

PRODUCT CATALOG

F-SERIES

Indicators
Totalizers
Transmitters
Flow Computers
Batch Controllers
Monitors
Displays

Flow
Level
Pressure
Temperature

FOR



INTRODUCTION TO THE F-SERIES

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.



Industrial applications

The F-Series range has been developed for typical industrial environments. It is sturdy and weather-proof through its aluminum or GRP IP67 / NEMA 4X field enclosure. The enclosure can be mounted directly onto sensors, walls or pipes, but is also suitable for panel mount applications, with one major advantage: it requires minimal depth clearance. The operational temperature specification of the product range is from -40°C to $+80^{\circ}\text{C}$ (-40°F to $+178^{\circ}\text{F}$).

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: all models are programmed in the same logical manner. The configuration of the unit is completely menu-driven with understandable texts avoiding confusing abbreviations. There are no sensitive DIP-switches or trimmers, you simply select "Flowmeter" as main function, after which you can select "Coil-input" or "Span". The Operator's main information is displayed in clear 17mm (0.7") or 26mm (1") and 8mm (0.3") alphanumeric characters. An adjustable bi-color backlight is available that will switch from green to red in case an alarm is triggered.



Input features

- For flow measurement, the instrument accepts signals from most flowmeters, ranging from PD-meters with reed-switches or hall-effect sensors to turbine sine wave (coil) pick-ups and other NPN/PNP pulse outputs. NAMUR standard sensors and (0)4 - 20mA or 0 - 10V DC analog devices are also catered for.
- For level and pressure measurement, inputs are available for (0)4 - 20mA or 0 - 10V DC signals.
- For temperature measurement, the instrument accepts (0)4 - 20mA or 0 - 10V DC signals, also 2, 3 or 4 wire PT100 elements and thermocouple.

Linearization of the input signal, square root calculation and data filter functions are all available.



Output features

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

- Analog output proportional to the flow rate, level, differential, ratio, temperature, pressure position or control value. This turns the unit into a powerful transmitter with a local display. The output can also be used to control actuators, valves or pumps.
- Transistor or relay outputs for high and low alarms, pulse output 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 the battery-powered unit. All software parameters can be monitored / modified in addition to the usual transfer of data using the Modbus protocol.

Power Management

During the development of the F-Series products, 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 and 115 - 230V AC.

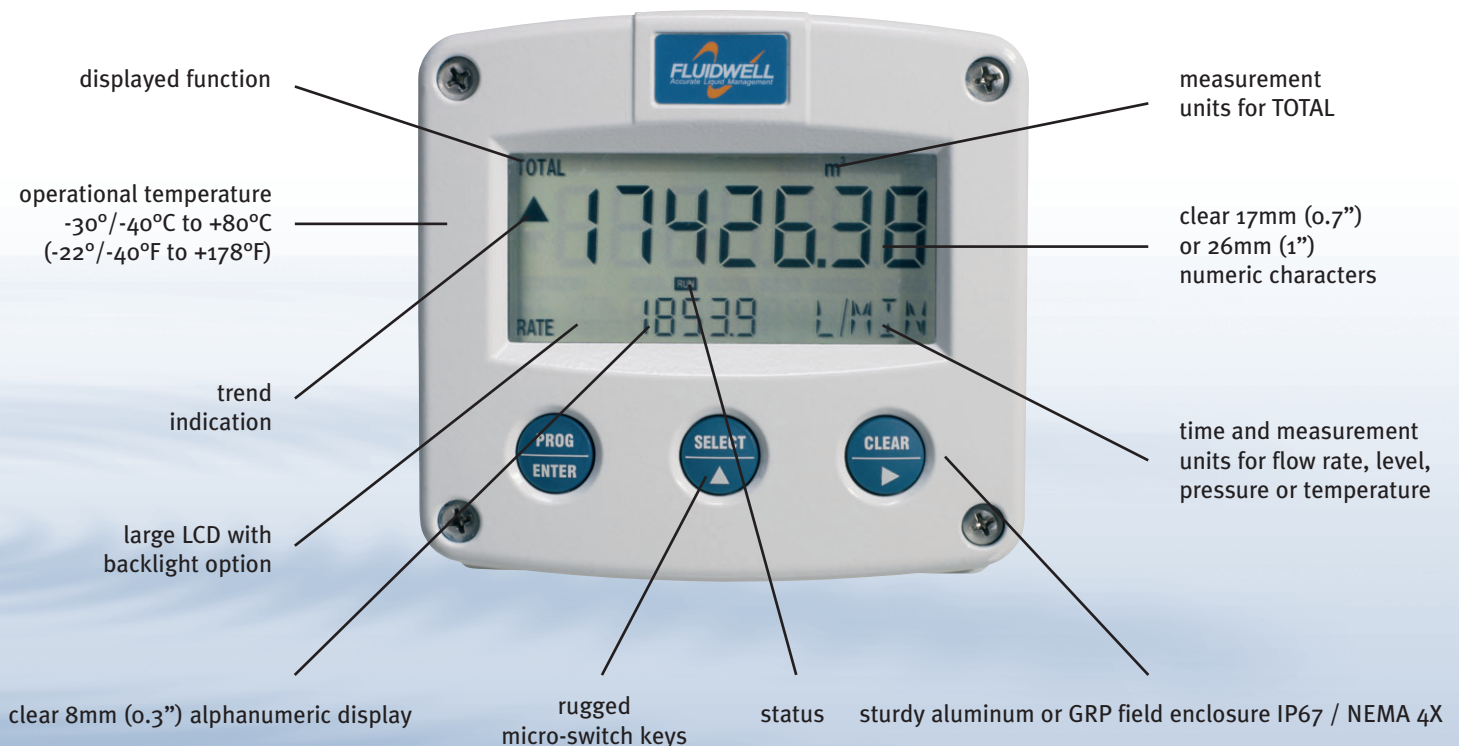
Since all settings are stored in EEPROM memory, you won't lose information when replacing the battery or in the event of sudden power loss. A backup of the running totals is made every minute.

Hazardous area installation

Both Fo- and F1-Series products can be supplied certified Intrinsically Safe to ATEX $\text{Ex II 1 GD EEx ia IIB/IIC T4}$. For the basic Fo-Series products, certification to IECEx, FM, CSA and non-incendive is expected in the fourth quarter of 2006 with following specifications:

- Intrinsically Safe Class I, II, or III, Division 1, Groups A through G, Ex ia Class I, Zone 0 and 1, Group IIC.
- Non-Incendive Class I, II, or III, Division 2, Groups A through G, Ex nA Class I, Zone 2, Group II.

An explosion-proof enclosure is also available which has been certified in accordance to ATEX $\text{Ex II 2 GD EEx d IIB T5}$.



FLOW RATE / TOTALIZERS, MONITORS AND TRANSMITTERS



Introduction

This product group offers an extensive range of solutions from a basic totalizer up to a powerful flow rate monitor with flowcurve linearization, flow rate monitoring, signal re-transmitting, alarm and pulse outputs as well as full Modbus communication. All models are available for safe area and hazardous area applications. Moreover, wireless data re-transmitting and remote flow rate / totalizer monitoring is offered with our M-Series and ProcessMonitor.com products and services.

The functionality of these products is based on two main hardware platforms:

- F0 platform: these products offer one signal input and can have one pulse or alarm output. This is our basic product range.
- F1 platform: these products have one or more signal inputs, multiple outputs and communication option. This is our advanced product range.

Both platforms share the same technology, enclosures, display and options but are dedicated to their typical functionality.



Common Flow rate / Totalizer features

- Clear operator information is a key feature of these products. Essential information is displayed as a clear text (e.g. “rate too high”) and not as mysterious abbreviations.
- The dedicated display shows two lines of information simultaneously along with text labels like “preset”, “actual” or “acc. total” so the operator understands the displayed information.
- The resettable total is displayed with seven 17mm (0.67”) high digits with its software selectable engineering unit. The following units can be selected through software: mL, L, m³, GAL, USGAL, kg, lb, bbl or no unit.
- Accumulated total is displayed with eleven 8mm (0.31”) digits and uses the same measuring units as total.
- Flow rate is normally displayed with 8mm (0.31”) digits at the bottom line of the display but can be set to 17mm (0.67”) digits if desired. The basic flow rate indicator F010 even has 26mm (1”) digits. The following engineering units can be selected: mL, L, m³, mg, g, kg, ton, GAL, bbl, lb, cf, REV, scf, Nm³, NL, P or no unit. The flow rate can be calculated per sec., min., hour or day. The trend indication shows an increase or decrease of the actual flow rate.

Further product specific features can be found on the following pages.



Configuration menu

All configuration settings are accessed via a simple operator menu which can be password protected. Each setting is clearly indicated with an alphanumeric description, therefore avoiding confusing abbreviations and baffling codes. There are no sensitive DIP-switches or trimmers, you simply select “Flowmeter” as main function, after which you can select “NPN pulse” or “span” etc. Once familiar with one F-Series product, you will be able to program all models in the series without a manual. All settings are safely stored in EEPROM memory. The clear and easy structured configuration menu is one of the most appreciated features of the F-Series.

Signal input type

For the flow rate / totalizers, three basic signal input types are available:

- Pulse signals: sine wave (coil) low sensitivity (80mV p-p), sine wave high sensitivity (20mV p-p), Namur, NPN, PNP, reed-switch or active pulses. For most signals a low pass filter can be enabled to ignore pulse bounce. The sine wave input can even be supplied with 10mV or 5mV p-p sensitivity (option ZF and ZG).

- Analog signal: (0)4 - 20mA or 4 - 20mA input loop powered version. The input signal can be tuned within this range (e.g. from 4.0mA to 18.0mA). To avoid counting at minimum signal, a low cut-off filter is available.
- Analog signal: 0 - 10V DC. The input signal can be tuned within this range (e.g. from 2.0 to 5.0V DC). A low cut-off filter is available here too, to avoid counting at minimum signal.

Data protection

All settings and totals are stored in EEPROM memory ensuring that no information is lost in the event of power failure or battery exchange.

To reset total, the CLEAR key must be pressed twice to avoid undesired initialization. Accumulated total cannot be reset to zero. The configuration menu and alarm values can be password protected to prevent unauthorized access.

For an explanation of all the F-Series options such as analog and alarm outputs, communication, power supply and enclosures, please read the section “Ordering codes” in the back of this catalog.

Product listing

- F010 Flow rate Indicator.
- F011 Totalizer with resettable total and accumulated total.
- F012 Flow rate Indicator / Totalizer with resettable total and accumulated total.
- F013 Flow rate Monitor / Totalizer with two high / low alarm values and one alarm output.
- F014 Flow rate Indicator / Totalizer with a scaled pulse output.
- F016 Flow rate Indicator / Totalizer with eight linearization points and a scaled pulse output.
- F110 Flow rate Indicator / Totalizer with analog output, scaled pulse output and communication option.
- F111 Dual Flow rate Indicator / Totalizer in one enclosure with two scaled pulse outputs and communication option.
- F112 Flow rate Indicator / Totalizer with fifteen linearization points, analog and scaled pulse output and communication option.
- F113 Flow rate Monitor / Totalizer with four high / low alarm values, max. four alarm or pulse outputs, analog output and communication option.
- F115 Bi-directional Flow rate Indicator / Totalizer with analog output, scaled pulse output and communication option.
- F117 Totalizer Monitor with high / low totalizer alarm, analog output and communication option.
- F118 Flow rate Monitor / Totalizer with ten linearization points, two high / low alarm values, max. three alarm or scaled pulse outputs, analog output and communication option.

F010 Flow rate Indicator with very large digits

The F010 is a local indicator with large 26mm (1") high digits which displays the actual flow rate. The measuring and time unit to be displayed below the flow rate are simply selected through an alphanumeric configuration menu. No adhesive labels have to be put on the outside of the enclosure: a weather proof and user-friendly solution! The configuration of K-factors or Span and number of decimals is done through software functions as well, without any sensitive DIP-switches or trimmers. A wide range of options further enhance this model capabilities, including Intrinsic Safety for hazardous area applications.

Features

- Displays instantaneous flow rate, measuring and time unit.
- Very large 26mm (1") high digits for flow rate.
- Piegraph indication: ten segments.
- Selectable on-screen engineering units for flow rate: mL, L, m³, mg, g, kg, ton, GAL, bbl, lb, cf, REV, scf, Nm³, NL, P or no unit.
- Selectable on-screen time units for flow rate: /sec, /min, /hour or /day.
- Number of digits for flow rate: 5¹/₂.
- Green/amber LED backlight with adjustable intensity.
- Auto backup of settings in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).
- Easy configuration with clear alphanumeric display.
- Very compact design for panel mount, wall mount or field mount applications.

Application

- Flow measurement where a local flow rate indication is required without signal re-transmitting or totalizer functionality. Alternative advanced models: F012, F013, F014, F016 or even more advanced F110 and higher.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Pulse output

- No.

Analog output

- No.

Alarm output

- No.

Communication

- No.

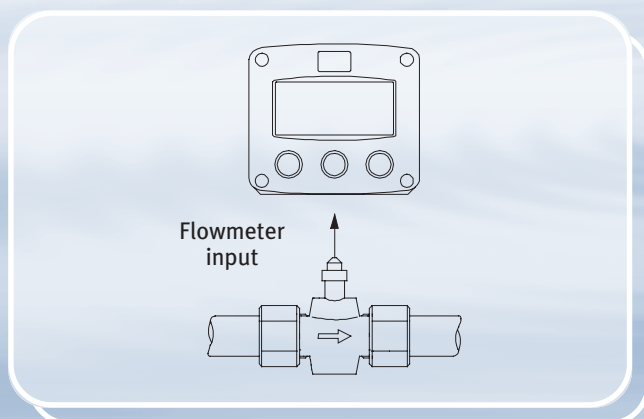
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F011 Totalizer with on-screen measuring units

The F011 is a local indicator which displays the running total and accumulated total simultaneously. Total can be reset to zero by pressing the CLEAR button twice. The accumulated total can register up to 11 digits and is backed-up in EEPROM memory every minute, just as the running total. The measuring unit to be displayed is simply selected through an alphanumeric configuration menu. No adhesive labels have to be put on the outside of the enclosure: a weather proof and user-friendly solution! A wide range of options further enhance this model capabilities, including Intrinsic Safety for hazardous area applications.

Features

- Displays total and accumulated total simultaneously.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Selectable on-screen engineering units: ml, L, m³, GAL, USGAL, kg, lb, bbl or no unit.
- Green/amber LED backlight with adjustable intensity.
- Auto backup of settings and running totals in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).
- Easy configuration with clear alphanumeric display.
- Very compact design for panel mount, wall mount or field mount applications.
- Rugged aluminum or polyamide field mount enclosure IP67 / NEMA 4X.

Application

- Flow measurement where a local totalizer function is required without flow rate or signal re-transmitting functionality. Alternative advanced models: F012, F013, F014, F016 or even more advanced F110 and higher.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Pulse output

- No.

Analog output

- No.

Alarm output

- No.

Communication

- No.

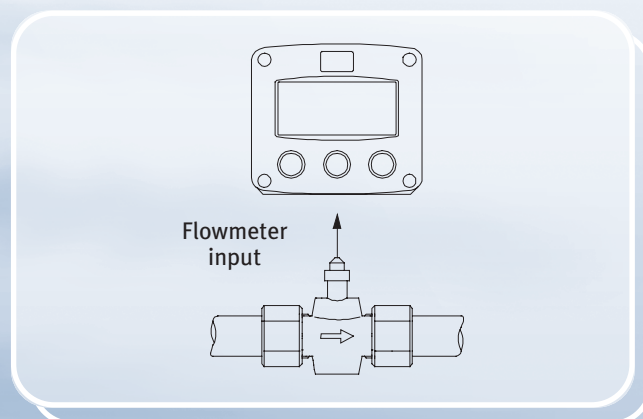
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F012 Flow rate Indicator / Totalizer displays flow rate and total simultaneously

The F012 is our most popular model. This local indicator displays the actual flow rate, total and accumulated total. Total can be reset to zero by pressing the CLEAR button twice. The accumulated total can register up to 11 digits and is backed-up in EEPROM memory every minute, just as the running total. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety for hazardous area applications.

Features

- Displays total and flow rate simultaneously.
- Large digit selection for flow rate or total.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Acc. total - not resettable: eleven 8mm (0.31").
- Green/amber LED backlight with adjustable intensity.
- Auto backup of settings and running totals in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).
- Selectable on-screen engineering units for flow rate: mL, L, m³, mg, g, kg, ton, GAL, bbl, lb, cf, REV, scf, Nm³, NL, P or no unit.
- Selectable on-screen time units for flow rate: /sec, /min, /hour or /day.
- Selectable on-screen engineering units for total: ml, L, m³, GAL, USGAL, kg, lb, bbl or no unit.

Application

- Flow measurement where a local flow rate indication and totalizer function is required without signal re-transmitting. Alternative basic models F010, F011 or more advanced F013, F014, F016, F110 and higher.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Pulse output

- No.

Analog output

- No.

Alarm output

- No.

Communication

- No.

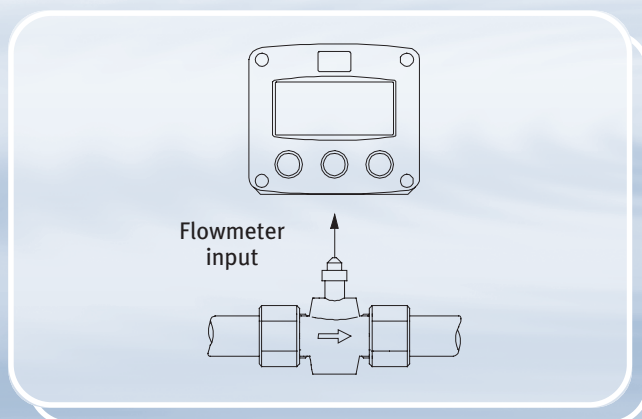
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F013 Flow rate Monitor / Totalizer with one high / low alarm output

The F013 is a versatile flow rate indicator and totalizer with continuous flow rate monitoring feature. It offers the ability to set one low flow rate and one high flow rate alarm value. If desired, an alarm ignore function can be set up to allow for an incorrect flow rate for a certain period of time. The display shows flow rate, total, accumulated total, alarm values and alarm messages. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety.

Features

- Flow rate monitoring: two alarm values can be set: low and high flow rate alarm.
- Alarm values can be changed by the operator or they can be password protected.
- Red flashing LED backlight in case of a flow rate alarm; intensity adjustable.
- Displays clear alarm messages.
- Displays total and flow rate simultaneously.
- Large digit selection for flow rate or total.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Separate engineering units for flow rate and total.
- Auto backup of settings and running totals in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).

Application

- Flow measurement where continuous flow rate monitoring is important without signal re-transmitting. Alternative advanced model: F113 and F118.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (o)4 - 20mA, o - 10V DC.

Pulse output

- No.

Analog output

- No.

Alarm output

- One configurable alarm output for high, low or both alarms.

Communication

- No.

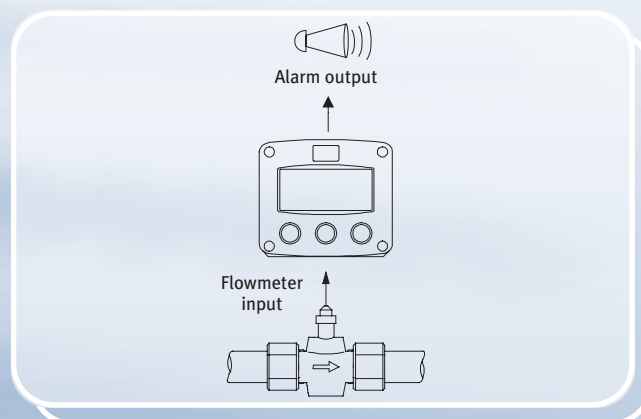
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F014 Flow rate Indicator / Totalizer with pulse output

The F014 is a local indicator which displays the actual flow rate, total and accumulated total. A scaled pulse, related to the accumulated total is generated for re-transmitting the count on the display. Total can be reset to zero by pressing the CLEAR button twice. The accumulated total can register up to 11 digits and is backed-up in EEPROM memory every minute, just as the running total. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety for hazardous area applications.

Features

- Scaled pulse output reflecting accumulated total.
- Displays total and flow rate simultaneously.
- Large digit selection for flow rate or total.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Separate engineering units for flow rate and total.
- Green/amber LED backlight with adjustable intensity.
- Auto backup of settings and running totals in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).
- Easy configuration with clear alphanumeric display.

Application

- Flow measurement where re-transmitting of the totalizer function is required. Alternative more advanced models F016, F110 and higher.

Communication

- No.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Pulse output

- One scaled pulse output according to accumulated total (e.g. one pulse every 3.25 gallons). Max. frequency 500Hz.

Analog output

- No.

Alarm output

- No.

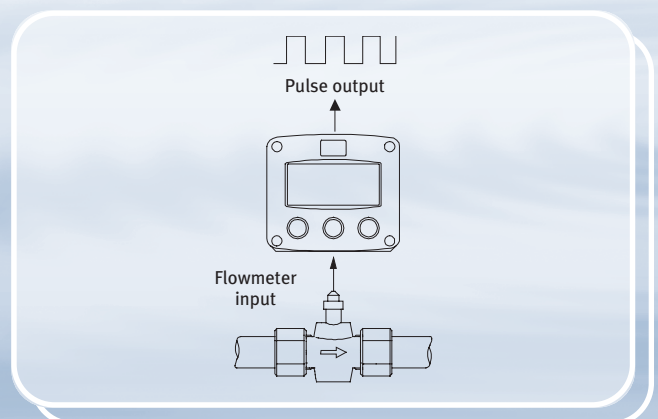
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F016 Flow rate Indicator / Totalizer with linearization and pulse output

The F016 is a local indicator which displays the actual flow rate, total and accumulated total. In addition to the average K-Factor or Span, eight linearization points can be entered with their frequencies or values. The unit will interpolate between these points greatly enhancing accuracy in any flow range, even for very low frequency applications. This linearization affects all displayed information as well as the pulse output. A wide range of options further enhance this model capabilities, including Intrinsic Safety.

Features

- Eight point linearization of the flow curve - with interpolation.
- Displays total and flow rate simultaneously.
- Large digit selection for flow rate or total.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Separate engineering units for flow rate and total.
- Green/amber LED backlight with adjustable intensity.
- Auto backup of settings and running totals in EEPROM memory.
- Operational temperature -40°C to +80°C (-40°F to 178°F).
- Easy configuration with clear alphanumeric display.

Application

- Flow measurement with mechanic flowmeters where a precise calculation over the full measurement range is required. Alternative more advanced model: F112 and F118.

Communication

- No.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Pulse output

- One scaled pulse output according to accumulated total (e.g. one pulse every 3.25 gallons).
Max. frequency 500Hz.

Analog output

- No.

Alarm output

- No.

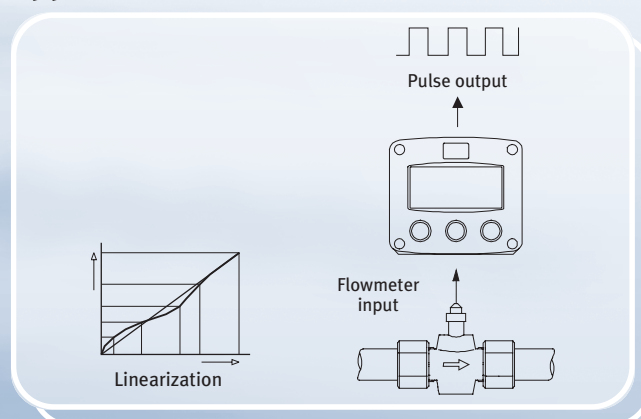
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX, IECEx, CSA and FM approvals available for Intrinsically Safe and non-incendive applications.
- ATEX approval available for explosion proof enclosure.

Application overview



F110 Flow rate Indicator / Totalizer with analog and pulse outputs

The F110 is the most popular model in our range of flow rate / totalizers, complete with pulse and analog output signals. Even demanding applications are catered for with our base unit configuration. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety and full Modbus communication.

Features

- Analog and pulse outputs.
- Modbus communication option.
- Displays total and flow rate simultaneously.
- Large digit selection for flow rate or total.
- Separate engineering units for flow rate and total on the display.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- LED backlight available.

Application

- Flow measurement where re-transmitting of the flow rate or serial communication is required. Alternative basic models: F010, F011, F012, F014. More advanced models F112, F113 and F118.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.
- Analog: (o)4 - 20mA, o - 10V DC.

Display example



Pulse output

- One scaled pulse output according to the accumulated total (e.g. one pulse every 3.25 gallons). Max. frequency 64Hz.

Analog output

- One (o)4 - 20mA / o - 10V DC output to transmit the flow rate. The signal can be scaled to any range, (e.g. from 200 L/min to 1200 L/min).

Alarm output

- No.

Communication

- RS232 / RS485 / TTL. Modbus ASCII / RTU protocol. All process data and settings are accessible.

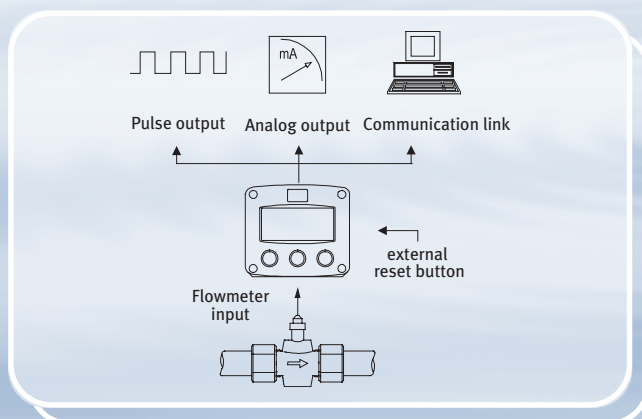
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F111 Dual Input Flow rate Indicator / Totalizer with two pulse outputs

The F111 incorporates two flow rate / totalizers in one enclosure, including a pulse output for each flow. There is no relationship between the flows, even different pulse input types can be used. For each flow, on-screen engineering units are easily configured from a comprehensive selection. The F111 can be set to show the selected information manually or with an automatic toggle function. A wide range of options is available to further enhance this model capabilities, including Intrinsic Safety and full Modbus communication.

Features

- Two flow rate indicators / totalizers.
- For each flow one scaled pulse output.
- Displays total, flow rate and product I.D. simultaneously.
- Large digit selection for flow rate or total.
- Flow rates: seven 17mm (0.67") or 8mm (0.31") digits.
- Totals - resettable: seven 17mm (0.67") digits.
- Accumulated totals - not resettable: eleven 8mm (0.31") digits.
- Separate engineering units for all flow rates and totals on the display.
- LED backlight available.

Application

- For applications where two indicators are required but one single and compact enclosure is desired. Alternative basic model: two separate F014s.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.
- Analog: (o)4 - 20mA, 0 - 10V DC.

Display example



Pulse outputs

- Two scaled pulse outputs according to the accumulated totalizers (e.g. one pulse every 3.25 gallons and a pulse every 50.0 liters). Max. frequency 64Hz.

Analog output

- No.

Alarm output

- No.

Communication

- RS232 / RS485 / TTL. Modbus ASCII / RTU protocol. All process data and settings are accessible.

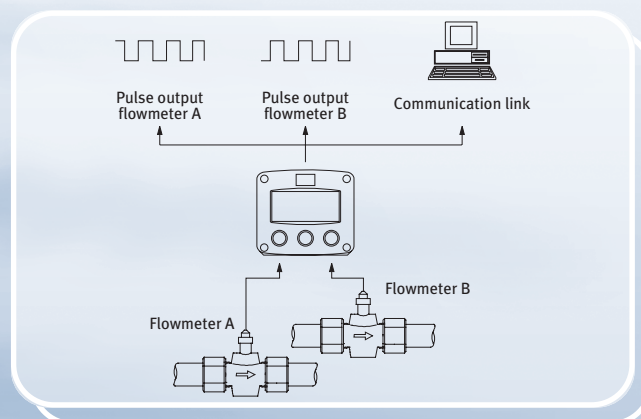
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F112 Flow rate Indicator / Totalizer with linearization and analog / pulse outputs

The F112 provides very precise linearization of the flowmeter signal. In addition to the average K-Factor or Span, fifteen linearization points can be entered with their frequencies or values. The unit will interpolate between these points greatly enhancing accuracy in any flow range, even for very low frequency applications. This linearization affects all displayed information as well as the output signals. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety and full Modbus communication.

Features

- Fifteen point linearization of the flow curve - with interpolation.
- Analog and pulse outputs.
- Displays total and flow rate simultaneously.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Large display selection for flow rate or total.
- LED backlight available.

Application

- Flow measurement with flowmeters where a precise calculation over the full measurement range is required as well as re-transmitting the flow rate or serial communication. Alternative basic model: F016 or more advanced model F118.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.
- Analog: (0)4 - 20mA, 0 - 10V DC.

Display example



Pulse output

- One scaled pulse output according to the accumulated total (e.g. one pulse every 3.25 gallons). Max. frequency 64Hz.

Analog output

- One (0)4 - 20mA / 0 - 10V DC output to transmit the flow rate. The signal can be scaled to any range (e.g. from 200 L/min to 1200 L/min).

Alarm output

- No.

Communication

- RS232 / RS485 / TTL. Modbus RTU protocol. All process data and settings are accessible.

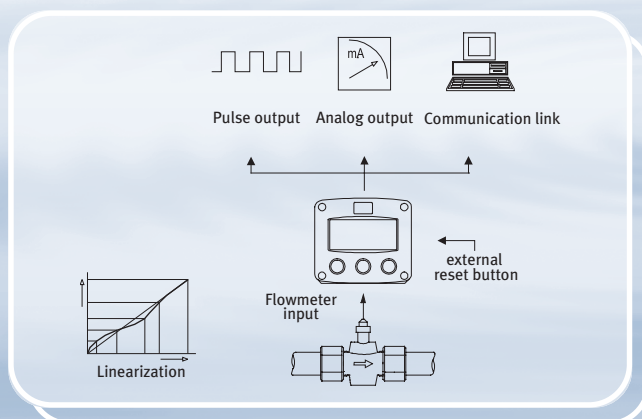
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F113 Flow rate Monitor / Totalizer with high / low alarm, analog and pulse outputs

The F113 is a versatile flow rate indicator and totalizer with continuous flow rate monitoring feature. It offers the ability to set two low flow rate and two high flow rate alarm values. If desired, an alarm ignore function can be set up to allow for an incorrect flow rate for a certain period of time. Up to five outputs are available to transmit the flow rate, alarm conditions and accumulated total. The display shows flow rate, total, accumulated total, alarm values, alarm messages and status. A wide range of options further enhance this model capabilities, including Intrinsic Safety and full Modbus communication.

Features

- Flow rate monitoring: four alarm values can be set: low-low, low, high and high-high flow rate alarm.
- Alarm values can be changed by the operator or they can be password protected.
- Displays clear alarm messages.
- Up to four configurable alarm or scaled pulse outputs.
- Analog output related to the flow rate.
- Flow rate: seven 17mm (0.67") or 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven digits.

Application

- Liquid flow measurement where continuous flow rate monitoring is important. Also re-transmitting of the flow rate and/or totalizer functions or serial communication is required. Alternative basic model: F013 or more advanced model F118.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.
- Analog: (o)4 - 20mA, o - 10V DC.

Display example



Pulse outputs

- Up to four scaled pulse outputs related to accumulated total: (e.g. one pulse every 3.25 gallons). Max. frequency 64Hz.

Analog output

- One (o)4 - 20mA / o - 10V DC output to transmit the flow rate. The signal can be scaled to any range (e.g. from 200 L/min to 1200 L/min).

Alarm outputs

- Up to four configurable alarm outputs for low-low, low, high, high-high or any combination.

Communication

- RS232 / RS485 / TTL. Modbus ASCII / RTU protocol. All process data and settings are accessible.

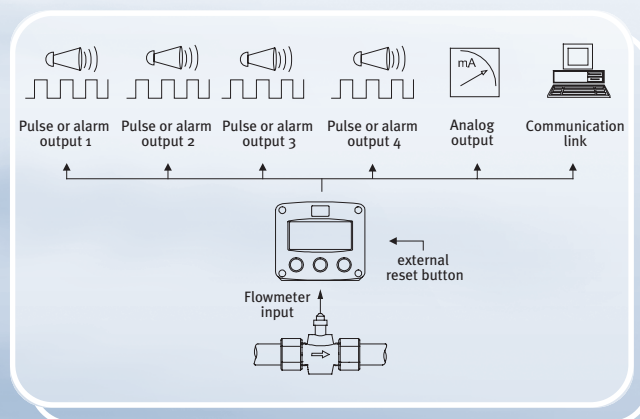
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F115 Bi-Directional Flow rate Indicator / Totalizer with analog, pulse signal and flow direction outputs

The F115 has been developed for applications where the direction of flow is an issue. It is required to offer two pulse signals from the flowmeter which are 90° or 270° degrees out of phase. In case of a reverse flow, the flow rate will be displayed as a negative value, the totalizers will count down and a switch output will be set. The pulse and analog outputs reflect both flow directions. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities, including Intrinsic Safety and full Modbus communication.

Features

- Quadrature input to detect the direction of flow.
- Total and accumulated total count up and count down reflecting the direction of flow.
- Displays total and flow rate simultaneously.
- Flow rate: six 17mm (0.67") or 8mm (0.31") digits.
- Displays positive and negative flow rate reflecting the direction of flow.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.

Application

- Bi-directional flow measurement applications (e.g. by loading / unloading of ships) or the correction for back-flow due to shocks in a pipeline caused by piston pumps.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.

Communication

- RS232 / RS485 / TTL. Modbus ASCII / RTU protocol. All process data and settings are accessible.

Display example



Pulse outputs

- One scaled pulse output according to the bi-directional accumulated total (e.g. one pulse every 3.25 gallons). Max. frequency 64Hz. A second output is switched as soon as the pulse output reflects a "negative" quantity.

Analog output

- One (0)4 - 20mA / 0 - 10V DC output to transmit the positive and/or negative flow rate (e.g. from +40 L/min to +600 L/min and from -40 L/min to -600 L/min) or positive flow rates only.

Alarm output

- No.

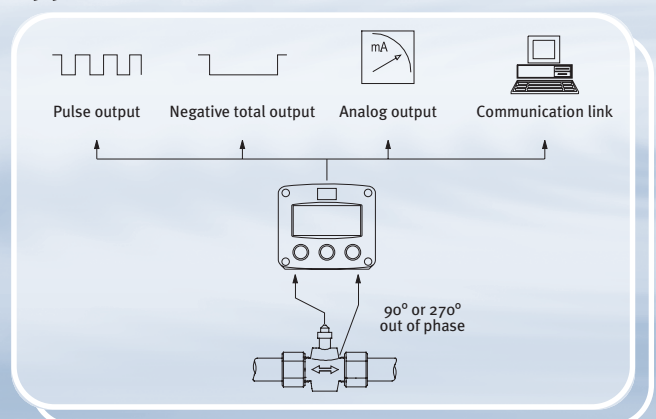
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F117 Totalizer Monitor with high / low totalizer alarm and analog output

The F117 has been developed for applications where the totalized quantity has to be monitored and not the flow rate. When a start command is given, the totalizer is reset to zero. The amount of product measured from that moment is monitored continuously for high totalizer values. Monitoring for low totalizer values will commence after a stop command is given or after a pre-defined time. The display shows the preset and actual totalized value, percentage and flow rate. The totalizer alarms are clearly indicated and two outputs are available to transmit alarm conditions. The analog output value mirrors the measured quantity in relation to the preset value. For remote control, an external start and stop input is available as standard.

Features

- The desired totalized (preset) quantity can be set by the operator
- Totalizer monitoring: two alarm values can be set; low and high totalizer alarm.
- Alarm values can be changed by the operator or they can be password protected.
- Displays total and preset value or percentage simultaneously.
- Displays clear alarm messages.
- Analog output related to the totalized value or flow rate.
- Quadrature input for bi-directional flow applications.
- Total - reset after a start-command: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven 8mm (0.31") digits.
- Flow rate: seven 17mm (0.67") digits (shown after stop command).
- LED backlight available.

Application

- Automated processes where a minimum and / or a maximum dispensed quantity has to be monitored continuously.

Display example



Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.

Status input

- External control: start and stop signal.

Analog output

- One (0)4 - 20mA / 0 - 10V output to transmit the flow rate or the totalized quantity in relation to the preset quantity (e.g. from 0.00 L to 2.50 L).

Alarm outputs

- Two alarm outputs for low and high totalizer alarm.

Communication

- RS232 / RS485 / TTL. Modbus RTU protocol. All process data and settings are accessible.

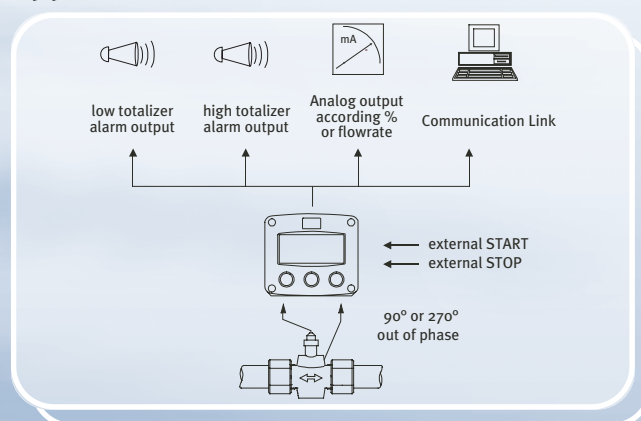
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.

Application overview



F118 Flow rate Monitor / Totalizer with linearization, high / low alarm and analog / pulse output

The F118 is a versatile flow rate indicator and totalizer with the ability to precisely linearize the flowmeter signal. In addition to the average K-Factor or Span, ten linearization points can be entered with their frequencies or values. The unit will interpolate between these points greatly enhancing accuracy in any flow range. Moreover, continuous flow rate monitoring feature is available with high and low flow rate alarm values and alarm outputs. Flow rate and total are transmitted with an analog and scaled pulse output. The display shows flow rate, total, accumulated total and alarm messages. On-screen engineering units are easily configured from a comprehensive selection. A wide range of options further enhance this model capabilities.

Features

- Ten point linearization of the flow curve - with interpolation.
- Flow rate monitoring: two alarm values can be set: low and high flow rate alarm.
- Alarm values can be changed by the operator or they can be password protected.
- Up to three configurable alarm or scaled pulse outputs.
- Analog output reflecting the flow rate.
- Displays total and flow rate simultaneously.
- Flow rate: seven 8mm (0.31") digits.
- Total - resettable: seven 17mm (0.67") digits.
- Accumulated total - not resettable: eleven digits.

Application

- Liquid flow measurement with flowmeters where a precise calculation over the full measurement range and continuous flow rate monitoring is required. Alternative basic models: Fo16 and F112.

Flowmeter input

- Pulse: sine wave (coil), reed-switch, NPN, PNP, Namur, active pulse signal.
- Analog: (o)4 - 20mA, o - 10V DC.

Display example



Pulse outputs

- Up to three scaled pulse outputs according to accumulated total (e.g. one pulse every 3.25 gallons). Max. frequency 64Hz.

Analog output

- One (o)4 - 20mA / o - 10V DC output to transmit the flow rate. The signal can be scaled to any range (e.g. from 200 L/min to 1200 L/min).

Alarm outputs

- Up to three configurable alarm outputs for low, high or any combination.

Communication

- RS232 / RS485 / TTL. Modbus RTU protocol. All process data and settings are accessible.

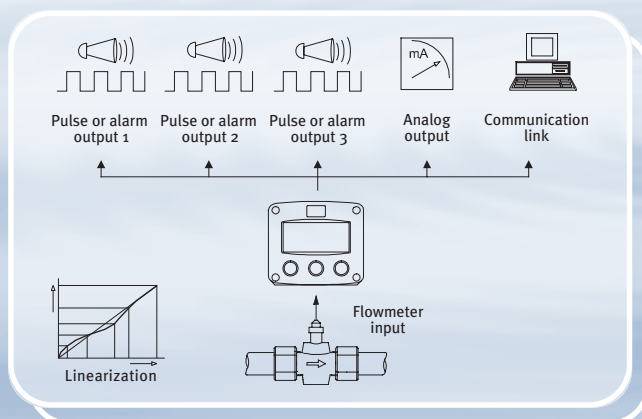
Power supply

- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC. Sensor supply 3.2, 8.2, 12 or 24V DC.

Hazardous area

- ATEX approval available for Intrinsically Safe and explosion proof applications.


Application overview



ORDERING CODES







This section describes the options and ordering codes of all F-Series products.



The  symbol indicates if the function is available Intrinsically Safe. The table on the following pages shows which options are available for each product. As it is our policy to improve our products continuously, it is advised to check the datasheets on our website www.fluidwell.com for up-to-date information about the latest options available.

Sensor input signal




This is the primary signal input type of the device. The configuration menu of each product allows you to select and adjust the signal parameters, without any sensitive mechanical DIP-switches, jumpers or trimmers. The analog input version “type A” is also available as 4 - 20mA input loop powered display (power supply type PL).

A		(0)4 - 20mA sensor input for flow, level, pressure and temperature measurement.
H		Thermocouple input for temperature measurement. Available types: check the latest datasheets.
P		Pulse input for flow applications. Signal types: sine wave (coil), NPN, PNP, reed switch, Namur and active signals. For most signals a low pass filter can be enabled.
T		PT100 (PRTD) input for temperature measurement, suitable for 2 or 3 wire (Fo: 4 wire as well).
U		0 - 10V DC sensor input for flow, level, pressure and temperature measurement.
X		No primary signal input (model F193 only).



Analog output signal

Available for the F1-Series only: related to the actual flow, level, height, pressure, temperature, percentage, ratio, consumption, differential or sum, position, energy or as control output. *Note: an active analog output comes with an active transistor output type OA and requires a power supply option type PD, PF or PM.*

AA		Active 4 - 20mA analog output - requires OA + PD, PF or PM.
AB		Active 0 - 20mA analog output - requires OA + PD, PF or PM.
AF		Passive floating 4 - 20mA analog output for Intrinsically Safe applications - requires PC, PD or PL.
AI		Passive isolated 4 - 20mA analog output - requires PB, PD, PF, PL or PM.
AP		Passive 4 - 20mA analog output signal. Output loop powered which means that the unit will be powered through this loop (comes with type PX as standard).
AU		Active analog output 0 - 10V DC - requires OA + PD, PF or PM.
AX		No analog output.



Communication

Available for the F1-Series only: all process data, settings and functions can be read, modified and controlled through the Modbus RTU / ASCII communication link. The selectable communication speed is 1200, 2400, 4800 or 9600 baud and 255 addresses can be assigned. Full Modbus functionality remains available for the Intrinsically Safe version (TTL). *Note: some models do not support Modbus ASCII.*

CB	RS232 - Modbus communication. Maximum cable length 15 meters (50 feet), no multi drop (1:1).
CH	RS485 - 2 wire - Modbus communication. Maximum cable length 1200 meters (3,937 feet), multi drop (1:n).
CI	RS485 - 4 wire (RS422) - Modbus communication. Maximum cable length 1200 meters (3,937 feet), multi drop (1:n).
CT	TTL (RS232 compatible) - Modbus communication, Intrinsically Safe only. No multi drop (1:1). Cable length: the normal RS232 limitations of bandwidth versus cable length are applicable. As a rule of thumb, speed (baud) x length (meters) < 15,000.
CX	No communication option.

Flow equations

The flow computers F126 and F127 use generic formulas for corrected gas and liquid volume.

EG	Formula for gas applications with temperature and pressure compensation.
EL	Formula for liquid applications with temperature compensation.
EX	No flow equations option.





Enclosures

Various types of enclosures are available for hazardous and safe area applications. The enclosures have recently been redesigned with a new keyboard and sealing to make them suitable for even the most harsh environments and to improve the operation. All enclosures have stainless steel screws. The aluminum enclosures are painted with a high quality UV stabilized two component industrial paint. The GRP enclosures (Glass-fiber Reinforced Polyamide) are UV stabilized and offer Vo acc. to UL94. New stainless steel accessories are available for wall and pipe mounting of the field enclosures (see section Accessories).

HA	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 2 x PG9 and 1 x M20.
HB	Panel mount enclosure	IP65 / NEMA 4	Aluminum	
HC	Panel mount enclosure	IP65 / NEMA 4	GRP	
HD	Field / wall mount enclosure	IP67 / NEMA 4X	GRP	Cable entry: no holes.
HE	Field / wall mount enclosure	IP67 / NEMA 4X	GRP	Cable entry: 2 x 16mm and 1 x 20mm.
HF	Field / wall mount enclosure	IP67 / NEMA 4X	GRP	Cable entry: 1 x 22mm (0.866").
HG	Field / wall mount enclosure	IP67 / NEMA 4X	GRP	Cable entry: 2 x 20mm.
HH	Field / wall mount enclosure	IP67 / NEMA 4X	GRP	Cable entry: 6 x 12mm.
HM	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 2 x M16 and 1 x M20.
HN	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 1 x M20.
HO	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 2 x M20.
HP	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 6 x M12.
HT	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 1 x 1/2" NPT.
HU	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: 3 x 1/2" NPT.
HZ	Field / wall mount enclosure	IP67 / NEMA 4X	Aluminum	Cable entry: no holes.



Inputs - additional pressure or switch input

Available for the F1-Series only: several products offer or require additional inputs with following functionality:

IA		(0)4 - 20mA input for pressure measurement.
IB		Additional reset input to zero the totalizer.
IU		0 - 10V DC input for pressure measurement.
IX		No additional input.





Outputs - alarm / pulse / control

Following switch output(s) are related to the totalizer (scaled pulse or alarm output), high / low alarms for flow, level, pressure or temperature or control outputs for the batch controllers. The Fo-Series offers maximum one output. The F1-Series maximum of four outputs, however in case of an Intrinsically Safe application a maximum of two outputs are available. Except the passive transistor (type OT), all output types require a power supply option type PD, PF or PM. For detailed information please consult the product datasheet.

OA		Active 24V transistor output(s), requires type PD, PF or PM. (F1-Series also: AA, AB or AU), max load: 50mA @ 24V DC.
OR		Mechanical SPST relays - isolated, requires type PF or PM, max. load 1A - 230V AC.
OS		Four mechanical SPST relays - isolated, requires type PD, max. load 1A - 230V AC.
OT		Passive transistor output(s), max. load 300mA @ 50V DC, (Intrinsically Safe max. 30V DC 100mA) per output.
OX		No output.





Power supply

To power the F-Series, several power supply options are available. For detailed information please consult the datasheet of the product.

PB		Long life lithium battery - only one battery required.
PC		Intrinsically Safe lithium battery - only one battery required.
PD		16 - 24V DC power supply with limited sensor supply capabilities.
PF		24V AC / DC power supply with full sensor supply.
PL		Input loop powered, the unit is powered through the 4 - 20mA signal input.
PM		115 - 230V AC power supply with full sensor supply.
PX		Sensor supply not available. Fo-Series can be powered with 8 - 30V DC. F1-Series can be powered by output loop (type AP), voltage: 8 - 30V DC.

Temperature - additional inputs






Available for the F1-Series only: several products require additional inputs with following functionality.

TA		(0)4 - 20mA input for temperature measurement.
TP		PT100 input for temperature measurement - 2 or 3 wire.
TU		0 - 10V DC input for temperature measurement.
TX		No additional input.








Hazardous area

All models can be supplied Intrinsically Safe with ATEX Certification. For the Fo-Series IECEx, CSA and FM approval as well as non-incendive approval are expected to become available during 2006. For detailed information and latest information, please consult the datasheet and certificate of the product.

XF		ATEX - EExd flameproof enclosure  II 2 GD EEx d IIB T ₅ .
XI		ATEX - Intrinsically Safe:  II 1 GD EEx ia IIB/IIC T ₄ T ₁₀₀ °C.
XN		Non incendive: Expected fourth quarter 2006.
XX		Safe area application.

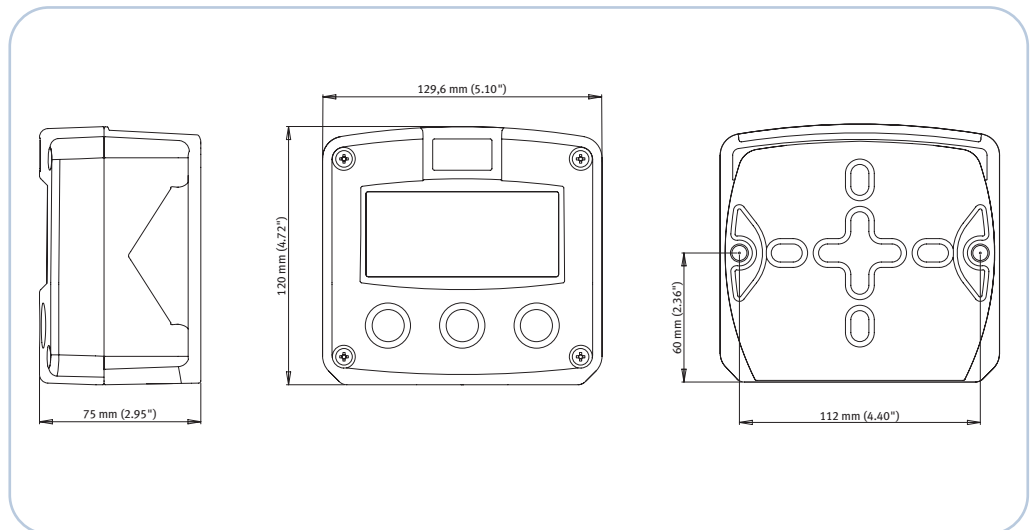
Other options

Several other options are listed below. Please be aware that more than one of these options can be selected.

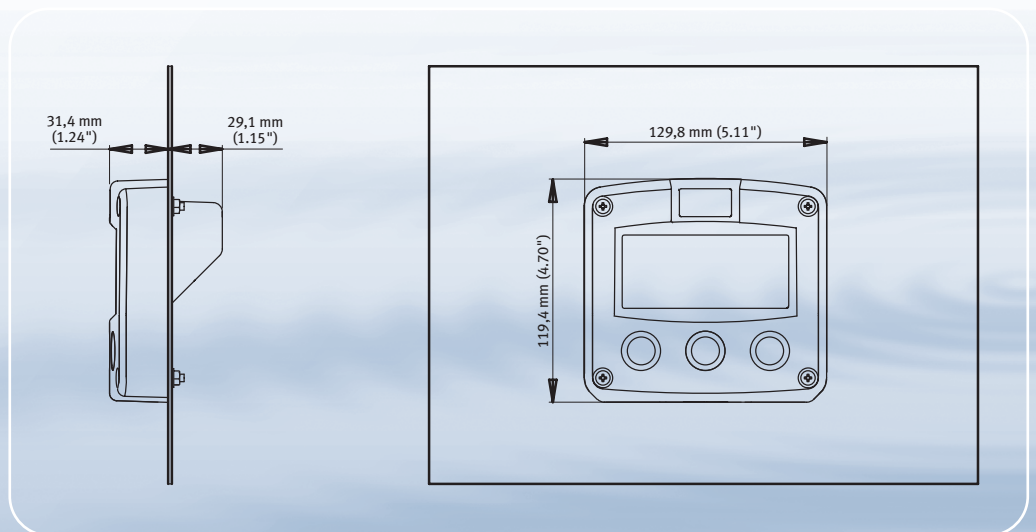
ZB		Bi-color backlight green/amber. In case of a monitoring application, the backlight can be set to switch to red in case of an alarm condition. <i>Note: for the F1-Series, only a green backlight for safe area applications is available at this moment.</i>
ZF		Extra high sensitivity for the sine wave (coil) input 10mV p-p.
ZG		Very high sensitivity for the sine wave (coil) input 5mV p-p.
ZV		PT100 (PRTD) range -200°C to +800°C (-328°F to +1472°F).
ZX		No additional option.

ENCLOSURES

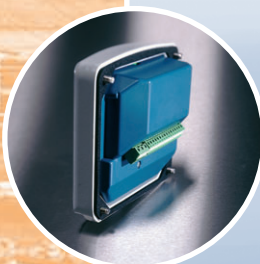
The following pages contain dimensional drawings of the F-Series enclosures and mounting accessories.



Field / wall mount enclosures, IP67 / NEMA4X

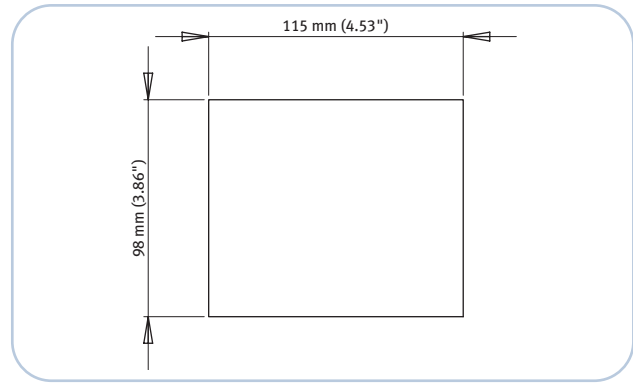


Panel mount enclosures, IP65 / NEMA4



Panel mounting

A major advantage of using the F-Series as a panel mount unit is the minimum depth clearance required. This allows a small box being used compared to many other panel mount devices.



Panel mount cut-out dimensions

Panel cut-out

The panel cut-out can be rectangle where the four bolts will be located in the corners.



Mounting the enclosure in a panel

The enclosure is supplied with four stainless steel bolts, O-rings, washers and nuts.



F-Series mounted in the cabinet

After installing the unit, the thick silicon gasket does assure a proper sealing.

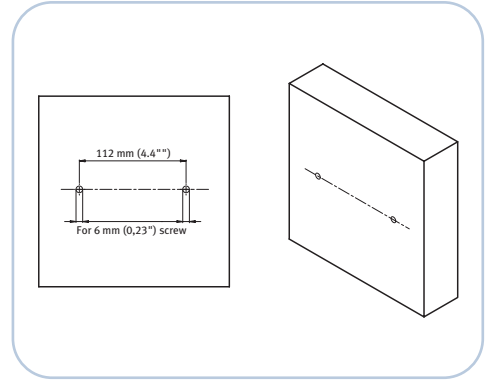


Wall mounting

The F-Series enclosures can be mounted onto the wall in two ways: with and without a mounting plate. Proper screws or bolts have to be used as the weight of the aluminum enclosure is about 1kg and the GRP enclosure about 0.5 kg.

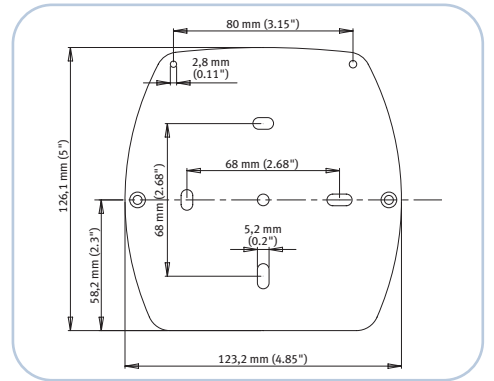
Mounting **without** a mounting plate;

Two holes have to be drilled horizontally to place 6mm (0.23") screws or bolts.



Mounting **with** a mounting plate

The stainless steel mounting plate does make the installation easier. It includes two proper fixed M6 stainless steel bolts with nuts and a large position to fix a tagplate with 3mm (0.11") screws.



Placing the mounting plate

Two or four holes have to be drilled horizontally and/or vertically, suitable for 5mm (0.2") screws or bolts.



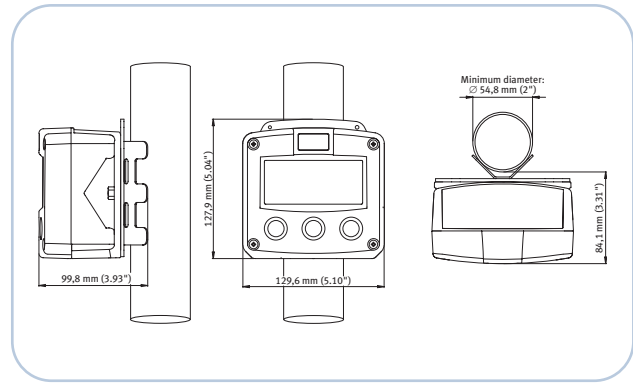
Placing the wall mount enclosure

Simply place the unit and fix it with the two stainless steel washers and M6 nuts provided.



Pipe mounting

The F-Series enclosures can be mounted on any horizontal or vertical pipe from 54,8mm (2") diameter with the stainless steel pipe mounting kit. Proper clamps have to be used as the total weight including the aluminum enclosure is about 1,4 kg and including the GRP enclosure about 0,9 kg. On the top of the mounting plate, a space is provided to place a proper tagplate with 3mm (0.11") screws.



Assembling the pipe mounting kit

The mounting kit includes three stainless steel M5 bolts to fix the pipe mounting bracket horizontally or vertically on the mounting plate. When assembled, the part can easily be fixed on the pipe with the stainless steel worm gear clamps.



Placing the field mount enclosure

Simply place the unit and fix it with the two stainless steel washers and M6 nuts provided.



ACCESSORIES

The following pages contain several accessories, which are available for the F-Series.

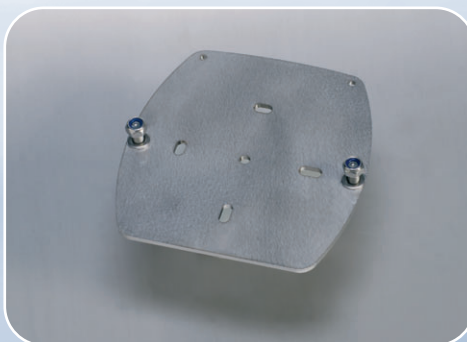


Mounting accessories

ACF02	Stainless steel wall mounting kit includes screws and plugs.
ACF05	Stainless steel pipe mounting kit (worm gear clamps not included).
ACF06	Two stainless steel worm gear clamps Ø 44 - 56mm (1.73" - 2.20").
ACF07	Two stainless steel worm gear clamps Ø 58 - 75mm (2.29" - 2.95").
ACF08	Two stainless steel worm gear clamps Ø 77 - 95mm (3.04" - 3.74").
ACF09	Two stainless steel worm gear clamps Ø 106 - 138mm (4.18" - 5.43").
ACF10	Customized Grevopal tagplates for ACF02 and ACF05, including stainless steel screws. Dimension: 95mm x 12.5mm (3.75" x 0.5").



Stainless steel pipe mounting kit



Stainless steel wall mounting kit

Cable gland accessories

ACF20	for HA enclosure: 2 x PG9, 1 x M20 includes O-rings - IP67 / NEMA 4X.
ACF25	for HE enclosure: 2 x M16, 1 x M20 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF26	for HF enclosure: 1 x M20 includes locknut and O-ring - IP67 / NEMA 4X.
ACF27	for HG enclosure: 2 x M20 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF28	for HH enclosure: 6 x M12 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF32	for HM enclosure: 2 x M16, 1 x M20 - includes O-rings - IP67 / NEMA 4X.
ACF33	for HN enclosure: 1 x M20 - includes O-ring - IP67 / NEMA 4X.
ACF34	for HO enclosure: 2 x M20 - includes O-rings - IP67 / NEMA 4X.
ACF35	for HP enclosure: 6 x M12 - includes O-rings - IP67 / NEMA 4X.
ACF39	for HT enclosure: 1 x 1/2" NPT - includes O-ring - IP67 / NEMA 4X.
ACF40	for HU enclosure: 3 x 1/2" NPT - includes O-rings - IP67 / NEMA 4X.



Cable glands

Blind plug accessories

ACF50	for HA enclosure: 2 x PG9, 1 x M20 includes O-rings - IP67 / NEMA 4X.
ACF55	for HE enclosure: 2 x M16, 1 x M20 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF56	for HF enclosure: 1 x M20 includes locknut and O-ring - IP67 / NEMA 4X.
ACF57	for HG enclosure: 2 x M20 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF58	for HH enclosure: 6 x M12 includes locknuts and O-rings - IP67 / NEMA 4X.
ACF62	for HM enclosure: 2 x M16, 1 x M20 - includes O-rings - IP67 / NEMA 4X.
ACF63	for HN enclosure: 1 x M20 - includes O-ring - IP67 / NEMA 4X.
ACF64	for HO enclosure: 2 x M20 - includes O-rings - IP67 / NEMA 4X.
ACF65	for HP enclosure: 6 x M12 - includes O-rings - IP67 / NEMA 4X.
ACF69	for HT enclosure: 1 x 1/2" NPT - includes O-rings - IP67 / NEMA 4X.
ACF70	for HU enclosure: 3 x 1/2" NPT - includes O-rings - IP67 / NEMA 4X.



Blind plugs

Intrinsically Safe isolators accessories

Ordering code		Description	Hazardous area	Safe area
ACG01	MTL5011B	One channel pulse or switch output transfer from hazardous area to safe area, including power supply.	type OT: passive transistor	1 mechanic make-and-break relay
ACG02	MTL5025	One channel power supply from safe area to hazardous area (e.g. to power the unit with type PD or to power a switching or analog device in hazardous area).	device to be powered	20 - 35V DC
ACG03	MTL5042	One channel 4 - 20mA repeater from hazardous area to safe area, including power supply.	type AP / AF: passive analog output	floating 4 - 20mA
ACG04	MTL5051	Bi-direction serial-data isolator (for Modbus communication).	type CT: TTL	RS232, RS422 or TTL
ACG05	MTL5018	Two channel pulse or switch output transfer from hazardous area to safe area, including power supply.	type OT: transistor	2 mechanic make-and-break relays
ACG06	MTL5012	One channel pulse or switch output transfer from hazardous area to safe area, including power supply.	type OT: passive transistor	floating solid state
ACG07	MTL5045	One channel isolated driver bringing 4 - 20mA from safe area to hazardous area, including power supply.	active 4 - 20mA	4 - 20mA



MTL isolators



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