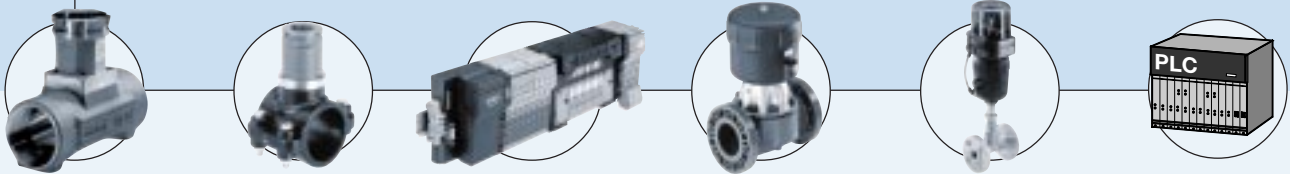


Electromagnetic Flow Transmitter



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

Type 8045 can be combined with...



Type S020

Fittings in
Stainless steel /
Brass / PVC /
PVDF / PP

Type S020

Fittings in
Stainless steel /
Brass / PVC /
PVDF / PP

**Type 8644-P
AirLINE**

Valve Island with
Electronic I/O

Type 2030

Diaphragm Valve

Type 2712 (8630)

Continuous
Top Control

PLC

The Magflowmeter 8045 has been designed for pipes with diameters ranging from DN15 to DN400 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 (PN16) and high temperatures (up to 110 °C).

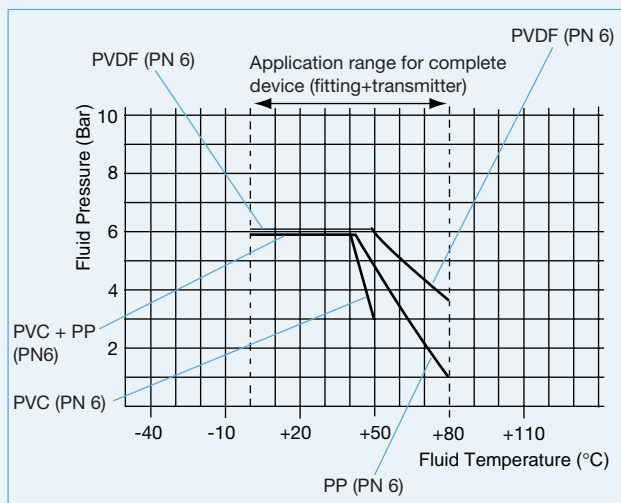
Technical Data			
Pipe diameter	DN15 to DN400	Fitting	Type S020 INSERTION (see corresp. data sheet)
Measuring range	0.1 m/s to 10 m/s	Voltage supply	18-36 VDC, 3 wires
Measuring error	$\leq \pm 2\%$ o.R. (1-10 m/s) ¹⁾ with manual works calibration or Teach-In $\leq \pm 4\%$ o.R. (1-10 m/s) ¹⁾ with standard K-factor of fitting	Outputs	NPN and PNP, open collector, galvanic insulation, up to 36 VDC, 100 mA max., protected against short circuits 2 normally open relays 3 A/250 VAC or 3 A/30 VDC Hysteresis thresholds 4-20 mA max. load: 1300 Ω at 30 V 1000 Ω at 24 V 700 Ω at 18 V
Linearity	$\leq \pm(1\% \text{ o.R.} + 0.1\% \text{ fs})^1$	Pulse Relay (programmable) (option)	
Repeatability	$\pm 0.25\%$ o.R. ¹⁾	Process Value	
Materials		Current consumption	Max. 300 mA
Sensor armature	PVDF or stainless steel 316L (1.4404)	Electrical connections	Cable gland M20x1.5
Seal	FPM (standard on version with PVDF sensor) EPDM (standard on version with stainless steel sensor)	Medium pressure (max.)	with a PVDF sensor with a stainless steel sensor
Electrodes	Stainless steel 316L (1.4404)	Protection class	IP65
Electrode armature of stainless steel sensor	PEEK	Standards	EN 50081-1, 50082-2 EN 61010-2 EN 60068-2-6 EN 60068-2-27
Earth ring of PVDF sensor	Stainless steel 316L (1.4404)	EMC	
Cover (version with PVDF sensor)	PC	Security	
Cover (version with st. st. sensor)	PPA, glass fiber reinforced	Vibration	
Housing (version with PVDF sensor)	PC, glass fiber reinforced	Shock	
Housing (version with st. st. sensor)	PPA, glass fiber reinforced	Operating temperature	-10 up to 60 °C
Front panel foil	Polyester	Storing temperature	-20 up to 60 °C
Protection lid	Cyclic Olefin Copolymer (COC)	Relative humidity	< 80%, non condensated
Medium conductivity	> 20 µS/cm		
Medium temperature			
PVDF Sensor	0 up to 80 °C		
Stainless steel Sensor	-25 up to 110 °C, depending on fitting material		

¹⁾ Under reference conditions i.e. measuring fluid=water, ambient and water temperatures of 20 °C, applying the minimum inlet and outlet pipes straights, matched inside pipe dimensions

Pressure/Temperature diagrams

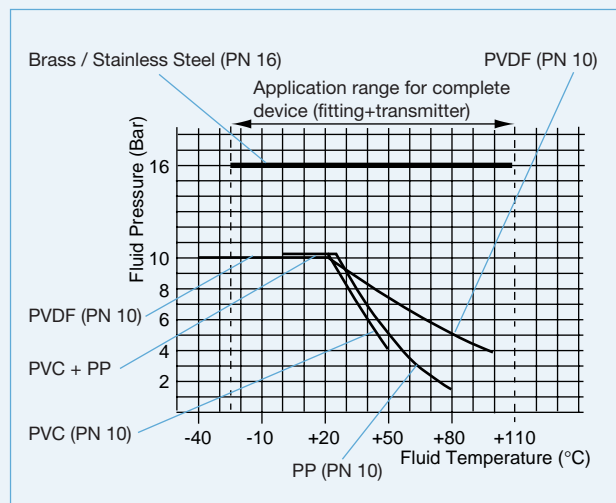
8045 with a PVDF sensor

Depending on the fitting material



8045 with a stainless steel sensor

Depending on the fitting material



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 speed of flow. 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:

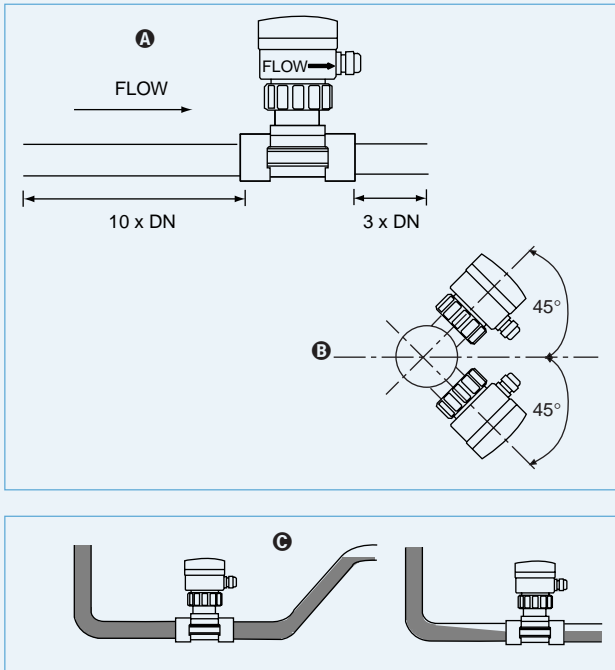
- the measured flow
- the value of the current output
- the value of the main totalizer
- the value of the daily totalizer



3 keys to go through the menus and program the device

LEDs indicating the relay status

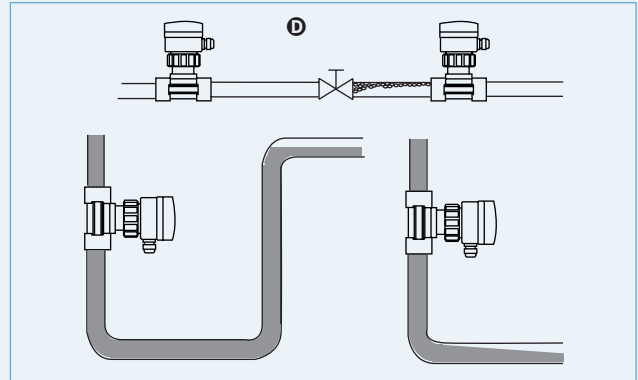
Installation recommendations



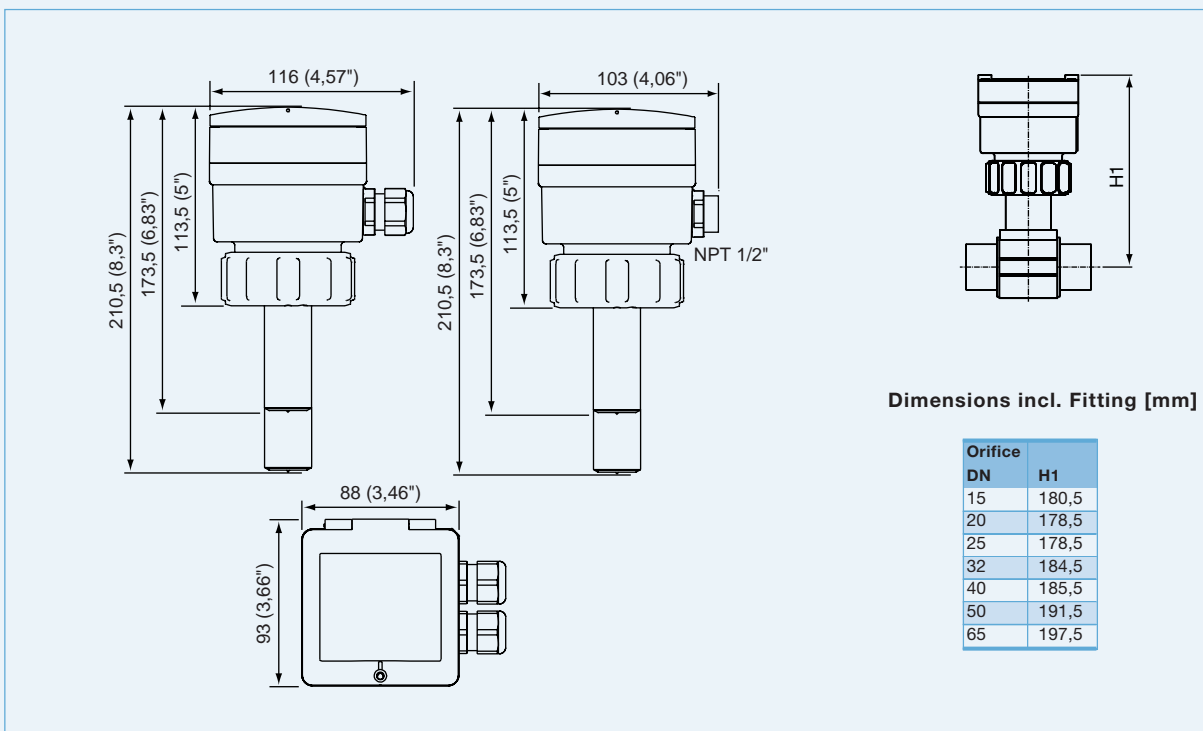
A The minimum straight upstream (10xDN) and downstream (3xDN) distances must be observed.

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



Dimensions (mm and inch)



Ordering Chart for Transmitters Type 8045 - For Fitting Type S020 (see corresp. datasheet)

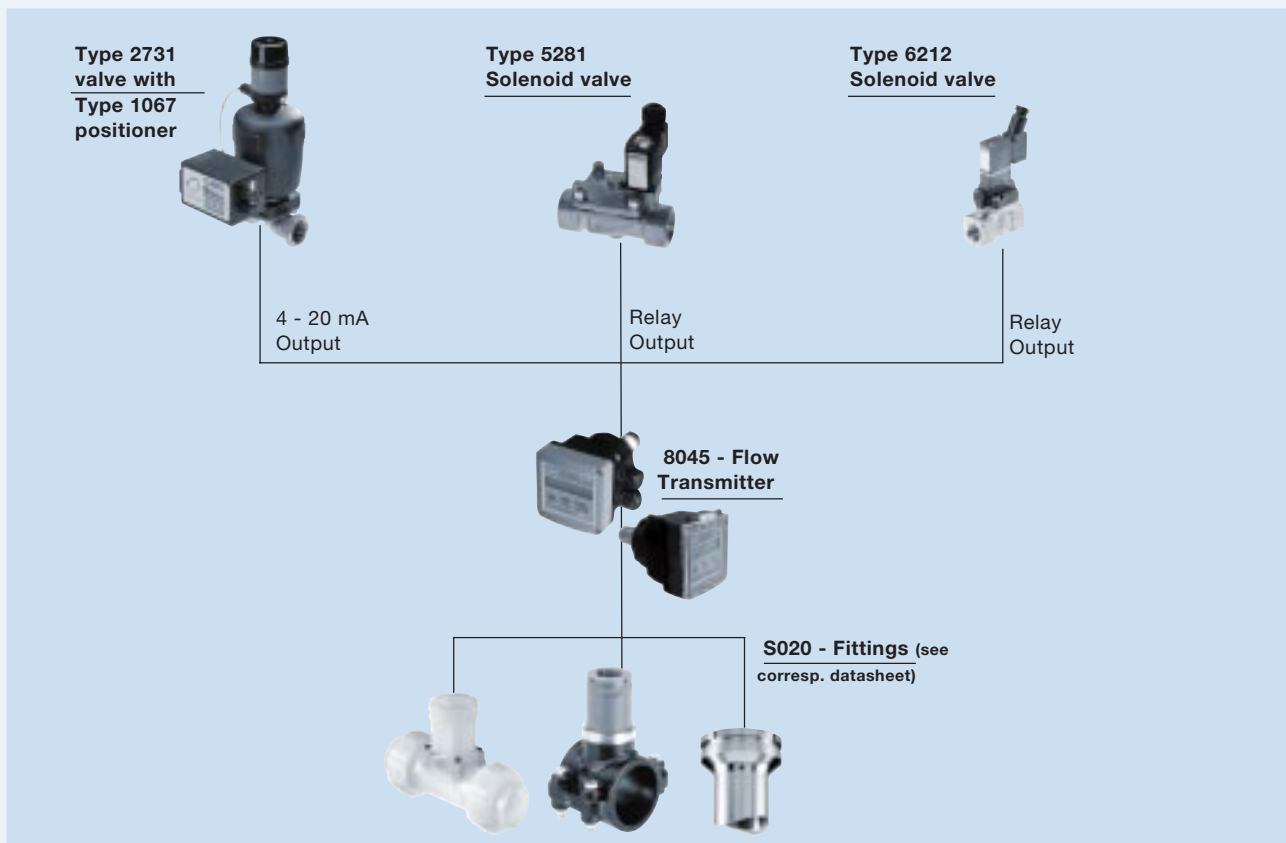
Voltage supply	Relays	Housing Material	Sensor	Gasket	Item-No
18-36 VDC	No	PC	Short, PVDF	FPM	426 498 R
18-36 VDC	No	PC	Long, PVDF	FPM	426 499 J
18-36 VDC	2	PC	Short, PVDF	FPM	426 506 R
18-36 VDC	2	PC	Long, PVDF	FPM	426 507 J
18-36 VDC	No	PPA	Short, Stainless Steel	EPDM	449 670 X
18-36 VDC	No	PPA	Long, Stainless Steel	EPDM	449 672 M
18-36 VDC	2	PPA	Short, Stainless Steel	EPDM	449 671 L
18-36 VDC	2	PPA	Long, Stainless Steel	EPDM	449 673 N

Ordering Chart of Accessories for Transmitters Type 8045

Accessories	Item-No
Set with 2 cable glands + 1 cable gland obturator + 2 neoprene gaskets	449 755 Q
Set with 2 NPT 1/2" reductions + 1 cable gland obturator + 2 gaskets	551 782 S
Set with 1 EPDM gasket + 1 cable gland obturator + 1 multi-way seal + mounting instructions ¹⁾	551 775 A
Set with 1 EPDM gasket + 1 FPM gasket	552 111 J

¹⁾ 1 set supplied with the transmitter Type 8045

Interconnection with other Bürkert products



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

We reserve the right to make technical changes without notice.

8045-GB/Ind**/Mar03