BARTEC

User Manual - TRANSLATION

POLARIS Remote

POLARIS II Remote 22"/ Remote 19.1"

Type 17-72V5-....

ATEX Zone 2 ATEX Zone 21/Zone 22

Document No. 11-71V4-7D0001

Revision 1 / July, 26th, 2018

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

Contents	Page
English	1 - 37

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POLARIS Remote POLARIS II Remote KVM

1.	Basi	c Safety Instructions	1
	1.1	Notes on this manual	1
		Languages	2
		Changes to the document	2
	1.2	Handling the product	2
	1.3	Use in accordance with the intended purpose	2
		1.3.1 Exclusive purpose	2
		1.3.2 Improper Use	2
		1.3.3 Owner's/Managing Operator's Obligations	3
	1.4	Safety Instructions	3
	4 5	1.4.1 General Safety Instructions	3
	1.5	Safety Instructions for Operation	3
		1.5.1 Upkeep	3 2
		1.5.2 Maintenance	S 1
		1.5.4 Repairs	
		1.5.5 Commissioning	4
	1.6	Ex Protection Type. Certification and Standards	4
	1.7	Warranty	5
2	Prod	uct Description	6
2.	21	Definition	6
	2.2	Focus on security	iniert.
	2.3	Schematic design	7
3	Fxnl	osion protection and approvals	7
0.	3 1	Explosion protection	7
4	Toch	nical Data	Q
4.		General data	0 8
	7.1	4.1.1 Characteristics POLARIS Remote Zero Client PC 19.1"	9 9
		4.1.2 Characteristics POLARIS Remote Zero Client PC 22"	
		4.1.3 Characteristics POLARIS Remote Zero Client PC 24"Fehler! Textmarke	e nicht definiert.
		4.1.4 Kenndaten Tastatur Varianten	10
		4.1.5 Heating (Optional) for Version up to -20°C	11
		4.1.6 Speaker (optional)	11
	4.2	Product Labelling	12
5.	Trans	sport and Assembly	13
	5.1	Transport	13
	5.2	Intermediate Storage	13
	5.3	Assembly	13
6.	Insta	llation	14
	6.1	Requirements	14
	6.2	Mechanical installation	15
		6.2.1 Floor mounting	16
		6.2.2 Wall mounting	16
			17
		6.2.4 Rotating/ Inclining	17 17

POLARIS Remote POLARIS II Remote KVM

		6.3.1 6.3.2	Installation guidelines PE conductor connection		
	61	0.3.3 Juncti	Connection cables		
	0.4	641	POLARIS Junction Box	20	
		6.4.2	Terminal assignment X1		
		6.4.3	Terminal assignment X1 with Heating H	ICS (optional)22	
		6.4.4	Terminal assignment X2	Fehler! Textmarke nicht definiert.	
		6.4.5	Fibre-Optic Port (optional)	Fehler! Textmarke nicht definiert.	
		6.4.6	Establishing the LAN connection	24	
		6.4.7	Terminal assignment in conformance to	T568BFehler! Textmarke nicht definier	t.
	6.5	EMC ((Electromagnetic Compatibility)		
		6.5.1	Note		
		6.5.2	Voltage supply (AC- and DC- variants).		
		6.5.3	Back-up tuse		
		0.5.4	Interference suppression		
		0.0.0	Connection of shielding		
		657	Examples of Shielding Connections	28	
7	Comn	niccioni		20	
7.	7 1	Final I	nspection	29 29	
0	•			20	
X	Onera	ation		-50	
ð.	Opera 8.1	ation Zero (Client operating system.		
δ.	Opera 8.1	ation Zero (8.1.1	Client operating system General remarks	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
δ.	Opera 8.1	ation Zero (8.1.1 8.1.2	Client operating system General remarks Functions	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
δ.	8.1	ation Zero (8.1.1 8.1.2 8.1.3	Client operating system General remarks Functions Description of functions	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
ð.	Opera 8.1	ation Zero (8.1.1 8.1.2 8.1.3 8.1.3	Client operating system General remarks Functions Description of functions RAM status	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
σ.	Opera 8.1	zero (8.1.1 8.1.2 8.1.3 8.1.3 8.1.4 8.1.5	Client operating system General remarks Functions Description of functions RAM status Touch Screen	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
о. 9.	Opera 8.1 Troub	Zero (8.1.1 8.1.2 8.1.3 8.1.3 8.1.4 8.1.5	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert.	
в. 9. 10.	Opera 8.1 Troub Mainte	Zero (8.1.1 8.1.2 8.1.3 8.1.3 8.1.4 8.1.5 bleshoot enance,	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. 	
в. 9. 10.	Troub Mainto 10.1	Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot enance, Mainte	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. 	
в. 9. 10.	Troub Mainto 10.1 10.2	Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot enance, Mainte Inspec	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. 	
в. 9. 10.	Troub Maint 10.1 10.2 10.3	zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot cenance, Mainte Inspec Mainte	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work	30	
в. 9. 10.	Troub Maint 10.1 10.2 10.3	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot enance, Mainte Inspec Mainte 10.3.1	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs	30	
в. 9. 10. 11.	Troub Mainte 10.1 10.2 10.3 Dispo	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot cenance, Mainte Inspec Mainte 10.3.1 bsal	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs	Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. Fehler! Textmarke nicht definiert. 	
в. 9. 10. 11. 12.	Troub Mainte 10.1 10.2 10.3 Dispo Dispa	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot cenance, Mainte Inspec Mainte 10.3.1 bsal	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs Packaging Instructions	30	
в. 9. 10. 11. 12. 13.	Troub Mainte 10.1 10.2 10.3 Dispo Dispa Acces	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot enance, Mainte Inspec Mainte 10.3.1 bsal itch and ssories,	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs Packaging Instructions Spare Parts	30	
в. 9. 10. 11. 12. 13. 14.	Troub Mainta 10.1 10.2 10.3 Dispo Dispa Acces Order	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot enance, Mainte Inspec Mainte 10.3.1 bsal itch and ssories, Numbe	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs Packaging Instructions Spare Parts rs	30Fehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiert	
в. 9. 10. 11. 12. 13. 14. 15.	Troub Mainte 10.1 10.2 10.3 Dispo Dispa Acces Order Additi	ation Zero (8.1.1 8.1.2 8.1.3 8.1.4 8.1.5 bleshoot cenance, Mainte Inspec 10.3.1 bsal itch and ssories, r Numbe ional Inf	Client operating system General remarks Functions Description of functions RAM status Touch Screen ing Inspection, Repair enance intervals ction enance and Repair Work Instructions for Repairs Packaging Instructions Spare Parts formation	30Fehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiertFehler! Textmarke nicht definiert	

Appendix:

Declaration of Conformity EC Type Examination Certificate Operating Instructions for HCS Radiator

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.

A DANGER

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

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

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.

POLARIS Remote POLARIS II Remote KVM

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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 <u>www.bartec.de</u> 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 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 Panel PCs 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.

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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 Analog** 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 and Zone 2 and Zone 22.





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 Analog** series is optimised for signals such as VGA /USB. A local monitor can be connected via "VGA Out". The touch screen is connected via an RS232 interface (the installation of a driver is necessary and is contained in the scope of delivery).

POLARIS Remote POLARIS II Remote KVM Analog

2.2 Schematic design



Illustration 3: Simple system structure

3. Explosion protection and approvals

3.1 Explosion protection

POLARIS II Typ 17-72V5-****		
ATEX		
Ex protection (maximum marking)	 ⟨Ex⟩ II 3G Ex nA ic IIC T5 Gc ⟨Ex⟩ II3(2)G (1)G Ex nA ic [ic] [ib Gb) [op is Ga] IIC T4/5 Gc ⟨Ex⟩ 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	<€0044	

POLARIS Remote POLARIS Remote KVM Analog

4. Technical Data

4.1 General data

Construction	Stainless steel enclosure
Connection to the PC (Local Unit)	Direct connection to VGA USB for Keyboard & Mouse RS 232 for Touchscreen Extension by means of an STP/S 4x2x23 AWG data communication cable
Conductor length	up to 200 m with resolution 1680 x 1050 up to 300 m with resolution up to 1280 x 1024
POLARIS Remote II	Terminal for STP cable Optional USB for keyboard & mouse (Version with keyboard and mouse)
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 °COperation0 °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

POLARIS Remote POLARIS II Remote KVM Analog

4.1.1 Characteristics POLARIS Remote 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
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 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	Display unit
(width x height x depth)	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

POLARIS Remote POLARIS Remote KVM Analog

4.1.3 Kenndaten Tastatur Varianten

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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 (statisch)
Wight	ca. 2 kg
Other features	Keyboard available in various languages
Abmessungen (mm)	2.50 80 99 13232
width: 500 mm	

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



Туре	HCS 40
Ex protection type	⟨€x⟩ II 2G Ex db IIC T4
	⟨€x⟩ 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

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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.

4.1.5 Speaker (optional)

Technical Details:

Туре	Internal cabinet speaker
connect	Internal Audio
Mounting	Internel cabinet plate



Factory built in

POLARIS Remote POLARIS Remote KVM Analog

4.2 Product Labelling



5. Transport and Assembly

5.1 Transport

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

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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 VGA / USB	
	1 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	

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.

A 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.

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

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.

POLARIS Remote POLARIS Remote KVM Analog

6.2.1 Floor mounting



Illustration 4: Drilling pattern - supporting system for floor mounting



Illustration 5: Drilling pattern - supporting system for wall mounting

POLARIS Remote POLARIS II Remote KVM Analog

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

A

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

A 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.

A 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.

POLARIS Remote POLARIS II Remote KVM Analog

6.4.1 POLARIS Junction Box



Illustration 9: POLARIS II junction box

6.4.2 Terminal assignment X1

3	Interface		AC	:/D(C S	ign	al		Des	cri	ption
X1-1	Supply		PE						Inte	mal	protective, protective earth
X1-2	Supply		L1/	+					AC	230	V ± 10 %/ DC 24 V ± 10 %
X1-3	Supply		Ν						Neu	tra	conductor
X1-4	Supply		PE						Prot	ect	ive earth
X1-5	Optional								Opti	ona	al available, depending on the
X1-6	Optional								inter	fac	e version, see internal
X1-7	Optional								coni	nec	tion diagram, number of the
X1-8	Optional								lem	III Ia	
X1-9	Optional										
X1-10	Optional										
X1-11	Optional										
	Terminal	X1-1 X1-2	X1-3	X1-4	X1-5	X1-6	X1-7	X1-8	X1-9	X1-10	X1-11

Illustration 10: Terminal assignment X1

POLARIS Remote POLARIS Remote KVM Analog

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 \pm 10 % or DC 24 V \pm 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		
X1-9	Optional		interface version, see internal		
X1-10	Optional		connection diagram, number of the		
X1-11	Optional		terminai variadie.		
X1-12	Optional				
X1-13	Optional				
X1-14	Optional				
	Terminal T	X1-4 X1-5 X1-6 X1-6 X1-7 X1-8 X1-8	X1-10 X1-12 X1-12 X1-13 X1-14		

Illustration 11: Terminal assignment X1 for POLARIS with heating

6.4.4 Local Unit



Illustration 12: Terminal assignment X2



More information please see user manual from the KVM.

6.4.5 Properties of local unit

Keyboard and mouse emulation for Plug & Play functionality. The PC boots under all conceivable circumstances. The Plug & Play initialisation of keyboard and mouse is guaranteed in the same way (length up to 300 m). A length adjustment using the keyboard is necessary.

6.4.6 Compatibility

In order to use the hardware of a broad variety of manufacturers in different environments, this product has a number of different functions and has been tested with a large number of different devices. Nevertheless, it is impossible to guarantee correct function with every keyboard/mouse/monitor and every mother board on the market.

6.4.7 Connection of STP cable

The connection between the POLARIS Remote KVM Analog and the local unit is made using a CAT 7 cable.

(i)

Requirements placed on CAT 7 cable:

The cables must be twisted and shielded EIA/TIA-568 B (usual) in pairs! Recommended cable: LAN STP cable CAT.7 4x2x23 AWG, see accessories.

6.4.8 Terminal assignment X2

Connation CAT cable TB 568B 1 to 1 connection between Remote Unit and Lokal Unit								
RJ45	PIN	Farbe (El	A-568B)	Schnittstelle	Funktion			
	1	OG/WH) //	KVM Pair 1	Blau Video			
PIN1	2	OG	\bigcirc	KVM Pair 1	Blau Video			
	3	GN/WH		KVM Pair 2	Grün Video			
	4	BU	\bigcirc	KVM Pair 3	Rot Video			
	5	BU/WH		KVM Pair 3	Rot Video			
	6	GN	\bigcirc	KVM Pair 2	Grün Video			
	7	BN/WH		KVM Pair 4	Data			
	8	BN		KVM Pair 4	/Data			

6.4.9 Establishing CAT cable

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



Illustration 13: 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.	CEL
(2)(3)(4)(5)	Strip 30 mm of cable sheath length. Fold the braided shielding back over the cable sheath. Shorten the braided shielding to a length of approx. 8 mm and fix it in place with the enclosed adhesive shielding film (fig. 2). Unravel the twisting and arrange the cores in accordance with wiring diagram.	L 30 mm
(6) (7) (8)	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. Run the individual core wires into the chambers in the actuating flap. 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).	Logo
(12)	(see illustration).	

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

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 mm^2 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 \pm 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)
Ι	Electricity for a POLARIS	At least 4 A
A	Cable cross-section of the supply line	
к	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.

(i)

i

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.

POLARIS Remote POLARIS Remote KVM Analog

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 14: 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 15: 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.

A 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.

(i)

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

9. Troubleshooting

Fault	Possible Cause	Remedy	
No display	No signal	Check wire ring to the local unit	
	Backlighting is defective.	Return to manufacturer	
	Device is defective	Return to manufacturer	
Voltago cupply or current	Power supply is too low	Check diameter and length of the conductor. See Chapter 6.8	
consumption too low or	Blown external line fuse	Check fuse.	
absent	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 basksystered	The backlighting is coming to the end of its service life.	Return to manufacturer Replace backlighting.	
Dark background	Power save activated at the local PC.	Press any key.	
Touch screen	Driver is deactivated Driver is not installed	Check driver installation / install driver	
not working	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: <u>services@bartec.de</u>

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:	<u>services@bartec.de</u>
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



- 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

14. Order Numbers

	Code		Code		code		code
Version	no. <mark>A</mark>	Input voltage	no. <mark>B</mark>	Keyboard code	no. <mark>C</mark>	Insert unit	no. <mark>D</mark>
POLARIS II Zero Client 19,1"							
without touchscreen	6						
POLARIS II Zero Client 19,1"		1			1	Trackball 50	1
with Touchscreen	5	AC 90 bis 253 V	1	German			
POLARIS II Zero Client 22"]					
without touchscreen	4						
POLARIS II Zero Client 22"					2	Trackball 38	2
with Touchscreen	3			English			
POLARIS II Zero Client 24"		1					
without Touchscreen	8	DC 24 V	2				
POLARIS II Zero Client 24"]			3	Touchpad	3
with Touchscreen	7			French			

Order Number: 17-72V4-ABZ0/CD00

Change the ABCD code with the right Number

15. Additional Information



16. EU Konformitätserklärung

EU Konformitätserklärung EU Declaration of Conformity Déclaration UE de conformité





Max-Eyth-Straße 16 97980 Bad Mergentheim Germany

Wir		We	Nous
	BA	RTEC GmbH	,
erklären in alleiniger Verantwortung, dass das Produl	de t respo	clare under our sole nsibility that the product	attestons sous notre seule responsabilité que le produit
POLARIS II		POLARIS II	POLARIS II
	י די די	yp 17-72V4-****/**** yp 17-72V5-****/****	
auf das sich diese Erklärung bezieht den Anforderungen der folgenden Richtlinien (RL) entspricht	to which in accord the fe	this declaration relates dance with the provision blowing directives (D)	is se référant à cette attestation of 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 i follow no	s in conformity with the ving standards or other ormative documents	et est conforme aux normes ou documents normatifs ci-dessous
EN 60079-0:20 EN 60079-11:2 EN 60079-15:2 EN 60079-28:2	012 + A11:20 2012 2010 2015	013 EN 60079-31: EN 61000-6-2 EN 61000-6-4 EN 60529 :19	2014 :2005 :2007 + A1:2011 91 +A1 :2000+A2 :2013
Kennzeichnung		Marking	Marquage
(Ex)	I 2D	Ex ib tb IIIC T100°C I	Db
		bzw.	
(Ex)	1 3 G	Ex nA ic IIC T5 Gc	
(Ex)	l 3(2)G(1)G	Ex ic nA [ic Gc] [ib G	ib] [op is Ga] IIC T4/T5 Gc
The ma	king is vari	able on type and com	ponents used

EU Konformitätserklärung EU Declaration of Conformity Déclaration UE de conformité



№ 11-72V4-7C0001_B

