developing solutions

FISCHER
MESS- UND REGELTECHNIK

Operating manual

ME69

Pressure transmitter

09005435 • BA_EN_ME69 • Rev. ST4-A • 04/25

Masthead

Manufacturer: **FISCHER Mess- und Regeltechnik GmbH**

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Version history

Rev. ST4-A 04/25	Version 1 (first edition)

Table of contents

1 Safety instructions

1.1 General

This operating manual contains basic instructions for the installation, operation and maintenance of the device that must be followed without fail. It must be read by the installer, the operator and the responsible specialist personnel before installing and commissioning the device.

This operating manual is an integral part of the product and therefore needs to be kept close to the instrument in a place that is accessible at all times to the responsible personnel.

The following sections, in particular instructions about the assembly, commissioning and maintenance, contain important information, non-observance of which could pose a threat to humans, animals, the environment and property.

The instrument described in these operating instructions is designed and manufactured in line with the state of the art and good engineering practice.

1.2 Personnel Qualification

The instrument may only be installed and commissioned by specialized personnel familiar with the installation, commissioning and operation of this product.

Specialized personnel are persons who can assess the work they have been assigned and recognize potential dangers by virtue of their specialized training, their skills and experience and their knowledge of the pertinent standards.

1.3 Risks due to Non-Observance of Safety Instructions

Non-observance of these safety instructions, the intended use of the device or the limit values given in the technical specifications can be hazardous or cause harm to persons, the environment or the plant itself.

The supplier of the equipment will not be liable for damage claims if this should happen.

1.4 Safety Instructions for the Operating Company and the Operator

The safety instructions governing correct operation of the instrument must be observed. The operating company must make them available to the installation, maintenance, inspection and operating personnel.

Dangers arising from electrical components, energy discharged by the medium, escaping medium and incorrect installation of the device must be eliminated. See the information in the applicable national and international regulations.

Please observe the information about certification and approvals in the Technical Data section.

1.5 Unauthorised Modification

Modifications of or other technical alterations to the instrument by the customer are not permitted. This also applies to replacement parts. Only the manufacturer is authorised to make any modifications or changes.

1.6 Inadmissible Modes of Operation

The operational safety of this instrument can only be guaranteed if it is used as intended. The instrument model must be suitable for the medium used in the system. The limit values given in the technical data may not be exceeded.

The manufacturer is not liable for damage resulting from improper or incorrect use.

1.7 Safe working practices for maintenance and installation work

The safety instructions given in this operating manual, any nationally applicable regulations on accident prevention and any of the operating company's internal work, operating and safety guidelines must be observed.

The operating company is responsible for ensuring that all required maintenance, inspection and installation work is carried out by qualified specialized personnel.

1.8 Pictogram explanation

⚠ DANGER

Type and source of danger

This indicates a **direct** dangerous situation that could lead to death or **serious injury** (highest danger level).

1. Avoid danger by observing the valid safety regulations.

⚠ WARNING

Type and source of danger

This indicates a **potentially** dangerous situation that could lead to death or **serious injury** (medium danger level).

1. Avoid danger by observing the valid safety regulations.

⚠ CAUTION

Type and source of danger

This indicates a **potentially** dangerous situation that could lead to slight or serious injury, damage or **environmental pollution** (low danger level).

1. Avoid danger by observing the valid safety regulations.

NOTICE

Note / advice

This indicates useful information of advice for efficient and smooth operation.

2 Product and functional description

2.1 Delivery scope

- ME69 pressure transmitter
- Operating Manual

2.2 Intended use

The ME69 pressure transmitter can be used to measure the pressure of acidic or alkaline liquid media. The media compatibility of the materials used (see technical data) must be reviewed for each specific application.

2.3 Device version

Standard plug according to DIN EN 175 301-803-A

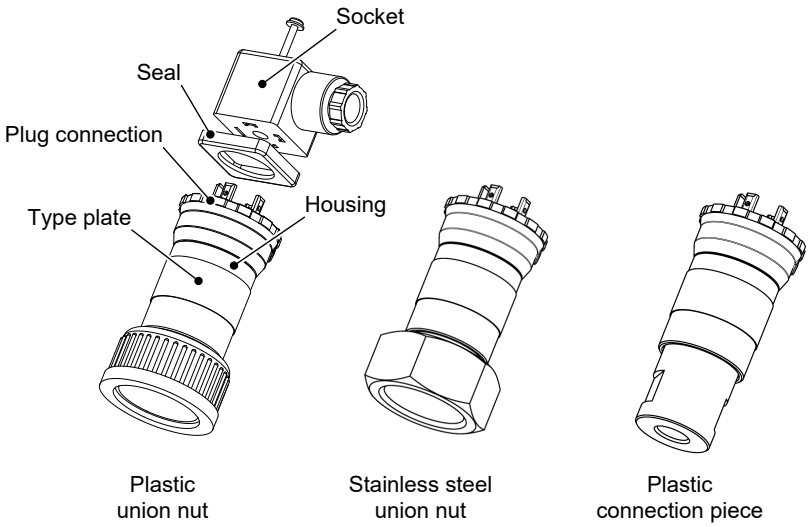
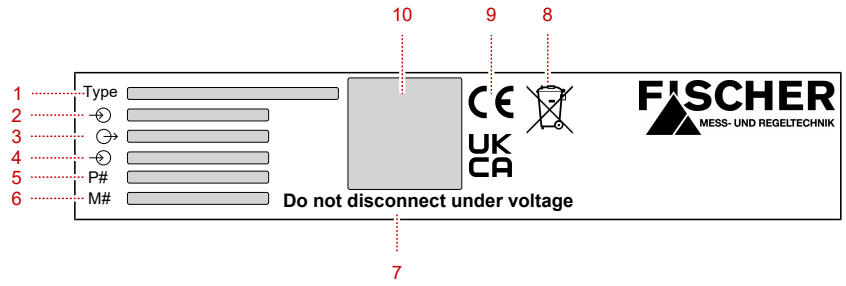


Fig. 1: Device versions

2.3.1 Type plate



1	Device type (order number)	2	Measuring range
3	Output signal	4	Power supply
5	Serial number	6	Customised article number
7	Safety note	8	Waste disposal
9	Conformity	10	Connection diagram

	Input	*Input*
	Output	*Output*
	Production No.	*Production number*
P#	Customer specification	

P# **23** 03618.03.123

Production year 2023

2.4 Function diagram

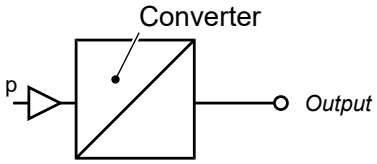


Fig. 2: Function diagram

2.5 Design and mode of operation

The pressure to be measured acts directly on a ceramic diaphragm with a resistance measuring bridge mounted on the back. The deformation of the diaphragm changes the bridge signal, which is converted by the integrated electronics into standard electrical signals 0/4...20 mA or 0...10V.

3 Installation

3.1 General

The pressure transmitter is intended to be mounted directly on pipelines.

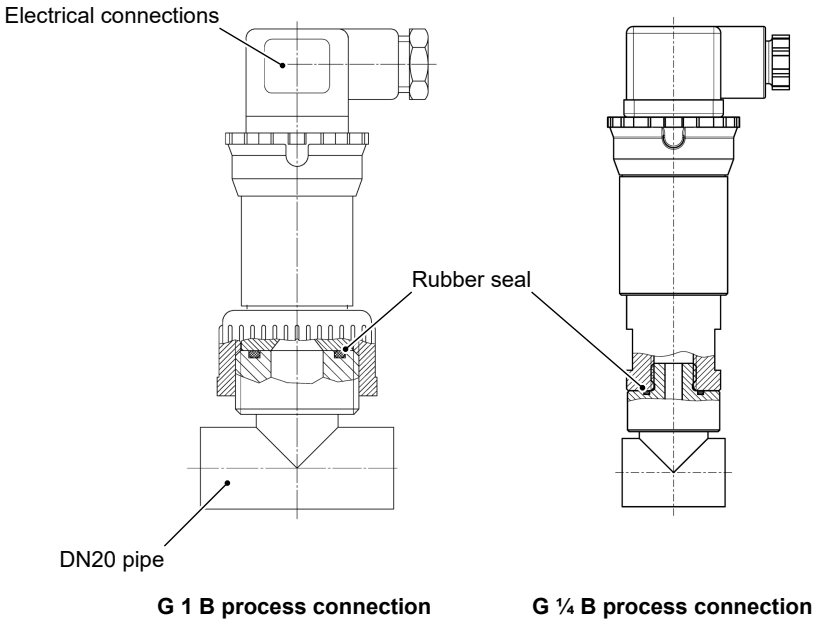


Fig. 3: Process connection (example)

3.2 Process connection

The ME69 pressure transmitter is equipped with pipe thread connections in accordance with DIN-ISO 228. The thread sizes G 1 B and G ¼ B are available. Please note that the threads are not self-sealing according to this standard. Please provide a suitable seal (not included in the scope of delivery)

and note that the seal will settle. Because of this, you must pre-tighten the seal by hand and use the specified tool for final assembly.

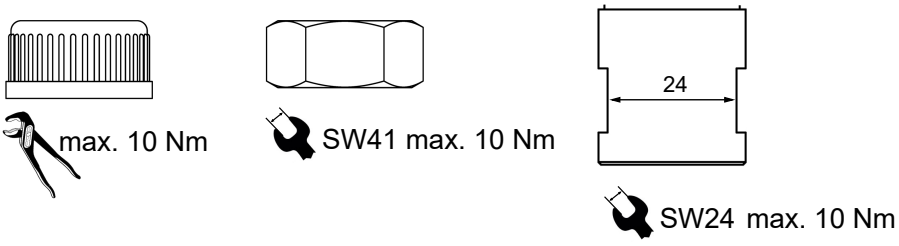


Fig. 4: Installation

3.3 Electrical connections

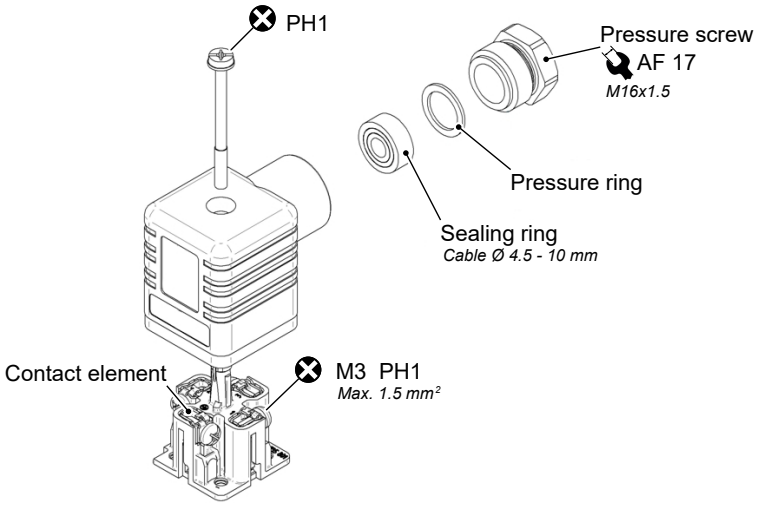


Fig. 5: Standard plug (valve plug)

3.3.1 2-conductor connection

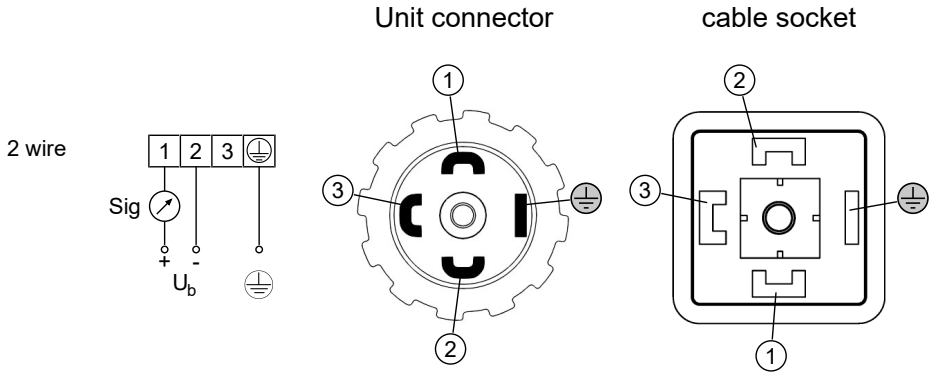


Fig. 6: Standardised plug DIN EN 175 301-803 form A

3.3.2 3-conductor connection

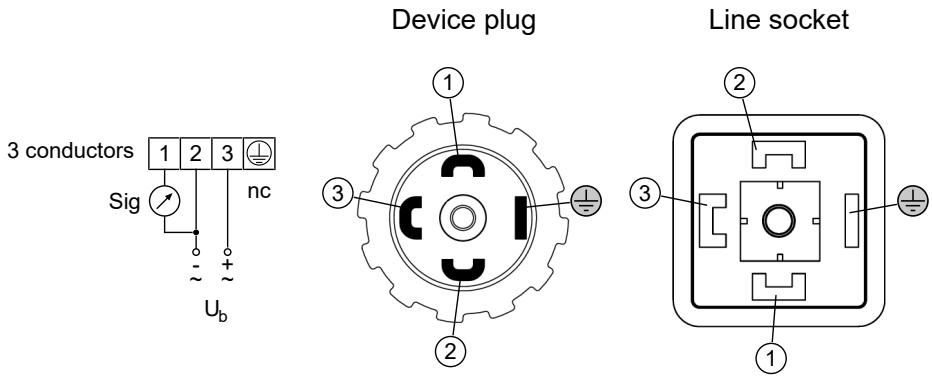


Fig. 7: Standardised plug DIN EN 175 301-803 form A

3.4 Start-up

Before commissioning, all electrical supply lines and pipelines must be installed correctly. All connections must be arranged so that there are no mechanical forces acting on the device.

Before commissioning, the pipelines must be checked for leaks.

⚠ DANGER

Dangers associated with the medium

Liquids can escape from pressurised lines, screw connections and components if handled incorrectly. Steps must be taken to prevent

- ▷ uncontrolled movements of cables and parts.
- ▷ Mechanical or chemical risks emanating from the leaking medium.

1. You avoid danger by observing the national and international guidelines and safety regulations.
2. Only carry out assembly and repair work when the system is depressurized.
3. Replace faulty parts and equipment immediately.

4 Servicing

4.1 Maintenance

The instrument is maintenance-free. We recommend the following regular inspection to guarantee reliable operation and a long service life:

- Check the function in combination with downstream components.
- Check the leak-tightness of the pressure connection lines.
- Check the electrical connections.

The exact test cycles need to be adapted to the operating and environmental conditions. In combination with other devices, the operating instructions for the other devices also need to be observed.

4.2 Transport

The measuring device must be protected against impacts. It should be transported in the original packaging or a suitable transport container.

4.3 Service

All defective or faulty devices should be sent directly to our repair department. Please coordinate all shipments with our sales department.

⚠ WARNING

Process media residues

Process media residues in and on dismantled devices can be a hazard to people, animals and the environment. Take adequate preventive measures. If required, the devices must be cleaned thoroughly.

Return the device in the original packaging or a suitable transport container.

4.4 Disposal

WEEE-Reg.-No. DE 31751293

Please help to protect our environment and dispose of the workpieces and packaging materials used in an environmentally friendly manner. Observe the country-specific waste treatment and disposal regulations.

The year of production can be found in the production number (serial number):

P# **23** 03618.03.123

Production year 2023

Further information on disposal can be found on our website [www.fischermesstechnik.de]

5 Technical data

5.1 General

General information		
Type designation	ME69	
Pressure type	Relative pressure	
Measurement principle	Piezoresistive ceramic sensor	

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

5.2 Input variables

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

*) can only be realised with a stainless steel housing

5.3 Output variables

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

5.4 Measuring accuracy

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

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

5.5 Auxiliary energy

Voltage output	**3-conductor**
Rated voltage	24 V AC/DC
Permitted op. voltage	15 to 30 V AC/DC
Absorbed power	≤ 1 W (VA)

Current output	**2-conductor**	**3-conductor**
Rated voltage	24 V DC	24 V AC/DC
Permitted op. voltage	6 to 30 V DC	15 to 30 V AC/DC
Absorbed power	≤ 1 W	≤ 1.5 W (VA)

5.6 Operating conditions

Ambient temperature range	0 to 60 °C
Storage temperature range	0 to 60 °C
Medium temperature range	0 to 60 °C
IP protection class	IP 65 acc. to DIN EN 60529
EU Declaration of Conformity	
EMC	EN IEC 61326-1:2021
	EN IEC 61326-2-3:2021
RoHS	EN IEC 63000:2019
UKCA declaration of conformity	
EMC	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	No substances of concern
Conflict materials	No conflict materials

5.7 Construction design

Process connection	G 1 B union nut made of plastic or stainless steel G ¼ B connecting port made of plastic
Housing	Plastic or stainless steel
Electrical connection	Standard plug according to DIN EN 175 301-803-A
Installation position	User-defined
Dimensions (L x D)	100 x 44 mm
Weight	max. <TBD>

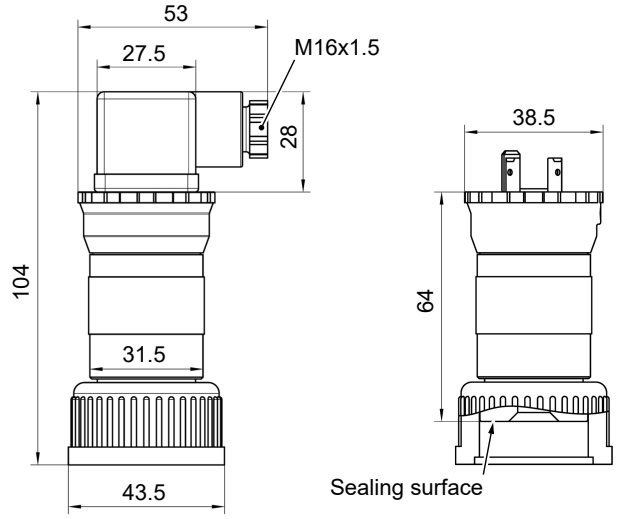
5.7.1 Materials

Materials of parts in contact with medium		
Ceramic membrane		96% Al_2O_3 Parylene coated
Seal		Fluoro rubber (FKM) Ethylene propylene diene rubber (EPDM) Perfluoro rubber (FFPM)
Union nut		Polyvinyl chloride (PVC-U) Polypropylene (PP-H) Stainless steel (1.4404)
Connecting port		Polyvinylidene fluoride (PVDF)

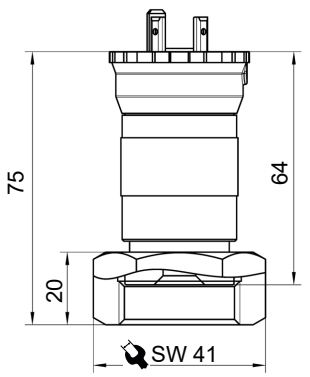
Materials of parts in contact with surroundings		
Housing		Polypropylene (PP -H) Stainless steel (14404)
Standard plug	Housing	Polyamide (PA)
	Seal	Acrylonitrile butadiene rubber (NBR)
	Contacts	Tin-plated brass

5.7.2 Dimension drawings

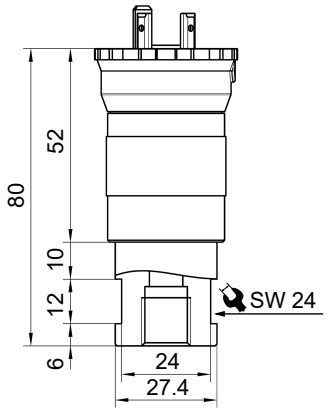
All dimensions in mm unless otherwise stated



Plastic union nut G 1 B



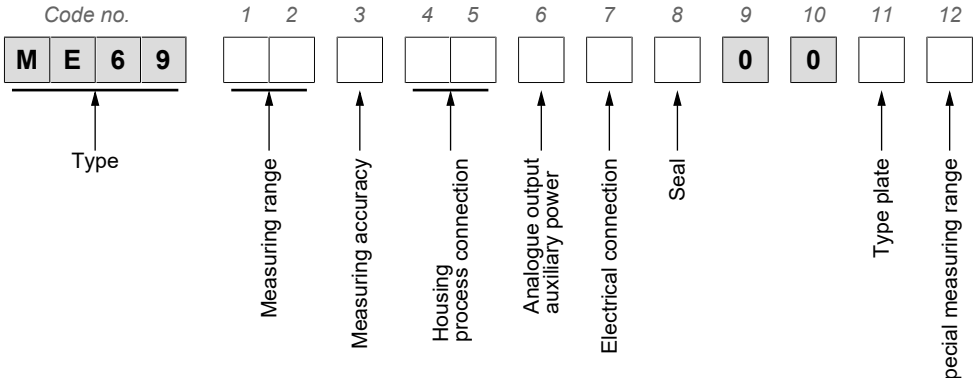
Stainless steel union nut G1 B



PVDF connection piece G ¼ B

Fig. 8: Dimension drawings

6 Order codes



[1.2]	Measuring range
83	0 … 400 mbar
01	0 … 0.6 bar
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
09	0 ... 25 bar (only with stainless steel housing code B4)
31	-1 … 0 bar
33	-1 … 1.5 bar
35	-1 … 5 bar

[3]	Measuring accuracy
M	Relative pressure characteristic curve deviation 1.0%
0	Relative pressure characteristic curve deviation 0.5 % (only on request)

[4.5]	Process connection	Housing
A9	Union nut made of PVC-U with G 1 B female thread	PP-H
H1	Union nut made of PP-H with G 1 B female thread	PP-H
17	Connection piece made of PVDF with G ¼ B female thread	PP-H
B7	Union nut made of 1.4404 with G 1 B female thread	PP-H
B4	Union nut made of 1.4404 with G 1 B female thread	1.4404

[6]	Analogue output	Type of connection	Auxiliary energy
A	0 ... 20 mA	3-conductor	24 V AC/DC
B	4 … 20 mA	2-conductor	24 V DC
C	0 … 10 V	3-conductor	24 V AC/DC
P	4 … 20 mA	3-conductor	24 V AC/DC

[7]	Electrical connection (standard plug according to DIN EN 175 301-803-A)
A	Plug connection without device outlet
H	Plug connection with device outlet
R	Plug connection with device outlet and 1 m connection cable

[8]	Seal (wetted)	
V	FKM	Viton® (fluororubber)
E	EPDM	Ethylene propylene diene rubber
K	FFPM	Kalrez® (perfluorinated rubber)

[11]	Type plate	
0	FISCHER	with FISCHER operating instructions
1	Customer logo	with neutral operating instructions
2	Customer logo	without operating instructions

[12]	Special measuring range
0	without configuration
1	with configuration

7 Annex

FISCHER MESS- UND REGELTECHNIK

(Translation) CE

EU Declaration of Conformity

For the product described as follows

Product designation **Pressure transmitter**

Type designation **ME69**

it is hereby declared that it corresponds with the basic requirements specified in the following designated directives:

2014/30/EU	*EMC Directive*
2011/65/EU	*RoHS Directive*
(EU) 2015/863	*Delegated Directive amending Annex II to Directive 2011/65/EU*

The products were tested in compliance with the following standards.

Electromagnetic compatibility (EMC)

DIN EN IEC 61326-1:2022-11 *EN IEC 61326-1:2021*	*Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirement*
DIN EN IEC 61326-2-3:2022-11 *EN IEC 61326-2-3:2021*	*Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-3: Particular requirements - Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning*

RoHS Directive (RoHS 3)

DIN EN IEC 63000:2019-05 *EN IEC 63000:2018*	*Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances*

Also they were subjected to the conformity assessment procedure „**Internal production control**".

Sole responsibility for the issue of this declaration of conformity in relation to fulfilment of the fundamental requirements and the production of the technical documents is with the manufacturer.

Manufacturer

FISCHER Mess- und Regeltechnik GmbH
Bielefelder Str. 37a
32107 Bad Salzuflen, Germany
Tel. +49 (0)5222 974 0

The devices bear the following marking: CE

Bad Salzuflen
14 Feb 2025

T. Malischewski
Managing Director

Fig. 9: CE_DE_ME69

FISCHER MESS- UND REGELTECHNIK

(Translation) UK CA

UKCA Declaration of Conformity

For the product described as follows

Product designation **Pressure transmitter**

Type designation **ME69**

is hereby declared to comply with the essential requirements, specified in the following UK regulations:

Statutory regulation No.	***Description***
2016 No. 1091	*The Electromagnetic Compatibility Regulations 2016*
2021 No. 422	*The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021*

The products have been tested according to the following standards.

Electromagnetic compatibility (EMC):

BS EN IEC 61326-1:2021-06-07	*Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements*
BS EN IEC 61326-2-3:2021-06-10	*Electrical equipment for measurement, control and laboratory use. EMC requirements. Particular requirements. Test configuration, operational conditions and performance criteria for transducers with integrated or remote signal conditioning*

Restriction of Hazardous Substances (RoHS):

BS EN IEC 63000:2018-12-10	*Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances*

The sole responsibility for drawing up this declaration of conformity in relation to the fulfilment of the essential requirements and the preparation of the technical documentation lies with the manufacturer.

Manufacturer

FISCHER Mess- und Regeltechnik GmbH
Bielefelder Str. 37a
32107 Bad Salzuflen, Germany
Tel. +49 (0)5222 974 0

The devices bear the following marking: UK CA

Bad Salzuflen
14 Feb 2025

T. Malischewski
Managing Director

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Fig. 10: UKCA_DE_ME69

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