Note on instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility. It is essential that they have an exact knowledge of the applicable rules and regulations. The instructions provide a summary of the most important safety measures and must be read by everyone working with the product so that they will be familiar with the correct handling of the product. The instructions have to be kept for future reference and must be available throughout the expected life of the product

Description

The limit monitors, type 07-31..-..../.... are used in conjunction with pneumatic actuators for valves and fittings. They serve to detect the open/closed status signal of the valve or fitting. This end position is communicated by two to a max. six flameproof encapsulated limit switches or intrinsically safe initiators with appropriate connection and mounting elements. The limit monitors consist of a support for the limit switches and an enclosure lid. Supports and enclosure lids together form the junction box in the “Ex eb” or “Ex tb” type of protection depending on the place of work. Mounting kits complying with VDI/VDE 3845 for a mechanical adaptation to the pneumatic actuator are available with varying console sizes. For utilization in Zone 1/2 only components for the Ex area are fitted. For use in Zones 21/22 switches in an industrial quality with a separate temperature rise test report from the manufacturer, can be fitted inside the dustproof enclosures also.

Explosion protection

max. Marking

Depends on the installed components;
observe the specifications on the type label.

Marking ATEX

Ⓔx II 2G Ex eb db mb ia/ib IIC T6 or T5 Gb
Ⓔx II 2D Ex tb IIIC T90 °C Db
CE 0044

Certification

IBExU 02 ATEX 1126

Marking IECEx

Ex eb db mb ia/ib IIC T6 or T5 Gb
Ex tb IIIC T90 °C Db

Certification

IECEx IBE 13.0038

Area of use

Atmospheric conditions at an altitude of up to 2000 m above sea level

Ambient temperature range

Depending on the installations;
observe the specifications on the type label.
-60 °C to +70 °C (-76 °F to +158 °F)

Approved for zones

1/2 and 21/22

Components

Follow the components manufacturer’s mounting instructions and safety instructions.

Other applicable documents

Circuit diagram, mounting instructions/operating instructions for the installed components, delivery note; the retention of these documents is mandatory.

Technical data

Protection class

min. IP 65 (EN 60529)

Mechanical strength

Impact energy max. 7 Nm

Housing material/material

Type 07-31A./...., Cast aluminium AlSi 12

Type 07-31B./...., Polyester

Type 07-31D./...., Stainless steel

Mounting dimensions
Cast aluminium and Polyester

In conformance to DIN EN ISO 5211 F05,
suitable for 4 cheese head screws M6 with locking element

Mounting dimensions
Stainless steel

In conformance to DIN EN ISO 5211 F05,
suitable for 4 screw-nuts M6 with locking element

Mounting console

In conformance to VDI/VDE 3845

Electrical data

Depending on the installations;
observe the specifications on the type label.

Rated voltage

up to 750 V/AC 50 Hz/60 Hz or DC

Rated current

up to 7 A

Type of connection

terminals 2.5 mm^2

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Safety Instructions

The limit monitor may be used only within the specified temperature class and the temperature range indicated for it (see type label). The limit monitor type 07-31..-..../.... is only suitable for use in zone 1/2 and 21/22. Utilization in areas other than those specified or the modification of the product by anyone other than the manufacturer are not permitted and will exempt BARTEC from liability for defects and any further liability. The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be observed. The limit monitor may be operated only if it is clean and not damaged in any way. Dust deposits > 5 mm (> 0.2 in) must be removed. When using electrical systems, the relevant installation and operating conditions must be observed. The specifications on the type label must be adhered to. Observe the applicable laws and directives when commissioning or restarting operation. Always follow the safety instructions on the operating equipment.

Marking

Particularly important points in these instructions are marked with a symbol:

⚠ 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.

ⓘ NOTICE

NOTICE is used to address practices not related to personal injury.

ⓘ NOTE

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

Standards conformed to

EN 60079-0:2012 + A11:2013
EN 60079-1:2014
EN 60079-7:2015
EN 60079-11:2012
EN 60079-18:2015
EN 60079-31:2014

as well as

EN 60529:1991 + A1:2000 + A2:2013

IEC 60079-0:2011 + Cor.:2012 + Cor.:2013
IEC 60079-1:2014-06
IEC 60079-7:2015
IEC 60079-11:2011 + Cor.:2012
IEC 60079-18:2014
IEC 60079-31:2013

as well as

IEC 60529:1991 + A1:2000 + A2:2013

ⓘ NOTE

See the installations' documentation (separate documentation) for standards for the installed parts.

Transport, Storage

ⓘ NOTICE

Damage to the limit motor through incorrect transport or incorrect storage.

- Transport and storage is permissible in original packaging only.

Assembly, Installation, and Commissioning

⚠ WARNING

Risk of serious injury due to incorrect proceedings.

- Only qualified personnel who are authorized and trained to assemble electrical components in hazardous (potentially explosive) areas may do any of the assembly, disassembly, installation and commissioning work.
- When setting up or operating explosion-proof electrical systems, observe the relevant installation and operating regulations.
- Always disconnect the limit monitors from voltage before assembly/disassembly.

Assembly/Disassembly

⚠ DANGER

Death or serious injury due to incorrect assembly.

- Metallic enclosures in hazardous areas require equipotential bonding with at least 4 mm^2. The connections must be secured against self loosening.

The device must be installed with resistance to torsion on an even supporting surface (see assembly instructions et. seq.).

ⓘ NOTE

For enclosures set up outdoors, it may be necessary to implement measures to ensure operation in accordance with the intended purpose (e.g. shelter from the rain or an outer enclosure with a suitable protection class).

Installation

⚠ DANGER

Death or serious injury due to improper use.

- Extensions or modifications to the limit monitor are only permissible if the manufacturer's approval is obtained first.
- EN/IEC 60079-14 must be observed.

When connecting cables and conductors to operating equipment that has "Ex e" or "Ex tb" type of protection, use Ex-certified cable entries that are suitable for the respective type of cable or conductor. They must ensure the "Ex e" or "Ex tb" type of protection and have a suitable sealing element to uphold the limit monitor's protection class. Metallic cable entries must be connected to the earthing system. Unused cable entry holes must be sealed by Ex-certified stopping plugs.

Check at the installation:

- Always use suitable crimping tools when crimping the wire-end ferrules to ensure a consistent quality of pressing each time.

ⓘ NOTICE

Take care not to damage the individual wires.

- Tighten all terminal points (including those not in use) securely.

Commissioning

Before commissioning, check that:

- The device has been installed in compliance with regulations
- The enclosure is not damaged
- The connection has been established properly
- The cables have been laid correctly
- All screws have been tightened securely
- The device functions perfectly

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Operation

⚠ DANGER

Death or serious injury through improper use.

- The limit monitor may be operated only within the technical limits that apply to it (see Explosion protection and Technical data).

Maintenance and fault clearance

⚠ WARNING

Risk of serious injury due to incorrect proceedings.

- Only authorized qualified personnel may do any of the work relating to maintenance and fault clearance.
- EN/IEC 60079-17 must be observed. It is recommended to formulate a maintenance plan according to this standard.
- Ensure that the voltage supply has been isolated or take suitable protective measures.

Maintenance work

The operator of the limit monitor must keep it in good condition, operate it correctly, monitor it and clean it regularly. The owner/managing operator must schedule maintenance intervals which will suit the respective conditions of use. In the course of maintenance particular attention must be paid to checking that the parts essential for the type of protection and proper functioning are in good condition.

- Check sealings for effectiveness.
- Replace old or damaged sealings with new original seals.
- Check that the connecting terminals and cable and conductor entries are secure.

Note

Maintenance includes, in particular, checking that parts required for the ignition protection type and operability are in a proper condition.

Fault Clearance

The limit monitor is defective if the device does not function any longer. In this case the limit monitor must be replaced or repaired with original parts. Defective discs cannot be replaced by the operator of the switchgear assembly. In this case, contact BARTEC GmbH via our service address.

NOTE

See the installation instructions/operating instructions for the individual components for information on replacements and repairs.

Accessories, spare parts

See BARTEC catalogue.

Disposal

Incorrect disposal can be harmful to the environment. In case of any doubt, obtain information on environmentally sound disposal from local municipal authorities or special disposal companies. The components in the limit monitor contain metal and plastic parts. The statutory requirements for disposing of electronic scrap must be observed therefore (e.g. disposal by an approved disposal company).

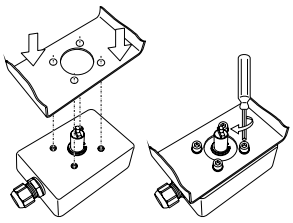
Service address

BARTEC GmbH
Max-Eyth-Str. 16
97980 Bad Mergentheim
Germany

Phone: +49 7931 597 0
Fax: +49 7931 597 119

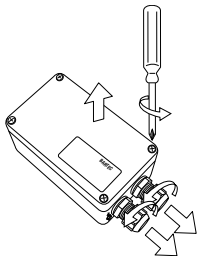
Assembly Instruction

Using 4 cheese head screws or hex nuts, fix the limit motor in place on the mounting console in compliance with VDI/VDE 3845.

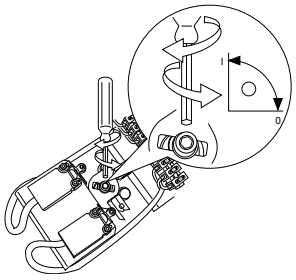


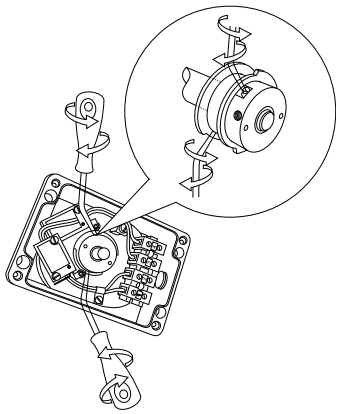
Proceeding

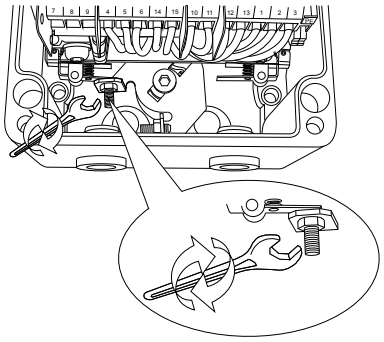
- Open the enclosure cover



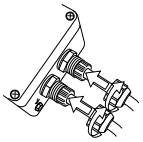
- Adjust the switching points

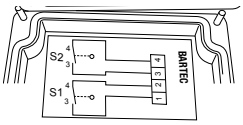




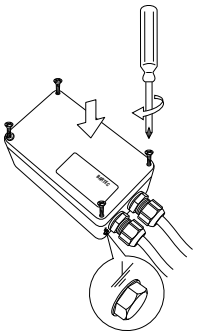


- Insert the cables
- Connect conductors





- Close the enclosure cover
- Tight the screws, max. torque 1.4 Nm



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EU Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de conformité

Nº 01-3100-7C0003

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
Grenzwertgeber Ex	**Limit Monitor Ex**	**Transmetteur de valeurs limites Ex**
Typ 07-31A*-**/**** bis 07-31E*-****/**** und 07-31M*-****/****		
auf das sich diese Erklärung bezieht den Anforderungen der folgenden **Richtlinien (RL)** entspricht	to which this declaration relates is in accordance with the provision of the following **directives (D)**	se référant à cette attestation correspond aux dispositions des **directives (D)** suivantes
ATEX-Richtlinie 2014/34/EU	**ATEX-Directive 2014/34/EU**	**Directive ATEX 2014/34/UE**
EMV-Richtlinie 2014/30/EU	**EMC-Directive 2014/30/EU**	**Directive CEM 2014/30/UE**
RoHS-Richtlinie 2011/65/EU	**RoHS-Directive 2011/65/EU**	**Directive RoHS 2011/65/UE**
Maschinen-Richtlinie 2006/42/EG	**Machinery Directive 2006/42/EC**	**Directive Européenne de l'Equipment 2006/42/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 60079-0:2012 + A11:2013 **EN 60079-1:2014** **EN 60079-7:2015** **EN 60079-11:2012**		**EN 60079-18:2015** **EN 60079-31:2014** **EN 60529:1991 +A1:2000 +A2:2013**
Kennzeichnung	**Marking**	**Marquage**
Ⓔx	**II 2G Ex eb db mb ia bzw. ib IIC T6 oder T5 Gb** **II 2G Ex ia bzw. Ib IIC T6 Gb** **II 2D Ex tb IIIC T90°C Db**	
Verfahren der EU-Baumuster-prüfung / Benannte Stelle	**Procedure of EU-Type Examination / Notified Body**	**Procédure d'examen UE de type / Organisme Notifié**
IBExU 02 ATEX 1126 **0637, IBExU, Fuchsmühlenweg 7, 09599 Freiberg, D**		

CE 0044

Bad Mergentheim, den 25.10.2017

ppa. Paul Wielsch
Head of Business Unit ESS

i.V. Gitta Kugler
Head of Test & Certification Center

03-0383-0362a

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