FINE CONTROLS (UK) LTD

Fine Controls have been supplying process controls & instrumentation equipment since 1994, & now serves an ever expanding customer base, both in the UK & globally.

We offer a full range of valve & instrumentation products & services, with our product rangerepresenting leading technologies & brands:

Flow: Flow Meters & Transmitters, Flow Switches, Flow Control Valves & Batch Control Systems

Temperature: Temperature Probes & Thermowells, Temperature ransmitters,Temperature Regulators & Temperature Displays

Level: Level Transmitters & Switches

Pressure: Pressure Gauges &Transmitters, Precision & High Pressure Regulators & I-P Converters, Volume boosters.

Precision Pneumatics: Pressure Regulators, I-P Converters, Volume Boosters, Vacuum Regulators

Valves: Solenoid & Pneumatic Valves, Control Valves & Positioners, Actuated Ball, Globe or Diaphragm Valves & Isolation Valves

Services: Repair, Calibration, Panel Build, System Design & Commissioning

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Email: sales@finecontrols.com

Digital batch controller

- Compact or remote version for DN 06 to 65
- Dosing
- Automatic-calibration: TEACH-IN
- Possible check of input/output signals
- Batched volume and totalizers displayed

Type 8035B 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 batch controller is especially designed for use in neutral, slightly aggressive, solid free liquids. The batch controller 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.

Technical data	
General data	
Compatibility	with fittings S030 (see corresp. data sheet)
Materials	
Housing, cover, lid, nut	PC
Front panel foil / Screws	Polyester / Stainless steel
Cable plug or glands	PA
Wetted parts materials	
Fitting, sensor armature	Brass, stainless steel 1.4435/316L, PVC, PP or PVDF
Paddle-wheel	PVDF
Axis and bearing / Seal	Ceramics / FKM (EPDM included, but not mounted)
Display	15 x 60 mm, 8-digit LCD, alphanumeric, 15 segments, 9 mm high
Electrical connections	Cable glands M20 x 1.5
Voltage supply cable	max. 50 m, shielded, 1.5 mm² max. cross-section

Complete device data (Fitting S030 + Electronics)	
Pipe diameter	DN 06 to 65
Measuring range	0.3 to 10 m/s (Hall transducer version)
Fluid temperature with fitting in	
PVC / PP	0 up to 50°C *(32 to 122°F)* / 0 up to 80°C *(32 to 176°F)*
PVDF, brass or stainless steel	-15 up to 100°C *(5 to 212°F)*
Fluid pressure max.	PN10 *(145.1 PSI)* (with plastic fitting) - PN16 *(232.16 PSI)* (with metal fitting) - (PN40 on request, see S030 data sheet) - see pressure/temperature diagram
Viscosity / Particle rates	300 cSt. max. / 1% max (size: max. 0.5 mm)
Accuracy	
Teach-In	≤ ±0.5% of F.S.* (at 10 m/s)[1)]
Standard K-factor	≤ ±(0.5% of F.S.* + 2.5% of Reading)[1)]
Linearity	≤ ±0.5% of F.S.* (at 10 m/s)[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)

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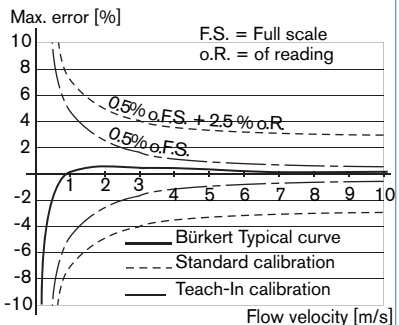
Electrical data	
Power supply	12-30 V DC (V+) ± 10%, filtered and regulated or 115/230 V AC 50/60 Hz (see technical specifications 115/230 VAC)
Reversed polarity of DC	protected
Current consumption with sensor (without consumption of inputs/output)	≤ 70 mA
Input	4 binary inputs, 5... 30 V DC - impedance 3.3 kΩ Functions: dosing quantity choice, start-stop dosing
Output	Polarized, potential free, 5...30 V DC; 100 mA, protected, line drop at 100 mA: 1.5 VDC - for status and alarm messages
Relay	2 relays, freely programmable, 3A, 230 V AC

Environment	
Ambient temperature	0 up to +60°C (operation and storage)
Relative humidity	≤ 80 %, without condensation

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	EN 61000-6-3 (2001), EN 61000-6-2 (2001)
Security	EN 61010-1
Pressure (Fitting S030, DN06 to 65, in PVC, PP, PVDF, stainless steel or brass)	Complying with article 3 of §3 from 2006/95/CE directive.*
Vibration	EN 60068-2-6
Shock	EN 60068-2-27

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

Accuracy diagram



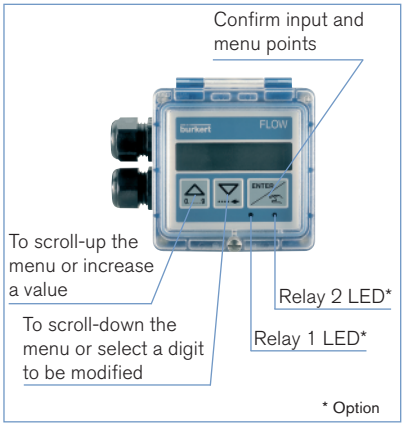
* For the 2006/95/CE pressure directive, the device can only be used under following conditions (depend on max. pressure, pipe diameter and fluid).

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 three levels:

Indication in operating mode / display	Parameter definition	Test
- dosing amount - dosing mode - main totalizer - daily totalizer with reset function	- language - engineering units - K-factor / Teach-In function - selection of batching mode - over run correction - alarm - function mode of relays - reset main totalizer	- display of state of binary inputs - relay test - frequency test of sensor



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Design and principle of operation

The electronic housing of the 8035 integrates the electronic board with display, programmation keys and also a transducer (Hall). The paddle-wheel is mounted in the fitting. The output signals are provided via two cable glands. 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 volume. The electronic component converts the measured signal and displays the actual volume.

The 8035 batch controller is mounted in a pipe in series with the valve; the unit controls the opening of the valve and measures the quantity of the fluid which flows. The unit also closes the valve when the pre-programmed quantity has been delivered.
The electronic component needs a voltage supply of 12-30 V DC or 115/230 V AC, and two output relays are used to activate the valves and to initiate alarms.

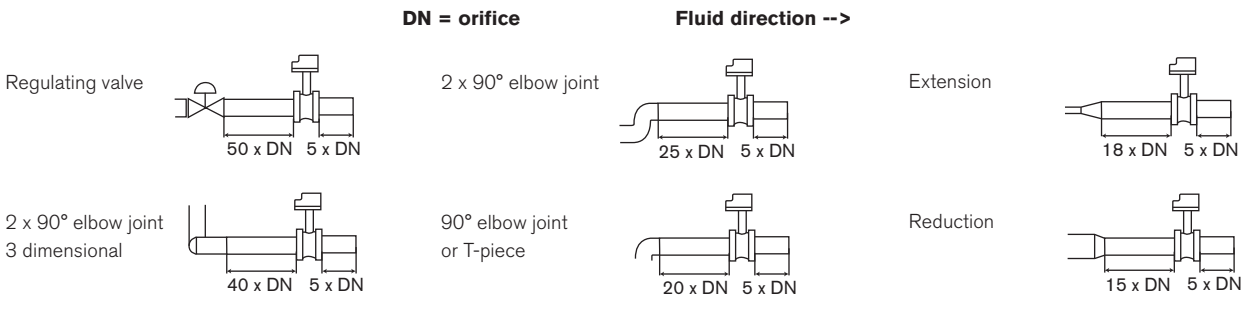
The following dosing and filling operations are possible:
- **Local dosing:** the user enters the quantity to be metered and initiates the dosage from the keypad.
- **Local dosing with pre-set quantity:** the user selects a quantity which has been preset and initiates the dosage from the keypad.
- **Remote control dosing** using a rotary knob (selecting a pre-set quantity) or binary data inputs.
- **Dosing controlled by a PLC unit** using binary data inputs.
- **Automatic dosing controlled by variation of pulse duration**. The quantity of the dose is directly proportional to the duration of a pulse.

Installation

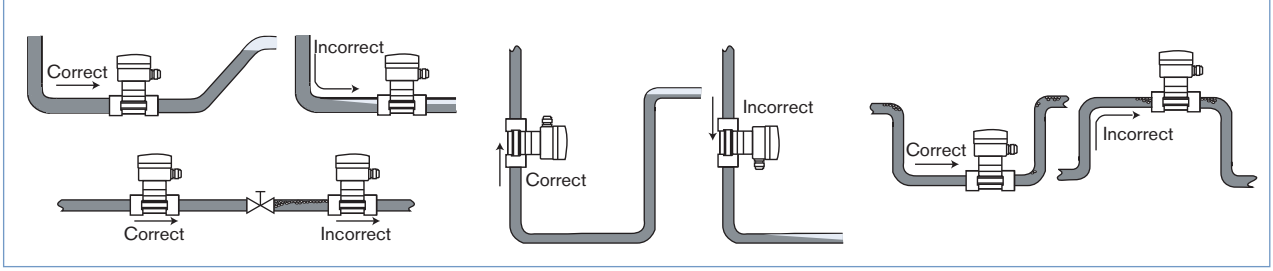
The electronic module SE35 can easily be installed into any Bürkert INLINE fitting system Type S030, by means of a Quarter-Turn.

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 batch controller 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 batch controller is not designed for gas flow measurement.

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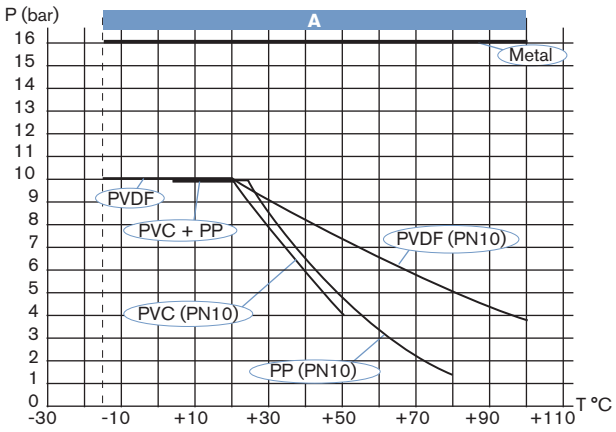
Pressure / Temperature diagram



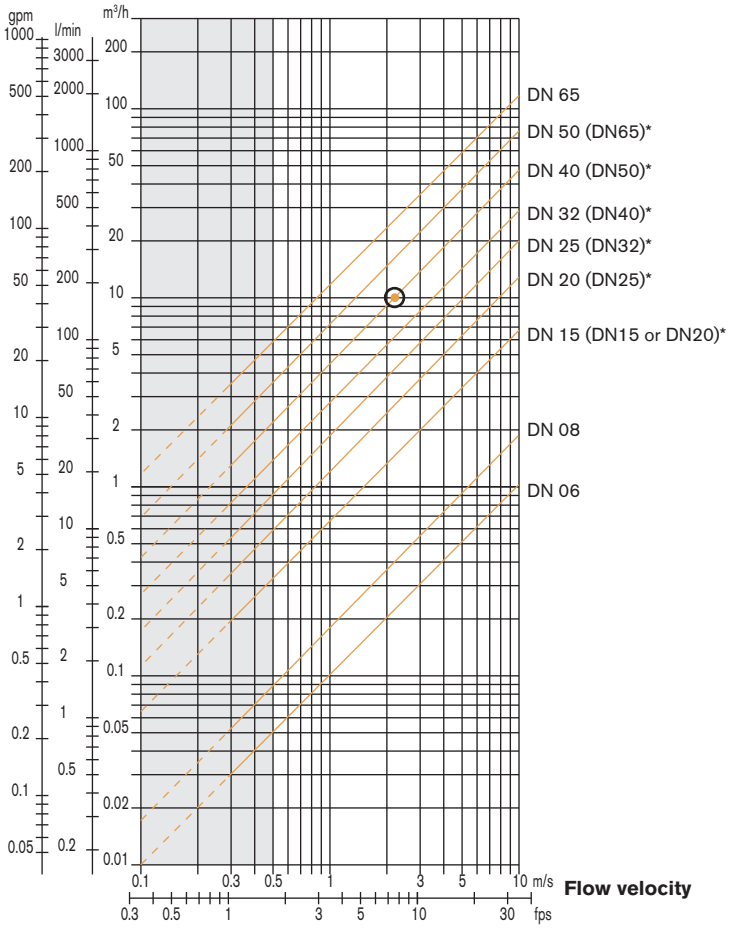
A: Application range for complete device
(fitting + transmitter)

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]

Flow rate



*** 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

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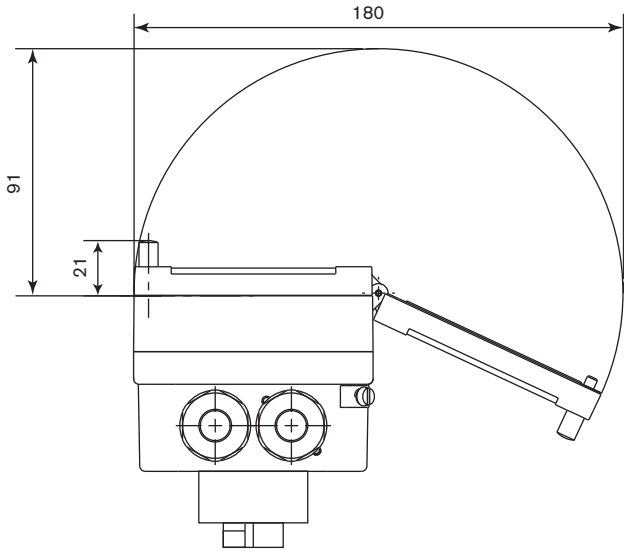
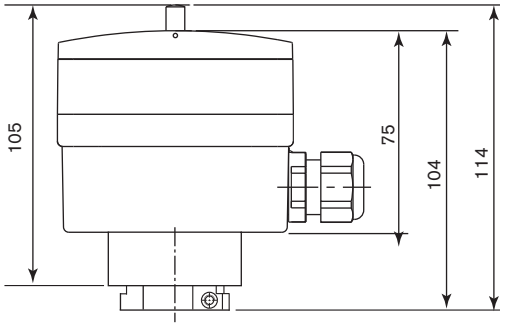
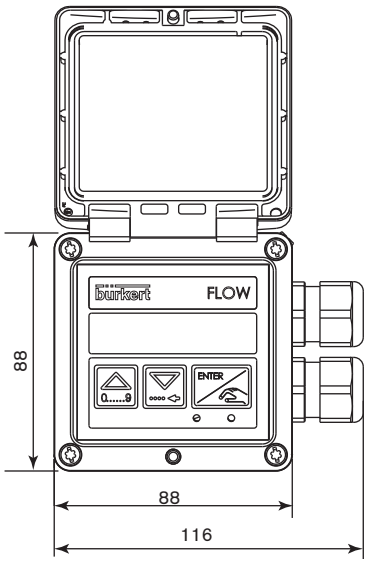
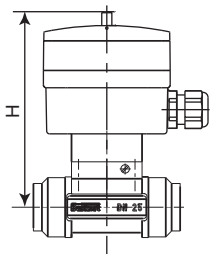
Dimensions [mm]









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

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Ordering chart for compact batch controller Type 8035

Flow batch controller with integrated paddle-wheel sensor

A batch controller Type 8035 consists of:
- an INLINE flow batch controller SE35
- an INLINE fitting Type S030 (DN06 - DN 65) (Refer to corresponding datasheet - has to be ordered separately)

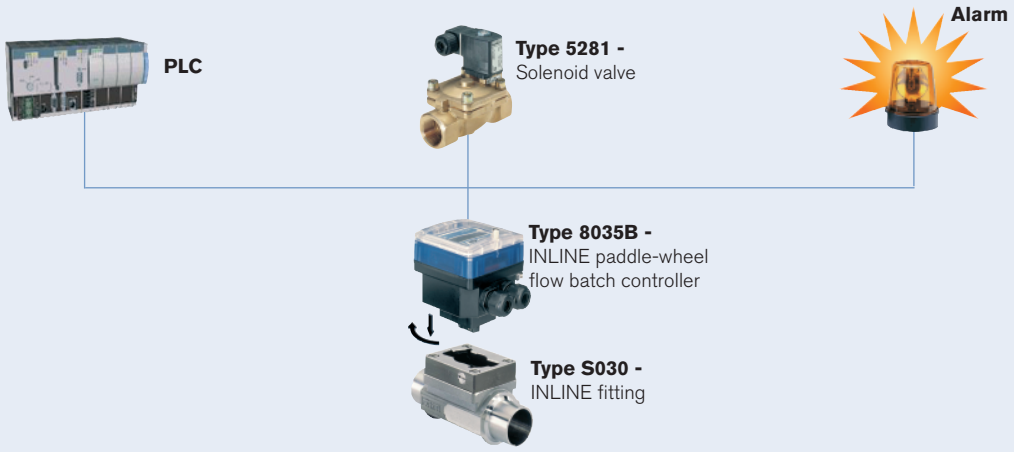
Specifications	Voltage supply	Relays	Sensor version	Electrical connection	Item no.
2 totalizers	12-30 V DC	2	Hall	2 cable glands	443 360
	115-230 V AC	2	Hall	2 cable glands	423 926

NOTE: For remote version, please refer to datasheet Type 8025 Batch controller

Ordering chart - accessories for batch controller 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

Interconnection possibilities with other Bürkert products



To find your nearest Bürkert facility, click on the orange box → **www.burkert.com**

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

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