




Type S056

Type SE56

Full bore magmeter, hygienic process connections

- Combination of magflowsensor fitting S056 and electronics SE56
- Continuous measurement or Batch Control
- Sanitary version,  certificate
- Dedicated to food & beverage or pharmaceutical applications
- Low-flow measurements on from 3 l/h

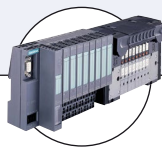
Type 8056 can be combined with...

**Type 6223**

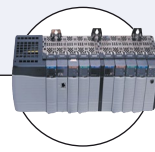
Solenoid control valve

**Type 8693**

Digital process controller

**Type 8644**

Valve islands

**PLC**

The complete full bore magflowmeter Type 8056, which consists of a magnetic sensor fitting Type S056 connected to an electronics Type SE56 (blind in compact version or with display in compact or remote version) is designed for applications with liquids with a minimum conductivity of 5 $\mu\text{S}/\text{cm}$.

Combined with a valve as the actuating element, the complete magflowmeter Type 8056 can control high-precision dosing operations and flow measurement in food & beverage or pharmaceutical industry.

General data - S056 sensor fitting

Compatibility	SE56 electronics (see corresponding data sheet)
Materials	
Body	stainless steel 304
Electrode (2 in standard)	Stainless steel 316L
Lining	PTFE
Seal	FKM or EPDM* (conform to FDA)
Electrical connection	2 cable glands PG9

Data complete flowmeter 8056 - (S056 sensor fitting + SE56 electronics)

Pipe diameter	DN03...DN100
Measuring range	0 ... 10 l/h to 0 ... 280 m ³ /h
Process connection	DIN11851, Clamp ISO2852 or Clamp BS4825 [SMS1146 (from DN10)]*
Medium temperature	see medium temperature chart on page 3
Medium pressure max.	PN16 (232 PSI)
Vacuum resistance	200 mbar (2.9 PSI) absolute at 100 °C (212 °F)
Measurement deviation^{1) 2)}	± 0.2% of reading (SE56 standard; SE56 blind) ± 0.8% of reading (SE56 basic)
Repeatability	± 0.1% (SE56 standard; SE56 blind) ± 0.2% (SE56 basic)
Minimum conductivity	5 $\mu\text{S}/\text{cm}$ (or 20 $\mu\text{S}/\text{cm}$ with demineralized water)

* on request

¹⁾ under reference conditions: water temperature = 20 °C, ambient temperature = 25 °C, constant flow rate during the test, liquid speed > 1 m/s

²⁾ = "measurement bias" as defined in the standard JCGM 200:2012

Environment	
Ambient temperature with	
SE56 standard	-20 ... +60 °C (-4... +140 °F) (operating and storage)
SE56 basic	-10 ... +50 °C (+14... +122 °F) (operating), -20 ... +50 °C (-4... +122 °F) (storage)
SE56 blind	-20 ... +40 °C (-4... +104 °F) (operating and storage)
Standards, directives and certifications	
Protection class	IP65 and IP67 (compact version, SE56 standard or SE56 blind); IP65 (remote version, SE56 standard), IP68 (remote version and junction box filled with resin, SE56 standard); IP65 (compact version, SE56 basic)
Standards and directives CE	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)

Ordering information for complete flowmeter Type 8056

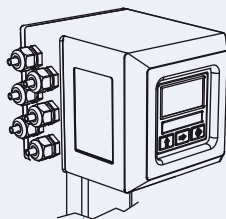
A complete flowmeter Type 8056 consists of a sensor fitting S056 and an electronics SE56.

The following information is necessary for the selection of a complete flowmeter:

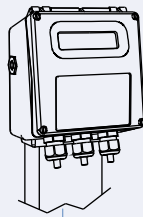
- **article no.** of the sensor fitting **Type S056** (see Ordering Chart on page 6)
- **article no.** of the electronics **Type SE56** (see corresponding data sheet or Ordering chart on page 7)

Examples for variations of complete flowmeter (electronics + sensor fitting)

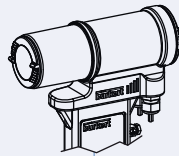
Electronics Type SE56



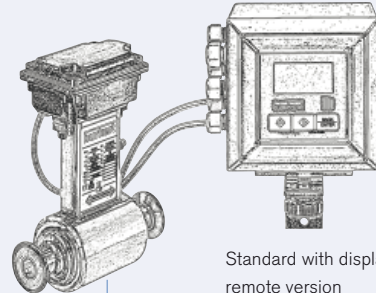
Standard with display
compact version



Basic (with or without display)
compact version

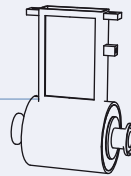


Without display (blind)
compact version

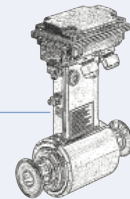


Standard with display
remote version

Sensor fitting Type S056



Compact version
sensor fitting



Remote version
sensor fitting

Design and operating principle

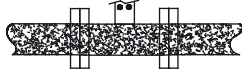
The sensor fitting Type S056 consists of a stainless steel pipe section internally lined with insulating material. Two electrodes mounted opposite to each other on the internal surface of the tube generate an electrical signal. The coils generating the magnetic field are placed outside the pipe. The signal generated by the sensor fitting S056 must be amplified and processed by an electronics (SE56) which outputs an electrical signal proportional to the fluid flow velocity respectively to the flow rate.

Faraday's induction law is the basis for this magnetic flow measurement.

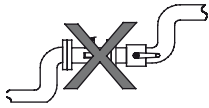
Installation



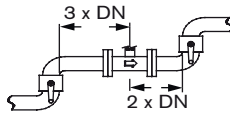
Avoid the functioning with the pipe partially filled.



During flowmeter operation the pipe must be completely full.

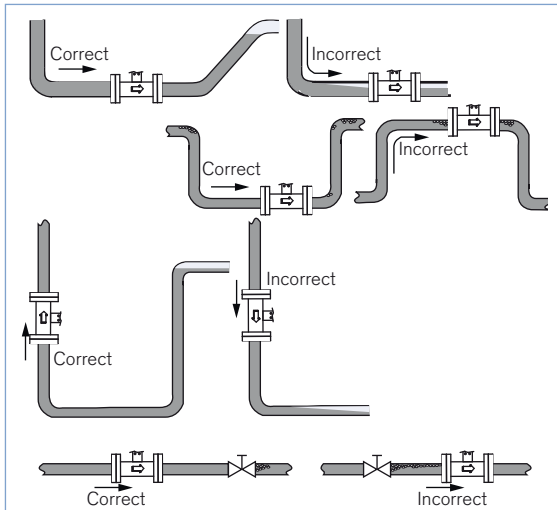


Avoid the installation near curves or hydraulic accessories.



Observe the upstream and downstream distances.

The sensor fitting can be installed into either horizontal or vertical pipes. Mount the sensor fitting in the below as correct indicated ways to obtain an accurate flow measurement.



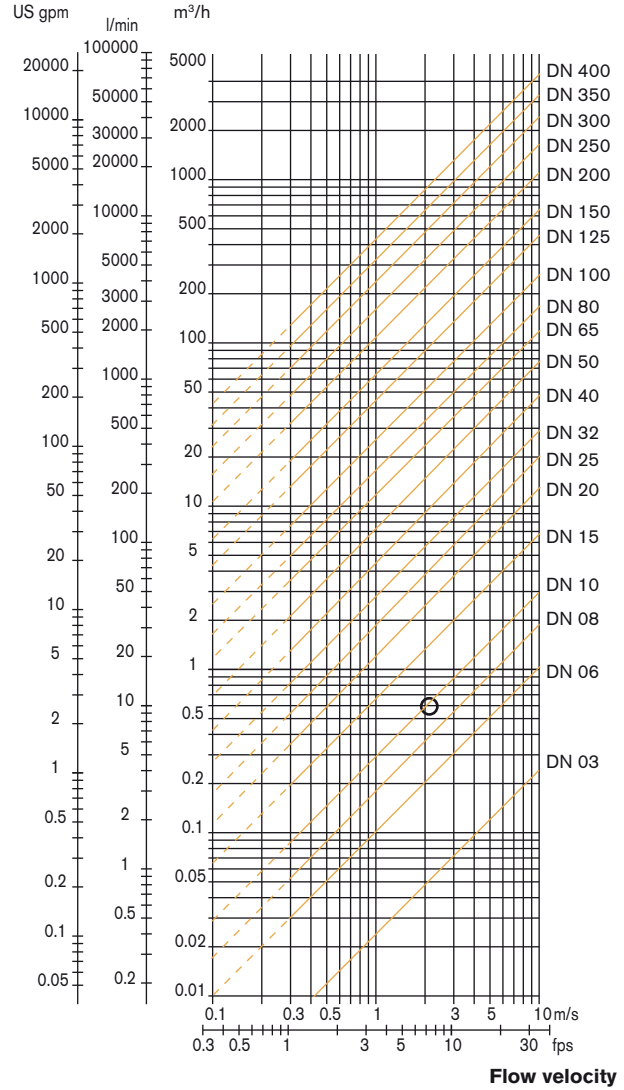
The suitable pipe size is selected using the diagram Flow/Velocity/DN (see diagram to the right).
The flow sensor fitting is not designed for gas flow measurement.

Flow/Velocity/DN diagram






Example:

- Flow: 10 l/min
- Ideal flow velocity: 2 ... 3 m/s
- For these specifications, the diagram indicates a pipe size of DN10

Flow rate



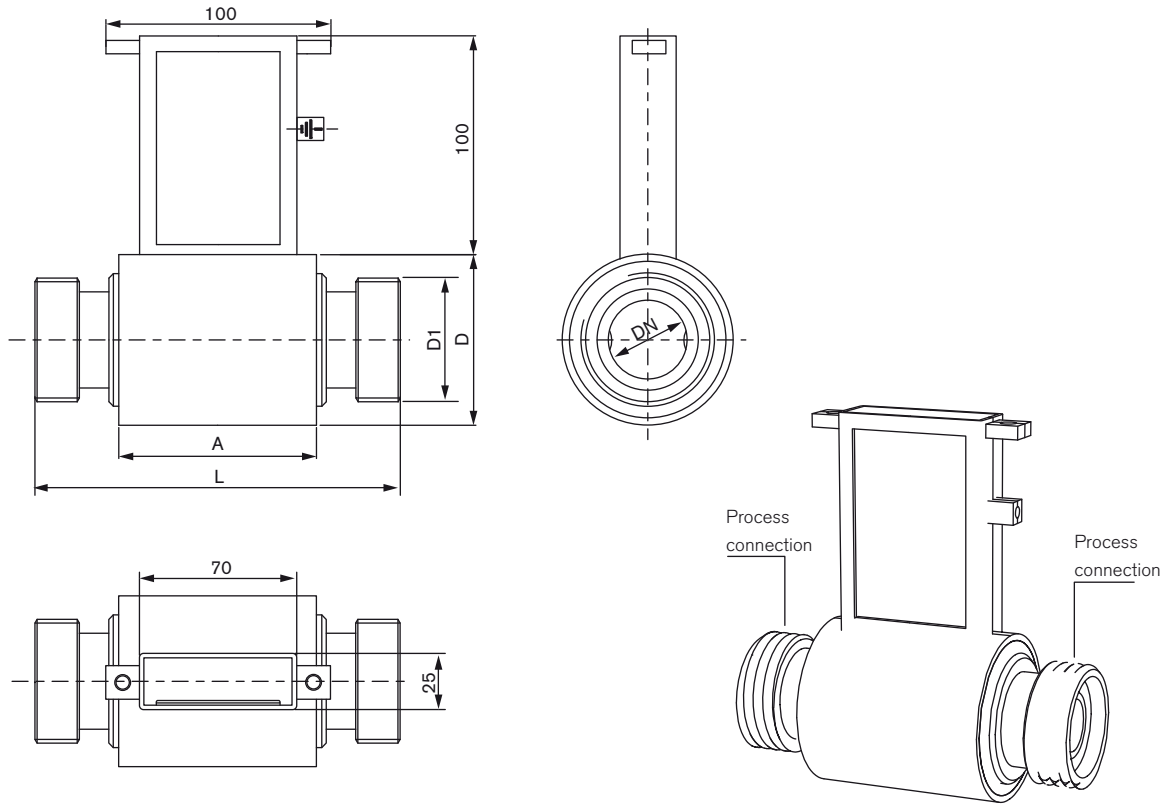
Medium temperature chart

	SE56 standard compact 	SE56 standard remote 	SE56 basic compact 	SE56 blind compact 
 S056 Sensor fitting (compact or remote version)	-20 ... +100 °C (-4... +212 °F)	-20 ... +130 °C (-4... +266 °F)	-10 ... +100 °C (14... +212 °F)	-20 ... +100 °C (-4... +212 °F) [up to 130 °C (up to 266 °F) for max. 1 hour]

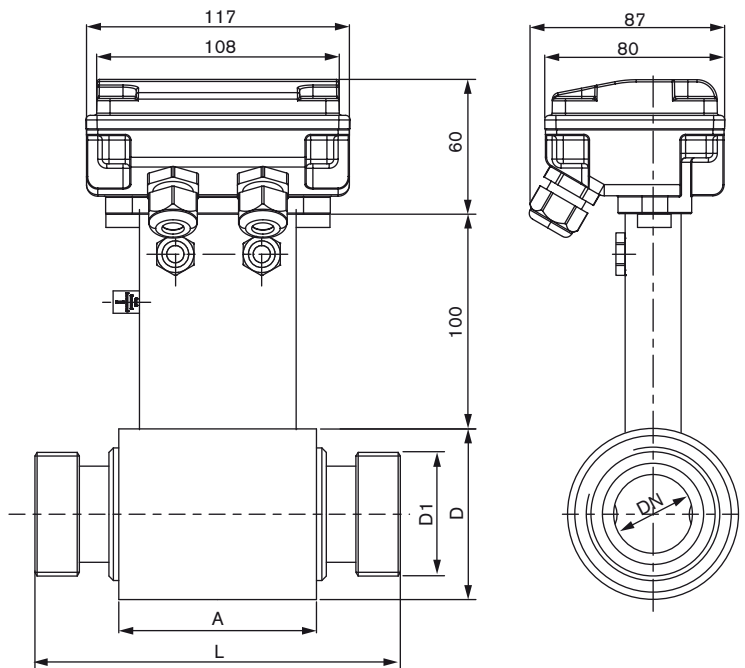
Dimensions [mm] of Type S056 sensor fitting - sanitary version DIN 11851

NOTE: Dimensions of SE56 electronics, see corresponding data sheet.

Compact version



Remote version, with junction box

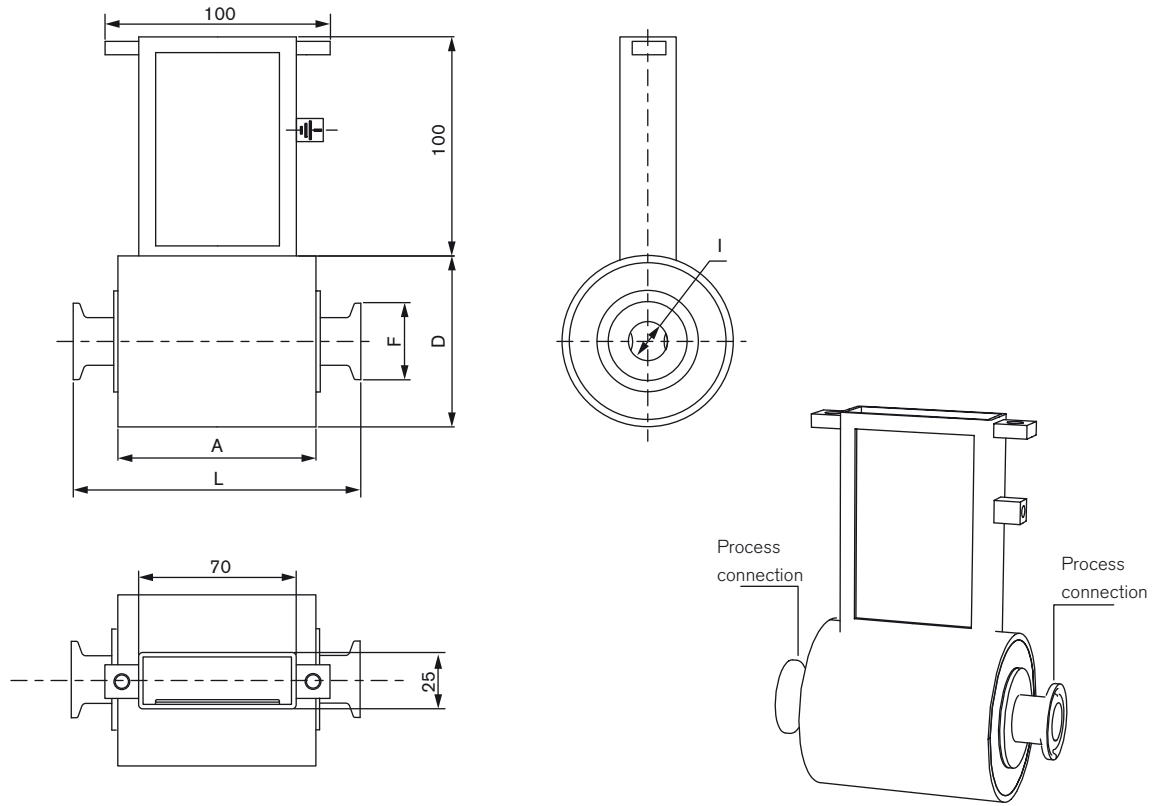


DN	A	L	D	Process connection	D1
03	77	128	76	DN10	RD28 x 1/8
06	77	128	76	DN10	RD28 x 1/8
10	77	128	76	DN10	RD28 x 1/8
15	77	128	76	DN15	RD34 x 1/8
20	77	128	76	DN20	RD44 x 1/6
25	100	180	76	DN25	RD52 x 1/6
32	100	180	89	DN32	RD58 x 1/6
40	100	180	89	DN40	RD65 x 1/6
50	100	180	114	DN50	RD78 x 1/6
65	100	180	140	DN65	RD95 x 1/6
80	100	200	140	DN80	RD110 x 1/4
100	100	200	168	DN100	RD130 x 1/4

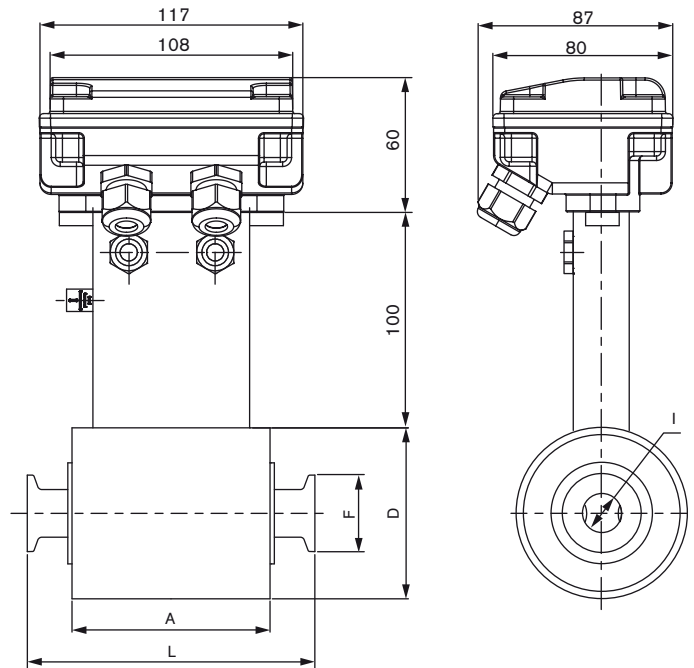
Dimensions [mm] of Type S056 sensor fitting - sanitary version Clamp ISO2852 or BS4825

NOTE: Dimensions of SE56 electronics, see corresponding data sheet.

Compact version



Remote version, with junction box



DN	A	L	D	Standard	F	I
03	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
06	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
10	77	128	76	Clamp ISO2852	34	12.7
				Clamp BS4825	25.4	9.5
15	77	128	76	Clamp ISO2852	34	17.2
				Clamp BS4825	25.4	15.85
20	77	128	76	Clamp ISO2852	34	21.3
				Clamp BS4825	50.5	22.2
25	100	180	76	Clamp ISO2852	50.5	22.6
				Clamp BS4825	50.5	22.2
40	100	180	89	Clamp ISO2852	50.5	35.6
				Clamp BS4825	50.5	34.9
50	100	180	114	Clamp ISO2852	64	48.6
				Clamp BS4825	64	47.6
65	100	180	140	Clamp ISO2852	77.5	60.3
				Clamp BS4825	77.5	60.3
80	100	200	140	Clamp ISO2852	91	72.9
				Clamp BS4825	91	72.9
100	100	200	180	Clamp ISO2852	119	97.6
				Clamp BS4825	119	97.6

Ordering chart for flowmeter 8056

A complete flowmeter Type 8056 consists of:

- a sensor fitting, wafer version Type S056
- an electronics Type SE56

Please order the relevant sensor fitting and the electronics separately!

Sensor fitting Type S056

Description	DN [mm]	Flow rate range		Body material	Number of electrodes	Electrode material	Material: Lining/Seal	Process connection	Article no.
		min. 0...0.4 m/s	max. 0...10 m/s						
Compact version	03	0...10 [l/h]	0...250 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	555732
								Clamp ISO2852	554004
								Clamp BS4825	559786
	06	0...40 [l/h]	0...1000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	559430
								Clamp ISO2852	559431
								Clamp BS4825	553325
	10	0...120 [l/h]	0...3000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	559432
								Clamp ISO2852	554904
								Clamp BS4825	554350
	15	0...240 [l/h]	0...6000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553527
								Clamp ISO2852	553555
								Clamp BS4825	553533
	20	0...500 [l/h]	0...12500 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553528
								Clamp ISO2852	559433
								Clamp BS4825	553534
	25	0...0.72 [m³/h]	0...18 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553486
								Clamp ISO2852	554151
								Clamp BS4825	553535
	32	0...1.16 [m³/h]	0...29 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553529
								Clamp ISO2852	553741
								Clamp BS4825	553536
	40	0...1.80 [m³/h]	0...45 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553530
								Clamp ISO2852	553741
								Clamp BS4825	553536
	50	0...2.88 [m³/h]	0...72 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553531
								Clamp ISO2852	555120
								Clamp BS4825	553537
	65	0...4.80 [m³/h]	0...120 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	553532
								Clamp ISO2852	554116
								Clamp BS4825	553538
	80	0...7.20 [m³/h]	0...180 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	555089
								Clamp ISO2852	559434
								Clamp BS4825	559791
	100	0...11.20 [m³/h]	0...280 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	on request
								Clamp ISO2852	on request
								Clamp BS4825	on request
Remote version with 10 m cable (included)	03	0...10 [l/h]	0...250 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	551506
								Clamp ISO2852	551501
								Clamp BS4825	559787
	06	0...40 [l/h]	0...1000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	551507
								Clamp ISO2852	551502
								Clamp BS4825	559788
	10	0...120 [l/h]	0...3000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	551508
								Clamp ISO2852	551503
								Clamp BS4825	559759
	15	0...240 [l/h]	0...6000 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	551509
								Clamp ISO2852	551504
								Clamp BS4825	554082

Description	DN [mm]	Flow rate range		Body material	Number of electrodes	Electrode material	Material: Lining/Seal	Process connection	Article no.
		min. 0...0.4 m/s	max. 0...10 m/s						
Remote version with 10 m cable (included)	20	0...500 [l/h]	0...12500 [l/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	551510
								Clamp ISO2852	551505
								Clamp BS4825	553925
	25	0...0.72 [m³/h]	0...18 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448480
								Clamp ISO2852	448499
								Clamp BS4825	559789
	32	0...1.16 [m³/h]	0...29 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448481
								Clamp ISO2852	448501
								Clamp BS4825	554147
	40	0...1.80 [m³/h]	0...45 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448482
								Clamp ISO2852	448501
								Clamp BS4825	554147
50	0...2.88 [m³/h]	0...72 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448483	
							Clamp ISO2852	448502	
							Clamp BS4825	554138	
65	0...4.80 [m³/h]	0...120 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448484	
							Clamp ISO2852	448503	
							Clamp BS4825	559790	
80	0...7.20 [m³/h]	0...180 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448485	
							Clamp ISO2852	448504	
							Clamp BS4825	558854	
100	0...11.20 [m³/h]	0...280 [m³/h]	SS 304	2	SS 316L	PTFE/FKM	DIN 11851	448486	
							Clamp ISO2852	448505	
							Clamp BS4825	on request	

Further versions on request

Please also use the "request for quotation" form on page 9 for ordering a customized sensor fitting.

Electronics Type SE56 (for more data, refer to data sheet Type SE56)

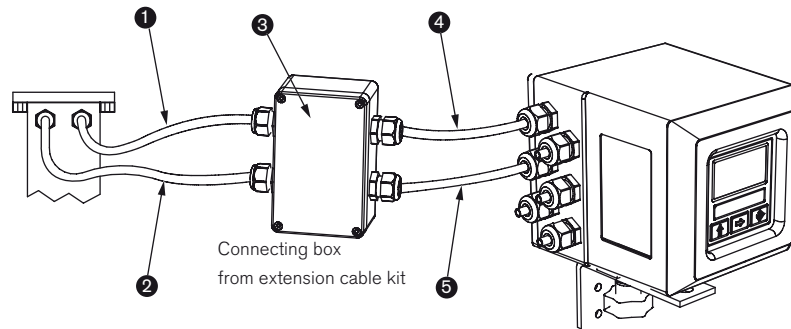
Description	Power supply	Outputs	Body material	Electrical connection	Article no.
Standard compact version with display	90...265 V AC	2 transistors	Aluminium	6 cable glands	558745
			Stainless steel	6 cable glands	559780
		2 transistors + 4...20 mA	Aluminium	6 cable glands	558747
			Stainless steel	6 cable glands	558306
Standard wall-mounting version 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
	18...63 V DC	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
	18...63 V DC	2 transistors	Nylon	3 cable glands	562445
		2 transistors + 4...20 mA	Nylon	3 cable glands	562446
Blind compact version	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

Ordering chart for spare parts/accessories for sensor fitting Type S056

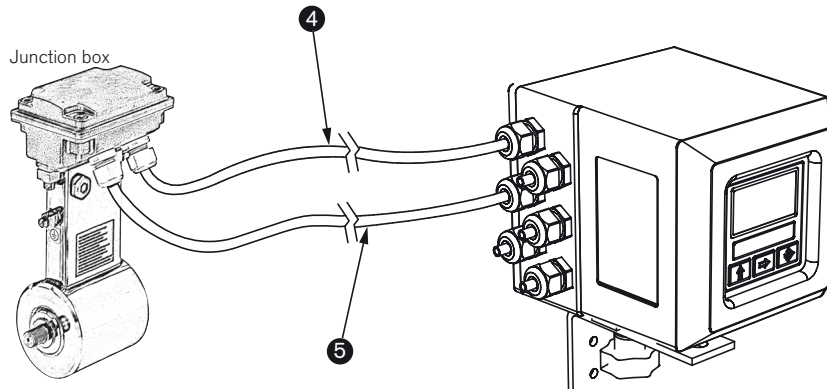
Description	Purpose	No. on drawing	Article no.
Electrode cable, 10 m long	for connection between sensor fitting without junction box Type S054/S055, S051 or S056 and electronics Type SE56*	1	448518
	for connection between sensor fitting with junction box Type S054/S055, S051 or S056 and electronics Type SE56* or for connection between extension cable kit and electronics Type SE56*	4	562851
Coil cable, 10 m long	for connection between sensor fitting without junction box Type S054/S055, S051 or S056 and electronics Type SE56*	2	448519
	for connection between sensor fitting with junction box Type S054/S055, S051 or S056 and electronics Type SE56* or for connection between extension cable kit and electronics Type SE56*	5	562852
Extension cable kit	including a connecting box and resin	3	562853

* (see corresponding data sheet)

Sensor fitting Type S056 without junction box



Sensor fitting Type S056 with junction box



Further versions on request



Electrical connection
Electrode and coil cables length