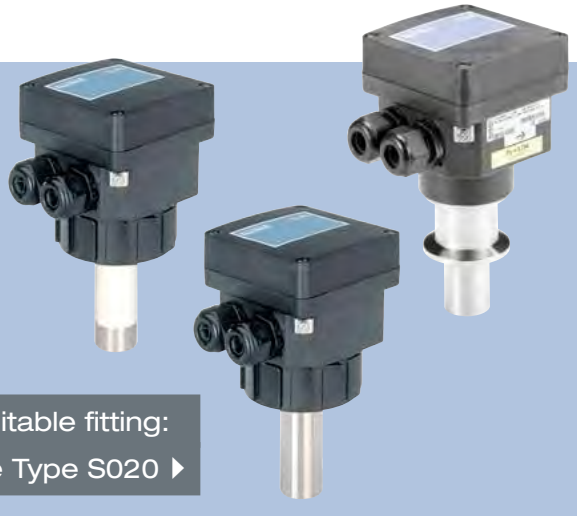
Insertion magnetic inductive flowmeter

8041

- Sensor without moving parts
- Flowmeter with On/Off control
- Application related calibration by Teach-In function
- Clean in place (CIP)
- FDA-compliant materials



Suitable fitting:
see Type S020 ▸

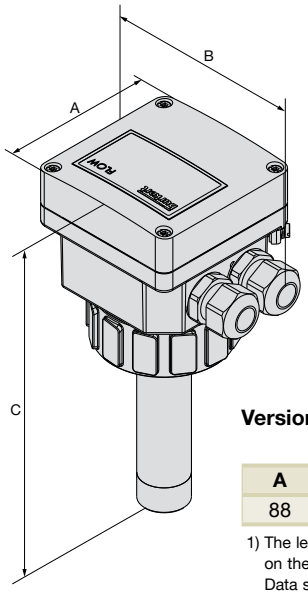
The electromagnetic flowmeter 8041 is made up of an electronic module and a sensor consisting of PVDF or stainless steel material. It has been designed to measure a flow rate of neutral and slightly aggressive fluids with a conductivity of more than 20 µS/cm in DN06…DN400 pipes.
It is fitted with a 4…20 mA output, a pulse output and a relay output. The different parameters can be set by means of 5 DIP switches, a push-button and a 10- field LED bargraph.
It is available:
- with G 2 connection for the version with a PVDF sensor
- with G 2 or clamp connection for the version with a stainless steel sensor.

The version with a stainless steel sensor can be used in applications with higher pressures (PN16) and higher temperatures (150 °C).

Technical data

General data	
Compatibility	With fittings S020 (Data sheet; see **Type S020** ▸)
Materials	
Housing, cover, nut	
PVDF sensor version	PC (glass fibre reinforced for housing)
Stainless steel sensor version	PPA (glass fibre reinforced)
Screws / Seal	Stainless steel / NBR
Cable glands	PA with neoprene seal
Wetted parts materials	
Sensor holder	PVDF or Stainless steel 1.4404/316L
Electrodes	Stainless steel 1.4404/316L
Seals	G 2 connection: FKM or EPDM (conform to FDA), Clamp connection: EPDM or FEP (to be ordered separately)
Earth ring (PVDF sensor version)	Stainless steel 1.4404/316L
Electrode holder (Stainless steel sensor version)	PEEK (conform to FDA)
Surface finishing quality	Ra < 0.8 mm (Clamp connection)
Electrical connections	2 cable glands M20 x 1.5
Recommended cable	0.5…1.5 mm² cross-section, shielded cable, 6…12 mm diameter (if only one cable is used per cable gland) or 4 mm diameter (if two cables are used per cable gland with using the supplied multi-way seal)

Dimensions [mm]



Version G 2 connection

A	B	C[1)]
88	116	162 or 199

1) The length of the sensor armature depends on the nominal size of the fitting used. Data sheet; see **Type S020** ▸

Options

- Stainless steel finger for + 150 °C and 16 bar with PPA housing
- FDA approved wetted materials, - Hastelloy C Electrodes

Complete device data (fitting S020 + flowmeter)	
Pipe diameter	
G 2 connection	DN06…DN400
Clamp connection	DN32…DN100
Measuring range	0.2…10 m/s
Sensor element	Electrodes
Fluid temperature	
PVDF sensor version	0…+80 °C (depends on fitting)
Stainless steel sensor version	-15…+150 °C (depends on fitting)
Fluid pressure max.	See pressure/temperature diagram
PVDF sensor version	PN10
Stainless steel sensor version	PN10 (with plastic fitting) - PN16 (with metal fitting)
Conductivity	Min. 20 mS/cm
Viscosity	< 1000 mPa.s

Technical data continued

Measurement deviation	
Teach-In	±0.5 % of Reading[1] (at the teach flow rate value)
Standard K-factor	±3.5 % of Reading[1]
Linearity	±0.5 % of F.S.[1][2]
Repeatability	±0.25 % of Reading[1]

1) Under reference conditions i.e. measuring fluid = water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions.
2) FS. = Full scale (10 m/s)

Electrical data	
Power supply	18…36 V DC filtered and regulated (3 wires)
Reversed polarity of DC	Protected
Current consumption	≤220 mA (at 18 V DC)
Output	
Signal current	4…20 mA (sink or source by wiring), 100 ms refresh time; Max. loop impedance: 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 V AC/3 A or 40 V DC/2 A (resistive load)
4… 20 mA output uncertainty	±1 % of range
Alarm	
Full scale exceeding	22 mA and 256 Hz
Fault signalling	22 mA and 0 Hz
User parameter	Saved in EEPROM

Environment	
Ambient temperature	-10…+60 °C (operating) -20…+60 °C (storage)
Relative humidity	<80 %, without condensation
Height above sea level	Max. 2000 m
Standard, directives and certifications	
Protection class	IP65
Standard and directives CE	The applied standards, which verify conformity with the EU Directives, can be found on the EU Type Examination Certificate and/or the EU Declaration of conformity (if applicable)
Pressure	Complying with article 4, §1 of Pressure Equipment Directive 2014/68/EU[3]
Certificates	FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal) ECR1935/2004 declaration (only for stainless steel sensor with EPDM seal)

3) The device conforms to Article 4, Paragraph 1 of the Pressure Equipment Directive 2014/68/EU under the following conditions: Device used on a pipe (PS = maximum admissible pressure; DN = nominal diameter of the pipe).

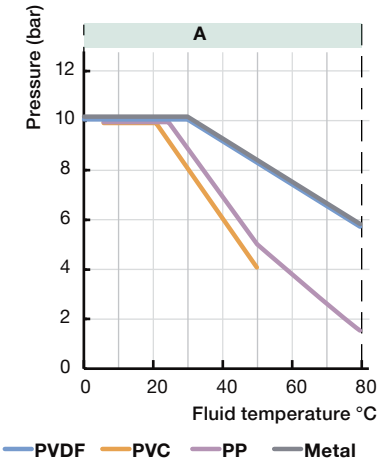
Type of fluid	**Conditions**
Fluid group 1, article 4, §1.c.i	DN ≤25
Fluid group 2, article 4, §1.c.i	DN ≤32, or PS*DN ≤1000
Fluid group 1, article 4, §1.c.ii	DN ≤25 or PS*DN ≤2000
Fluid group 2, article 4, §1.c.ii	DN ≤200 or PS ≤10 or PS*DN ≤5000

Note: If the device is mounted in a humid environment or outside, then the maximum voltage allowed is **35 V DC** instead of 36 V DC.

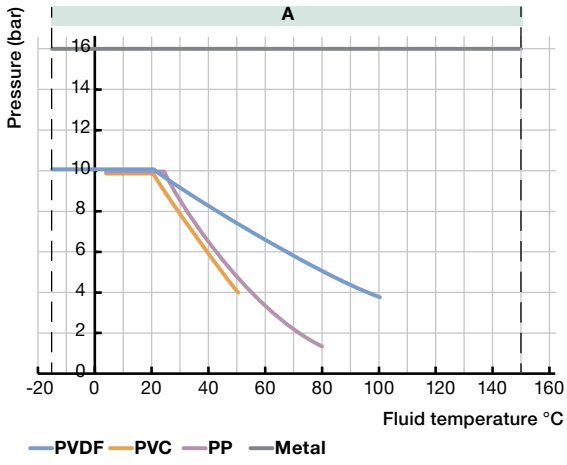
Pressure/Temperature diagrams

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

8041 with a PVDF sensor
(depending on the fitting material)



8041 with a stainless steel sensor
(depending on the fitting material)



A: Application range for complete device
(fitting + flowmeter)

Main features and programming

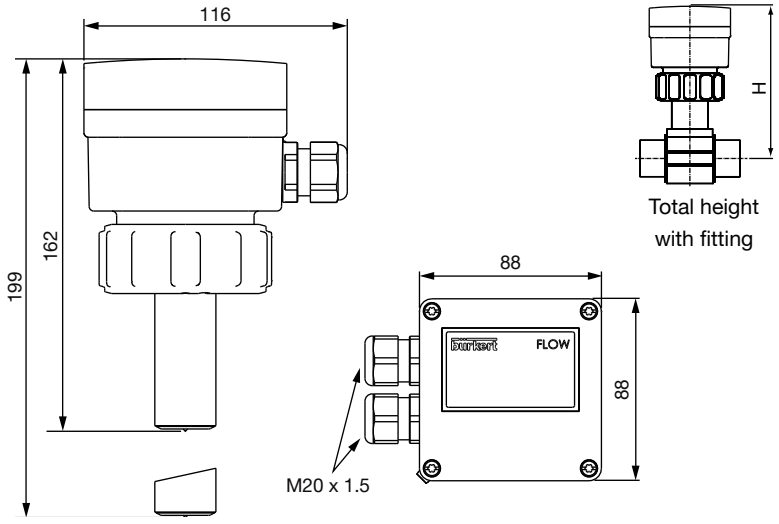
Using as a flowmeter

- Programming of the full scale
  - selection of a predefined measuring range: 0…2, 0…5 or 0…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 delay before switching
- 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.
- Adjustment of the full scale of the device accordingly to the customer process full scale.

Dimensions [mm]



DN	H with S020 fitting			
	T-Fitting	Saddle	Plastic spigot	Metal spigot
06	163	–	–	–
08	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	–	248	–	–
200	–	261	263	238
250	–	–	281	298
300	–	–	293	317
350	–	–	306	329
400	–	–	321	–

Note: The Type 8041 can easily be installed into any Bürkert Insertion fitting system (S020) by just fixing the main nut. The length of the sensor armature depends on the nominal size of the fitting used.
Data sheet; see **Type S020** ▸

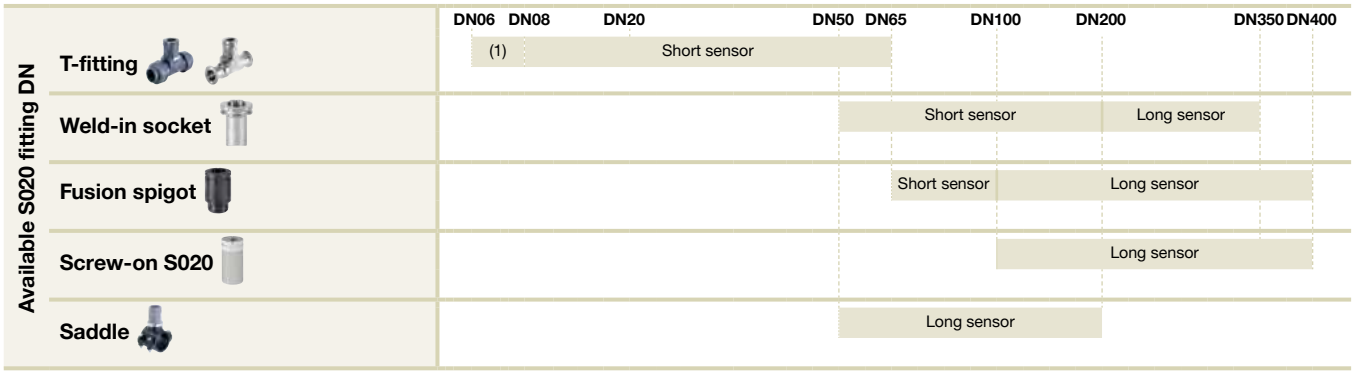
Ordering chart

Voltage supply	Output	Relay	Housing material	Seals	Sensor version	Certificates: FDA	Certificates: ECR1935/2004[1]	Certificates: Certifications	Electrical connection	Article no.
G 2 connection to use with S020 Fitting for flowmeter with G 2 connection										
18…36 V DC	4…20 mA, frequency	1	PC	FKM	short, PVDF	✓	×	×	2 cable glands	558064
					long, PVDF	✓	×	×	2 cable glands	558065
			PPA	FKM	short, stainless steel)	✓	✓	×	2 cable glands	552779
					long, stainless steel	✓	✓	×	2 cable glands	552780
			PPA	FKM	short, stainless steel	✓	✓	✓	2 cable glands	561606
					long, stainless steel	✓	✓	✓	2 cable glands	561607

1) If FKM seal mounted as standard at factory is replaced with the EPDM seal included in the delivery.

Note regarding the ordering of a complete flowmeter:
The complete 8041 flowmeter consists of the Type S020 Insertion fitting and the Type 8041 flowmeter.
FKM seal in standard; 1 EPDM seal contained in the kit 551775, 1 relay connection kit 552812 are supplied with each flowmeter.
Please enter the appropriate flowmeter according to the table “Compatible and recommended combinations with Bürkert Insertion Fitting” and order the respective Insertion Fitting and the selected flowmeter separately.

Compatible and recommended combinations with Bürkert Insertion Fitting



(1) DN06 and DN08 in stainless steel S020 only, 8041 with stainless steel sensor recommended

Accessories

Specifications	Article no.
Set with 2 cable glands M20 x 1.5 + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5 + 2 multiway seals 2 x 6 mm	449755
Set with 2 reductions M20 x 1.5 /NPT ½ + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5	551782
Relay connection kit with 1 screw terminal strip + 1 protection cap + 1 rilsan + 1 mounting instruction sheet	552812
3 points calibration certificate (device combined with a S020 fitting, only for DN ≤ 200)	550676
FDA declaration of conformity (for stainless steel or PVDF sensor with FKM or EPDM seal)	803724
For G 2 connection version	
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland + 1 green FKM seal for the sensor + 1 mounting instruction sheet	558102
Snap ring	619205
PC union nut	619204
PPA union nut	440229
Set with 1 green FKM and 1 black EPDM seal	552111