

## TEM-EX-C



Figure: TEM-EX-C\*

- ▶ Robust and safe temperature transducer for general mining applications
- ▶ In combination with the Kirchgaesser multi channel signal converter and display unit COMBA-EX or signal converter CON-EX respectively the device is used to measure temperatures in liquid and gaseous media.
- ▶ Housing: Stainless steel (Connector: plastic)
- ▶ The temperature measuring ranges are selectable in the range of -20°C to +150°C according to the table of versions (other measuring ranges are available on request).
- ▶ Sensor: Semiconductor
- ▶ Process connection: Thread G $\frac{1}{2}$  (selectable sensor length)
- ▶ Electrical connection: Hirschmann surface mounted connector type G4
- ▶ There are pre-fabricated connection cables type VCG (1 ... 30 m) available to connect TEM-EX-C with a Kirchgaesser signal converter.
- ▶ The power supply is provided by the Kirchgaesser signal converter.
- ▶ Marking according to 94/9/EC: I M1 Ex ia I (KDB 08ATEX209)

**Ordering information TEM-EX**

<b>10</b>	<b>Device version</b>	
	C	Transducer to connect with a Kirchgaesser signal converter
<b>20</b>	<b>Process connection</b>	
	1	G½ thread
	9	Special version, to be specified
<b>30</b>	<b>Length of sensor</b>	
	0100	100 mm
	0160	160 mm
	0230	230 mm
	0360	360 mm
	0510	510 mm
	_____	Length of sensor (mm) after consulting
	9999	Special version, to be specified
<b>40</b>	<b>Measuring range (lower limit) *1</b>	
	A	-20°C
	C	-10°C
	D	-5°C
	E	0°C
	Y	Special version, to be specified
<b>50</b>	<b>Measuring range (upper limit) *1</b>	
	B	+20°C
	C	+30°C
	D	+40°C
	E	+50°C
	F	+60°C
	G	+70°C
	K	+100°C
	M	+120°C
	P	+150°C
	Y	Special version, to be specified
<b>60</b>	<b>Accuracy class</b>	
	A	Max. ± 0.2K from measurement value (upper range value ≤ +60°C)
	B	Max. ± 0.5% of end value (+60°C < upper range value)
	Y	Special version, to be specified
<b>70</b>	<b>Electrical connection</b>	
	G	Hirschmann surface mounted connector type G4
	Y	Special version, to be specified

\*1 See table for selectable combinations of lower and upper limits!

Complete order code:

**TEM-EX-**

<b>C</b>						
----------	--	--	--	--	--	--

## Selectable measuring ranges \*2

Lower limit (40)	Upper limit (50)	Measuring range
A	B	-20°C ... +20°C
A	C	-20°C ... +30°C
A	D	-20°C ... +40°C
C	B	-10°C ... +20°C
C	C	-10°C ... +30°C
C	D	-10°C ... +40°C
D	B	-5°C ... +20°C
D	C	-5°C ... +30°C
D	D	-5°C ... +40°C
E	D	0°C ... +40°C
E	E	0°C ... +50°C
E	F	0°C ... +60°C
E	G	0°C ... +70°C
E	K	0°C ... +100°C
E	M	0°C ... +120°C
E	P	0°C ... +150°C

\*2 Other temperature ranges can be selected optionally!

 Ordering information connection cable **VC\*-\***

<b>10</b>	<b>Type of connector</b>
G	Hirschmann connector type G4
<b>20</b>	<b>Length of cable</b>
__	Length of connection cable [m], max. 30 m

Complete order code:

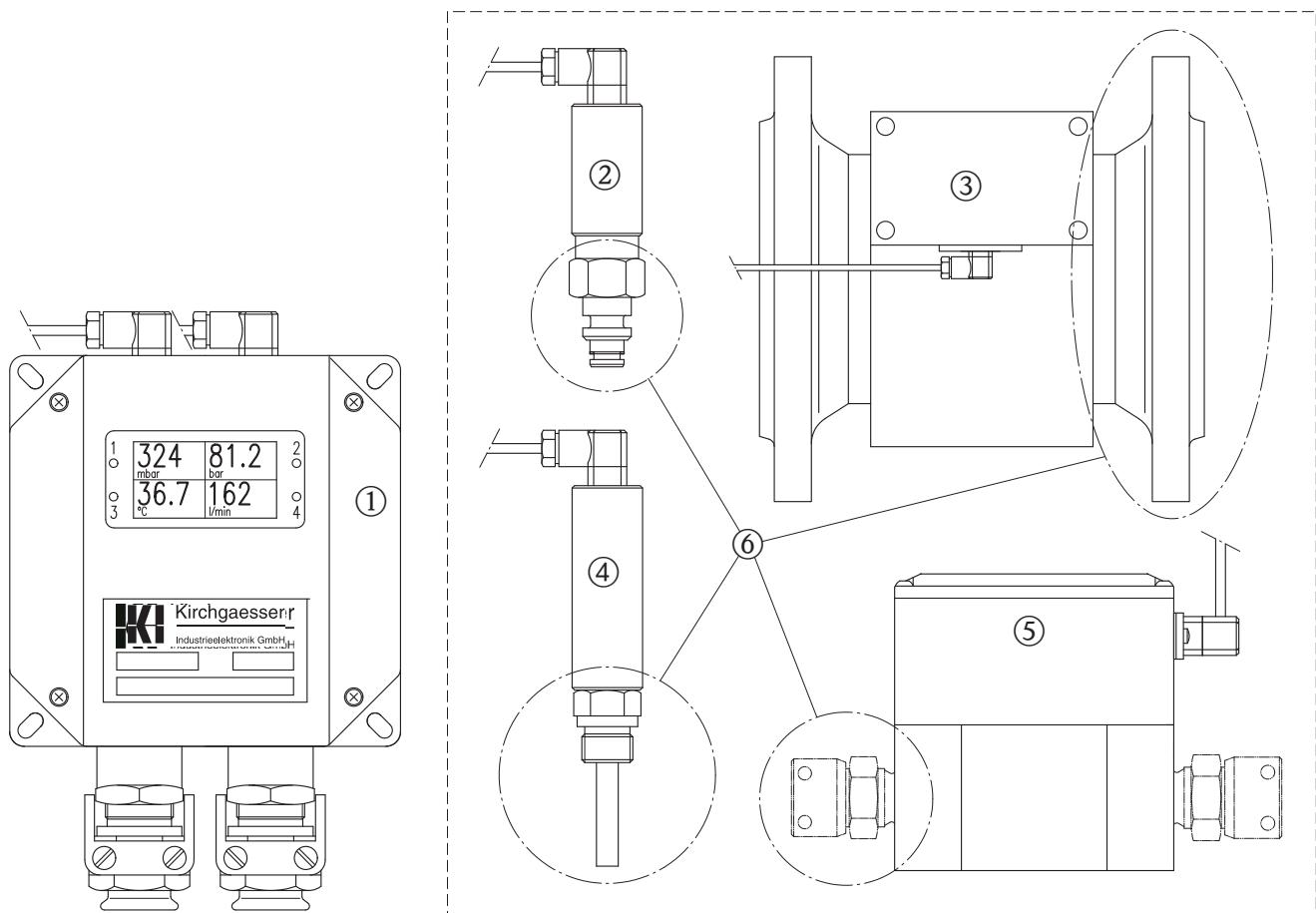
VC  -

### Measuring system:

The measuring system consists of the temperature transducer type TEM-EX-C and a Kirchgaesser multi channel signal converter and display unit COMBA-EX or signal converter CON-EX respectively.

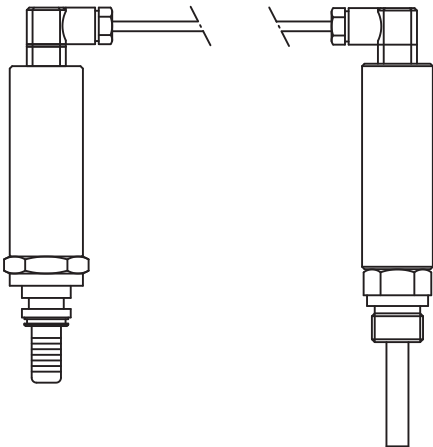
The transducer TEM-EX-C is available with different sensor lengths, please refer the ordering information for further details.

### TEM-EX-C with the multi channel signal converter and display unit COMBA-EX



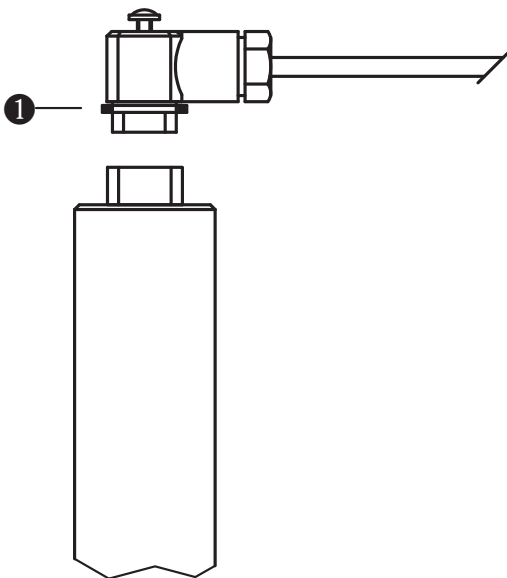
- Any combination of TEM-EX-C ④ and/or transducers type PEM-EX-C ② (pressure), type MID-EX-GC ③ (high flow) and/or type MID-EX-C ⑤ (small flow) can be connected with COMBA-EX ①.
- The individual transducers are available with different process connections ⑥.
- The connection cable type VCG with a maximum length of 30 m is not a part of the package and has to be ordered separately.

### TEM-EX-C with the signal converter CON-EX



- The connection cable type VCG with a maximum length of 30 m is not a part of the package and has to be ordered separately.

### Installation:



### Warning!

Please take notice of the sealing ❶ of the connector!

### Technical data (general):

- Measuring principle:  
Temperature-sensitive semiconductor sensor
- Material
  - Housing: Stainless steel
  - Connector: Plastic
- Weight:  
Depending on length of sensor (0.35 kg at 100 mm sensor length)
- Protection according to EN 60529:  
IP 65
- Protection according to EN 60079-0:  
Ex ia I
- Nominal pressure:  
Max. 100 bar
- Process connection:  
Thread G $\frac{1}{2}$
- Ambient temperature:  
 $-20^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$
- Process temperature:  
 $-20^{\circ}\text{C} \leq T_p \leq +150^{\circ}\text{C}$

### Technical data (electrical):

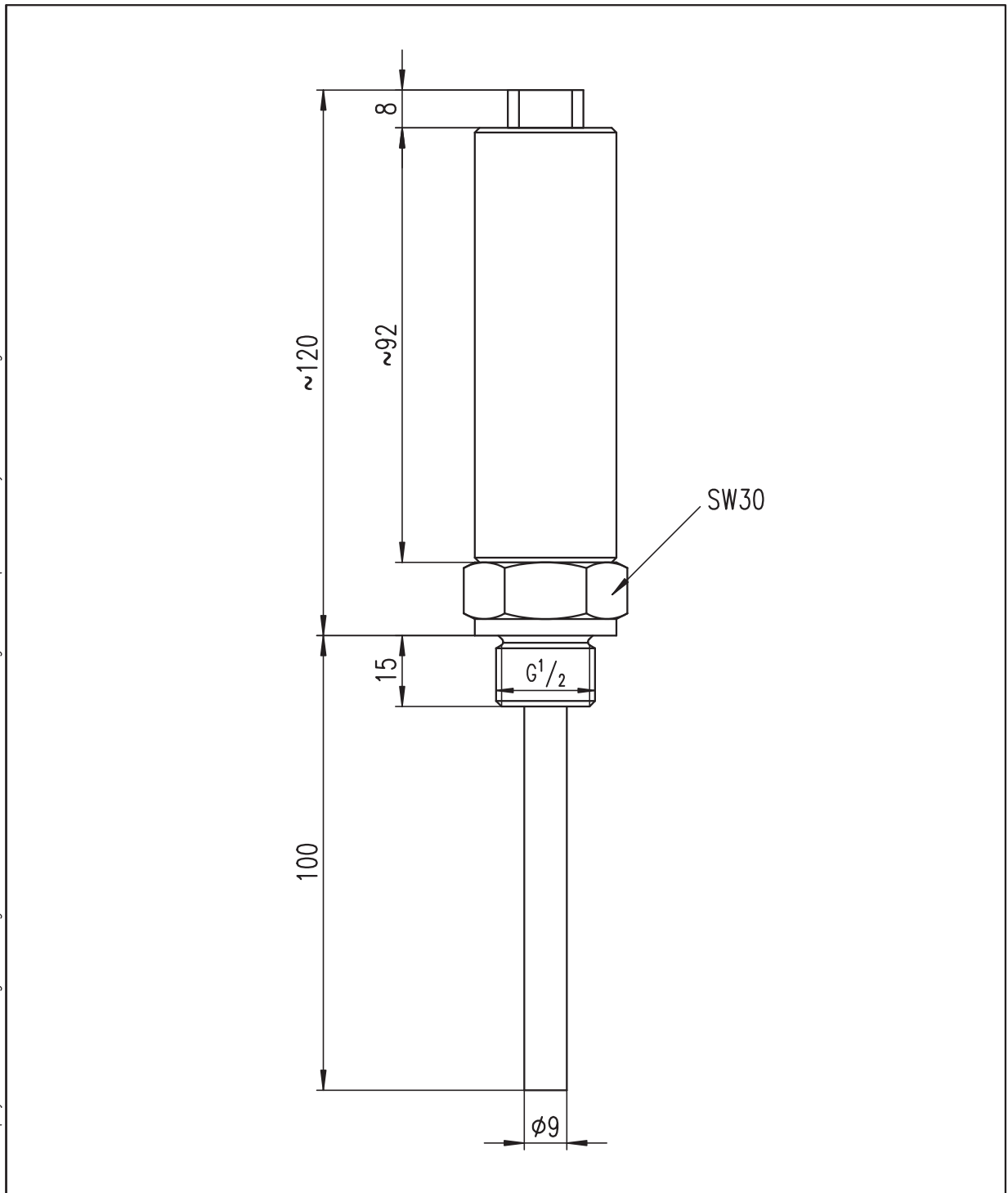
- Power supply:  
Provided by the Kirchgaesser signal converter
- Current consumption:  
12 mA
- Output signal:  
Serial
- Internal inductances:  
Negligible
- Internal capacitances:  
Negligible

### Note!

- The device is approved and certified according to GB3836.1 and GB3836.4 for the use in China mining, the certification numbers are **J2013330** and **J2013327** (COMBA-EX).
- The temperature transducer TEM-EX-C is designed for connection with the Kirchgaesser multi channel signal converter and display unit COMBA-EX (see ka053000en) or signal converter CON-EX (see ka058000en). If you need a single device with independent output signal, please take a look on our TEM-EX-L (see ka055200en).

**Dimension sheet:**

Based on the security notes by DIN ISO 16016: The reproduction, distribution and utilization of these sites as well as the communication of its contents to other without explicit authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.



				Scale 1:1			
				<p>TEM-EX-C10100***G</p> <p>2-055000-00-05-M</p>			
			Drawn			Date	Name
			Checkd.			14.07.2008	Nüsse
			Apprvd.				
					Sheet		
1.1	Text removed	06.11.14			MK	1	
Rev.	Changes	Date	Name	2-055000-00-05-M			
				Rev. 1.1	of 1		

This page is for your notes!