

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.

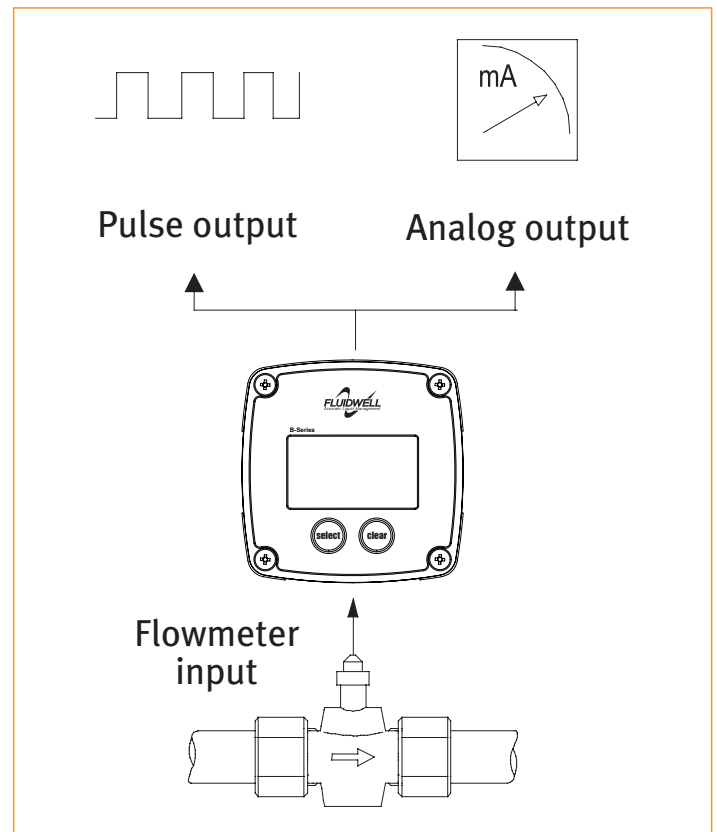
Power requirements

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.

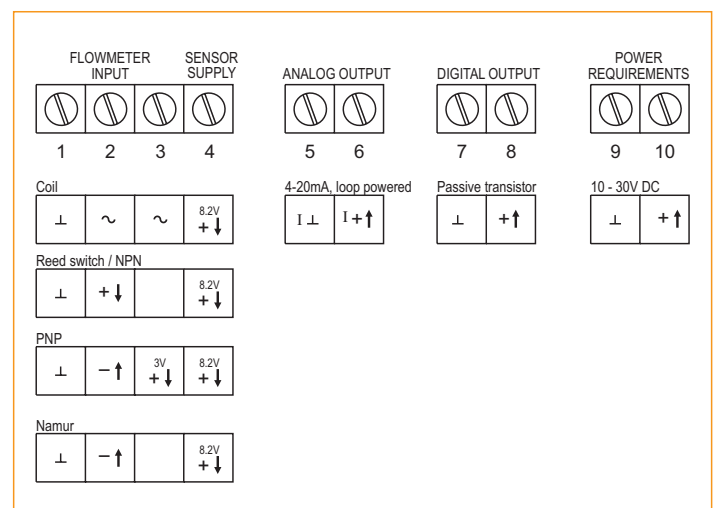
B-Smart application overview



B-Smart display example



B-Smart terminal connections



Technical specification

General

Display	
Type	High intensity transfective numeric and alpha-numeric 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. I _{max} = 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, I _{out} 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, I _{out} 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.
Liftoff 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!



Reliable

Count on us.

Dimensions enclosure

