

Digital flow transmitter for continuous flow measurement



- Compact or remote version for DN 06 to 65
- Shows both flow rate and volume (with two totalizers)
- Automatic-calibration: TEACH-IN
- Simulation: all output signals provided without the need for real flow

Type 8035T can be combined with...



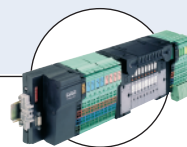
Type S030
INLINE fitting



Type 6213
Solenoid valve



Type 2712 (8630)
Continuous
TopControl system



Type 8644
Valve
islands



PLC

The paddle-wheel transmitter is especially designed for use in neutral, slightly aggressive, solid free liquids. The transmitter is made up of a compact fitting (S030) and an electronic module (SE35) quickly and easily connected together by a Quarter-Turn.

The Bürkert designed fitting system ensures simple installation of the sensors into all pipes from DN 06 to 65.

The compact INLINE flow transmitter is available in different versions:

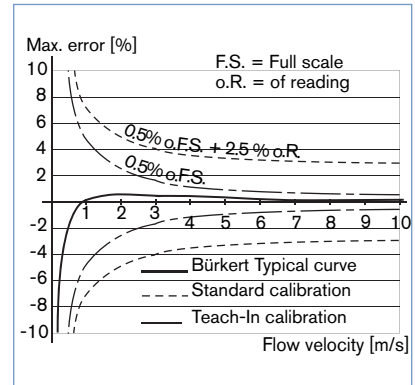
- Flow transmitter with standard output signal
- Battery powered

Technical data	
General data	
Compatibility	with fittings S030 (see corresp. datasheet)
Materials	Housing, cover, lid, nut Front panel foil / Screws Cable plug or glands Wetted parts materials Fitting, sensor armature Paddle-wheel Axis and bearing / Seal
Display	15 x 60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable plug EN 175301-803 or cable glands M20 x 1.5 or none (for battery version)
Voltage supply cable	max. 50 m, shielded, 1.5 mm ² max. cross-section
Complete device data (Fitting S030 + Electronics)	
Pipe diameter	DN 06 to 65
Measuring range	0.5 to 10 m/s (Battery version - Coil transducer) 0.3 to 10 m/s (Hall transducer version)
Fluid temperature with fitting in PVC / PP PVDF, brass or stainless steel	0 up to 50°C / 0 up to 80°C -15 up to 100°C
Fluid pressure max.	PN10 (with plastic fitting) - PN16 (with metal fitting) - (PN40 on request, see S030 datasheet) - see pressure/temperature diagram
Viscosity / Particle rates	300 cSt. max. / 1% max (size: max. 0.5 mm)
Accuracy	Teach-In Standard K-factor
Linearity	≤ ±0.5% of F.S.* (at 10 m/s) ¹⁾ ≤ ±(0.5% of F.S.* + 2.5% of Reading) ¹⁾
Repeatability	≤ 0.4% 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. * F.S.=Full scale (10 m/s)

Electrical data	
Power supply Standard signal version	12-30 V DC (V+) ± 10%, filtered and regulated or 115/230 V AC 50/60 Hz (see technical specifications 115/230 VAC)
Battery indicator / totalizer version	2 x 9 V DC batteries, autonomy min. 1 year at 20°C
Reversed polarity of DC	protected
Current consumption with sensor (without consumption of pulse output)	≤ 70 mA - transmitter with relays ≤ 20 mA - transmitter without relay
Output Standard signal version Signal current	4-20 mA (3-wire with relays; 2-wire without relay) max. loop impedance: 900 Ω at 30 V DC; 600 Ω at 24 V DC; 50 Ω at 12 V DC; 800 Ω with a 115/230 V AC voltage supply
Pulse	Polarized, potential free, 5...30 V DC; 100 mA, protected, line drop at 100 mA: 1.5 VDC
Relay Battery indicator / totalizer version	2 relays, freely programmable, 3A, 230 V AC None
Technical specifications 115/230 VAC	
Voltage supply available inside the device	27 V DC regulated - max. current: 125 mA integrated protection: fuse 125 mA temporised power: 3 VA
Environment	
Ambient temperature	0 up to +60°C (operation and storage)
Relative humidity	≤ 80 %, non condensated
Standards, directives and approvals	
Protection class	IP65 with cable or screws plug mounted and tightened or with obturator locked if not used.
Standard and directives EMC Security Pressure (Fitting S030, DN06 to 65, in PVC, PP, PVDF, stainless steel or brass) Vibration Shock	EN 61000-6-3 (2001), EN 61000-6-2 (2001) EN 61010-1 Complying with article 3 of §3 from 2006/95/CE directive.* EN 60068-2-6 EN 60068-2-27
Specific technical data of UR and CSA recognized products	
Relay output	30 V AC and 42 V peak max. or 60 V DC.
Ambient temperature	max. 40°C
Relative humidity	max. 80 %
Intended for an inner pollution	degree 2 environment
Installation category	I
Altitude	max. 2000 m

Accuracy diagram



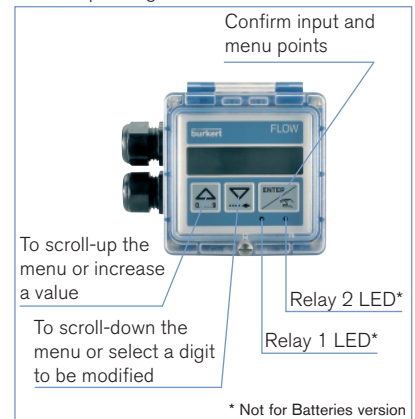
* For the 2006/95/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

Type of fluid	Conditions
Fluid group 1, §1.3.a	DN≤25 only
Fluid group 2, §1.3.a	DN≤32, or DN>32 and PN*DN ≤1000
Fluid group 1, §1.3.b	PN*DN ≤2000
Fluid group 2, §1.3.b	DN≤200

Operation and display

The device can be calibrated by means of the K-factor, or via the Teach-In function. Customized adjustments, such as measuring range, engineering units, pulse output and filter are carried out on site. The operation is specified according to two or three levels, depending on the transmitter version:

	Indication in operating mode / display	Parameter definition	Test
Flow transmitter	- flow - output current - main totalizer - daily totalizer with reset function	- language - engineering units - K-factor / Teach-In function - measuring range 4-20 mA - pulse output - relay (option) - filter - reset main totalizer	- alteration of basic adjustment (offset, span) - frequency test of sensor - flow simulation (dry-run test operation)
Battery indicator / totalizer	- flow - main totalizer - daily totalizer with reset function	- language - engineering units - K-factor / Teach-In function - filter - reset main totalizer	



Design and principle of operation



The electronic housing of the 8035 integrates the electronic board with display, programming keys and also a transducer (coil for Battery indicator version or Hall for other versions). The paddle-wheel is mounted in the fitting. The output signals are provided via a cable plug or two cable glands (according to the transmitter version). Bürkert designed fitting (S030) ensures simple installation of the Bürkert transmitter into pipes from DN 06 to DN 65.

When liquid flows through the pipe, the 4 magnets, inserted in the paddle-wheel set in rotation, produce a measuring signal in the transducer. The frequency modulated induced voltage is proportional to the flow velocity of the fluid. A conversion coefficient (K factor, available in the S030 instruction manual of the fitting), specific to each pipe (size and material) enables the conversion of this frequency into flowrate. The electronic component converts the measured signal into several outputs (according to the transmitter version) and displays the

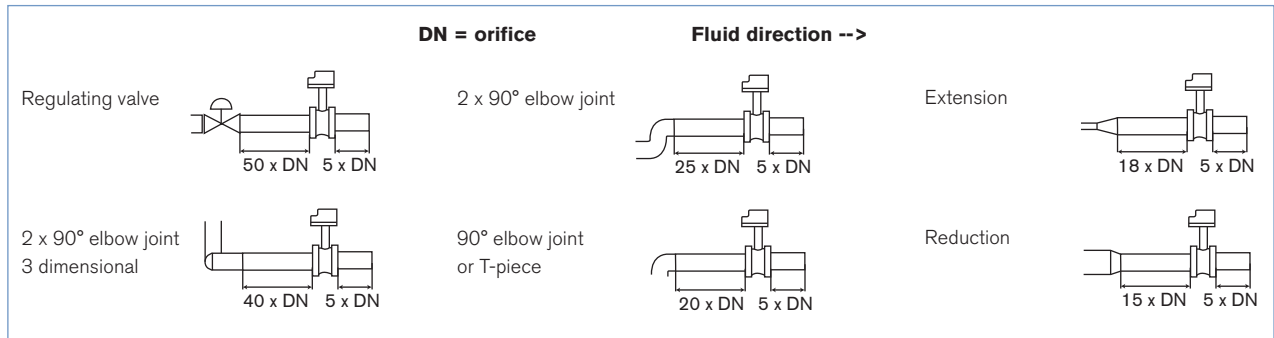
actual value.

Installation

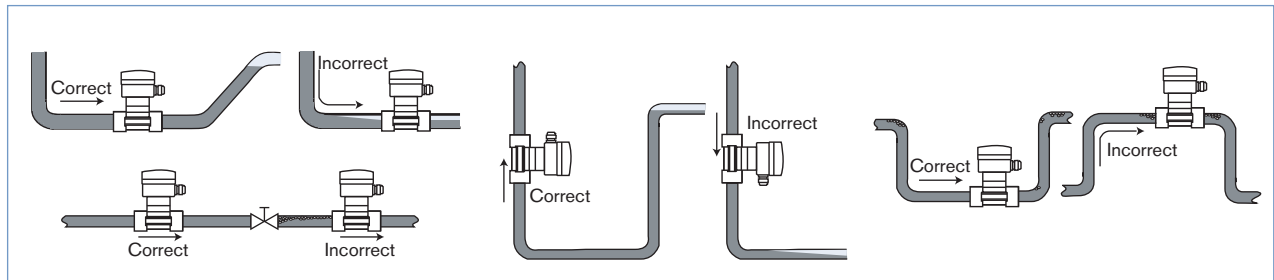
The electronic SE35 can easily be installed into any Bürkert INLINE fitting system Type S030, by means of a Quarter-Turn.

Minimum straight upstream and downstream distances must be observed. According to the 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.



The flow rate transmitter can be installed into either horizontal or vertical pipes.

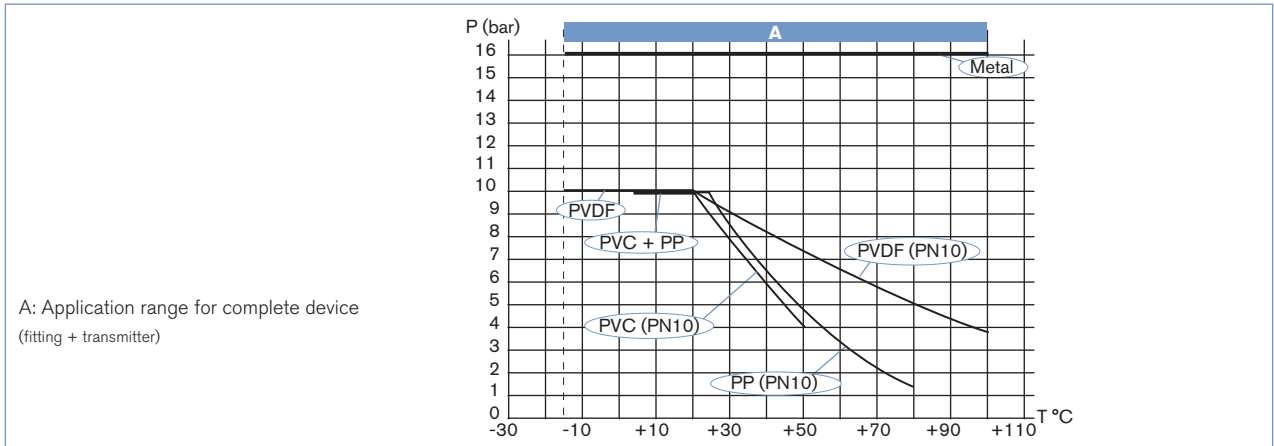


Pressure and temperature ratings must be respected according to the selected fitting material.

The suitable pipe size is selected using the diagram Flow / Velocity / DN.

The flow transmitter is not designed for gas flow measurement.

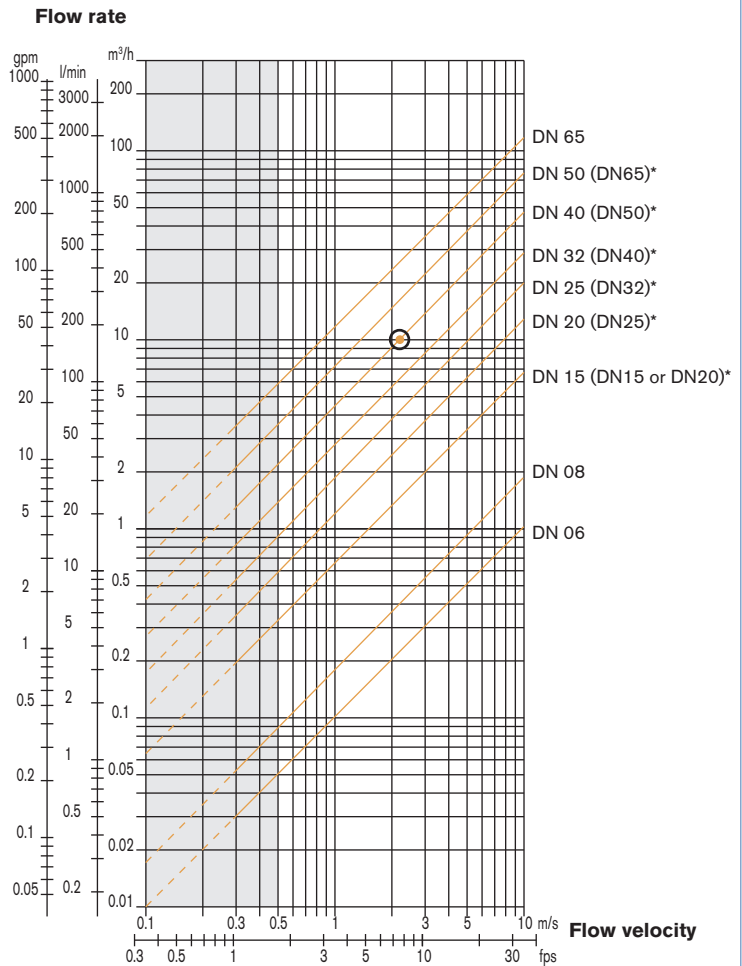
Pressure / Temperature diagram



Selection of fitting / pipe size

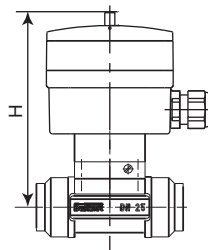
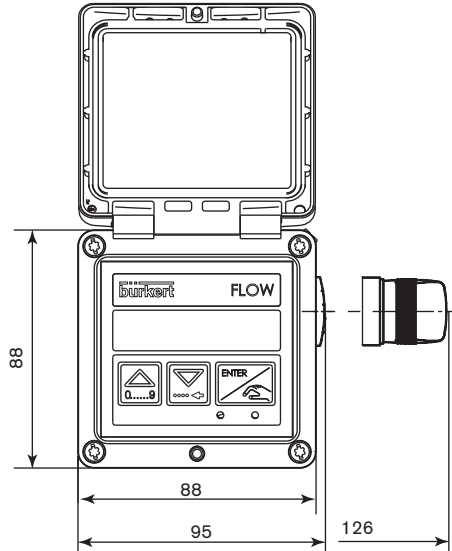
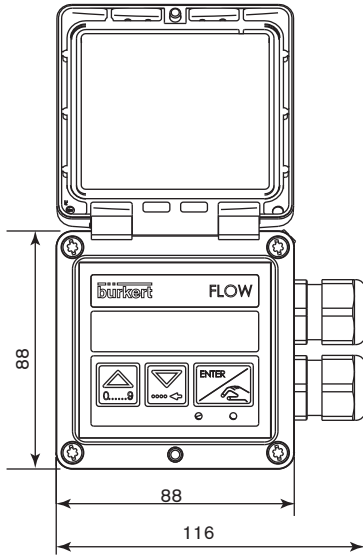
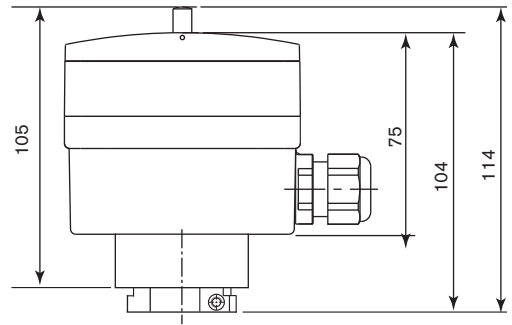
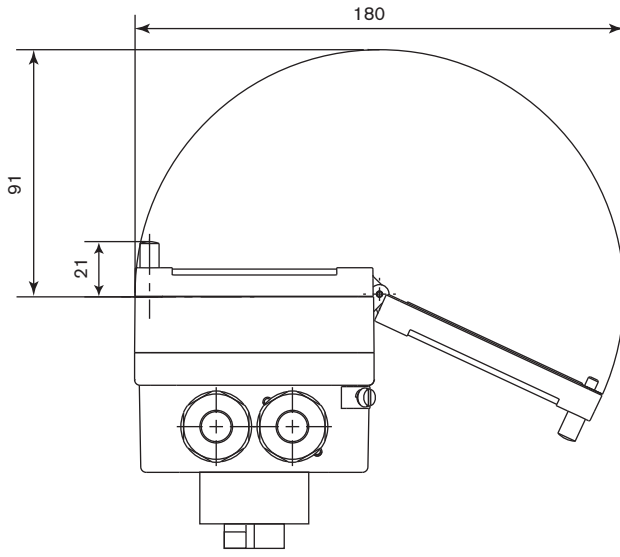
Example:

- Specification of nominal flow: 10 m³/h
- Ideal flow velocity: 2...3 m/s
- For these specifications, the diagram indicates a pipe size of DN40 [or DN50 for (*) mentioned fittings]



* for following fittings:
 - with external threads acc. to SMS 1145
 - with weld-ends acc. to SMS 3008, BS 4825 / ASME BPE or DIN 11850 Series 2
 - Clamp acc. to SMS 3017 / ISO 2852, BS 4825 / ASME BPE or DIN 32676

Dimensions [mm]



DN	H T-fitting
06	134
08	134
15	139
20	137
25	137
32	140
40	144
50	151
65	151

Ordering chart for compact transmitter Type 8035

Flow transmitter or indicator / totalizer with integrated paddle-wheel sensor

A flow transmitter or indicator / totalizer Type 8035 consists of:

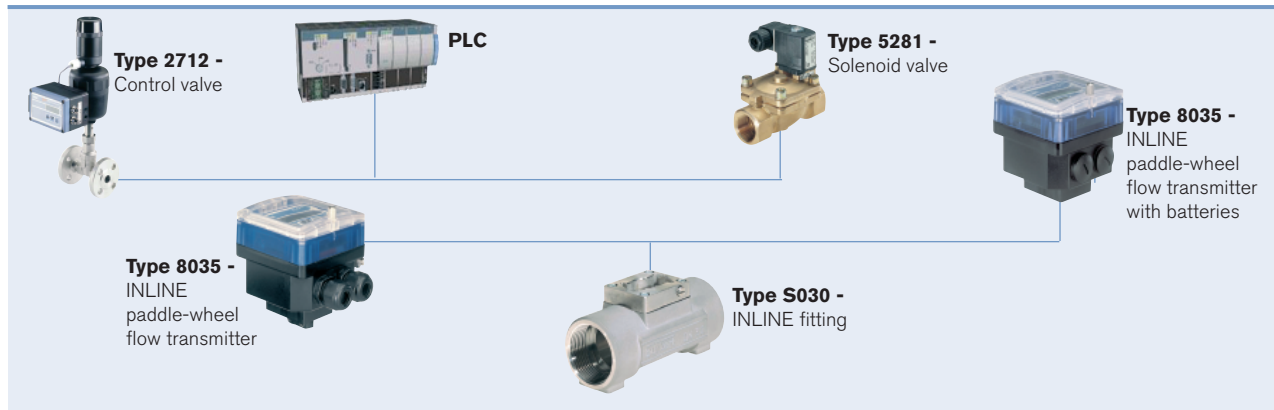
- an INLINE flow transmitter or indicator / totalizer SE35
- an INLINE fitting Type S030 (DN06 - DN 65) (Refer to corresponding datasheet - has to be ordered separately)

Specifications	Voltage supply	Output	Relays	Sensor version	Agreements	Electrical connection	Item no.
Standard output signal transmitter, 2 totalizers	12-30 V DC	4-20 mA (2 wires) + pulse	None	Hall	-	EN 175301-803	444 005
						2 cable glands	444 006
		UR	2 cable glands	553 432			
	115-230 V AC	4-20 mA (3 wires) + pulse	2	Hall	-	2 cable glands	444 007
					UR	2 cable glands	553 433
		4-20 mA (2 wires)+ pulse	None	Hall	-	2 cable glands	423 922
Indicator, 2 totalizers	2 x 9 V DC batteries	4-20 mA (3 wires)+ pulse	2	Hall	-	2 cable glands	423 924
		---	None	Coil	-	None	423 921

Ordering chart - accessories for transmitter Type 8035 (has to be ordered separately)

Specifications	Item 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	449 755
Set with 2 reductions M20 x 1.5 /NPT1/2" + 2 neoprene flat seals for cable gland or plug + 2 screw-plugs M20 x 1.5	551 782
Set with 1 stopper for unused cable gland M20 x 1.5 + 1 multiway seal 2 x 6 mm for cable gland + 1 black EPDM gasket for the sensor + 1 mounting instruction sheet	551 775
Cable plug EN 175301-803 with NPT1/2 " reduction without cable gland (Type 2509)	162 673

Interconnection possibilities with other Bürkert products



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

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