



fill level



water level



pressure



temperature



flow



visualization



signal converter



sensoric



Technical manual

TA 0610

LBM

Diode module

for wire break monitoring in conductive electrode probes



Installation example electrode probe STK 1

Useable for wire break monitoring in conductive electrode probes

Useable in the following ACS electrode probes:

- **SAT**
- **STK**
- **SLK**
- **ELT**
- **SST**
- **PUK**
- **SBS**

Installation in the terminal box of conductive electrode probes in combination with a suitable evaluation device, e.g. SRA-100-U0

ATEX II 1 G Ex ia IIC T6

Certification for the use in explosion hazardous areas

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1. Application

The diode module **LBM** is used for wire break monitoring in conductive measuring applications and is installed in the terminal box of the respective probe. In combination with a suitable filling level limit switch a pair of wires can be monitored for wire break.

The diode module LBM is certificated for the use in explosion hazardous areas acc. to ATEX II 1 G in zone 0.

2. Function

The module has a 2-pole design and is connected in the terminal box of the electrode probe between the electrode rod resp. electrode rope, that should be monitored, and the reference connection resp. the longest electrode rod resp electrode rope.

The electrode rod resp. electrode rope, that should be monitored, must be connected to the terminal CH1 of the filling level limit switch SRA-100-U0 and the wire break monitoring of the device must be activated. If the wire to the electrode probe breaks, the filling level limit switch will detect this and generates a warning signal at a fault indication relay.

The modules are delivered separated to the electrode probes and must be connected by the user at the installation according to the requirements. The probes of the type SBS are excepted from this. Due to the potting of the probe housing, the module is already installed by factory and can not be added or rewired later.

3. Safety notes

Each person that is engaged with inauguration and operation of this device, must have read and understood this technical manual and especially the safety notes.




Installation, electrical connection, inauguration and operation of the device must be made by a qualified employee according to the informations in this technical manual and the relevant standards and rules.

The device may only be used within the permitted operation limits that are listed in this technical manual. Every use besides these limits as agreed can lead to serious dangers.

The materials of the device must be chosen resp. checked for compatibility with the respective application requirements (contacting materials, process temperature)

An unsuitable material can lead to damage, abnormal behavior or destruction of the device and to the resulting dangers.

The device meets the legal requirements of all relevant EC directives.  **0158**

Safety notes for electrical operating supplies for explosive hazardous areas

If a device is installed and operated in explosive hazardous areas, the general Ex construction standards (EN/IEC 60079-14, VDE 0165), these safety notes and the enclosed EC conformity certificate must be observed.

The installation of explosive hazardous systems must be carried out principally by specialist staff.

The device meets the classification

II 1 G Ex ia IIC T6...T1 resp. II 1/2 G Ex ia IIC T6...T1 resp. II 2 G Ex ib IIC T6...T1

The diode module type LBM has to be installed in such a way that a degree of protection of min. IP20 according to IEC 60529 is reached.

The permitted operating temperatures can be found in this technical manual.

For applications, which require devices of category 1 or category 1/2, the process pressure and temperature range of the media has to be between 0,8 bar and 1,1 bar and between -20 °C and 60 °C.

The operating device may only remain in the zone when connected to an evaluation device and connected to the potential compensation.

4. Installation

The diode module can be installed into the ACS electrode probes SAT, STK, SLK, ELT, SST, PUK and SBS, as well as into other suitable electrode probes. The diode module is not suitable for the installation into ACS electrode probes SAT, SST and SBS with terminal housing diameter 40mm.

5. Electrical connection

The electrical connection of the device must be carried out according to the respective country specific standards. Incorrect installation or adjustment could cause applicationally conditioned risks.

The module must be connected between the rod/rope, that should be monitored, and the longest rod/rope resp. at electrode probe with metallic process connection between this and the shortest rod/rope.

A connection polarity is not relevant. When using evaluation devices resp. transmitter, that does not support a wire supervision, this module may not be installed.

6. Operation

not relevant

7. Maintenance

The device is free of maintenance.

8. Repair

A repair may only be carried out by the manufacturer. When sending back the device, add a note with the description of the error and the application.

9. Technical Data

Connection

Connection specification: Annunal cable lug M4

Materials

Housing: PE-HD polyethylene, High Density

Cable: Silicone

Environmental conditions

Environmental temperature: – 20°C...+70°C

Weight: 0,01 kg

Protection classification: IP00 EN/IEC 60529

Climatic classification: 3K3 bzw. 3M2 EN/IEC 60721-3-4

Shock classification: 15 g / 11 ms EN/IEC 60068-2-27

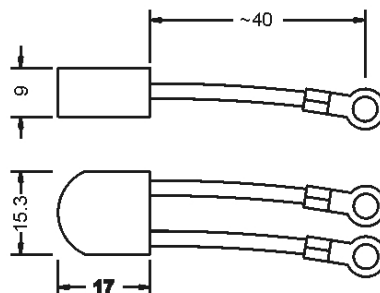
Vibration classification: 5 g / 10 – 2000 Hz EN/IEC 60068-2-6

EM – compatibility: emission DIN EN 61326-1 operation device class B
immunity DIN EN 61326-1 industrial range

Reference conditions: EN/IEC 60770-1 resp. EN/IEC 61003-1

T = 25 °C, rel. humidity 45...75 %, environm. air pressure 860...1060 kPa

10. Dimension drawings



11. Order code overview

LBM version standard
ExLBM version with certification ATEX



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