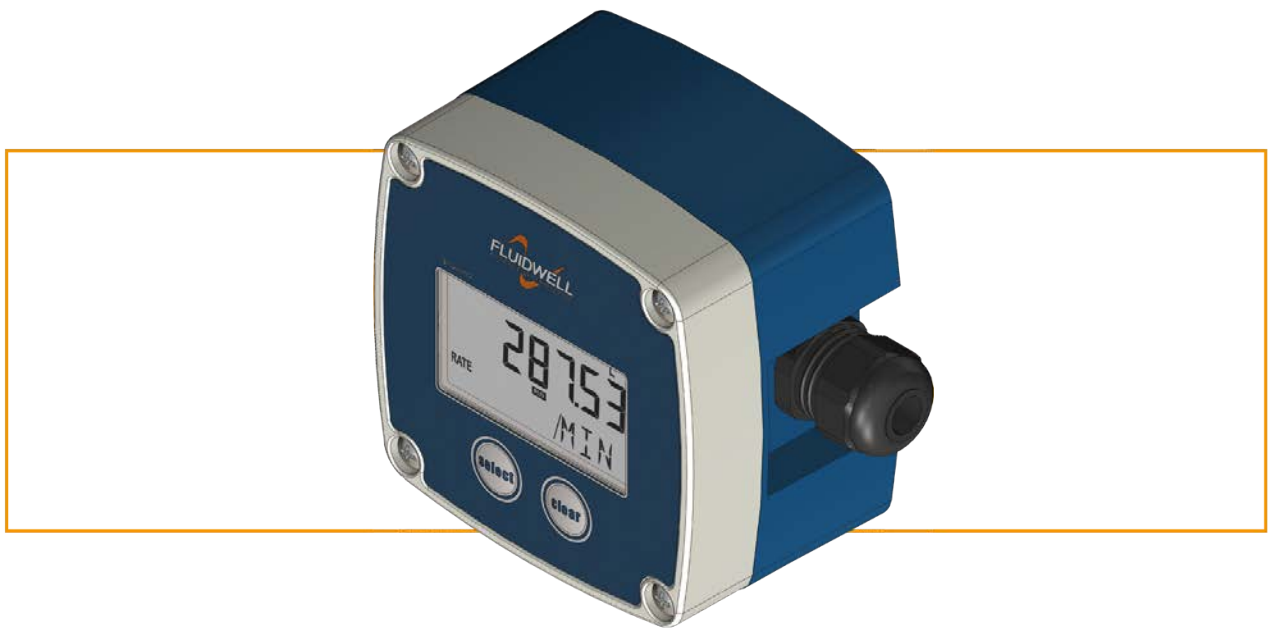


B-SERIES

Flow rate indicator / totalizer



USER GUIDE

B-BASIC

B-Series - Basic with a capital B!

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Certification



The CE marking is a mandatory conformity marking that allows the manufacturers to circulate (industrial) products freely within the internal market of the European Economic Area (EEA). The CE mark self-certifies that the products have met the minimum EEA health, safety and environmental requirements for the consumer and workplace safety.

The CE marking is also found on products sold outside the EEA that are manufactured in, or designed to be sold in, the EEA.



The WEEE/RoHS Directive uses a special logo in addition to the CE logo to show that the product is designed and manufactured to restrict the release of the hazardous substances from the electrical and the electronic equipment to prevent major environmental and health problems.

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1 Introduction

1.1 Purpose of the document

The purpose of this User guide is to give a general guide for the operation and maintenance of the B-Basic.

1.2 Use of the B-Basic

1.2.1 Intended use

The B-Basic is intended for use in safe areas (ordinary locations).

1.2.2 Unintended use

A hazardous situation may occur if the B-Basic is not used for the purpose it was designed for or is used incorrectly. Please obey the information as given in this instruction manual:

- Do not use the standard configuration (safe area/ordinary location applications) in an hazardous area.
- Do not use the B-Basic in life support applications. A possible malfunction of the B-Basic can cause (serious) injury or death to persons.

1.3 Target audience

This User guide is aimed at the persons who are:

- involved in the preparation of the required work;
- involved in the operation of the process;
- involved in the maintenance tasks for the B-Basic;
- appointed to supervise the required work;
- appointed for the certification, the occupational, the health, the safety and the quality related tasks.

2 Declaration of Conformity



Count on us.

Declaration of Conformity

Fluidwell B-series indicators Veghel, July 2016

We, Fluidwell BV, declare under our sole responsibility that the B-series indicators are designed and will operate conform the following applicable European Directives and Harmonised Standards, when installed and operated according to the related manual:

- EMC Directive** EN61000-6-2:2005; EN61000-6-3:2007; EN61326-1:2013
- RoHS Directive** EN 50581:2012

Last two digits of the year in which the CE marking was affixed: 14.
 The object of the declaration above is in conformity with the relevant Union harmonisation legislation:

	until April 19 th , 2016	from April 20 th , 2016
EMC Directive	2004/108/EC	2014/30/EU
RoHS Directive	2011/65/EU	2011/65/EU

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3 Safety information

3.1 Work safety

3.1.1 Mechanical work

Only qualified and well-trained persons who are familiar with the mechanical installation and the service procedures and who obey the specific regulations and the requirements set by the authorities, the manufacturer, the employer and the plant owner, are allowed to do the mechanical work.

3.1.2 Electrical work

Only qualified and well-trained persons who are familiar with the electrical installation and the service procedures and who obey the specific regulations and requirements set by the authorities, the manufacturer, the employer and the plant owner, are allowed to do the electrical work.

3.1.3 Operation and setup

Only qualified and well-trained persons who are familiar with the operation and setup of the B-Basic and the related installation and who obey the specific regulations and requirements set by the authorities, the manufacturer, the employer and the plant owner, are allowed to do the setup and to operate the B-Basic.

3.2 General electrical safety

Electricity can cause (serious) injury to persons and cause damage to equipment. Many accidents cause serious electrical shock or serious burns. Fatal shocks are often caused by high voltage systems. But even non-fatal electrical shock causes (serious) injury to persons by falls from ladders.

Typical hazards from work with electrical powered systems are:

- the contact with live parts that cause electrical shock;
- failures that can cause a (electrical) fire;
- the fire or explosion caused by electrical failures.

Work safely on the electrical installations:

- 1 Understand and know the construction and circuits of the (electrical) installation and equipment.
- 2 Make sure, the tools, materials and equipment are calibrated, valid and suitable for the work.
- 3 Identify the possible energy sources that can cause a hazard.
- 4 Lock Out / Tag Out the (related) installation.
- 5 Measure the voltage.
- 6 Make sure, the reading is 0 Volt to prove that the installation is safe to work on!
- 7 At any time, if the work becomes more hazardous than anticipated for, stop and take the required (safety) precautions.

3.3 Battery power related safety



WARNING!

Handle the battery with care. A mistreated battery can become unsafe. Unsafe batteries can cause (serious) injury to persons.

The batteries are used to store electrical energy. The battery is a high power battery which must be treated carefully. When the battery is mistreated or damaged, there is a risk of a fire, an explosion and serious burns.

- 1 Only use a battery which is applicable for the intended use.
- 2 Mind that you cannot switch off a battery.
- 3 Make sure, it is safe to work on the battery system.

- 4 Handle the battery with the utmost care to prevent a short circuit and damage.
- 5 Do not recharge, crush, disassemble, incinerate, heat above its rated temperature or expose the contents to water.
- 6 Dispose of the battery in accordance with the (inter)national, the manufacturer's and the plant owner's standards and regulations.

4 General description

4.1 Function of the B-Basic

4.2 Component information

The B-Basic has:

- the front cover (3) with the display (5) and the control keys (4);
- the body (1) with knockouts for the cable glands (2).

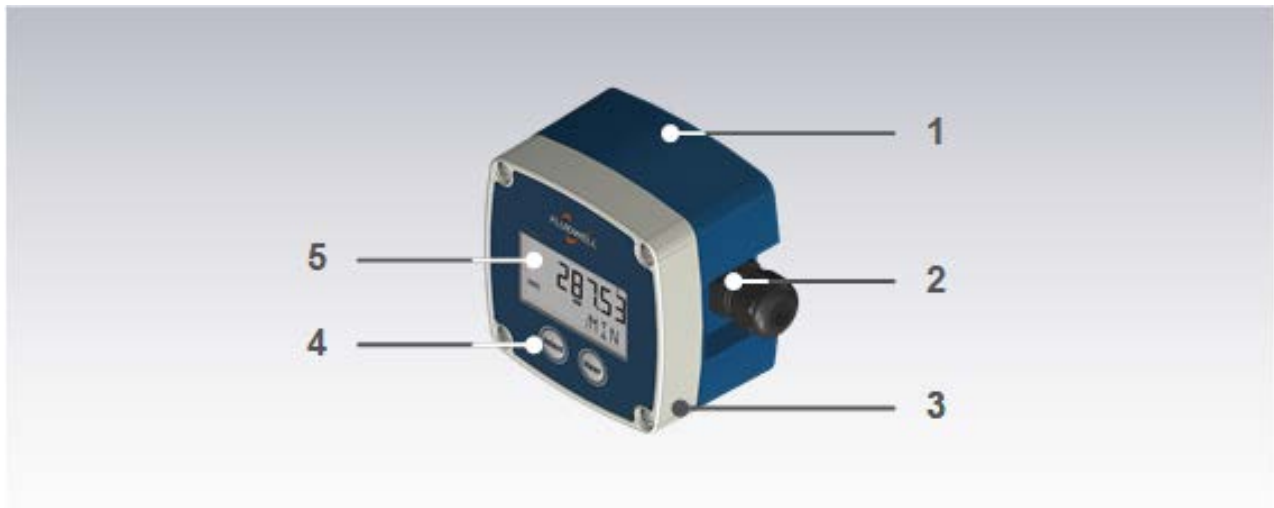


Figure 4.1: B-Basic - Component information (typical)

4.3 Navigation

This section describes how to navigate through the operator menu.

The operator menu has different pages to show the total, the accumulated total or the flow rate. It is also possible to erase (clear) the total value. Mind that it is not possible to erase the accumulated total.



FW-B000_000029-001-ML



Figure 4.2: Navigation - Select another page

5 Operation

5.1 How to select another page

This procedure assumes that the B-Basic shows the RATE page.


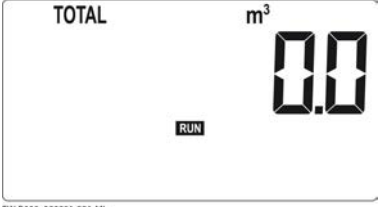
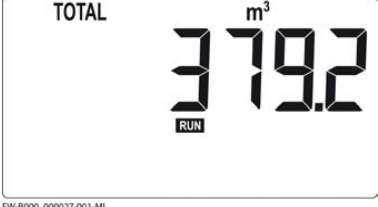
STEP	ACTION	RESULT
1	Press the SELECT key, to view the TOTAL page.	<p>FW-B000_000027-001-ML</p>

STEP	ACTION	RESULT
2	Press the SELECT key, to view the ACCUMULATED TOTAL page.	 <p>FW-B000_000028-001-ML</p>
3	Press the SELECT key, to view the FLOW RATE page.	 <p>FW-B000_000026-001-ML</p>

5.2 How to erase the total

This procedure assumes that the B-Basic shows the TOTAL page.

Mind that it is not possible to erase the accumulated total.

STEP	ACTION	RESULT
1	Press the CLEAR key, to access the CLEAR page.	 <p>FW-B000_000030-001-ML</p>
2	Press the CLEAR key (YES), to erase the TOTAL, or	 <p>FW-B000_000031-001-ML</p>
3	Press the SELECT key, to keep the TOTAL.	 <p>FW-B000_000027-001-ML</p>

6 Maintenance

6.1 General information

The B-Basic is almost maintenance free. The maintenance tasks are limited to inspections, cleaning and battery replacement.

The B-Basic cannot be repaired by the user. A repair is only possible by the manufacturer or an authorized service center.

6.2 Cleaning

- 1 Make the work area safe for the work.

- 2 Use a soft cloth or brush to remove the contamination.
- 3 Use a soft cloth, made damp with a mild soap solution to clean the B-Basic.
- 4 Let the B-Basic dry onto the air.
- 5 Remove all tools, materials and equipment from the work area.
- 6 If applicable, return the B-Basic into service.

6.3 Inspection

6.3.1 Preparation

- 1 Make the work area safe for the work.
- 1 Lock-out and tag-out (LOTO) the B-Basic and the related system or installation.
- 2 Make sure, it is safe to do the work.

6.3.2 Inspection

- 1 Clean the B-Basic.
- 2 Make sure, the B-Basic:
 - is in a good condition and shows no signs of deterioration;
 - is correctly and firmly attached to the structure.
- 3 Make sure, the wiring and wiring glands:
 - are in good condition and shows no signs of deterioration;
 - are correctly and firmly attached to the structure.
- 4 Make sure, the display:
 - is readable;
 - shows no signs of condensation inside the B-Basic.

6.3.3 Job close up

- 1 Do an after installation test of the B-Basic.
- 2 Remove all tools, materials and equipment from the work area.
- 3 Make sure the work area is clean.
- 4 Discard of the waste in accordance with the plant owner's, the manufacturer' and the (inter)national rules and regulations.

6.4 How to change a battery



WARNING!

Only qualified and well-trained persons who are familiar with the electrical installation and the service procedures and who obey the specific regulations and requirements set by the authorities, the manufacturer, the employer and the plant owner, are allowed to do the electrical work.

6.4.1 Preparation

- 1 Make the work area safe for the work.
- 1 Lock-out and tag-out (LOTO) the B-Basic and the related system or installation.
- 2 Make sure, it is safe to do the work.

6.4.2 Remove the cover

NOTICE The wiring and the electronics are attached to the inside of the cover.

- 1 Remove and keep the screws (2) to release the cover (1).
- 2 Carefully, remove and hold the cover (1).
- 3 Inspect the seal for signs of deterioration.
- 4 Do any necessary work.

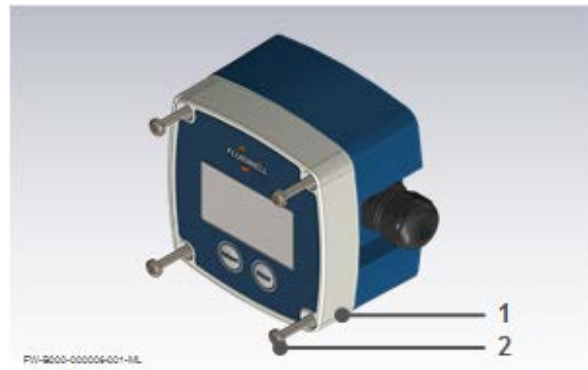


Figure 6.1: Remove the cover

6.4.3 Remove and install a new battery

- 1 Hold the cover (1) and carefully remove the battery (4) from the battery holder (5).
- 2 Discard the battery (4).
- 3 Inspect the battery holder (5) for signs of deterioration and corrosion.
- 4 Do any necessary work.
- 5 Mind the polarity and install a new battery (4) in the holder (5).
- 6 Make sure, the display comes on.

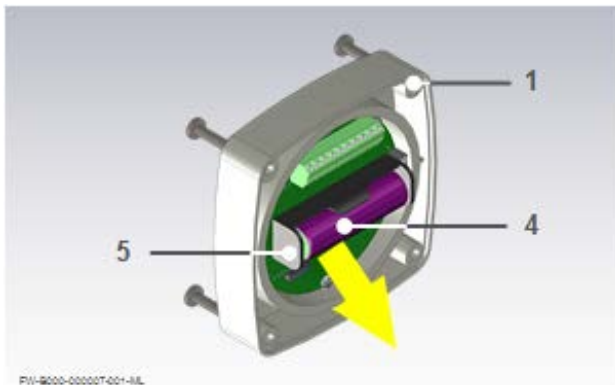


Figure 6.2: remove the battery

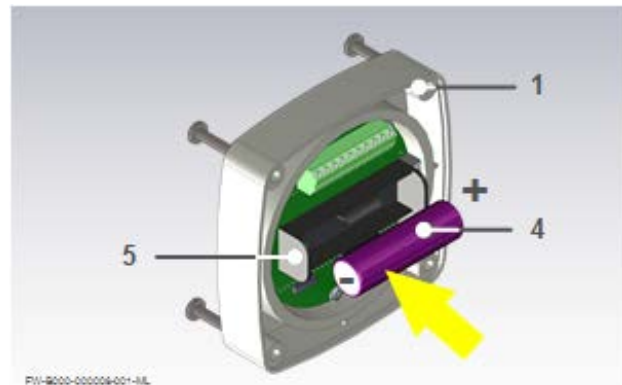


Figure 6.3: Install the battery

6.4.4 Install the cover

- 1 Make sure, the seal (3) is clean and installed correctly.
- 2 Attach the cover (1) with the screws (2).
- 3 Tighten the screws (2).

6.4.5 Job close up

- 1 Do an after installation test of the B-Basic.
- 2 Remove all tools, materials and equipment from the work area.
- 3 Make sure the work area is clean.
- 4 Discard of the waste in accordance with the plant owner's, the manufacturer' and the (inter)national rules and regulations.

7 Technical specifications

DISPLAY	
Type	High intensity transfective numeric and alphanumeric LCD, with white LED backlight
Dimensions	54 x 29mm (2.13" x 1.14")

DISPLAY	
Digits	Seven 12mm (0.47") and seven 7mm (0.28") digits
Refresh rate	During operation 8 times/sec, it will automatically switch to 1 time/sec after 30 sec without operation

ENCLOSURE	
Length x Height x Depth	92.2 x 92.2 x 60 mm (3.63" x 3.63" x 2.35")
Weight	200 g
Material	Glass Reinforced Plastic (GRP)
Cable entry	knockout: 2 x 16 mm; 1 x 20 mm
Protection degree	IP 65 / Nema Type 4

DIMENSIONS		
	A=92 mm, (3.62")	F=52 mm, (2.05")
	B=92 mm, (3.62")	G=72.8 mm, (2.87")
	C=60 mm, (2.36")	H=19 mm, (0.75")
	D=14 mm, (0.55")	J=38 mm, (1.49")
	E=14 mm, (0.55")	

AMBIENT CONDITIONS - STORAGE	
Temperature	-20°C to +80°C (-4°F to 176°F)
Humidity, relative	90%, no condensation allowed

AMBIENT CONDITIONS - OPERATION	
Temperature	-20°C to +80°C (-4°F to 176°F)
Humidity, relative	90%, no condensation allowed

POWER REQUIREMENTS	
External power supply	10 - 30V DC. Consumption max. 625mW The external power supply will also supply the backlight.
Battery power	1 x 3.6V AA Lithium battery - life-time depends upon settings and configuration - up to approx. 2 years.

SENSOR EXCITATION	
Terminal 3	1.2 V for coil pick-up and 3 V for low power pulse signals. I _{out} =max. 63µA.

SENSOR EXCITATION	
NOTICE	This voltage shall not be used to supply the flowmeter's electronics, converters etc., as it will not provide adequate sustained power! All energy used by the flowmeter's pick-up will directly influence the battery life-time. It is strongly advised to use a 'zero power' pickup such as a coil or reed-switch when operating without external power. It is possible to use some low power NPN or PNP output signals, but the battery life time will be significantly reduced (consult your distributor).
Terminal 4	8.2 V; Only available when external power is connected.

INPUT PARAMETERS	
Coil	90mV _{pp}
Reed	R = 1MΩ, pull-up; F = 120Hz
NPN	R = 100kΩ, pull-up; F = 6kHz
PNP	R = 47kΩ, pull-down; F = 6kHz
NAMUR	R = 820Ω, pull-down; F = 4kHz

DIRECTIVES AND STANDARDS	
Electro Magnetic Compatibility	Directive 2014/30/EU; FCC 47 CFR part 15
Low Voltage Directive	Directive 2014/35/EU
Restriction of Hazardous Substances	Directive 2011/65/EU
Protection rating	EN60529; NEMA 250

