Features
- Large display shows preset value and running batch value simultaneously.
- Self-learning overrun correction.
- Easy operation to enter a batch value and to control the process.
- Count-up and count-down function available.
- Selectable on-screen engineering units; volumetric or mass.
- Ability to process all types of flowmeter signals.
- Operational temperature -40°C up to +80°C (-40°F up to 178°F).
- Rugged aluminum field mount enclosure IP67/NEMA4X.
- Intrinsically Safe - ATEX, IECEx and CSA approval for gas and dust applications.
- Explosion/flame proof II 2 GD EEx d IIB T5.
- LED backlight option.
- Loop or battery powered, 8 - 24V AC/DC or 115 - 230V AC power supply.
- Sensor supply 3.2 / 8.2 / 12 / 24V DC.

Signal output
- One control output for one-stage batching.

Signal input
Flow
- Reed-switch.
- NAMUR.
- NPN/PNP pulse.
- Sine wave (coil).
- Active pulse signals.
- (0)4 - 20mA.
- 0 - 10V DC.

Applications
- For batching small up to very large quantities. Single or repeating batches.
- Alternative more sophisticated models: F130 - F131, F136 and 300 series.
**General information**

**Introduction**
The F030 is a straightforward but basic Batch Controller. The operator can enter a batch quantity easily or execute repeating batches. During the batch, the preset value is displayed as well as the batched (or remaining) quantity and the units of measurement. The automatic self-learning overrun correction will ensure an accurate result each batch again. A wide selection of options further enhance this model's capabilities, including Intrinsic Safety.

**Display**
The display has large 17mm (0.67") and 8mm (0.31") digits which are used to display the batched quantity and the preset value simultaneously. On-screen engineering units are easily configured from a comprehensive selection. A seven digit resettable "day total" is available as well as an eleven digit non-resettable accumulated total. All are backed-up in EEPROM memory every minute. A smart display update function achieves a readable display even at -40°C / -40°F.

**Backlight**
For those applications where readability during day and night is an issue, a bi-color backlight is available. The background color green or amber and the intensity can be adjusted from the keyboard. The display is a transflective type, which means that a high contrast reading is guaranteed in full sunlight as well as during the night. This backlight option is available Intrinsically Safe.

**Configuration**
All configuration settings are accessed via a simple operator menu which can be pass-code protected. Each setting is clearly indicated with an alphanumerical description, therefore avoiding confusing abbreviations. 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 in the event of sudden power failure.

**Control output**
One output is available for one stage control of smaller batch volumes. The output signal can be a passive NPN or an active PNP transistor, or an isolated electro-mechanical relay.

**Signal input**
The F030 will accept most pulse and analog input signals for flow or mass flow measurement. The input signal type can be selected by the user in the configuration menu without having to adjust any sensitive mechanical dip-switches, jumpers or trimmers. The analog input version is even available as 4 - 20mA input loop powered display.

**Power supply**
Several power supply options are available to power the F030 and sensor. A battery powered version with a long life lithium battery which will last up to five years. For analog sensors, a 4 - 20mA loop powered version is available as well. A real sensor supply is offered with the 24V AC / DC or 115 - 230V AC power supply option.

**Hazardous area**
For hazardous area applications, this model has been ATEX, IECEx and CSA certified Intrinsically Safe for gas and dust applications, with an allowed operational temperature of -40°C to +70°C (-40°F to +158°F). FM certification is expected to be available in 2009. A flame proof enclosure with ATEX certification offers the rating II 2 GD EEx d IIB T5.

**Enclosures**
Various types of enclosures can be selected, all ATEX, IECEx and CSA approved. As standard the F030 is supplied in an GRP panel mount enclosure. Most popular is our aluminum field mount enclosure with IP67 / NEMA 4X rating. Both European or U.S. cable gland entry threads are available.

**Overview application F030**

- **Flowmeter input**
- **Control output**
Dimensions enclosures
Aluminum & GRP panel mount enclosure

Terminal connections power supply
PB/PC - PD - PL - PX

Terminal connections power supply PF - PM
**Typical wiring diagram F030-P-OT-PB-(PX)-(ZB)**

**Type PB:** BATTERY POWERED

- Backlight option: type ZB (not used in this example)
  - e.g. relay
  - 8 - 30V DC
- Control output type OT: passive transistor
- Power supply type PX: 8 - 30V DC (not used in this example)

* Sensor supply voltage for pulse flowmeter type P:
  Terminal 3: 1.2 / 3.2V DC.
* Sensor supply voltage for analog flowmeter type A / U:
  Termina 3: not available.

**Typical wiring diagram F030-A-OT-PX-ZB**

**Type PX:** BASIC 8 - 30V DC POWER SUPPLY (STANDARD)

- Backlight option: type ZB
  - 20 - 30V DC
- Control output type OT: passive transistor
- Power supply type PX: 8 - 30V DC

* Sensor supply voltage for pulse flowmeter type P:
  Terminal 3: 1.2 / 3.2 V DC.
* Sensor supply voltage for analog flowmeter type A / U:
  Termina 3: not available.

**Typical wiring diagram F030-A-OT-PL-(ZB)**

**Type PL:** INPUT LOOP POWERED

- Backlight option: type ZB (not used in this example)
  - e.g. relay
  - 8 - 30V DC
- Control output type OT: passive transistor
- Flowmeter input type A - PL:
  Input loop powered 4 - 20mA

Sensor supply: sensor is externally powered.

**Typical wiring diagram F030-P-OT-PD-ZB**

**Type PD:** 16 - 30V DC POWER SUPPLY

- Backlight option: type ZB
  - 16 - 30V DC
- Control output type OT: passive transistor
- Sensor supply type PD: 16 - 30V DC
- Flowmeter input type P:
  pulse

* Sensor supply voltage for pulse flowmeter type P:
  Terminal 3: 1.2 / 3.2V DC. Terminal 6 with type PD: 8.2V DC.
* Sensor supply voltage for analog flowmeter type A / U:
  Termina 3: not available. Terminal 6 with type PD: voltage as connected to terminal 5 (internally linked).
**Typical wiring diagram F030-P-OA-PF-ZB**

**Terminal Connectors**
- **Type PF:**
  - 24V AC / DC Power Supply

**Backlight Option:** Type ZB
- Internally powered.

**Flowmeter Input**
- Type P: Pulse

**Control Output**
- Type OA: Active 24V DC Signal

**Supply**
- 7: Common ground
- 8: Signal
- 9: Power Supply Type PF: 8 - 24V AC / DC
- 10: Control Output Type OA: Active 24V DC Signal

**Main Supply**
- 11: 24V AC
- 12: Earth

**Sensor Supply Voltage**
- For Pulse Flowmeter Type P:
  - Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC

*Sensor supply voltage for pulse flowmeter type P: Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.*

*Sensor supply voltage for analog flowmeter type A / U: Terminal 7: 8.2 / 12 / 24V DC.*

---

**Typical wiring diagram F030-P-OR-PF-ZB**

**Terminal Connectors**
- **Type PF:**
  - 24V AC / DC Power Supply

**Backlight Option:** Type ZB
- Internally powered.

**Flowmeter Input**
- Type A: (0) 4 - 20mA

**Control Output**
- Type OR: Mechanic Relay

**Supply**
- 7: Common ground
- 8: Signal
- 9: Power Supply Type PF: 8 - 24V AC / DC
- 10: Control Output Type OR: Mechanic Relay

**Main Supply**
- 11: 24V DC
- 12: Earth

**Sensor Supply Voltage**
- For Pulse Flowmeter Type P:
  - Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.

*Sensor supply voltage for pulse flowmeter type P: Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.*

*Sensor supply voltage for analog flowmeter type A / U: Terminal 7: 8.2 / 12 / 24V DC.*

---

**Typical wiring diagram F030-A-OA-PM-ZB**

**Terminal Connectors**
- **Type PM:**
  - 115 - 230V AC Power Supply

**Backlight Option:** Type ZB
- Internally powered.

**Flowmeter Input**
- Type A: (0) 4 - 20mA

**Control Output**
- Type OA: Active 24V DC Signal

**Supply**
- 7: Common ground
- 8: Signal
- 9: Power Supply Type PM: 115 - 230V AC
- 10: Control Output Type OA: Active 24V DC Signal

**Main Supply**
- 11: N
- 12: L1
- 13: Earth

**Sensor Supply Voltage**
- For Pulse Flowmeter Type P:
  - Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.

*Sensor supply voltage for pulse flowmeter type P: Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.*

*Sensor supply voltage for analog flowmeter type A / U: Terminal 7: 8.2 / 12 / 24V DC.*

---

**Typical wiring diagram F030-P-OR-PM-ZB**

**Terminal Connectors**
- **Type PM:**
  - 115 - 230V AC Power Supply

**Backlight Option:** Type ZB
- Internally powered.

**Flowmeter Input**
- Type P: Pulse

**Control Output**
- Type OR: Mechanic Relay

**Supply**
- 7: Common ground
- 8: Signal
- 9: Power Supply Type PM: 115 - 230V AC
- 10: Control Output Type OR: Mechanic Relay

**Main Supply**
- 11: N
- 12: L1
- 13: Earth

**Sensor Supply Voltage**
- For Pulse Flowmeter Type P:
  - Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.

*Sensor supply voltage for pulse flowmeter type P: Terminal 7: 1.2 / 3.2 / 8.2 / 12 / 24V DC.*

*Sensor supply voltage for analog flowmeter type A / U: Terminal 7: 8.2 / 12 / 24V DC.*
Hazardous area applications

The F030-XI has been certified according ATEX and IECEx by KEMA and according CSA c-us for use in Intrinsically Safe applications with an ambient temperature of -40°C to +70°C (-40°F to +158°F).

- The ATEX markings for gas and dust applications are:
  - II 1 G Ex ia IIC T4
  - II 1 D Ex iaD 20 IP 65/67 T100 °C.
- The IECEx markings for gas and dust applications are: Ga Ex ia IIC T4 and Ex iaD 20 IP 65/67 T100 °C.
- The CSA c-us markings are: Class I/II/III, Division 1, Groups A, B, C, D, E, F, G, Temperature class T4 and Class I, Zone 0, AEx ia IIC T4.
- FM approval is expected to become available in 2009.

It is allowed to connect up to three I.S. power supplies to power the unit, sensor and backlight. The F030-PD-XI offers a 8.2V DC sensor supply to power e.g. a Namur sensor or the input voltage to power an analog sensor.

An ATEX approved flame proof enclosure with rating II 2 GD Ex d IIB T5 is available as well. Please contact your supplier for further details.

Certificate of conformity KEMA 05ATEX1168 X
- IECEx KEM 08.0006X • CSA.08.2059461 X

Configuration example IIA - IIB and IIC - F030-P-OT-PC-(PX)-XI-(ZB) - Battery powered unit

<table>
<thead>
<tr>
<th>TERMINAL CONNECTORS</th>
<th>HAZARDOUS AREA</th>
<th>SAFE AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0 - series</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply backlight</td>
<td>Backlight option: type ZB (not used in this example).</td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td>Intrinsically Safe apparatus</td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td>Control output type OT: passive transistor</td>
<td></td>
</tr>
<tr>
<td>Main supply</td>
<td>Basic power supply type PX: 8 - 30V DC (not used in this example).</td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td>I.S. flowmeter input type: P pulse</td>
<td></td>
</tr>
</tbody>
</table>

* Sensor supply voltage for pulse flowmeter type P - Terminal 3: 1.2 / 3.2V DC.
Please note: type PX may be used in combination with the battery (type PC). PX will power the unit; the battery will be disabled automatically till power is disconnected.
**Configuration example IIA - IIB and IIC - F030-P-OT-PX-XI-(ZB) - Basic power supply 8 - 30V DC**

- **TERMINAL CONNECTORS**
  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB (not used in this example).
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
    - $I_o = \text{max. } 200mA$
    - $P_o = \text{max. } 1.2W$
    - Power supply or switch interface
    - For example MTL5025 MTL5011B
    - e.g. relay

- **TERMINAL CONNECTORS**
  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
    - $I_o = \text{max. } 200mA$
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    - e.g. relay

- **TERMINAL CONNECTORS**
  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
    - $I_o = \text{max. } 200mA$
    - $P_o = \text{max. } 1.2W$
    - Power supply or switch interface
    - For example MTL5025 MTL5011B
    - e.g. relay

Note: above values are safety values. Consult the technical specification for operational values.

---

* Sensor supply voltage for pulse type P: Terminal 3: 1.2V / 3.2V DC.
Please note: type PX may be used in combination with the battery (type PC). PX will power the unit; the battery will be disabled automatically till power is disconnected.

**Configuration example IIA - IIB and IIC - F030-P-OT-PX-XI-ZB - Basic power supply 8 - 30V DC**

- **TERMINAL CONNECTORS**
  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
    - $I_o = \text{max. } 200mA$
    - $P_o = \text{max. } 1.2W$
    - Power supply or switch interface
    - For example MTL5025 MTL5011B
    - e.g. relay

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  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
    - $I_o = \text{max. } 200mA$
    - $P_o = \text{max. } 1.2W$
    - Power supply or switch interface
    - For example MTL5025 MTL5011B
    - e.g. relay

- **TERMINAL CONNECTORS**
  - **F0 - series**
  - **HAZARDOUS AREA**
    - Backlight option: type ZB
    - Intrinsically Safe apparatus
  - **SAFE AREA**
    - $U_o = \text{max. } 30V$
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    - $P_o = \text{max. } 1.2W$
    - Power supply or switch interface
    - For example MTL5025 MTL5011B
    - e.g. relay

Note: above values are safety values. Consult the technical specification for operational values.

---

* Sensor supply voltage for pulse type P: Terminal 3: 1.2V / 3.2V DC.
Please note: type PX may be used in combination with the battery (type PC). PX will power the unit; the battery will be disabled automatically till power is disconnected.
Configuration example IIA - IIB and IIC - F030-P-OT-PD-XI-ZB - Power supply 16 - 30V DC

I.S. flowmeter
input type: P
pulse

TERMINAL CONNECTORS
F0 - series

12 3
Common ground
Supply

Common ground
Signal
Circuit depends on
type of signal

7 8
Common ground
Main supply
Supply *

9 10
Common ground
Supply backlight

HAZARDOUS AREA

Backlight option: type ZB

Intrinsically Safe apparatus

Control output type OT: passive transistor

Power supply type PD: 16 - 30V DC

I.S. flowmeter input type: P
pulse

SAFE AREA

Power supply
For example
MTL5025

For example
MTL5025
MTL5011B

e.g. relay

Note: above values are safety values.
Consult the technical specification for operational values.

* Sensor supply voltage for pulse type P: Terminal 3: 1.2V / 3.2V DC, Terminal 6: 8.2V DC.
Please note: type PD may be used in combination with the battery (type PC). PD will power the unit; the battery will be disabled automatically till power is disconnected.

Configuration example IIA - IIB and IIC - F030-A-OT-PD-XI-ZB - Power supply 16 - 30V DC

TERMINAL CONNECTORS
F0 - series

12 3
Common ground
Supply

Common ground
Signal
Circuit depends on
type of signal

7 8
Common ground
Main supply
Supply *

9 10
Common ground
Supply backlight

HAZARDOUS AREA

Backlight option: type ZB

Intrinsically Safe apparatus

Control output type OT: passive transistor

Power supply type PD: 16 - 30V DC

I.S. flowmeter input - type A: (0)4 - 20mA

SAFE AREA

Power supply
For example
MTL5025

For example
MTL5025
MTL5011B

e.g. relay

Note: above values are safety values.
Consult the technical specification for operational values.

* Sensor supply voltage for analog flowmeter type A / U: Terminal 6: as input voltage terminal 5 (internally linked).
Please note: type PD may be used in combination with the battery (type PC). PD will power the unit; the battery will be disabled automatically till power is disconnected.
**Configuration example IIA - IIB and IIC - F030-A-OT-PL-XI-ZB - Input loop powered**

**TERMINAL CONNECTORS**

**F0 - series**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common ground</td>
<td>Common ground</td>
<td>Main supply</td>
<td>Control output type OT: passive transistor</td>
<td>I.S. flowmeter input - type A-PL: 4 - 20mA input loop powered.</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HAZARDOUS AREA**

<table>
<thead>
<tr>
<th>Terminal connector</th>
<th>Type of connector</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply backlight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SAFE AREA**

- \( U_o = \text{max. } 30V \)
- \( I_o = \text{max. } 200mA \)
- \( P_o = \text{max. } 0.75W \)

- \( U_o = \text{max. } 30V \)
- \( I_o = \text{max. } 200mA \)
- \( P_o = \text{max. } 1.2W \)

Power supply or switch interface

- For example MTL5025
- MTL5011B
- e.g. relay

- Power supply
- MTL5025

Note: above values are safety values. Consult the technical specification for operational values.

Sensor supply is not available: unit is input loop powered (type PL).

Please note: type PL may be used in combination with the battery (type PC). PL will power the unit; the battery will be disabled automatically till power is disconnected.

**Configuration example IIA - IIB and IIC - F030-A-OT-PX-XI-ZB - Basic power supply 8 - 30V DC**

**TERMINAL CONNECTORS**

**F0 - series**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>5</th>
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<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common ground</td>
<td>Common ground</td>
<td>Main supply</td>
<td>Control output type OT: passive transistor</td>
<td>Power supply type PX: 8 - 30V DC</td>
<td>+</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

**HAZARDOUS AREA**

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<td></td>
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<tr>
<td>Signal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common ground</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SAFE AREA**

- \( U_o = \text{max. } 30V \)
- \( I_o = \text{max. } 200mA \)
- \( P_o = \text{max. } 0.75W \)

- \( U_o = \text{max. } 30V \)
- \( I_o = \text{max. } 90mA \)
- \( P_o = \text{max. } 0.92W \)

Power supply

- For example MTL5025

- Power supply or switch interface
- For example MTL5025
- MTL5011B
- e.g. relay

Note: above values are safety values. Consult the technical specification for operational values.

* Sensor supply voltage for analog flowmeter type A / U: not available in this example.

Please note: type PX may be used in combination with the battery (type PC). PX will power the unit; the battery will be disabled automatically till power is disconnected.
### Technical specification

#### Display

**Type**
High intensity reflective numeric and alphanumeric LCD, UV-resistant.

**Dimensions**
90 x 40mm (3.5” x 1.6”).

**Digits**
Seven 17mm (0.67”) and eleven 8mm (0.31”) digits. Various symbols and measuring units.

**Refresh rate**
User definable: 8 times/sec. - 30 secs - off.

**Option ZB**
Transflective LCD with bi-color LED-backlight; green / amber. Intensitiy and color selected trough the keyboard. Good readings in full sunlight and darkness. Also available Intrinsically Safe.

#### Operating temperature

**Standard unit**
-40°C to +80°C (-40°F to +178°F).

**Intrinsically Safe**
-40°C to +70°C (-40°F to +158°F).

#### Power requirements

**Type PB**
Long life Lithium battery - life-time depends upon settings and configuration - up to 5 years.

**Type PC**
Intrinsically Safe long life lithium battery - life-time depends upon settings and configuration - up to 5 years.

**Type PD**
16 - 30V DC. Power consumption max. 1 Watt.

**Type PF**
24V AC / DC ± 10%. Power consumption max. 15 Watt.

**Type PL**
Input loop powered from sensor signal 4 - 20mA (type A).

**Type PM**
115 - 230V AC ± 10%. Power consumption max. 15 Watt.

**Type PX**
8 - 30V DC. Power consumption max. 0.3 Watt.

**Type ZB**

**Note PB/PF/PM**
The total consumption of the sensor, active output type OA and backlight type ZB may not exceed 400mA @ 24V DC.

**Note**
For Intrinsically Safe applications, consult the safety values in the certificate.

#### Sensor excitation

**Type PB/PC/PX**
3.2V DC for pulse signals and 1.2V DC for coil pick-up.

**Note**
This is not a real sensor supply. Only suitable for sensors with a very low power consumption like coils (sine wave) and reed-switches.

**Type PD**
for pulse signals: 1.2 / 3.2 / 8.2V DC - max. 5mA@8.2V DC. For analog signals, the sensor supply voltage is according to the power supply voltage connected.

**Type PF / PM**
With pulse input: 1.2 / 3.2 / 8.2 / 12 / 24V DC - max. 400mA @ 24V DC.

#### Terminal connections

**Type**
Removable plug-in terminal strip.

**Wire max.**
1.5mm² and 2.5mm².

#### 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.

### Casing

#### General

**Window**
Polycarbonate window.

**Sealing**
Silicone.

**Control keys**
Three industrial micro-switch keys. UV-resistant silicone keypad.

#### Aluminum wall / field mount enclosures

**General**
Die-cast aluminum wall/fi eld mount enclosure IP67 / NEMA 4X with 2-component UV-resistant coating.

**Dimensions**
130 x 120 x 75mm (5.12” x 4.72” x 2.95”) - W x H x D.

**Weight**
1100 gr.

**Type HA**
Cable entry: 2 x PG9 and 1 x M20.

**Type HM**
Cable entry: 2 x M16 and 1 x M20.

**Type HN**
Cable entry: 1 x M20.

**Type HO**
Cable entry: 2 x M20.

**Type HP**
Cable entry: 6 x M12.

**Type HT**
Cable entry: 1 x 1/2” NPT.

**Type HU**
Cable entry: 3 x 1/2” NPT.

**Type HZ**
Cable entry: no holes.

#### GRP wall / field mount enclosures

**General**
GRP wall/fi eld mount enclosure IP67 / NEMA 4X, UV-resistant and flame retardant.

**Dimensions**
130 x 120 x 75mm (5.12” x 4.72” x 2.95”) - W x H x D.

**Weight**
600 gr.

**Type HD**
Cable entry: no holes.

**Type HE**
Cable entry: 2 x Ø 16mm and 1 x Ø 20mm.

**Type HF**
Cable entry: 1 x Ø 22mm (7/8”).

**Type HG**
Cable entry: 2 x Ø 20mm.

**Type HH**
Cable entry: 6 x Ø 12mm.

**Type HJ**
Cable entry: 3 x Ø 22mm (7/8”).

**Type HK**
Flat bottom, cable entry: no holes.

#### Panel mount enclosures

**Dimensions**
130 x 120 x 60mm (5.12” x 4.72” x 2.36” ) - W x H x D.

**Panel cut-out**
115 x 98mm (4.53” x 3.86” ) L x H.

**Type HB**
Die-cast aluminum panel mount enclosure IP65 / NEMA 4.

**Weight**
600 gr.

**Type HC**
GRP panel mount enclosure IP65 / NEMA 4, UV-resistant and flame retardant.

**Weight**
450 gr.

#### ABS wall / field mount enclosures

**General**
Silicone free ABS wall/field mount enclosure IP65 with EPDM and PE sealings. UV-resistant polyester keypad (old HD enclosure).

**Dimensions**
130 x 114 x 71mm (5.1” x 4.5” x 2.8” ) - W x H x D.

**Weight**
450 gr.

**Type HS**
Cable entry: no holes.
Hazardous area

Intrinsically Safe

ATEX certification II 1 G Ex ia IIC T4.

IECEx certification II 1 D Ex iaD 20 IP 65 / 67 T 100 °C.

CSA c-us certification Intrinsically Safe for Class I/II/III, Div. 1,
Groups A, B, C, D, E, F, G, Temp. class T4

Ambient -40°C to +70°C / -40° to +158°F.

Explosion proof

ATEX certification II 2 G Ex d IIB T5.

Type XF Dimensions of enclosure: 300 x 250 x 200mm
(11.8” x 9.9” x 7.9”) L x H x D.

Weight Appr. 15kg.

Environment


Signal input

Flowmeter sensor

Type P 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.

K-Factor 0.0000001 - 9,999,999 with variable decimal position.

Low-pass filter Available for all pulse signals.

Option ZF coil sensitivity 10mVpp.

Option ZG coil sensitivity 5mVpp.

Type A (0)4 - 20mA. Analog input signal can be scaled to any
desired range within 0 - 20mA.

Type U 0 - 10V DC. Analog input signal can be scaled to any
desired range within 0 - 10V DC.

Accuracy Resolution: 16 bit. Error < 0.01mA / ± 0.05% FS.

Span 0.001 / 999,999 with variable decimal position.

Update time Four times per second.

Voltage drop Type A: max. 2V DC @ 20mA.

Type U: 3kΩ.

Load impedance Type A - PL (loop powered): max. 2.6V DC @ 20mA.

Type U: 3kΩ.

Relationship Linear and square root calculation.

Note For signal type A and U: external power to sensor is
required; e.g. type PD.

Control output

Function Control output according the batch process.

Type OA One active 24V DC transistor output (PNP);
load max. 400mA (requires PF or PM).

Type OR One electro-mechanical relay output - isolated;
max. switch power 230V AC (N.O.) - 0.5A
(requires PF or PM).

Type OT One passive transistor output (NPN) - not isolated.
Max. 50V DC - 300mA per output.

Operational

Operator functions

Displayed

- Preset value - can be entered by the operator.
- Batched quantity or remaining quantity.
- Total and accumulated total.
- Total can be reset to zero by pressing the STOP-key

twice.

Preset and total

Digits 7 digits.

Units L, m, GAL, USGAL, KG, lb, bbl, no unit.

Decimals 0 - 1 - 2 or 3.

Note Total can be reset to zero.

Accumulated total

Digits 11 digits.

Units / decimals According to selection for total.

Note Can not be reset to zero.

Accessories

Mounting accessories

ACF02 Stainless steel wall mounting kit.

ACF05 Stainless steel pipe mounting kit (worm gear clamps
not included).

ACF06 Two stainless steel worm gear clamps Ø 44 - 56mm.

ACF07 Two stainless steel worm gear clamps Ø 58 - 75mm.

ACF08 Two stainless steel worm gear clamps Ø 77 - 95mm.

ACF09 Two stainless steel worm gear clamps Ø 106 - 138mm.

ACF10 Customized Grevopal tagplates for ACF02 and ACF05,
including stainless steel screws.

Dimension: 95mm x 12.5mm (3.75” x 0.50”).

Cable gland accessories

ACF20 For HA enclosure, includes O-rings.

ACF25 For HE enclosure, includes locknuts and O-rings.

ACF26 For HF enclosure, includes locknuts and O-rings.

ACF27 For HG enclosure, includes locknuts and O-rings.

ACF28 For HH enclosure, includes locknuts and O-rings.

ACF29 For HJ enclosure, includes locknuts and O-rings.

ACF32 For HM enclosure, includes O-rings.

ACF33 For HN enclosure, includes O-rings.

ACF34 For HO enclosure, includes O-rings.

ACF35 For HP enclosure, includes O-rings.

ACF39 For HT enclosure, includes O-rings.

ACF40 For HU enclosure, includes O-rings.

Display example - 90 x 40mm (3.5” x 1.6”)

Actual

29734

L

Run

63500

Preset

Fluidwell
### Ordering Information

**Standard configuration:** F030-P-HC-OT-XX-ZX.

<table>
<thead>
<tr>
<th>Flowmeter/Pressure/Level/Temperature/Sensor input signal</th>
<th>F030</th>
<th>-</th>
<th>-H</th>
<th>-O</th>
<th>-P</th>
<th>-X</th>
<th>-Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flowmeter input</td>
<td>A &amp; (0)4 - 20mA input.</td>
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<tr>
<td>Pulse input</td>
<td>P &amp; coil, npn, pnp, namur, reed-switch.</td>
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<tr>
<td>0 - 10V DC input.</td>
<td>U</td>
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</tr>
</tbody>
</table>

### Panel mount enclosures - IP65 / NEMA4

- **HB:** Aluminum enclosure.
- **HC:** GRP enclosure.

### GRP field / wall mount enclosures - IP67 / NEMA4X

- **HD:** Cable entry: no holes.
- **HE:** Cable entry: 2 x Ø 16mm & 1 x Ø 20mm.
- **HF:** Cable entry: 1 x Ø 22mm (90°).
- **HG:** Cable entry: 2 x Ø 20mm.
- **HH:** Cable entry: 6 x Ø 12mm.
- **HJ:** Cable entry: 3 x Ø 22mm (90°).
- **HK:** Flat bottom, cable entry: no holes.

### Aluminum field / wall mount enclosures - IP67 / NEMA4X

- **HA:** Cable entry: 2 x PG9 + 1 x M20.
- **HM:** Cable entry: 2 x M16 + 1 x M20.
- **HN:** Cable entry: 1 x M20.
- **HO:** Cable entry: 2 x M20.
- **HP:** Cable entry: 6 x M12.
- **HT:** Cable entry: 1 x ½”NPT.
- **HU:** Cable entry: 3 x ½”NPT.
- **HZ:** Cable entry: no holes.

### ABS field / wall mount enclosures

- **HS:** Silicone free ABS field enclosure IP65 – Cable entry: no holes (old HD enclosure).

### Output

- **OA:** One active transistor output - requires PF or PM.
- **OR:** One mechanical relay output - requires PF or PM.
- **OT:** One passive transistor output - standard configuration.

### Power supply

- **PB:** Lithium battery powered.
- **PC:** Lithium battery powered - Intrinsically Safe.
- **PD:** 16 - 30V DC + sensor supply.
- **PF:** 24V AC / DC + sensor supply.
- **PL:** Input loop powered from sensor signal type “A”.
- **PM:** 115 - 230V AC + sensor supply.
- **PX:** Basic power supply 8 - 30V DC (no real sensor supply).

### Hazardous area

- **XI:** Intrinsically Safe.
- **XF:** EExd enclosure - 3 keys.
- **XX:** Safe area only.

### Other options

- **ZB:** Backlight.
- **ZF:** Coil input 10mVpp.
- **ZG:** Coil input 5mVpp.
- **ZX:** No options.

The bold marked text contains the standard configuration.

@ Available Intrinsically Safe.