



Electromagnetic flow sensor with hygienic process connections

- For connection to a Type SE58 transmitter (with or without display, in compact or remote variant) for flow measurement
- Hygienic variant, 3 A certification
- For food, beverage or pharmaceutical applications
- Flow measurement 0.2...approx. 4.500 l/min for DN 03...DN 100

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

Can be combined with

	Type SE58 L variant of the transmitter for electromagnetic inductive flow sensors	►
	Type SE58 M variant of the transmitter for electromagnetic-inductive flow sensors	►
	Type SE58 S variant of the transmitter for electromagnetic-inductive flow sensors	►

Type description

The electromagnetic flow sensor Type S056 (compact or remote variant) is suitable for applications with low flow rates and liquids with minimum conductivity.

Combining it with the corresponding transmitter Type SE58 S (required minimum conductivity: 20 $\mu\text{S}/\text{cm}$) or Type SE58 M or Type SE58 L transmitters (required minimum conductivity: 5 $\mu\text{S}/\text{cm}$) results in a flowmeter with varying performance, functions, materials, and approvals, suitable for specific applications as per the respective requirements.

Compact devices are built with Type SE58 S, while with Type SE58 M or Type SE58 L, both compact devices and remote variants are available, where the transmitter and sensor are connected with 2 cables up to a maximum distance. Standard process connections for Type S056 are available as clamp and threaded (dairy thread) connections.

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1. General technical data

Note:

Empty pipe functionality is not available for sensors with connections of DN 03...DN 20.

The electromagnetic flow sensor Type S056 in a compact or remote variant is intended for use with transmitter Type SE58, which is available in three variants L, M or S.



Further information can be found in the data sheet of the transmitter, see [data sheet Type SE58](#) ►.

Product properties

Material

Non-wetted parts

Sensor housing	Stainless steel 304/1.4301
Junction box	Only for remote sensor: stainless steel 304 (1.4301) polished

Wetted parts

Clamp	Stainless steel 316L
Lining	PTFE (conform to FDA)
Electrode	Stainless steel 316L
Seal	FKM (conform to FDA), EPDM (on request, conform to FDA)
Pipe diameter	DN 03...DN 100
Dimensions	Further information can be found in chapter "4. Dimensions" on page 6.
Measuring principle	Electromagnetic induction Further information can be found in chapter "6.1. Measuring principle" on page 11.
Measuring range	0...10 l/h to 0...280 m³/h Further information can be found in chapter "7.4. Ordering chart" on page 13.

Performance data

At reference conditions and according to internal test procedures:

- At room temperature
- Constant flow rate during the test, liquid speed > 1 m/s
- Pressure: > 30 Kpa
- Flow condition: observed inlet and outlet conditions
- Zero point stability: ± 0.005 %

Measurement deviation	If used with Type SE58 transmitter: • in compact or remote L variant: ≤ ± 0.2 % of the measured value for flow velocity > 0.5 m/s • in compact or remote M variant: ≤ ± 0.8 % of the measured value for flow velocity > 0.5 m/s • in compact S variant: ≤ ± 0.5 % of the measured value for flow velocity > 0.5 m/s See data sheet Type SE58 ►
Repeatability	If used with Type SE58 transmitter: • in compact or remote L variant: ≤ ± 0.1 % of the measured value for flow velocity > 0.5 m/s • in compact or remote M variant: ≤ ± 0.4 % of the measured value for flow velocity > 0.5 m/s • in compact S variant: ≤ ± 0.25 % of the measured value for flow velocity > 0.5 m/s See data sheet Type SE58 ►
Vacuum resistance	200 mbar (2.9 PSI) absolute at 100 °C (212 °F)

Medium data

Fluid temperature	If used with transmitter Type SE58: • in compact variant: - 20...+ 110 °C (- 4...+ 230 °F) (130 °C (+ 266 °F) allowed for 60 min for steam/hot water cleaning) • in remote variant: - 20...+ 130 °C (- 4...+ 266 °F)
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Fluid pressure	PN 16
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Minimum conductivity	5 µS/cm (or 20 µS/cm with demineralised water)
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Product connections

Pipe connection	DIN 11851, clamp ISO 2852 or clamp BS 4825 (SMS 1146 (from DN 10) on request)
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Electrical connection	2 cable glands PG9 (for remote variant of the sensor)
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Approvals and conformities

Directives

CE directive	Further information on the CE directive can be found in chapter "2.2. Standards" on page 5.
Pressure equipment directive	The device is subject to the requirements of the Pressure Equipment Directive 2014/68/EU. Category II device for group 1 and 2 fluids under the following conditions: • maximum allowable pressure (PS) ≤ 40 bar • minimum/maximum temperature (TS): - 10/+ 130 °C • within the following limits for liquids of group 2: – PN 40 for DN 40...DN 250 • within the following limits for liquids of group 1 with a vapour pressure at the maximum allowable temperature not exceeding 0.5 bar (g): for diameters above DN 25 and PS x DN > 2000

Environment and installation

Ambient temperature	According to the used version of SE58 transmitter and its material Detailed information can be found in the data sheet of the transmitter, see data sheet Type SE58 ►.
Relative air humidity	≤ 90 %, without condensation
Height above sea level	Max. 2000 m
Operating condition	Continuous
Equipment mobility	Fixed
Application range	Indoor and outdoor Protect the device against electromagnetic interference, ultraviolet rays and, when installed outdoors, against the effects of climatic conditions.
Degree of protection according to IEC/EN 60529	If use with SE58 transmitter: • in compact L and M variant: IP67 (IP68 optional) • in compact S variant: IP67 (IP68 optional) • in remote L and M variant: IP68
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

2. Approvals and conformities

2.1. Conformity

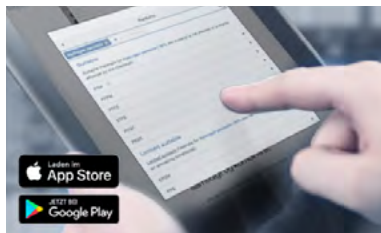
In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.2. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

3. Materials

3.1. Bürkert resistApp



Bürkert resistApp – Chemical resistance chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start chemical resistance check](#)

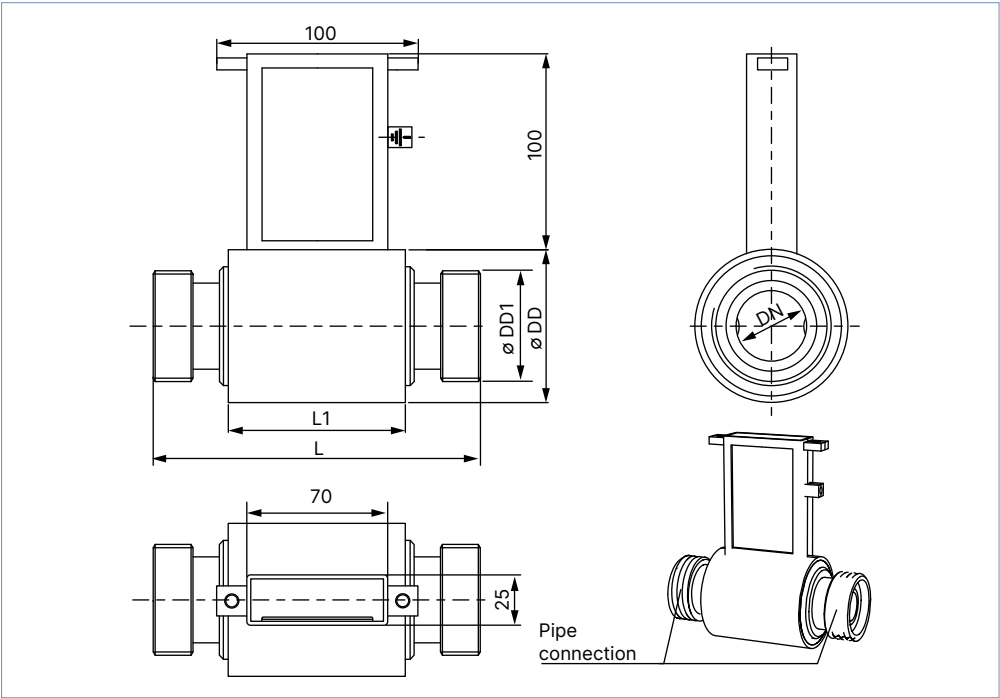
4. Dimensions

4.1. Compact variant

Pipe connection according to DIN 11851

Note:

- Further information on the dimensions of the Type SE58 transmitter can be found in **data sheet Type SE58** ►.
- Dimensions in mm, unless otherwise stated

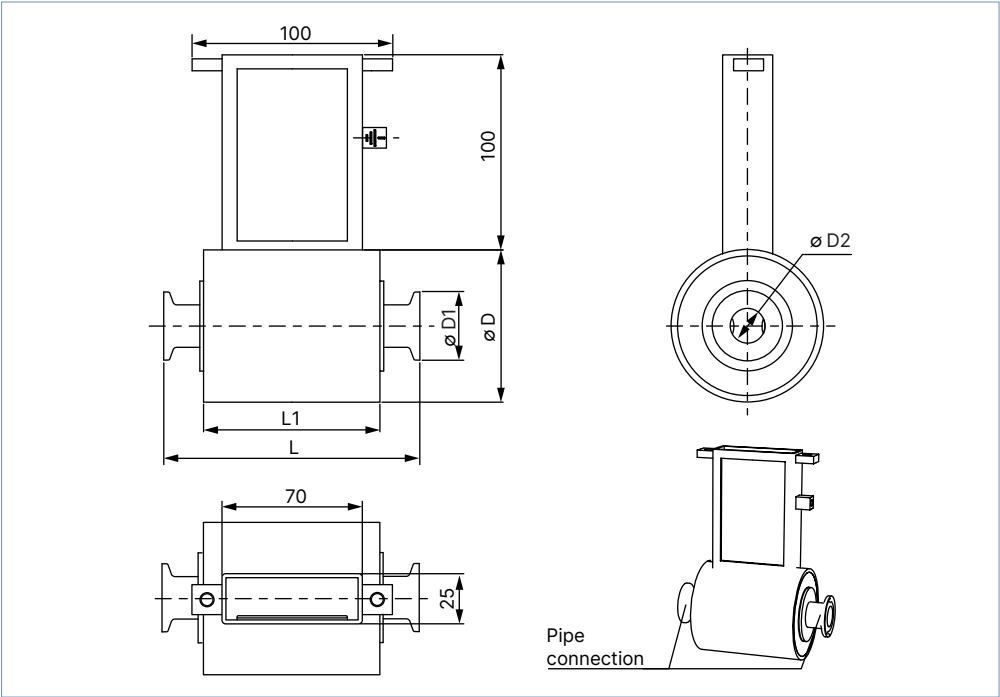


DN	Pipe connection	L	L1	Ø D	Ø D1
03	DN 10	128	77	76	RD28 x 1/8
06					RD28 x 1/8
10					RD28 x 1/8
15					RD34 x 1/8
20	DN 20	180	100	89	RD44 x 1/6
25	DN 25				RD52 x 1/6
32	DN 32				RD58 x 1/6
40	DN 40				RD65 x 1/6
50	DN 50	200	100	114	RD78 x 1/6
65	DN 65			140	RD95 x 1/6
80	DN 80			168	RD110 x 1/4
100	DN 100				RD130 x 1/4

Pipe connection according to clamp ISO 2852 or BS 4825

Note:

- Further information on the dimensions of the Type SE58 transmitter can be found in **data sheet Type SE58** ►.
- Dimensions in mm, unless otherwise stated



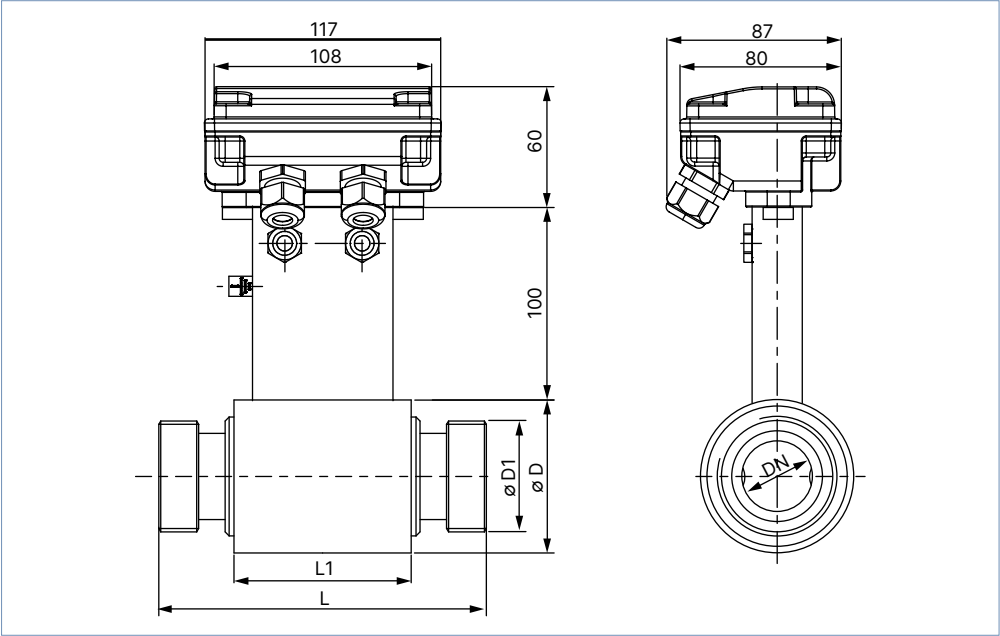
DN	Standard	L	L1	ØD	ØD1	ØD2	
03	Clamp ISO 2852	128	77	76	34	12.7	
	Clamp BS 4825				25.4	9.5	
06	Clamp ISO 2852				34	12.7	
	Clamp BS 4825				25.4	9.5	
10	Clamp ISO 2852				34	12.7	
	Clamp BS 4825				25.4	9.5	
15	Clamp ISO 2852				34	17.2	
	Clamp BS 4825				25.4	15.85	
20	Clamp ISO 2852	180	100	89	34	21.3	
	Clamp BS 4825				50.5	22.2	
25	Clamp ISO 2852				50.5	22.6	
	Clamp BS 4825				50.5	22.2	
40	Clamp ISO 2852				50.5	35.6	
	Clamp BS 4825				50.5	34.9	
50	Clamp ISO 2852			114	64	48.6	
	Clamp BS 4825				64	47.6	
65	Clamp ISO 2852				140	77.5	60.3
	Clamp BS 4825					77.5	60.3
80	Clamp ISO 2852	200	180			91	72.9
	Clamp BS 4825					91	72.9
100	Clamp ISO 2852			119	97.6		
	Clamp BS 4825			119	97.6		

4.2. Remote variant with junction box

Pipe connection according to DIN 11851

Note:

- Further information on the dimensions of the Type SE58 transmitter can be found in **data sheet Type SE58** ►.
- Dimensions in mm, unless otherwise stated

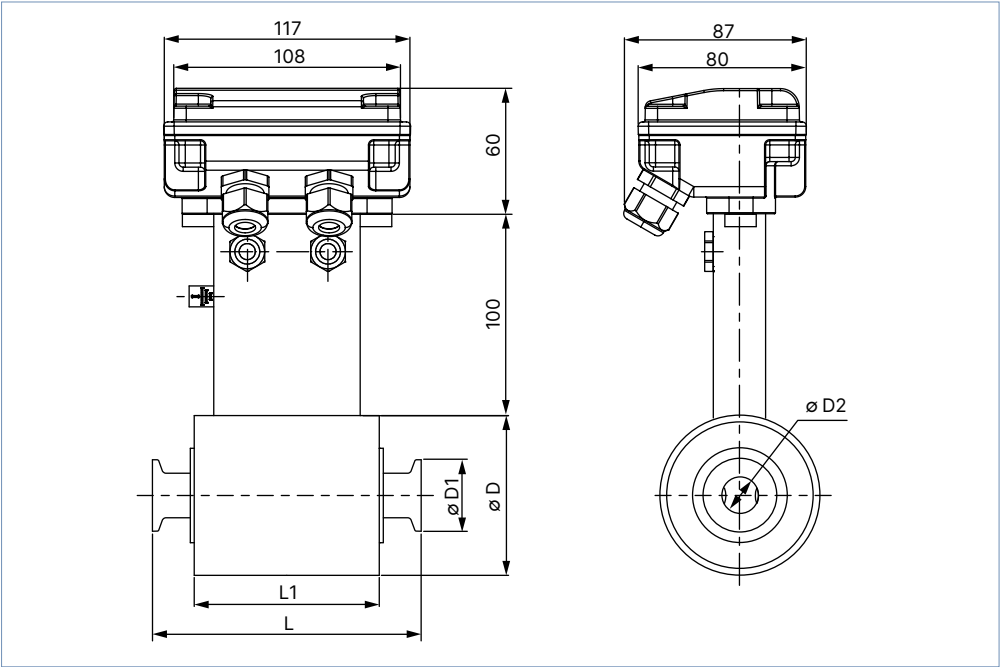


DN	Pipe connection	L	L1	ØD	ØD1
03	DN 10	128	77	76	RD28 x 1/8
06					RD28 x 1/8
10					RD28 x 1/8
15					RD34 x 1/8
20	DN 20	180	100	89	RD44 x 1/6
25	DN 25				RD52 x 1/6
32	DN 32				RD58 x 1/6
40	DN 40				RD65 x 1/6
50	DN 50	200		114	RD78 x 1/6
65	DN 65			140	RD95 x 1/6
80	DN 80			168	RD110 x 1/4
100	DN 100				RD130 x 1/4

Pipe connection according to clamp ISO 2852 or BS 4825

Note:

- Further information on the dimensions of the Type SE58 transmitter can be found in **data sheet Type SE58** ►.
- Dimensions in mm, unless otherwise stated



DN	Standard	L	L1	ØD	ØD1	ØD2
03	Clamp ISO 2852	128	77	76	34	12.7
	Clamp BS 4825				25.4	9.5
06	Clamp ISO 2852				34	12.7
	Clamp BS 4825				25.4	9.5
10	Clamp ISO 2852				34	12.7
	Clamp BS 4825				25.4	9.5
15	Clamp ISO 2852				34	17.2
	Clamp BS 4825				25.4	15.85
20	Clamp ISO 2852	34	21.3			
	Clamp BS 4825	50.5	22.2			
25	Clamp ISO 2852	180	100	50.5	22.6	
	Clamp BS 4825			50.5	22.2	
40	Clamp ISO 2852			89	50.5	35.6
	Clamp BS 4825			50.5	34.9	
50	Clamp ISO 2852			114	64	48.6
	Clamp BS 4825			64	47.6	
65	Clamp ISO 2852			140	77.5	60.3
	Clamp BS 4825			77.5	60.3	
80	Clamp ISO 2852	200		91	72.9	
	Clamp BS 4825			91	72.9	
100	Clamp ISO 2852			180	119	97.6
	Clamp BS 4825			119	97.6	

5. Product installation

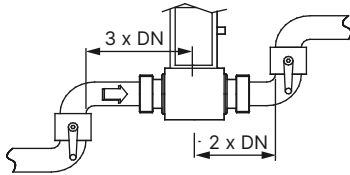
5.1. Installation notes

Flow measurement

Note:

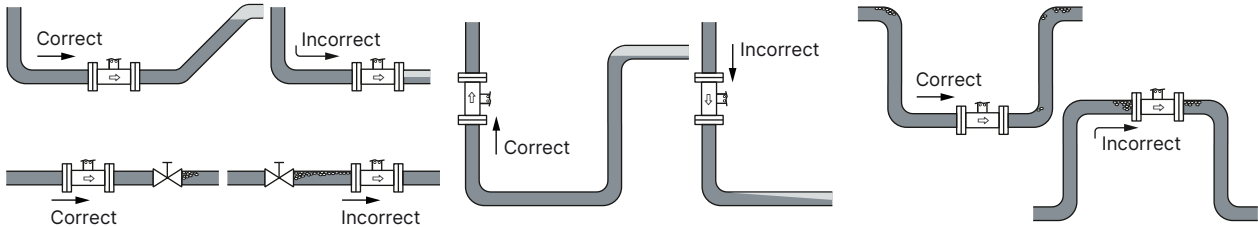
The device is not suitable for use in gaseous media and steam.

Minimum straight distances upstream and downstream of the sensor must be observed.



The device can be installed in either horizontal or vertical pipes, but following additional conditions should be respected:

- The pipe always must be filled with fluid at all times near the device, when it is in operation.
- Mount the sensor in the indicated positions shown below to obtain an accurate flow measurement.



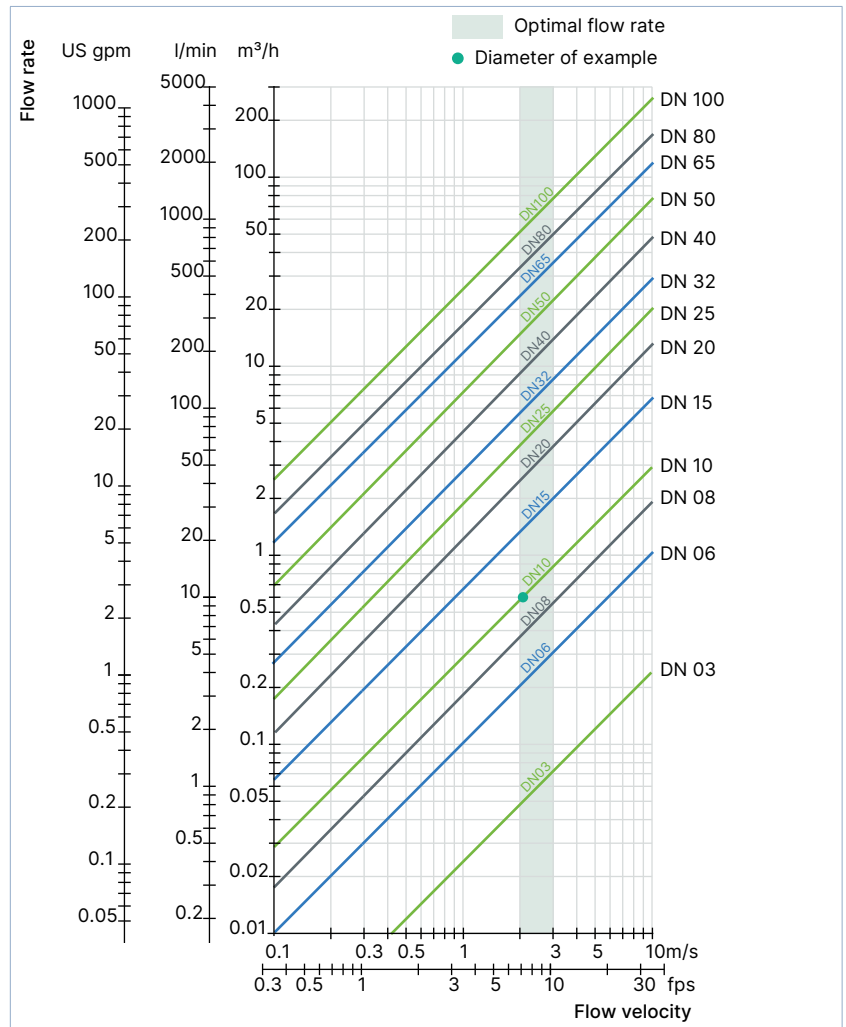
The suitable pipe size is selected using the diagram in the chapter [“5.2. Selection of the nominal diameter”](#) on page 11.

5.2. Selection of the nominal diameter

The following graph is used to determine the appropriate DN of the pipe and fitting for the application, according to the fluid velocity and the flow rate. On the chart, the intersection of flow velocity and flow rate gives the appropriate diameter.

Example:

- Nominal flow: 10 l/min
 - Optimal flow rate: 2...3 m/s
- Result: Select a pipe size of DN 10



6. Product operation

6.1. Measuring principle

Faraday's law serves as the physical basis for magnetic flow measurement.

Magnetic coils are arranged around the pipeline to generate a magnetic field. Conductive liquids flowing through the magnetic field induce a voltage at two opposite metallic electrodes in contact with the medium. These electrodes are used to measure the induced electrical alternating voltage.

The signal of sensor Type S056 must be amplified and processed by transmitter Type SE58.

Detailed information on the dimensions of the SE58 transmitter can be found in **data sheet Type SE58** ►.

7. Ordering information

7.1. Bürkert eShop



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7.2. Recommendation regarding product selection

A complete flowmeter consists of a Type S056 (compact or remote variant) and a Type SE58 transmitter (compact or remote variant).

See **data sheet Type SE58** ► for more information.

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

- **Article no.** of the sensor **Type S056** (see **"7.4. Ordering chart" on page 13**)
- **Article no.** of the transmitter **Type SE58** (see **data sheet Type SE58** ► for more information)

7.3. Bürkert product filter



Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

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7.4. Ordering chart

DN	Flow rate range		Pipe connection	Material				Article no.
[mm]	Min. 0...0.4 m³/s	Max. 0...10 m³/s		Housing	Electrode ^{1.)}	Seal	Lining	
Sensor Type S056, compact variant								
03	0...0.01 m³/h	0...0.25 m³/h	DIN 11851	Stainless steel 304	Stainless steel 316L	FKM	PTFE	555732 
			Clamp ISO 2852					554004 
			Clamp BS 4825					559786 
06	0...0.04 m³/h	0...1 m³/h	DIN 11851					559430 
			Clamp ISO 2852					559431 
			Clamp BS 4825					553325 
10	0...0.12 m³/h	0...3 m³/h	DIN 11851					559432 
			Clamp ISO 2852					554904 
			Clamp BS 4825					554350 
15	0...0.24 m³/h	0...6 m³/h	DIN 11851					553527 
			Clamp ISO 2852					553555 
			Clamp BS 4825					553533 
20	0...0.50 m³/h	0...12.5 m³/h	DIN 11851					553528 
			Clamp ISO 2852					559433 
			Clamp BS 4825					553534 
25	0...0.72 m³/h	0...18 m³/h	DIN 11851					553486 
			Clamp ISO 2852					554151 
			Clamp BS 4825					553535 
32	0...1.16 m³/h	0...29 m³/h	DIN 11851					553529 
40	0...1.80 m³/h	0...45 m³/h	DIN 11851					553530 
			Clamp ISO 2852					553741 
			Clamp BS 4825					553536 
50	0...2.88 m³/h	0...72 m³/h	DIN 11851					553531 
			Clamp ISO 2852					555120 
			Clamp BS 4825					553537 
65	0...4.80 m³/h	0...120 m³/h	DIN 11851					553532 
			Clamp ISO 2852					554116 
			Clamp BS 4825					553538 
80	0...7.20 m³/h	0...180 m³/h	DIN 11851					555089 
			Clamp ISO 2852					559434 
			Clamp BS 4825					559791 
100	0...11.20 m³/h	0...280 m³/h	DIN 11851					On request
			Clamp ISO 2852					On request
			Clamp BS 4825					On request

DN [mm]	Flow rate range		Pipe connection	Material				Article no.
	Min. 0...0.4 m/s	Max. 0...10 m/s		Housing	Electrode ^{1.)}	Seal	Lining	
Sensor Type S056, remote variant with junction box in stainless steel 304 (1.4301) polished and 10 m electrodes and coils cables (included)								
03	0...0.01 m³/h	0...0.25 m³/h	DIN 11851	Stainless steel 304	Stainless steel 316L	FKM	PTFE	551506 
			Clamp ISO 2852					551501 
			Clamp BS 4825					559787 
06	0...0.04 m³/h	0...1 m³/h	DIN 11851					551507 
			Clamp ISO 2852					551502 
			Clamp BS 4825					559788 
10	0...0.12 m³/h	0...3 m³/h	DIN 11851					551508 
			Clamp ISO 2852					551503 
			Clamp BS 4825					559759 
15	0...0.24 m³/h	0...6 m³/h	DIN 11851					551509 
			Clamp ISO 2852					551504 
			Clamp BS 4825					554082 
20	0...0.50 m³/h	0...12.5 m³/h	DIN 11851					551510 
			Clamp ISO 2852					551505 
			Clamp BS 4825					553925 
25	0...0.72 m³/h	0...18 m³/h	DIN 11851					448480 
			Clamp ISO 2852					448499 
			Clamp BS 4825					559789 
32	0...1.16 m³/h	0...29 m³/h	DIN 11851					448481 
40	0...1.80 m³/h	0...45 m³/h	DIN 11851					448482 
			Clamp ISO 2852					448501 
			Clamp BS 4825					554147 
50	0...2.88 m³/h	0...72 m³/h	DIN 11851					448483 
			Clamp ISO 2852					448502 
			Clamp BS 4825					554138 
65	0...4.80 m³/h	0...120 m³/h	DIN 11851					448484 
			Clamp ISO 2852					448503 
			Clamp BS 4825					559790 
80	0...7.20 m³/h	0...180 m³/h	DIN 11851					448485 
			Clamp ISO 2852					448504 
			Clamp BS 4825					558854 
100	0...11.20 m³/h	0...280 m³/h	DIN 11851					448486 
			Clamp ISO 2852					448505 
			Clamp BS 4825					On request

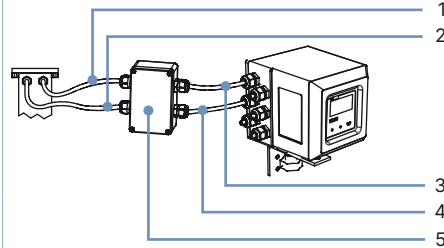
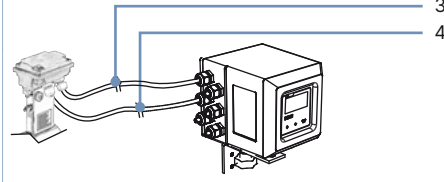
1.) 2 measuring electrodes

Further variants on request


Process connection
 SMS 1146 (from DN 10)

Material
 Seal: EPDM

7.5. Ordering chart accessories

Accessories for remote sensor		No.	Description	Article no.
Without junction box 	1	10 m cable for electrodes ¹⁾ For connecting the sensor (variant without junction box) Type S051, S054, S055 or S056 to the connecting box of the extension cable set	448518	
	2	10 m cable for coils ¹⁾ For connecting the sensor (variant without junction box) Type S051, S054, S055 or S056 to the connecting box of the extension cable set	448519	
	3	10 m cable for electrodes ¹⁾ For connecting - the connecting box of the extension cable set to the transmit- ter Type SE58 - the sensor (variant with junction box) Type S051, S054, S055 or S056 to the transmitter Type SE58	562851	
With junction box 	4	10 m cable for coils ¹⁾ For connecting - the connecting box of the extension cable set to the transmit- ter Type SE58 - the sensor (variant with junction box) Type S051, S054, S055 or S056 to the transmitter Type SE58	562852	
	5	Connecting box of the extension cable set including resin	562853	

1.) Cable lengths other than 10 m on request (for cables length > 20 m, a preamplifier is supplied for an additional charge).