



## Full Bore Magflowmeter for Low-flow measurement

- 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



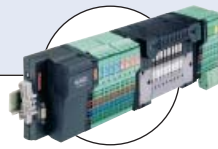
**Type 2100 (8692)**

Angle seat valve with Control unit



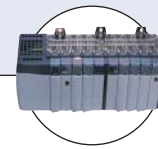
**Type 2731 (8692)**

TopControl system



**Type 8644**

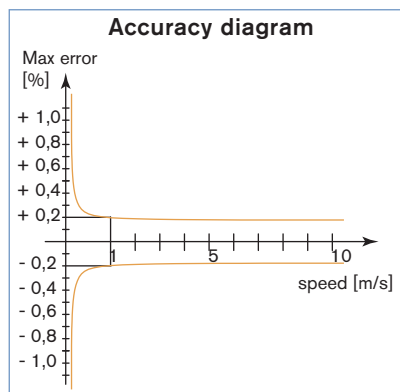
Valve islands



**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.



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

### General data - S051 sensor fitting

<b>Compatibility</b>	SE56 electronics (see corresponding data sheet)
<b>Materials</b>	
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 / Gasket	PTFE / FKM, EPDM or FFKM
<b>Electrical connection</b>	2 cable glands (PG9)

### Complete magflowmeter 8051 data - (S051 sensor fitting + SE56 electronics)

<b>Pipe diameter</b>	DN03 up to DN20
<b>Measuring range</b>	0 l/h ... 10 l/h up to 0 l/h... 12 500 l/h
<b>Process connection</b>	Thread ISO 228-1, NPT (DIN 11851, SMS 1145, Clamp ISO 2852 or BS 4825, Flanges DIN 2501, ANSI on request)
<b>Medium temperature</b>	
Compact version	-20°C up to 100°C (-4°F up to 212°F) (with display version) -20°C up to 100°C (-4°F up to 212°F) (with blind version) [up to 130°C (up to 266°F) for max. 1 hour]
Remote version	-20°C up to 130°C (-4°F up to 302°F)
<b>Medium pressure max.</b>	PN16 (232 PSI) (PN40 (580 PSI), on request)
<b>Vacuum resistance</b>	200 mbar (2.9 PSI) absolute at 100°C (212°F)
<b>Accuracy <sup>1)</sup></b>	± 0.2% of reading (see diagram, opposite)
<b>Repeatability</b>	< 0.1%
<b>Minimum conductivity</b>	5 $\mu\text{S}/\text{cm}$ (or 20 $\mu\text{S}/\text{cm}$ with demineralized water)
<b>Environment</b>	
<b>Ambient temperature</b>	-20°C up to 60°C (-4°F up to 140°F) (with display version) or -20°C up to 40°C (-4°F up to 104°F) (with blind version)
<b>Standard</b>	
<b>Protection class</b>	IP67 (Compact version); IP68 (Remote version)
<b>Standard</b>	
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 full bore magflowmeter Type 8051

A complete full bore magflowmeter Type 8051 consists of a sensor fitting S051 and an electronics SE56. The electronics is only delivered in combination with the sensor fitting as a part of a complete magflowmeter.

The following information is necessary for the selection of a complete full bore magflowmeter:

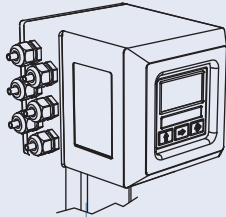
- **item no** of the sensor fitting **Type S051** (see Ordering Chart)
- **item no** of the electronics **Type SE56** (see remote data sheet or Ordering chart on page 5)

### More info.

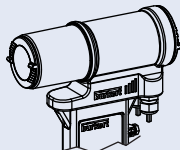
For more technical information about this product, click on this box... you will come to our website for this product where you can download the datasheet.

### Examples for variations of complete full bore magflowmeter

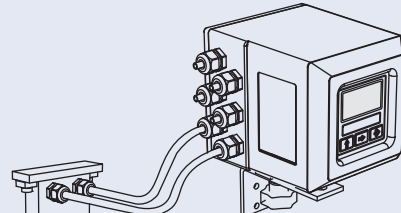
#### Electronics Type SE56



With local display -  
Compact version

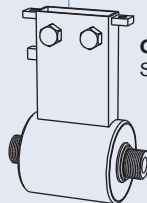


Without display (blind) -  
Compact version

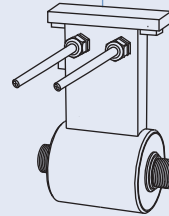


With local display -  
Remote version

#### Sensor fitting Type S051



**Compact version**  
Sensor fitting



**Remote version**  
Sensor fitting

## Design and operating principle

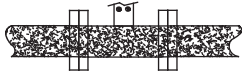
The sensor fitting Type S051 consists of a stainless steel pipe section internally lined with insulating material. Two electrodes mounted opposite to each other on the internal surface of the tube generate an electrical signal. The coils generating the magnetic field are placed outside the pipe. The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

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

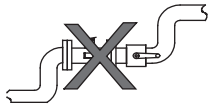
Installation



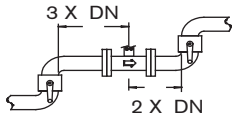
Avoid the functioning with the pipe partially filled.



During flowmeter operation the pipe must be completely full.

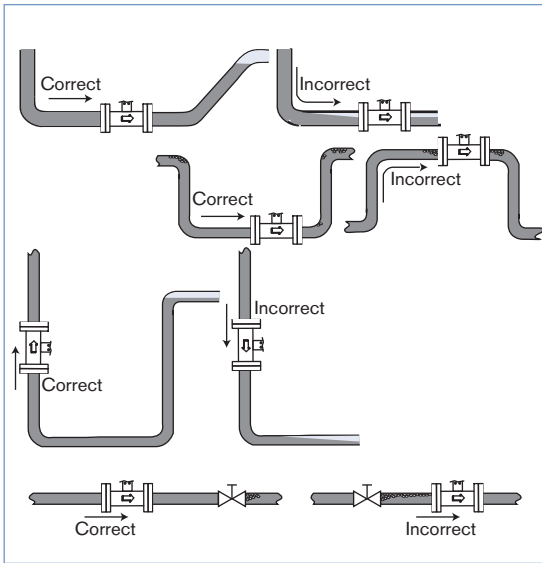


Avoid the installation near curves or hydraulic accessories.



Observe the upstream and downstream distances.

The sensor fitting can be installed into either horizontal or vertical pipes. Mount the S051 sensor fitting in the below as correct indicated ways to obtain an accurate flow measurement.



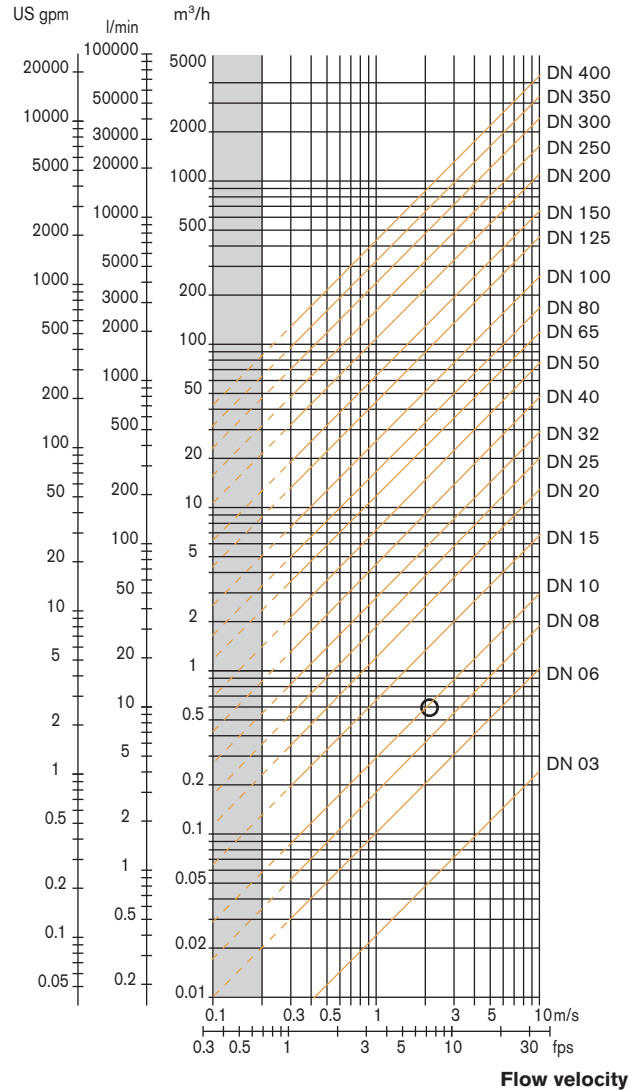
The suitable pipe size is selected using the diagram Flow / Velocity / DN (see diagram to the right).  
The flow sensor fitting is not designed for gas flow measurement.

Selection of fitting / pipe size

Example:

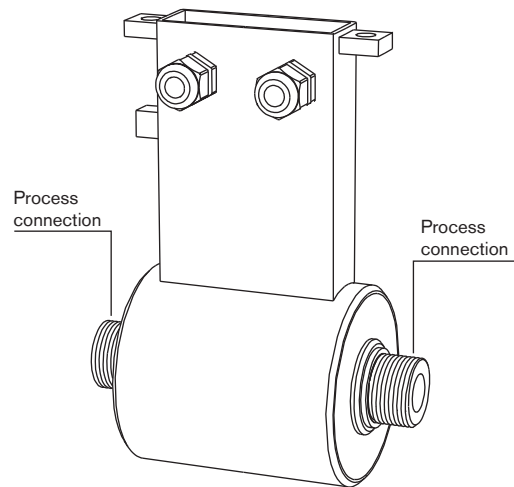
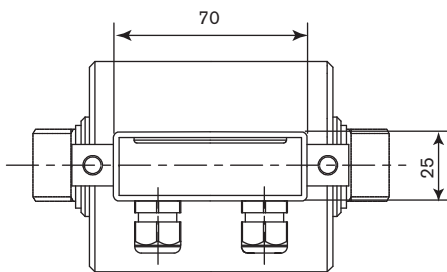
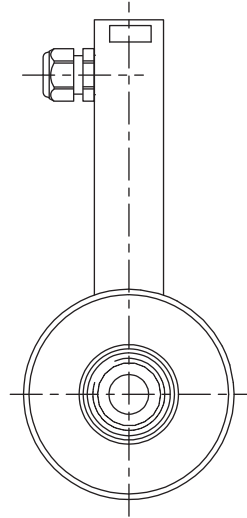
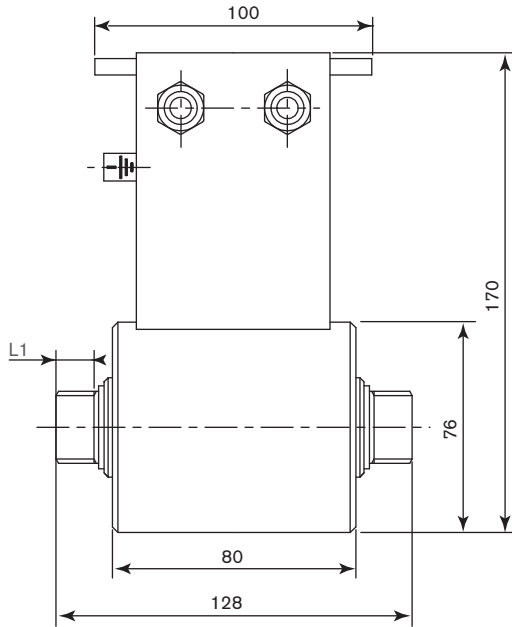
- Specification of nominal flow: 10 l/min
- Ideal flow velocity: 2...3 m/s
- For these specifications, the diagram indicates a pipe size of DN10

Flow rate



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

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



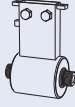
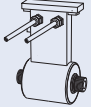
DN [mm]	Thread [inch]	L1 [mm]
03	G or NPT 1/4"	16.4
06	G or NPT 3/8"	16.4
10	G or NPT 1/2"	17.4
15	G or NPT 3/4"	20.0
20	G or NPT 1"	20.0

## Ordering charts for Low-flow magflowmeter 8051

A complete magflowmeter Type 8051 consists of: - a full bore sensor fitting Type S051  
- an electronics Type SE56

Please order the relevant sensor fitting and the electronics remotely!

### Full bore sensor fitting Type S051

Description	DN [mm]	Process con- nection	Flow rate range [l/h]		Body material	Wetted parts material			Item no.
			min. 0...0.4 m/s	max. 0...10 m/s		Connection / Electrode	Seal	Lining	
	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

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

Description	Power supply	Outputs	Housing material	Electrical connection	Item no.
With local display compact version	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
With local display remote version	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
Blind compact version	20 - 30 V DC	Transistor	Stainless steel	2 cable glands	559 132
		Transistor + 4...20 mA	Stainless steel	2 cable glands	559 133
		Transistor + PROFIBUS DP	Stainless steel	2 cable glands	559 134

### **i** Further versions on request

Please also use the "request for quotation" form on page 6 for ordering a customized Low-flow sensor fitting [go to page](#).

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

Description	Item no.
Electrode cable, 10 m long (for connection between sensor fitting Type S054/S055 without junction box, S051 or S056 and electronics Type SE56*)	448 518
Coil cable, 10 m long (for connection between sensor fitting Type S054/S055 without junction box, S051 or S056 and electronics Type SE56*)	448 519

\* (see corresponding data sheet)

## Low-flow 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 the electronics Type SE56.

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 <sup>1)</sup>**  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

<sup>1)</sup> 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 the nearest Bürkert, click on the orange box →

[www.burkert.com](http://www.burkert.com)

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

Subject to alteration  
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