

PEM-EX-C



Figure: PEM-EX-C*A*G

- ▶ Robust and safe pressure transducer for general mining applications
- ▶ In combination with a Kirchgaesser multi channel signal converter and display unit COMBA-EX or signal converter CON-EX respectively the device is used to measure relative and absolute pressures in liquid and gaseous media.
- ▶ Housing: Stainless steel (connector: plastic)
- ▶ Pressure measuring ranges: 0 .. 40 mbar to 0 .. 600 bar
- ▶ Transducer (with/without mechanical damping):
 - Ceramic diaphragm; flush-mounted G1¼ thread, internal G½ thread, flange DN40 PN6 with extension or hydrostatic transducer
 - Thin-film; flush-mounted G½ thread, internal G¼ or G½ thread or socket nipple DN10 (according to DIN 20043)
- ▶ Electrical connection: Hirschmann surface mounted connector type G4
- ▶ There are pre-fabricated connection cables type VCG (1 .. 30 m) available to connect PEM-EX-C with a Kirchgaesser evaluation and display unit or signal converter respectively.
- ▶ The power supply is provided by the Kirchgaesser signal converter.
- ▶ Marking according to 94/9/EC: I M1 Ex ia I Ma (KDB 08ATEX027)

Ordering information **PEM-EX**

10	Device version		
	C	Transducer to connect with a Kirchgaesser signal converter	
20	Messbereich		
	—	Measuring range see table	
	YY	Special version, to be specified	
30	Process connection, sensor		
	A	Socket nipple DN10 (according to DIN 20043), thin-film sensor	
	B	Pipe thread G¼, internal thin-film sensor	
	C	Pipe thread G½, internal thin-film sensor	
	D	Pipe thread G½, internal ceramic sensor	
	E	Pipe thread G½, flush-mounted thin-film sensor	
	F	Pipe thread G1¼, flush-mounted ceramic sensor	
	H _ _ _ _	Flange DN40 PN 6 with extension: 100 mm (H0100) to 1600 mm (H1600) in steps of 100 mm, flush-mounted ceramic sensor	
	J	Hydrostatic transducer	
	Y	Special version, to be specified	
40	Mechanical damping		
	1	With mechanical damping (only process connection A - C)	
	2	Without mechanical damping	
	9	Special version, to be specified	
50	Electrical connection		
	G	Hirschmann connector type G4	
	K _ _	Fixed connection cable with Hirschmann connector type G4, length: 1 m (K01) to 30 m (K30)	
	Y	Special version, to be specified	

Complete order code: **PEM-EX-**

Note!

- The process connection **J** and the electrical connection **K _ _** are not combinable with other connections.
- The Multi channel signal converter and display unit **COMBA-EX-4K9A [SA57]** is mandatory for the device version **PEM-EX-C*J*K _ _** for pressure equalisation of the pressure transducer.
- The connection cable is not a part of delivery of the transducer and has to be ordered separately
- **Exception:** The PEM-EX-C*J*K _ _ requires no separate connection cable.

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

10	Type of connector	
	G	Hirschmann connector type G4
20	Length of cable	
	—	Length of the connection cable [m], max. 30 m

Complete order code: **VC** -

Pressure measuring ranges:

Code	Measuring range	Overpressure limit	Process connection	Atmospheric pressure balance	Code	Measuring range	Overpressure limit	Process connection	Atmospheric pressure balance
AA	0 ... 40 mbar	-0.3 ... 4 bar	D, F, H, J	✓	CG	0 ... 4 bar	16 bar	A, B, C, E	✓
AB	0 ... 60 mbar	-0.3 ... 4 bar	D, F, H, J	✓	EG	0 ... 4 bar	16 bar	A, B, C, E	×
AC	0 ... 100 mbar	-0.3 ... 4 bar	D, F, H, J	✓	CH	0 ... 4 bar	25 bar	D, F, H	✓
AK	0 ... 100 mbar	-0.3 ... 4 bar	D, F, H, J	×	EH	0 ... 4 bar	25 bar	D, F, H	×
AD	0 ... 160 mbar	-0.6 ... 5 bar	D, F, H, J	✓	CJ	0 ... 6 bar	24 bar	A, B, C, E	✓
AM	0 ... 160 mbar	-0.6 ... 5 bar	D, F, H, J	×	EJ	0 ... 6 bar	24 bar	A, B, C, E	×
AE	0 ... 250 mbar	6 bar	D, F, H, J	✓	CK	0 ... 6 bar	40 bar	D, F, H	✓
AN	0 ... 250 mbar	6 bar	D, F, H, J	×	AT	0 ... 6 bar	40 bar	D, F, H	×
AF	0 ... 400 mbar	1.6 bar	A, B, C	✓	CL	0 ... 10 bar	40 bar	A, B, C, E	✓
EA	0 ... 400 mbar	1.6 bar	A, B, C	×	EK	0 ... 10 bar	40 bar	A, B, C, E	×
AG	0 ... 400 mbar	6 bar	D, F, H, J	✓	DB	0 ... 10 bar	40 bar	D, F, H	✓
AO	0 ... 400 mbar	6 bar	D, F, H, J	×	EL	0 ... 10 bar	40 bar	D, F, H	×
AH	0 ... 600 mbar	2.4 bar	A, B, C	✓	CM	0 ... 16 bar	64 bar	A, B, C, E	×
EB	0 ... 600 mbar	2.4 bar	A, B, C	×	CN	0 ... 16 bar	40 bar	D, F, H	×
AJ	0 ... 600 mbar	10 bar	D, F, H, J	✓	CO	0 ... 25 bar	100 bar	A, B, C, E	×
AP	0 ... 600 mbar	10 bar	D, F, H, J	×	CP	0 ... 25 bar	40 bar	D, F, H	×
CA	0 ... 1 bar	4 bar	A, B, C, E	✓	CR	0 ... 40 bar	160 bar	A, B, C, E	×
EC	0 ... 1 bar	4 bar	A, B, C, E	×	CS	0 ... 40 bar	60 bar	D, F	×
CB	0 ... 1 bar	10 bar	D, F, H, J	✓	CT	0 ... 60 bar	240 bar	A, B, C, E	×
ED	0 ... 1 bar	10 bar	D, F, H, J	×	CU	0 ... 60 bar	105 bar	D, F	×
CC	0 ... 1.6 bar	6.4 bar	A, B, C, E	✓	CV	0 ... 100 bar	400 bar	A, B, C, E	×
EE	0 ... 1.6 bar	6.4 bar	A, B, C, E	×	CW	0 ... 160 bar	600 bar	A, B, C, E	×
CD	0 ... 1.6 bar	18 bar	D, F, H, J	✓	CX	0 ... 250 bar	600 bar	A, B, C, E	×
AR	0 ... 1.6 bar	18 bar	D, F, H, J	×	CY	0 ... 400 bar	600 bar	A, B, C, E	×
CE	0 ... 2.5 bar	10 bar	A, B, C, E	✓	CZ	0 ... 600 bar	800 bar	A, B, C, E	×
EF	0 ... 2.5 bar	10 bar	A, B, C, E	×	GA	-1 ... +1 bar	8 bar	A, B, C, E	✓
CF	0 ... 2.5 bar	18 bar	D, F, H, J	✓	GB	-1 ... +1 bar	10 bar	D, F, H	✓
AS	0 ... 2.5 bar	18 bar	D, F, H, J	×	GC	-1 ... +5 bar	24 bar	A, B, C, E	✓
					GD	-1 ... +5 bar	25 bar	D, F, H	✓

Note!

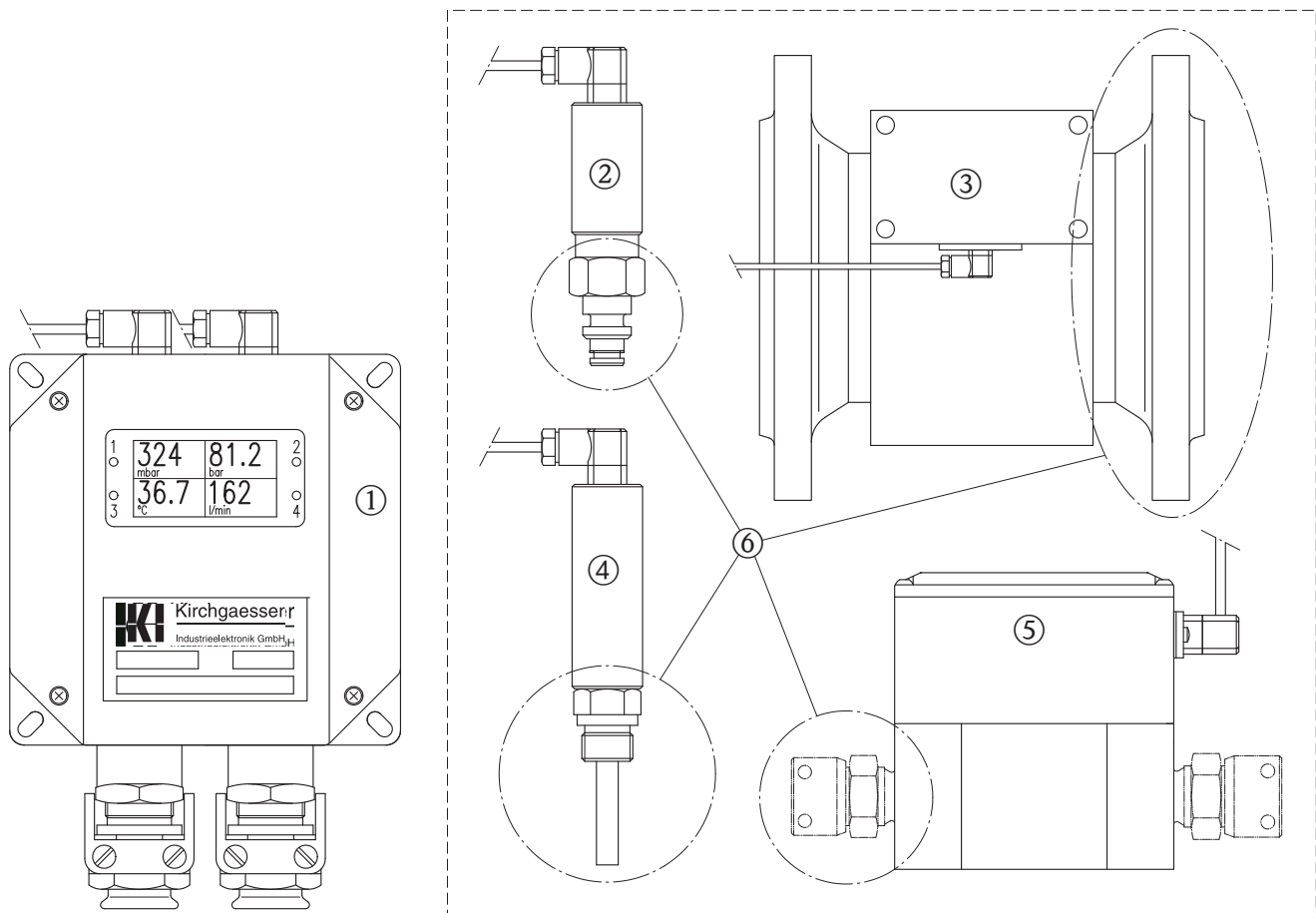
- Other measuring ranges or higher overpressure limits are optionally available!
- Conversion:
 1 mbar = 0.1 kPa
 1 bar = 100 kPa
- Standard measuring ranges of the hydrostatic transducer:
 40 mbar (4 kPa) ... 2.5 bar (250 kPa).
- Atmospheric pressure balance:
 ✓ = with
 × = without

Measuring system:

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

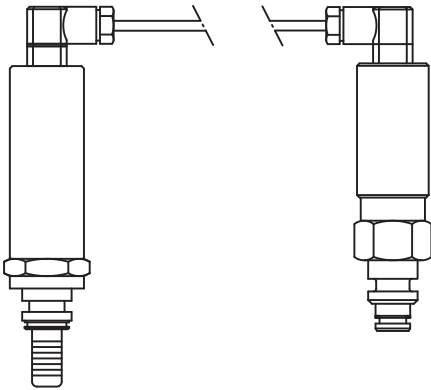
The transducer PEM-EX-C is available with different process connections, please refer to the ordering information for further details.

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



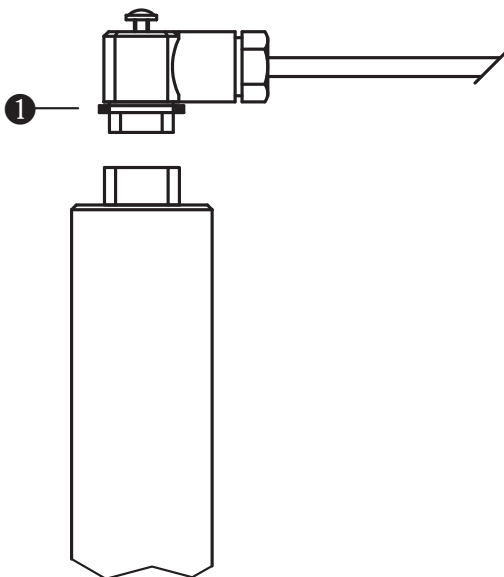
- Any combination of PEM-EX-C ② and/or transducers type TEM-EX-C ④ (temperature), type MID-EX-GC ③ (high flow) and/or type MID-EX-C ⑤ (small flow) can be connected with COMBA-EX ①.
- The individual transducers are available with different process connections ⑥.
- The connection cable type VCG with a maximum length of 30 m is not a part of the package and has to be ordered separately. **Exception:** The PEM-EX-C*J*K __ requires no separate connection cable.

PEM-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. **Exception:** The PEM-EX-C*J*K __ requires no separate connection cable.

Installation:



Warning!

Please take notice of the sealing ❶ of the connector!

Technical data (general):

- Measuring principle:
Ceramic or thin-film sensor
- Measuring uncertainty:
 - Max. $\pm 1\%$ of end value
 - Typ. $\pm 0.5\%$ of end value
- Time constant of mechanical damping:
Approx. 20 ms
- Material
 - Housing: Stainless steel
 - Connector: Plastic
- Weight:
Approx. 0.35 ... 0.5 kg (without flange process connection and fixed connection cable)
- Protection according to EN 60529:
IP 65
- Type of protection according to EN 60079-0:
Ex ia I Ma
- Process connection:
 - G $\frac{1}{4}$,
 - G $\frac{1}{2}$,
 - G1 $\frac{1}{4}$,
 - Socket nipple DN10 (according to DIN 20043)
 - Flange DN40 PN6 (according to EN 1092-1) or
 - Hydrostatic transducer
- Ambient and medium temperature:
 $-20^{\circ}\text{C} \leq T_a/T_p \leq +60^{\circ}\text{C}$

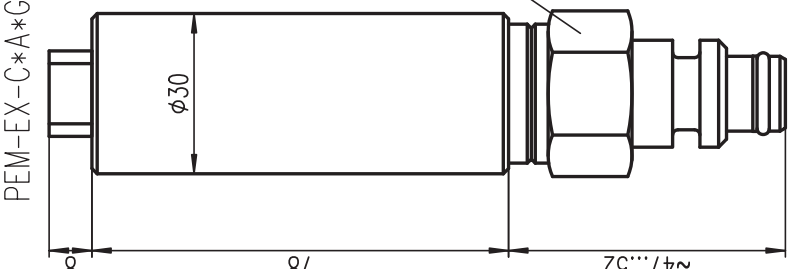
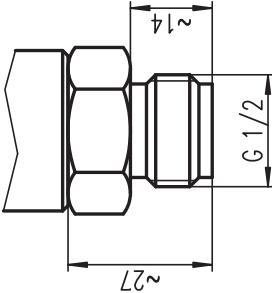
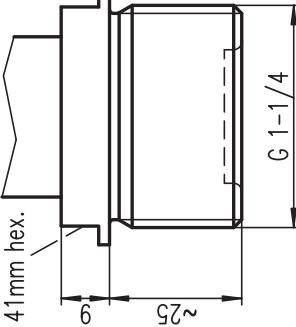
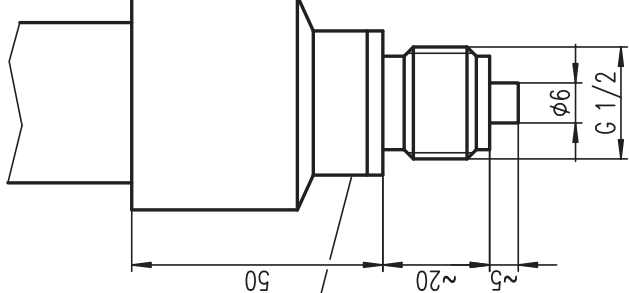
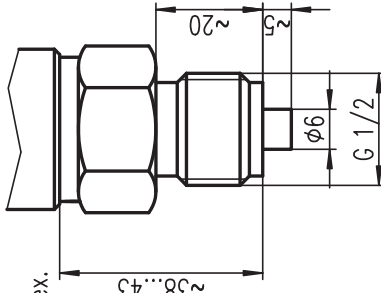
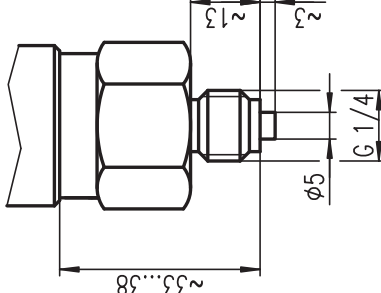
Technical data (electrical):

- Power supply:
Provided by the Kirchgaesser signal converter
- Current consumption:
3 mA
- Output signal:
Serial
- Internal inductances:
 - Negligible or
 - 0.6 $\mu\text{H}/\text{m}$ (only PEM-EX-C*J*K _ _)
- Internal capacitances:
 - Negligible or
 - 160 pF/m (only PEM-EX-C*J*K _ _)

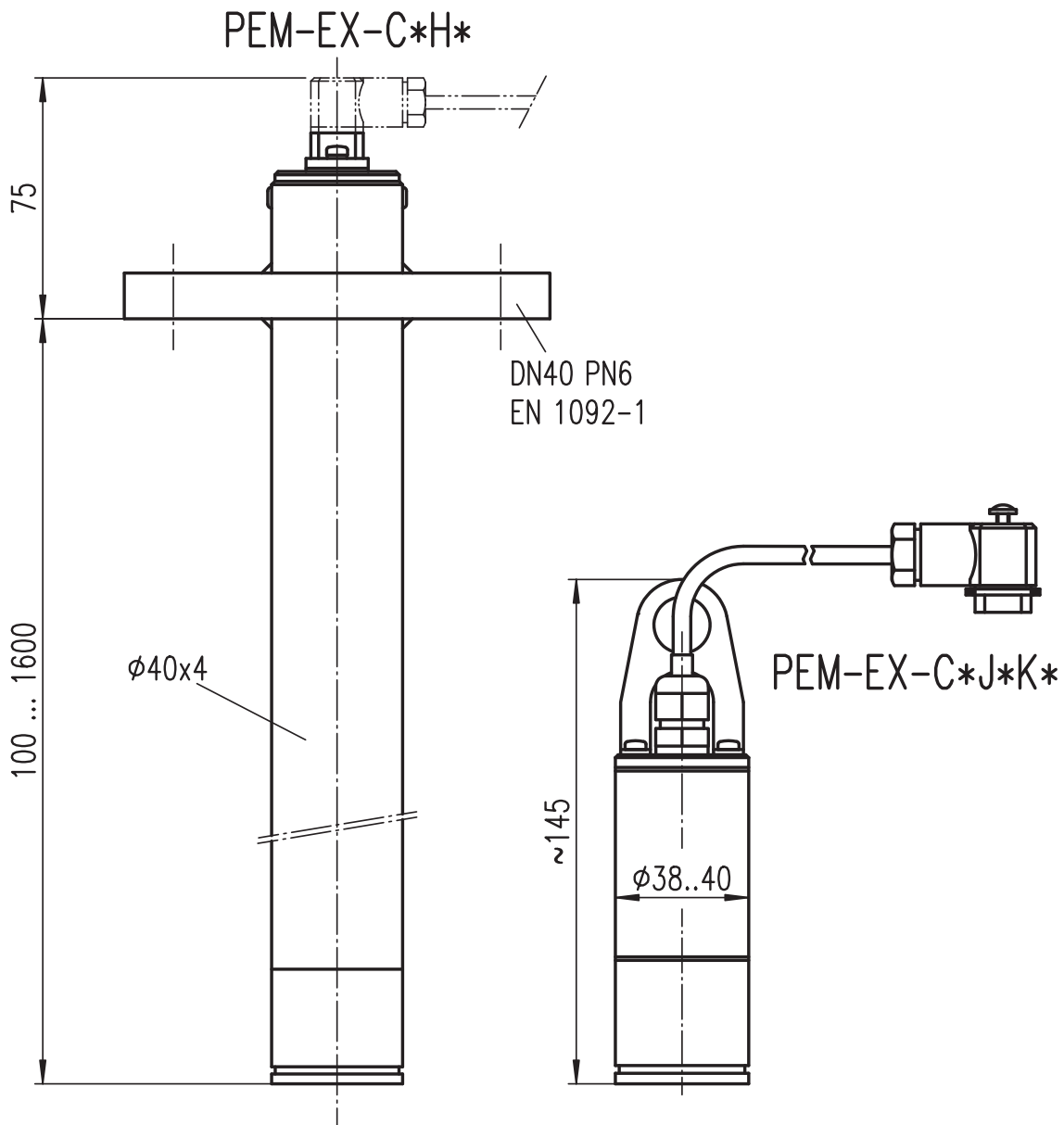
Note!

- The device is approved and certified according to GB3836.1 and GB3836.4 for the use in China mining, the certification numbers are **J2013329** and **J2013327** (COMBA-EX).
- The pressure transducer PEM-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 at our PEM-EX-L (see ka054100en).

Dimension sheets:

PEM-EX-C*A*G			PEM-EX-C*E2G			PEM-EX-C*F2G			PEM-EX-C*D*G		
											
PEM-EX-C*C*G			PEM-EX-C*B*G								
											
						Date		Name			
						Drawn		09.04.08		Kuhrig	
						Checkd.					
						Apprvd.					

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					Date	Name		PEM-EX-C*H* / PEM-EX-C*J*K*		
				Drawn	26.10.11	Lenz				
				Checkd.						
				Apprvd.						
1.3	Added PEM-EX-C*J*K*	29.04.15	Lenz	 Kirchgaesser Industrieelektronik GmbH	2-054000-00-04-M				Sheet 1	
1.2	Text removed	06.11.14	MK						of 1	
1.1	Add engl. language	02.01.12	MK							
Rev.	Changes	Date	Name			Rev. 1.3				