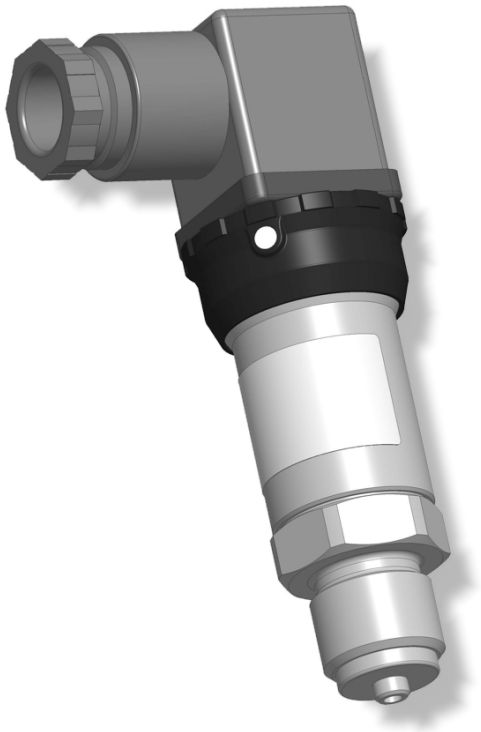
developing solutions

FISCHER MESS- UND REGELTECHNIK

II 3G Ex ec IIC T4 Gc
II 3D Ex tc IIIB T125°C Dc
-10°C ≤ T_{amb} ≤ 60°C

RoHS III COMPLIANT



Data sheet

ME14

Pressure transmitter

46528 • DB_EN_ME14 • Rev. ST4-I • 08/26

1 Product and functional description

1.1 Performance characteristics

Main features

- Robust device design for use in rough environments
- Good precision for challenging measurement tasks
- High variance in process connections
- Optional model either for use in explosive areas Zone 2 or 22
- Silicone-free

Typical applications

- Relative pressure measurement

Areas of application

- Procedural technology
- Process technology
- Environmental technology

1.2 Use as intended

The ME14 is a pressure transmitter with a ceramic measuring cell for measuring positive and negative pressures, and can be used for both absolute and relative pressure measurements.

The pressure transmitter is suitable for use with non-aggressive liquid and gaseous media. Please see the technical data for the respective measuring ranges.

NOTICE! Please contact the manufacturer before using this device with dirty or aggressive media because the media compatibility of the device needs to be checked.

ATEX classification

The pressure transmitter **ME14 ## # ## # # 0 R # # # 0 # #** is suitable as electrical equipment

- for use in areas containing flammable gases, Zone 2
- and in areas containing combustible dust, Zone 22 – dry dust.

The devices are marked with

CE Ex II 3G Ex ec IIC T4 Gc

CE Ex II 3D Ex tc IIIB T125°C Dc

$-10\ °C \leq T_{amb} \leq 60\ °C$

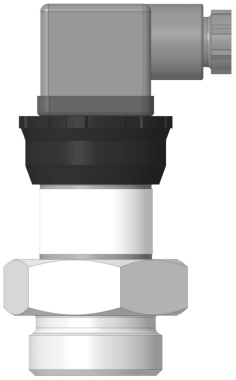
1.3 Product summary

NOTICE! For use in particularly moist areas, all devices are also available in a grouted version.

The following illustrations provide an overview of the different models, process and electrical connection options.

Standard model
Ceramic sensor

up to 100 bar



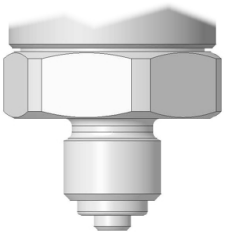
Near flush-mounted
Ceramic sensor

up to 100 bar

Fig. 1: Product summary

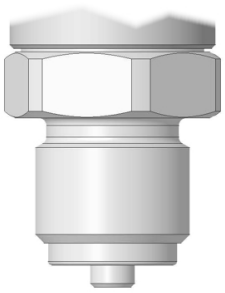
1.3.1 Process connection

Standard



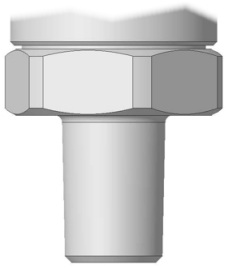
G ¼ B

Code 85



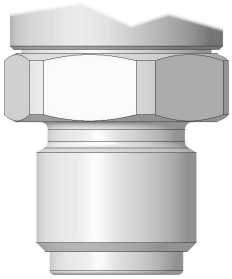
G ½ B

87



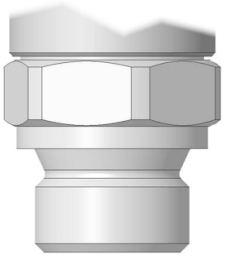
¼-18 NPT

88



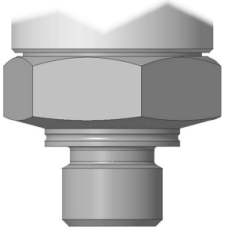
G ½ B
with a 9 mm bore

S8



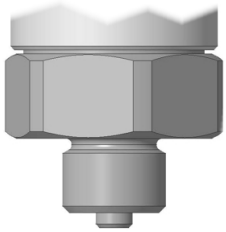
G ½ A
DIN 3852 Form A

Code K1



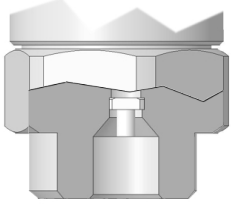
M14 x 1.5
ISO 6149-2

K2



M14 x 1.5
with centring pin

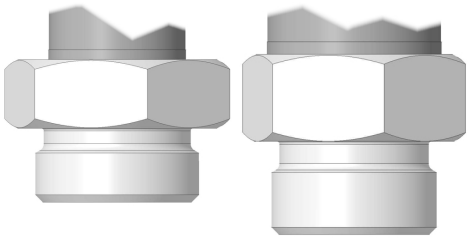
K3



Schrader ®

S1

Near flush-mounted



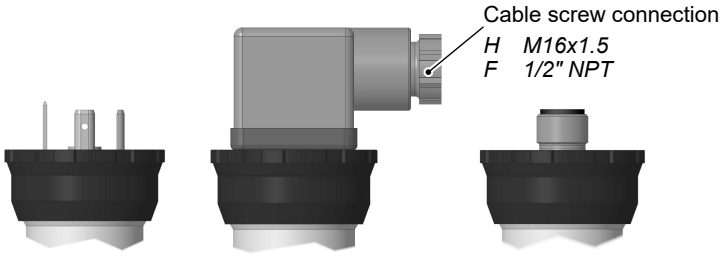
G 1 B **G ¾ B**

Code *A3* *A8*

Fig. 2: Options for the process connection

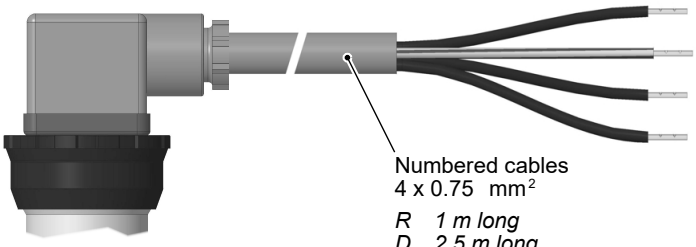
1.3.2 Electrical connection

Plug



without standardised plug **with standardised plug** **M12 plug**

Code *A* *H, F* *M*

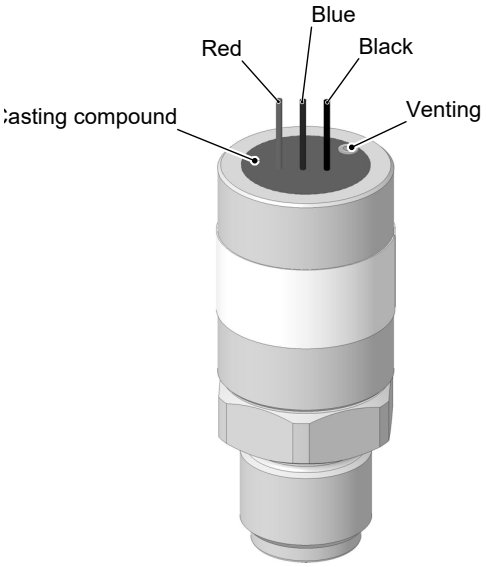


with cable connection

Code *R, T*

Free strands

NOTICE! Only in grouted design. An ATEX model is not possible with this connection variant.



Code *V*

Fig. 3: Electrical connection options

1.4 Function diagram

NOTICE! The functional diagram shown here depicts a 3-wire device with a standardised plug connection and is representative of all versions.

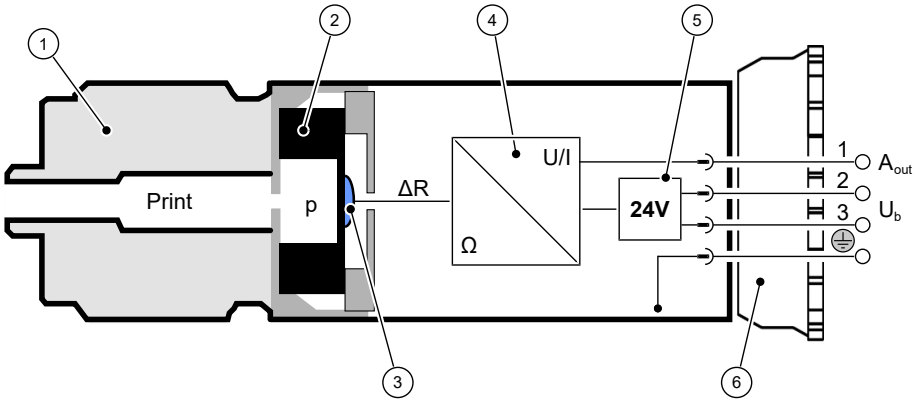


Fig. 4: Functional diagram (3-wire)

1	Process connection	**2**	Sensor element
3	Resistance bridge	**4**	Transmitter electronics
5	Power supply	**6**	Connection plug

1.5 Design and mode of operation

The standard version with a ceramic measuring cell operates on the thick-film strain gauge principle. The pressure being measured acts directly on the membrane, which deforms under the resulting force. This causes a change in the resistance of the applied strain gauge bridge. Electronics integrated into the device convert this bridge signal into an electrical output signal.

2 Technical data

2.1 Generalities

Reference conditions (acc. to IEC 61298-1)		
Temperature	+15 … +25 °C	
Relative humidity	45 … 75%	
Air pressure	86 to 106 kPa	860 to 1060 mbar
Auxiliary energy	24 V DC	
Installation position	User-defined	

General information	
Type designation	ME14
Pressure type	Relative pressure and absolute pressure
Measurement principle	SGS
Media	Non-aggressive liquid and gaseous media

2.2 Input parameters [relative pressure]

Positive measuring ranges [bar]

Measuring range	Pressure safety [bar]		Characteristic curve deviation	
	Overpressure	Bursting pressure	option.	Default
0 … 250 mbar	1	1.5	-	1.0%
0 … 400 mbar	1	1.5	0.5%	1.0%
0 … 0.6 bar	1.5	2.5	-	1.0%
0 … 1.0 bar	3	5	0.5%	1.0%
0 … 1.6 bar	3	5	0.5%	1.0%
0 … 2.5 bar	7.5	15	0.5%	1.0%
0 … 4 bar	7.5	15	0.5%	1.0%
0 … 6 bar	15	30	0.5%	1.0%
0 … 10 bar	30	60	0.5%	1.0%
0 … 16 bar	30	60	0.5%	1.0%
0 … 25 bar	75	150	-	1.0%
0 … 40 bar	75	150	-	1.0%
0 … 60 bar	150	250	-	1.0%
0 … 100 bar	150	250	0.5%	1.0%

Positive measuring ranges [psi]

Measuring range	Pressure safety [bar]		Characteristic curve deviation	
	Overpressure	Bursting pressure	option.	Default
0 … 15 psi	3	5	0.5%	1.0%
0 … 30 psi	7.5	15	0.5%	1.0%
0 … 60 psi	7.5	15	0.5%	1.0%
0 … 100 psi	15	30	0.5%	1.0%
0 … 160 psi	30	60	0.5%	1.0%
0 … 250 psi	30	60	0.5%	1.0%
0 … 500 psi	75	150	-	1.0%
0 … 1000 psi	150	250	-	1.0%
0 … 1500 psi	150	250	0.5%	1.0%

Vacuum measuring ranges [bar]

Measuring range	Pressure safety [bar]		Characteristic curve deviation	
	Overpressure	Bursting pressure	option.	Default
0 … -1 bar	3	5	-	1.0%
-1 … 0 bar	3	5	-	1.0%
-1 … 0.6 bar	3	5	-	1.0%
-1 … 1.0 bar	3	5	-	1.0%
-1 … 1.5 bar	7.5	15	-	1.0%
-1 … 3 bar	7.5	15	-	1.0%
-1 … 5 bar	15	30	-	1.0%
-1 … 9 bar	30	60	-	1.0%
-1 … 15 bar	30	60	-	1.0%
-1 … 24 bar	75	150	-	1.0%

Special measuring ranges

Measuring range	Pressure safety [bar]		Characteristic curve deviation	
	Overpressure	Bursting pressure	option.	Default
-30 in Hg vac … +15 psi	3	5	-	1.0%
-30 in Hg vac … +100 psi	15	30	-	1.0%

2.3 Input parameters [absolute pressure]

Positive measuring ranges [bar]

Measuring range	Pressure safety [bar]		Characteristic curve deviation	
	Overpressure	Bursting pressure	option.	Default
0 … 1.0 bar	3	5	0.5%	1.0%
0 … 1.6 bar	3	5	0.5%	1.0%
0 … 2.5 bar	7.5	15	0.5%	1.0%
0 … 4 bar	7.5	15	0.5%	1.0%
0 … 6 bar	15	30	0.5%	1.0%
0 … 10 bar	30	60	0.5%	1.0%

2.4 Output parameters

Voltage output		3-wire
Output range		0–10 V DC
Limit		approx. 10.5 V DC
Load impedance	15 V ≤ U_b < 20 V 20 V ≤ U_b ≤ 30 V	≥ 5 kΩ ≥ 2 kΩ

Current output	2-wire	3-wire
Output range	4–20 mA	0–20 mA 4–20 mA
Limit	26 mA	23 mA
Load impedance	(U_b − 6 V) / 0.02 A	(U_b − 10 V) / 0.02 A + 300 Ω

Step response [T90]	
Typ.	50 ms
Max.	100 ms

2.5 Measurement accuracy

Non-linearity	Maximum	0.5 % FS
	Typical	0.2 % FS
Hysteresis	Maximum	0.5 % FS
	Typical	0.2 % FS
Characteristic curve deviation [2]	Standard	1.0 %
	Option [1]	0.5 %
Temperature drift	Zero point	0.07 % FS/K
	Measuring range	0.05 % FS/K

[1] only possible for certain measuring ranges
[2] incl. non-linearity and hysteresis

2.6 Auxiliary energy

3-conductor current output	Default	ATEX
Rated voltage	24 V AC/DC	24 V AC/DC
Permitted op. voltage	15 ... 30 V AC/DC	15 … 28 V AC 15 … 30 V DC
Absorbed power	≤ 1,5 W (VA)	≤ 1,5 W (VA)

3-conductor voltage output	Default	ATEX
Rated voltage	24 V AC/DC	24 V AC/DC
Permitted op. voltage	15 ... 30 V AC/DC	15 … 28 V AC 15 … 30 V DC
Absorbed power	≤ 1 W (VA)	≤ 1 W (VA)

2-wire current output	Default	ATEX
Rated voltage	24 V DC	24 V DC
Permitted op. voltage	6 ... 30 V DC	6 ... 30 V DC
Absorbed power	≤ 1 W	≤ 1 W

2.7 Application conditions

	Standard	ATEX
Ambient temperature range	−10–70 °C	−10–60 °C
Storage temperature range	−20–70 °C	−20–70 °C
Medium temperature range	−10–85 °C	−10–60 °C
ATEX	EN IEC 60079-0:2018	
	Corrigendum: EN IEC 60079-0:2018/A11:2024 EN IEC 60079-0:2018/AC:2020-02	
	EN 60079-7:2015	
	Corrigendum: EN IEC 60079-7:2015/A1:2018 EN 60079-7:2015/A11:2024	
	EN IEC 60079-31:2024	
EMC	EN IEC 61326-1:2021	
	EN IEC 61326-2-3:2021	
RoHS	EN IEC 63000:2018	
Degree of protection	IP65 in accordance with EN 60529	
Materials of parts in contact with surroundings		
Enclosure	CrNi steel 1.4305	
Device plug screw cap	Polypropylene, black	
Device plug	Polyamide, brass, tin	
Cable socket	Polyamide, polycarbonate, brass, tin	
Materials of the parts that come into contact with the measuring medium		
Process connection	CrNi steel 1.4404	
Sensor membrane	Ceramic Al_2O_3	
Seal	FKM	Fluorinated rubber, Viton®
		Compliant with the following for the “Standard” measuring system:

		Regulation (EC) No 1935/2004, Article 3 FDA 21 CFR § 177.2600(a)–(f) 3-A Sanitary No. 18-03, Class I
	CR	Chloroprene rubber, Neoprene®
	EPDM	Ethylene propylene diene rubber
	H-NBR	Hydrogenated acrylonitrile butadiene rubber
	FFPM	Perfluorinated rubber, Kalrez®

2.8 Construction design

2.8.1 Standard version

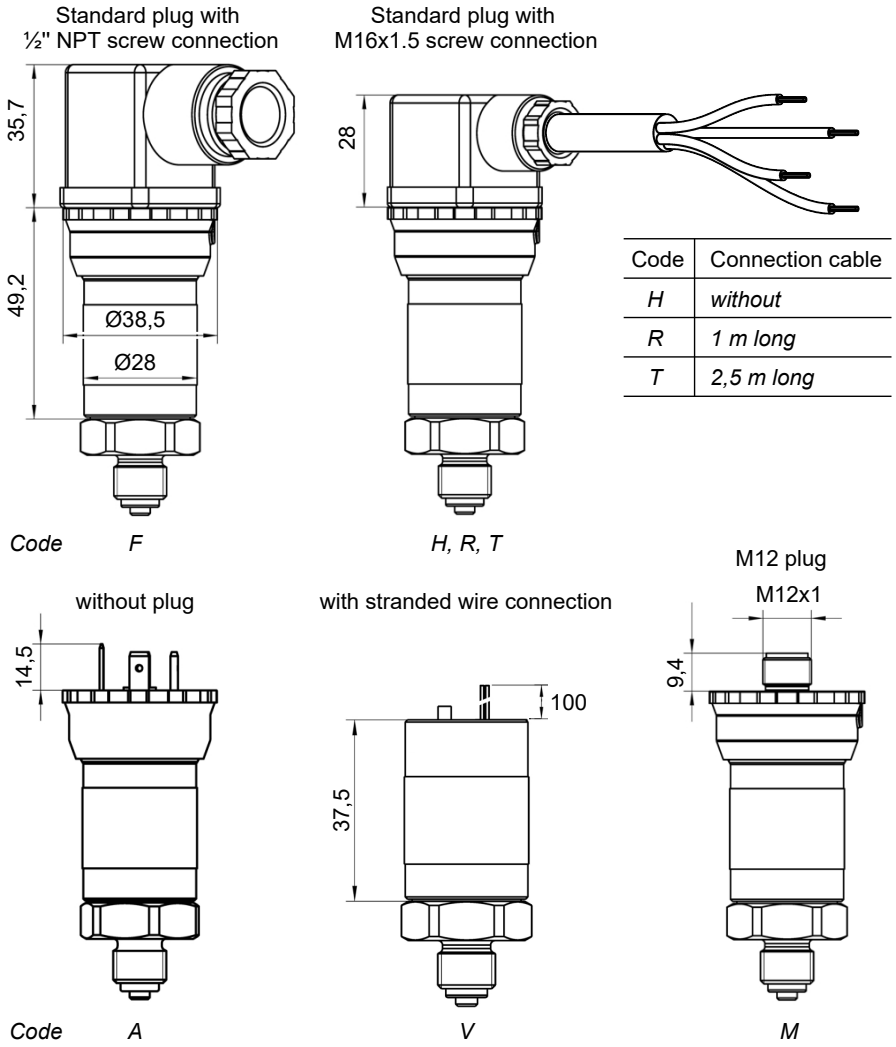


Fig. 5: Dimensional drawing with electrical connection options

2.8.2 Near flush-mounted front sensor

Please note! All electrical connection options (see above) are available.

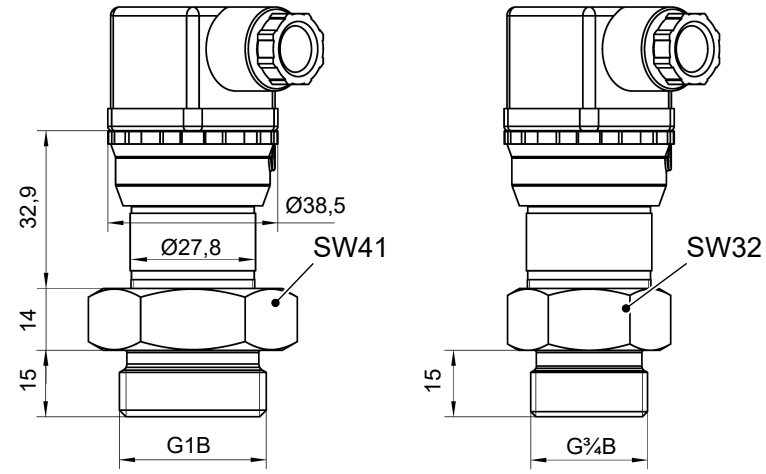


Fig. 6: Dimensional drawing 'almost front-flush sensor'

2.8.3 Process connections

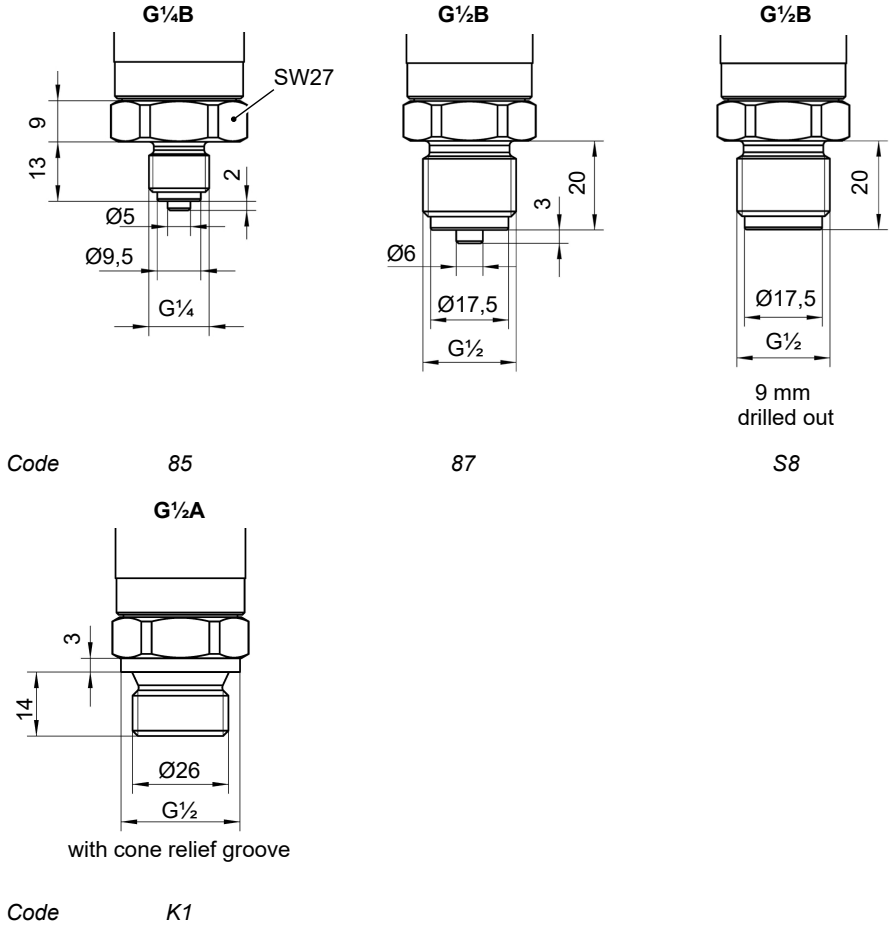


Fig. 7: Process connections with imperial thread

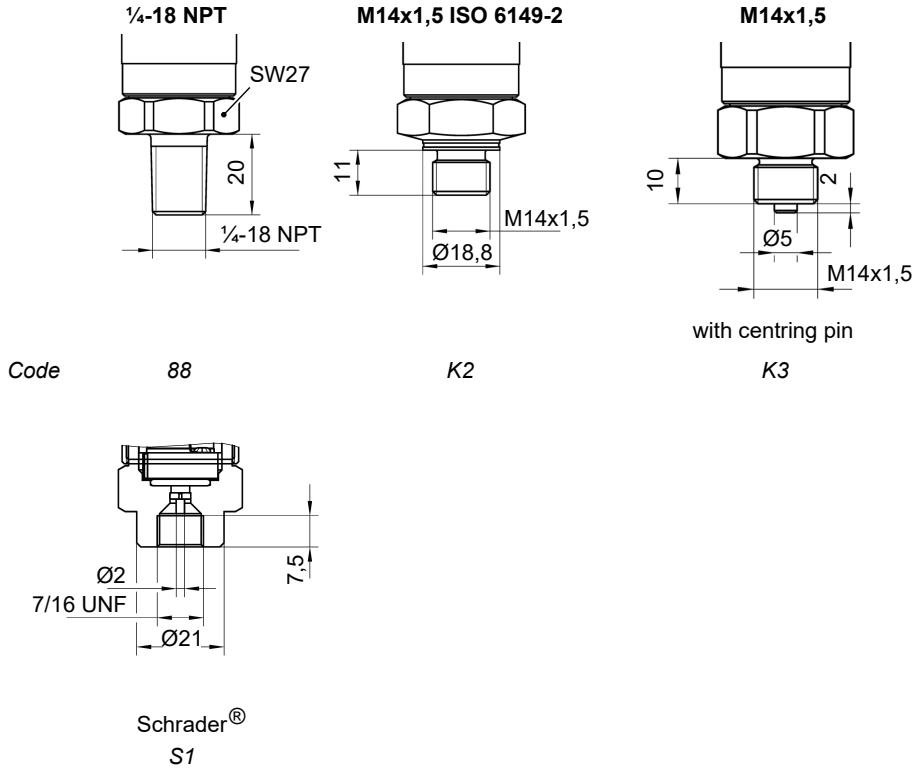
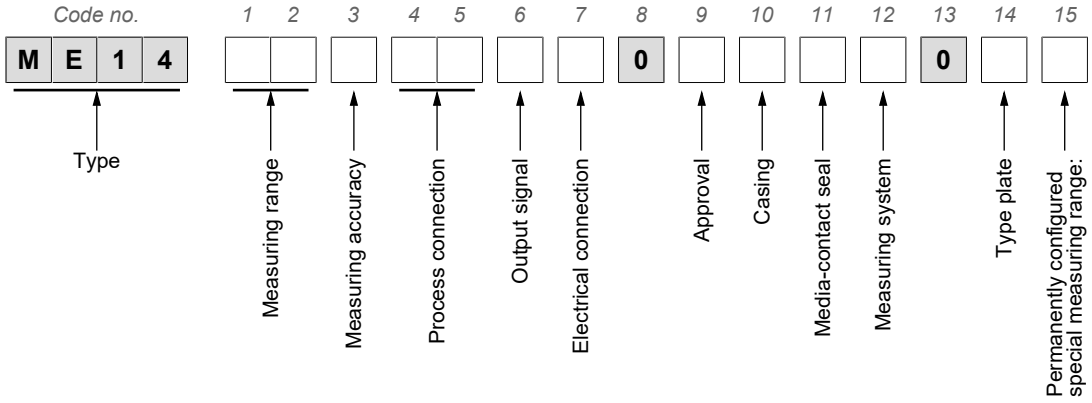


Fig. 8: Process connections with imperial and metric thread

3 Order codes



Relative pressure ranges

Measuring range: [mbar / bar]

[1,2]	*(Code no.)*
82	0–250 mbar
83	0–400 mbar
01	0–0.6 bar
02	0–1.0 bar
03	0–1.6 bar
04	0–2.5 bar
05	0–4 bar
06	0–6 bar
07	0–10 bar
08	0–16 bar
09	0–25 bar
10	0–40 bar
11	0–60 bar
12	0–100 bar
31	−1–0 bar
32	−1–0.6 bar
27	−1–1.0 bar
33	−1–1.5 bar
34	−1–3 bar
35	−1–5 bar
36	−1–9 bar
37	−1–15 bar
38	−1–24 bar
39	0–−1 bar

Measuring range: [psi]

[1,2]	*(Code no.)*
H4	0–15 psi
H5	0–30 psi
H6	0–60 psi
H7	0–100 psi
H9	0–160 psi
Q1	0–250 psi
P9	0–500 psi
P3	0–1000 psi
P4	0–1500 psi

Measuring range: [in Hg vac … psi]

[1,2]	*(Code no.)*
S2	−30 in Hg vac–15 psi
S5	−30 in Hg vac–100 psi

For S2 and S5, the flush-mounted process connections A3 and A8 are not available.

Absolute pressure ranges

Measuring range: [bar]

[1,2]	*(Code no.)*
A2	0–1.0 bar
A3	0–1.6 bar
A4	0–2.5 bar
A5	0–4 bar
A6	0–6 bar
A7	0–10 bar

Measuring accuracy:

[3]	*(Code no.)*
M	Characteristic curve deviation 1.0%
0	Characteristic curve deviation 0.5% (special measuring ranges available on request)

Process connection:

[4,5]	*(Code no.)*
85	Connecting pin with male thread G ¼ B
87	Connecting pin with male thread G ½ B
88	Connecting pin with male thread ¼-18 NPT EXT
A3	G 1 B with a near-flush pressure sensor
A8	G ¾ B with a near-flush pressure sensor
S1	Connection for Schrader® fitting
S8	Connecting pin with G ½ B male thread, internally bored to 9 mm
K1	Connecting pin with male thread G ½ A with taper undercut
K2	Connecting pin with male thread M14 x 1.5 ISO 6149-2
K3	Connecting pin with male thread M14 x 1.5 with centring pin

Output signal:

[6]	*(Code no.)*	Auxiliary energy	Type of connection
A	0–20 mA	24 V AC/DC	3-wire
B	4–20 mA	24 V DC	2-wire
C	0–10 V	24 V AC/DC	3-wire
P	4–20 mA	24 V AC/DC	3-wire

Electrical connection:

[7]	*(Code no.)*	
A	4-pin plug connection without device socket	
H	4-pin plug connection with device socket (M16*1.5)	
F	4-pin plug connection with device socket (½″ NPT)	
R	4-pin plug connection with device socket and 1 m connection cable	
T	4-pin plug connection with device socket and 2.5 m connection cable	
V	Connection with flying leads	only with the following restrictions Approval [9] = 0 (Standard) Enclosure version [10] = V (encapsulated, IP65)
M	M12 plug connection, 4-pin	(5-pin for ATEX)

Approval:

[9]	*(Code no.)*
0	Standard
R	ATEX: Zones 2 and 22

Enclosure version:

[10]	*(Code no.)*	
0	Standard	IP65
V	Encapsulated design	IP65

Seal in contact with the medium:

[11]	*(Code no.)*		
V	FKM	Viton® (fluororubber)	Standard
C	CR	Neoprene, chloroprene rubber	
E	EPDM	Ethylene propylene diene rubber	
H	H-NBR	Hydrogenated acrylonitrile butadiene rubber	
K	FFPM	Kalrez® (perfluorinated rubber)	

Measuring system:

[12]	*(Code no.)*
0	Standard
3	Measuring system suitable for O_2 measurements (only with VITON® seal)

Type plate:

[14]	*(Code no.)*	
0	FISCHER	with FISCHER operating manual
1	Customer-specific	with neutral operating manual
2	Customer-specific	without operating manual

permanently configured special measuring range:

[15]	*(Code no.)*
0	Without configuration
1	With configuration

3.1 Accessories

Order No.	Designation	No. of pins	Length
06401993	PUR cable with M12-coupling	4-pin	2 m
06401994	PUR cable with M12-coupling	4-pin	5 m
06401563	PUR cable with M12-coupling	4-pin	7 m
06401572	PUR cable with M12-coupling	4-pin	10 m
06401566	PUR cable with M12-coupling	4-pin	15 m

Order No.	Designation	No. of pins	Length
06401995	PUR cable with M12-coupling	5-pin	2 m
06401996	PUR cable with M12-coupling	5-pin	5 m
06401564	PUR cable with M12-coupling	5-pin	7 m
06401573	PUR cable with M12-coupling	5-pin	10 m
06401567	PUR cable with M12-coupling	5-pin	15 m

MZ1###	Siphons
MZ400#	Capillary throttle coil
MZ410#	Adjustable damping throttle
MZ5###	Pressure-gauge shut-off valve in accordance with DIN 16270/16271
MZ6###	Pressure-gauge shut-off valve in accordance with DIN 16271
09002385	Deflagration volume protector

The data sheet for the MZ## accessories is available on our website at www.fischermesstechnik.de or on request.

3.2 Information about the document

This document contains all technical data about the device. Great care was taken when compiling the texts and illustrations. nevertheless, errors cannot be ruled out.

Subject to technical amendments.

Notes

Notes

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