

TEM-EX-B



Figure:
TEM-EX-B with PROMOS connector

- ▶ Robust and safe device for continuous monitoring of a temperature gradient and a temperature limit (e.g. for conveyor belt monitoring)
- ▶ Corresponds to the European standards EN 13849-1 (Performance Level d) and EN 61508 (Safety Integrity Level 2) for use in safety systems with the requirements according to the functional safety.
- ▶ The temperature limit values are selectable in fixed steps according to the ordering information.
- ▶ Housing: Brass and stainless steel
- ▶ Electrical connection:
 - PROMOS connector type BN4160
 - Hydrostar connector type SKK24 or SKK45M
 - Fixed cable (selectable length)
- ▶ Output signal: Switch signal
- ▶ Output function:
 - Photo relay (standard or with line monitoring)
 - PROMOS compatible
- ▶ Power supply: 9.0 - 13.5 VDC
- ▶ Marking according to 94/9/EC:
I M2 Ex ib I (KDB 08ATEX209)



Ordering information TEM-EX-B

20	Process connection	
	1	Bolt-on housing type 1
	9	Special version, to be specified
30	Housing material	
	A	Brass + stainless steel
	Y	Special version, to be specified
40	Switching condition temperature gradient	
	A	$\geq 1K/3s$
	Y	Special version, to be specified
50	Switching condition temperature limit	
	045	$\geq +45^{\circ}C$
	055	$\geq +55^{\circ}C$
	065	$\geq +65^{\circ}C$
	999	Special version, to be specified
60	Functional safety	
	1	Without
	2	Functional safety SIL 2 (according to EN 61508) + safety of machinery PL d (according to EN 13849)
	9	Special version, to be specified
70	Electrical connection	
	B	PROMOS connector type BN4160, axial
	K	PROMOS connector type BN4160, radial
	F	Hydrostar connector type SKK24, axial
	L	Hydrostar connector type SKK24, radial
	H	Hydrostar connector type SKK45M, axial
	M	Hydrostar connector type SKK45M, radial
	J	Fixed cable
	Y	Special version, to be specified
80	Length of cable *1	
	—	Length in meter (electrical connection J , otherwise 00)
	YY	Special version, to be specified
90	Power supply	
	A	9.0 - 13.5 VDC
	Y	Special version, to be specified
100	Output function	
	1	Photo relay
	2	Photo relay with line monitoring
	3	PROMOS compatible
	9	Special version, to be specified

*1 0 - 99 m (standard 10 m)

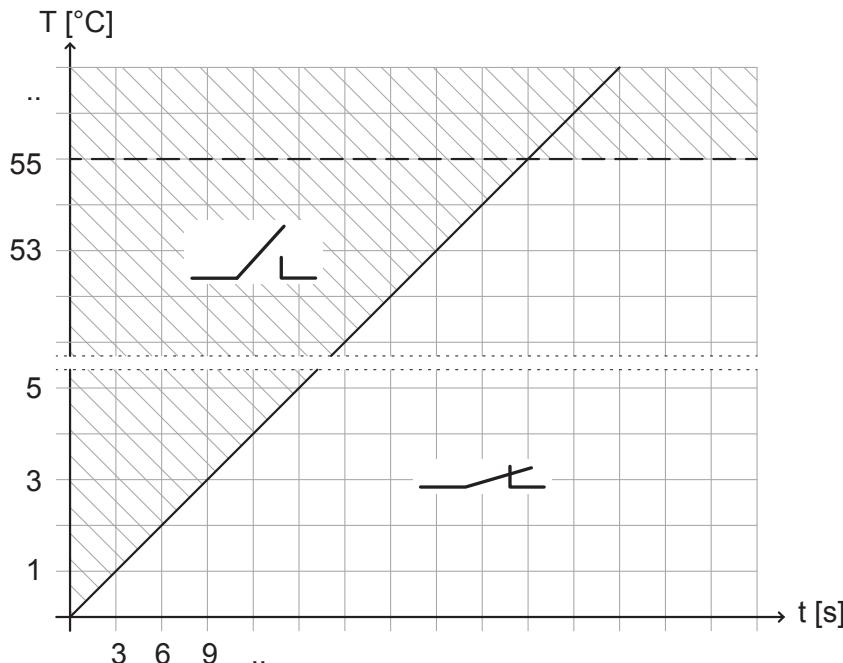
110	Output signal						
	A	Switch signal					
	Y	Special version, to be specified					
120	Special equipment						
	1	Standard					
	9	Special version, to be specified					

TEM-EX- B completed order code

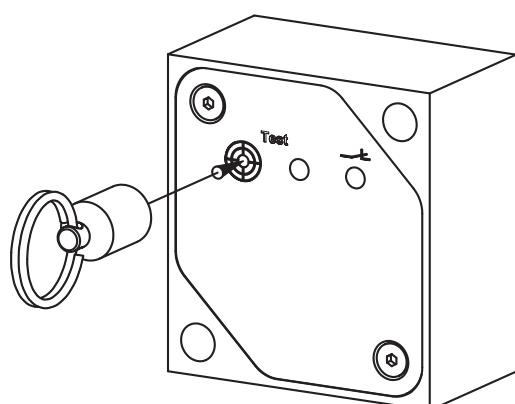
Function of the device

- The device TEM-EX-B monitors a temperature gradient (1K/3s) and a temperature limit (+45°C, +55°C or +65°C; selectable value). As soon as one of the two values exceed their limit, the potential-free switch contact will be opened.

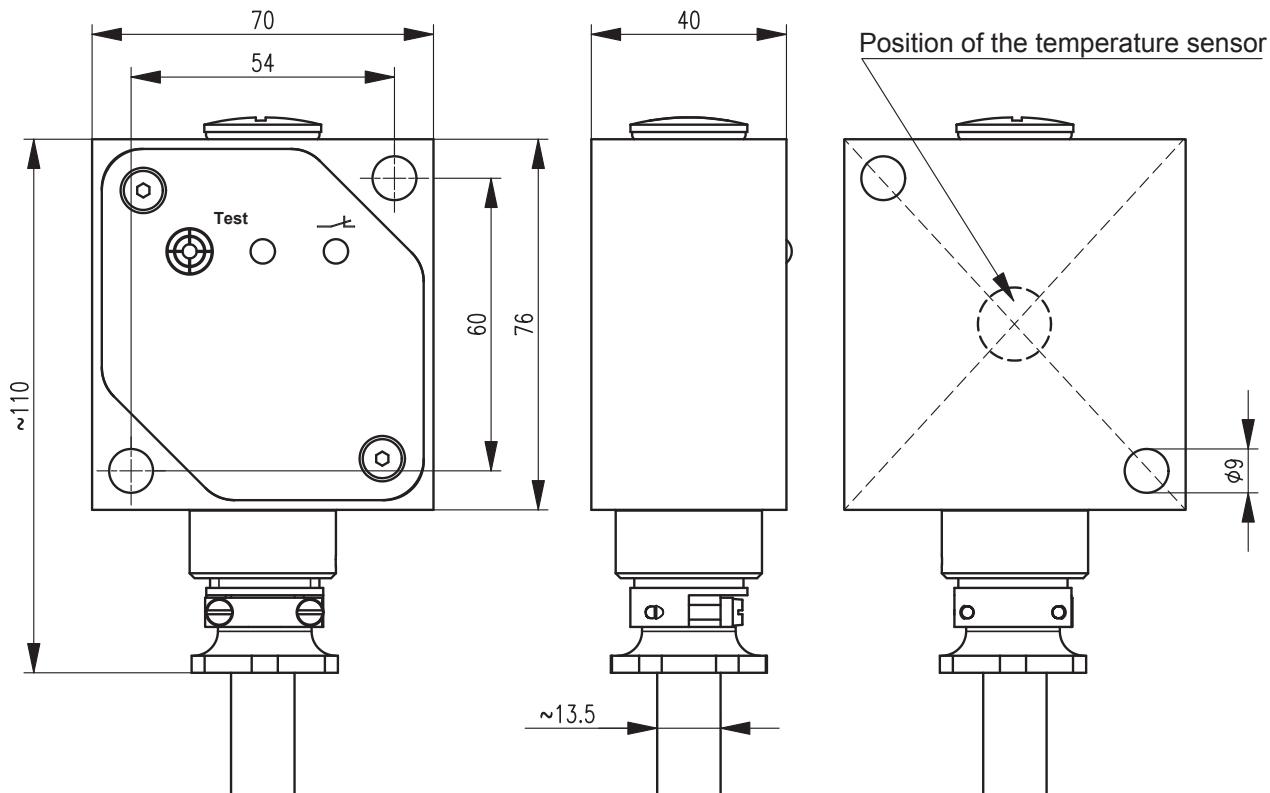
Example: TEM-EX-B1AA055*



- The function of the device can be checked on-site by means of a contactless test adapter (see **accessory**). For this put the test adapter on the test mark:
 - The red flashing LED "Test" shows the self test of the electronic was performed successfully.
 - After 4 seconds the green LED "—" switched off and the switch output opens. The test of the switch output was performed successfully.



Device features



- The device can easily be mounted at the monitoring position with two M8 bolts.

Note:

We recommend the use of a suitable thermal conductance paste in the area of the temperature sensor.

- The device is constructed for the robust and safe use in mining applications. It is fully sealed and requires no maintenance.

Note:

A function test on-site is possible at any time with the help of a test adapter.

Accessory

- Test adapter for switch checking function on-site:
Order code: 502117

Technical data (general):

- Measuring principle:
Temperature-sensitive semiconductor sensor
- Measuring uncertainty:
Max. $\pm 1^{\circ}\text{C}$ (typ. $\pm 0.5^{\circ}\text{C}$)
- Material of the housing:
Brass and stainless steel
- Weight:
Approx. 1 kg (without fixed cable)
- Protection according to EN 60529:
IP65
- Marking according to 94/9/EC (ATEX):
 Ex I M2 Ex ib I
- Ambient temperature:
 $-20^{\circ}\text{C} \leq \text{Ta} \leq +70^{\circ}\text{C}$

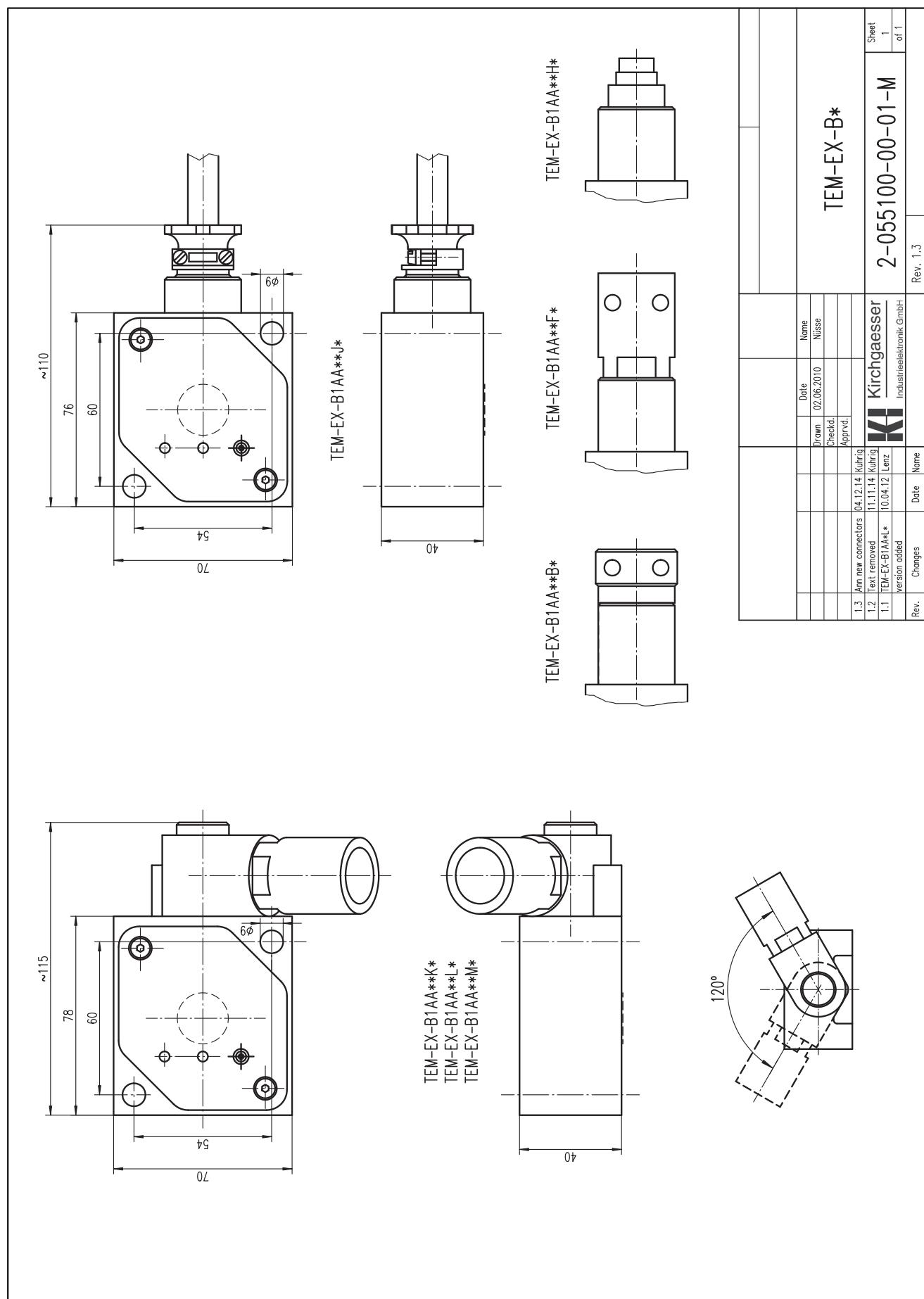
Technical data (electrical):

- Power supply:
 $9.0 \text{ VDC} \leq \text{Ui} \leq 13.5 \text{ VDC}$
- Current consumption:
26 mA
- Power supply of the switching output (photorelay):
 $9.0 \text{ VDC} \leq \text{Uio} \leq 13.5 \text{ VDC}$ ($9.0 \text{ VDC} \leq \text{Uio} \leq 12.5 \text{ VDC}$ with line monitoring)
- Internal capacitances: negligible
- Internal inductances: negligible

Technical data (functional safety):

- The device version **TEM-EX-B1AA*2*** corresponds to the European standards EN 61508 "Functional safety" (Safety Integrity Level 2) and EN 13849 "Safety of machinery" (Performance Level d), for details about the technical data according to the standards please take a look at the declaration of conformity fs055000a1.

Dimension sheet:



Document protected by DIN ISO 16016. The reproduction, distribution and utilization as well as the communication of its contents to others without explicit authorization is prohibited. All rights reserved in the event of the grant of a patent, utility model or design.