



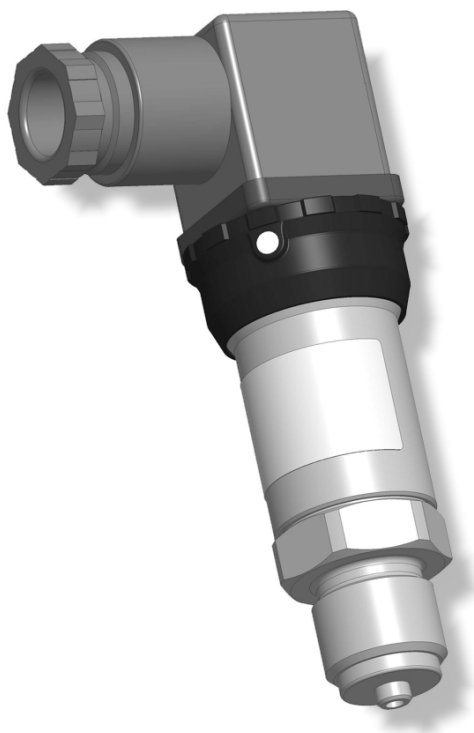
II 3G Ex ec IIC T4 Gc

II 3D Ex tc IIIB T125°C Dc

$-10^{\circ}\text{C} \leq T_{\text{amb}} \leq 60^{\circ}\text{C}$



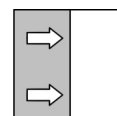
RoHS III
COMPLIANT



Data sheet

ME14

Pressure transmitter



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 over-pressure and under-pressure measurements and can be used for 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 unit with dirty or aggressive media because the media compatibility of the unit needs to be checked.

ATEX classification

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

- either for use in areas with flammable gases, Zone 2
- or in areas with flammable dust, Zone 22 – dry dusts.

The devices are marked with

CE  II 3G Ex ec IIC T4 Gc

CE  II 3D Ex tc IIIB T125°C Dc

$-10\text{ °C} \leq T_{\text{amb}} \leq 60\text{ °C}$



1.3 Product summary

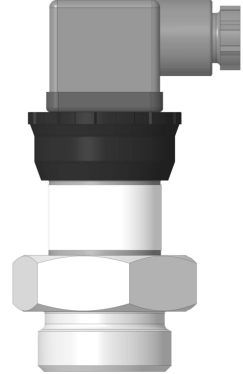
NOTICE! For use in particularly moist areas, all devices are also available in a grouted version.

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



**Standard model
Ceramic sensor**

up to 100 bar



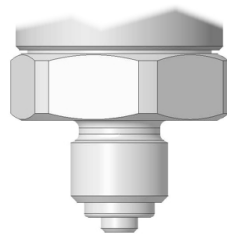
**Near flush-mounted
Ceramic sensor**

up to 100 bar

Fig. 1: Product summary

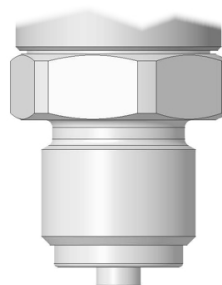
1.3.1 Process connection

Standard



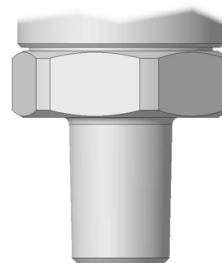
G 1/4 B

Code 85



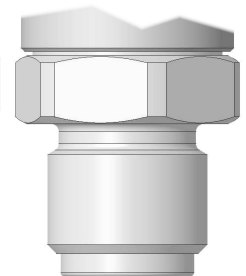
G 1/2 B

87

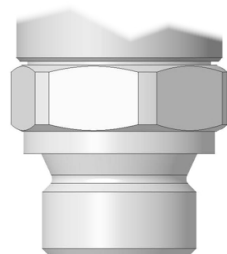


1/4 - 18 NPT

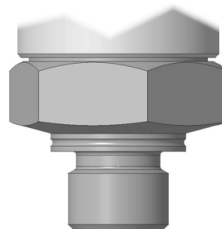
88



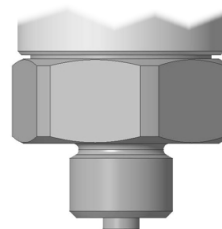
**G 1/2 B
with 9 mm drill hole
S8**



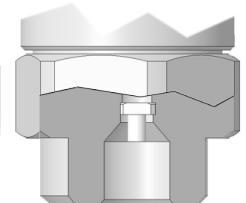
**G 1/2 A
DIN 3852 Form A
Code K1**



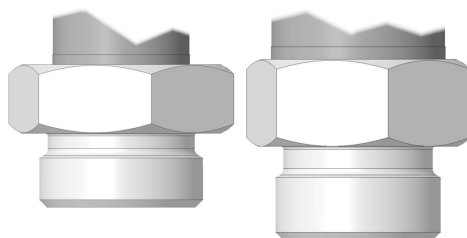
**M14 x 1.5
ISO 6149-2
K2**



**M14 x 1.5
with centring pin
K3**



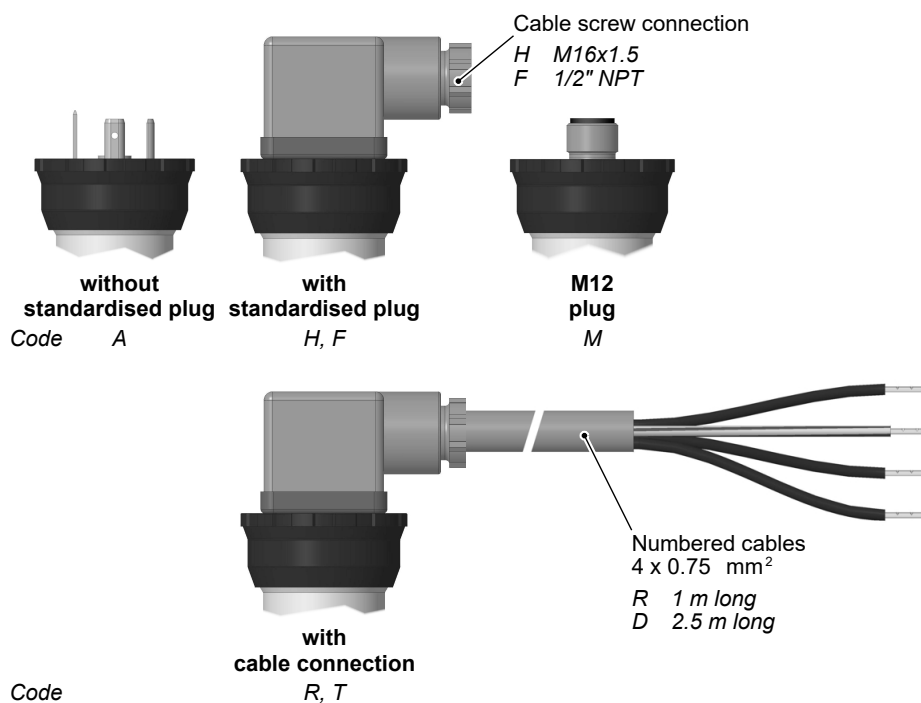
**Schrader®
S1**

Near flush-mounted**G 1 B****G 3/4 B**

Code A3

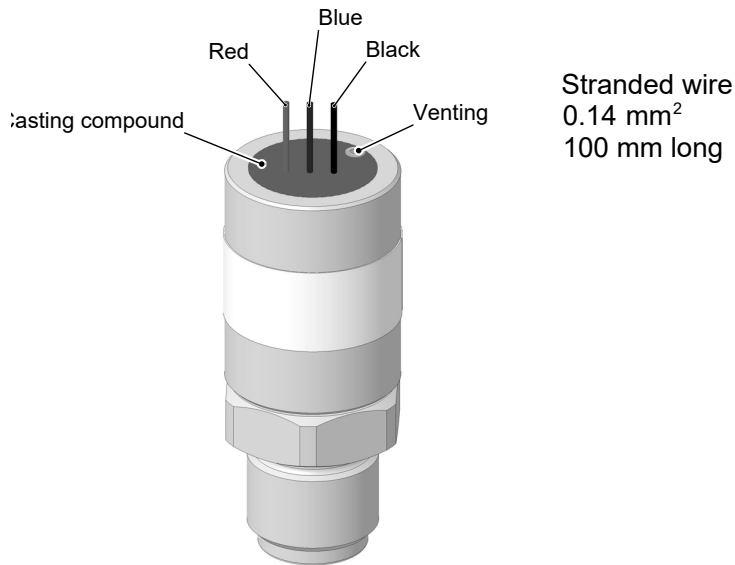
A8

Fig. 2: Options for the process connection

1.3.2 Electrical connection**Plug**

Free strands

NOTICE! An ATEX model is not possible with this connection variant.



Code

V

Fig. 3: Electrical connection options

1.4 Function diagram

NOTICE! This illustration shows a functional diagram of a 3-wire with standardised plug connection as an example for all models.

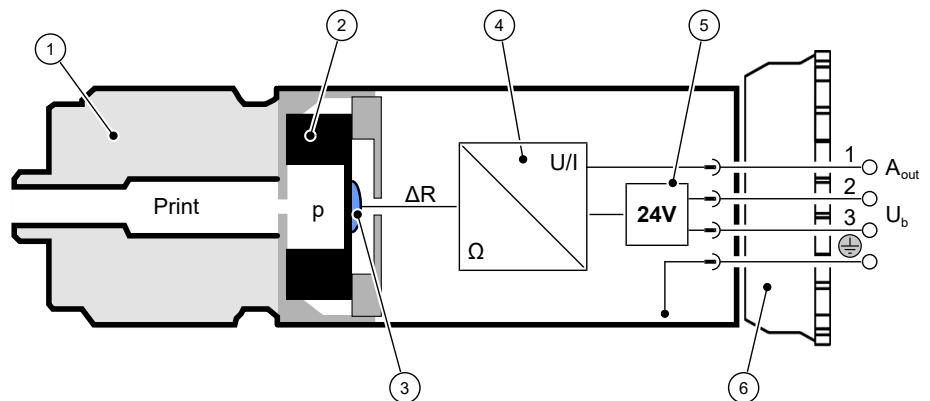


Fig. 4: Functional diagram (3-wire)

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

1.5 Design and mode of operation

The standard model with ceramic measuring cell works according to the thick layer technology DMS principle. The measured pressure acts directly onto the membrane, which deforms when under pressure. This changes the resistance of the attached DMS bridge. Electronics integrated into the device convert this bridge signal into an electronic 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	
Measurement principle	SGS	
Media	Non-aggressive liquid and gaseous media	

2.2 Input variables

Positive measuring ranges [bar]

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

2.3 Output parameters

Voltage output		3-conductor
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-conductor	3-conductor
Output range	4 ... 20 mA	0 to 20 mA 4 to 20 mA
Limit	26 mA	23 mA
Load impedance	(U _b -6V)/0.02A	(U _b -10V)/0.02A + 300Ω

2.4 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

2.5 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	$\leq 1,5 \text{ W (VA)}$	$\leq 1,5 \text{ W (VA)}$
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	$\leq 1 \text{ W (VA)}$	$\leq 1 \text{ W (VA)}$
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	$\leq 1 \text{ W}$	$\leq 1 \text{ W}$

2.6 Application conditions

	Default	ATEX
Ambient temperature range	-10 °C ... +70 °C	-10 °C ... +60 °C
Storage temperature range	-20 °C ... +70 °C	-20 °C ... +70 °C
Medium temperature range	-10 °C ... +85 °C	-10 °C ... +60 °C
ATEX	EN IEC 60079-0:2018 Corrigendum 1: EN IEC 60079-0:2018/AC:2020-02 EN IEC 60079-7 :2015/A1:2018 EN 60079-31:2014	
EMC	EN IEC 61326-1:2021 EN IEC 61326-2-3:2021	
RoHS	EN IEC 63000:2018	
Type of protection	IP 65 as per EN 60529	
Materials of parts in contact with surroundings		
Casing	CrNi Steel 1.4305	
Device plug screw lid	Polypropylene, black	
Device plug	Polyamide, brass, zinc	
Cable socket	Polyamide, polycarbonate, brass, zinc	
Materials of the parts that come into contact with the measuring medium		
Process connection	CrNi Steel 1.4404	
Sensor membrane	Ceramic Al ₂ O ₃	
Seal	FKM	Fluorinated rubber, Viton®
(acc. to model)	CR	Chloroprene rubber, Neoprene®
	EPDM	Ethylene propylene diene rubber
	H-NBR	Hydrogenated acrylonitrile butadiene rubber
	FFPM	Perfluorinated rubber, Kalrez®

2.7 Construction design

2.7.1 Standard version

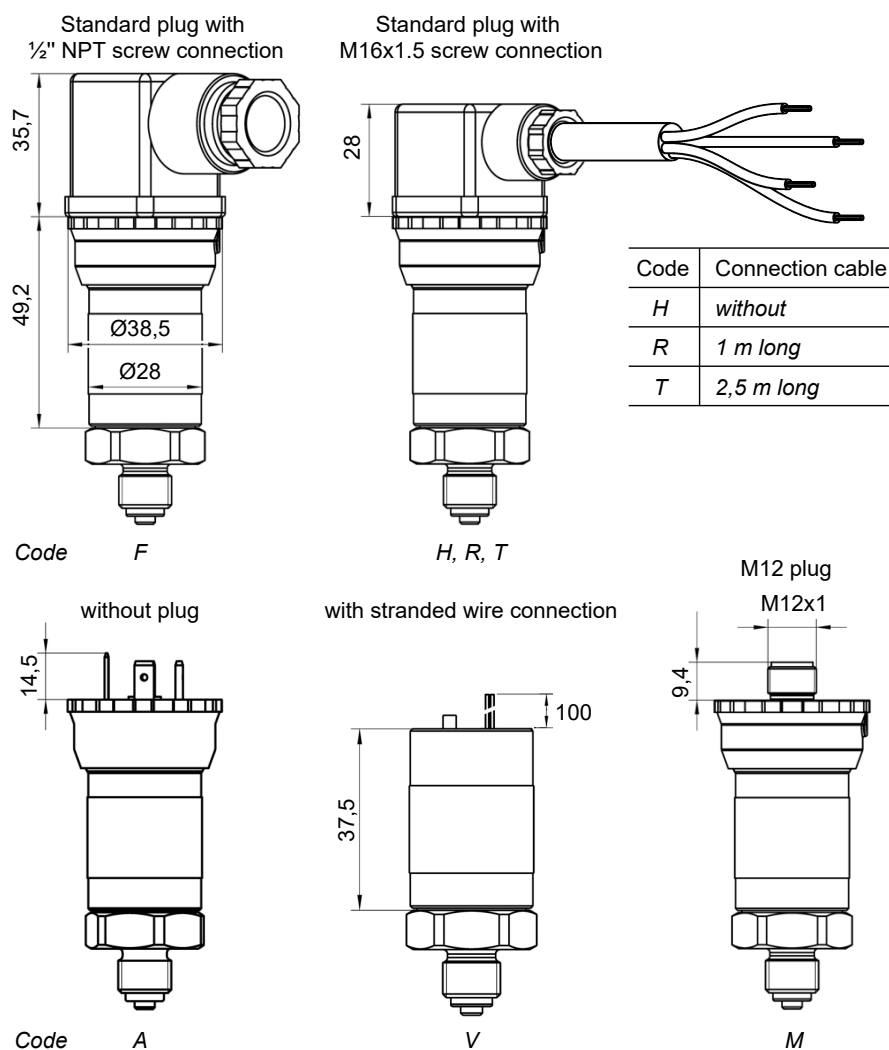


Fig. 5: Dimensional drawing with electrical connection options

2.7.2 Near flush-mounted front sensor

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

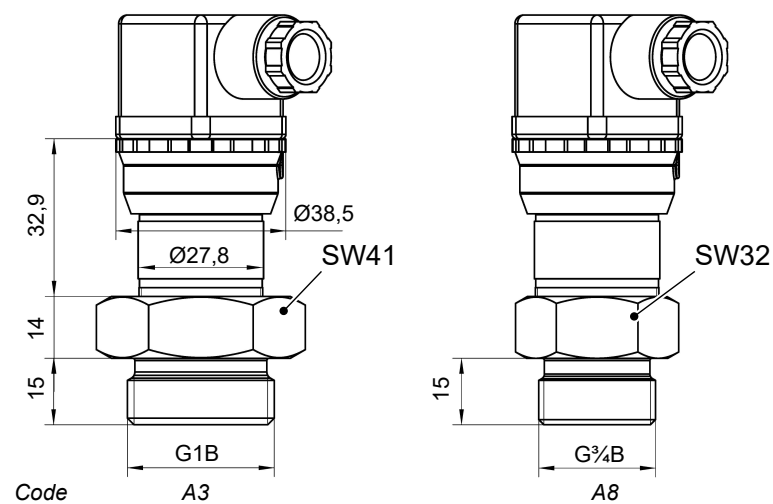


Fig. 6: Dimensional drawing 'almost front-flush sensor'

2.7.3 Process connections

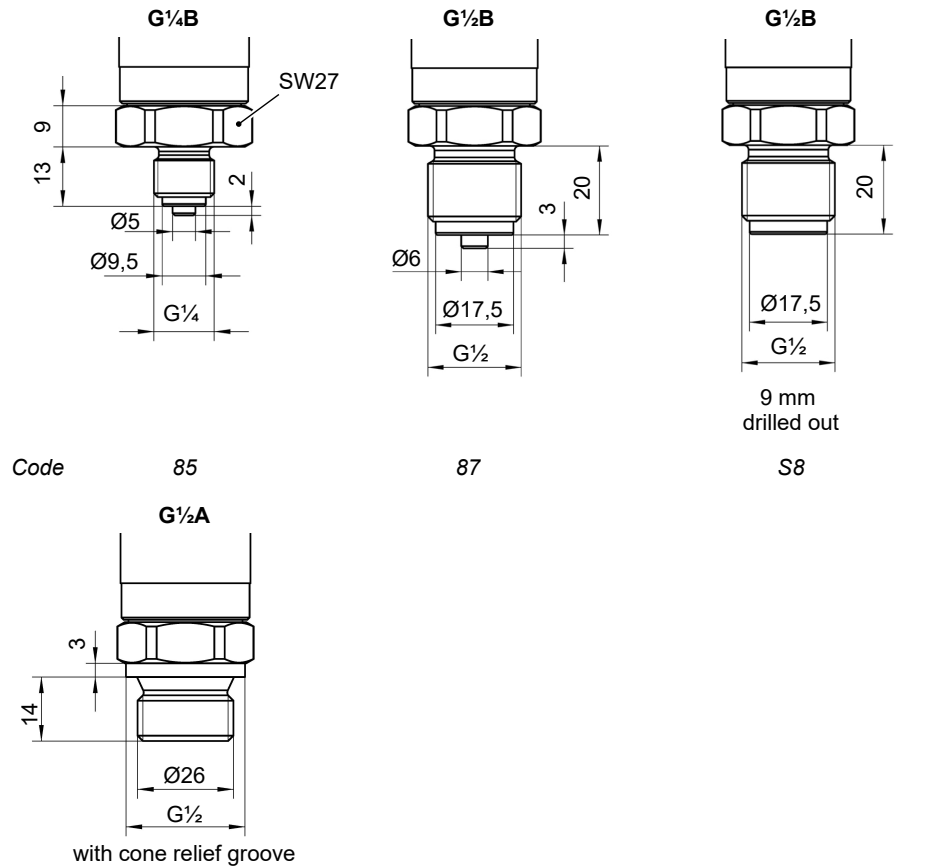


Fig. 7: Process connections with imperial thread

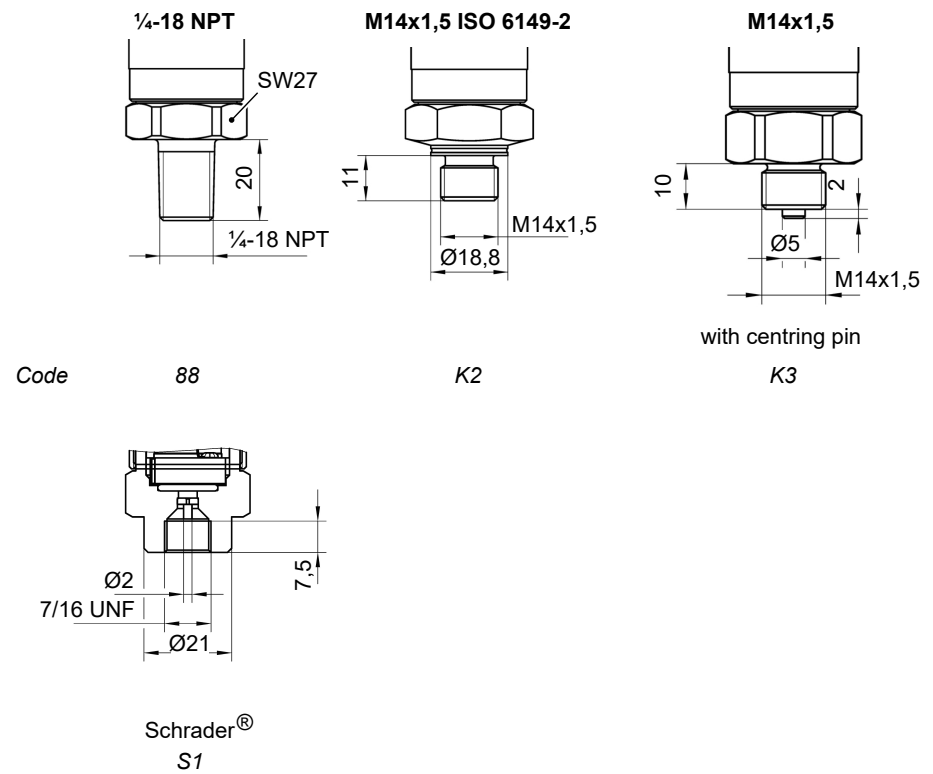
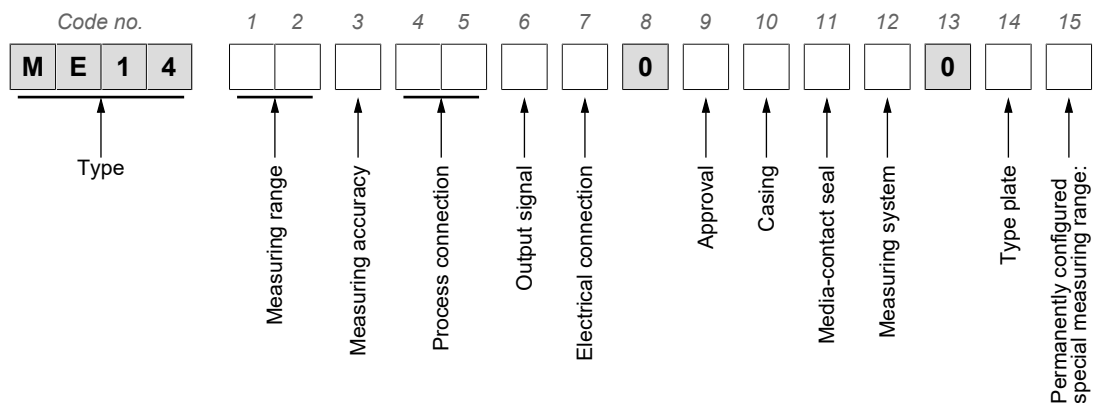


Fig. 8: Process connections with imperial and metric thread

3 Order codes



Measuring range: [mbar]

[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: [special measuring ranges]

[1.2]	(Code no.)
S2	-30 in Hg vac ... +15 psi no front-flush process connection A3, A8
S5	-30 in Hg vac ... +100 psi possible

Measuring accuracy:

[3]	(Code no.)
M	Characteristic curve deviation relative pressure 1.0%
0	Characteristic curve deviation relative pressure 0.5% (special measuring ranges 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 near flush-mounted front pressure sensor
A8	G ¾ B with near flush-mounted front pressure sensor
S1	Connection for the Schrader® screw connection
S8	Connecting pin with male thread G ½ B interior 9 mm drilled
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-conductor
B	4 ... 20 mA	24 V DC	2-conductor
C	0 ... 10 V	24 V AC/DC	3-conductor
P	4 ... 20 mA	24 V AC/DC	3-conductor

Electrical connection:

[7]	(Code no.)
A	4-pin plug connection without device outlet
H	4-pin plug connection with device outlet (M16*1.5)
F	4-pin plug connection with device outlet (½" NPT)
R	4-pin plug connection with device outlet and 1 m connection cable
D	4-pin plug connection with device outlet and 2.5 m connection cable
V	Connect with free strands only with the following restrictions Approval [9] = 0 (default) housing model [10] = V (grouted, IP65)
M	M12 plug connection, 4-pin (5-pin with ATEX)

Approval:

[9]	(Code no.)
0	Default
R	ATEX Zone 2 and Zone 22

Casing:

[10]	(Code no.)
0	Default IP 65
V	Grouted design IP 65

Media contact seal:

[11]	(Code no.)
V	FKM Viton® (fluororubber) Default
C	CR Neoprene, chloroprene rubber
E	EPDM Ethylene propylene diene rubber
H	H-NBR Hydrogenated acrylonitrile butadiene rubber -25°C ... +100 °C
K	FFPM Kalrez® (perfluorinated rubber)

Measuring system:

[12]	(Code no.)
0	Default
3	System suitable for measuring O ₂ (only with VITON® seal)

Type plate:

[14]	(Code no.)
0	FISCHER
1	Customer-specific

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#	Settable damping reactor		
MZ5###	Manometer shut-off valve acc. to DIN 16270/16271		
MZ6###	Manometer shut-off valve acc. to DIN 16272		
09002385	Deflagration volume protector		

A data sheet is available on our website 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.



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