

Instruction Manual

ME11 || Pressure Transmitter

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1. Safety Instructions

1.1. General



This manual contains detailed information about the product, and instructions for its installation, operation and maintenance. Operators and other technical personnel responsible for the equipment must read this thoroughly before attempting to install or operate this equipment. A copy of this manual must always be kept accessible at the place of work for reference by concerned personnel.

Chapter 1 (sections 1.2 through 1.7) contains general as well as specific safety instructions. Chapters 2 through 10, covering topics ranging from intended purpose of the equipment to its final disposal, also include important points relating to safety. Overlooking or ignoring any of these safety points can endanger humans and animals, and possibly cause damage to other equipment.

1.2. Personnel Qualification

Personnel responsible for installation, operation, maintenance and inspection of this product must have the qualifications, training and experience necessary to carry out such work on this type of equipment.

1.3. Risks of Disregarding Safety Instructions

Disregarding safety instructions, use of this product for purposes for which it is not intended, and/or operation of this product outside the limits specified for any of its technical parameters, can result in harm to persons, the environment, or the plant on which it is installed. Fischer Mess- und Regeltechnik GmbH will not be responsible for consequences in such circumstances.

1.4. Safety Instructions for Operators

Safety instructions for the proper use of this product must be followed. This information must be available at all times to by personnel responsible for installation, operation, maintenance and inspection of this product. Adequate steps must be taken to prevent the occurrence of hazardous conditions that can be caused by electric energy and the convertible energy of the process media. Such conditions can, for example, be the result of improper electrical or process connections. Detailed information is available in relevant published norms (DIN EN, UVW in Germany; and equivalents in other countries), industrial standards such as DVWG, Ex-, GL-, VDE guidelines, as well as regulations of the local authorities (e.g., EVUs in Germany).



1.5. Modifications Forbidden

Modification or other technical alteration of the product is not permissible. This also applies to the use of unauthorized spare parts for repair / maintenance of the product. Any modifications to this product, if and as necessary, should be done only by Fischer Mess- und Regeltechnik GmbH.

1.6. Operational Restrictions

The operational reliability of the product is guaranteed only when used for intended purposes. The product must be selected and configured for use specifically with defined process media. The limiting values of operating parameters, as given in the product specification sheet, must never be crossed.

1.7. Safety Considerations during Installation and Maintenance

The safety instructions given in this manual, existing national regulations relating to accident prevention, and the internal safety rules and procedures of the user organization regarding safety during installation, operation and servicing must all be followed meticulously.

It is the responsibility of the users to ensure that only suitably qualified and experienced technical personnel are used for installation, operation and servicing of this equipment.

2. Intended Applications

The pressure transmitter ME11 can be used to measure pressure and vacuum.

The device is solely for intended use. It must be used only for applications and under conditions specified by the manufacturer. Please confer with Fischer Mess- und Regeltechnik GmbH prior to using this transmitter along with polluted or aggressive media. For use with this media it needs to be adjusted in every part with direct contact to the media.

3. Product Description and Functions

3.1. Principles of Operation

Line pressure to be measured is acting directly onto a ceramic diaphragm. The mechanical strain forced by the line pressure is converted into a electrical signal by means of a wheatstone bridge located on the back of the diaphragm.

An electric circuit after the ceramic sensor is converting the bridge signal into an electrical standard signal (4-20 mA or 0-10 V DC).

4. Installation

As standard the transmitter is provided with a G 1/2 male threaded connection for pipe mounting. The device is adjusted for a vertical mounting position, but can be mounted in any direction.

To ensure safety during installation and maintenance integrate adequate shut-off valves.

By recommended accessories (see. 9.) like shut-off valves MZ 5 / 6 the instrument can be

- depressurized or shut down,
- cut off a plant to enable controlling or repairing.

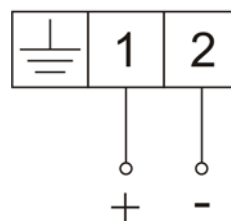
4.1. Process Connections

- By authorized personnel only.
- For suitable mechanical process fittings only (see Ordering Code on instrument's type plate).
- Isolate pressure lines before connecting the device.
- Protect the device against pressure shock (e.g.: do not mount it against a water column).
- For use with suitable media only.
- Protect against overpressure.
- Before commissioning check for leakage.

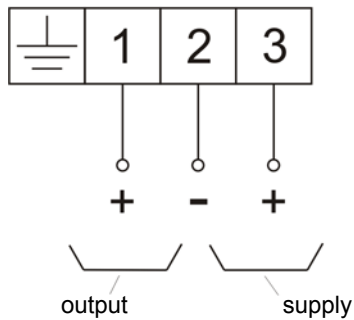
4.2. Electrical Connections

- Only qualified technicians authorized for this type of work should undertake installation.
- Electrical connections must comply with relevant international, national and local regulations and norms relating to electrical and instrumentation installations.
- Switch off electrical power to the plant before attempting electrical installation work of any kind.
- Make electrical connections to the instrument through a suitable energy-limiting safety device (isolation or zener barrier).

4.3. Connection Scheme



2-wire connection
Ordering Code B



**3-wire connection
(standard)
Ordering Code C**

5. Commissioning

Power supply and signal cabling to the instrument must be correctly selected to meet operational requirements, and installed in a way that does not cause physical stress to the instrument.

- When used with liquid media the pressure lines must be vented, for different heights in head of liquid in lines cause measuring errors. The instrument and lines must be protected against frost when used with water.
- To ensure safety during installation and maintenance provide adequate shut-off valves.

5.1. Pressure Connections

During pressure connection pay attention to the following:

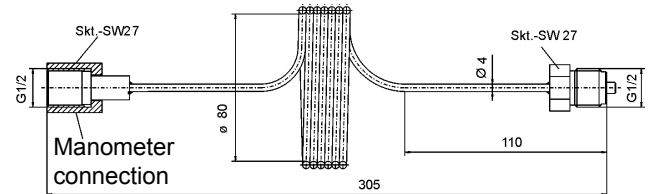
- Pressure lines must be kept as short as possible and must not have short bends to avoid measurement errors induced by pressure line delays.

- Provide a continuous downward/upward gradient of min. 8% to prevent formation of sediments.
- For steam pressure measurement provide a loop to effect a waterpocket because of the temperature (e.g. accessory MZ 10 / MZ 11)
- When used with liquid media mount transmitter below measuring point. Vent pressure line before commissioning.
- When used with gaseous media mount transmitter above measuring point.

5.2. Pulsation Damping

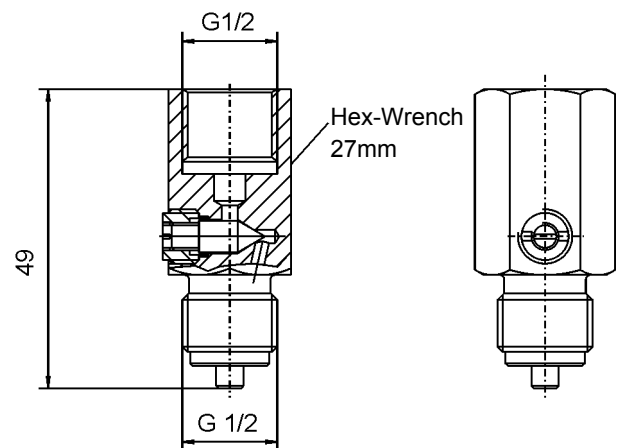
During pulsating pressure on the instrument mechanical wear and disturbances in functional capability may occur. To avoid this we recommend installing absorbers into the pressure lines.

Capillary Reactive Coil MZ40



Adjustable Attenuator Valve MZ41

During operating condition adjust needle valve that way, that the indicator follows changes of pressure delayed.



6. Maintenance

The instrument is inherently maintenance-free.

However, to ensure reliable operation and maximize the operating life of the instrument, it is recommended that the instrument, its external electrical and process connections, and external connected devices be regularly inspected, e.g.:

- Check the output signal.
- Check all pressure connections for leak-tightness.
- Check the integrity of all electrical connections of the instruments.

Inspection and test schedules depend on operating and site conditions. The operating manuals of other equipment to which the instrument is connected must be read thoroughly to ensure that all of them work correctly when connected together.

7. Transport

The product must be protected against shock and vibration during transport. It must therefore be properly packed, preferably in the original factory packaging, whenever it is to be transported.

8. Service

Any defective devices or devices with missing parts should be returned to Fischer Mess- und Regeltechnik GmbH. For quick service contact our service department.

9. Accessories

See Datasheet MZ

10. Disposal



Protect your environment!

Use the product in accordance with relevant regulations. Please be aware of environmental consequences of disposal at the end of the product's life, and take care accordingly.

11. Specifications

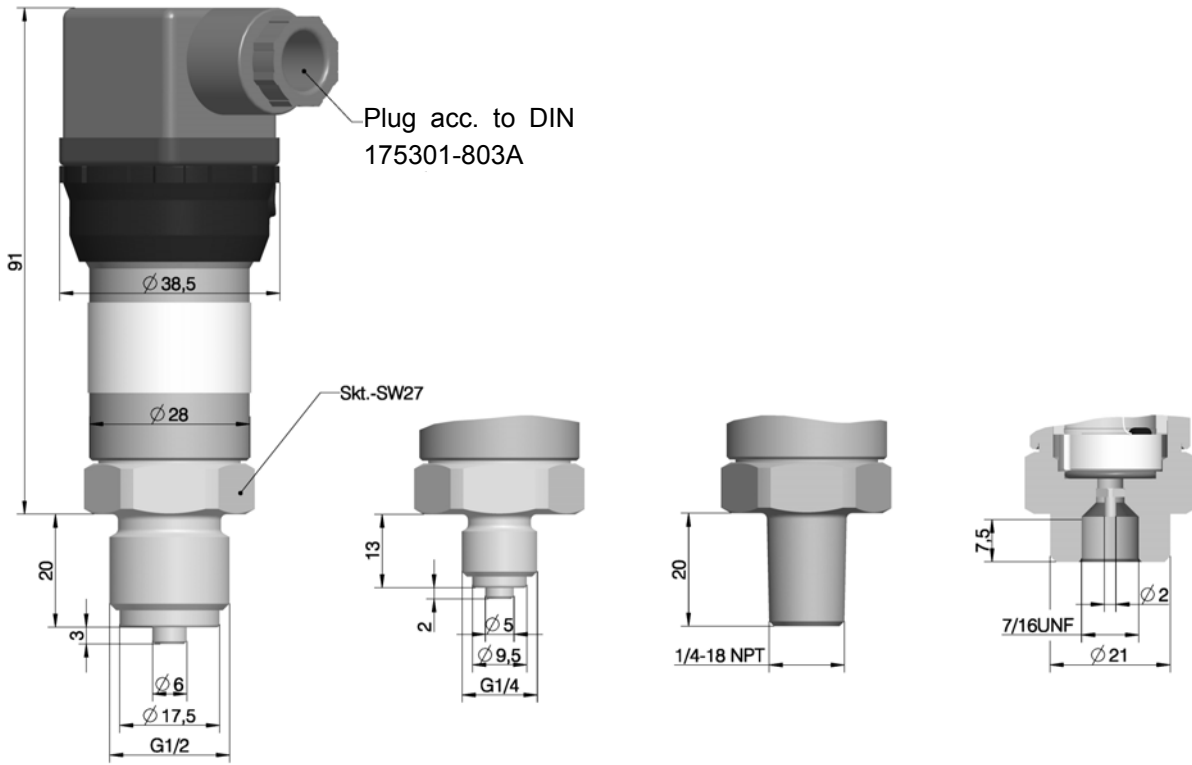
Measuring range (bar)	-1-0	-1-0,6	-1-1,5	-1-3	-1-5	-1-9	-1-15	-1-24						
Overpr. safety (bar)	3	5	8	12	20	32	50	80						

Measuring range (bar)	0-1,6	0-2,5	0-4	0-6	0-10	0-16	0-25	0-40	0-60					
Overpr. safety (bar)	5	8	12	20	32	50	80	120	200					

	General	
Linearity	< 1% FS	
Hysteresis	< 0.5% FS	
Max. ambient temperature	0° to 60°C	
Max. medium temperature	0° to 85°C	
Pressure connection	male thread G1/2 B according to DIN EN 837	
Electrical connection	plug according to DIN EN 175301-803	
Enclosure protection	IP 65 according to DIN EN 60 529	
Material: media contact	Chrome-nickel-steel 1.4305, ceramic: Al ₂ O ₃ , gasket: Viton®	
Material: body	Chrome-nickel-steel 1.4305	
	Electrical	
Nominal power supply	24 V DC	24 V DC/AC
Allowable power supply	6...30 V DC	15...30 V DC
	-	15...30 V AC
Output signal	4-20 mA	0-10 V DC
Electrical connection	2-wire	3-wire
	(U _B -6 V) / 0.02 A	≥5 kΩ above 15 VDC
Max. load		≥2 kΩ above 20 VDC
	Current / voltage limiting	approx. 26 mA
Temperature drift, offset	0.07 % FS/K	0.07 % FS/K
Temperature drift, scale	0.05 % FS/K	0.05 % FS/K

The transmitter is protected against short circuit and reverse connection.

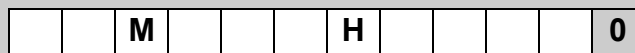
12. Dimensions (all units in mm unless stated otherwise)



13. Ordering Code

Pressure Transmitter

ME11



Measuring Range

0 ... 1,6 bar	>	0	3
0 ... 2,5 bar	>	0	4
0 ... 4 bar	>	0	5
0 ... 6 bar	>	0	6
0 ... 10 bar	>	0	7
0 ... 16 bar	>	0	8
0 ... 25 bar	>	0	9
0 ... 40 bar	>	1	0
0 ... 60 bar	>	1	1
-1 ... 0 bar	>	3	1
-1 ... 0,6 bar	>	3	2
-1 ... 1,5 bar	>	3	3
-1 ... 3 bar	>	3	4
-1 ... 5 bar	>	3	5
-1 ... 9 bar	>	3	6
-1 ... 15 bar	>	3	7
-1 ... 24 bar	>	3	8
0 ... 30 PSI	>	H	5
0 ... 60 PSI	>	H	6
0 ... 100 PSI	>	H	7
0 ... 160 PSI	>	H	9
0 ... 250 PSI	>	Q	1
0 ... 500 PSI	>	P	9
-30 inch HG vac...+ 15 PSI	>	S	2
-30 inch HG vac...+100 PSI	>	S	5

Accuracy

Curve deviation, gauge pressure 1.0%	>	M
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Pressure Connection

Connection shank G 1/4"B; material: 1.4305	>	8	5
Connection shank G 1/2"B; material: 1.4305	>	8	7
Connection shank 1/4-18 NPT EXT; material: 1.4305	>	8	8
Connection for Schrader® fitting; material: 1.4305	>	S	1

Electrical Output Signal

4 - 20 mA two conductor	>	B
0 -10 VDC three conductor (STANDARD)	>	C

Electrical Connection

4-pole connector according to DIN EN 175 301-803-A	>	H
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Operating voltage

24 VDC (two conductor transmitter only)	>	9
24 VDC (15-30 VDC) (not two-conductor transmitter)	>	A
24 VAC/DC (not two-conductor transmitter)	>	L

Housing

IP 65 to DIN EN 60 529	>	0
IP 65 to DIN EN 60 529; encapsulated version	>	V

Seal with medium contact

FKM (fluor rubber, Viton®)	>	V
CR (chloroprene rubber, Neoprene®)	>	C
EPDM (ethylene propylene diene monomer)	>	E
H-NBR (hydrogenated nitrile-butadiene rubber) suitable to -25 °C	>	H

Measuring system / version

Standard	>	0
Suitable for measuring O2 (with FPM seal only)	>	3

14. CE-Certifikate



EG-Konformitätserklärung

Wir erklären in alleiniger Verantwortung, dass nachstehend genannte Produkte

EC Declaration of Conformity

We declare under our sole responsibility that the products mentioned below

Drucktransmitter / Pressure Transmitter

ME11 #####

gemäß gültigem Datenblatt übereinstimmen mit der

specified by the actual data sheet complies with the

EG-Richtlinie

EC Directive

2004/108/EG (EMV)

2004/108/EC (EMC)

Die Produkte wurden entsprechend der folgenden Normen geprüft (Störfestigkeit für Industriebereich, Störaussendung für Wohnbereich):

The instruments have been tested in compliance with the norms (Immunity for industrial environments, emission for residential environments):

DIN EN 61326-1:2004-05
DIN EN 61326-2-3
DIN EN 61010-1:2002-08

DIN EN 61326-1:2004-05
DIN EN 61326-2-3
DIN EN 61010-1:2002-08

Die Geräte werden gekennzeichnet mit:

The gauges are marked with:



Bad Salzuffen, 22.06.09
(Ort, Datum / place, date)


(rechtsverb. Unterschrift / authorized signature)

