



II 3D Ex tc IIIB T125°C Dc

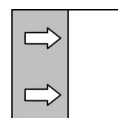


Data sheet

ME01 ... S

Digital manometer
with remote transmission

for explosion-protected areas
Dust explosion protection Zone 22



1 Product and functional description

1.1 Performance characteristics

Typical applications

- Procedural technology
- Process technology
- Environmental technology
- Mechanical and plant engineering

Main features

- Relative pressure or absolute pressure measurement
- large vibration resistance
- highly precise
- highly overpressure-proof
- LED measuring data display
- Analogue output for remote transmission

1.2 Product summary

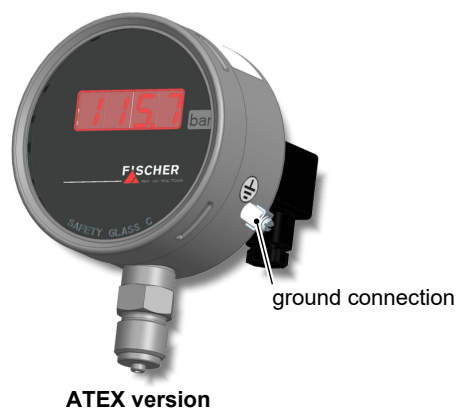


Fig. 1: Device versions

1.3 Intended use

The ME01 is a pressure transmitter with a ceramic measuring cell and is suitable for measuring over-pressure and under-pressure for non-aggressive liquid and gaseous media.

Depending on the model, the device can be used to measure relative pressure or absolute pressure.

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

The device may only be used for the purpose stipulated by the manufacturer. The manufacturer will not be liable for damage arising from incorrect or improper use.

1.3.1 Explosive atmosphere classification

Danger due to dry dusts

The ME01 ## # 87 # HL S#### digital pressure gauges are suitable for use as "electrical equipment for use in potentially explosive atmospheres" Zone 22 – dry dusts.

Designation in accordance with Directive 2014/34/EU:

CE Ex II 3D Ex tc IIIB T125°C Dc

1.4 Function diagram

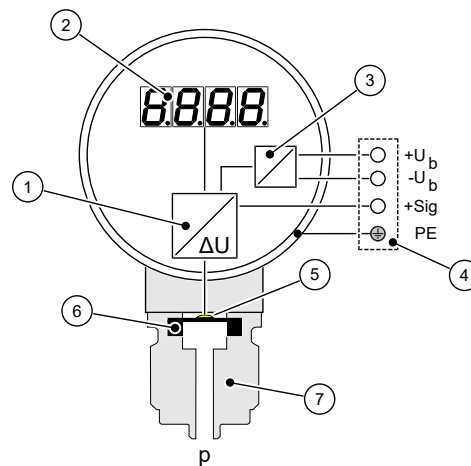


Fig. 2: Function diagram

1	Measurement converter	2	Measuring data display
3	Auxiliary energy	4	Device plug
5	Resistance bridge	6	Ceramic measuring cell
7	Connecting shanks		

1.5 Design and mode of operation

A ceramic measuring cell is used as a pressure sensor. The high resistance of the used ceramic materials also allows use with aggressive media.

There is a resistance measuring bridge attached to the side of the measuring diaphragm that faces away from the medium. When pressure is exerted, the membrane distorts in the elastic range. At the same time, the resistance values of the bridge change proportionally to the measuring pressure. These values are changed by the installed electronics and are displayed.

The electrical unit signals 0/4 ... 20 mA and 0 ... 10 V in a three-wire design are available for remote transmission.

2 Technical data

2.1 Generalities

Type designation	ME01 ... S #####	Zone 22
Pressure type	Absolute pressure Relative pressure	
Measurement principle	Piezoresistive ceramic sensor	
Reference conditions (acc. to IEC 61298-1)		
Temperature	+15 to +25 °C	
Relative humidity	45 ... 75 %	
Air pressure	86 to 106 kPa	860 to 1060 mbar
Installation position	vertical	

2.2 Input variables

Measuring range	Over-pressure safety	Absolute pressure	Relative pressure
0 ... 1 bar	2 bar	•	•
0 ... 1.6 bar	3.2 bar	•	•
0 ... 2.5 bar	5 bar	•	•
0 ... 4 bar	8 bar	•	•
0 ... 6 bar	12 bar	•	•
0 ... 10 bar	20 bar	•	•
0 ... 16 bar	32 bar	•	•
0 ... 25 bar	50 bar	•	•
0 ... 40 bar	80 bar	•	•
0 ... 60 bar	120 bar	•	•
-1 ... 0 bar	2 bar		•
-1 ... 0.6 bar	3.2 bar		•
-1 ... 1.5 bar	5 bar		•
-1 ... 3 bar	8 bar		•
-1 ... 5 bar	12 bar		•
-1 ... 9 bar	20 bar		•
-1 ... 15 bar	32 bar		•

2.3 Output sizes

Output signal	0/4 ... 20 mA	0 to 10 V
Type of connection	Three-conductor	Three-conductor
Apparent ohmic resistance	500 Ω	> 5 kΩ
Limits	24 mA	10.5 V

2.4 Measuring accuracy

Characteristic curve	Linear
Measurement deviation	1 %
Linearity	< 1% FS
Hysteresis	< 0.5 % FS
Temperature drift (zero-point)	0.4 % FS/10 K
Temperature drift (range)	0.05 % FS/10 K

2.5 Auxiliary energy

NOTICE! Only a CE-compliant mains adapter with a slow 200 mA fuse may be used in the power supply circuit for ATEX devices.

Nominal voltage	24 V DC
Admissible operating voltage	15 ... 30 V DC
Power consumption	Max. 160 mA
Effective inner capacity C_i	Max. 270 nF
Effective inner inductivity L_i	Max. 980 μ H

2.6 Operating conditions

Ambient temperature range	0 ... +60 °C
Storage temperature range	-10 ... +70 °C
Medium temperature range	0 ... +85 °C
Protection class IP	IP65 acc. to DIN EN 60529
CE	Compliant with:
ATEX	EN IEC 60079-0:2018/A11:2024 EN 60079-31:2014
EMV	EN IEC 61326-1:2021 EN IEC 61326-2-1:2021
RoHS	EN IEC 63000:2018
UKCA	Compliant with:
ATEX	BS EN IEC 60079-0+A11:2018-07-09 BS EN IEC 60079-31:2024-03-0
EMV	BS EN IEC 61326-1:2021-06-07 BS EN IEC 61326-2-3:2021-06-10
RoHS	BS EN IEC 63000:2018-12-10
REACH	Conform
Conflict materials	none

2.7 Construction design

Process connection	Connection shank G1/2 B DIN EN 837
Electrical connection	4-pin standard plug DIN EN 175 301-803-A
Connection cable	Max. 1.5 mm ² Ø 4.5 ... 10 mm
Earthing connection	Fine wire up to 4 mm ² Single wire up to 6 mm ²
Installation position	vertical
Dimensions (LWH)	138 x 101 x 99 mm
Weight	≈ 620 g

2.7.1 Materials

Materials of the parts that come into contact with the medium	
Process connection	Stainless steel 1.4571, 1.4404
Sealant	FKM
Sensor element	Ceramic Al ₂ O ₃
Materials of the parts that come into contact with the surroundings	
Housing	Stainless steel 1.4301
Front film	PET
Sealant	NBR
Device plug	PA 6 GF
Device plug seal	NBR

2.7.2 Dimensional drawings

All dimensions in mm unless otherwise stated

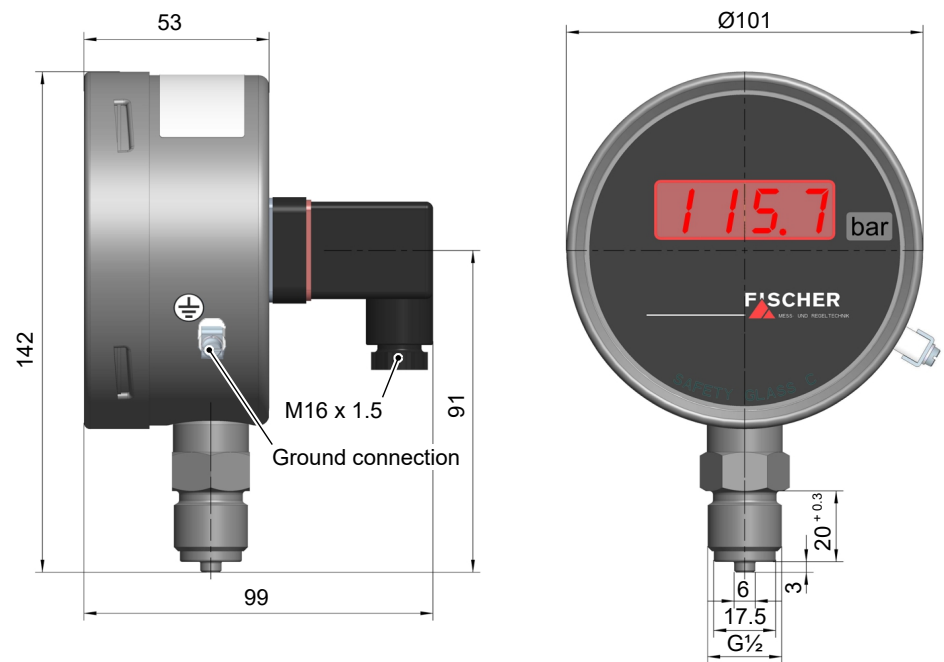


Fig. 3: Dimensional drawing

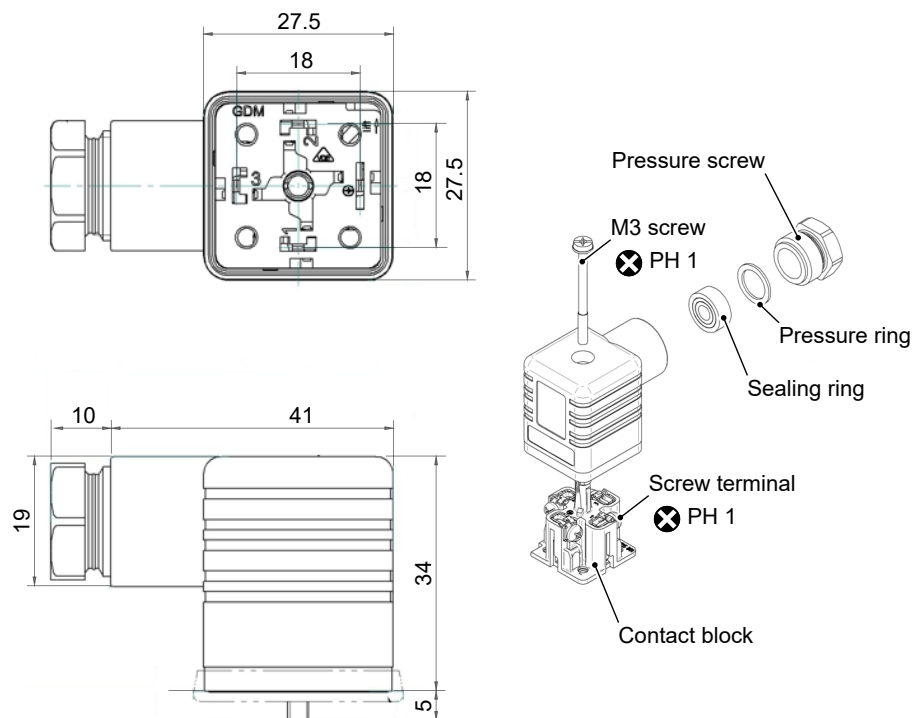
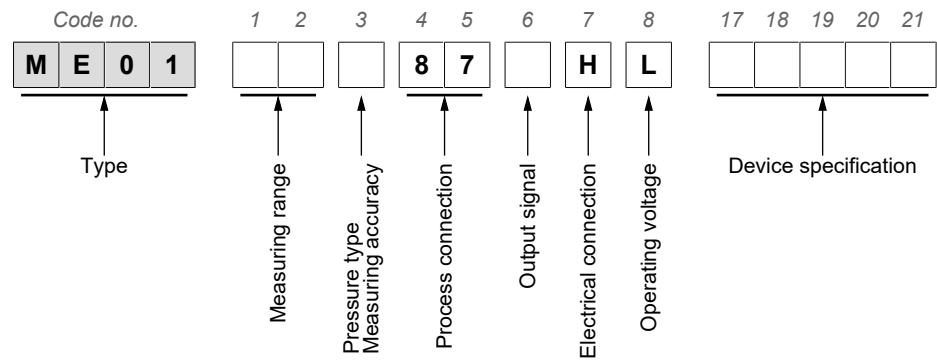


Fig. 4: Cable socket

3 Order code



Measuring range:

[1.2] (Code no.)
02 0 ... 1 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
31 -1 ... 0 bar
32 -1 ... 0.6 bar
33 -1 ... 1.5 bar
34 -1 ... 3 bar
35 -1 ... 5 bar
36 -1 ... 9 bar
37 -1 ... 15 bar

Pressure type/measuring accuracy:

[3] (Code no.)	
M	Relative pressure (Characteristic curve deviation 1%)
S	Absolute pressure (Characteristic curve deviation 1%)

Process connection:

[4.5] (Code no.)	
87	Connection shanks with external thread G½ B bottom, rustproof stainless steel

Output signal:

[6] (Code no.)	Type of connection	Operating voltage
A	0...20 mA	3-Conductor
P	4...20 mA	3-Conductor
C	0...10 V DC	3-Conductor

Electrical connection:

[7] (Code no.)
H Plug 4-pin, standardised plug DIN EN 175 301-803-A

Operating voltage:

[8] (Code no.)
L 24 V AC/DC

Device specification:

[17-21] (Code no.)
S#### Use in Zone 22 - Risk from dust: CE _{Ex} II 3D Ex tc IIIB T125°C Dc

3.1 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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