# B Connected Datasheet

Your success counts

# Basic Flow rate Indicator / Totalizer

## with Modbus communication and isolated outputs


Modbus

***Application examples:*** *Common flow monitoring*

*Battery powered flow indication*


*Your brand customization*

**The basic indicators of the B-Series have all the benefits you may expect from a Fluidwell product: It's durable, reliable and very easy to operate. For more advanced functionality we recommend our D-, E-, F- and N-Series.**

## Advantages

- Durable IP65 (Type 4X) field, wall or meter mount enclosure.
- Intuitive "Know one, know them all!" configuration menu, saving time, cost and aggravation.
- Compact design.
- Competitve pricing.
- Design your own branded product with several enclosure customization options.

## Features

- Displays instantaneous flow rate, total and accumulated total.
- Clear 12mm(0.5") numeric and 7mm(0.3") alphanumeric digits.
- All info at a glance with clear alphanumerical display.
- Bright LED backlight.
- The B-Connected accepts the basic sensor input signals: Reed-switch, Namur, NPN, PNP, Sine wave (coil).
- Isolated passive 4 - 20mA output according to flow rate.
- Isolated scaled pulse output according to accumulated total.
- Modbus RS485 communication.
- Power requirements: Lithium AA battery or 10 - 30V DC.
- Sensor supply: 8.2V DC.
- Auto backup of settings and running totals.
- One 20mm (0.79") and two 16mm (0.63") knock-out hole cable entries.
- Easy configurable via PC with free downloadable remote configuration tool.

## Introduction

The Modbus communcation and isolated output signals make the B-Connected a dedicated flow transmitter for connection to an automation network or PLC. 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-Connected is provided with a bright backlight.

## Analog output

The flow rate is transmitted with the isolated 4 - 20mA output signal. The output signal can be scaled to any desired range.

## Configuration

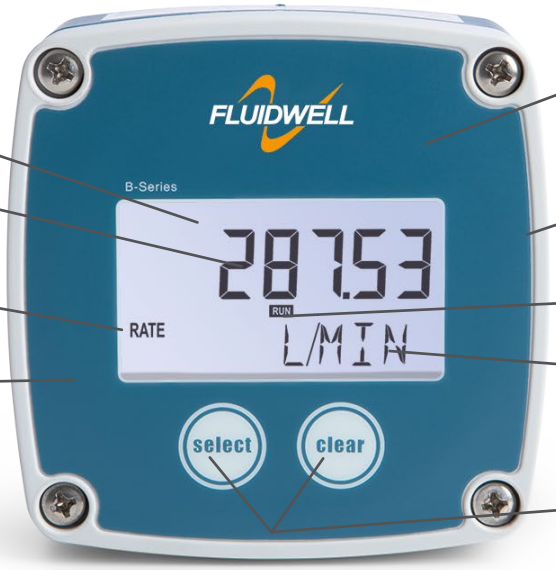
The B-Series uses the same highly appreciated configuration structure of our Fluidwell product series. Each setting is clearly indicated with an alphanumerical description, which avoids confusing abbreviations. Once familiar with one B-series product, you will be able to program all models in all series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

## Remote configuration

Even more user-friendly is the remote configuration via a PC using the free downloadable Configuration Software.
Connect the B-Series Modbus RS485 connector with the special Configuration Cable (ACE06) to the USB port of your PC.

## Pulse outputs

An isolated scaled pulse output is available according the accumulated total. The pulse length can be set to 5ms, 15msec or 100ms.




Bright LED backlight

Clear 12mm (0.47”) numeric digits

Displayed function

Resistant to harsh weather conditions like snow, rain and temperatures from -20°C to +60°C (-4°F to +140°F)

Robust IP65 (Type 4X) field enclosure

1 x 20mm (0.79”)/ 2 x 16mm (0.63”) cable entries

Status indication

Clear 7mm (0.28”) alphanumeric digits

2 Easy buttons and user-friendly menu-structure: **“Know one, know them all!”**

## Communication

Processed data can be read, total can be cleared and settings can be read and modified through the Modbus RS485 Communication link.

## Power requirements

The B-Connected can be powered with a single 3.6V lithium AA battery. The basic 10 - 30V DC power supply can supply the B-Connected including the backlight and offers an 8.2V DC sensor supply.

All info at a glance

Easy to install

Easy to program

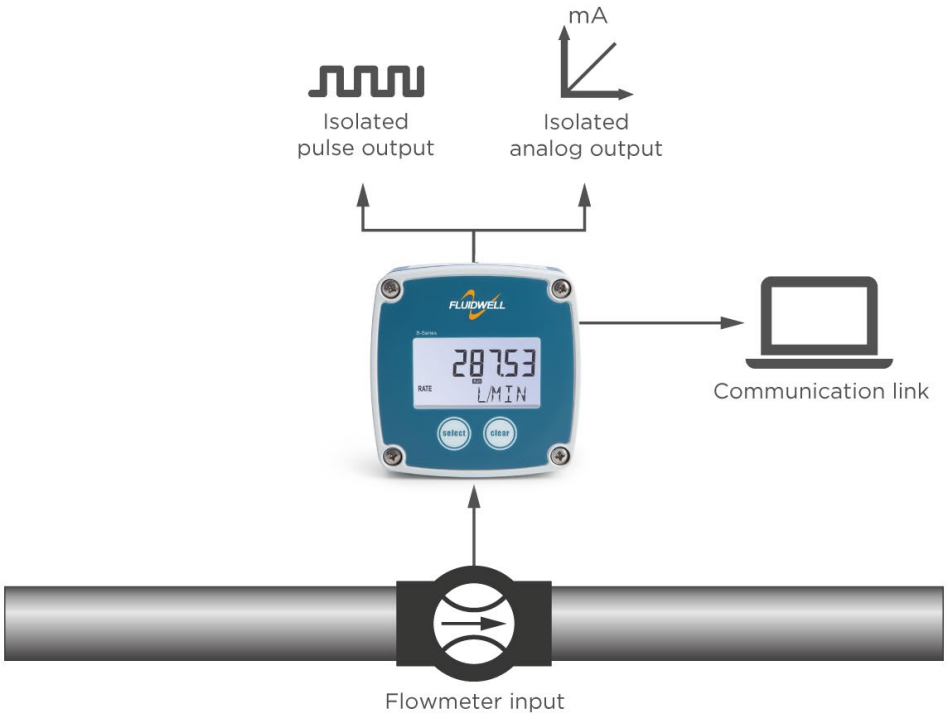
Know one know them all!

Reliable

User-friendly

## Overview application B-Connected

Basic flow measurement where re-transmission of the flow rate and/or totalizer functions or serial communication 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 and for panel mount applications we offer our D-Series indicators.




## Signal input

The B-Connected 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

| Type of signal | Resistance | Low Pass filter (LP) | Max. frequency | Max. frequency Low Pass filter (LP) | Min. amplitude P-P | Remark |
|---|---|---|---|---|---|---|
| NPN | 100kΩ pull-up | | 6 kHz Threshold 1.2V | | | Open collector |
| REED | | 1MΩ pull-up | | 120Hz | | |
| PNP | 47KΩ pull-down | | 6kHz Threshold 1.2V | | | |
| NAMUR | 715Ω pull-down | | 4kHz | - | | External power required |
| COIL | - | - | | - | $30mV_{pp}$ | |

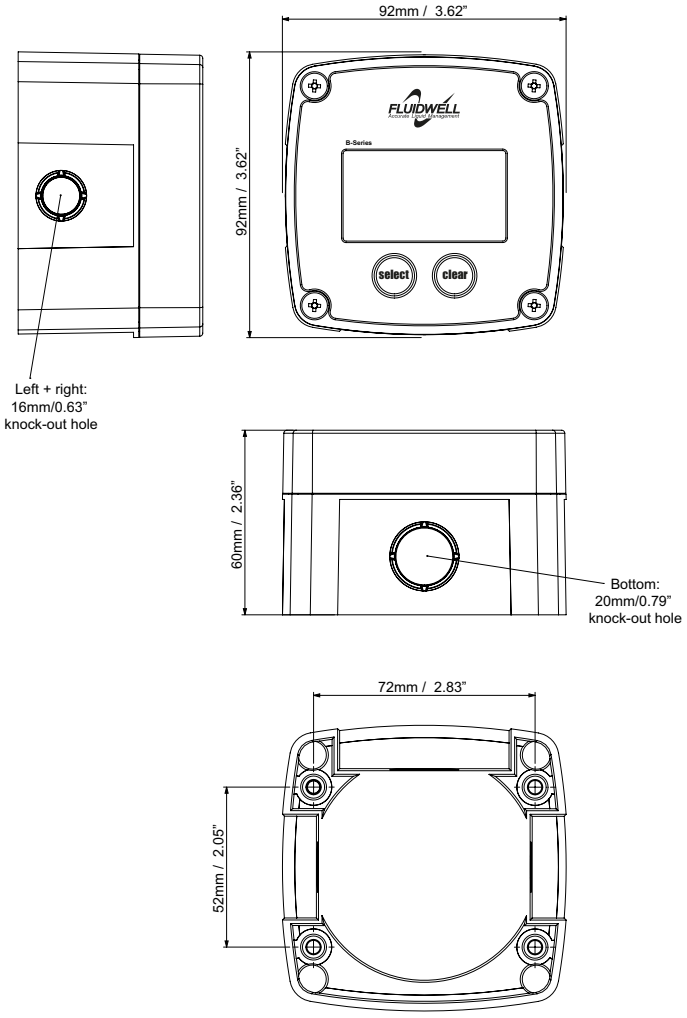
## Enclosures

The smart design of the rugged IP65 (Type 4X) GRP enclosure ensures optimal advantages for various mounting possibilities.
The B-Connected can be field or wall mounted or directly on the flowmeter. The back cover can be turned in steps of 90°, enabling cable entry from any side.
The standard enclosure will be delivered as follows:

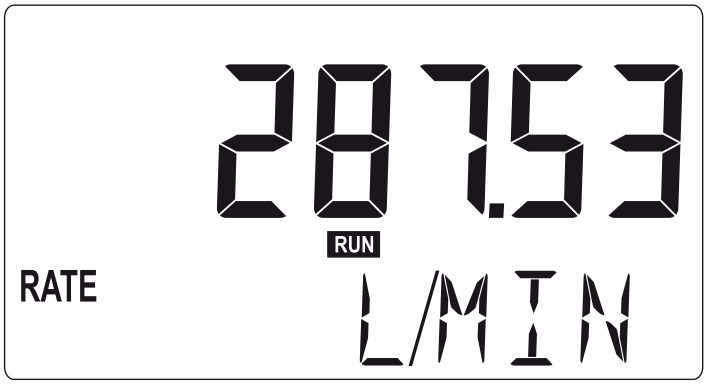
- Blue GRP back cover.
- White GRP front cover with blue polyester front foil and Fluidwell logo.

## Dimensions enclosure

*GRP field mount enclosure*



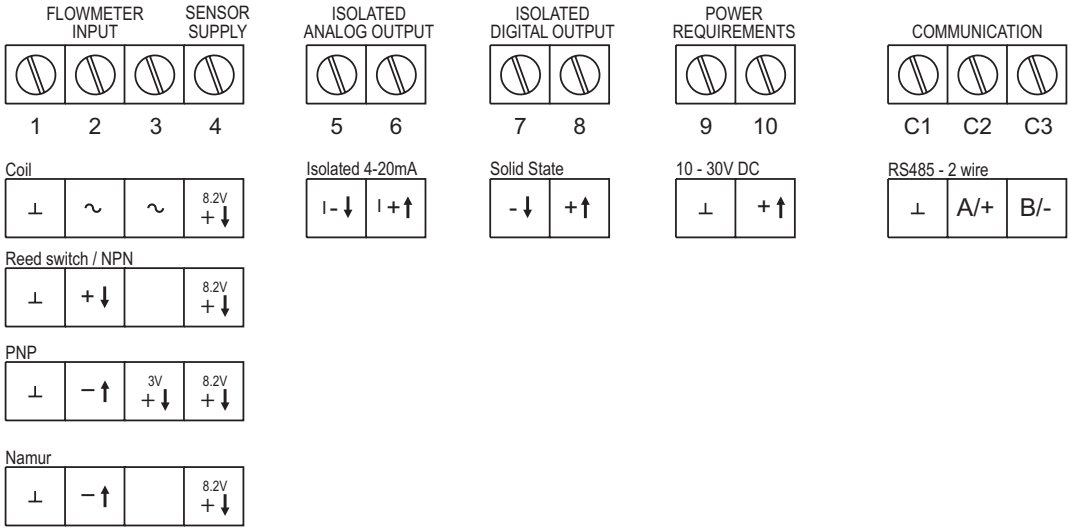

## B-Connected display example




## Customization options

- Fluidwell blue polyester front foil without logo.
- Custom front foil options. (2, 3, 4 or 5 colors).
- Custom front/back cover color.
- Customized manual cover.
- Customized technical label.
- Customized package label.


## Terminal connections B-Connected



## Display

| | |
|---|---|
| **Type** | High intensity transflective 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. Max. 35mA. |
| **Note** | The basic power supply will also supply the backlight and the 8.2V DC sensor supply. |
| **Battery** | 1 x 3.6V AA Lithium battery - life-time up to app. 2 years. |

## 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, req. 10-30V DC supply. |

## Data protection

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

| | |
|---|---|
| **Material** | GRP, IP65 (Type 4X), UV-resistant & flame retardant. |
| **Window** | Polyester foil window. |
| **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. |
| **Cable entries** | Knock out holes |
| | Side: 2 x 16mm / 0.63" |
| | Bottom: 1 x 20mm / 0.73" |

## Terminal connections

| | |
|---|---|
| **Type** | Fixed. Wire max. 1.5mm$^2$ |

## Signal inputs - Flowmeter

| | |
|---|---|
| **Pulse inputs** | Coil / sine wave (sensitivity: 30mVpp), NPN, PNP, reed-switch, Namur. |
| **Frequency** | Minimum 0Hz - maximum 6kHz for total and flow rate. Maximum frequency depends on signal type and internal low-pass filter. |
| **K-Factor** | 0.000010 - 9,999,999 with variable decimal position. |

## Signal outputs - Digital output

| | |
|---|---|
| **Function** | Pulse output - transmitting accumulated total. |
| **Frequency** | User selectable: Off, Long (5Hz/100msec), Intermediate (33Hz/15ms). |
| **Note** | Max. freq. with battery supply: Long (5Hz/100ms). |
| **Output type** | Isolated solid state output. 50mA, max. 30V. |
| **Isolation** | Max. difference between separated circuits: 100V. |

## Signal outputs - Analog output

| | |
|---|---|
| **Function** | Transmitting flow rate. |
| **Output type** | Isolated analog output. 6 - 30V DC. Range: 3.3 - 22mA. |
| **Accuracy** | 10 bit. Error 0.5% of full scale and temperature range. Analog output signal can be scaled to any desired range. |
| **Liftoff voltage** | 6V. |
| **Loop resistance** | Typical 500 Ohm @ 24V. Max. 800 Ohm |
| **Isolation** | Max. difference between separated circuits: 100V. |

## Signal outputs - Communication option

| | |
|---|---|
| **Function** | Reading display information, clear total, reading / writing all configuration settings. |
| **Protocol** | Modbus ASCII / RTU. |
| **Speed** | 1200 - 2400 - 4800 - 9600 - 19200 - 38400. |
| **Addressing** | 1 - 247. |
| **Comm. Type** | RS485 2-wire (no termination resistors allowed). |
| **Max. load** | 10nF or max 100m cable. |

## Operator functions

| | |
|---|---|
| **Displayed info** | • Flow rate.<br>• Total.<br>• Accumulated total.<br>• Reset total by pressing the CLEAR-key twice. |

## Total

| | |
|---|---|
| **Digits** | 7 digits. |
| **Units** | L, m$^3$, US gal, gal, 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, m$^3$, g, kg, ton, gal, bbl, lb, cf or none. |
| **Decimals** | 0 - 1 - 2 or 3. |
| **Time units** | /sec - /min - /hr - /day. |

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