



## F SERIES (REMOTE PANEL MOUNT ELECTRONICS)

Top of the line specialty electronics by **FLOMEC® F Series Electronics** are designed with several different input and output options. Rugged and dependable, the F Series offers:

- Field-mountable
- Easy programming with a sensible menu-driven structure
- Large 0.67" (17 mm), 7 digit display
- Accepts several different input signals

## FEATURES / BENEFITS

- Batching
- Net Use
- 4-20 mA Output
- HART Protocol
- High Low Alarms
- Linearization
- Two Stage Valve Control
- Temperature Compensation

## APPLICATIONS

- The F-Series is your first and safest choice for fieldmount indicators. Especially in harsh weather conditions like rain, snow, salty atmospheres and temperatures between -40°F up to +176°F (-40°C up to 80°C) for safe and hazardous area applications.
- Applications where net flow calculation at base conditions is desired without the influence of thermal product expansion.
- Liquid flow measurement with mechanical flowmeters where a precise calculation over the full measurement range is required. Also continuous flow rate monitoring is required.
- For batching small up to very large quantities. Single or repeating batches.
- Fuel consumption calculation for diesel engines on board of ships or trains. Sum function: where flows are split-up in two pipe-lines and total flow has to be calculated.

## APPROVALS

IECEX



## PRODUCT CONFIGURATION

### STANDARD CONFIGURATION 1

- F018** = Flow Rate Monitor / Totalizer - Linearization & Alarms
- F115** = Flow Rate Monitor / Totalizer - Bi-Directional - Quadrature
- F127** = Differential / Sum Flow Computer - Net Use - Temp Correction
- F130** = Batch Controller - Two Stage

### FLOWMETER INPUT SIGNAL 2

**P** = Pulse input: Coil, NPN, PNP, Namur, Reed-switch

### ANALOG OUTPUT SIGNAL 3

- AP** = Passive 4-20mA output, loop powered unit (F115 & F127)
- AH** = Galvanically isolated, loop powered 4-20 mA output (F018)
- AX** = No analog output (F130)

### COMMUNICATION 4

- CR** = HART Communication (F018)
- CX** = NO communications (F115, F127 & F130)

### FLOW EQUATIONS 5

- EL** = Corrected Liquid Volume (F127)
- EX** = No flow equations (F115 & F130)
- = None on F018

### ENCLOSURE 6

**HE** = Cable Enter: 2-16 mm & 1-20 mm

### ADDITIONAL INPUTS 7

- IR** = Remote control input to start, pause or stop (F130)
- IX** = No additional inputs (F018, F115 & F127)
- = None for F018

### OUTPUTS 8

**OT** = Two passive transistor outputs - standard configuration (F018 only has 1 not 2)

### POWER SUPPLY 9

- PD-PB** = 8 - 24 V (ac/dc) + sensor supply - with XI: 16 - 30 V (dc) & Lithium battery powered (F018\*, F115 & F127)
- PD-PC** = 8 - 24 V (ac/dc) + sensor supply - with XI: 16 - 30 V (dc) & Lithium battery powered - Intrinsically Safe (F018\* & F130)

\*F018 does not have the 8 - 24 V (ac/dc)

### TEMPERATURE INPUT SIGNAL 10

- TP** = PT100 input (F127)
- TX** = No temperature input signal (F115 & F130)
- = None on F018

### HAZARDOUS AREA 11

- XI** = Intrinsically Safe, according to ATEX & IECEx (F018 & F127)
- XX** = Safe area only (F018, F115, & F130)

### OTHER OPTIONS 12

- ZB** = Backlight (F018, F115 & F127)
- ZX** = No options (F130)

1 2 3 4 5 6 7 8 9 10 11 12  
 >>>> F018 P AP CX EX HE IX OT PD-PB TX XX ZB

## SPECIFICATIONS

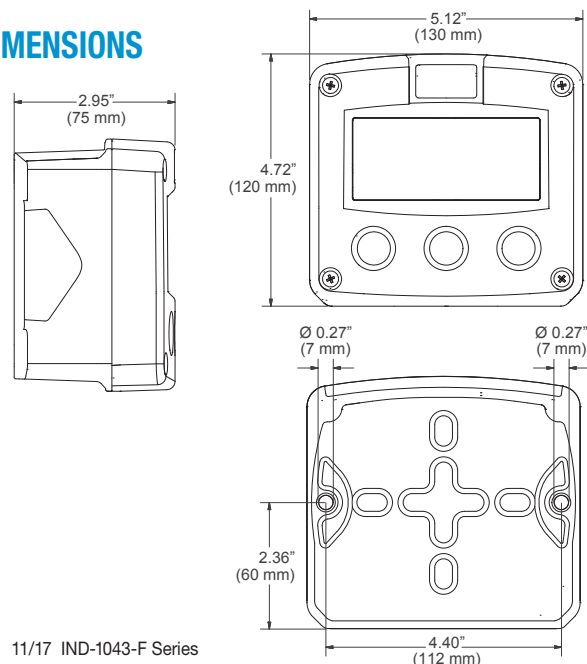
Display:	
Type	High intensity reflective numeric and alpha-numeric LCD, UV resistant
Dimensions	3.5 in. x 1.6 in. (90 mm x 40 mm)
Digits	Seven 0.67 in. (17 mm) and eleven 0.31 in. (8 mm) digits. Various symbols and measuring units.
Refresh rate	User definable: Fast, 1 s, 3 s, 15 s, 30 s, Off
Option ZB	Transflective LCD with green LED backlight. Good readings in full sunlight and darkness.
Operating Temperature:	
	-40°F to +176°F (-40°C to +80°C)
Power Requirements:	
	8 - 24 V (ac/dc) ± 10%. Power consumption maximum 10 Watt.
	16 - 30V (dc). Power consumption maximum 1 Watt.
Sensor Excitation:	
	1.2 / 3.2 / 8.2 / 12 / 24V (dc) - maximum 400mA @ 24V (dc)
Terminal Connections:	
	Removable plug-in terminal strip. Wire maximum 1.5 mm <sup>2</sup> and 2.5 mm <sup>2</sup>
Data Protection:	
Type:	EEPROM backup of all settings. Backup of running totals every minute. Data retention at least 10 years.
Pass-code:	Configuration settings can be pass-code protected.
Enclosure:	
Dimensions:	5.12" x 4.72" x 2.95" (130 x 120 x 75 mm) W x H x D
Type HE	GRP panel mount enclosure IP65 / NEMA 4X. UV-resistant and flame retardant.
Weight	1.32 lbs (600g)
Environment:	
Electromagnetic compatibility:	Compliant ref: EN 61326 (1997), EN 61010-1 (1993)
Signal Input (Flowmeter):	
	Coil / sine wave (minimum 20mVpp or 80mVpp - sensitivity selectable), NPN / PNP, open collector, reed switch, Namur, active pulse signals 8 - 12 and 24V (dc)
Frequency:	Minimum 0Hz - maximum 7kHz for total and flow rate internal low-pass filter. E.g. reed switch with low-pass filter: maximum frequency 120Hz
K-Factor	0.000010 - 9,999,999 with variable decimal position
Low-pass filter	Available for all pulse signals

## ACCESSORIES

1522056	F-Series Wall Mount Kit
1522052	F-Series Pipe Mount Kit
1519011	M16 Cable Gland Kit
1519012	M20 Cable Gland Kit

Signal Output (Analog):	
Function:	Transmitting differential / sum flow rate
Accuracy:	10 bit. Error < 0.05%. Analog output signal can be scaled to any desired range.
Update time:	Ten times per second
Type AP:	Passive 4-20mA output - not isolated. Unit will be loop powered.
Type AH:	Galvanically isolated, loop powered 4-20mA output
Signal Output (Pulse):	
Function:	Pulse output according to differential or sum accumulated total and indication negative pulse output.
Frequency:	Maximum 64 Hz. Pulse length user definable between 7.8 ms up to 2 seconds
Type OT:	Two passive transistor outputs (NPN) - not isolated. Maximum 50V (dc) - 300mA per output
Communication option:	
Function:	Reading display information, reading / writing all configuration settings
Protocol:	HART
Total - 7 digits, 0 - 1 - 2 or 3 decimals:	
Units:	L, m <sup>3</sup> , GAL, USGAL, kg, lb, bbl, no unit
Note:	Total can be reset to zero
Accumulated Total - 11 digits:	
Units / Decimals:	According to selection for total
Note:	Can not be reset to zero
Flow rate - 7 digits, 0 - 1 - 2 or 3 decimals:	
Units:	mL, m <sup>3</sup> , Gallons, kg, Ton, lb, bl, cf, RND, ft <sup>3</sup> , scf, Nm <sup>3</sup> , NI, ical - no units
Time units:	/s - /min - /hr - /day
Alarm values - 7 digits:	
Units / Decimals:	According to selection for total
Time units:	According to selection for total
Type of alarm:	Low and high flow rate alarm. Includes alarm delay time and configurable alarm outputs.
Line temperature - 6 digits, 1 decimal:	
Units:	°C, °F or K

## DIMENSIONS



Wichita · Sydney · Mexico City

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**Service & Warranty:** For technical assistance, warranty replacement or repair contact your **FLOMEC**® or **GPI**® distributor: In North or South America: **888-996-3837 / FLOMEC.net**  
Outside North or South America: **+61 2 9540 4433 / FLOMEC.net**

11/17 IND-1043-F Series