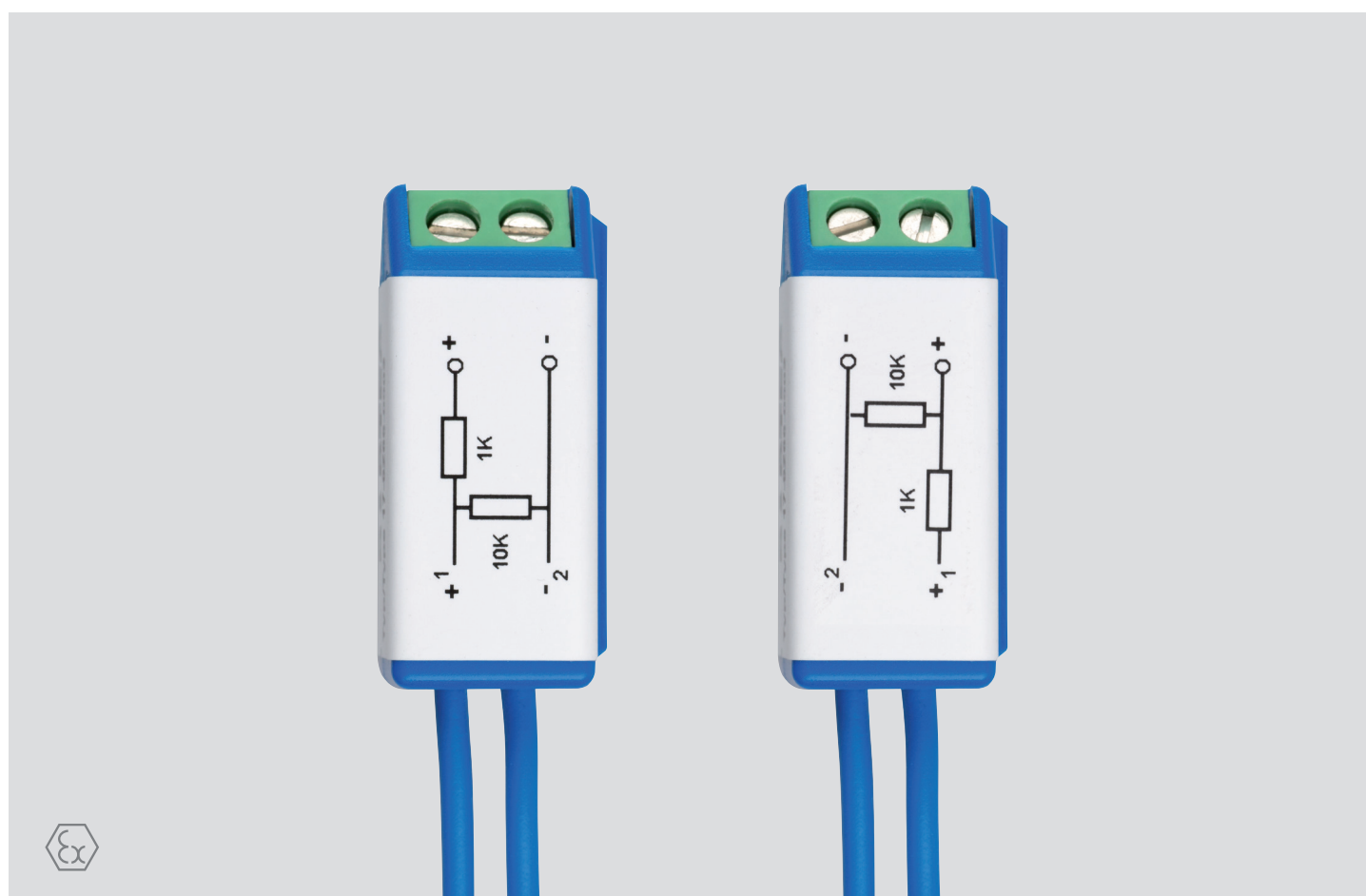


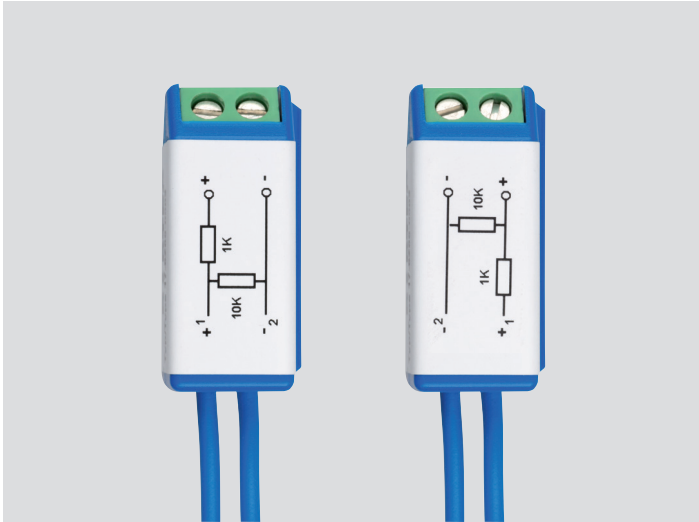
Resistive coupler

Datasheet



The resistive coupling element is used as Simple Apparatus in hazardous areas for the monitoring open circuits/short circuits, (example on isolation amplifiers) in an intrinsic safety circuit.

The resistive coupling element is installed on site directly on the contact to be monitored or in the connection area for it.



Mode of operation

Numerous isolation amplifiers are able to monitor the connected sensor cable for an open circuit and/or short circuit. This is possible because electronic proximity sensors in both an energized and a non-energized state can consume current as defined in EN 60947-5-6. Falling short of or exceeding this value can therefore be clearly assigned to an open circuit or short circuit.

If simple mechanical contacts are used in place of electronic proximity sensors, however, it is not possible to distinguish whether a short circuit is present. The same applies to a line break and an open contact. This can be remedied by a combination of resistors at the end of the sensor cable directly before the switch. This ensures quiescent current in the cable also in the event of an open contact or to a limited extent with a closed contact, keeping the current at a value significantly below the response threshold for a short circuit.

Four different statuses can be detected: open circuit, switch open, switch closed, short circuit.

The resistive coupling element may be used with all isolation amplifiers with open circuit and short circuit monitoring, such as from BARTEC, CEAG, Hartmann & Braun, Pepperl + Fuchs

Explosion protection

ATEX/IECEx	Group II subdivision IIC temperature class T6/T5 Simple Apparatus with EPL Ga acc. to Section 5.7 of EN 60079-11:2011 / IEC 60079-11 Ed. 6
Standards conformed to	EN IEC 60079-0:2018 / IEC 60079-0 Ed. 7 EN IEC 60079-11:2011 / IEC 60079-11 Ed. 6 EN 60079-14:2014 / IEC 60079-14 Ed. 5

Safety Instructions

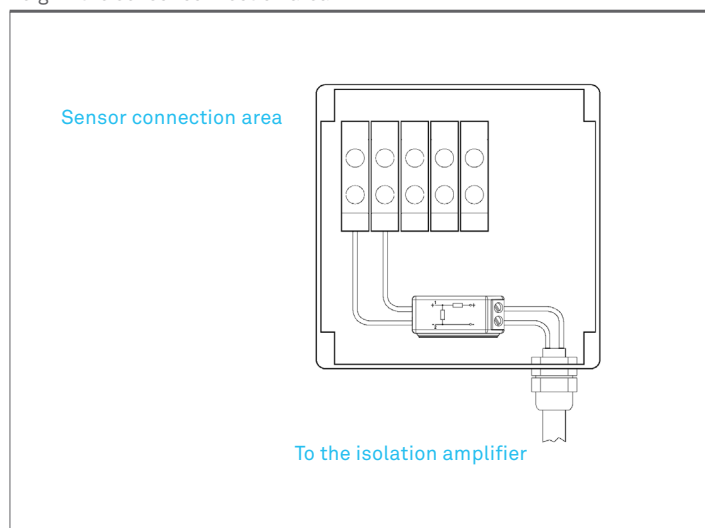
The resistive coupler may be used only within the specified ambient (service) temperature range. Utilization in areas other than those specified or the alteration of the product by anyone other than the manufacturer is not permitted and will exempt BARTEC from liability for defects or any further liability. Incorrect installation can cause malfunctioning and the loss of explosion protection. Only service technicians who are authorized to work in potentially explosive atmospheres may do any of the assembly, disassembly, installation, commissioning, maintenance, and fault clearance work. The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be observed. When setting up or operating explosion-resistant electrical systems, the EN/IEC 60079-14 and all relevant installation and operating regulations must be observed. The resistive coupler may be used only if it is clean and not damaged in any way. It is not permissible to modify the module in any way.

Technical data

Degree of protection	IP20
Resistance values	See order details
Max. Power (U_i)	30 V
Max. output (P_i)	0.5 W up to T5/0.2 W for T6 (up to $T_u = +50\text{ °C}$) /0.1 W for T6 (up to $T_u = +60\text{ °C}$)
Internal inductance (L_i)	negligibly low
Internal capacitance (C_i)	negligibly low
Ambient temperature	-40 °C to +60 °C
Service temperature range	-40 °C to +60 °C T5/T6
Terminals	0.5 - 1.5 mm ² (solid or stranded wire)
Connection cable	0.5 mm ²
Rated torque	0.5...0.6 Nm

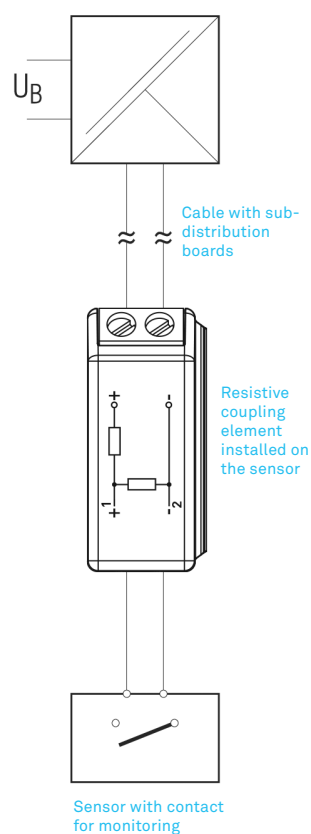
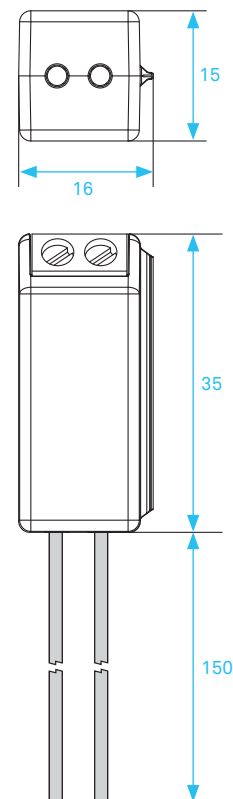
Installation

e.g. in the sensor connection area

**Application**

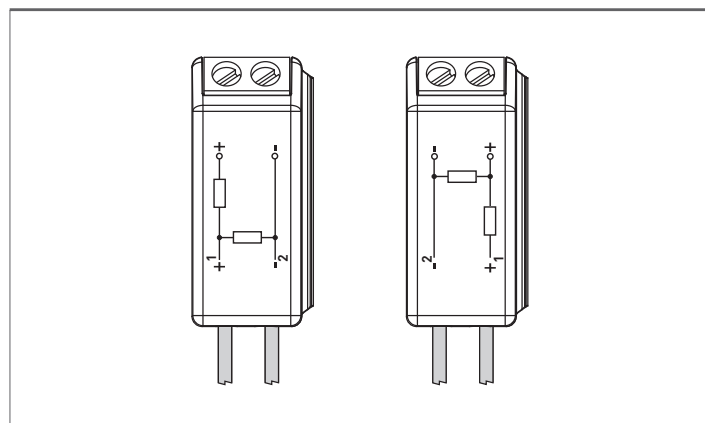
version 1

Open circuit/short circuit monitoring in the case of isolation amplifiers with contact activation

**Dimensions****Wiring diagram**

version 1

version 2

**Order details**

Version	Designation				Order number
2	1 k/10 k	With terminals and cables	10 k	Parallel to the terminal	17-9Z66-0001
1	1 k/10 k	With terminals and cables	10 k	Parallel to the cable	17-9Z66-0002
1	2.1 k/22 k	With terminals and cables	22 k	Parallel to the cable	17-9Z66-0013
1	1 k/2 k	With terminals and cables	2 k	Parallel to the cable	17-9Z66-0016
1	1 k/10 k	With terminals and cables	10 k	Parallel to the cable + wire end ferrules	17-9Z66-0021
1	1.5 k/10 k	With terminals and cables	10 k	Parallel to the cable + wire end ferrules	17-9Z66-0022
1	2.7 k/10 k	With terminals and cables	10 k	Parallel to the cable	17-9Z66-0023
1	2 k 7/22 k	With terminals and cables	22 k	Parallel to the cable	17-9Z66-0030