 18th 2006 • Technical data subject to change

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Appendix

Declaration of Conformity

11-71V4-7C0001
11-72V4-7C0001

EC Type Examination Certificate

IBExU09ATEX009
IBExU09ATEX1113X

Operating Instructions

Radiator HCS Type 27-20..-..../....
with Declaration of Conformity

Erklärung der Konformität
Declaration of Conformity
Attestation de conformité

N° **11-71V4-7C0001**

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 Panel PC	**POLARIS Panel PC**	**POLARIS Panel PC**

Typenbezeichnung 17-71V4-**/******

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 94/9/EG	**ATEX-Directive 94/9/EC**	**ATEX-Directive 94/9/CE**
EMV-Richtlinie 2004/108/EG	**EMC-Directive 2004/108/EC**	**CEM-Directive 2004/108/CE.**
RoHS 2002/95/EG	**RoHS 2002/95/EC**	**RoHS 2002/95/CE**
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 61241-0:2006 **EN 61241-1:2004** **EN 61000-6-2:2005** **EN 61000-6-4:2007**	**EN 55022:2006 + A1:2007 Kl. A** **EN 55024:1998 + A1:2001 + A2:2003** **EN 60529:1991 + A1:2000**	
Kennzeichnung	**Marking**	**Marquage**
II 2D Ex tD A21 IP 65 T100 °C		
Verfahren der EG-Baumusterprüfung / Benannte Stelle	**Procedure of EC-Type Examination / Notified Body**	**Procédure d'examen CE de type / Organisme Notifié**
IBExU09ATEX1113 X **0637 IBExU, Fuchsmühlenweg 7, 09599 Freiberg, D**		

CE 0044

Bad Mergentheim, den 04.05.2010

ppa. Ewald Warmuth
Geschäftsleitung / General Manager

Erklärung der Konformität
Declaration of Conformity
Attestation de conformité

Nº **11-72V4-7C0001**

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

CE

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 Panel PC	**POLARIS II Panel PC**	**POLARIS II Panel PC**

Typenbezeichnung 17-72V4-**/******

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 94/9/EG	**ATEX-Directive 94/9/EC**	**ATEX-Directive 94/9/CE**
EMV-Richtlinie 2004/108/EG	**EMC-Directive 2004/108/EC**	**CEM-Directive 2004/108/CE**
RoHS 2002/95/EG	**RoHS 2002/95/EC**	**RoHS 2002/95/CE**
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 60079-0:2006 **EN 60079-1:2004** **EN 61000-6-2:2005** **EN 61000-6-4:2007**	**EN 55022:2006 + A1:2007 Kl. A** **EN 55024:1998 + A1:2001 + A2:2003** **EN 60529:1991 + A1:2000**	
Kennzeichnung	**Marking**	**Marquage**
II 3G Ex nA II T5		
Verfahren der internen Fertigungskontrolle	**Procedure of internal control of Production**	**Procédure de contrôle interne de fabrication**
IBExU09ATEXB009 **0637 IBExU, Fuchsmühlenweg 7, 09599 Freiberg, D**		

CE

Bad Mergentheim, den 04.05.2010

ppa. Ewald Warmuth
Geschäftsleitung / General Manager

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] # TYPE EXAMINATION CERTIFICATE
(Translation)

[2] for electrical equipment of Equipment Group II, Equipment Category 3

[3] Type Examination Certificate Number: **IBExU09ATEXB009**

[4] Equipment: **Visual unit POLARIS II**
Typ 17-72V*.****/****

[5] Manufacturer: Bartec GmbH

[6] Address: Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

[7] The design of the equipment mentioned under [4] and any acceptable variations thereto are specified in the schedule to this Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH certifies that the equipment mentioned under [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive 94/9/EC.
The test results are recorded in the test report IB-09-3-290 of 5 October 2009.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2006 and EN 60079-15:2005.

[10] If the sign „X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this Type Examination Certificate.

[11] This Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned under [4] shall include the following:

Ⓔx II 3G Ex nA II T5

$-25\ °C \leq T_a \leq +50\ °C$

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - 09599 Freiberg, Germany
☏ +49 (0) 3731 3805-0 - 🖷 +49 (0) 3731 23650

Freiberg, 5 October 2009

By order

(Dr. Wagner)

IBExU
Institut für Sicherheitstechnik GmbH
An-Institut der TU-Bergakademie Freiberg
Fuchsmühlenweg 7
09599 Freiberg/Sachsen
Tel. (0 37 31) 38 05-0 • Fax 2 36 50
- Stamp -

Certificates without signature and stamp are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Schedule

[13] **Schedule**

[14] **to the TYPE EXAMINATION CERTIFICATE IBExU09ATEXB009**

[15] **Description of equipment**

The Visual unit POLARIS II type 17-72V*-****/**** permits the use of arbitrary software applications in explosive areas of the zone 2. The equipment can be used both as panel-PC and as remote terminal. The construction types have a touch screen or an optionally separated keyboard with track ball or touch pad.
In addition, components suitable for category 3G or higher with a degree of protection of at least IP 54 can be built-in in the wall of the enclosure.

Technical data

Ambient temperature range	-25 °C to +50 °C
Display size	12 – 22 inch
Typ 17-72V*-*1/**** **	Wide range voltage
Rated voltage:	90 V AC to 253 V AC max. 120 W
Typ 17-72V*-*2/**** **	DC-power supply
Rated voltage:	+24 V DC (18 V to max. 26 V) max. 120 W

[16] **Test report**

The test results are recorded in the Test Report IB-09-3-290. The test documents are part of the test report and are listed there.

Summary of the test results
The Terminals fulfil the requirements of explosion protection for electrical equipment of Equipment Group II and Category 3G.

[17] **Special conditions for safe use**

none

[18] **Essential Health and Safety Requirements**

Confirmed by compliance with standards (see [9])

By Order

Freiberg, 5 October 2009

(Dr. Wagner)

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg

[1] # EC-TYPE EXAMINATION CERTIFICATE

according to Directive 94/9/EC, Annex III

(Translation)

[2] Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres, Directive 94/9/EC

[3] EC-Type Examination Certificate Number: **IBExU09ATEX1113 X**

[4] Equipment: **Visual unit POLARIS II**
Typ 17-71V*.****/****

[5] Manufacturer: Bartec GmbH

[6] Address: Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

[7] This equipment and any acceptable variation thereto are specified in the schedule to this EC-Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the test report IB-09-3-198/1 of 11 September 2009.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 61241-0:2006 and EN 61241-1:2004.

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified under [17] in the schedule to this EC-Type Examination Certificate.

[11] This EC-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this directive apply to the manufacture and supply of this equipment.

[12] The marking of the equipment mentioned in [4] shall include the following:

Ex II 2D Ex tD A21 IP 65 T 100 °C

$-25\ °C \leq T_a \leq +50\ °C$

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7 - D-09599 Freiberg
Tel.: 00493731 3805-0 - Fax: 00493731 23650

Authorised for certifications
- Explosion protection -

By order

Wagner

(Dr. Wagner)

Zertifizierungsstelle Explosionsschutz IBExU Institut für Sicherheitstechnik GmbH * Kenn-Nr. 0637 *

- Seal-
(ID no. 0637)

Freiberg, 14 September 2009

Certificates without signature and seal are not valid.
Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Schedule

[13] **Schedule**

[14] **to the EC-TYPE EXAMINATION CERTIFICATE IBExU09ATEX1113 X**

[15] **Description of equipment**

The Visual unit POLARIS II permits the use of arbitrary software applications in explosive areas of the zone 21 and 22. The equipment can be used both as panel-PC and as remote terminal. The construction types have a touch screen or an optionally separated keyboard with track ball or touch pad.

Technical data

Ambient temperature range	-25 °C to +50 °C
Display size	12 – 22 inch
Typ 17-71V*-*1/**** **	Wide range voltage
Rated voltage:	110 V AC to 230 V AC ± 10 % max. 120 W
Typ 17-71V*-*2/**** **	DC- power supply
Rated voltage:	+24 V (18 V) to max. 26 V DC max. 120 W

[16] **Test report**
The proof of the explosion protection is recorded in the test report IB-09-3-198/1.
The test documents are part of the test report and are listed there.

Summary of the test results:
The Visual unit POLARIS II fulfils the requirements of the dust explosion protection for equipment of the Group II and Category 2D. The surface temperature of the enclosure is at most 100 °C.

[17] **Special conditions**
High energy load mechanism on the operating surface of the keyboard (for example pneumatic particle transport) has to be excluded during the application.

[18] **Essential Health and Safety Requirements**

Confirmed by compliance with standards (see [9]).

By order

Freiberg, 14 September 2009

(Dr. Wagner)

1 Use

The HCS radiators are produced in compliance with Directive 94/9/EC and approved for direct heating by flange mounting and/or for room heating by natural convection. They can be used in hazardous areas in accordance with the Ex marking specified under point 2.
The standard version has thermostats integrated in the connection cable as protection against frost. Versions without thermostat can be used as protection against condensation or with an external controller for temperature maintenance.

2 Explosion protection

EC Type Approval Certificate:

PTB 03 ATEX 1139 X

Ex marking:

(depending on the type being used: the following maximum Ex protection type)

Ⓔx II 2G Ex D IIC or dm IIC resp. T4, T3

Ⓔx II 2D Ex tD or tDmD resp. A21 IP 65 T 135 °C, T 200 °C

3 Technical data

Rated voltage	maxi. AC 250 V
Permissible operating voltage	maxi. AC 265 V
Rated current (in compliance with VDE 0298)	maxi. 10 A
Ambient temperature	-50 °C up to +60 °C
Operating temperature range without thermostat	-50 °C up to +180 °C
Operating temperature range with thermostat (with type of heater 27-2261 ..../.... and 27-2263 ..../....)	-50 °C up to +80°C
Operating temperature range with thermostat (with type of heater 27-226A ..../.... and 27-226B ..../....)	-50 °C up to +180°C
Installation position: Vertical flow through fins	
Switching capacity of thermostat and failure alarm	16 A, AC 250/400 V

Special voltages are possible with appropriate output adaptation and component selection.

Conformity to standards

EN 60079-0: 2006 EN 55014-1: 2006
EN 60079-1: 2004 EN 60529: 1991+A1: 2000
EN 60079-18: 2004
EN 61241-0: 2006
EN 61241-1: 2004
EN 61241-18: 2004

4 Installation

During unpacking and transport, take care not to bend or place weights on the connection cable. The radiator must be mounted as shown in point 9 with fins in a vertical position in order to ensure effective convection. The specified minimum distances from the ground, walls and neighbouring devices must be adhered to.
The connection cable must be firmly laid with mechanical protection up to the entry into the terminal box provided by the customer while complying with the permissible bending radius of 5 x external diameter. If connected in a hazardous area, it must be connected through an enclosure that meets the requirements of the types of protection specified in EN 60079-0 Section 1. During installation the max. permissible temperatures of the neighbouring components must be observed. When determining the operating temperature, the max. permissible ambient temperature, self-heating and perhaps the heat conduction (medium) must be taken into account. In Types 27-2061..../.... and Type 27-2063 The thermostat must be built into an enclosure that corresponds to the requirements in 60079-18 section 7.1. A 16-A fuse in conformance to DIN 41571 or IEC 60127 must be connected upstream as a protection against short circuits. This fuse may be accommodated in the associated supply device or must be connected upstream separately. The safety rated voltage must be equal to or greater than the thermostat's specified nominal voltage.

21-2000-7D0001-07/10-BEH-292957

The connection capacity of the automatic circuit breaker must be equal to or greater than the maximum assumable short-circuit current at the site of installation. The equipotential bonding or grounding must be ensured by mounting the thermostat onto the entire system.
There is the optional possibility of using external thermostats that have a separate EC Type Examination Certificate.

5 Connection

The radiator may be connected and secured only by a specialist complying with the “rated voltage” and “rated current” specified on the type label:
The radiator has reached its rated power once the operating voltage = rated voltage. Mains voltage fluctuations up to 10 % are permissible then.
To protect against short-circuits and for cable protection, circuit breakers with type B characteristic up to 16 A can be used. Additional equipotential bonding is necessary. The terminal block provided for this has the earthing sign. Residual current devices increase safety for people and protection for equipment and are therefore recommended.

6 Commissioning

When the radiator has been installed in accordance with the guidelines given under points 3 and 4 and it has been ensured that effective convection is not obstructed at any time by inadmissible covers, the radiator may be switched on.
A temperature fuse will permanently open the heating circuit if these installation instructions are not observed.

7 Maintenance

Thanks to its type of construction, the radiator does not require any maintenance work. The intervals for the performance and safety tests can be freely selected in accordance with the owner/managing operator’s applicable regulations.

8 Safety Instructions

When mounted in an exposed position, there is a risk of injury from the rib ends and hot surfaces:

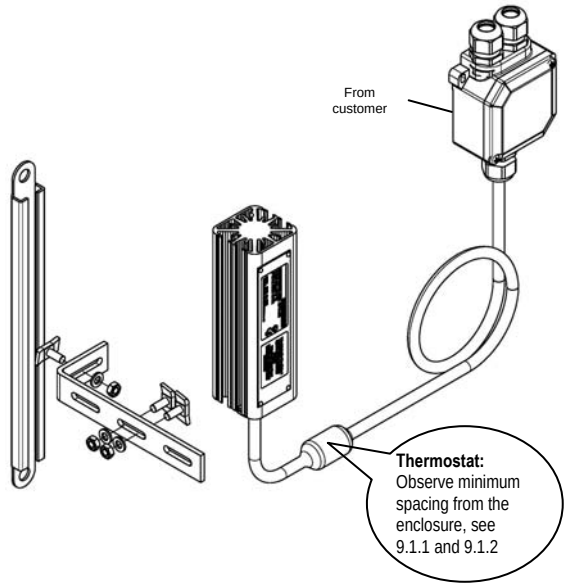
- Max. 160 °C for T3 heaters
- Max. 100 °C for T4 heaters
- The thermostat must be mounted assembled in the air

9 Installation position and minimum spacing

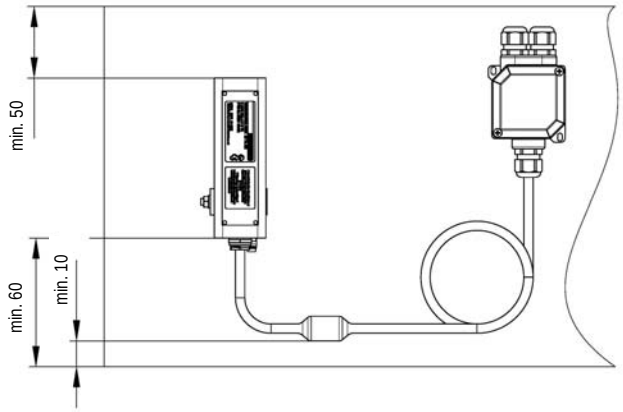
When assembling, the following must be observed:

- the ribs must be vertical
- the minimum distance from the enclosure must be adhered to, see 9.1.1 and 9.1.2
- the type label must stay legible
- measurements must be given in mm

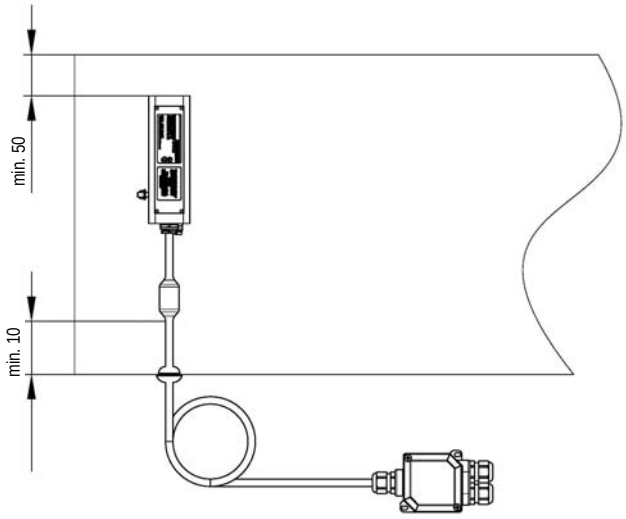
9.1 HCS



9.1.1 with wiring box provided by the customer inside

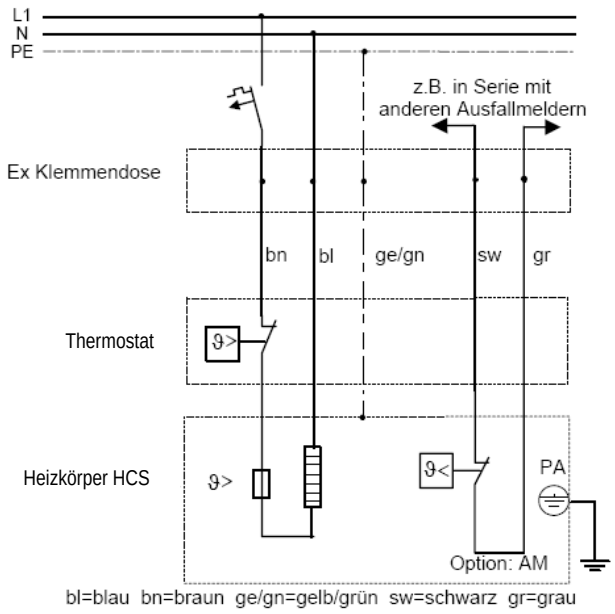


9.1.2 with wiring box provided by the customer outside



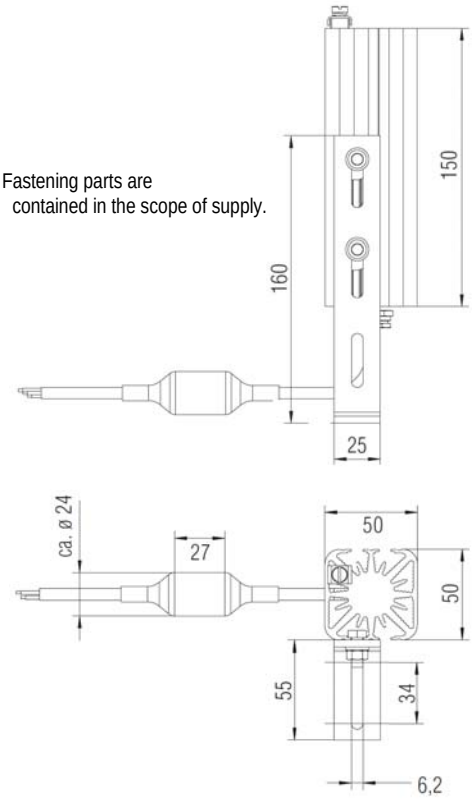
21-2000-7D0001-07/10-BEH-292957

10 Wiring diagram



Dimensions

Fastening parts are contained in the scope of supply.



11 Service address

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Fax + 49 7931 597119

E-mail: info@bartec.de
Web: www.bartec.de

21-2000-7D0001-07/10-BEH-292957

Erklärung der Konformität
Declaration of Conformity
Attestation de conformité

Nº **21-2000-7C0002**

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

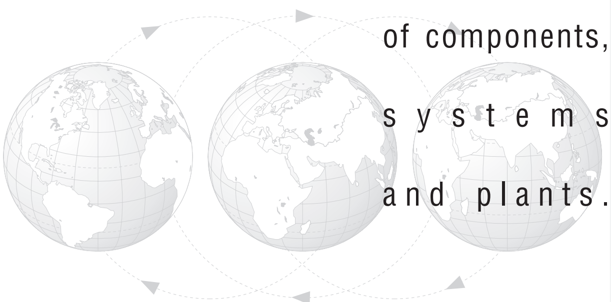
Wir	We	Nous
BARTEC GmbH,		
erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
Heizkörper HCL, HCM, HCS	**Heater plate HCL, HCM, HCS**	**Plaque chaufante HCL, HCM, HCS**
Typ 27-206*-**/**** Typ 27-216*-****/**** Typ 27-226*-****/****		
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 94/9/EG	**ATEX-Directive 94/9/EC**	**ATEX-Directive 94/9/CE**
EMV-Richtlinie 2004/108/EG	**EMC-Directive 2004/108/EC**	**CEM-Directive 2004/108/CE**
RoHS 2002/95/EG	**RoHS 2002/95/EC**	**RoHS 2002/95/CE**
WEEE 2002/96/EG	**WEEE 2002/96/EC**	**WEEE 2002/96/CE**
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 60079-0:2006 **EN 61241-0:2006** **EN 55014-1:2006**	**EN 60079-1:2004** **EN 61241-1:2004** **EN 60529:1991+A1:2000**	**EN 60079-18:2004** **EN 61241-18:2004**
Kennzeichnung	**Marking**	**Marquage**
II 2 G Ex d IIC bzw. dm IIC T4, T3 **II 2 D Ex tD bzw. tDmD A21 IP65 T135°C, T200°C**		
Verfahren der EG-Baumusterprüfung	**Procedure of EC-Type Examination**	**Procédure d'examen CE de type**
PTB 03 ATEX 1139 X **CE 0044**		

Bad Mergentheim, den 25.11.2009

Dr. Anjou Appelt
Geschäftsleitung / General Manager

BARTEC

BARTEC protects people and the environment by the safety of components, systems and plants.



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