BARTEC

User Manual - TRANSLATION

POLARIS REMOTE

USB Barrier Exi

Typ B7-72VZ-….

4 x USB Exi Out for
ATEX/IECEx
Zone 1 and Zone 21

Document no. 11-71V2-7D00xx /

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

Content	Pages
English	1 - 22

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1. Basic safety instructions

1.1 Notes on this manual

Read carefully before putting the devices into operation.

The user manual is a fixed part of the product. It must be kept in the direct vicinity of the device and the installation, operating and service staff must have access to it at all times.

The user manual contains important information, safety instructions and test certificates which are necessary for the perfect function of the device in operation.

The user manual is directed at all individuals concerned with the commissioning, handling and servicing of the product. The applicable guidelines and standards for areas with gas and dust atmosphere (2014/34/EU, EN/IEC 60079-17 and EN/IEC 60079-19) must be observed when conducting this work.

Knowledge of the safety and warning information in this user manual and the strict compliance with it is essential for safe installation and commissioning. Accidents, injuries and material damage can be avoided by circumspect handling and systematically following the instructions.

The examples, tables, and figures provided in this user manual are for illustration purposes. Due to the different requirements of the respective application, the BARTEC company cannot assume responsibility or liability for actual use based on the examples and figures.

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 these operating instructions and marked by symbols.

DANGER

DANGER describes a directly imminent danger. If not avoided, death or severe injury will be the consequence.

WARNING

WARNING describes a possibly imminent danger. If not avoided, death or severe injury may be the consequence.

CAUTION

CAUTION describes a possibly imminent danger. If not avoided, mild or slight injury may be the consequence.

ATTENTION
ATTENTION describes a possibly damaging situation. If not avoided, the plant or objects in its vicinity may be damaged.

Important information on effective, economical & environmentally compliant handling.

1.1.1 Languages

The original user manual with safety information is written in English. All other available languages are translations of the original user manual.

The user manual is available in German and English. If further languages are required, these must be requested from BARTEC or stated on placing an order.

1.1.2 Changes in the document

BARTEC reserves the right to change the content of this document without notification. No warranty is assumed for the correctness of the information. In cases of doubt, the German safety instructions apply because it is not possible to rule out errors of translation or printing. In the case of legal disputes, the “General Terms and Conditions of Business” of the BARTEC GmbH also apply.

The current versions of the datasheets, operating instructions, certificates and EU declarations of conformity can be downloaded from www.bartec.de or may be requested 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 Intended use

1.3.1 Exclusive purpose

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

The POLARIS REMOTE series have been designed specially for use in hazardous (potentially explosive) areas in Zone 1 or Zones 21.

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

1.3.2 Unintended 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.

1.4 Duties of the operator

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.

1.5 Safety information

1.5.1 General

- 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.

1.6 General safety information for operation

1.6.1 Maintenance

The pertinent erection and operating provisions for electrical systems must be observed! (e.g. Directive RL 2014/34/EU, BetrSichV and nationally applicable ordinances EN 60079-14, IEC 60079-14 and the series DIN VDE 0100)!

Observe the national waste disposal regulations when disposing of materials.

1.6.2 Servicing

No constant servicing will be necessary if operated correctly under consideration of the assembly instructions and environmental conditions. See Chapter "Service, inspection, repair" in this respect.

1.6.3 Inspection

According to EN/IEC 60079-17 and EN/IEC 60079-19, the operator of electrical systems in potentially explosive atmospheres is obliged to have these inspected by an electrician to ensure correct condition.

1.6.4 Repairs

Repairs to explosion-proof equipment may only be performed by persons authorized by BARTEC, who must employ the latest technological practices, observe the manufacturer's instructions and use only original spare parts. The applicable regulations are to be observed here.

1.6.5 Commissioning

It must be checked that all components and documents are available before commissioning.

1.7 Labelling, test certificate and standards

The device features an explosion protection label, as well as a test certificate. For an explanation of the symbols and information used, see chapter 4 "Technical data".

The POLARIS REMOTE series complies with Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX Directive). For information on standards that must be observed, see chapter 3 "Explosion protection and approvals".

1.8 Warranty

WARNING

Explosion protection cannot be guaranteed if non-specified components are used.

- ▶ Do not make any changes or perform any reconstruction work on the device.
- ▶ Use only original spare parts.

The manufacturer provides a full warranty exclusively for the spare parts it supplies. When using parts from third parties, there is no guarantee that they have been designed or manufactured to handle the requisite stress or offer the requisite degree of safety.

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).

BARTEC grants a warranty period of one year on the POLARIS series, starting from the BARTEC delivery date. The warranty period for accessories is 1 year from the date of delivery. This warranty covers all parts of the delivery and is limited to the free-of-charge replacement of or repair of the defective parts by BARTEC. The packaging supplied should ideally be retained for this purpose (return shipping). If necessary and following written consultation, the products should be sent to us with an RMA form. No claims may be submitted for repair work to be performed at the installation location.

2. Product description

2.1 Definition

The **USB Barrier Exi module** allows to use up to 4 intrinsically safe USB devices on one standard USB port of an industrial computer. **The USB Barrier** can be installed in Zone 2 if it is installed in a suitable conformity rated enclosure. This must meet the requirements of EN IEC 60079-7 or other recognized type of ignition protection. Intrinsically safe accessories from BARTEC such as USB sticks 17-A1Z0-0007, 17-71VZ-5100/***** and keyboard and trackball, 17-71VZ-****/**** can be connected to the four intrinsically safe ports.

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2.2 Schematic design

USB Barrier Exi Module would be tested with the intrinsically safe accessories from Bartec..

2.2.1 Schematic

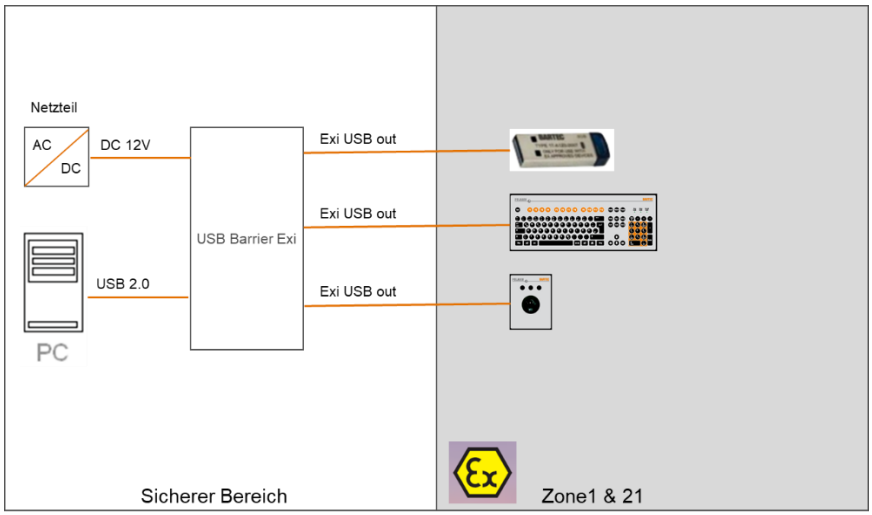


Illustration 1:

3. Explosion protection and approvals

USB Barriere Exi Typ B7-72VZ-….	
ATEX	
Ex protection type	II (2) G [Ex ib IIC or IIB] II (2) D [Ex ib IIC or IIB] -20 °C ≤ Ta ≤ 50 °C
Certification	IBExU 09 ATEX 1113 X
Standards in accordance with EMC Directive 2014/34/EU	EN 60079-0:2018 EN 60079-7:2015/A1 :2018 EN 60079-11:2012 EN 60079-31:2014
IECEx	
Ex protection type	[Ex ib IIC or IIB] [Ex ib IIIC]
Certification	IECEx IBE 11.0007X
Standards	IEC 60079-0:2017 Edition: 7.0 IEC 60079-11:2011 Edition: 6 IEC 60079-31:2013 Edition: 2
Special conditions	The USB Barrier Exi, B7-72VZ-D0**/' can also be installed as associated equipment in Zone 2 if it is installed in a suitable conformity-rated enclosure. This must meet the requirements of the EN IEC 60079-7 standard or another recognized type of ignition protectio

More test certificates	www.bartec.de
EU-conformity	
RoHS-Directive	2011/65/EU
Standards in accordance with EMC Directive 2014/30/EU	EN/IEC 61000-6-2:2005 EN 61000-6-4:2007 + A1:2011 IEC 61000-6-4:2006 + A1:2010
Electrical safety	EN/IEC 61010-1:2010
Product labelling	CE 0044

4. Technical data

4.1 General technical Data

Construction	4 USB hub with external power supply.
Connection to the PC	with local unit (plug & play) through STP/S copper cable connections 1 x HDMI/DVI in 1 x HDMI/DVI out (local monitor) 1 x USB for keyboard/mouse/touch screen/ hand-held scanner
Connection to PC	1 x USB socket Type B
Output	4 x Exi USB
Power supply DC	DC 12 V ±10 %
Power supply AC	external plug-in power supply AC 90 V bis 253 V ± 10 %, 50 Hz bis 60 Hz
Max. power consumption	P_{max} < 10 W
Relative air humidity	5 bis 95 % non-condensation
Material enclosure	Polyester enclosure
Protection class Enclosure Connector	IP65 IP 20
Optional approved accessories	POLARIS Keyboard POLARIS Trackball BARTEC Exi USB Stick

4.2 Keyboard

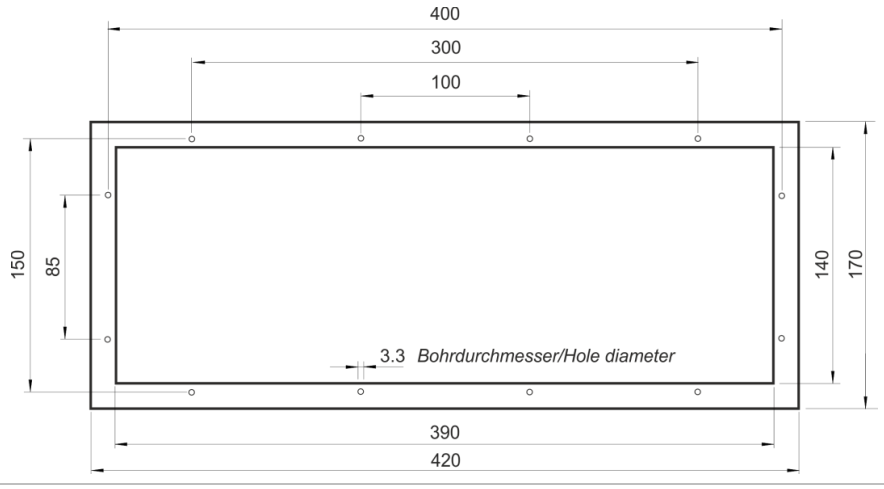
4.2.1 Explosion Protection

Type	17-71VZ-40..
Ex protection type ATEX	II 2G Ex ib IIC T4 Gb II 2D Ex ib IIIC T120°C Db -20 °C ≤ Ta ≤ +60 °C (50°C)
Certification	IBExU 05 ATEX 1117 X
Ex protection type IECEx	Ex ib IIC T4 Gb Ex ib IIIC T120 °C Db
Certification	IECEx IBE 11.0007X
More certificates	www.bartec.de

4.2.2 General data

Construction	Front panel fitting
Material	Polyester foil on aluminum sheet (conditionally UV-resistant)
Protection class (front)	IP65
Dimensions (width x height)	420 mm x 170 mm
Wall cut-out (width x height)	391 mm x 140 mm
Installation depth	18 mm
Weight	approx. 700 g
Other features	Keyboard available in various languages

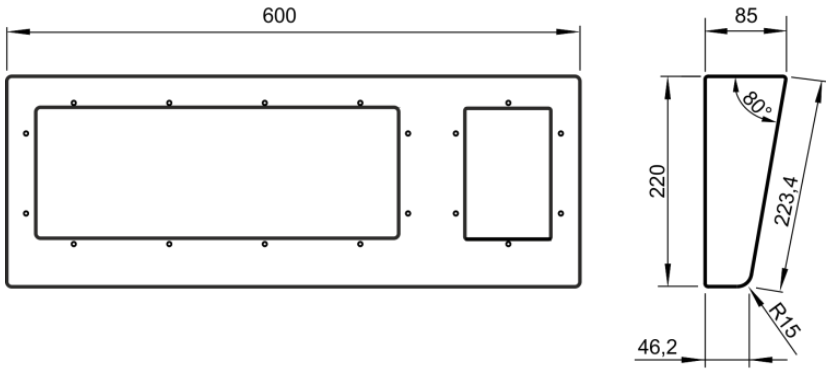
Dimensions and wall cut-out for keyboard (mm)



4.2.3 Characteristics of enclosure for mouse and keyboard

Order no.	05-0041-0277
Material	Stainless steel 1.4301; AISI 304
Dimensions (width x height x depth)	600 mm x 85 mm x 220 mm
Protection class	IP65

Dimensions (mm)



4.3 Trackball

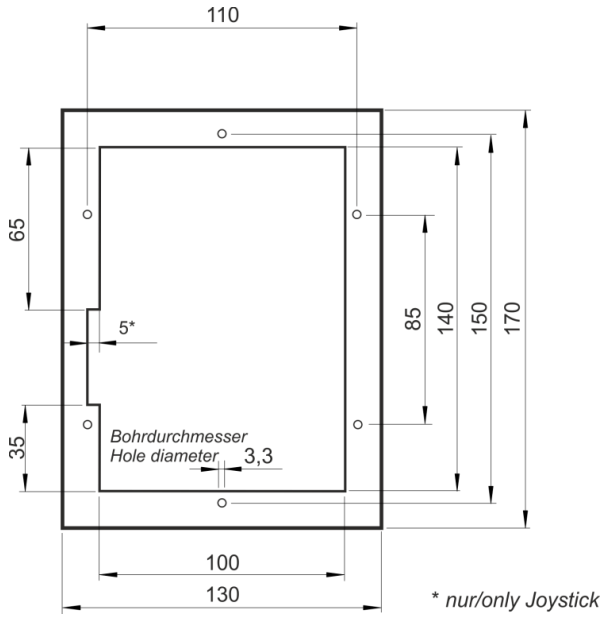
4.3.1 Explosion protection

Ex protection type ATEX	II 2G Ex ib IIC T4 Gb II 2D Ex ib IIIC T120°C Db -20 °C ≤ Ta ≤ +60 °C (50°C)
Certification	IBExU 05 ATEX 1117 X
Ex protection type IECEx	Ex ib IIC T4 Gb Ex ib IIIC T120 °C Db
Certification	IECEx IBE 11.0007X
More test certificates	www.bartec.de

4.3.2 General Data

Construction		Front panel fitting
Material		Polyester foil on aluminium sheet (conditionally UV-resistant)
Protection class		
Trackball	Static	IP65 front site
	Dynamic	IP51 front site
Dimensions (width x height)		130 mm x 170 mm
Wall cut out (width x height)		100 mm x 140 mm

Dimensions and wall cut-out (mm)



4.3.3 Trackball

Trackball	Type 17-71VZ-3000
Installation depth	43 mm
Weight	approx. 500 g

4.4 Product Labelling

Type label

5. Transport, Storage, Scope and Assembly

5.1 Transport

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.

Damage caused by incorrect storage and transport shall not fall within the warranty provisions of BARTEC GmbH.

5.2 Intermediate Storage

ATTENTION

Damage to property through incorrect storage!

- ▶ Comply with the correct storage temperatures.
- ▶ Keep free of moisture.

5.3 Scope of delivery

1 x POLARIS USB Barrier Exi
1 x external Power Supply
1 x USB Cable
1 x User manual

Not enclosed:

- Assembly Material,
- Cable for Exi USB

5.3.1 Accessories optional

- Keyboard, trackball,
- Enclosure
- Cable for Keyboard and Trackball

5.4 Assembly

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

6. Installation

We recommend setting up and testing the entire system before its ultimate installation in the ex-area. If a long connection cable is not available, please use a patch cable to test the basic functions.

DANGER

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

▶ The POLARIS must be integrated in the equipotential bonding.

6.1 Requirements

- The place where the POLARIS USB Barrier is installed must have sufficient mechanical stability/fastening.
- If a supporting system is used, the surface underneath and the means of fastening the supporting system must be designed to bear the weight of the POLARIS

Outdoor Installation

ATTENTION

Damage from condensation or overheating!

▶ Avoid direct sunlight!
Remedy: e.g. shelter with sufficient air circulation.

▶ Remove condensation on the POLARIS USB Barrier Exi immediately.

▶ Equip the protective housing with breather.

6.2 Mechanical Installation

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.

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.

- The user may do only the wiring at the terminals that are accessible to him/her (Ex i and Ex e terminal compartment).
- 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 intrinsically safe circuits.
- The safety and accident prevention regulations applicable to the respective individual case must be observed.

6.4 Terminal compartments

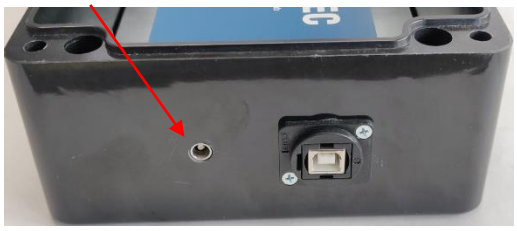
6.4.1 PE conductor connection

Insert PA through black cable gland M16 and attach to PA screw M4

6.4.2 USB to PC USB socket Type: B

6.4.3 Power supply voltage

DC 12V, AC (wide voltage) via external plug-in power supply unit



6.5 Ex I - USB Outputs

Keyboard, trackball, do not connect when power supply is active.

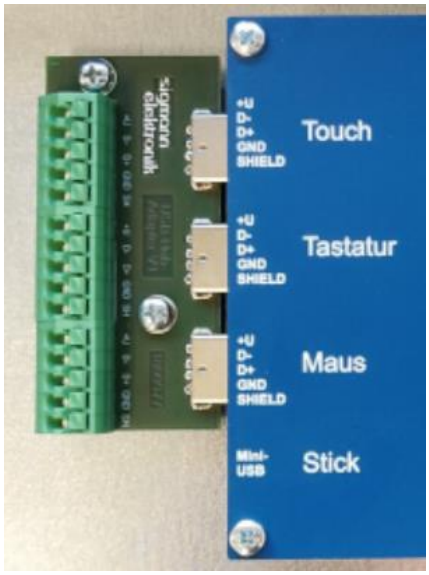
Tightening torque of the cable glands

Torque	Connecting thread	Nut
non-armoured cables	2.3 Nm	1.5 Nm
armoured cables	8 Nm	5 Nm

DANGER

Accessories which have not been approved jeopardise the explosion protection. Danger to life exists in an explosive atmosphere!

▶ Only use POLARIS accessories!



6.5.1 Connection Keyboard and Trackball

USB-Interface for Keyboard				
Terminal	**Interface**	**Colur**	**Signal**	**Function**
U+	USB	Brown	VCC	Power
D-	USB	Red	D-	Keyboard D-
D+	USB	Blue	D+	Keyboard D+I
GND	USB	Yellow	GND	Ground connected to protective earth
SH	USB	Shield	Shield	Ground connected to protective earth

USB-Interface for Trackball				
Klemme	**Schnittstelle**	**Farbe**	**Signal**	**Function**
U+	USB	weiß	VCC	Power
D-	USB	grau	D-	Trackball D-
D+	USB	rosa	D+	Trackball D+I
GND	USB	grün	GND	Ground connected to protective earth
SH	USB	Shield	Shield	Ground connected to protective earth

ATTENTION

On the 05-0068-0172 connecting cable, the white/brown and green/yellow supply lines are connected and must be disconnected.

- Make the connection between the POLARIS Remote and the Ex i keyboard.
- Connection by means of a 1.80-metre-long connection cable
- Keyboard and trackball Type 05-0068-0172
  (Optional: 3-metre-long connection cable)

7. Commissioning

For electrical systems the relevant installation and operating specifications (e.g. Directives 2014/34/EU, 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

Before commissioning the device, check that everything is wired correctly:.

8. Operation

The device can be put into operation after the final check has been made.

9. Faults and troubleshooting

Fault	Possible Cause	Remedy
No function on keyboard & mouse	No signal	Check wiring
	Keyboard issue	Change Keyboard
	No signal	Check Power
	No signal	Check USB wiring to PC

10. Maintenance, inspection, repair

Only trained and qualified personnel may commission and do maintenance work. Trained qualified personnel are people who are familiar with the installation, assembly, commissioning and operation, 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.

10.2 Inspection

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.

10.3 Maintenance and repair work

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

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

10.3.1 Instructions for Repairs

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

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

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

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

http://www.bartec.de

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

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

In the case of returns, send back the complete system, POLARIS Remote KVM Digital including the local unit.

11. Disposal

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

Our devices are intended as professional electric devices for business use only, referred to as B2B devices under the WEEE-Directive. The WEEE directive sets the framework for waste electric and electronic equipment handling procedures which are to apply throughout the EU. This means that you are not permitted to dispose of this equipment in normal household refuse. It should not be given to the collection sites set up by the public waste management authorities either but instead it should be disposed of in a separate collection in an environmentally sound manner.

Any product we supply can be returned by our customers to us when the time has come to dispose of it. We will ensure that it is disposed of in accordance with the respective applicable statutory regulations.

The sender pays the costs of the dispatch/packaging.

12. Dispatch and packaging instructions

ATTENTION

Sensitive Devices! Damage to property due to incorrect packaging!

- ▶ Take the device's maximum weight into account when selecting the packaging and mode of transport.
- ▶ Use the original packaging for transportation.

13. Accessories, spare parts

Name			Order no.
Keyboard in respective national language			17-71VZ-40.0
Input devices	Trackball		17-71VZ-2000
Connection cable	for keyboard and trackball/joystick	1.8 m	03-0068-0172
Enclosure for keyboard and mouse			05-00410277

14. Additional information

14.1 Resistance list

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

Aldehydes
Acetaldehyde
Formaldehyde

Caustic solutions	
Ammonia	< 2 %
Caustic soda	< 2 %

Hydrocarbons
Aliphatic hydrocarbons
General
Benzine
Benzene
Toluene
Xylene

Saline solutions
Alkalicarbonate
Bichromate
Prussiate of potash

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

Chlorinated hydrocarbons
Chlorofluorocarbon
Perchloroethylene
III-trichloroethane
Trichloroethylene

Ester
Ethyl acetate

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

Other organic solvents
Aether
Dimethyl formamide
Dioxane

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

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

(Where not stated otherwise: concentration = 100%)

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

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

15. Declaration of conformity

All certificates see www.bartec.de