Compact INSERTION Batch Controller

- DN06-400 mm
- 4-20 mA output
- On-site calibration by TEACH-IN
- Check of input/output signals
- Total and daily totalizers for batch quantity and number of batches, volume or mass totalizers displayed

The compact batch controller combines a paddle-wheel flow sensor and an electronic module with a display in an IP65 enclosure. The electrical connection is provided via two cable glands.

Bürkert designed fitting S020 ensures simple installation of the Bürkert sensor into pipes from DN20 to DN400.

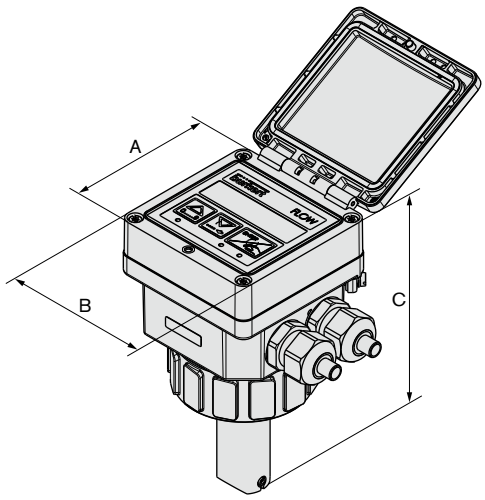
Technical Data

General data	
Compatibility	With fittings S020 (see corresponding data sheet)
Materials	
Housing, cover, lid, nut	PC
Front panel foil / Screws	Polyester / Stainless steel
Cable glands	PA
Wetted parts materials	
Fitting	Brass, stainless steel 1.4404/316L, PVC, PP or PVDF
Sensor holder, paddle-wheel	PVDF
Axis and bearing / Seal	Ceramics / FKM (EPDM option)
Electrical connections	Cable glands M20 x 1.5, max. 50 m protected cable with 1.5 mm ² max. cross-section
Device data (Fitting S020 + batch controller)	
Pipe diameter	DN20 to 400 mm
Measuring range	0.3 to 10 m/s (Hall transducer version)
Fluid temperature with fitting in	
PVC / PP	0 °C to +50 °C / 0 °C to +80 °C
PVDF, brass or stainless steel	-15 to +80 °C
Fluid pressure max.	PN10 (see pressure/temperature in datasheet)
Viscosity / Pollution	300 cSt. max. / 1% max.
Measurement error	
Teach-In	±1% of Reading[1] (at the teach flow rate value)
Standard K-factor	±2.5% of Reading[1]
Linearity	±0.5% of F.S.[1]
Repeatability	±0.4% of Reading[1]
Environment	
Ambient temperature (operation and storage)	-10 to +60 °C (version 12 - 36 V DC) -10 to +50 °C (version 115/230 V AC)
Height above sea level	max. 2000 m
Relative humidity	≤ 80%, without condensation

* F.S.=Full scale (10 m/s)

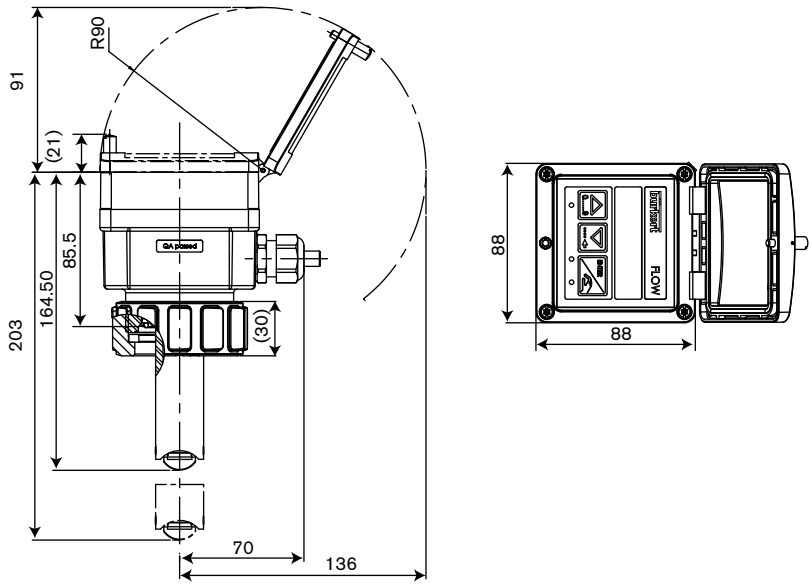
[1] Under reference conditions i.e. measuring fluid=water, ambient and water temperature = 20 °C, applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions

Envelope Dimensions [mm] (see datasheet for details)



A	B	C
88	88	164,50 (203)

Envelope Dimensions [mm] (see datasheet for details)



Technical Data (continued)

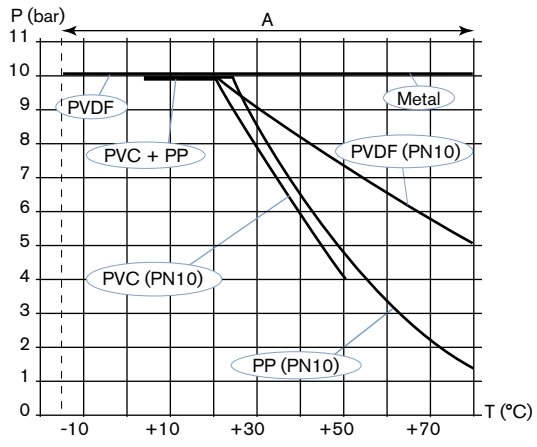
Electrical data	
Power supply (V+)	12 - 36 V DC (max tolerance: -5% or +10% at 12 V DC; ±10% at 36 V DC), filtered and regulated, SELV (safety extra low voltage), circuit with a non dangerous energy level or 115/230 V AC 50/60 Hz (see technical specifications 115/230 V AC)
Reversed polarity of DC	protected
Current consumption with sensor (without consumption of digital input and pulse output)	with relays ≤ 90 mA at 12 V DC; ≤ 45 mA at 36 V DC
Inputs DI (1 to 4)	Switching threshold Von: 5... 36 V DC; Switching threshold Voff max: 2 V DC; Input impedance: 9.4 KOhms; Galvanic insulation, protected against polarity reversals and voltage spike
Outputs	
Transistors (DO1 and DO4)	NPN or PNP (wiring dependent), potential free; function: pulse output (by default for DO1), batch state (by default for DO4), configurable and parameterizable 0.6 - 2200 Hz, 5 - 36 V DC, 100 mA max., line drop 2.7 V DC at 100 mA duty cycle: ■ > 0.45 if 0.6 < frequency < 300 Hz ■ > 0.4 if 300 < frequency < 1500 Hz ■ < 0.4 if 1500 < frequency < 2200 Hz Galvanic insulation, protected against overvoltage, polarity reversals and short-circuits
Relays (DO2 and DO3)	2 relays (normally open), parameterizable (by default: DO2 always configured to control the valve, parameterized of 100% of the batch quantity and DO3 configured as alarm), 230 V AC/3 A or 40 V DC/3 A (resistive load), max. cutting power of 750 VA (resistive load)

Technical specifications 115/230 V AC	
Voltage supply available inside the device	27 V DC regulated, max. current: 125 mA integrated protection: fuse 125 mA temporised power: 3 VA
Standards, directives and approvals	
Protection class (according to EN60529)	IP65 with cable gland mounted and tightened or with obturator locked if not used.
Standards and directives Pressure	Complying with article 3 of chap. 3 from 97/23/CE directive*
Approvals	CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22 No.61010-1)

* F.S.=Full scale (10 m/s)

[1] Under reference conditions i.e. measuring fluid=water, ambient and water temperature = 20 °C (68 °F), applying the minimum inlet and outlet pipe straights, matched inside pipe dimensions

Pressure / temperature chart



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

Operation and display (common to the various versions)

When mounted in a pipe (compact version) or connected to a flowmeter (remote version) in series with one or two valves, the 8025 batch controller makes it possible to carry out a dosing of one or several quantities of liquids. The unit controls the opening of the valves and measures the quantity of the fluid which flows. The unit also closes the valves when the preset quantity has been delivered.
The electronic component needs a voltage supply of 12 - 36 V DC or 115/230 V AC.
The device is equipped with 4 digital inputs (DI1 up to DI4), 2 transistor outputs (DO1 configured as a pulse output and DO4 configured as state output, by default), 2 relay outputs (DO2 always configured to control the valve and by default parameterize of 100% of the batch quantity and DO3 configured as alarm output by default), two volume or mass totalizers and two batch totalizers.
The second relay output can be used to activate another valve, to initiate alarms or to generate warnings.

The following dosing modes are possible:

- **Locally started dosing of free quantity:**
  the user enters the quantity to be filled and starts the dosing from the keypad.
- **Locally started dosing of preset quantity:**
  the user selects a quantity which has been preset and starts the dosing from the keypad.
- **Locally started dosing of free/preset quantity**
  the user enters the quantity to be filled or selects a quantity which has been preset and starts the dosing from the keypad.
- **Dosing controlled by a PLC unit**
  the user selects a quantity which has been preset and starts the dosing using binary inputs.
- **Locally/remote selection of preset quantity and dosing controlled by a PLC unit:**
  the user selects a quantity which has been preset from the keypad or using binary inputs and starts the dosing using binary inputs.
- **Automatic dosing controlled by variation of pulse duration:**
  the quantity of the dosing is directly proportional to the duration of a pulse.
- **Remote dosing determined by Teach-In:**
  Teach-In of the dosing quantity using binary inputs.
- **Local dosing determined by Teach-In:**
  Teach-In of the dosing quantity from the keypads.

The device is calibrated by means of the K-factor which is either entered or determined via the Teach-In functions.
User adjustments, such as measuring range, engineering units, pulse output, etc. are carried out via the device operators interface.

The operation is specified according to five levels:

Indication in operating mode/display	Parameter definition	Test	Information	History
▪ dosing amount ▪ dosing mode ▪ main quantity totalizer ▪ daily quantity totalizer with reset function ▪ main batch totalizer ▪ daily batch totalizer with reset function	▪ language ▪ engineering units ▪ K-factor/Teach-In function ▪ selection of dosing mode ▪ over run correction ▪ alarm ▪ outputs configuration ▪ reset both quantity/batch totalizers (main and daily) ▪ Brightness of the display (backlight)	▪ input test ▪ output test ▪ frequency test ▪ warning and fault messages generating ▪ configuration mode	▪ Display of error, alarm and/or warning messages	▪ Display of the 10 latest batches

Ordering Chart

Description	Voltage supply	Relay	Sensor version	Electrical connection	Item no.
Compact Batch Controller Type 8025B					
2 totalizers	12 - 30 V DC	2	Hall, short	2 cable glands	419 520
			Hall, long	2 cable glands	419 522
	115 - 230 V AC	2	Hall, short	2 cable glands	419 521
			Hall, long	2 cable glands	419 529

Accessories

Description	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 seal for the sensor + 1 mounting instruction sheet	551 775
Ring	619 205
Union nut	619 204
Set with 1 green FKM and 1 black EPDM seal	552 111