

Full bore magmeter for low flow volumes

- Combination of magflowsensor fitting S051 and electronics SE56
- Continuous measurement or Batch Control
- Clean in place (CIP)
- Low-flow measurements down to 3 l/h

Type 8051 can be combined with...



Type 6223

Solenoid control valve



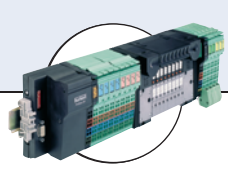
Type 8801-YE

Element
On/Off system



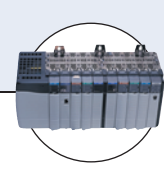
Type 8802-DD

Classic
Continuous system



Type 8644

Valve islands



PLC

The complete full bore magflowmeter Type 8051, which consists of a magnetic sensor fitting Type S051 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 full bore magflowmeter Type 8051 can control high-precision dosing and filling operations.

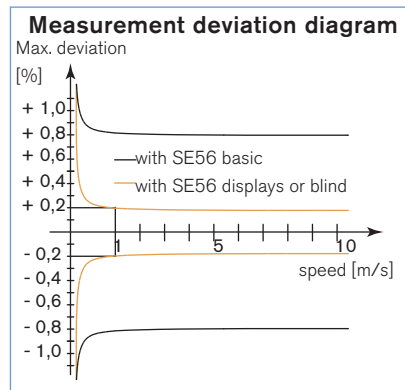
General data - S051 sensor fitting

| | |
|------------------------------|---|
| Compatibility | SE56 electronics (see corresponding data sheet) |
| Materials | |
| Body | Stainless steel 304 (1.4301) |
| Wetted part (connection) | Stainless steel 316L (1.4404) or 304 (1.4301) for full lining |
| Electrode | Stainless steel 316L [Hastelloy C, Titanium, Tantalum, Platinum-rhodium on request] |
| Lining | PTFE |
| Seal | FKM, EPDM or FFKM |
| Electrical connection | 2 cable glands PG9 |

Data complete flowmeter 8051 - (S051 sensor fitting + SE56 electronics)

| | |
|--|---|
| Pipe diameter | DN03...DN20 |
| Measuring range | 0...10 l/h to 0...12500 l/h |
| Process connection | Thread ISO 228-1, NPT (DIN 11851, SMS 1145, Clamp ISO 2852 or BS 4825, Flanges DIN 2501, ANSI on request) |
| Medium temperature | see medium temperature chart on page 3 go to page |
| Medium pressure max. | PN16 (232 PSI) (PN40 (580 PSI), on request) |
| Vacuum resistance | 200 mbar (2.9 PSI) absolute at 100°C (212°F) |
| Measurement deviation¹⁾ see diagram, opposite | $\pm 0.2\%$ of reading (SE56 standard; SE56 blind) $\pm 0.8\%$ of reading (SE56 basic) |
| Repeatability | $\pm 0.1\%$ (SE56 standard; SE56 blind) $\pm 0.2\%$ (SE56 basic) |
| Minimum conductivity | 5 $\mu\text{S}/\text{cm}$ (or 20 $\mu\text{S}/\text{cm}$ with demineralized water) |

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



| 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) |
| Standard | |
| 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) |
| Standard | |
| EMC | EN 61326-1, |
| Emission / Immunity | EN 55011 (Group 1, Class B) / IEC 1000-4-2/3/4/5/6/11 |
| Safety | EN 61010 |

Ordering information for complete flowmeter Type 8051

A complete flowmeter Type 8051 consists of a sensor fitting S051 and an electronics SE56.

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

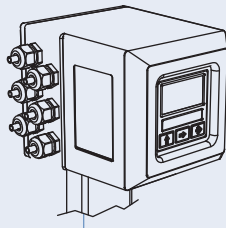
- **item no.** of the sensor fitting **Type S051** (see Ordering Chart on page 5)
- **item no.** of the electronics **Type SE56** (see corresponding data sheet or Ordering chart on page 5)

More info.

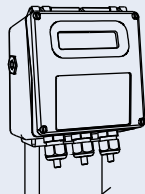
For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.

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

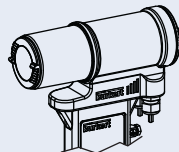
Electronics Type SE56



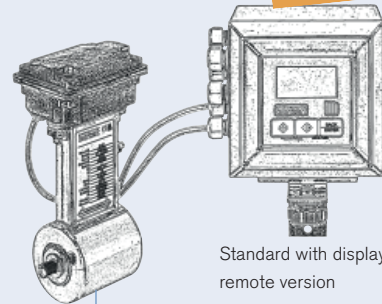
Standard with display
compact version



Basic (with or without display)
compact version

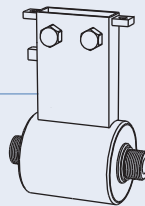


Without display (blind)
compact version

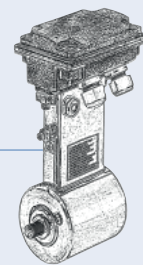


Standard with display
remote version

Sensor fitting Type S051



Compact version
sensor fitting



Remote version
sensor fitting

Design and operating principle

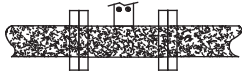
The sensor fitting Type S051 consists of a stainless steel pipe section internally lined with insulating material. Two electrodes mounted opposite to each other on the internal surface of the tube generate an electrical signal. The coils generating the magnetic field are placed outside the pipe. The signal generated by the sensor fitting S051 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.

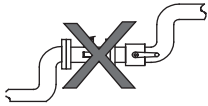
Installation



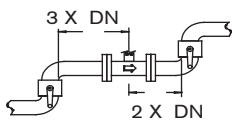
Avoid the functioning with the pipe partially filled.



During flowmeter operation the pipe must be completely full.

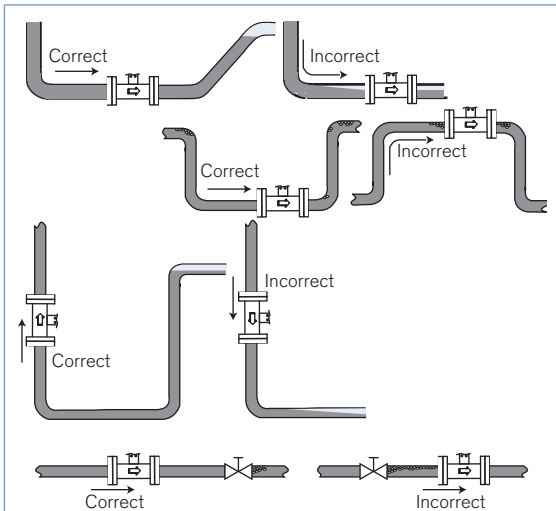


Avoid the installation near curves or hydraulic accessories.



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).

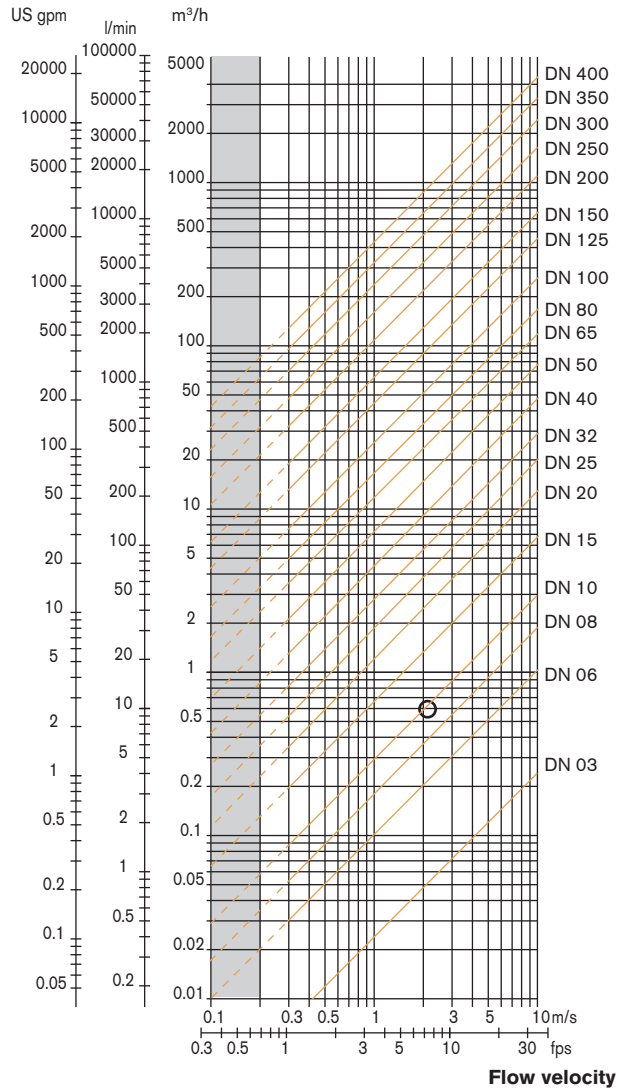
The flow sensor fitting is not designed for gas flow measurement.

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



DTS 1000101292 EN Version: L Status: RL (released | freigegeben | validé) printed: 24.10.2016

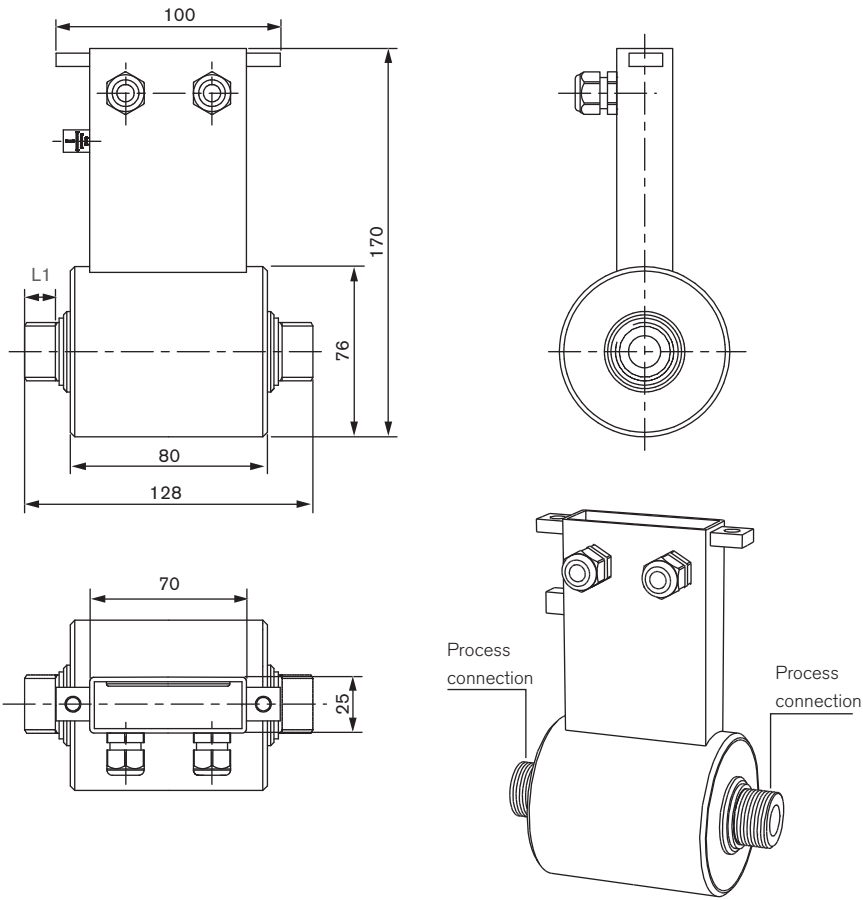
Medium temperature chart

| | SE56 standard compact  | SE56 standard remote  | SE56 basic compact  | SE56 blind compact  |
|---|---|--|--|--|
|  S051 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] |

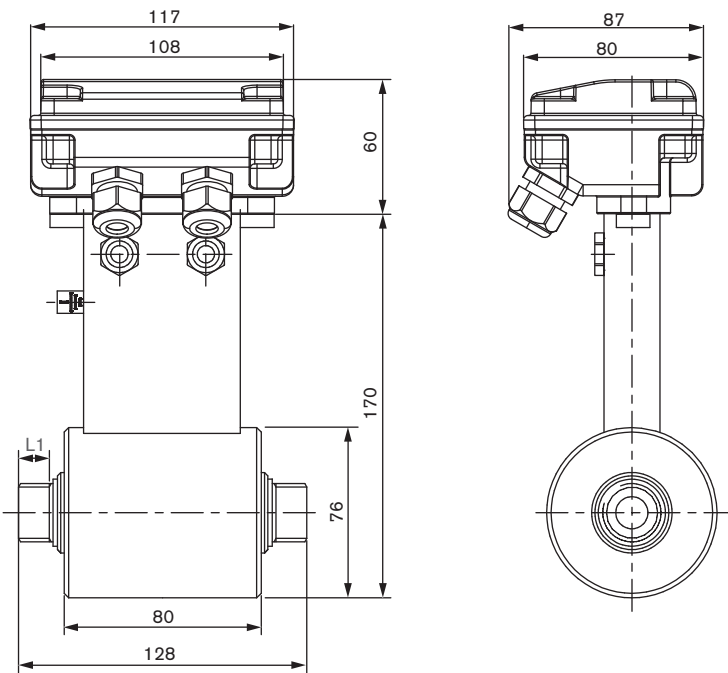
Dimensions [mm] of Type S051 sensor fitting (without full lining)

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

Compact version



Remote version, with junction box



| DN [mm] | Thread [inch] | L1 [mm] |
|---------|---------------|---------|
| 03 | G or NPT 1/4" | 16.4 |
| 06 | G or NPT 3/8" | 16.4 |
| 10 | G or NPT 1/2" | 17.4 |
| 15 | G or NPT 3/4" | 20.0 |
| 20 | G or NPT 1" | 20.0 |

Ordering chart for flowmeter 8051

A complete flowmeter Type 8051 consists of:

- a sensor fitting Type S051
- an electronics Type SE56

Please order the relevant sensor fitting and the electronics separately!

Sensor fitting Type S051

| Description | DN [mm] | Process connection | Flow rate range [l/h] | | Body material | Wetted parts materials | | | Item no. |
|---|-----------------|--------------------|-----------------------|----------------|---------------|------------------------|------|---------|----------|
| | | | min. 0...0.4 ms | max. 0...10 ms | | Connection /Electrode | Seal | Lining | |
| Compact version | 03 | G1/4" (ISO 228-1) | 0...10 | 0...250 | SS 304 | SS 316L | FKM | PTFE | 554 321 |
| | | NPT1/4" | 0...10 | 0...250 | SS 304 | SS 316L | FKM | PTFE | 554 213 |
| | 06 | G3/8" (ISO 228-1) | 0...40 | 0...1000 | SS 304 | SS 316L | FKM | PTFE | 553 065 |
| | | NPT3/8" | 0...40 | 0...1000 | SS 304 | SS 316L | FKM | PTFE | 555 892 |
| | 10 | G1/2" (ISO 228-1) | 0...120 | 0...3000 | SS 304 | SS 316L | FKM | PTFE | 553 374 |
| | | NPT1/2" | 0...120 | 0...3000 | SS 304 | SS 316L | FKM | PTFE | 555 111 |
| | 15 | G3/4" (ISO 228-1) | 0...240 | 0...6000 | SS 304 | SS 316L | FKM | PTFE | 553 481 |
| | | NPT3/4" | 0...240 | 0...6000 | SS 304 | SS 316L | FKM | PTFE | 557 659 |
| 20 | G1" (ISO 228-1) | 0...500 | 0...12500 | SS 304 | SS 316L | FKM | PTFE | 553 539 | |
| | NPT1" | 0...500 | 0...12500 | SS 304 | SS 316L | FKM | PTFE | 553 663 | |
| Remote version with 10 m cable (included) | 03 | G1/4" (ISO 228-1) | 0...10 | 0...250 | SS 304 | SS 316L | FKM | PTFE | 448 487 |
| | 06 | G3/8" (ISO 228-1) | 0...40 | 0...1000 | SS 304 | SS 316L | FKM | PTFE | 448 488 |
| | 10 | G1/2" (ISO 228-1) | 0...120 | 0...3000 | SS 304 | SS 316L | FKM | PTFE | 448 489 |
| | 15 | G3/4" (ISO 228-1) | 0...240 | 0...6000 | SS 304 | SS 316L | FKM | PTFE | 448 490 |
| | 20 | G1" (ISO 228-1) | 0...500 | 0...12500 | SS 304 | SS 316L | FKM | PTFE | 448 491 |

i Further versions on request

Please also use the "request for quotation" form on page 7 for ordering a customized sensor fitting [go to page](#).

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

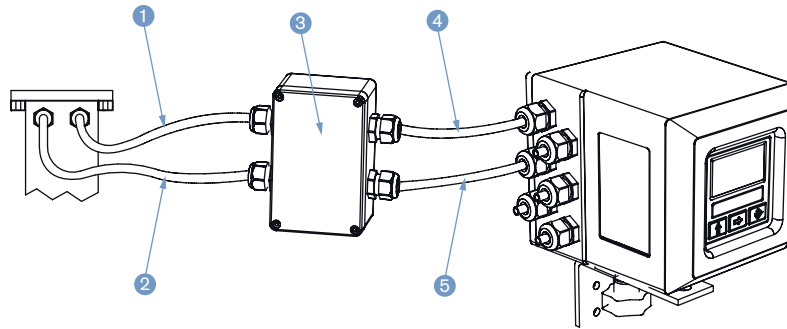
| Description | Power supply | Outputs | Body material | Electrical connection | Item no. |
|---|---------------|-----------------------------------|---------------------------|-----------------------|----------------|
| Standard compact version with display | 90...265 V AC | 2 transistors | Aluminium | 6 cable glands | 558 745 |
| | | | Stainless steel | 6 cable glands | 559 780 |
| | | 2 transistors + 4...20 mA | Aluminium | 6 cable glands | 558 747 |
| | | | Stainless steel | 6 cable glands | 558 306 |
| Standard wall-mounting version with display | 90...265 V AC | 2 transistors | Aluminium | 6 cable glands | 559 781 |
| | | | Stainless steel | 6 cable glands | 558 310 |
| | | 2 transistors + 4...20 mA | Aluminium | 6 cable glands | 558 750 |
| | | | Stainless steel | 6 cable glands | 558 308 |
| Basic compact version with display | 90...265 V AC | 2 transistors | Nylon | 3 cable glands | 562 439 |
| | | | 2 transistors + 4...20 mA | Nylon | 3 cable glands |
| | 18...63 V DC | 2 transistors | | Nylon | 3 cable glands |
| | | | 2 transistors + 4...20 mA | Nylon | 3 cable glands |
| Basic compact version without display | 90...265 V AC | 2 transistors | | Nylon | 3 cable glands |
| | | | 2 transistors + 4...20 mA | Nylon | 3 cable glands |
| | 18...63 V DC | 2 transistors | | Nylon | 3 cable glands |
| | | | 2 transistors + 4...20 mA | Nylon | 3 cable glands |
| Blind compact version | 20...30 V DC | up to 4 transistors | | Stainless steel | 2 cable glands |
| | | up to 4 transistors + 4...20 mA | Stainless steel | 2 cable glands | 559 133 |
| | | up to 4 transistors + PROFIBUS DP | Stainless steel | 2 cable glands | 559 134 |

Ordering chart for spare parts/accessories for sensor fitting Type S051

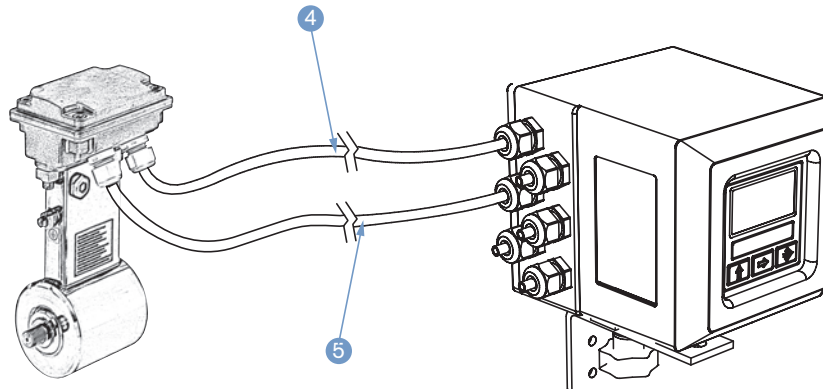
| Description | Purpose | No. on drawing | Item no. |
|-------------------------------|--|----------------|----------|
| Electrode cable, 10 m long | for connection between sensor fitting Type S054/S055, S051 or S056 without junction box and electronics Type SE56* | 1 | 448 518 |
| | for connection between sensor fitting Type S054/S055, S051 or S056 with junction box and electronics Type SE56* or for connection between extension cable kit and electronics Type SE56* | 4 | 562 851 |
| Coil cable, 10 m long | for connection between sensor fitting Type S054/S055, S051 or S056 without junction box and electronics Type SE56* | 2 | 448 519 |
| | for connection between sensor fitting Type S054/S055, S051 or S056 with junction box and electronics Type SE56* or for connection between extension cable kit and electronics Type SE56* | 5 | 562 852 |
| Extension cable kit | including a connecting box and resin | 3 | 562 853 |

* (see corresponding data sheet)

Sensor fitting Type S051 without junction box



Sensor fitting Type S051 with junction box


i Further versions on request

Electrical connection
 Electrode and coil cables length

Sanitary sensor fitting Type S051 - request for quotation

Note

You can fill out the fields directly in the PDF file before printing out the form.

Please fill out and send to your nearest Bürkert facility* with your inquiry or order.

**NOTE:**

Please take into account that the sensor fitting Type S051 must be associated with one of the electronics Type SE56.

If only the sensor fitting is ordered, please indicate on your order the version (standard, blind or basic) or better the item no. of the electronics Type SE56 with which it will be associated

| | |
|------------------|-----------------|
| Company: | Contact person: |
| Customer No.: | Department: |
| Address: | Tel. / Fax.: |
| Postcode / Town: | E-mail: |

Full Bore Magflow sensor fitting S051

Quantity: Desired delivery date:

■ Pipe diameter: DN03 DN06 DN10 DN15 DN20

■ Process fitting connection:

External thread ISO 228-1 DIN 11851
 NPT SMS 1145

Clamp ISO 2852 BS 4825

Flange DIN 2501 ANSI

■ Pressure: PN16 PN40

■ Materials:

Seal FKM EPDM FFKM

Wetted parts 316L 304 and PTFE full lining

Electrodes ¹⁾ 316L (2 M.E.)*
 Hastelloy (2 M.E. + 2 G.E.)* Tantalum (2 M.E. + 2 G.E.)*
 Titanium (2 M.E. + 2 G.E.)* Platinum (2 M.E. + 2 G.E.)*

* M.E. = measuring electrode and G.E. = ground electrode

■ Flowmeter version: Compact Remote

■ Cable length: meter (for cable length > 20 m a preamplifier is included. Caution! Price increase)

¹⁾ If the pipe is in plastic then it is advised to choose 3 electrodes, if it is in metal then 2 electrodes are enough.

Electronics SE56



When you click on the orange box "More info.", you will come to our website for the resp. product where you can download the data sheet, and then you can fill out the SE56 request for quotation form.

To find your nearest Bürkert office, click on the orange box →

www.burkert.com

In case of special application conditions,
please consult for advice.

Subject to alteration.
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