DATA SHEET

Type SE56

Transmitter for electromagnetic- inductive flow sensors

- Must be equipped with sensor Type S051, S054, S055 or S056
- Continuous measurement or batch control
- High accuracy
- Different housing shapes and materials available
- Compact and remote design selectable

Product variants described in the data sheet may differ from the product presentation and description.

Can be combined with

Type S051 ▸
Magnetic-inductive flow sensor, low flow rates

Type S054 ▸
Magnetic inductive sensor with intermediate flange for water treatment and general purpose applications

Type S055 ▸
Magnetic inductive sensor with flange for water treatment and general purpose applications

Type S056 ▸
Magnetic inductive sensor with hygienic process connections

Type description

The transmitter Type SE56 (blind in compact version or with display in compact or remote version) connected to the magnetic flow sensor (compact or remote version) Type S051, S054, S055 or S056 is designed for applications with liquids with a minimum conductivity of 5 µS/cm.

The device can be parameterize either with 3 keypads (version with display) or by computer via a serial interface.

As standard, the equipment is supplied with one or two transistor outputs and one digital input. As options, other features are available: such as high frequency output, current output.

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Visit product website ▸

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1. General Technical Data

The SE56 transmitter is available in four versions:

Standard compact version with display	Standard remote version with display	Basic compact version with or without display	Compact version without display
			

It is intended for use with electromagnetic flow sensors Type S051, S054, S055 or S056.
Detailed information can be found in the data sheet of the electromagnetic-inductive flow sensors, see **data sheet Type S051** ▶, **data sheet Type S054** ▶, **data sheet Type S055** ▶, **data sheet Type S056** ▶.

1.1. Standard compact or remote version with display

Product properties	
Housing material	Die casting aluminium or stainless steel 304 electro-polish
Dimensions	Detailed information can be found in chapter "2. Dimensions" on page 7.
Compatibility	Electromagnetic flow sensors Type S051, S054, S055, S056 in compact or remote version Detailed information can be found in data sheets, see **data sheet Type S051** ▶, **data sheet Type S054** ▶, **data sheet Type S055** ▶, **data sheet Type S056** ▶.
Display	Graphic display 8 lines x 16 Characters, 128 x 64 pixels with back light
Keyboard	3 membrane keys
Cable length	For remote version: max. 20 m (distance between sensor and transmitter)
Data-logger	An EEPROM stores the measured values (in case of power failure)
Special function	• Bidirectional measure • Dual measurement range • Diagnostic functions such as empty pipe detection • Remote configuration (for connection to PC through remote configuration tool kit) • Batch and filling functions
Performance data	
Under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s	
Measurement deviation	±0.2 % of reading
Repeatability	±0.1 % of reading
Measurement tolerance	• Flow rate (volume) = ±0.05 % of reading • Out 4/20 mA = ±0.08 % of reading • Frequency out = ±0.08 % of reading
Electrical data	
Operating voltage	90…265 V AC, 44 Hz…66 Hz
Power consumption	Max. 25 VA
Input	1 digital, function use is configurable
Outputs	• Transistor: 2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage) • Current: 1 output, 4…20 mA, RL = 1000 W (+ a second output, on request) • Serial interface (on request): RS-232, RS-485 (Modbus protocol available)
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Medium data	
Velocity range	0.4…10 m/s

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Process/Port connection & communication	
Electrical connection	6 cable glands PG11
Approvals and certificates	
Standards	
Degree of protection according to IEC/EN 60529	• In standard compact version: IP67 • In standard remote version: – IP65 – IP68 (if the junction box of the sensor is filled with resin)
Protection class	Class I
Directives	
CE directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable).
Environment and installation	
Ambient temperature	-20…+60 °C (-4…+140 °F) (operation and storage)
Relative air humidity	≤90 %, without condensation
Height above sea level	Max. 2000 m
Operating conditions	Continuous
Equipment mobility	Fixed device
Application range	Indoor and outdoor (protect the device against electromagnetic interference, ultraviolet rays and against the effects of climatic conditions)
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.2. Basic compact version with or without display

Product properties	
Housing material	PA6 with glass fibre
Dimensions	Detailed information can be found in chapter “2. Dimensions” on page 7.
Compatibility	Electromagnetic flow sensors Type S051, S054, S055, S056 in compact version. Detailed information can be found in data sheets, see **data sheet Type S051 ▶**, **data sheet Type S054 ▶**, **data sheet Type S055 ▶**, **data sheet Type S056 ▶**.
Display	Alphanumeric display 2 lines x 16 Characters, without back light
Parametrisation	Through remote configuration tool kit (accessories Article no. 559374) or 3 keys inside Detailed information can be found in chapters “3. Product accessories” on page 8 and “5.5. Ordering chart accessories” on page 12.
Data-logger	An EEPROM stores the measured values (in case of power failure)
Special function	• Bidirectional measure • Diagnostic functions such as empty pipe detection • Plug in (protected plug for connection to PC)
Performance data	
Under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s	
Measurement deviation	±0.8 % of reading
Repeatability	±0.2 % of reading
Measurements tolerance	• Flow rate (volume) = ±0.1 % of reading • Out 4/20 mA = ±0.12 % of reading • Frequency out = ±0.12 % of reading

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Electrical data	
Operating voltage	90…265 V AC or 12…60 V DC
Power consumption	Max. 6 W
Input	1 digital, function use is configurable
Outputs	• Transistor: 2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage) • Current: 1 output, 4…20 mA, RL = 800 W passive • Serial interface (on request): RS-485 (Modbus protocol available)
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Medium data	
Velocity range	0.4…10 m/s
Process/Port connection & communication	
Electrical connection	3 cable glands PG11
Approvals and certificates	
Standards	
Degree of protection according to IEC/EN 60529	IP65
Protection class	Class I
Directives	
CE directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable).
Environment and installation	
Ambient temperature	• Operation: -10…+50 °C (+14…+122 °F) • Storage: -20…+50 °C (-4…+122 °F)
Relative air humidity	≤90 %, without condensation
Height above sea level	Max. 2000 m
Operating conditions	Continuous
Equipment mobility	Fixed device
Application range	Indoor and outdoor (protect the device against electromagnetic interference, ultraviolet rays and against the effects of climatic conditions)
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

1.3. Compact version without display

Product properties	
Material	
Housing	Stainless steel
Cover	PPS
Seal	EPDM
Dimensions	Detailed information can be found in chapter "2. Dimensions" on page 7.
Compatibility	Electromagnetic flow sensors Type S051, S054, S055, S056 in compact version. Detailed information can be found in data sheets, see **data sheet Type S051 ▶**, **data sheet Type S054 ▶**, **data sheet Type S055 ▶**, **data sheet Type S056 ▶**.
Display	None
Parametrisation	Through remote configuration tool kit (accessories Article no. 559374) Detailed information can be found in chapters "3. Product accessories" on page 8 and "5.5. Ordering chart accessories" on page 12.
Data-logger	An EEPROM stores the measured values (in case of power failure)

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Special function	• Bidirectional measure • Diagnostic functions such as empty pipe detection • Remote configuration (for connection to PC) • Batch and filling functions
Performance data	
Under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s	
Measurement deviation	±0.2 % of reading
Repeatability	±0.1 % of reading
Electrical data	
Operating voltage	20…30 V DC
Power consumption	Max. 10 W
Input	1 digital, function use is configurable
Outputs	• Transistor: 2 outputs, selectable open collector as pulse/frequency (1250 Hz, 100 mA, 40 V DC) or alarm (adjustable usage) • Current: 1 output, 4…20 mA, RL = 800 W passive • Serial interface (on request): RS-485
Galvanic isolation	All the input/outputs are galvanically isolated from power supply
Medium data	
Velocity range	0.4…10 m/s
Process/Port connection & communication	
Electrical connection	2 cable glands PG9
Approvals and certificates	
Standards	
Degree of protection according to IEC/EN 60529	IP65 and IP67
Protection class	Class I
Directives	
CE directives	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable).
Environment and installation	
Ambient temperature	-20…+40 °C (-4…+104 °F) (operation and storage)
Relative air humidity	≤90 %, without condensation
Height above sea level	Max. 2000 m
Operating conditions	Continuous
Equipment mobility	Fixed device
Application range	Indoor and outdoor (protect the device against electromagnetic interference, ultraviolet rays and against the effects of climatic conditions)
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

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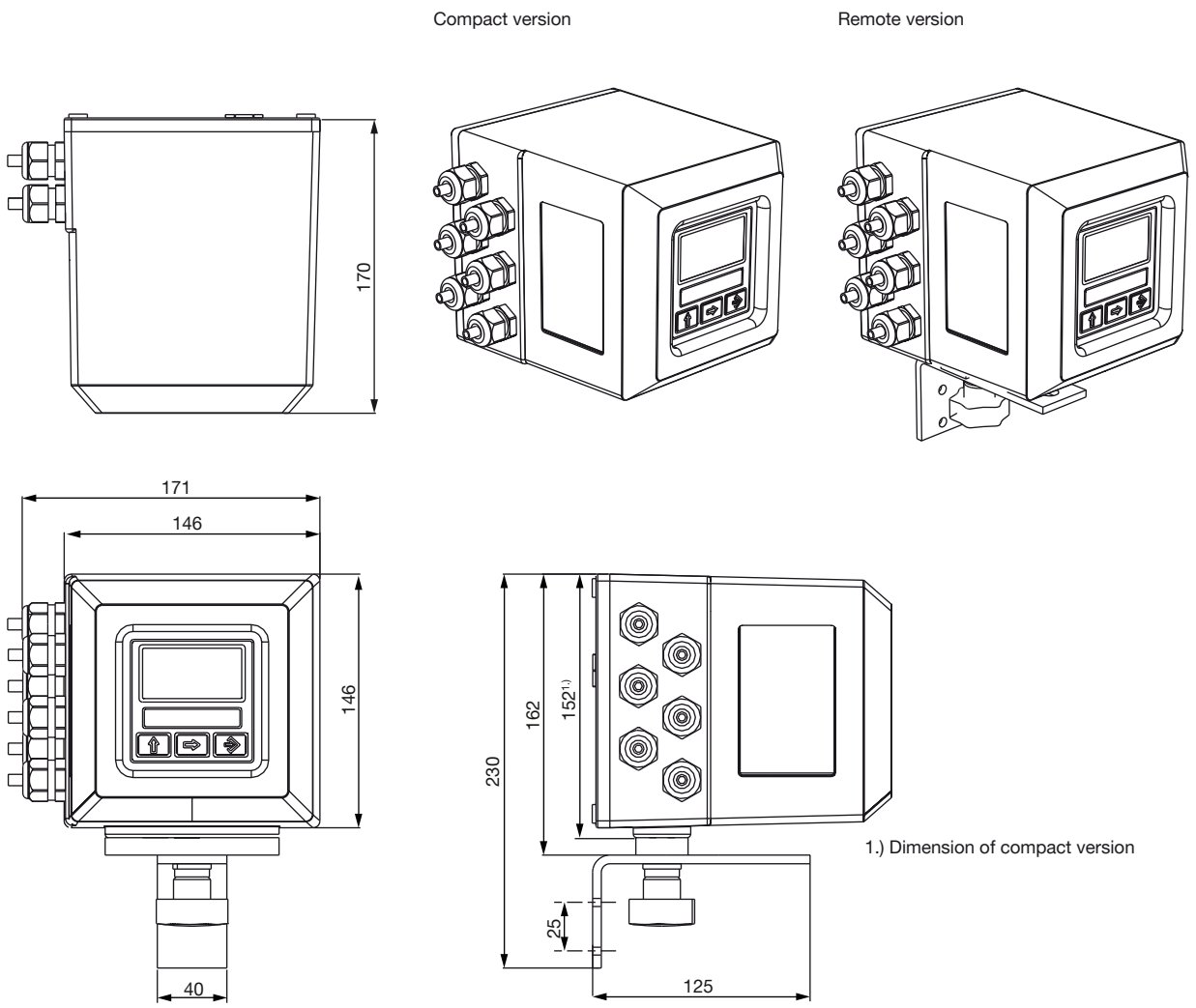
2. Dimensions

2.1. Standard compact or remote version with display

Note:
Dimensions in mm (unless specified differently)



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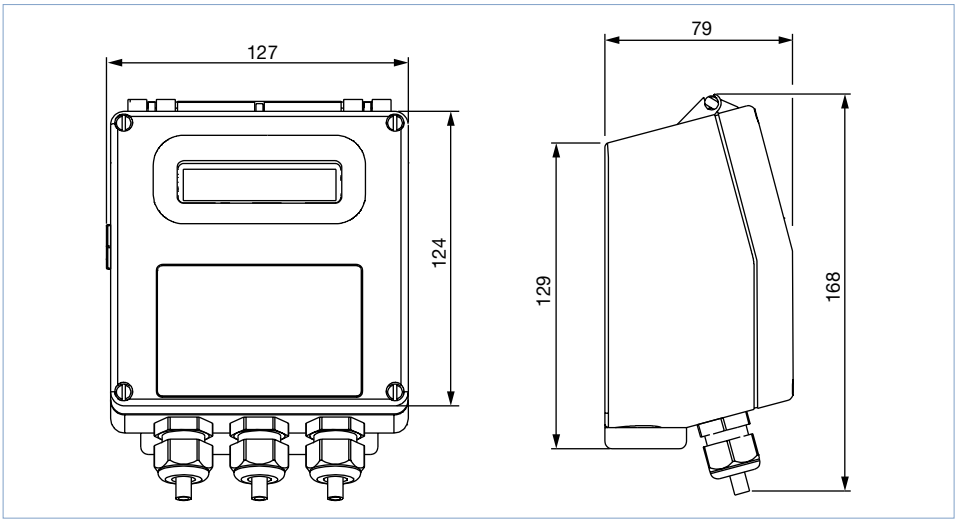
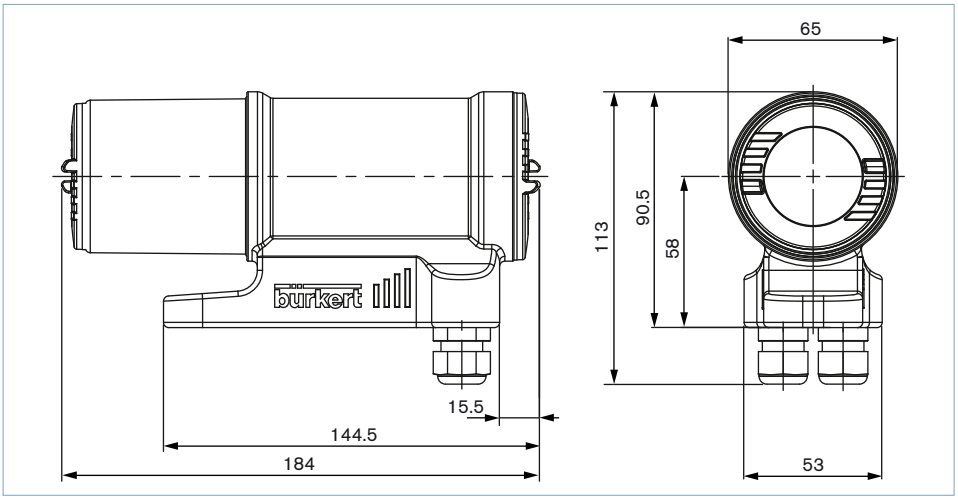
2.2. Basic compact version with or without display

Note:
Dimensions in mm (unless specified differently)



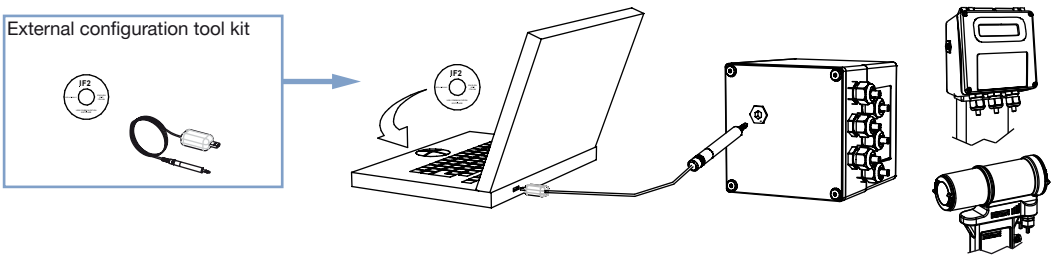
2.3. Compact version without display

Note:
Dimensions in mm (unless specified differently)



3. Product accessories

Note:
To configure a device with or without a display, please use the external configuration toll kit.



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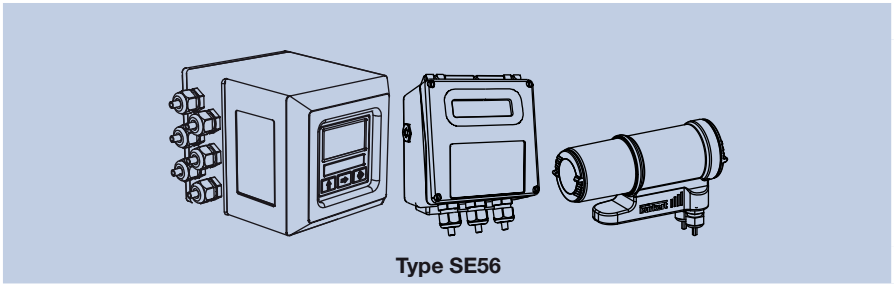
4. Networking and combination with other Bürkert products

4.1. Compact version

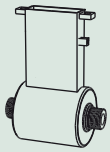
Note:
The compact SE56 transmitter is intended for use with S051, S045, S055 or S056 compact flow sensors.

Example:

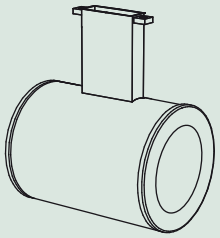


Type SE56

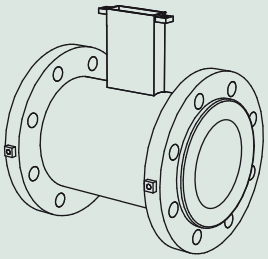
Magnetic flow sensor



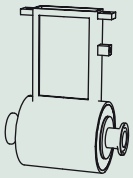
Type S051 ▸
For low flow volumes



Type S054 ▸
Without flanges (wafer)



Type S055 ▸
With flanges



Type S056 ▸
With hygienic process connections

Magnetic flowmeter

Type 8051 ▸
Full bore magmeter for low flow volumes

Type 8054 ▸
Full bore magmeter without flanges (wafer)

Type 8055 ▸
Full bore magmeter with flanges

Type 8056 ▸
Full bore magmeter, hygienic process connections

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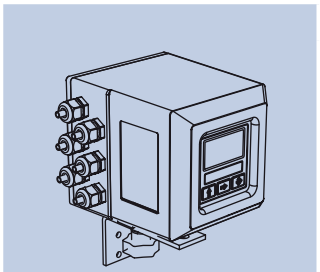
4.2. Remote version

Note:
The remote SE56 transmitter is intended for use with S051, S045, S055 or S056 remote flow sensors.

Example:



Type SE56

Magnetic flow sensor

Type S051 ▸
For low flow volumes

Type S054 ▸
Without flanges (wafer)

Type S055 ▸
With flanges

Type S056 ▸
With hygienic process connections

Magnetic flowmeter

Type 8051 ▸
Full bore magmeter for low flow volumes

Type 8054 ▸
Full bore magmeter without flanges (wafer)

Type 8055 ▸
Full bore magmeter with flanges

Type 8056 ▸
Full bore magmeter, hygienic process connections

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5. Ordering information

5.1. Bürkert eShop – Easy ordering and quick delivery

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5.2. Recommendation regarding product selection

A complete full bore flowmeter consists of a flow sensor (compact or remote version) Type S051, S054, S055 or S056 and a flow transmitter (compact or remote version) Type SE56.

See **Data sheet Type S051** ▶, **Data sheet Type S054** ▶, **Data sheet Type S055** ▶, **Data sheet Type S056** ▶ for more information.

Two different components must be ordered in order to select a complete device. The following information is required:

- **Article no.** of the sensor **Type S051, S054, S055 or S056** (see **Data sheet Type S051** ▶, **Data sheet Type S054** ▶, **Data sheet Type S055** ▶, **Data sheet Type S056** ▶ for more information
- **Article no.** of the transmitter **Type SE56** (see following ordering chart)

5.3. Bürkert product filter

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5.4. Ordering chart transmitter Type SE56

Operating voltage	Outputs	Housing material	Electrical connection	Article no.
Standard compact version with display				
90…265 V AC	2 transistors	Aluminium	6 cable glands	558745
		Stainless steel	6 cable glands	559780
	2 transistors + 4…20 mA	Aluminium	6 cable glands	558747
		Stainless steel	6 cable glands	558306
Standard remote version (wall-mounting) with display				
90…265 V AC	2 transistors	Aluminium	6 cable glands	559781
		Stainless steel	6 cable glands	558310
	2 transistors + 4…20 mA	Aluminium	6 cable glands	558750
		Stainless steel	6 cable glands	558308
Basic compact version with display				
90…265 V AC	2 transistors	Nylon	3 cable glands	562439
	2 transistors + 4…20 mA	Nylon	3 cable glands	562440
12…60 V DC/18…45 V AC	2 transistors	Nylon	3 cable glands	562443
	2 transistors + 4…20 mA	Nylon	3 cable glands	562444
Basic compact version without display				
90…265 V AC	2 transistors	Nylon	3 cable glands	562441
	2 transistors + 4…20 mA	Nylon	3 cable glands	562442
12…60 V DC/18…45 V AC	2 transistors	Nylon	3 cable glands	562445
	2 transistors + 4…20 mA	Nylon	3 cable glands	562446
Compact version without display				
20…30 V DC	Up to 4 transistors	Stainless steel	2 cable glands	559132
	Up to 4 transistors + 4…20 mA	Stainless steel	2 cable glands	559133
	Up to 4 transistors + PROFIBUS DP	Stainless steel	2 cable glands	559134

Further versions on request

Additional

- For standard remote version with display:
  - Panel-mounting version (housing only in plastic)
  - Outputs: 4…20 mA
    RS 485 (Modbus protocol available)
    PROFIBUS DP
    2 transistors (one of them: 10 KHz)
    2 transistors + 1 x RS-232
    2 transistors + 4…20 mA + 1 x RS-232
    HART protocol
    2 relays 60 V AC
    2 relays 250 V AC
- For Basic compact version with or without display:
  - Outputs: 4…20 mA
    RS 485
- For compact version without display:
  - Outputs: 4…20 mA
    RS 485
    PROFIBUS DP

Voltage

- For standard remote version with display:
  - 15…45 V DC/V AC
  - 12…35 V DC

5.5. Ordering chart accessories

Description	Article no.
Remote configuration tool kit	559374

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