

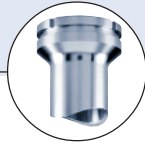
- Sensor in solid state technology
- Working as a transmitter and/or as an ON/OFF controller
- Automatic calibration of full scale: TEACH-IN
- Clean in place (CIP)
- FDA approved

Type 8041 can be combined with...



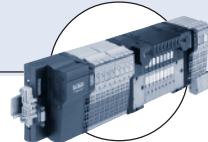
Type S020

T-Fitting in
Stainless steel /
Brass / PVC /
PVDF / PP



Type S020

Spigot in
Stainless steel /
PVC / PVDF / PP



**Type 8644-P
AirLINE**

Valve Island with
electronic I/O



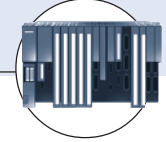
Type 8025

Universal transmitter/
batch controller
Panel or Wall



Type 2712 (8630)

Continuous
TopControl



PLC

The flowmeter 8041 has been designed for pipes with diameters ranging from DN 6 to DN 400 and liquids having a conductivity > 20 µS/cm. The transmitter is a magmeter made up of an electronic module and a stainless steel sensor. It is fitted with a 4-20 mA output, a pulse rate

output and a relay output. The different parameters can be programmed by means of 5 switches, a push-button and a 10 led bargraph. The type 8041 can be used in applications with higher pressure and higher temperature.

Fitting and sensor data	
Pipe diameter	DN 6 to DN 400
Measuring range	0.2 m/s to 10 m/s
Fitting	S020 (see corresp. datasheet)
Sensor element	Electrodes
Materials wetted parts	
Finger, electrodes	Stainless steel 316L (DIN1.4404)
Seal	EPDM (FDA agreements)
Armature	PEEK (FDA agreements)
Medium data	
Medium temperature	-20 to 150°C (depends on fitting)
Fluid pressure	max. PN16 (Depends on temperature and fitting material, see temperature-pressure diagram)
Conductivity	min. 20 µS/cm
Electronic module data	
Accuracy (for measured value from 1 to 10 m/s and -20°C < T° < 130°C)	
Teach-In	±2% of measured value
Standard K-factor ¹⁾	±4% of measured value
Linearity	±(1% of measured value + 0.1% of FS*)
Repeatability	0.25% of measured value
Voltage supply	18-36 VDC, filtered and regulated (3 wires)
Reversed polarity of DC	protected
Outputs 8041	
Current	4-20 mA, 100 ms refresh rate; max. load: 1100 Ω at 36 V DC, 330 Ω at 18 V DC
Frequency	0-240 Hz, duty cycle = 50%±1% 100 mA max., protected against short-circuits and polarity reversals
Relay	Normally open or normally closed (depending on wiring), 250 VAC, 3A

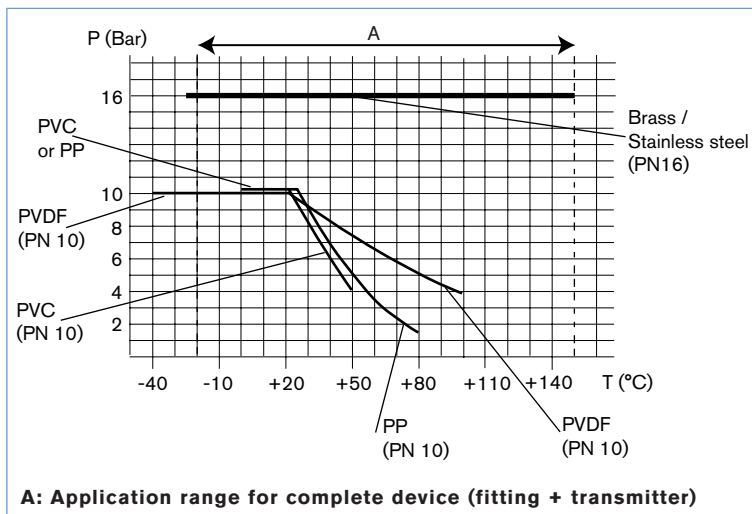
Electronic module data (continued)	
Current consumption	Max. 220 mA
Alarm	
Full scale exceeding	22 mA and 256 Hz
Fault signalling	22 mA and 0 Hz
User parameters	Saved in EEPROM
Materials	
Housing, cover	PPA, glass fibre reinforced
Seal	EPDM, standard
Electrical connections	Cable gland M 20 x 1.5
General data	
Ambient temperature	-10° to 60 °C
Storage temperature	-20° to 60 °C
Voltage supply cable	
Cross-section	0.75mm ² shielded
Protection class	IP65
Altitude max. for operating	2000 m
Standards	
EMC	EN 50081-1, 61000-6-2
Security	EN 61010-1
Vibration	CEI 68-2-6
Shock	CEI 68-2-27
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 ≤ 16 bar and DN < 125
- Fluids of group 2 according to §1.3b of the directive:	PN ≤ 16 bar and DN ≤ 200
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).	

1) 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

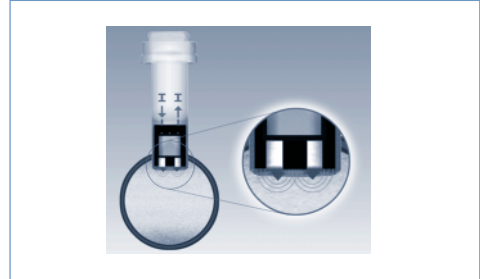
Pressure/Temperature diagram

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



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.

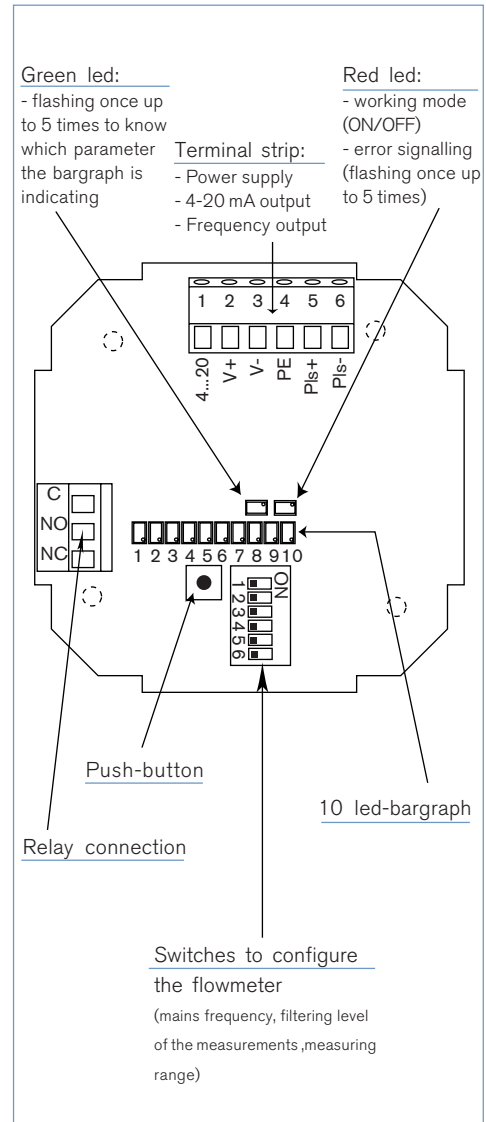


Possible applications

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

Display on PCB



Main features and programming

Using as a transmitter

- Programming of the full scale
 - selection of a predefined measuring range: 0 to 2, to 5 or to 10 m/s
 - selection by TEACH-IN: with the actual max. flow velocity of the application
- 4-20 mA current output
- 0-240 Hz frequency output
- Relay output: switching mode either window or hysteresis, on low or high switching threshold
- Relay time-out
- Filter
- Alarm:
 - for full scale exceeding with 22 mA and 256 Hz
 - for fault signalling with 22 mA and 0 Hz

Using as an ON/OFF control

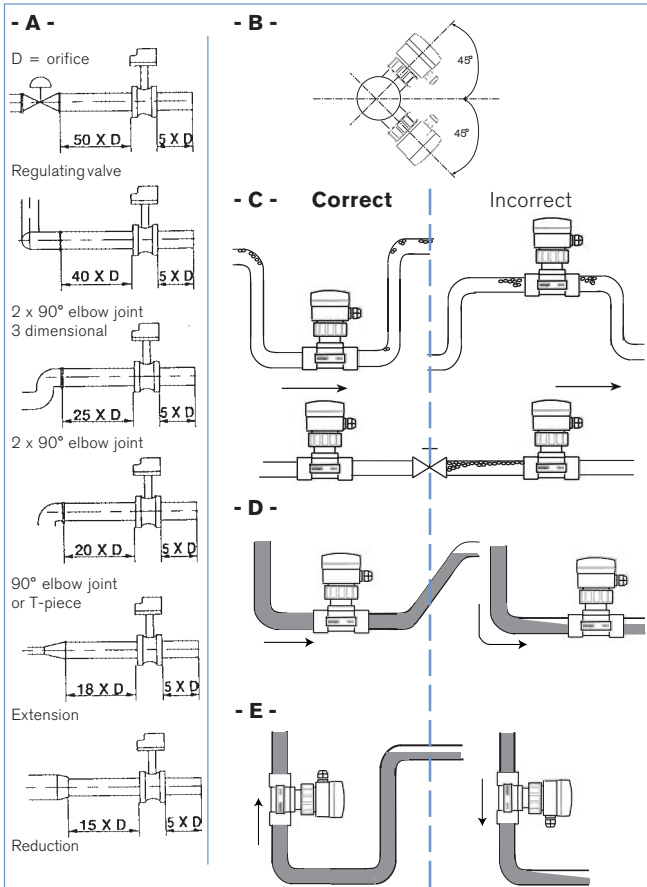
- Flow detection with switching thresholds, defined as a percentage of max. flow rate.
- TEACH-IN of the full scale with an unknown max. flow rate.

Installation recommendations

A- A minimum straight upstream and downstream distances must be observed. According to pipe's design, necessary distances can be bigger or use a flow conditioner to obtain the best accuracy. For more information, please refer to EN ISO 5167-1. EN ISO 5167-1 prescribes the straight inlet and outlet distances that must be complied with when installing fittings in pipe lines in order to achieve calm flow conditions. The most important layouts that could lead to turbulence in the flow are shown below, together with the associated prescribed minimum inlet and outlet distances. These ensure calm, problem-free measurement conditions at the measurement point.

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.

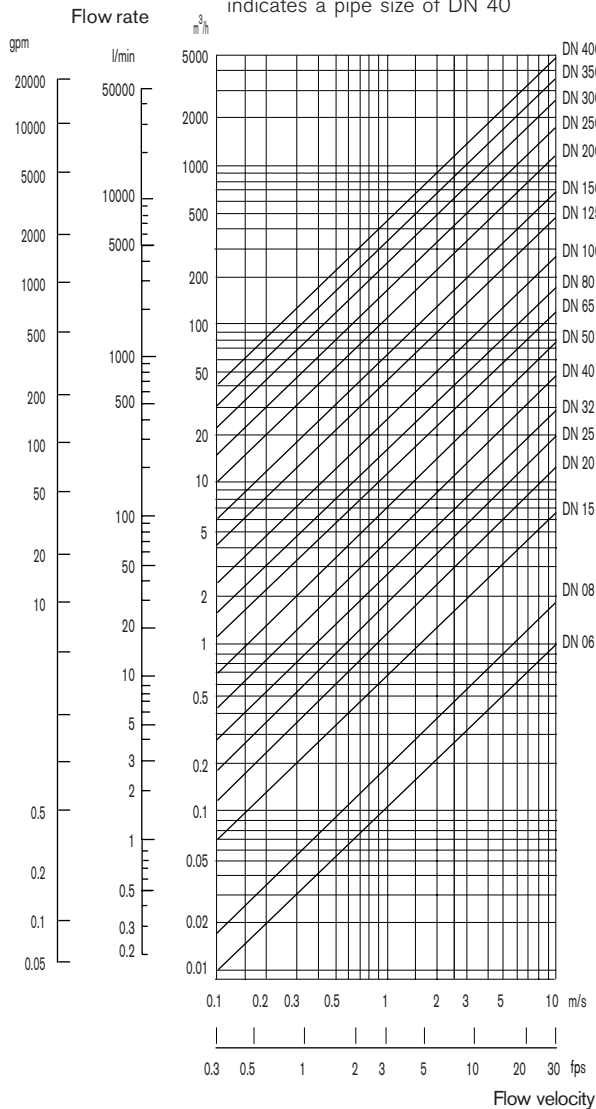
C, D and E - Mount the 8041 transmitter in these ways to obtain an accurate flow measurement.



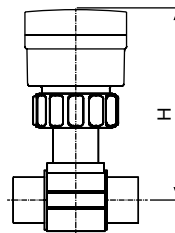
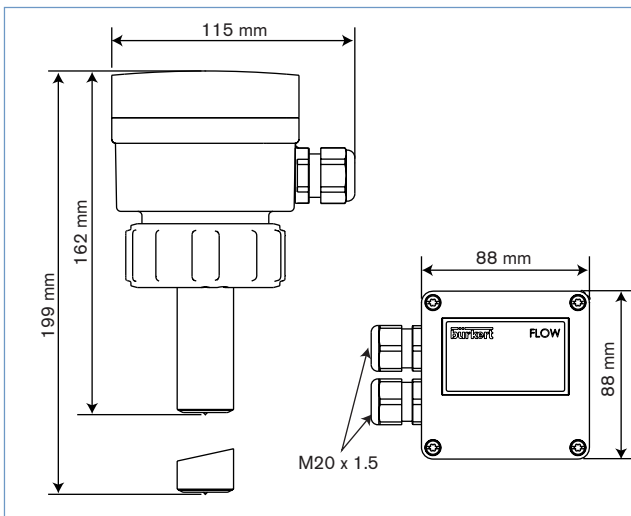
Selection of fitting / pipe size

Example 1:

- Specification of nominal flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s
- For these specifications, the diagram indicates a pipe size of DN 40



Dimensions [mm]



DN [mm]	H [mm]			
	T-Fitting	Saddle	Plastic Spigot	St/St. Spigot
6	163			
8	163			
15	168			
20	166			
25	166			
32	169			
40	173			169
50	179	204		174
65	179	203	187	180
80		207	193	185
100		212	200	195
110		208		
125		215	235	206
150		225	242	217
180		249		
200		261	263	238
250			281	298
300			293	317
350			306	329
400			321	

Ordering chart for transmitter 8041 - for fitting Type S020 (see corresp. datasheet)

Voltage supply	Outputs	Relays	Housing material	Gasket	Sensor	Connector	Item no.
18-36 VDC	4-20 mA, Frequency,	1	PPA	EPDM	Short, Stainless steel	2 cable glands M20x1.5	552 779
					Long, Stainless steel		552 780

Note: Delivered with 1 set 551 775 and 1 relay connection kit 552 812

Ordering chart of accessories for transmitter 8041 (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
PPA nut	440 229
Set with 1 green FKM + 1 black EPDM gaskets	552 111
Relay connection kit with 1 screw terminal strip + 1 protection cap + 1 rilsan + 1 mounting instruction sheet	552 812
Calibration certificate	550 676
FDA -Approval	449 788

Remote electronics Type 8025 panel or wall mounted version which can be connected to the 8041

Version	Description	Voltage supply	Output	Relays	Sensor	Connection	Item no.
Panel	Type 8025 „Universal“, 2 totalisators	18-30 VDC	4-20 mA, pulse	None	8041	Terminals	419 538
				2	8041	Terminals	419 537
	Type 8025 „Batch“, 2 totalisators, 1 flowrate	18-30 VDC	-	2	8041	Terminals	419 536
Wall	Type 8025 „Universal“, 2 totalisators	18-30 VDC	4-20 mA, pulse	None	8041	3 cable glands	419 541
				2	8041	3 cable glands	419 540
	Type 8025 „Batch“, 2 totalisators, 1 flowrate	115-230 VAC	4-20 mA, pulse	None	8041	3 cable glands	419 544
		18-30 VDC	-	2	8041	5 cable glands	433 740

Interconnection with other Bürkert products

Type S020 - Fitting (see corresp. datasheet)		4-20 mA current output		Type 2731 - valve with Type 1067 positioner SideControl		Type 8025 - Universal transmitter / batch controller Wall-mounted or panel-mounted	
		Relay output		Frequency output			
Available Fitting DN	T-fitting S020	DN 6 (1)	short sensor		DN65		
	Welding tab S020		short sensor		DN50	DN350 long sensor	
	Fusion spigot S020		short sensor		DN65	DN400 long sensor	
	Screw-on S020		long sensor		DN100	DN400	
	Saddle S020		DN50	long sensor		DN200	

(1) DN6 and DN8 only in stainless steel

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

We reserve the right to make technical changes
without notice.

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