

Datasheet B-Smart

Basic with a capital B!



Count on us.

Basic Flow rate Indicator / Totalizer

with analog and pulse signal outputs



Advantages

- The B-Series is our most cost effective display but with all the benefits you may expect from a Fluidwell product: It's durable, reliable and very easy to operate. **Basic with a capital B!**
- Your crew is in control with our highly praised "know one, know them all" configuration structure, saving time, cost and aggravation.

Features

- Compact design.
- Displays instantaneous flow rate, total and accumulated total.
- Durable IP65 (Type4) field, wall or meter mount enclosure.
- One 20mm and two 16mm knock-out hole cable entries.
- "Know one, know them all" configuration structure.
- Easy reading and programming with clear alphanumeric display.
- Clear 12mm(0.5") numeric digits and 7mm(0.3") alphanumeric digits.
- Bright LED backlight.
- Auto backup of settings and running totals.
- Lithium AA battery, output loop powered and 10 - 30V DC power supply.
- Sensor supply: 8.2V DC.

Outputs

- Loop powered 4 - 20mA output according to flow rate.
- Scaled pulse output according to accumulated total.

Inputs

- Ability to process the basic types of flowmeter signals:
Namur, Reed-switch, NPN, PNP and Sine wave (coil).

Applications

- Basic flow measurement where re-transmission of the flow rate and/or totalizer functions is required.
- The B-series offers you an economical solution for common industrial applications. Nothing more, nothing less.
- For intrinsically safe applications we offer our rugged, field mount [F-Series](#) indicators.
- For explosion proof applications we offer our [E-Series](#) indicators.
- For panel mount applications we offer our [D-Series](#) indicators.

General information

Introduction

The B-Smart flow transmitter is the most advanced model in our B-Series, complete with pulse and analog output signals. The display shows flow rate, total and accumulated total. On-screen engineering units are easily configured from a comprehensive selection.

Display

The main process information is displayed with 7 digits (12mm, 0.47") to show flow rate, total or accumulated total. The 7 alpha-numeric digits (7mm, 0.28") are used for the flow rate measurement units and the clear setup menu messages. For good readings in full sunlight and darkness, the B-Smart is provided with a bright backlight.

Configuration

The B-Series uses the same highly appreciated configuration structure of our Fluidwell product series. Each setting is clearly indicated with an alphanumerical description, which avoids confusing abbreviations. Once familiar with one B-series product, you will be able to program all models in all series without a manual. In other words: know one, know them all.

Flow meter input

The B-Smart accepts the basic flowmeter input signals: Namur, Reed-switch, NPN, PNP and Sine wave (coil). The input signal type can easily be selected in the configuration menu.

Analog output

The flow rate is transmitted with the 4 - 20mA output signal. The B-Smart can even be powered via the loop-current.

Pulse outputs

A scaled pulse output is available according the accumulated total. The pulse length can be set to 5msec or 100msec. The output is a passive NPN signal.

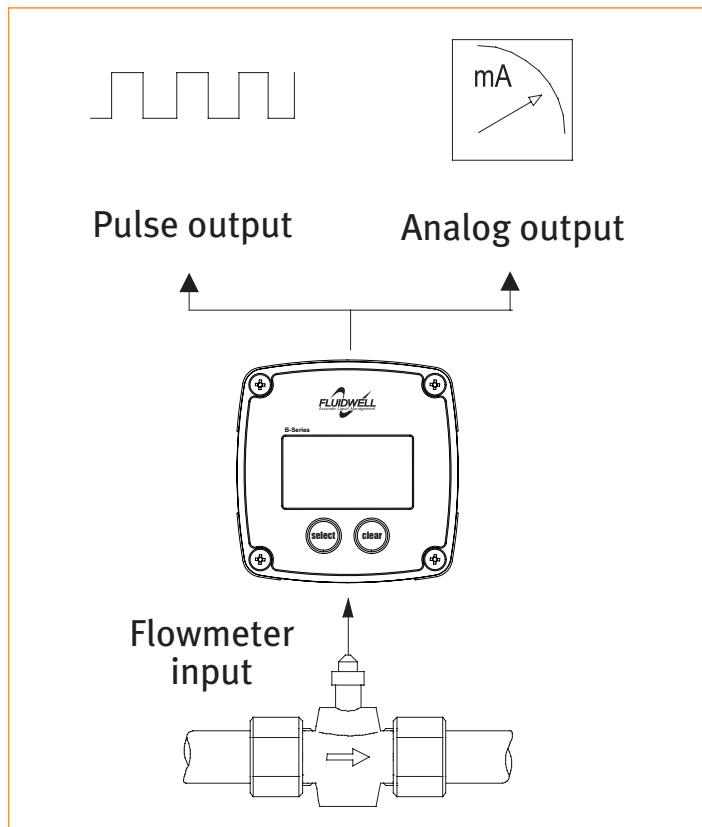
Power requirements

Several power inputs are available to supply the B-Series and sensor. The B-Smart can be powered with a single 3,6V lithium AA battery or loop powered via the analog output. The basic 10 - 30V DC power supply can supply the B-Smart including the backlight and offers an 8.2V DC sensor supply.

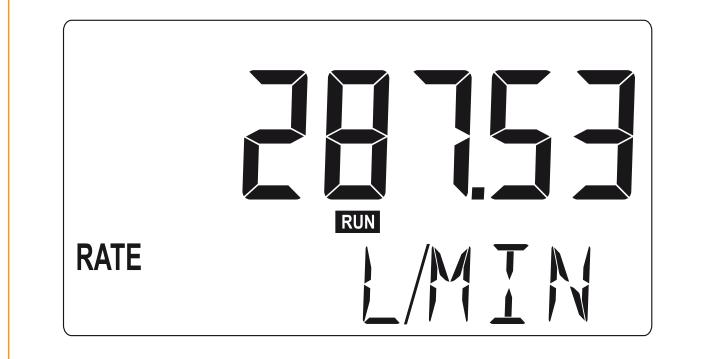
Enclosures

The smart design of the rugged IP65 (Type4) GRP enclosure ensures optimal advantages for various mounting possibilities. The B-Smart can be field or wall mounted or directly on the flowmeter.

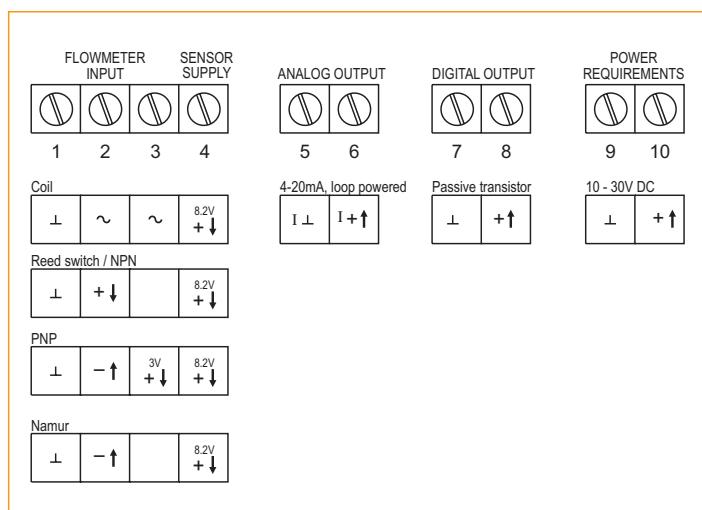
B-Smart application overview



B-Smart display example



B-Smart terminal connections



Technical specification

General

Display

| | |
|--------------|--|
| Type | High intensity transreflective numeric and alphanumeric LCD, with white LED backlight. |
| Dimensions | 54 x 29mm (2.13" x 1.14"). |
| Digits | Seven 12mm (0.47") and seven 7mm (0.28") digits. Various symbols and measuring units. |
| Refresh rate | During operation 8 times/sec, it will automatically switch to 1 time/sec after 30 sec without operation. |

Operating temperature

| | |
|---------|----------------------------------|
| Ambient | -20°C to +60°C (-4°F to +140°F). |
|---------|----------------------------------|

Power requirements

| | |
|--------------|--|
| Basic supply | 10 - 30V DC. Standard consumption: Pmax. 60mW. With backlight: Pmax. 435mW. With backlight + sensor supply: Pmax. 735mW. |
| Note | The basic power supply will also supply the backlight or the 8.2V DC sensor supply. |
| Battery | 1 x 3.6V AA Lithium battery - life-time depends upon settings and configuration - up to approx. 2 years. |
| Loop powered | Loop powered, analog output. 12 - 30V DC. 3.3 - 21.7mA according Namur NE45. Imax = 22mA. Consumption max. 660mW @ 0 Ohm (22mA @ 30VDC). |

Sensor excitation

| | |
|------------|--|
| Terminal 3 | 3V DC for pulse signals and 1.2V DC for coil pick-up, Iout max. 100µA. |
| Note | This is not a real sensor supply. Only suitable for sensors with a very low power consumption like coil. |
| Terminal 4 | 8.2V DC, Iout max. 10mA, requires 10-30V DC supply. |

Terminal connections

| | |
|------|---|
| Type | Plug-in terminal strip. Wire max. 1.5mm². |
|------|---|

Data protection

| | |
|---------|---|
| Type | Non-volatile backup of all settings. Backup of running totals every minute. Data retention at least 10 years. |
| Pincode | Configuration settings can be pincode protected. |

Directives & Standards

| | |
|-------------|---|
| EMC | Directive 2014/30/EU, FCC 47 CFR part 15. |
| Low voltage | Directive 2014/35/EU. |
| RoHS | Directive 2011/65/EU. |
| IP & NEMA | EN 60529 & NEMA 250. |

Enclosure

General

| | |
|--------------|--|
| Material | GRP, IP65 (Type4), UV-resistant and flame retardant. |
| Window | Polyester foil, UV-resistant. |
| Sealing | EPDM gasket. |
| Control keys | Two industrial micro-switch keys. |
| Dimensions | 92 x 92 x 60mm (3.62" x 3.62" x 2.36") - W x H x D. |
| Weight | 200 gram / 0.44 lbs. |

Signal input

Flow meter sensor

| | |
|-----------------|---|
| Pulse inputs | Coil / sine wave (sensitivity: 80mVpp), NPN, PNP, reed-switch, Namur. |
| Frequency | Minimum 0Hz - maximum 7kHz for total and flow rate. Maximum frequency depends on signal type and internal low-pass filter. E.g. reed-switch with low-pass filter: max. frequency 120Hz. |
| K-Factor | 0.000010 - 9,999,999 with variable decimal position. |
| Low-pass filter | Available for reed-switch. |

Signal outputs

Digital output

| | |
|-------------|--|
| Function | Pulse output: Transmitting accumulated total. |
| Frequency | User definable: 100Hz (5msec) or 5Hz (100msec). |
| Output type | One passive transistor output (NPN) - not isolated. 300mA, max. 30V. |

Analog output

| | |
|------------------|--|
| Function | Transmitting flow rate. |
| Output type | Loop powered, analog output. 12 - 30V DC. 3 - 22mA according Namur NE45. |
| Accuracy | 10 bit. Error 0.5% of full scale and temperature range. Analog output signal can be scaled to any desired range. |
| Lift-off voltage | 12V. |
| Loop resistance | Typical 500Ohm @ 24V. Max. 800Ohm |

Operational

Operator functions

| | |
|---------------------|--|
| Displayed functions | <ul style="list-style-type: none"> • Flow rate. • Total. • Accumulated total. • Reset total by pressing the CLEAR-key twice. |
|---------------------|--|

Total

| | |
|----------|---|
| Digits | 7 digits. |
| Units | L, m³, US gal, igal, Oil bbl, kg, lb or none. |
| Decimals | 0 - 1 - 2 or 3. |
| Note | Total can be reset to zero. |

Accumulated total

| | |
|------------------|-----------------------------------|
| Digits | 7 digits. |
| Units / decimals | According to selection for total. |
| Note | Can not be reset to zero. |

Flow rate

| | |
|------------|---|
| Digits | 7 digits. |
| Units | mL, L, m³, g, kg, ton, US ton, US gal, igal, Oil bbl, lb, cf or none. |
| Decimals | 0 - 1 - 2 or 3. |
| Time units | /sec - /min - /hr - /day. |

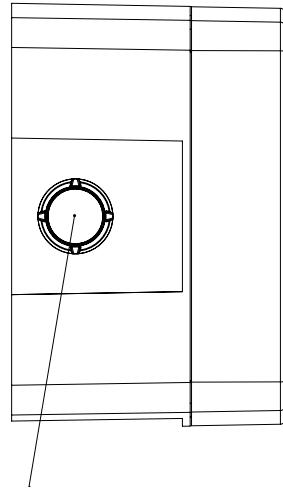
Datasheet B-Smart

Basic with a capital B!

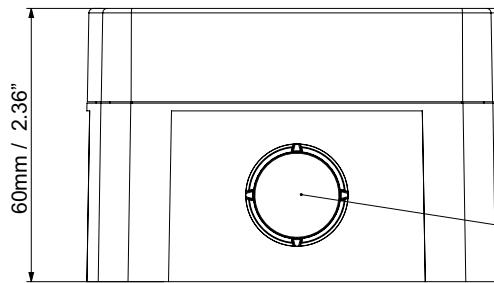
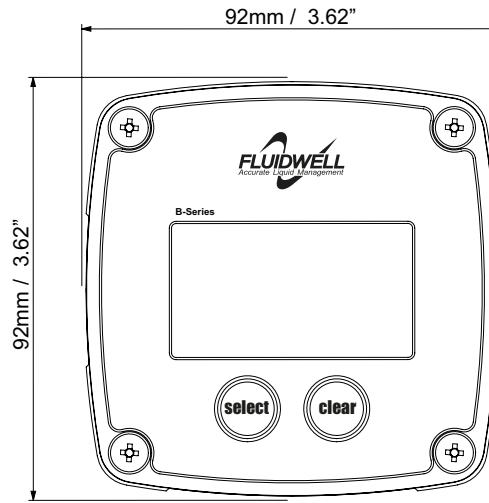


Count on us.

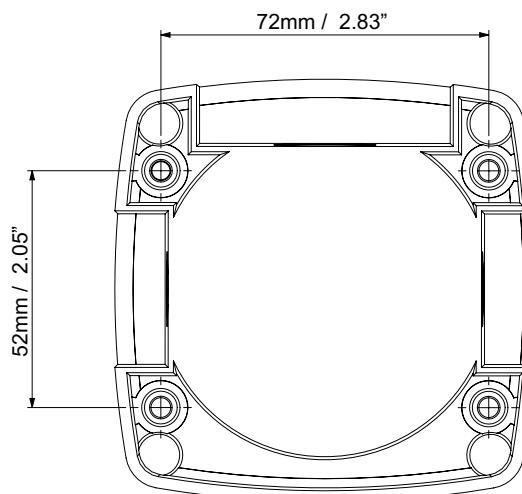
Dimensions enclosure



Left + right:
16mm/0.63"
knock-out hole



Bottom:
20mm/0.79"
knock-out hole



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