

- Sensor in solid state technology
- Shows both flow rate and volume
- Simulation: all outputs signals provided without the need for real flow
- Clean in process (CIP)
- FDA approved

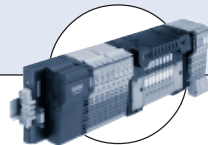
Type 8045 can be combined with...



**Type S020**  
Fitting in  
Stainless steel /  
Brass / PVC /  
PVDF / PP



**Type S020**  
Fitting in  
Stainless steel /  
PVC / PVDF / PP



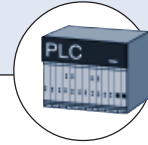
**Type 8644-P**  
**AirLINE**  
Valve Island with  
electronic I/O



**Type 2030**  
Diaphragm Valve



**Type 2712 (8630)**  
Continuous  
TopControl



**PLC**

The Magflowmeter 8045 has been designed for pipes with diameters ranging from 1/4" to 16" and liquids having a conductivity > 20 µS/cm.

The transmitter has a large display, a keyboard and provides 4-20 mA, relay and pulse outputs. The version with a stainless steel sensor has

been designed for applications with high pressures 230 PSI and high temperatures (up to 230°F).

| Fitting and sensor data                 |  |
|---|--|
| <b>Pipe diameter</b>                    | 1/4" (DN 6) to 16" (DN 400)  |
| <b>Measuring range</b>                  | 0.33 ft/s (0.1 m/s) to 32.8 ft/s (10 m/s)  |
| <b>Fitting</b>                          | S020 (see corresp. data sheet)   |
| <b>Sensor element</b>                   | Electrodes   |
| <b>Materials wetted parts</b>           |  |
| Sensor armature                         | PVDF or Stainless steel 316L (DIN1.4404)   |
| Electrodes                              | Stainless steel 316L (DIN1.4404)   |
| Seal                                    | FPM (standard on version with PVDF sensor)<br>EPDM (standard on version with Stainless steel sensor) |
| Earth ring (PVDF sensor vers.)          | Stainless steel 316L (DIN1.4404)   |
| Electrode holder (St. St. sensor vers.) | PEEK   |

| Medium data                    |   |
|--------------------------------|---|
| <b>Medium temperature</b>      |   |
| PVDF sensor version            | 32°F (0) up to 176°F (80°C) (dep. on fitting)   |
| Stainless steel sensor version | -13°F (-25) up to 230°F (110°C) (dep. on fitting)   |
| <b>Fluid pressure</b>          |   |
| PVDF sensor version            | 87psi (PN6) (see temperature-pressure diagram)  |
| Stainless steel sensor version | 145psi or 230psi (PN10 or PN16) (Depends on temperature and fitting material, see temperature-pressure diagram) |
| <b>Conductivity</b>            | min. 20 µS/cm   |

| Electronic module data               |  |
|--------------------------------------|--|
| <b>Accuracy</b>                      |  |
| Teach-In, manually works calibration | ± 2% of measured value <sup>1)</sup> .033 to 32.8 ft/s   |
| Standard K-factor                    | ± 4% of measured value <sup>1)</sup> .033 to 32.8 ft/s   |
| <b>Linearity</b>                     | ± (1% of measured value + 0.1% of FS*)   |
| <b>Repeatability</b>                 | 0.25% of measured value <sup>1)</sup>  |
| <b>Voltage supply</b>                | 18-36 VDC, regulated (3 wires)   |
| <b>Outputs 8045</b>                  |  |
| Pulse                                | NPN and PNP, open collector, galvanic insulation, up to 36 VDC, 100 mA max., protected against short-circuits and polarity reversals |

| Electronic module data (continued)           |  |
|--|--|
| Relay (programmable) (option)                | 2 normally open relays, freely adjustable 250 VAC, 3A or 30 VDC, 3A (resistive load) max. cutting power of 750 VA (resistive load) |
| Process value                                | Hysteresis thresholds<br>4-20 mA, max. load: 1300 Ω at 30 V,<br>1000 Ω at 24 V, 700 Ω at 18 V                                      |
| <b>Current consumption</b>                   | max. 300 mA  |
| <b>Materials</b>                             |  |
| Housing, Cover (with PVDF sensor version)    | PC, (glass fibre reinforced for Housing)   |
| Housing, Cover (with St. St. sensor version) | PPA, glass fibre reinforced  |
| Front panel foil                             | Polyester  |
| Protection lid                               | PSU  |
| <b>Electrical connections</b>                | Cable gland M 20 x 1.5   |

| General data  |  |
|---|--|
| <b>Ambient temperature</b>  | 14°F (-10°C) to 140°F (60 °C) (operating)<br>-4°F (-20°C) to 140°F (60 °C) (storage) |
| <b>Relative humidity</b>  | < 80%, non condensed   |
| <b>Protection class</b>   | IP65   |
| <b>Standards</b>  |  |
| EMC   | EN 50081-1, 50082-2  |
| Security  | EN 61010-2   |
| Vibration   | EN 60068-2-6   |
| Shock   | EN 60068-2-27  |
| The device also complies with directive N° 97/23/EC about the devices set under pressure, according to the following methods: |  |
| - Fluids of group 1 according to §1.3b of the directive:  | PN ≤ 230 PSI and DN < 5"   |
| - Fluids of group 2 according to §1.3b of the directive:  | PN ≤ 230 PSI and DN ≤ 8"   |
| It has been designed and manufactured professionally (Article 3.3). The CE mark is not for pressure.                          |  |
| The CE mark complies with directives 89/336/EC (EMC) and 73/23/EC (LVD).  |  |

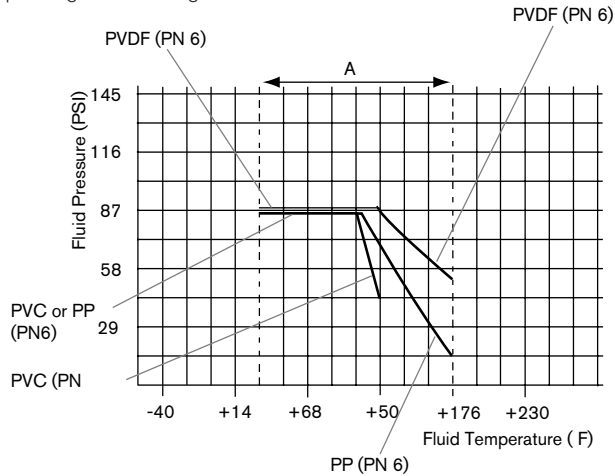
<sup>1)</sup> In the reference conditions, where: fluid = water, water and ambient temperatures = 20°C, upstream and downstream distances complied with, pipe dimensions adapted.  
\* FS = Full scale

## Pressure/Temperature diagrams

Please be aware of the fluid pressure-temperature dependence according to the respective fitting+sensor material as shown in the diagrams.

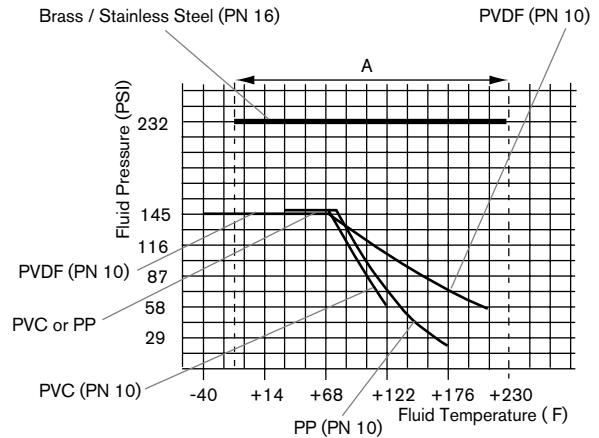
### 8045 with a PVDF sensor

Depending on the fitting material



### 8045 with a stainless steel sensor

Depending on the fitting material

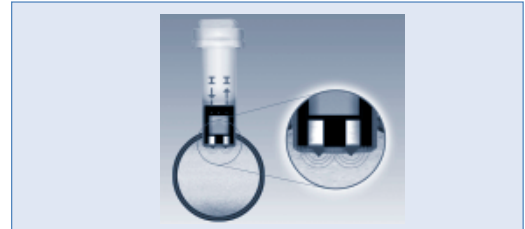


**A: Application range for complete device (fitting + transmitter)**

## Measuring principle

The E-shaped magnetic system inside the sensor induces a magnetic field into the fluid, which is perpendicular to the direction of flow.

Two electrodes are in galvanic contact with the liquid. Based on the Faraday law a voltage can be measured between these electrodes once a liquid (min. conductivity of 20  $\mu\text{S}/\text{cm}$ ) flows along the pipe. This voltage is proportional to the flow velocity. Using the K factor for the individual pipe diameter the speed of flow is converted into volume per time.



## Possible applications

Flow control of fluids, charged or not:

- ▶ Waste water treatment
- ▶ Flow control of drinking water (FDA approval)
- ▶ Laundries: measurement and control of the water consumption
- ▶ Swimming pools: pump protection and flow control
- ▶ Food-processing industry: monitoring of the cleaning cycles (FDA approval)
- ▶ Irrigation

## Software main features

- International measuring units
- Choice of the display language
- Teach-In for a better accuracy, or K-factor
- 4-20 mA current output
- Pulse output
- 2 relays (option)
- Filter function
- Reset of the main totalizer
- Simulation mode to adjust Zero and Span and simulate flow in dry-run condition

## Display

Large digital display with 8 characters (4 digital characters and 4 alphanumeric characters) indicating:

- the measured flow
- the value of the current output
- the value of the main totalizer
- the value of the daily totalizer



3 keys to go through the menus and program the device

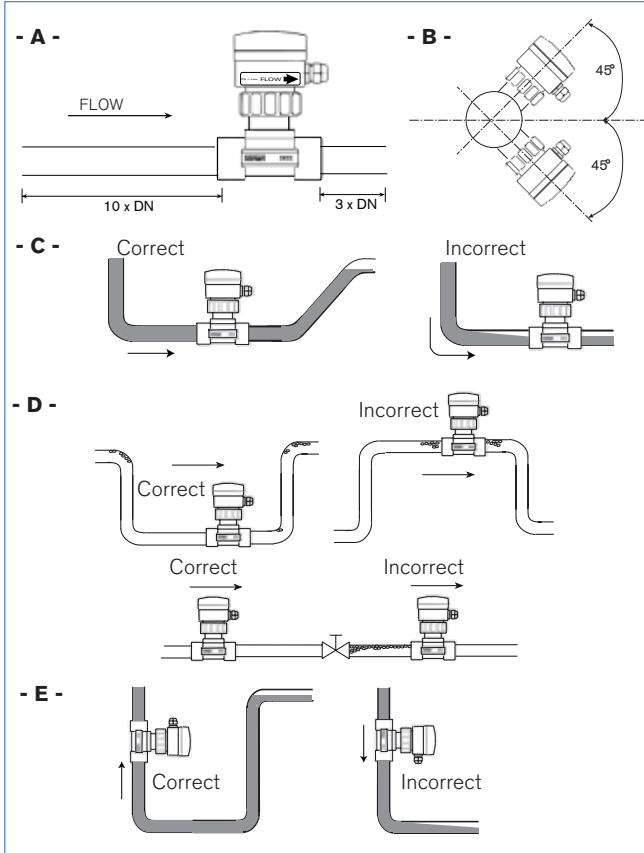
LEDs indicating the relay status

**Installation recommendations**

**A-**  
The minimum straight upstream (10 x DN) and downstream (3 x DN) distances must be observed.

**B-**  
It is advisable to mount the transmitter at a 45° angle to the horizontal centre of the pipe to avoid having deposits on the electrodes and false measurements due to air bubbles.

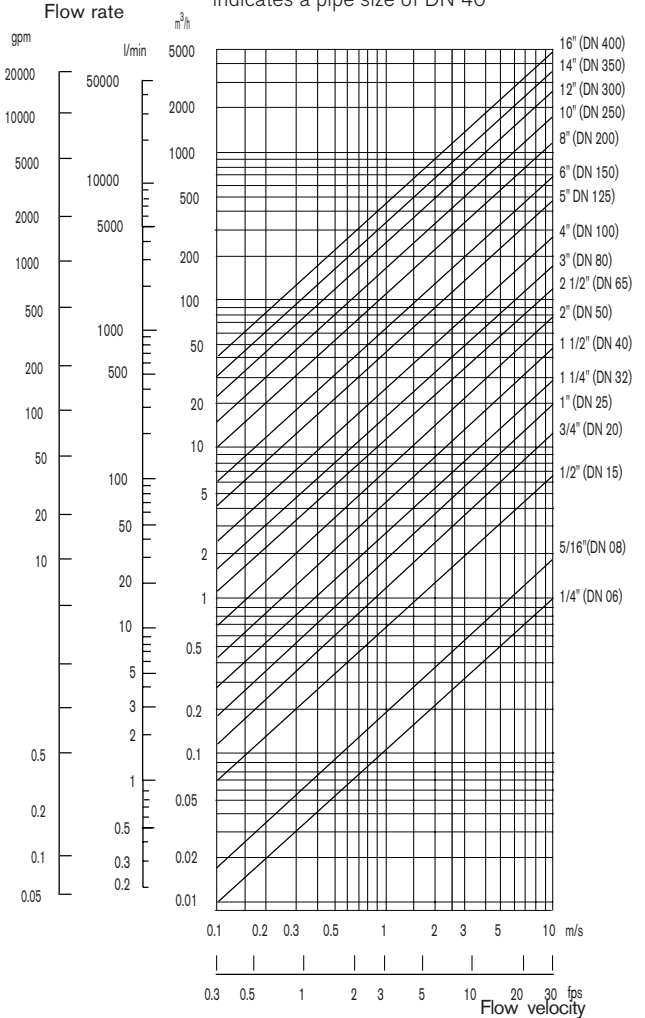
**C, D and E -**  
Mount the 8045 transmitter in these ways to obtain an accurate flow measurement.



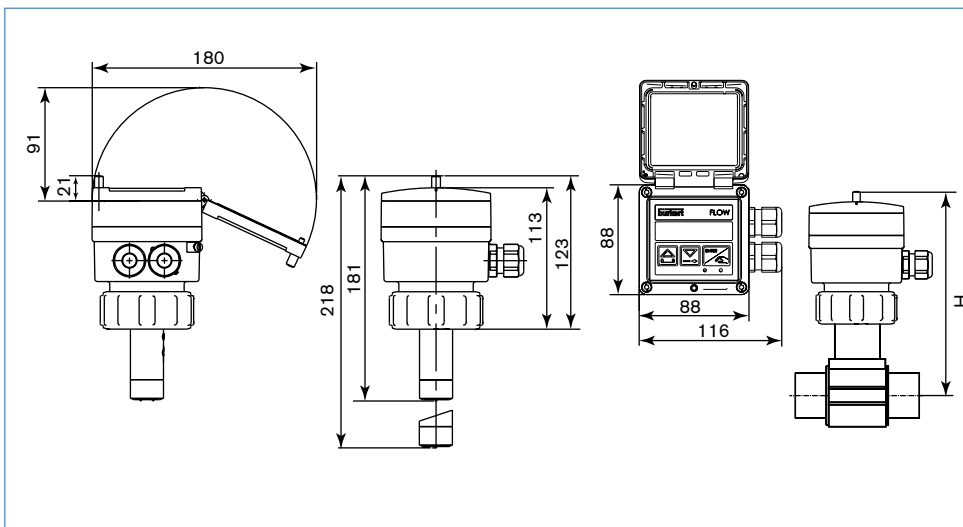
**Selection of fitting / pipe size**

**Example 1:**

Specification of nominal flow: 10 m<sup>3</sup>/h  
 - Ideal flow velocity: 2...3m/s  
 - For these specifications, the diagram indicates a pipe size of DN 40



**Dimensions [mm]**



| DN [mm] | T-Fitting | H [mm] |                |               |
|---------|-----------|--------|----------------|---------------|
|         |           | Saddle | Plastic Spigot | St:St. Spigot |
| 6       | 181       |        |                |               |
| 8       | 181       |        |                |               |
| 15      | 186       |        |                |               |
| 20      | 183       |        |                |               |
| 25      | 183       |        |                |               |
| 32      | 187       |        |                |               |
| 40      | 191       |        |                | 187           |
| 50      | 197       | 221    |                | 192           |
| 65      | 197       | 220    | 202            | 196           |
| 80      |           | 224    | 207            | 203           |
| 100     |           | 229    | 214            | 213           |
| 110     |           | 225    |                |               |
| 125     |           | 232    |                | 224           |
| 150     |           | 242    | 260            | 235           |
| 180     |           | 266    |                |               |
| 200     |           | 278    | 281            | 256           |
| 250     |           |        | 299            |               |
| 300     |           |        | 304            |               |
| 350     |           |        | 324            |               |
| 400     |           |        | 338            |               |

**Ordering chart for transmitter 8045 - for fitting Type S020** (see corresp. datasheet)

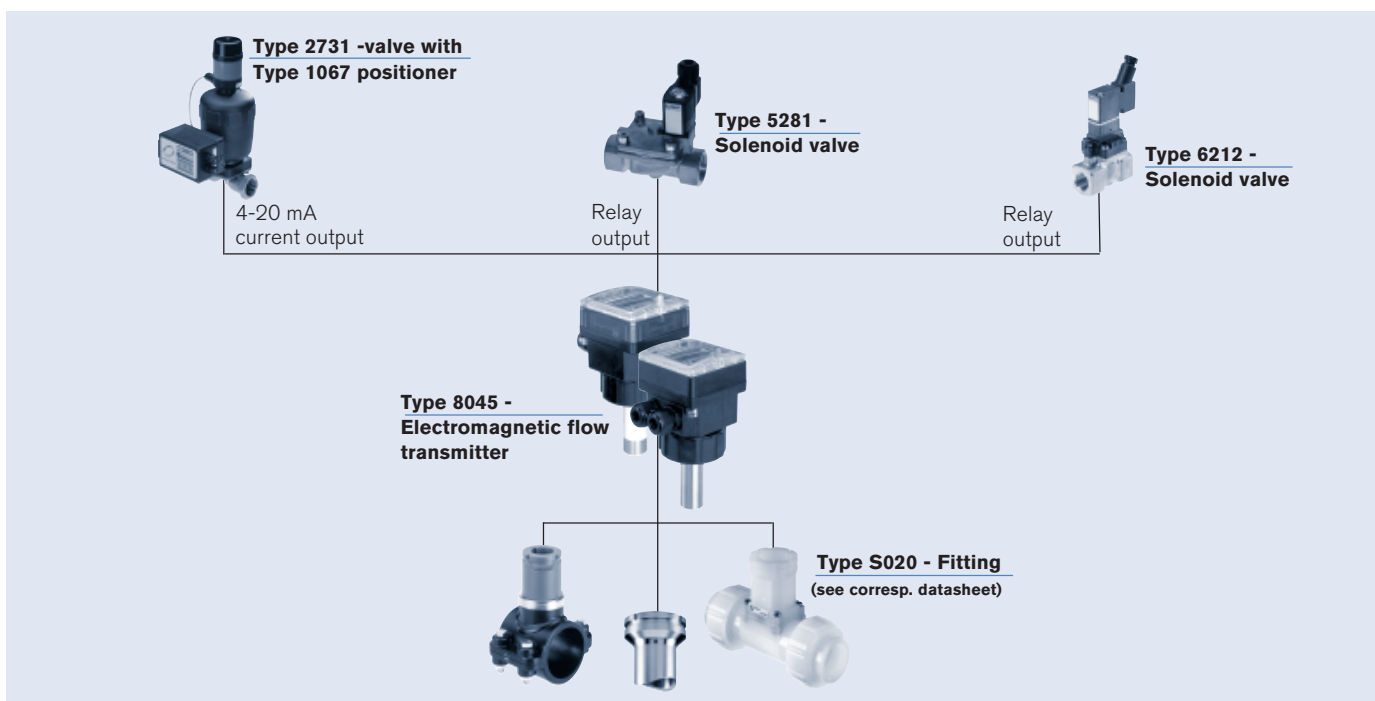
| Voltage supply | Output         | Relays | Housing material | Gasket                 | Sensor                 | Connector              | Item no. |
|----------------|----------------|--------|------------------|------------------------|------------------------|------------------------|----------|
| 18-36 VDC      | 4-20 mA, pulse | No     | PC               | FPM                    | Short, PVDF            | 2 cable glands M20x1.5 | 426 498  |
|                |                |        |                  |                        | Long, PVDF             | 2 cable glands M20x1.5 | 426 499  |
|                |                | 2      | PC               | FPM                    | Short, PVDF            | 2 cable glands M20x1.5 | 426 506  |
|                |                |        |                  |                        | Long, PVDF             | 2 cable glands M20x1.5 | 426 507  |
|                | No             | PPA    | EPDM             | Short, Stainless steel | 2 cable glands M20x1.5 | 449 670                |          |
|                |                |        |                  | Long, Stainless steel  | 2 cable glands M20x1.5 | 449 672                |          |
|                |                | 2      | PPA              | EPDM                   | Short, Stainless steel | 2 cable glands M20x1.5 | 449 671  |
|                |                |        |                  |                        | Long, Stainless steel  | 2 cable glands M20x1.5 | 449 673  |

Note: Delivered with 1 set 551 775

**Ordering chart of accessories for transmitter 8045** (to be ordered separately)

| Accessories  | Item no. |
|--|----------|
| Set with 2 cable glands M20x1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20x1.5 + 2 multiway seals 2x6 mm  | 449 755  |
| Set with 2 reductions M20x1.5/NPT1/2" + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20x1.5  | 551 782  |
| Set with 1 stopper for not used cable gland M20x1.5 + 1 multiway seal 2x6 mm for cable gland or plug + 1 black EPDM gasket for the sensor + 1 mounting instruction sheet | 551 775  |
| Ring   | 619 205  |
| PC nut   | 619 204  |
| PPA nut  | 440 229  |
| Set with 1 green FPM + 1 black EPDM gaskets  | 552 111  |
| Calibration certificate  | 550 676  |
| FDA -Approval  | 449 788  |

**Interconnection with other Burkert products**



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

We reserve the right to make technical changes without notice.

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