



The FLS FlowX3 F9.50.L Batch Controller family is designed for accurate and reliable batching or blending of a variety of liquids. The instrument combines complex control capability with easy calibration and operation. Simple and Advanced mode are available to customize the unit to the specific batch requirements providing simple and quick changes of batch volumes and settings. The F9.50.L, with two relays, a solid state relay and an analog output, ensure accurate batch operation reducing the possibility of water hammer into the system. While with the F9.51.L is possible to store up to 10 different batch parameters batching different volumes and different liquids in the same pipeline always with the same accuracy. The high flexibility is maximized with only one packaging for compact pipe mount, panel or wall installation. Self explaining calibration menus and 5-button keypad allow a user friendly setup of all the batch parameters while the high visible backlight LCD display can show batch in progress, instant and totalized flow.

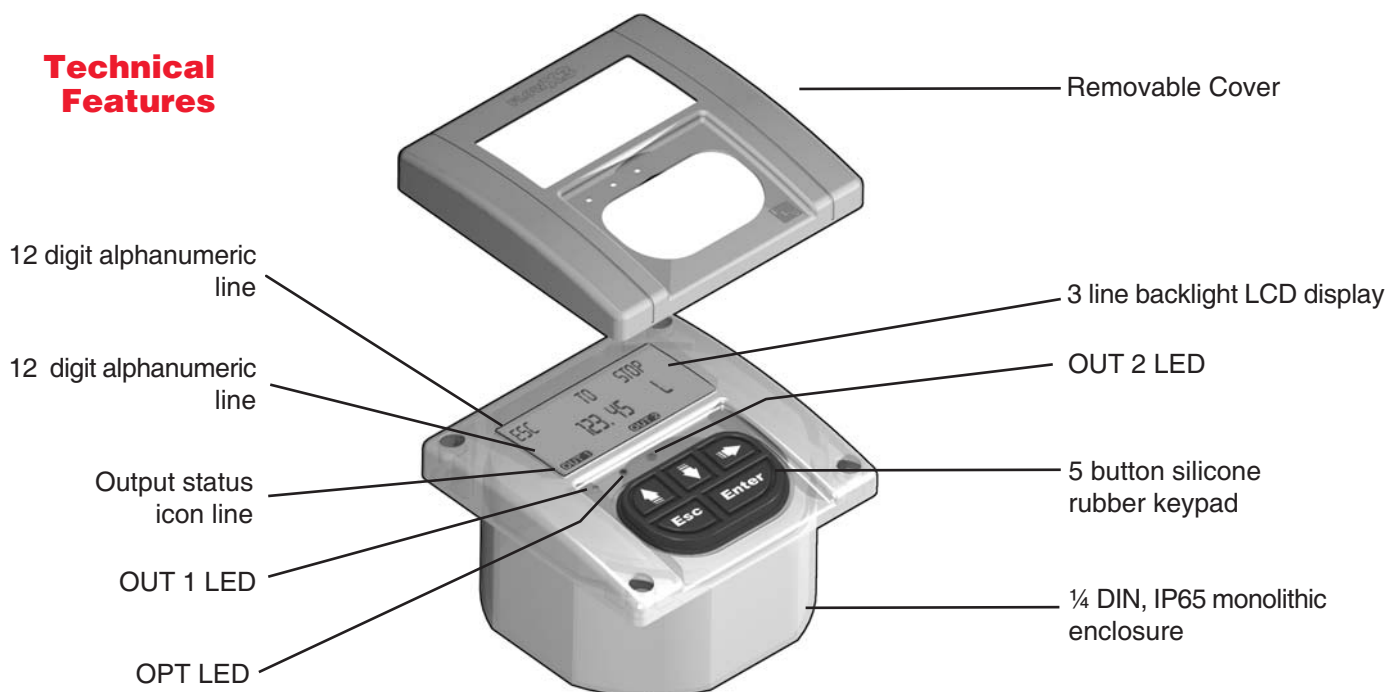
Main Features


- Easy Batch Volume setting.
- Simple and Advanced operating modes.
- External Start, Stop and Resume.
- Self explaining calibration menus.
- Auto-calibration.
- Two Stage Shutdown Control (F9.50.L).
- Overrun Alarm.
- Missing Signal Alarm.
- End-of-Batch Pulse Output.
- Output simulation for system testing.
- Count-up or Count-down batch indication (F9.50.L).
- Permanent and Resettable totalizer.
- 3 line alphanumeric backlight LCD.
- IP65 monolithic packaging.
- 5 button keypad.
- One packaging for compact/pipe, panel or wall installation.
- Automatic or Manual Overrun Compensation (F9.50.L).
- Advanced Valve Control (F9.50.L).
- Count-up or Count-down batch indication (F9.50.L).
- Store up to ten different batch parameters (F9.51.L).
- Count-up batch indication (F9.51.L).

Applications

- Batch Processes.
- Chemicals Addition.
- Filling Processes.
- Blending Applications.

Technical Features



Batch Controller	Part No.	Associated Flow Sensor	Storable batches	4-20 mA Output	Solid state relay LED	Relay Output
	F9.50.L	1 Hall Effect	1	1	1 – START Batch, END Batch, Off	2 – Batch & Option
	F9.51.L	1 (Effect Hall)	10	-	-	2 – Batch & Option

Engineering Data

- The batch controller is designed with only one packaging for compact/pipe, panel or wall installation.
- The batch controller has 1/4 DIN panel mount standard dimensions: 96 x 96 mm (3.8 x 3.8 inch).
- The instrument meets IP65 standards.
- The instrument provides flow rate indication, one permanent and one resettable totalizer with fully scaleable engineering units.
- The batch controller provides two SPDT relays. One relay for batch-in-progress indication, the other configurable for end-of-batch pulse, overrun alarm or missing signal alarm in F9.50.L and F9.51.L, and two-stage shutdown only in F9.50.L version.

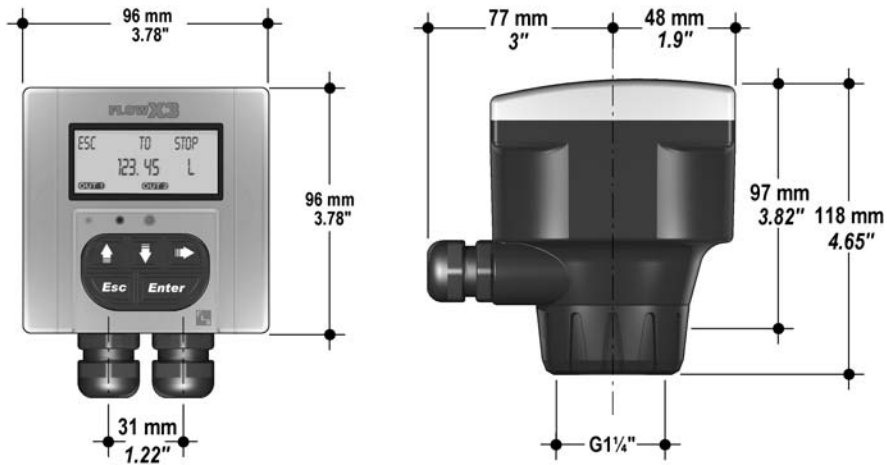
- The instrument F9.50.L provides a 4..20mA analog output configurable for valve control, or batch completion.
- The batch controller F9.50.L also provides an SSR output configurable as START Batch or END Batch.
- The instrument provides also additional functions as: External Start, Stop and Resume.
- The batch controller is compatible with all FLS FlowX3 Hall Effect Flow Sensor.
- The batch controller is equipped with a 3 line backlight LCD: 2 x 12 alphanumeric lines & 1 icon line.
- The batch controller is equipped with a Silicone rubber 5 button keypad.
- The instrument provides auto-calibration and simulation options.

Connections to FLOWX3 Sensors

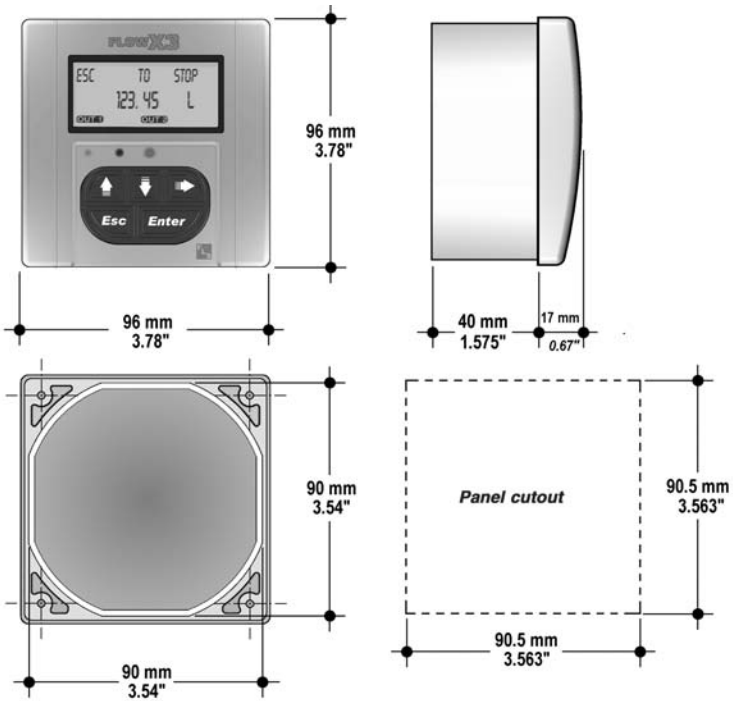
Batch Controllers FLOWX3	FLOWX3 Sensor														
	F3.00.H	F3.00.C	F3.01.H	F3.01.C	F3.10.H	F3.15.H*	F3.30.H*	ULF.H	ULF.R	ULF3.15*	ULF3.30*	F3.80	F111.H	F111.C	F3.60M F3.63M
F9.50.L	■		■		■	■		■		■		■	■		■
F9.51.L	■		■		■	■		■		■		■	■		■

* with Output Kit mounted.

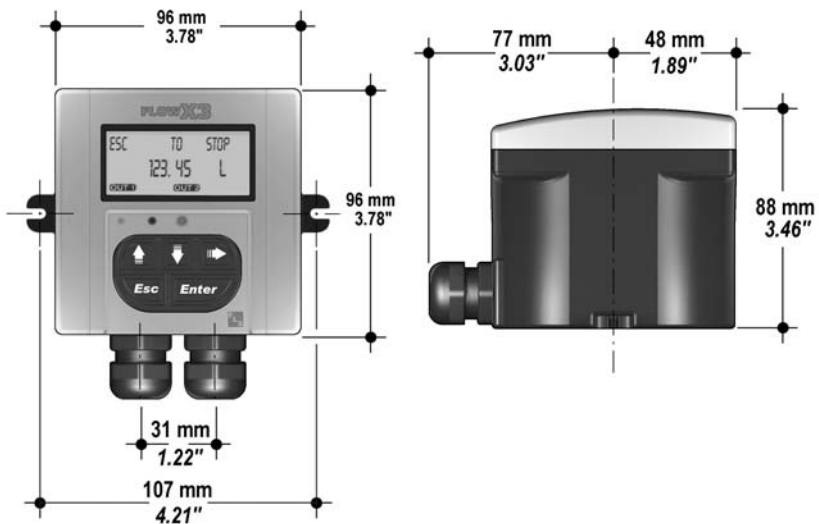
Dimensions Compact Mount



Panel Mount



Wall Mount

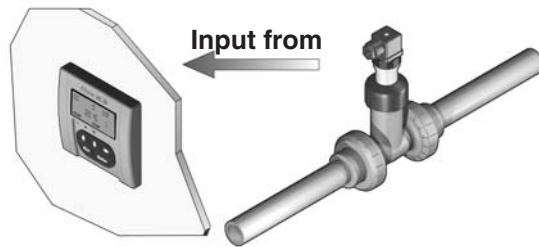


Installation

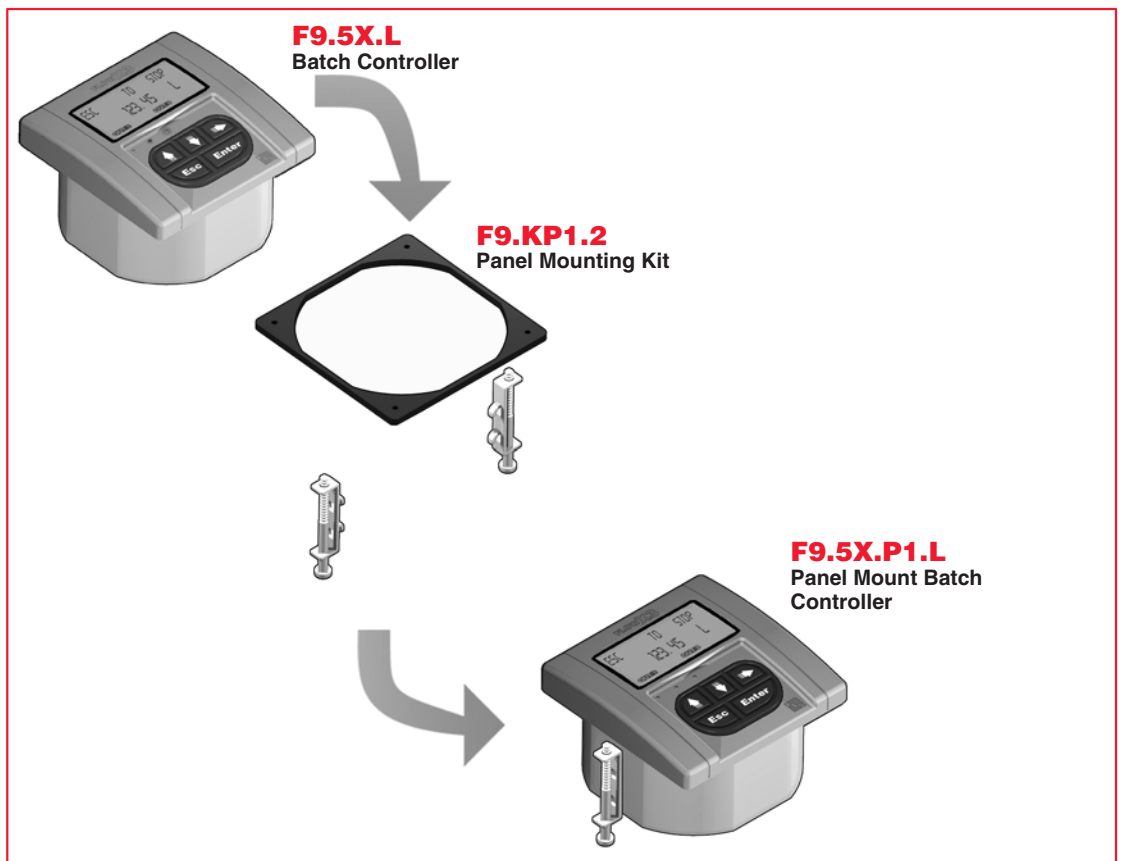
The batch controller is available just in one packaging for compact field version, panel or wall installation. The compact field version is mounted on top of the sensor using the compact mounting kit (F9.KC1), the panel version is installed using the panel mounting kit (F9.KP1.2), while the wall mounting version is fixed to the wall by the mounting kit (F9.KWX).

The mounting kits can be ordered directly connected to the controller or separately and then simply installed on it. Please refer to Ordering Data section for a complete listing of part numbers.

Panel Mount



The panel mounting version consists of the batch controller and the mounting bracket kit F9.KP1 with gasket for IP65 watertight panel installation. The controller perfectly fits into a standard ¼ DIN panel cutout. The instrument and the kit can be ordered separately (code F9.5X.L for the monitor and code F9.KP1 for the mounting bracket) or together using code F9.5X.P1.L.



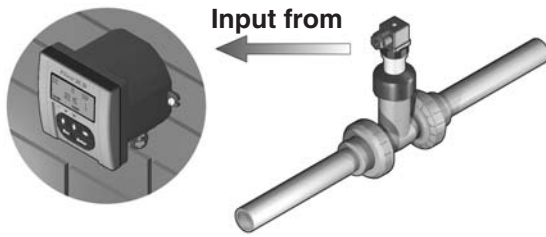
Input from



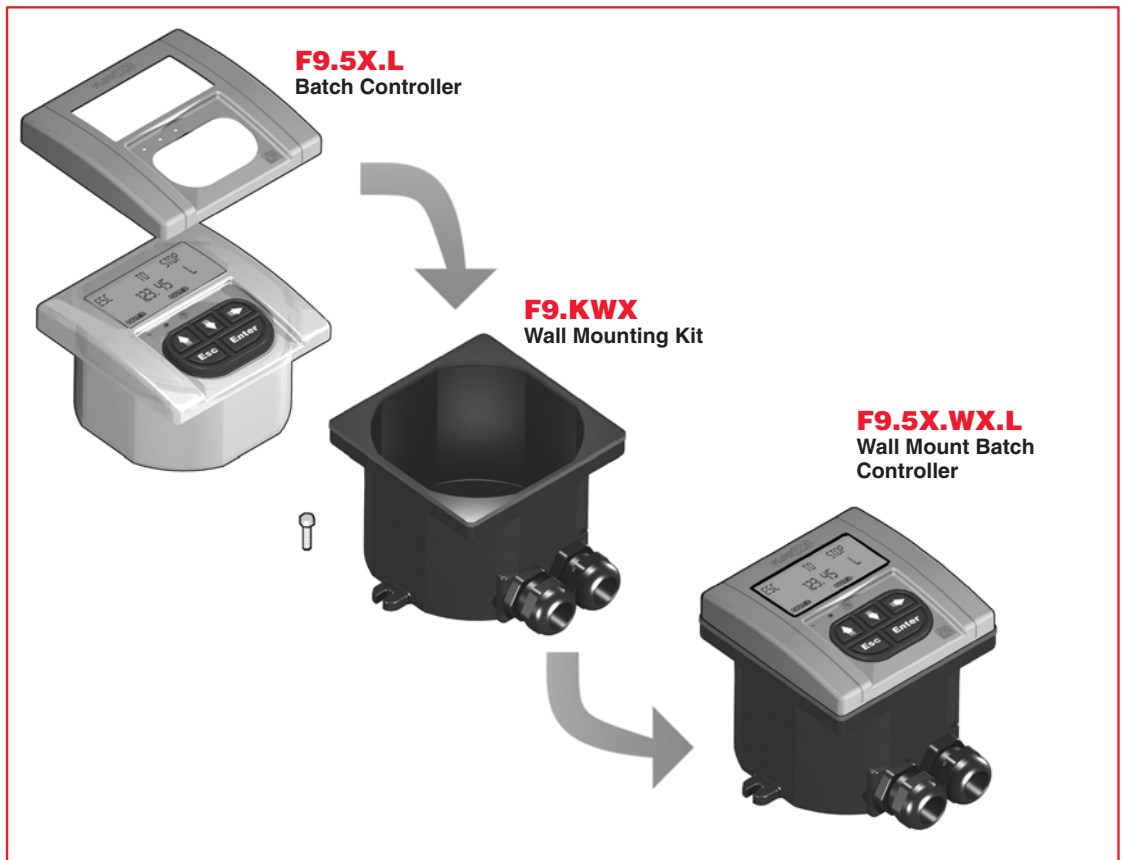
**FLS FlowX3 Flow Sensor
(sold separately)**

F3.00.H.XX - F3.10.H.XX -
F3.15.H.XX -
ULF01.H.X - ULF3.15.XX.X - ULF03.H.X -
F111.H - F3.80 - New F3.60M & F3.63M

Installation Wall Mount



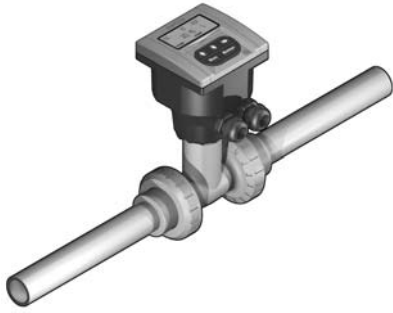
The wall mounting version consists of the batch controller and the wall mounting kit. The F9.KW1 kit includes the plastic adapter, the gasket for IP65 watertight wall installation and the fixing screws. The F9.KW2 includes also a 110/230 VAC to 24 VDC power supply directly mounted into the plastic adapter to provide a low voltage regulated output to the controller. The instrument and the kit can be ordered separately (code F9.5X.L for the controller and code F9.KWX for the kit) or together using code F9.5X.WX.L.



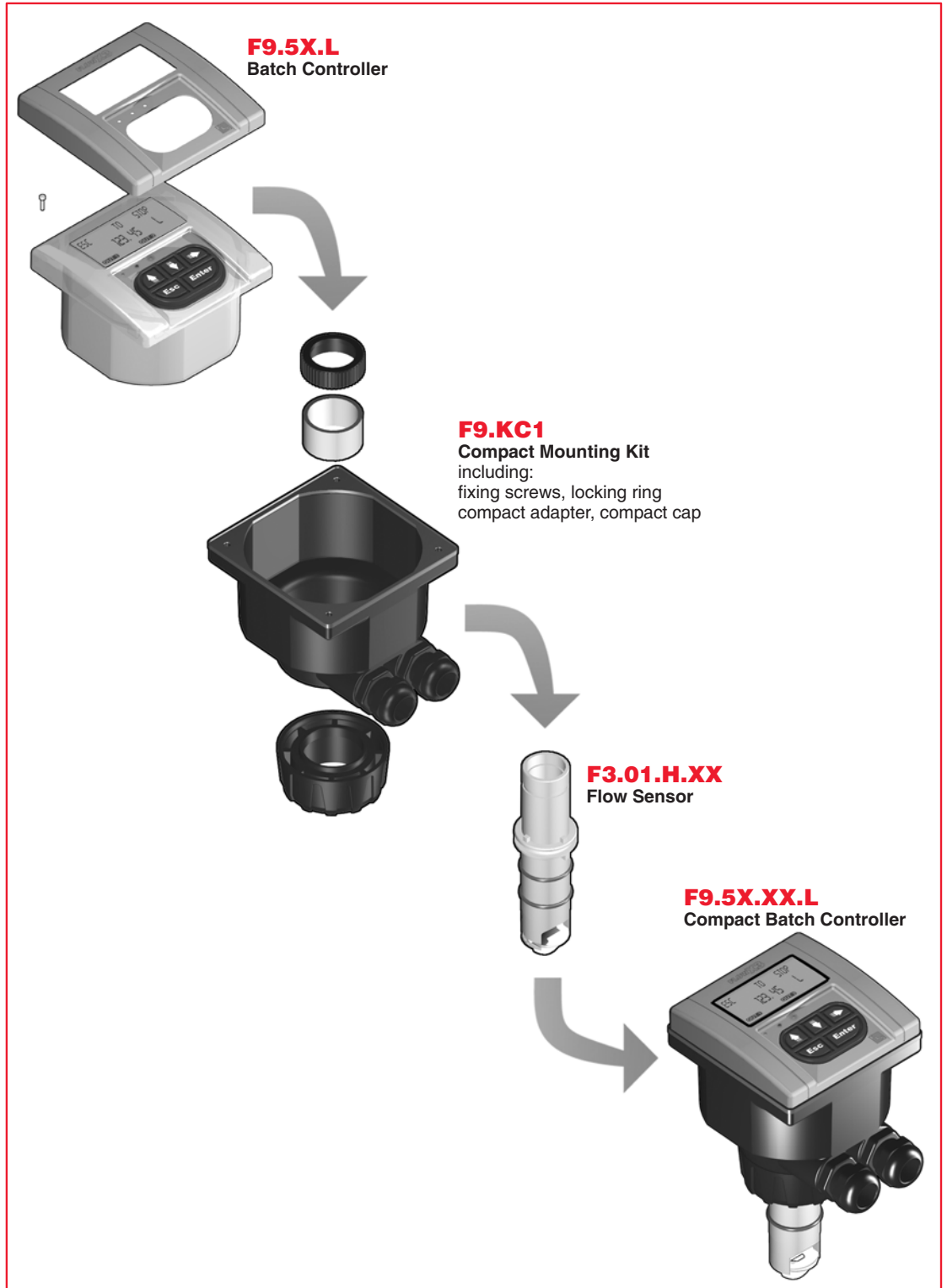
**FLS FlowX3 Flow Sensor
(sold separately)**

F3.00.H.XX - F3.15.H.XX - F3.30.H.XX
 ULF01.H.X - ULF3.15.XX.X - ULF03.H.X -
 F111.H - F3.80 - New F3.60M & F3.63M

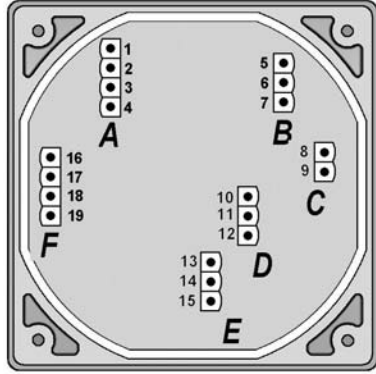
Installation Compact Mount



The compact mounting kit F9.KC1 includes the compact plastic adapter with gasket for IP65 watertight installation, the compact cap, the locking ring and four fixing screws for mounting the batch controller directly onto the sensor. The instrument and the kit can be ordered separately (code F9. 5X.L for the controller and code F9.KC1 for the kit) or together using code F9. 5X.XX.L.



Rear Terminal View



Power supply **A**

1	+ VDC
2	+ LOOP
3	- LOOP
4	- VDC

Sensor **B**

SENSOR	
5	GND
6	IN
7	V+

Solid State Relay OutPut **C**

8	NO
9	COM

OUT 1 RELAY **D**

RELAY 1	
10	NC
11	COM
12	NO

OUT 2 RELAY **E**

RELAY 2	
13	NC
14	COM
15	NO

Remote control **F**

16	GND
17	RESUME
18	START
19	STOP

Technical Data

General

- Associated flow sensor:
 - FLS FLOWX3 Hall effect with frequency output
 - FLS FLOWX3 New Electromagnetic flow sensor*.
- Materials:
 - Case: PC
 - Panel gasket: Neoprene
 - Wall & Field gasket: EPDM
 - Keypad: 5-button silicone rubber.
- Display:
 - backlight configuration
 - 3 line LCD: 2 x 12 alphanumeric lines + 1 icon line
 - Update rate: 1 second
 - Contrast: User adjustable with 5 levels.
- Enclosure: IP65 front

Electrical

- Supply Voltage: 12 to 24 VDC $\pm 10\%$ regulated.
- Sensor Input (Frequency):
 - Sensor power: 3.8 –12 VDC @ < 30 mA
 - Range: 0.5 to 1000 Hz
 - Optically isolated from current loop
 - Short circuit protected
 - Accuracy: $\pm 0,50$ Hz.
- Relay output:
 - Mechanical SPDT contact
 - Expected mechanical life (min. operations): 10^7
 - Expected electrical life (min. operations):
 - N.O./N.C. switching capacity
 - 8 A @ 240 VAC
 - n° of operations 10×10^4
 - OUT1 – Batch: Batch in progress indication
 - OUT2 – Option: End of batch, overrun alarm, missing signal alarm.
- Additional Functions:
 - External Start, Stop and Resume.

F9.50.L specific

- Relay output:
 - OUT2 – Option: Two-stage shutdown
- Current output:
 - 4...20 mA, isolated, fully adjustable and reversible
 - Max loop impedance: 150 Ω @ 12 VDC, 330 Ω @ 18 VDC, 600 Ω @ 24 VDC
 - Configurations: Valve control, batch completion
- Solid state relays:
 - User selectable as START Batch, END Batch, OFF
 - Optically isolated, 50 mA MAX sink, 24 VDC MAX pull-up voltage
 - Max puls e/min: 300.
- Additional Functions:
 - End of batch pulse.

Environmental

- Operating temperature: -10°C to $+70^{\circ}\text{C}$ (14°F to 158°F)
- Storage temperature: -15°C to $+80^{\circ}\text{C}$ (5°F to 176°F)
- Relative humidity: 0 to 95% non condensing.

Standards and Approvals

- Manufactured under ISO 9001 (Quality).
- Manufactured under ISO 14001 (Environmental Management).
- CE.

* For F3.60M & F3.63M power supply must be supplied separately.

Ordering Data

FlowX3 F9.5X.L

Part No.	Description	Power Supply	Input
F9.50.L	Batch Controller	12 to 24 VDC	1 (Freq.)
F9.51.L	Batch Controller	12 to 24 VDC	1 (Freq.)

FlowX3 F9.5X.P1.L (Panel Mount version)

Part No.	Description	Power Supply	Input
F9.50.P1.L	Panel Mount Batch Controller	12 to 24 VDC	1 (Freq.)
F9.51.P1.L	Panel Mount Batch Controller	12 to 24 VDC	1 (Freq.)

FlowX3 F9.5X.WX.L (Wall Mount version)

Part No.	Description	Power Supply	Input
F9.50.W1.L	Wall Mount Batch Controller	12 to 24 VDC	1 (Freq.)
F9.51.W1.L	Wall Mount Batch Controller	12 to 24 VDC	1 (Freq.)
F9.50.W2.L	Wall Mount Batch Controller	110 to 230 VAC	1 (Freq.)
F9.51.W2.L	Wall Mount Batch Controller	110 to 230 VAC	1 (Freq.)

Ordering Data

FlowX3 F9.5X.XX.L (Compact Field Mount version)

Part No.	Description	Power Supply	Sensor Length	Sensor Body	Sensor O-rings
F9.50.01.L	Field Mount Batch Controller	12 to 24 VDC	L0	CPVC	EPDM
F9.50.02.L	Field Mount Batch Controller	12 to 24 VDC	L0	CPVC	FPM
F9.50.03.L	Field Mount Batch Controller	12 to 24 VDC	L1	CPVC	EPDM
F9.50.04.L	Field Mount Batch Controller	12 to 24 VDC	L1	CPVC	FPM
F9.50.05.L	Field Mount Batch Controller	12 to 24 VDC	L0	PVDF	EPDM
F9.50.06.L	Field Mount Batch Controller	12 to 24 VDC	L0	PVDF	FPM
F9.50.07.L	Field Mount Batch Controller	12 to 24 VDC	L1	PVDF	EPDM
F9.50.08.L	Field Mount Batch Controller	12 to 24 VDC	L1	PVDF	FPM
F9.50.09.L	Field Mount Batch Controller	12 to 24 VDC	L0	316L SS	EPDM
F9.50.10.L	Field Mount Batch Controller	12 to 24 VDC	L0	316L SS	FPM
F9.50.11.L	Field Mount Batch Controller	12 to 24 VDC	L1	316L SS	EPDM
F9.50.12.L	Field Mount Batch Controller	12 to 24 VDC	L1	316L SS	FPM
F9.50.13.L	Field Mount Batch Controller	12 to 24 VDC	L0	BRASS	EPDM
F9.50.14.L	Field Mount Batch Controller	12 to 24 VDC	L0	BRASS	FPM
F9.50.15.L	Field Mount Batch Controller	12 to 24 VDC	L1	BRASS	EPDM
F9.50.16.L	Field Mount Batch Controller	12 to 24 VDC	L1	BRASS	FPM

Ordering Data

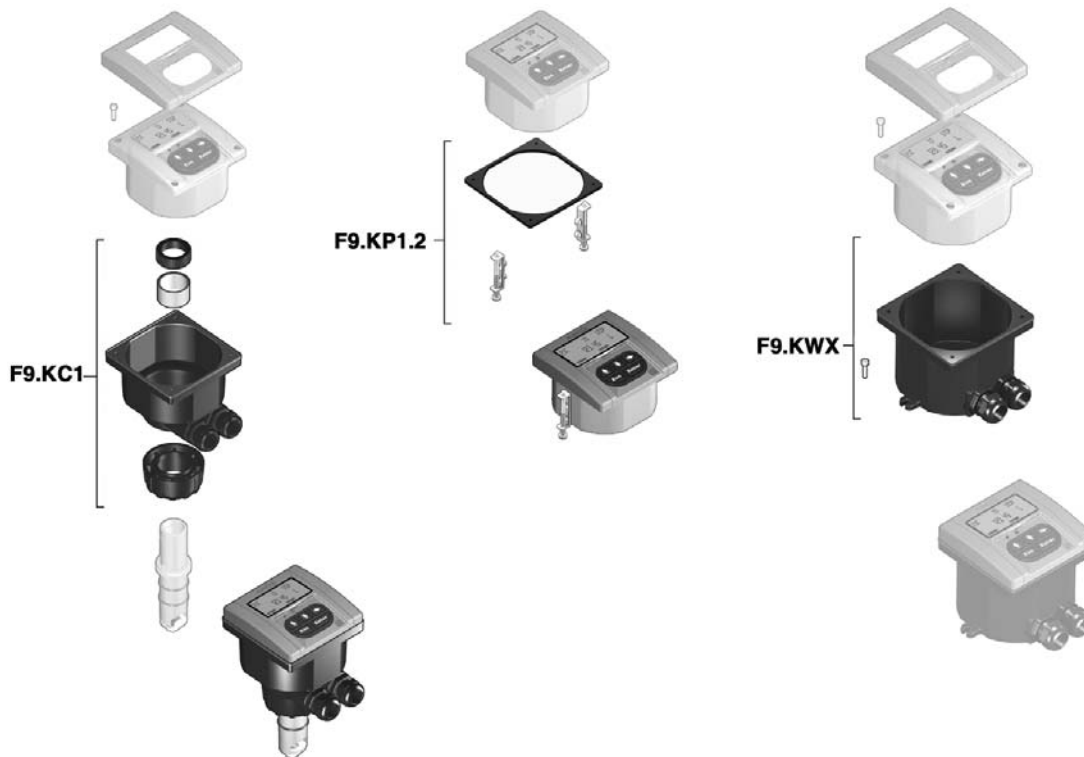
FlowX3 F9.5X.XX.L (Compact Field Mount version)

Part No.	Description	Power Supply	Sensor Length	Sensor Body	Sensor O-rings
F9.51.01.L	Field Mount Batch Controller	12 to 24 VDC	L0	CPVC	EPDM
F9.51.02.L	Field Mount Batch Controller	12 to 24 VDC	L0	CPVC	FPM
F9.51.03.L	Field Mount Batch Controller	12 to 24 VDC	L1	CPVC	EPDM
F9.51.04.L	Field Mount Batch Controller	12 to 24 VDC	L1	CPVC	FPM
F9.51.05.L	Field Mount Batch Controller	12 to 24 VDC	L0	PVDF	EPDM
F9.51.06.L	Field Mount Batch Controller	12 to 24 VDC	L0	PVDF	FPM
F9.51.07.L	Field Mount Batch Controller	12 to 24 VDC	L1	PVDF	EPDM
F9.51.08.L	Field Mount Batch Controller	12 to 24 VDC	L1	PVDF	FPM
F9.51.09.L	Field Mount Batch Controller	12 to 24 VDC	L0	316L SS	EPDM
F9.51.10.L	Field Mount Batch Controller	12 to 24 VDC	L0	316L SS	FPM
F9.51.11.L	Field Mount Batch Controller	12 to 24 VDC	L1	316L SS	EPDM
F9.51.12.L	Field Mount Batch Controller	12 to 24 VDC	L1	316L SS	FPM
F9.51.13.L	Field Mount Batch Controller	12 to 24 VDC	L0	BRASS	EPDM
F9.51.14.L	Field Mount Batch Controller	12 to 24 VDC	L0	BRASS	FPM
F9.51.15.L	Field Mount Batch Controller	12 to 24 VDC	L1	BRASS	EPDM
F9.51.16.L	Field Mount Batch Controller	12 to 24 VDC	L1	BRASS	FPM

Ordering Data

Mounting Kits

Part No.	Name	Description
F9.KC1	Compact mounting Kit	Plastic adapter with gasket, compact cap, locking ring and 4 fixing screws
F9.KP1.2	Panel mounting Kit	Mounting bracket with gasket
F9.KW1	Wall mounting Kit	Plastic adapter with gasket and fixing screws
F9.KW2	Wall mounting Kit with Power Supply	Plastic adapter with gasket, fixing screws and 110/230VAC to 24VDC power supply included



Spare Parts

Item	Part No.	Name	Description
1	F9.SP2	Cover	PC front cover, 3 LED
2	F9.SP4.1	PG 13.5	PG 13.5 Cable Gland for Compact or Wall mounting Kit
2	F9.SP4.2	PG 11	PG11 Cable Gland for Compact or Wall mounting Kit

