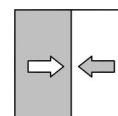


Operating manual

DE80

Differential pressure transmitter
ECO-LINE ®

09015257 • BA_EN_DE80 • Rev. ST4-E • 04/25



Masthead

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Version history

Rev. ST4-A	04/21	Version 1 (first edition)
Rev. ST4-B	06/21	Version 2 (+/- measuring range as delivery condition)
Rev. ST4-C	01/22	Version 3 (Modbus version added, UKCA)
Rev. ST4-D	04/23	Version 4 (Screw plug; assembly updated)
Rev. ST4-E	04/25	Version 5 (Interface: Add delivery status)

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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

- Differential pressure transmitter DE80 ECO-LINE®
version as stated on the type plate
- Operating Manual
- Closing screw for degree of protection IP65
- Connection set for ventilation ducts
type. No. 04005148 consisting of
2 x hose (6/4 mm) 2.50 m long
2 x measuring nozzle ABS RAL7035 light grey
4 x fastening screw ST2.9 x 9.5-C galvanised and passive.

2.2 Intended use

DE80 is a multi-functional differential pressure transmitter with an optional changeover contact. It is suitable for measuring overpressure, under-pressure and differential pressure in neutral gaseous media.

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.

2.3 Function diagram

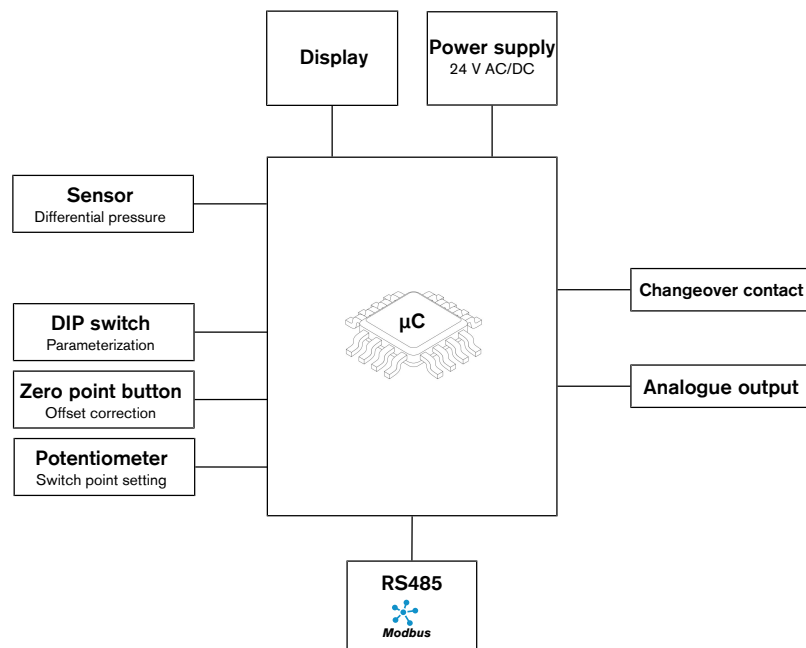


Fig. 1: Function diagram

2.4 Design and mode of operation

The device is based on a piezo-resistive sensor element that is suitable for measuring overpressure, under-pressure and differential pressure. The pressures to be compared have a direct effect on a silicon membrane equipped with a measuring bridge.

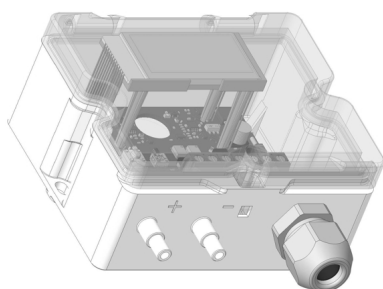
When the pressure is equal, the measuring membrane is in its idle state. If a pressure difference occurs, the membrane is deflected and a resistance change takes place on the attached measuring bridge. This change is evaluated by the device's electronics and transformed into an analogue output signal. The output signal can be attenuated and square rooted.

Optionally, the device can be delivered with a full-graphic LC display and a changeover contact. In addition, the device is available as a 2-wire or Modbus RTU variant. Overall, the device can be delivered with the following equipment.

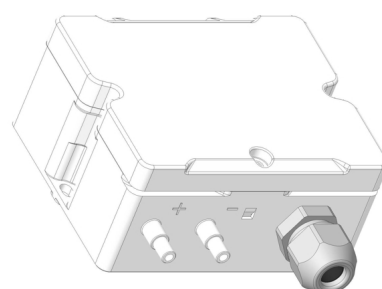
	3-wire	2-wire	Modbus RTU
Analogue output 0/4 ... 20 mA or 0/2 ... 10 V	x		
Current loop 4 ... 20 mA		x	
RS485 Modbus RTU			x
Options:			
Full graphic LC display	x	x	x
Changeover contact	x		

2.5 Device versions

Outwardly, the DE80 only differs in the version with measured value display and without measured value display. Both versions are available as a 2-conductor and 3-conductor version. All other features can be configured using DIP switches on devices with analogue output or via the interface on the Modbus version.



With measuring value display



Without measuring value display

Fig. 2: Product summary

Connections

Connection on the pressure side is made by means of a hose nipple. The hose nipple is suitable for both 8/6 mm and 6/4 mm hose.

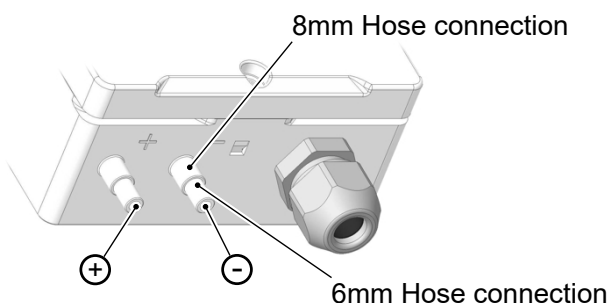


Fig. 3: Process connections

Electrical connection is made via an M16 x 1.5 cable screw connection with an internal terminal strip.

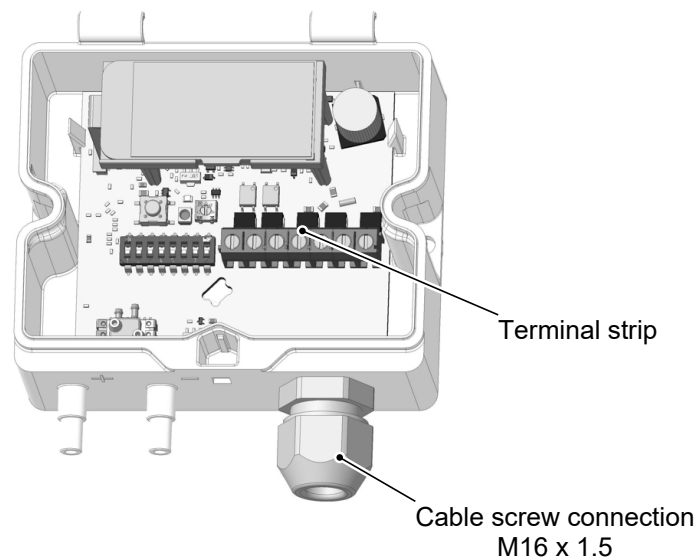


Fig. 4: Electric connections

2.5.1 Type plate

The rating plate shown serves as an example of the information contained. For further information, please refer to the order code at the end of these instructions.

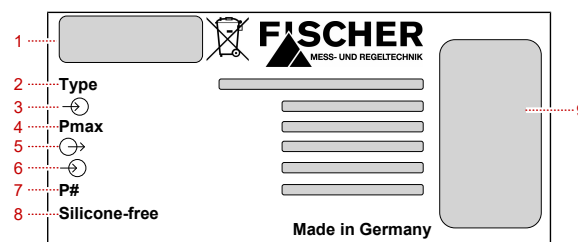


Fig. 5: Type plate

1	Conformity (CE, UKCA, etc.)	2	Device type (order code)
3	Basic measuring range	4	Overload capacity
5	Output signal (configurable)	6	Auxiliary voltage
7	Production number	8	Special properties
9	Circuit diagram		

	Input
	Output
Pmax	Proof Pressure
P#	Production No.

Fig. 6: Key

3 Assembly

3.1 General

The device is intended for mounting on level walls and mounting plates. For this purpose, the device has two mounting holes on the side.

NOTICE! The locking screw is located in a plastic bag inside the device.

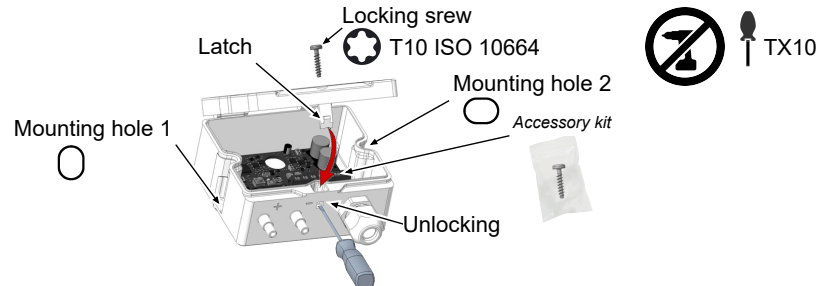


Fig. 7: Protection class IP65

(a) Opening the housing

To open the housing, first remove the screw plug (if present). Then the housing can then be unlocked. To do this, use a suitable slotted screwdriver to press the locking lug at the designated point.

(b) Closing the housing

Close the cover until the latch clicks into place. Protection class IP54 is achieved with the snap-in connection alone.

NOTICE! The screw plug included must be used to achieve IP65.

Please contact the manufacturer if the screw is missing. It is a special screw for thermoplastics. Protection class IP65 cannot be achieved with another screw as a replacement.

(c) Assembly of the screw plug

The installation of the locking screw ensures that the release is blocked and the cover is held in position. It is a self-tapping screw for polycarbonate.

During installation (1), a screw-in torque [M_E] of maximum 1.2 Nm is required to form the thread and overcome the friction. Heat is generated during this process.

WARNING! Always mount the screw by hand. Do not use a cordless screwdriver.

As soon as the screw head is in contact (2), the installation is complete. Further tightening torque [M_A] to apply a pretensioning force is not necessary, as the function of the screw is already fulfilled in this position.

Please note that if the screw is turned further, the overtorque [M_U] will quickly be reached and the thread destroyed (3).

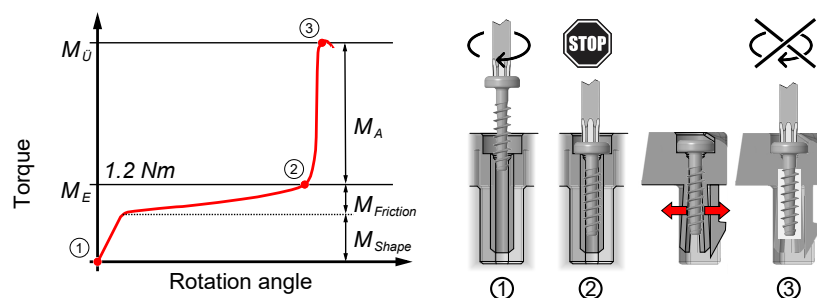


Fig. 8: Permissible torques

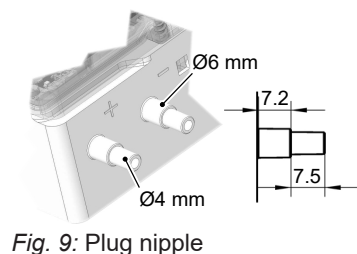
3.2 Process connection

- By authorized and qualified specialized personnel only.
- The pipes need to be depressurized when the instrument is being connected.
- Appropriate steps must be taken to protect the device from pressure surges.
- Check that the device is suitable for the medium being measured.
- Maximum pressures must be observed (cf. Tech. data)

The process connection is designed for soft hoses with an inner diameter of 4 or 6 mm. The plug nipple is designed for both hose sizes.

For assembly, proceed as follows:

1. Cut the hose as straight as possible.
2. Push the hose onto the plug nipple as far as it will go.
3. Protect the hose line against mechanical or thermal effects.



3.3 Electrical connection

- By authorized and qualified specialized personnel only.
- When the device is connected, national and international electrotechnical regulations must be observed.
- Disconnect the system from the mains before electrically connecting the device.
- Do not connect the device when it is live.

Depending on the version, a different PCB terminal is fitted. All versions except Modbus have analogue output.

Model	Print terminal
2-wire	3-pin
3-conductor without switch output	3-pin
3-conductor with switch output	7-pin
3-conductor with Modbus RTU (RS485)	5-pin

2-conductor

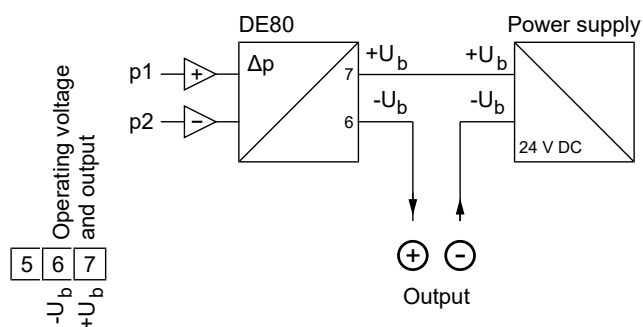


Fig. 10: Electrical connection of a 2-conductor

3-conductor without switch output

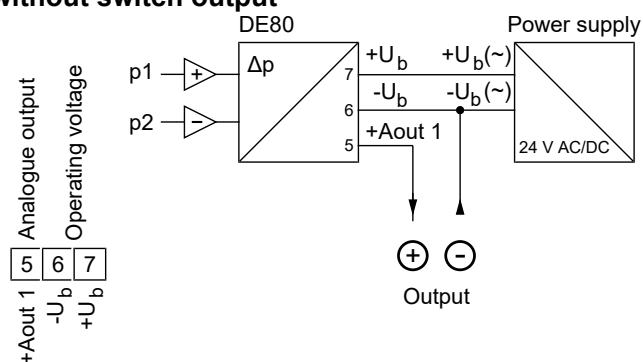


Fig. 11: Electrical connection of a 3-conductor without switch output

4 Start-up

4.1 General

All electrical supply, operating and measuring lines, and the pressure connections must have been correctly installed before commissioning. All supply lines are arranged so that there are no mechanical forces acting on the device.

Check that the pressure connections do not leak before commissioning.

4.2 Display

Optionally, the device can be delivered with a LC display. After switching on the auxiliary voltage, the current measured value appears on the display.

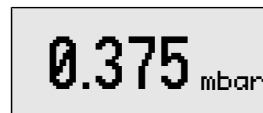


Fig. 15: Measuring data display

4.3 Config select

When configuring the DE80 devices, a distinction is made between devices with analogue output and devices with Modbus.

4.3.1 Devices with analogue output

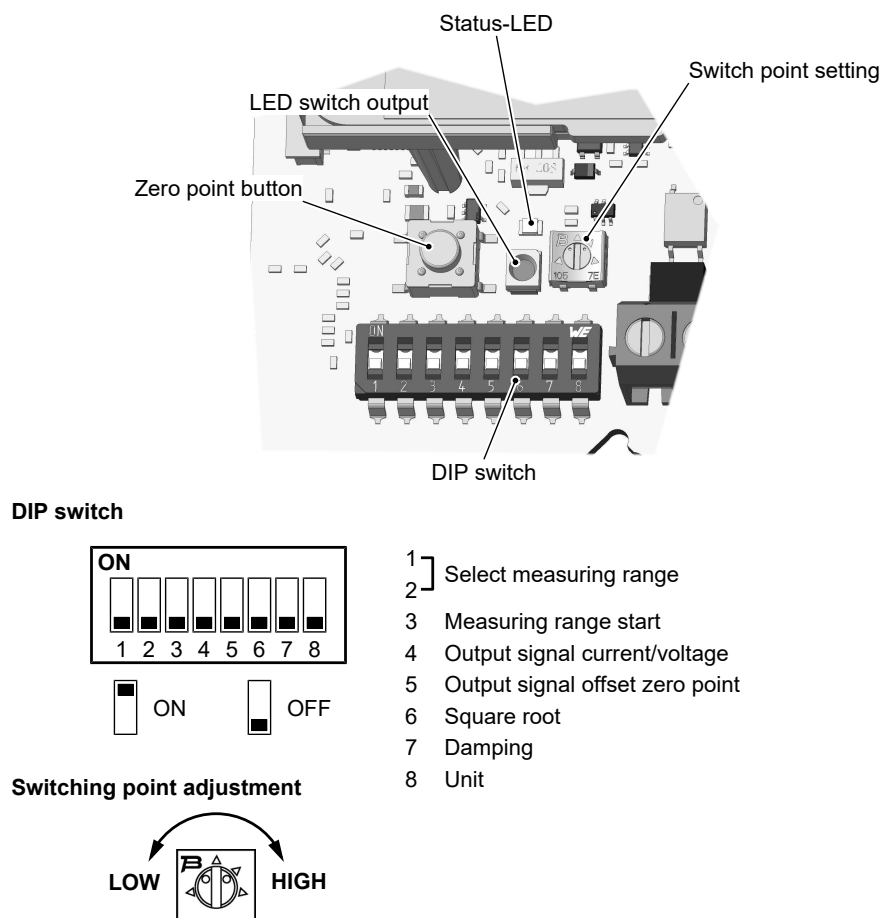




























Fig. 16: Control elements for configuration









4.3.1.1 Measuring range









ON											
								mbar		Pa (kPa)	
1 2 3 4 5 6 7 8								8		8	

Basic measuring range 1 mbar / 100 Pa									
1 2 3									
			+/- 1 mbar +/- 100 Pa						
			+/- 0.75 mbar +/- 75 Pa						
			+/- 0.50 mbar +/- 50 Pa						
			+/- 0.25 mbar +/- 25 Pa						
1 2 3									
			0 ... 1 mbar 0 ... 100 Pa						
			0 ... 0.75 mbar 0 ... 75 Pa						
			0 ... 0.50 mbar 0 ... 50 Pa						
			0 ... 0.25 mbar 0 ... 25 Pa						

Basic measuring range 10 mbar / 1000 Pa									
1 2 3									
			+/- 10 mbar +/- 1000 Pa						
			+/- 5 mbar +/- 500 Pa						
			+/- 3 mbar +/- 300 Pa						
			+/- 1 mbar +/- 100 Pa						
1 2 3									
			0 ... 10 mbar 0 ... 1000 Pa						
			0 ... 5 mbar 0 ... 500 Pa						
			0 ... 3 mbar 0 ... 300 Pa						
			0 ... 1 mbar 0 ... 100 Pa						

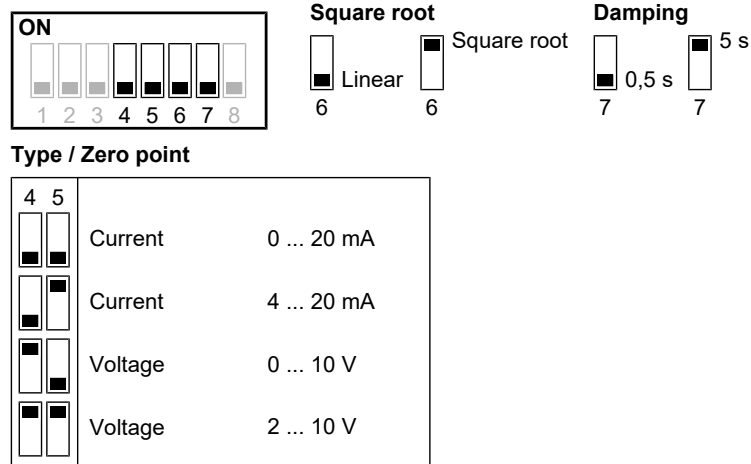
Basic measuring range 50 mbar / 5000 Pa									
1 2 3									
			+/- 50 mbar +/- 5000 Pa						
			+/- 30 mbar +/- 3000 Pa						
			+/- 20 mbar +/- 2000 Pa						
			+/- 10 mbar +/- 1000 Pa						
1 2 3									
			0 ... 50 mbar 0 ... 5000 Pa						
			0 ... 30 mbar 0 ... 3000 Pa						
			0 ... 20 mbar 0 ... 2000 Pa						
			0 ... 10 mbar 0 ... 1000 Pa						

Basic measuring range 100 mbar / 10 kPa									
1 2 3									
			+/- 100 mbar +/- 10 kPa						
			+/- 80 mbar +/- 8 kPa						
			+/- 60 mbar +/- 6 kPa						
			+/- 40 mbar +/- 4 kPa						
1 2 3									
			0 ... 100 mbar 0 ... 10 kPa						
			0 ... 80 mbar 0 ... 8 kPa						
			0 ... 60 mbar 0 ... 6 kPa						
			0 ... 40 mbar 0 ... 4 kPa						

Basic measuring range 250 mbar / 25 kPa									
1 2 3									
			+/- 250 mbar +/- 25 kPa						
			+/- 160 mbar +/- 16 kPa						
			+/- 100 mbar +/- 10 kPa						
			+/- 80 mbar +/- 8 kPa						
1 2 3									
			0 ... 250 mbar 0 ... 25 kPa						
			0 ... 160 mbar 0 ... 16 kPa						
			0 ... 100 mbar 0 ... 10 kPa						
			0 ... 80 mbar 0 ... 8 kPa						

4.3.1.2 Output signal

- Damping affects the analogue output and display.
- DIP switch 2 (symmetry) has no function during root extraction. The measuring range is fixed to 'asymmetrical unidirectional' (0...x).



Note:

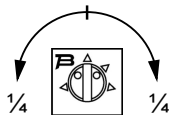
If the analogue output is in U operation, a short circuit at the output is indicated by the status LED (yellow) flashing continuously. However, an error in power operation cannot be displayed.

4.3.1.3 Zero point correction

In order to zero the measured value, the zero point button is actuated in the depressurized state. The yellow status LED flashes 1x long and 2x short as confirmation.

Zero point correction can compensate for an offset up to 33% of the basic measuring range.

4.3.1.4 Switch point setting



To activate the switch point setting, the potentiometer must be quickly adjusted by 1/4 turn.

If the switch point setting mode has been activated, the letters "spc" appear on the display. Now the switch point can be changed with the potentiometer. The change has a direct effect on the state of the switching contacts. The analogue output signal continues to correspond to the pressure measured value. Once activated, the mode cannot be ended without the switch point being overwritten.

If the potentiometer does not change anything for 10 seconds, the set value is automatically adopted as the switch point.

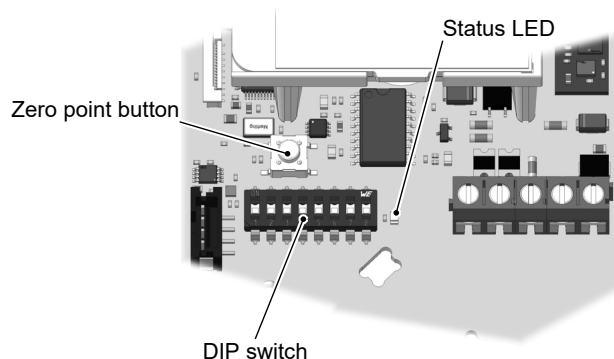
The switch point setting is confirmed by the status LED (yellow), which briefly flashes 1x. The status of the switch contact is indicated by the LED switch output.

The switch output is low-resistance between COM and NC as long as the measured value is lower than the set switch point. In this state the green LED is off.

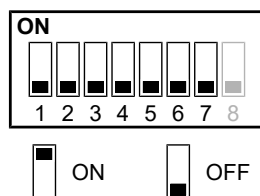
If the measured value exceeds the set switch point, the COM-NO path becomes low-resistance and the LED is switched on.

4.3.2 Device with Modbus

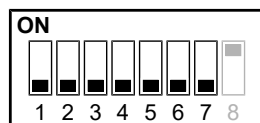
NOTICE! In this section you will learn how to configure a Modbus device. Further information can be found in the Modbus manual.



DIP switch



- 1
- 2
- 3
- 4 Address
- 5
- 6
- 7
- 8 Modbus address = OFF



- 1
- 2 Baud rate
- 3
- 4 Parity
- 5
- 6 Stop bit
- 7 Byte order
- 8 Interface = ON

Delivery status

Address	1
Baud rate	19200
Parity	even
Stop bit	1
Byte order	MSB ... LSB

Fig. 17: Control elements for configuration

4.3.2.1 Modbus address

NOTICE! Address 0 is reserved for the broadcast. For this reason, a decimal 1 is added to each set address.

ON								S1	S2	S3	S4	S5	S6	S7	S8	Σ	Address
1 2 3 4 5 6 7 8																	
								Binary	2 ⁰	2 ¹	2 ²	2 ³	2 ⁴	2 ⁵	2 ⁶		
								Decimal	1	2	4	8	16	32	64	= 127	Sum +1
								0	0	0	0	0	0	0	0	0	1
								1	0	0	0	0	0	0	0	1	2
								0	1	0	0	0	0	0	0	2	3
								1	1	1	1	1	1	1	0	127	128

Fig. 18: Setting the Modbus address

4.3.2.2 Interface

ON								S1	S2	S3		S8	Σ	Baud rate
1 2 3 4 5 6 7 8														
								Binary	2 ⁰	2 ¹	2 ²			
								Decimal	1	2	4		= 7	
								0	0	0		1	0	2400
								1	0	0		1	1	4800
								0	1	0		1	2	9600
								1	1	0		1	3	14400
								0	0	1		1	4	19200
								1	0	1		1	5	38400
								0	1	1		1	6	57600
								1	1	1		1	7	115200

ON								S4	S5	S8	Parity
1 2 3 4 5 6 7 8											
								0	0	1	without
								1	0	1	even
								0	1	1	uneven

ON								S6	S8	Stop bit
1 2 3 4 5 6 7 8										
								0	1	1 Bit
								1	1	2 Bits

ON								S7	S8	Byte order
1 2 3 7 8 6 7 8										
								0	1	MSB ... LSB
								1	1	LSB ... MSB

Fig. 19: Configuring the interface

4.3.2.3 Description of functions

DIP switches

The Modbus is configured with the DIP switch.

There are two settings areas. They are divided into interface and address configurations. Switch S8 allows you to switch between the two setting areas.

As soon as the BUS configuration is changed using the DIP switches, an information window appears on the display (if available) with the currently set BUS configuration.

For complete configuration, the following procedure is recommended:

- First switch on the device and then set all DIP switches to the OFF position. Now use S1 to S7 to select the desired MODBUS address.
- Next, set switch S8 to ON. Now you can configure the baud rate, parity, number of stop bits and byte order.
- Moving each switch results in a configuration change. The configuration is saved after each change. If the operator changes the switch position while the device is switched off, this does not change the bus parameters.

Zero point button

In order to zero the measured value (zero point correction), the button is briefly pressed in the pressureless state. The yellow status LED flashes 1x long and 2x short as confirmation.

Zero point correction can compensate for an offset of up to 33% of the basic measuring range.

If the button is pressed for several seconds, an information window with the currently set BUS configuration appears on the display (if available).

Status LED

The status LED signals confirmation of the zero point correction.

It also flashes quickly and evenly when the device is sending data to the master via Modbus.

5 Servicing

5.1 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.

5.2 Transport

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

5.3 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.


5.4 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]



6 Technical data

6.1 General

Type designation	DE80
Pressure type	Differential pressure
Measurement principle	Piezo-resistive
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

6.2 Input variables

Basic measuring ranges		Overload		Bursting pressure	
1 mbar	100 Pa	0.7 bar	70 kPa	1.0 bar	100 kPa
10 mbar	1000 Pa	0.1 bar	10 kPa	0.2 bar	20 kPa
50 mbar	5000 Pa	0.8 bar	80 kPa	1 bar	100 kPa
100 mbar	10 kPa	0.8 bar	80 kPa	1 bar	100 kPa
250 mbar	25 kPa	1.4 bar	140 kPa	2.5 bar	250 kPa

Each basic measuring range can be divided into three specified measuring ranges. In the case of devices with a Modbus interface, this is parameterized via the interface. For devices with an analogue interface, the desired measuring range can be set using the DIP switches. All options are listed in the measurement accuracy table.

6.3 Output sizes

Analogue output 3-conductor

The output signal can be switched between 0 ... 20 mA, 4 ... 20 mA, 0 ... 10V and 2 ... 10 V (Live Zero).

Output signal	0 to 20 mA 4 to 20 mA	0 ... 10 V 2 ... 10 V
Signal range	0.0 to 21.5 mA	0.0 to 10.75 V
Load impedance R_L	$\leq 600 \Omega$	$\geq 2 \text{ k}\Omega$

Switch output (changeover contact) 3-conductor

Type	Potential-free semiconductor switch (MOS-FET)
Progr. switching function	Changeover contact
Switching voltage	3 to 32 V AC/DC
Max. switching current	0.25 A
Max. switching output	8 W / 8 VA $R_{ON} \leq 4 \Omega$

Analogue output 2-conductor

Output signal	4 to 20 mA
Signal range	3.5 to 21.5 mA
Admissible resistance R_L	$R_L \leq (U_b - 7 \text{ V})/0.02 \text{ A}$

6.4 Measuring accuracy

- Based on the reference temperature, the information only applies within the compensation range.
- The measurement error includes linearity, hysteresis and non-repeatability.
- Compensation range: 0 ... 60 °C.
- TC spread (for all measuring ranges)
 - Type 0.03 %/K
 - Max. 0.06 %/K

Measuring range		Measurement deviation		TC zero point	
[mbar]		Type	Max.	Type	Max.
Basic measuring range 1 mbar / 100 Pa					
±1	0 ... 1	0.75 %	1.5 %	0.04 %/K	0.08 %/K
±0.75	0 ... 0.75	1.25 %	2.5 %	0.08 %/K	0.16 %/K
±0.5	0 ... 0.5	1.75 %	3.5 %	0.14 %/K	0.28 %/K
±0.25	0 ... 0.25	2.25 %	4.5 %	0.20 %/K	0.40 %/K
Basic measuring range 10 mbar / 1000 Pa					
±10	0 ... 10	0.75 %	1.5 %	0.02 %/K	0.05 %/K
±5	0 ... 5	1.25 %	2.5 %	0.05 %/K	0.10 %/K
±3	0 ... 3	1.75 %	3.5 %	0.07 %/K	0.15 %/K
±1	0 ... 1	2.25 %	4.5 %	0.10 %/K	0.20 %/K
Basic measuring range 50 mbar / 5000 Pa					
±50	0 ... 50	0.75 %	1.5 %	0.02 %/K	0.05 %/K
±30	0 ... 30	1.25 %	2.5 %	0.05 %/K	0.10 %/K
±20	0 ... 20	1.75 %	3.5 %	0.07 %/K	0.15 %/K
±10	0 ... 10	2.25 %	4.5 %	0.10 %/K	0.20 %/K
Basic measuring range 100 mbar / 10kPa					
±100	0 ... 100	0.75 %	1.5 %	0.02 %/K	0.04 %/K
±80	0 ... 80	1.25 %	2.5 %	0.03 %/K	0.06 %/K
±60	0 ... 60	1.75 %	3.5 %	0.04 %/K	0.08 %/K
±40	0 ... 40	2.25 %	4.5 %	0.05 %/K	0.10 %/K
Basic measuring range 250 mbar / 25 kPa					
±250	0 ... 250	0.75 %	1.5 %	0.02 %/K	0.04 %/K
±160	0 ... 160	1.25 %	2.5 %	0.03 %/K	0.06 %/K
±100	0 ... 100	1.75 %	3.5 %	0.04 %/K	0.08 %/K
±80	0 ... 80	2.25 %	4.5 %	0.05 %/K	0.10 %/K

6.5 Digital interfaces

Modbus RTU interface

interface	RS 485
Report	Modbus RTU
Modbus specification	Application Protocol Specification V1.1b3 (April 26, 2012)
Address	1 ... 128
Baud rate	2400 ... 115200 Baud
Parity	Even, uneven, parity
Stopbits	1...2

6.6 Auxiliary energy

3-conductor version/Modbus RTU

Nominal voltage	24 V AC/DC
Admissible operating voltage U_b	19.2 V ... 28.8 V AC/DC
Power consumption	< 2W

2-conductor version

Nominal voltage	24 V DC
Admissible operating voltage U_b	12 V ... 28.8 V DC

6.7 Operating conditions

Ambient temperature range	-20 to +70 °C
Medium temperature range	-20 to +70 °C
Storage temperature range	-20 to +70 °C
Protection class	IP54 IP65 with enclosed screw plug
EMC	EN IEC 61326-1:2021 EN IEC 61326-2-3:2021 EN 60730-1:2016 + A1:2019 + A2:2022 + A11:2024
RoHS	EN IEC 63000:2018

6.8 Display

Display	Full graphic LC display
Resolution	128 x 64 Pixel
Back lighting	None
Measuring data display	Display format depends on the measuring range

6.9 Construction design

Process connection		Outer Ø		Inner Ø	
Plug nipple	Hose	6 mm		4 mm	
	Hose	8 mm		6 mm	
Electrical connection	2-conductor	3-conductor	3-conductor changeover contact	Modbus RTU	
Cable screw connection M16 x 1.5	Print terminal No. of pins 3	Print terminal No. of pins 3	Print terminal No. of pins 7	Print terminal No. of pins 5	
Cable screw connection clamping area			5 mm to 10 mm		
Fine-stranded conductor (with ferrule)			0.25 mm ² to 1 mm ²		
Single stranded conductor			0.34 mm ² to 1.5 mm ²		
Installation position			User-defined		
Dimensions (without connections)			92 x 45 x 83		
Weight			Max. 150 g		

6.9.1 Materials

Materials of the parts that come into contact with the medium

Process connection (housing)	Polycarbonate PC
Sensor element	Silicon
Hoses	EPDM

Materials of the parts that come into contact with the surroundings

Housing	Polycarbonate PC
Housing sealant	EPDM
Cable screw connection	Polyamide PA 6
Cable screw connection sealant	TPE or CR (Neoprene)
Closing screw	Galvanised steel

6.9.2 Dimension drawings

All dimensions in mm unless otherwise stated

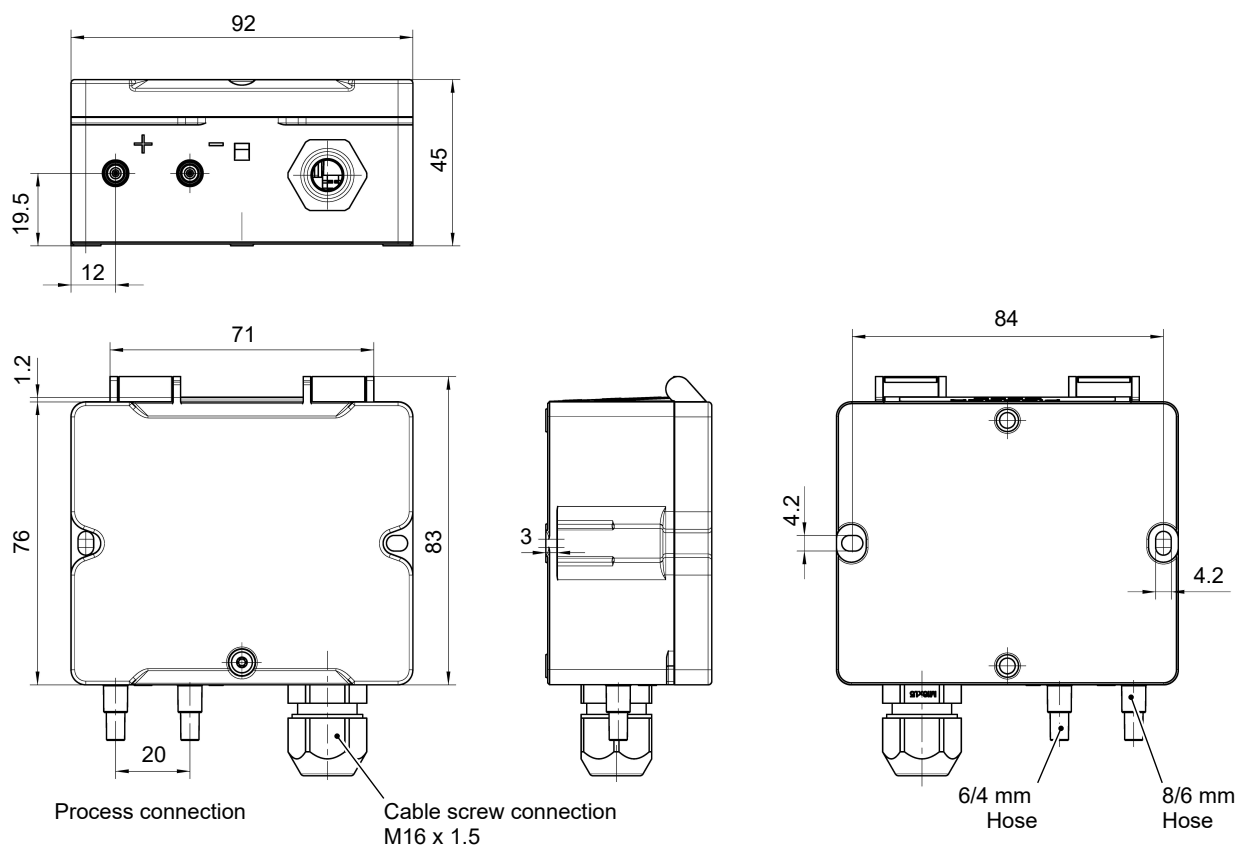
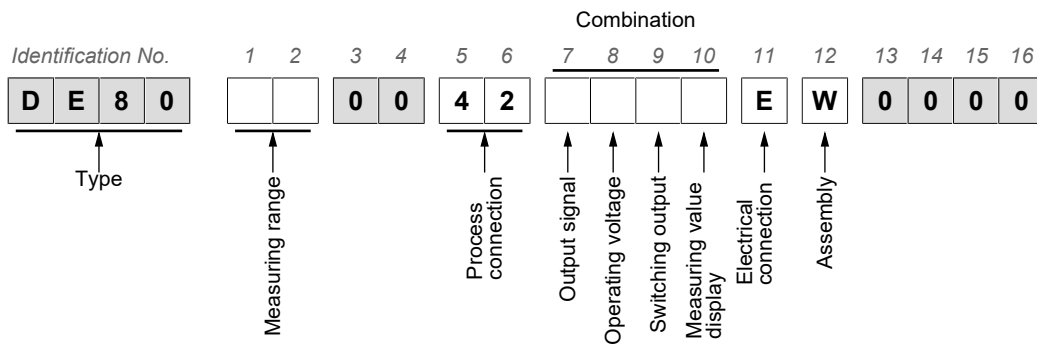


Fig. 20: Dimension drawing

7 Order codes



Measurement range:

[1.2]

0E	Basic measuring range 1 mbar / 100 Pa
1E	Basic measuring range 10 mbar/ 1000 Pa
2E	Basic measuring range 50 mbar/ 5000 Pa
3E	Basic measuring range 100 mbar/ 10 kPa
4E	Basic measuring range 250 mbar/ 25 kPa

Process connection:

[5.6]

42	Plug nipple for 6/4 mm or 8/6 mm hose
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Combined identification number

[7-10]

AL00	Output signal	: 0/4-20 mA, 0/2-10V, 3-conductor
	operating voltage	: 24 V AC/DC
	switching output	: without
	measured value display	: without
AL0C	Output signal	: 0/4-20 mA, 0/2-10V, 3-conductor
	operating voltage	: 24 V AC/DC
	switching output	: without
	measured value display	: 4-digit
AL3C	Output signal	: 0/4-20 mA, 0/2-10V, 3-Leiter
	operating voltage	: 24 V AC/DC
	switching output	: Changeover contact
	measured value display	: 4-digit
B900	Output signal	: 4-20 mA, 2-conductor
	operating voltage	: 24 V DC
	switching output	: without
	measured value display	: without
B90C	Output signal	: 4-20 mA, 2-conductor
	operating voltage	: 24 V DC
	switching output	: without
	measured value display	: 4 digit
ML0C	Output signal	: Modbus RTU, RS485, 3 conductor
	operating voltage	: 24 V AC/DC
	switching output	: without
	measured value display	: 4 digit
ML00	Output signal	: Modbus RTU, RS485, 3 conductor
	operating voltage	: 24 V AC/DC
	switching output	: without
	measured value display	: without

Electrical connection:**[11]****E** Cable screw connection**Assembly:****[12]****W** Wall mounting**7.1 Accessories**

- **Connection set**

To connect the differential pressure transmitter to the ventilation channels comprising

- PVC hose
- ABS measuring nozzle including attachment screws.

Designation	Hose	Length	Order no.
Connection set	2 x 6/4 mm	2.5 m	04005148
	2 x 8/6 mm	2.5 m	04005224

- **Modbus**

Designation	Order no.
T-distributor unshielded	04451213
Y-distributor shielded	04451217
Field attachable connector (M12 coupling)	04459067
Field attachable connector (M12 connector)	04459065
Terminating resistor Modbus 120 Ohm (M12 socket)	06411280
Terminating resistor Modbus 120 Ohm (M12 connector)	06411279

- **Spare parts**

Designation	Order no.
Locking screw	01001758

8 Attachment



(Translation) **CE**

EU Declaration of Conformity

For the product described as follows

Product designation **Differential pressure transmitter**
Type designation **DE80**

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
DIN EN 60730-1:2025-05 EN 60730-1:2016 + A1:2019 + A2:2022 + A11:2024	Automatic electrical controls - Part 1: General requirements

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
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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 Salzungen, Germany
 Tel. +49 (0)5222 974 0

The devices bear the following marking:



Bad Salzungen
08 May 2025

T. Malischewski
 Managing Director

09010461 • CE EN DE80 • Rev. ST4-C • 05/25



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Fig. 21: CE_DE_DE80

(Translation) **UK
CA**

UKCA Declaration of Conformity

For the product described as follows

Product designation Differential pressure transmitter
Type designation DE80

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

Statutory regulation No.	Description
2016 No. 1091	<i>The Electromagnetic Compatibility Regulations 2016</i>
2021 No. 422	<i>The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (Amendment) Regulations 2021</i>
2022 No. 1647	<i>The Hazardous Substances and Packaging (Legislative Functions and Amendment) (EU Exit) Regulations 2020</i>

The products have been tested according to the following standards.

Electromagnetic compatibility (EMC):

<i>BS EN IEC 61326-1:2021-06-07</i>	<i>Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements</i>
<i>BS EN IEC 61326-2-3:2021-06-10</i>	<i>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</i>
<i>BS EN IEC 60730-1+A11:2024-11-04</i>	<i>Automatic electrical controls for household and similar use. General requirements</i>

Restriction of Hazardous Substances (RoHS):

<i>BS EN IEC 63000:2018-12-10</i>	<i>Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances</i>
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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
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The devices bear the following marking:



Bad Salzufen
01 Apr 2025



T. Malischewski
Managing Director



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