FLUIDWELL
Accurate Liquid Management

F-SERIES

indicators
totalisers
transmitters
flow computers
batch controllers
monitors

FOR

flow
level
pressure
temperature

Pipeline mounting

IP67 / NEMA 4X environmental protection

Wall mounting with backlight

Flowmeter mounting

Introduction

The F-series range offers you an extensive selection of indicators, controllers and monitoring systems for liquid and gas flow applications as well as for level, pressure and temperature measurement. Its sturdy industrial design is a major feature, utilizing an innovative die-cast aluminum case. Exceptional functionality has ensured that the F-series has become a very popular range of local indicators, controllers and signal transmitters.

Industrial applications

The F-series range has been developed for typical industrial environments. It is sturdy and weather-proof through its aluminum IP67 / NEMA4X field enclosure. The coated aluminum enclosure can be mounted directly onto sensors or walls and pipes.
It is also suitable for panel mount applications, with one major advantage: it requires minimal depth clearance. Also available is a more cost effective ABS enclosure with the same dimensions and protection rating, for both panel and wall mount applications. The high specification electronics guarantee reliable operation in the temperature range from -40°C up to +80°C (-40°F / +178°F).

Operational

Fluidwell is acutely aware of the excessive amount of equipment which today's technicians need to control. For this reason, a clear user-friendly menu structure was developed for programming all Fluidwell products a number of years ago. Since all models are programmed in the same logical manner, technicians can now save a great deal of time and effort. The configuration of the unit is fully menu-driven with understandable text, avoiding confusing abbreviations. The Operators main information is displayed in clear 17mm (0.7") and 8mm (0.3") alpha-numerical characters. An adjustable two-color backlight is available that switches from green to red in case a low-flowrate alarm is generated, for example.

Input features

- The instrument will accept signals from most flowmeters, ranging from PD-meters with reed-switches or hall-effect sensors to turbine coil pick-ups and other NPN / PNP pulse outputs. NAMUR standard sensors and (0)4 - 20 mA or 0 - 10V DC analog devices are also catered for.
- For level, pressure and temperature measurement, inputs are available for (0)4 - 20mA or 0 - 10V DC signals and for 2 or 3 wire PT100 elements. Linearisation of the input signal, square root calculation and data filter functions are all available.

Output features

Related to the functionality of the selected unit, the following output features are available:

- Analog output proportional to the flowrate, level, differential, ratio, temperature or pressure. This turns the unit into a powerful transmitter with a local display. The (0)4 - 20mA or 0 - 10V DC output can also be used to control actuators or pumps.
- Transistor or relay outputs for high and low alarms, pulse output, flow-direction as well as the control of valves / relays in batch control applications.
- The RS232, RS485 or TTL interface makes it possible to communicate remotely, even with a battery-powered unit. All configuration settings can be modified in addition to the usual transfer of data using the Modbus protocol.
The RS485 communication option allows up to 255 different units to be addressed.

Actual size

operational temperature
-30°/-40°C up to +80°C
(-20°/-40°F to +178°F)

displayed
function

trend
indication

large LCD
with
backlight
option

measurement units for TOTAL

clear 17mm (0.7")
numeric
characters

TOTAL   m³

17426.38

RUN

1853.9

RATE   L/MIN

time and
measurement
units for flow rate,
level, pressure or
temperature

PROG ENTER   SELECT ▲   CLEAR ▶

clear 8mm (0.3") alpha numeric display   status   rugged micro-switch keys   sturdy aluminum field enclosure IP67 / NEMA 4X

Power Management

During the development of the F-series, ultra-low power consumption was a key-requirement. Thanks to recent advancements in CMOS technology, Fluidwell has extended the battery life significantly and introduced several smart power-management functions.
Result: a battery lifetime of seven years can be achieved. Additionally, several alternative means of powering the F-series are available: loop-powered, 24V AC / DC, 115 - 230V AC and solar power. All settings are stored in EEPROM, which means that you won't lose information when replacing the battery or in the event of sudden power loss. A backup of the running totals is made every minute.

Hazardous area installation

All F-series products can be supplied certified intrinsically safe to ATEX ⟨Ex⟩ II 1 GD EEx ia IIB/IIC T4. Full functionality remains available, including analog, pulse / alarm outputs and Modbus communication. The units can be lithium battery powered, or connected to an external power source if required.
An explosion-proof enclosure is also available which has been certified in accordance to ATEX ⟨Ex⟩ II 2 EEx d IIB T5.

ISO 9001:2000 KEMA   ⟨Ex⟩ C€

Product overview

	Flowrate / Totalisers							linearisation			hi/lo alarms		Flowcomputers		ratio	differential / sum	
	F010 flowrate indicator	**F011** totalizer	**F012** flowrate / totalizer	**F014** with pulse output	**F110** pulse and analog outputs	**F111** 2 signal inputs 2 pulse outputs	**F115** bi-directional measurement	**F016** with pulse output	**F112** pulse and analog outputs	**F118** analog + pulse output two flowrate alarms	**F013** flowrate monitoring one alarm output	**F113** flowrate monitoring max. 4 alarm outputs	**F126-EL** flow + temperature for liquid volume calc.	**F126-EG** flow + temp. + press. for gas volume calc.	**F114** ratio calculation and monitoring	**F116** consumption / sum calculation	**F127-EL** consumption calc. with temp. correction
Pulse input; type P	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
(0)4 - 20mA input; type A	●	●	●	●	●	●			●	●	●	●	●	●	●	●	
0 - 10V DC input; type U	●	●	●	●	●	●			●	●	●	●	●	●	●	●	
PT100; type T																	
Actual flowrate	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Actual total (resettable)		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Accumulated total		●	●	●	●	●	●	●	●	●	●	●	●				●
Preset and actual value																	
Actual level and percentage																	
Actual temperature													●	●			●
Actual pressure														●			
15 point linearisation								●	●	●							
(0)4 - 20mA / 0 - 10V output:																	
- acc. to flowrate, level or temp.					●		●	●	●			●	●	●			
- acc. to differential / sum																● / ●	● / -
- acc. to ratio															●		
- acc. to process stage																	
Pulse output acc. to total				●	●	●	●	●	●	●		●				●	
High / low alarms										●	●	●			●		
1 stage control output																	
2 stage control output																	
Overrun correction																	
Detection flow direction							●										
Temperature compensation													●	●			●
Pressure compensation														●			
Dual input unit						●	●								●	●	●
Consumption calculation																●	●
Sum calculation (add on)																●	
External reset total or start/stop					●				●			●					
RS232 / RS485 / TTL					●	●	●		●	●		●	●	●	●	●	●
Intrinsically Safe	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Explosion proof	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
LED backlight	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Product overview

	Batch controllers / Dispensers					Level indicators		hi/lo alarms	linearisation		Temperature		hi/lo alarms	Pressure Indicators		hi/lo alarms
	F030	F130	F131	F133	F136	F070	F073	F170	F077	F173	F040	F043	F143	F050	F151	F053
	with one control output	two control or pulse outputs	2 control/pulse + analog output	dispenser	2 control / pulse + analog output	level indicator	with one alarm output	analog + maximum 4 alarm outputs	one alarm output	analog + maximum 4 alarm outputs	temperature indicator	with one alarm output	analog + maximum 4 alarm outputs	pressure indicator	dual pressure indicator	with one alarm output
Pulse input; type P	●	●	●	●	●											
(0)4 - 20mA input; type A	●	●	●			●	●	●	●	●	●			●	●	●
0 - 10V DC input; type U	●	●	●			●	●	●	●	●	●			●	●	●
PT100; type T											●	●	●			
Actual flowrate			●	●	●											
Actual total (resettable)	●	●	●	●	●											
Accumulated total	●	●	●	●	●											
Preset and actual value	●	●	●		●											
Actual level and percentage						●	●	●	●	●						
Actual temperature											●	●	●			
Actual pressure														●	●	●
15 point linearisation									●	●						
(0)4 - 20mA / 0 - 10V output:																
- acc. to flowrate, level or temp.		●					●			●			●			
- acc. to differential / sum																
- acc. to ratio															●	
- acc. to process stage					●											
Pulse output acc. to total		●	●		●											
High / low alarms							●	●	●	●		●	●			●
1 stage control output	●	●	●	●	●											
2 stage control output		●	●		●											
Overrun correction	●	●	●		●											
Detection flow direction							●									
Temperature compensation																
Pressure compensation																
Dual input unit															●	
Consumption calculation																
Sum calculation (add on)																
External reset total or start/stop				●												
RS232 / RS485 / TTL		●	●	●	●			●	●	●			●		●	
Intrinsically Safe	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Explosion proof	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
LED backlight	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Terminal connections

Typical inputs:

internal battery or
loop powered,
12 / 24V AC / DC
115 / 230V AC

RS232 / RS485 / TTL
Modbus communication

flow meter power supply
3.2 / 8.2 / 12 / 24V DC

(0)4 - 20mA / 0 - 10V DC
analog output

control output

up to 4 high / low
alarm outputs

12345

scaled pulse-output

Turbine flowmeter

coil

PD-flowmeter
positive displacement

reed-switch

Magnetic inductive
flowmeter

open collector

Coriolis
massflowmeter

PNP-pulse

Vortex flowmeter

NPN-pulse

Ultrasonic flowmeter

NAMUR

Massflowmeter

*(0)4 - 20mA
0 - 10V DC*

Level

*(0)4 - 20mA
0 - 10V DC*

Pressure

*(0)4 - 20mA
0 - 10V DC*

Temperature

*(0)4 - 20mA
0 - 10V DC
PT100*

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