



Full bore magmeter with flanges

- Combination of sensor S055 and transmitter SE56
- Continuous measurement or Batch Control
- For water treatment and general purpose applications
- Flow rate measurement for DN 25...DN 200

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

Can be combined with



Type 8644

Remote Process Actuation Control System AirLINE



Type 8693

Digital electropneumatic process controller for the integrated mounting on process control valves

Type description

The complete full bore magflowmeter Type 8055, which consists of a magnetic sensor Type S055 (in compact or remote version) connected to a transmitter Type SE56 (without display 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 full bore magflowmeter Type 8055 can also control high-precision dosing operations and flow measurements in potable water treatment and waste water treatment.

Phase out

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1. General Technical Data

The 8055 flowmeter is available with different transmitters.
The versions of the transmitter, Type SE56, are:

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

Detailed information can be found in the data sheet of the transmitter for electromagnetic-inductive flow sensors, see **data sheet Type SE56** ►.

Product properties

Material

Non wetted parts

Sensor housing Carbon steel painted (stainless steel 304 or 316 on request)

Wetted parts

Electrode Stainless steel 316L (Alloy C, Titanium, Tantalum, Platinum-rhodium on request)

Lining PP or ebonite (hard rubber) (PTFE on request)

- Seal
- FKM (EPDM on request) with PP lining
 - Without gasket with ebonite (hard rubber) lining (with PTFE lining on request)

Dimensions Detailed information can be found in chapter **"3. Dimensions"** on page 6.

Pipe diameter DN 25...DN 200 (upper DN on request)

Measuring principle Electromagnetic induction
Detailed information can be found in chapter **"5.1. Measuring principle"** on page 9.

Measuring range 0...0.72 m³/h to 0...1130 m³/h
Detailed information can be found in chapter **"6.4. Ordering chart sensor Type S055"** on page 11.

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 If used with SE56 transmitter

- In standard compact version: ±0.2 % of reading
- In standard remote version: ±0.2 % of reading
- In Basic compact version: ±0.8 % of reading
- In compact version without display: ±0.2 % of reading

Repeatability If used with SE56 transmitter

- In standard compact version: ±0.1 %
- In standard remote version: ±0.1 %
- In Basic compact version: ±0.2 %
- In compact version without display: ±0.1 %

Vacuum resistance 200 mbar (2.9 PSI) absolute at 100 °C (212 °F)

Medium data

Fluid temperature

- With PP lining used with SE56 transmitter:
 - in standard compact version: -0...+60 °C (+32...+140 °F)
 - in standard remote version: -0...+60 °C (+32...+140 °F)
 - in Basic compact version: -0...+60 °C (+32...+140 °F)
 - in compact version without display: -0...+60 °C (+32...+140 °F)
- With PTFE lining (on request) used with SE56 transmitter:
 - in standard compact version: -20...+100 °C (-4...+212 °F)
 - in standard remote version: -20...+130 °C (-4...+266 °F)
 - in Basic compact version: -10...+100 °C (+14...+212 °F)
 - in compact version without display: -20...+100 °C (-4...+212 °F)

Fluid pressure	PN 16 (232 PSI) with PP lining
Minimum conductivity	5 µS/cm (or 20 µS/cm with demineralised water)
Process/Port connection & communication	
Process connection	Flange EN1092-1, ANSI B16-5, (JIS on request)
Electrical connection	2 cable glands PG9 (for remote version of the sensor)
Approvals and certificates	
Standards	
Degree of protection according to IEC/EN 60529	If use with SE56 transmitter: • in standard compact version: IP65 and IP67 • in standard remote version: – IP65 – IP68 (if the junction box of the sensor is filled with resin) • in Basic compact version: IP65 • in compact version without display: IP65 and IP67
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).
Pressure equipment directives	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 10 for DN 400...DN 500 – PN 16 for DN 250...DN 300 – PN 25 for DN 200...DN 250 – 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×DN>2000
Environment and installation	
Ambient temperature	If used with SE56 transmitter: • in standard compact version: -20...+60 °C (-4...+140 °F) (operation and storage) • in standard remote version: -20...+60 °C (-4...+140 °F) (operation and storage) • in Basic compact version: – -10...+50 °C (+14...+122 °F) (operating) – -20...+50 °C (-4...+122 °F) (storage) • in compact version without display: -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

2. Product versions

The flowmeter 8055 is available in a compact or remote version.

Compact version of the flowmeter Type 8055



A compact version of the flowmeter Type 8055 is made of a sensor Type S055 in a compact version and a compact transmitter Type SE56. The compact flowmeter is also available in 3 versions depending on the used transmitter.

Product details	
Standard transmitter	With display, housing in aluminium or stainless steel
Basic transmitter	With or without display, housing in nylon
Without display transmitter	Without display, housing in stainless steel



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

- **Article no.** of the compact sensor Type S055 (Detailed information can be found in chapter “6.4. Ordering chart sensor Type S055” on page 11)
- **Article no.** of the compact transmitter Type SE56 (see **data sheet Type SE56** ►)

Remote version of the flowmeter Type 8055



A remote version of the flowmeter Type 8055 is made of a sensor Type S055 in a remote version and a remote transmitter Type SE56. The remote flowmeter is available with the following transmitter.

Product details	
Standard transmitter	With display, housing in aluminium or stainless steel



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

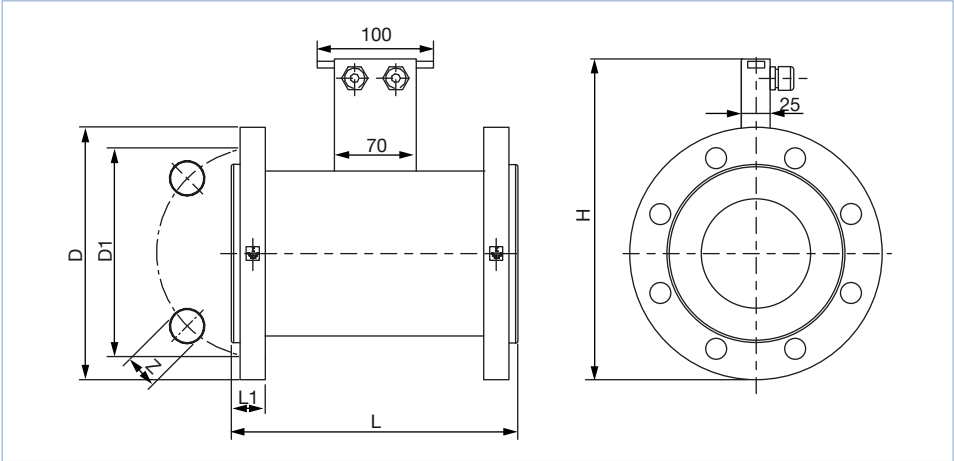
- **Article no.** of the remote sensor Type S055 (Detailed information can be found in chapter “6.4. Ordering chart sensor Type S055” on page 11)
- **Article no.** of the remote transmitter Type SE56 (see **data sheet Type SE56** ►)

3. Dimensions

3.1. Compact version, PN 16

Note:

- Detailed information on the dimensions of the SE56 transmitter can be found in **data sheet Type SE56** ►.
- Dimensions in mm (unless specified differently)

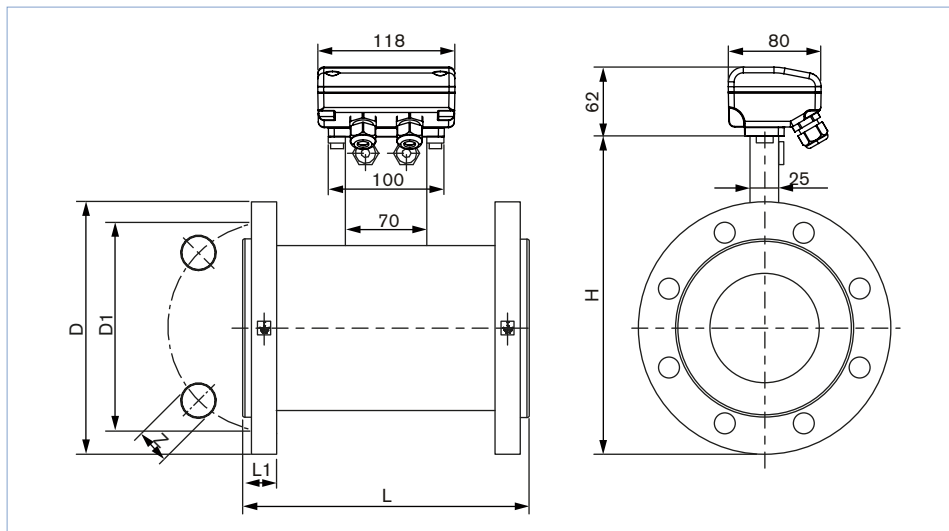


DN	H	L	Standard	L1	Z	D1	D
25	185	200	EN 1092-1	18	4 x 14	85	115
	182		ANSI 150 RF	16.3	4 x 15.9	79.4	107.9
32	203	200	EN 1092-1	18	4 x 18	100	140
	192		ANSI 150 RF	17.9	4 x 15.9	88.9	117.5
40	213	200	EN 1092-1	18	4 x 18	110	150
	202		ANSI 150 RF	19.5	4 x 15.9	98.4	127
50	228	200	EN 1092-1	18	4 x 18	125	165
	222		ANSI 150 RF	21.1	4 x 19	120.7	152.4
65	248	200	EN 1092-1	18	4 x 18	145	185
	245		ANSI 150 RF	24.3	4 x 19	139.7	177.8
80	263	200	EN 1092-1	20	8 x 18	160	200
	258		ANSI 150 RF	25.9	4 x 19	152.4	190.5
100	283	250	EN 1092-1	20	8 x 18	180	220
	287		ANSI 150 RF	25.9	8 x 19	190.5	228.6
125	313	250	EN 1092-1	22	8 x 18	210	250
	315		ANSI 150 RF	25.9	8 x 22.2	215.9	254
150	344	300	EN 1092-1	22	8 x 22	240	285
	341		ANSI 150 RF	27.4	8 x 22.2	241.3	279.4
200	399	350	EN 1092-1	24	12 x 22	295	340
	401		ANSI 150 RF	30.6	8 x 22.2	298.5	342.9

3.2. Remote version with junction box, PN 16

Note:

- Detailed information on the dimensions of the SE56 transmitter can be found in **data sheet Type SE56** ►.
- Dimensions in mm (unless specified differently)



DN	H	L	Standard	L1	Z	D1	D
25	185	200	EN 1092-1	18	4 x 14	85	115
	182		ANSI 150 RF	16.3	4 x 15.9	79.4	107.9
32	203	200	EN 1092-1	18	4 x 18	100	140
	192		ANSI 150 RF	17.9	4 x 15.9	88.9	117.5
40	213	200	EN 1092-1	18	4 x 18	110	150
	202		ANSI 150 RF	19.5	4 x 15.9	98.4	127
50	228	200	EN 1092-1	18	4 x 18	125	165
	222		ANSI 150 RF	21.1	4 x 19	120.7	152.4
65	248	200	EN 1092-1	18	4 x 18	145	185
	245		ANSI 150 RF	24.3	4 x 19	139.7	177.8
80	263	200	EN 1092-1	20	8 x 18	160	200
	258		ANSI 150 RF	25.9	4 x 19	152.4	190.5
100	283	250	EN 1092-1	20	8 x 18	180	220
	287		ANSI 150 RF	25.9	8 x 19	190.5	228.6
125	313	250	EN 1092-1	22	8 x 18	210	250
	315		ANSI 150 RF	25.9	8 x 22.2	215.9	254
150	344	300	EN 1092-1	22	8 x 22	240	285
	341		ANSI 150 RF	27.4	8 x 22.2	241.3	279.4
200	399	350	EN 1092-1	24	12 x 22	295	340
	401		ANSI 150 RF	30.6	8 x 22.2	298.5	342.9

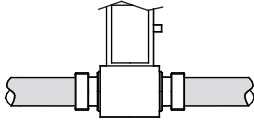
4. Product installation

4.1. Installation notes

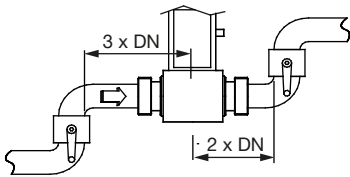
Note:

The flow meter is not designed for gas and steam flow measurement.

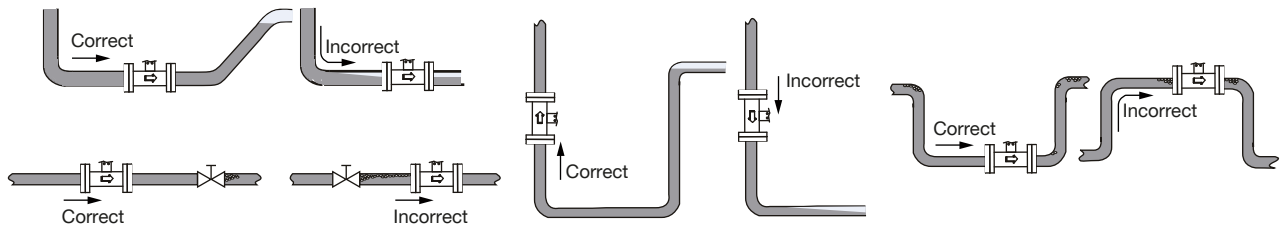
- During flowmeter operation the pipe must be completely full.



- Observe the upstream and downstream distances.



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



The suitable pipe size can be selected using the diagram for selecting the nominal diameter of the pipe.

See chapter [“4.2. Selection of the nominal diameter”](#) on page 9.

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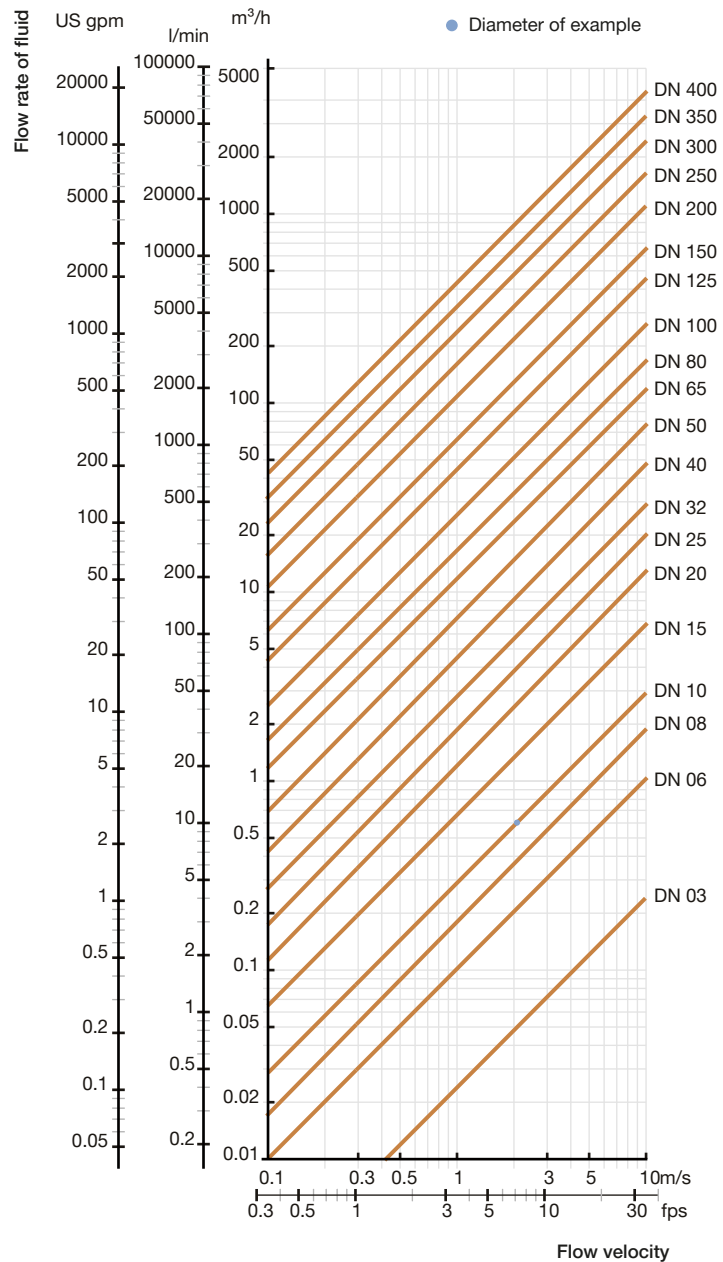
4.2. Selection of the nominal diameter

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

Example:

- Flow: 10 l/min
- Optimal flow rate: 2...3 m/s

Result: Select a pipe size of DN 10



5. Product operation

5.1. 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 S055 must be amplified and processed by transmitter SE56. The transmitter delivers a signal proportional to the flow velocity or flow rate at its current output (4...20 mA) or at its pulse output. Depending on the application, both the 4 mA and the 20 mA limits can be assigned values in physical units such as l/min.

6. Ordering information

6.1. Bürkert eShop – Easy ordering and quick delivery



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6.2. Recommendation regarding product selection

A complete 8055 flowmeter consists of a S055 flow sensor in compact or remote version and a SE56 transmitter (compact or remote version).

See **Data sheet Type SE56** ► 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 S055** (see following ordering chart)
- **Article no.** of the transmitter **Type SE56** (see **data sheet Type SE56** ► for more information)

6.3. Bürkert product filter



Bürkert product filter – Get quickly to the right product

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6.4. Ordering chart sensor Type S055

DN [mm]	Process connection	Flow rate range		Housing material	Wetted parts materials			Article no.
		Min. 0...0.4 m³/s	Max. 0...10 m³/s		Electrode ^{1.)}	Seal	Lining	
Sensor Type S055, compact version								
25	EN 1092-1 ANSI 150	0...0.72 m³/h	0...18 m³/h	Carbon steel	Stainless steel 316L	FKM	PP	553540
								554353
32	EN 1092-1 ANSI 150	0...1.16 m³/h	0...29 m³/h					553541
								560047
40	EN 1092-1 ANSI 150	0...1.80 m³/h	0...45 m³/h					553542
								560048
50	EN 1092-1 ANSI 150	0...2.88 m³/h	0...72 m³/h					553485
								554354
65	EN 1092-1 ANSI 150	0...4.80 m³/h	0...120 m³/h					553393
								558785
80	EN 1092-1 ANSI 150	0...7.20 m³/h	0...180 m³/h	553394				
				554351				
100	EN 1092-1 ANSI 150	0...11.20 m³/h	0...280 m³/h	553489				
				554352				
125	EN 1092-1 ANSI 150	0...18.00 m³/h	0...450 m³/h	559318				
				562955				
150	EN 1092-1 ANSI 150	0...25.60 m³/h	0...640 m³/h	557512				
				561426				
200	EN 1092-1 ANSI 150	0...45.20 m³/h	0...1130 m³/h	Carbon steel	Stainless steel 316L	–	Ebonite (hard rubber)	554217
								560568
Sensor Type S055, remote version with junction box and 10 m electrodes and coils cables (included)								
25	EN 1092-1 ANSI 150	0...0.72 m³/h	0...18 m³/h	Carbon steel	Stainless steel 316L	FKM	PP	448492
								559598
32	EN 1092-1 ANSI 150	0...1.16 m³/h	0...29 m³/h					448493
								562958
40	EN 1092-1 ANSI 150	0...1.80 m³/h	0...45 m³/h					448494
								559599
50	EN 1092-1 ANSI 150	0...2.88 m³/h	0...72 m³/h					448495
								562128
65	EN 1092-1 ANSI 150	0...4.80 m³/h	0...120 m³/h					448496
								562959
80	EN 1092-1 ANSI 150	0...7.20 m³/h	0...180 m³/h	448497				
				562129				
100	EN 1092-1 ANSI 150	0...11.20 m³/h	0...280 m³/h	448498				
				555666				
125	EN 1092-1 ANSI 150	0...18.00 m³/h	0...450 m³/h	560144				
				562956				
150	EN 1092-1 ANSI 150	0...25.60 m³/h	0...640 m³/h	554141				
				561952				
200	EN 1092-1 ANSI 150	0...45.20 m³/h	0...1130 m³/h	Carbon steel	Stainless steel 316L	–	Ebonite (hard rubber)	559753
								562135

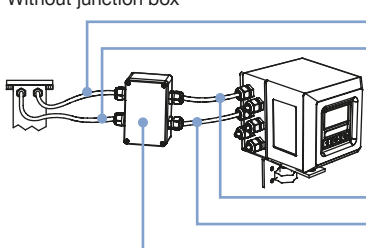
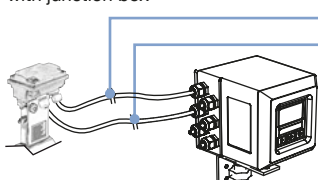
1.) Three electrodes (2 measuring electrodes + 1 ground electrode)

Further versions on request

	Material • Seal: EPDM • Lining: PTFE • Body: stainless steel 304, stainless steel 316L • Electrodes: – Alloy C (2 measuring electrodes + 1 ground electrode) – Titanium (2 measuring electrodes + 1 ground electrode) – Tantalum (2 measuring electrodes + 1 ground electrode) – Platinum-rhodium (2 measuring electrodes + 1 ground electrode)		Process connection Flange: ANSI 300; JIS 10 K
			Orifice DN > 200 ^{1.)}
			Pressure PN 10, PN 25, PN 40

1.) Ebonite (hard rubber) or PTFE lining material (if PTFE not selected then Ebonite (hard rubber) in standard)

6.5. 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 (version without junction box) Type S051, S054, S055 or S056 to the connecting box of the cable extension kit.	448518 
	2	10 m cable for coils ^{1.)} For connecting the sensor (version without junction box) Type S051, S054, S055 or S056 to the connecting box of the cable extension kit.	448519 
	3	10 m cable for electrodes ^{1.)} For connecting - the connecting box of the cable extension kit to the transmitter Type SE56 - the sensor (version with junction box) Type S051, S054, S055 or S056 to the transmitter Type SE56	562851 
with junction box 	4	10 m cable for coils ^{1.)} For connecting - the connecting box of the cable extension kit to the transmitter Type SE56 - the sensor (version with junction box) Type S051, S054/ S055 or S056 to the transmitter Type SE56	562852 
	5	Connecting box of the cable extension kit including No. 1 + 2 + 3 + 4 and resin	562853 

1.) Other cables length than 10 m on request (for cables length > 20 m a preamplifier could be needed. **Caution, this will result in a price increase!**)

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