




Magnetic inductive sensor with flange

- For connection to a transmitter Type SE58 (with or without display, in compact or remote version) for flow measurement
- Design mainly for use in applications with water
- Flow measurement 25...approx. 75,000 l/min for DN 25...DN 400

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

Can be combined with

	Type SE58 Version L of the transmitter for electromagnetic-inductive flow sensors	▶
	Type SE58 Version M of the transmitter for electromagnetic-inductive flow sensors	▶
	Type SE58 Version S of the transmitter for electromagnetic-inductive flow sensors	▶

Description du Type

The Type S055 magnetically inductive flow sensor (compact or separate version) is suitable for liquids with a minimum conductivity and for use in applications with requirements in areas of water measurements.

The combination with the dedicated SE58 S transmitter (minimum required conductivity: 20 µS/cm) or with the SE58 M or SE58 L transmitters (minimum conductivity required: 5 µS/cm) results in a flowmeter with different performance, functions, materials and approvals, with the corresponding suitability for the respective applications depending on the respective requirements.

With the SE58 S you get a compact device, with the SE58 M and SE58 L compact devices or remote versions are created for which the transmitter and sensor are connected by 2 cables up to a maximum length. Standard process connections available for the S055 are flange connections.

1. General technical data

The S055 electromagnetic flow sensor in a compact or remote version is intended for use with transmitter Type SE58, which is available in three versions L, M or S.



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

Product properties

Material

Non wetted parts

Sensor housing

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

Junction box

Only for remote sensor: painted aluminium (on request: stainless steel 304 (1.4301) raw or polished)

Wetted parts

Lining

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

Electrode

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

Seal

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

Pipe diameter

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

Dimensions

Detailed information can be found in chapter [“2. Dimensions” on page 5.](#)

Measuring principle

Electromagnetic induction

Detailed information can be found in chapter [“4.1. Measuring principle” on page 8.](#)

Measuring range

0...0.72 m³/h to 0...1130 m³/h (upper on request)

Detailed information can be found in chapter [“5.4. Ordering chart sensor Type S055” on page 10.](#)

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 SE58 transmitter:

- in compact or remote L version: ≤ ± 0.2 % of the measured value for flow velocity > 0.5 m/s
- in compact or remote M version: ≤ ± 0.8 % of the measured value for flow velocity > 0.5 m/s
- in compact S version: ≤ ± 0.5 % of the measured value for flow velocity > 0.5 m/s

See [data sheet Type SE58](#) ▶

Repeatability

If used with SE58 transmitter:

- in compact or remote L version: ≤ ± 0.1 % of the measured value for flow velocity > 0.5 m/s
- in compact or remote M version: ≤ ± 0.4 % of the measured value for flow velocity > 0.5 m/s
- in compact S version: ≤ ± 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) for PTFE, at 60 °C (140 °F) for PP and at 80 °C (176 °F) for ebonite

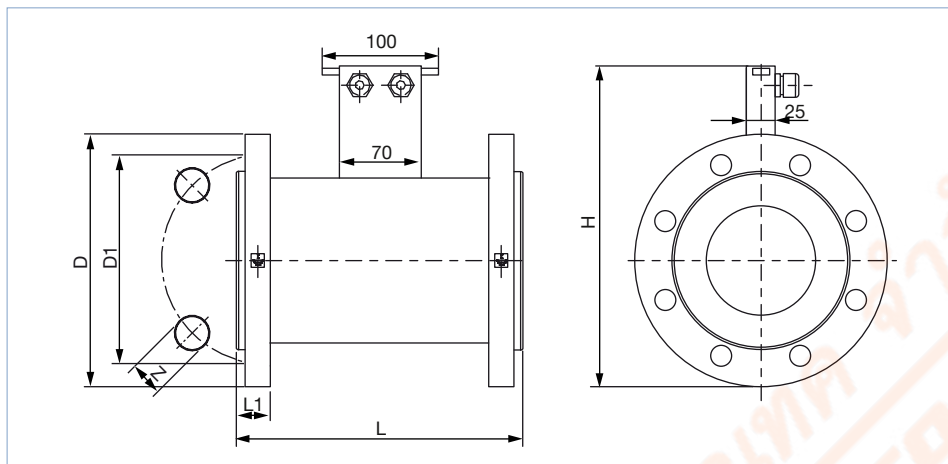
Medium data	
Fluid temperature	<ul style="list-style-type: none"> • With PP lining used with SE58 transmitter: <ul style="list-style-type: none"> – in compact version: -0...+60 °C (+32...+140 °F) – in remote version: -0...+60 °C (+32...+140 °F) • With ebonite lining used with SE58 transmitter: <ul style="list-style-type: none"> – in compact version: -5...+80 °C (+23...+176 °F) – in remote version: -5...+80 °C (+23...+176 °F) • With PTFE lining (on request) used with SE58 transmitter: <ul style="list-style-type: none"> – in compact version: -20...+100 °C (-4...+212 °F) – in remote version: -20...+110 °C (-4...+230 °F)
Fluid pressure	<ul style="list-style-type: none"> • PN 16 (232 PSI) with PP or ebonite lining • PN40 on request, only with PTFE lining up to DN 150
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	
Directives	
CE directive	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 directive	<p>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:</p> <ul style="list-style-type: none"> • maximum allowable pressure (PS) ≤ 40 bar • minimum/maximum temperature (TS): -10/+130 °C • within the following limits for liquids of group 2: <ul style="list-style-type: none"> – 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	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 device
Application range	Indoor and outdoor (protect the device against electromagnetic interference, ultraviolet rays and against the effects of climatic conditions)
Degree of protection according to IEC/EN 60529	<p>If use with SE58 transmitter:</p> <ul style="list-style-type: none"> • in compact L and M version: IP67 (IP68 optional) • in compact S version: IP67 (IP68 optional) • in remote L and M version: IP68 <p>See data sheet Type SE58 ▶</p>
Installation category	Category II according to UL/EN 61010-1
Pollution degree	Degree 2 according to UL/EN 61010-1

2. Dimensions

2.1. Compact version, PN 16

Note:

- Detailed information on the dimensions of the SE58 transmitter can be found in **data sheet Type SE58** ▶.
- Dimensions in mm (unless specified differently)

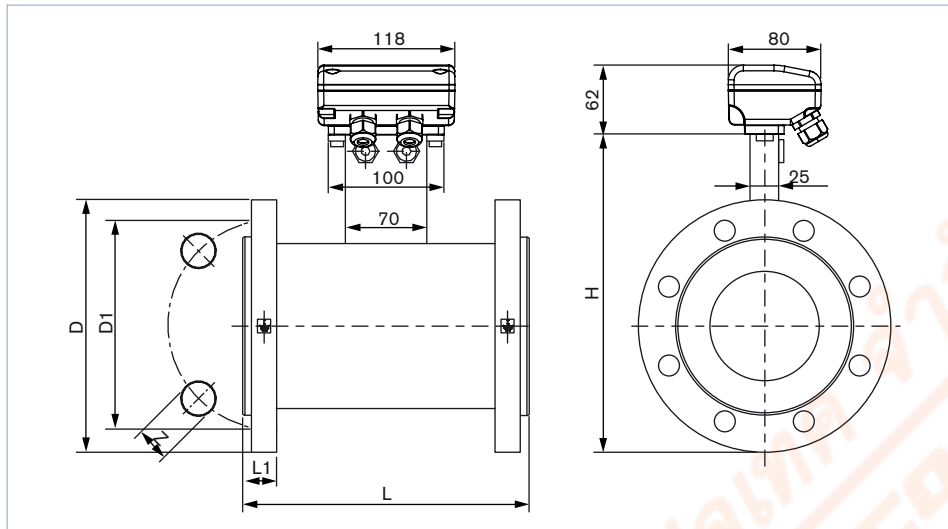


DN	H	L	Standard	L1	Z	D1	D
25	185	200	EN 1092-1	18	4x14	85	115
	182		ANSI 150 RF	16.3	4x15.9	79.4	107.9
32	203	200	EN 1092-1	18	4x18	100	140
	192		ANSI 150 RF	17.9	4x15.9	88.9	117.5
40	213	200	EN 1092-1	18	4x18	110	150
	202		ANSI 150 RF	19.5	4x15.9	98.4	127
50	228	200	EN 1092-1	18	4x18	125	165
	222		ANSI 150 RF	21.1	4x19	120.7	152.4
65	248	200	EN 1092-1	18	4x18	145	185
	245		ANSI 150 RF	24.3	4x19	139.7	177.8
80	263	200	EN 1092-1	20	8x18	160	200
	258		ANSI 150 RF	25.9	4x19	152.4	190.5
100	283	250	EN 1092-1	20	8x18	180	220
	287		ANSI 150 RF	25.9	8x19	190.5	228.6
125	313	250	EN 1092-1	22	8x18	210	250
	315		ANSI 150 RF	25.9	8x22.2	215.9	254
150	344	300	EN 1092-1	22	8x22	240	285
	341		ANSI 150 RF	27.4	8x22.2	241.3	279.4
200	399	300	EN 1092-1	24	12x22	295	340
	401		ANSI 150 RF	30.6	8x22.2	298.5	342.9

2.2. Remote version with junction box, PN 16

Note:

- Detailed information on the dimensions of the SE58 transmitter can be found in **data sheet Type SE58** ▶.
- Dimensions in mm (unless specified differently)



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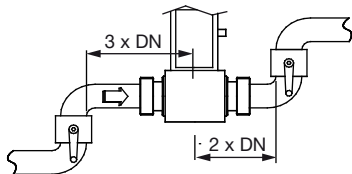
3. Product installation

3.1. Installation notes

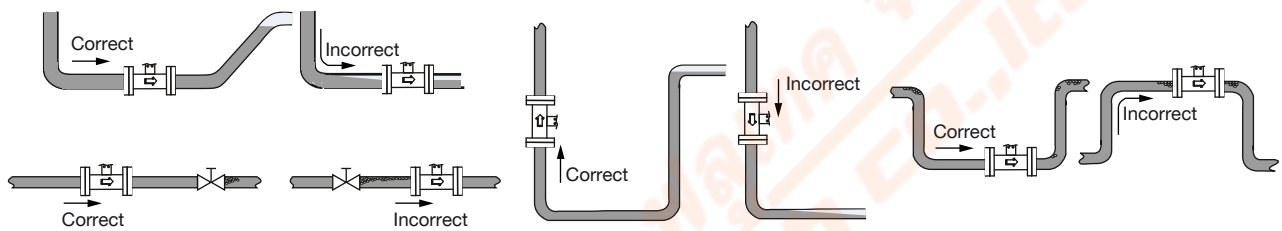
Note:

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 indicated positions shown below to obtain an accurate flow measurement.



The suitable pipe size can be selected using the nominal pipe size selection chart. See chapter "3.2. Selection of the nominal diameter" on page 8.

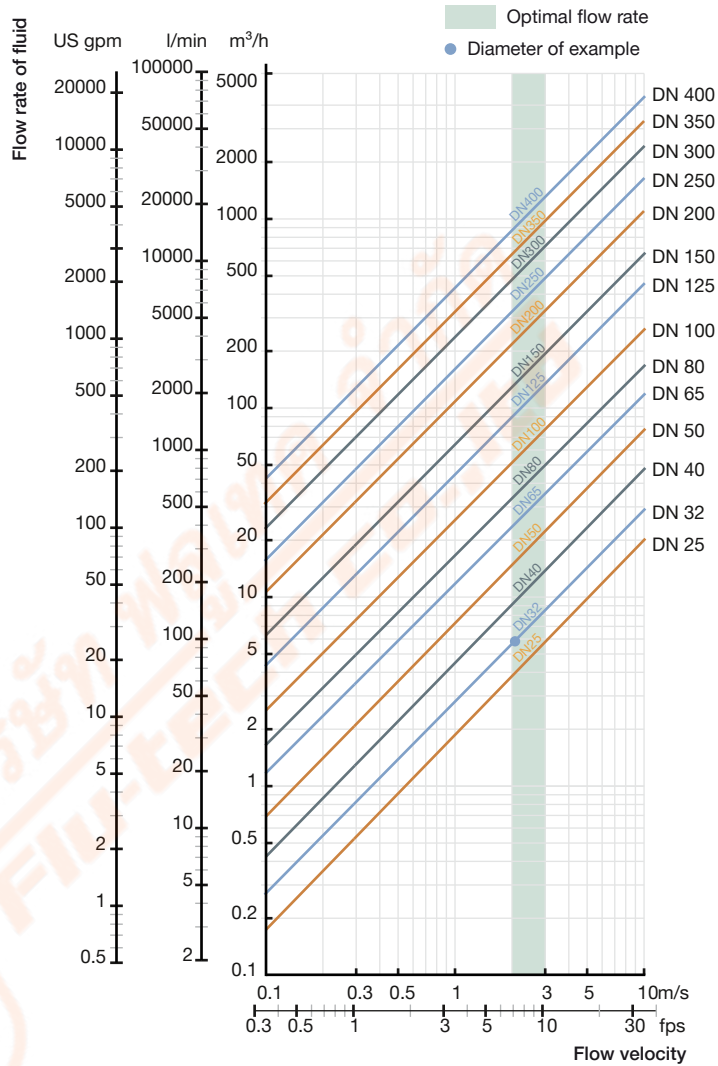
3.2. Selection of the nominal diameter

The graph is used to determine the DN of the pipe 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: 100 l/min
- Optimal flow rate: 2...3 m/s

Result: Select a pipe size of DN 32



4. Product operation

4.1. 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 SE58.

Detailed information on the dimensions of the SE58 transmitter can be found in [data sheet Type SE58](#) ▶.