Features
• Displays running total and accumulated total.
• Large 17mm (0.67”) digits for resettable total and 8mm (0.31”) for non resettable accumulated total.
• Selectable on-screen engineering units.
• Ability to process all types of flowmeter signals.
• Auto backup of settings and running totals.
• Operational temperature -40°C up to +80°C (-40°F up to 178°F).
• Very compact design for panel mount, wall mount or field mount applications.
• Rugged aluminum field mount enclosure IP67/NEMA4X.
• Intrinsically Safe - ATEX, IECEEx and CSA approval for gas and dust applications.
• Explosion/flame proof II 2 GD Ex d IIB T5.
• Easy configuration with clear alphanumerical display.
• 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 input
Flow
• Reed-switch.
• NAMUR.
• NPN/PNP pulse.
• Sine wave (coil).
• Active pulse signals.
• (0)4 - 20mA.
• 0 - 10V DC.

Applications
• Flow measurement where a local totalizer function is required without flow rate or re-transmission functionality. Alternative advanced models: F012 - F013 - F014 - F016 or even more advanced F110 and higher.
General information

Introduction
The F011 is a local indicator to display the running total and accumulated total. Total can be reset to zero by pressing the CLEAR button twice. A non-resettable accumulated total is available with eleven digits. The measuring unit to be displayed is simply selected through an alfa-numerical configuration menu. No adhesive labels have to be put on the outside of the enclosure: a weather proof and user-friendly solution! A wide selection of options further enhance this model’s capabilities, including Intrinsic Safety for hazardous area applications.

Display
The display has large 17mm (0.67”) and 8mm (0.31”) digits show both totals simultaneously. Both totalizers are backed-up in EEPROM memory every minute. As the F011 has been designed for field mounted applications, a smart display update function has been incorporated. Related to the lower temperatures, the update frequency of the LCD is tuned automatically to achieve 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 can be set to 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 also 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 and baffling codes. 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.

Signal input
The F011 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 F011 and sensor. Most popular is our 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 Ex d IIB T5.

Enclosures
Various types of enclosures can be selected, all ATEX, IECEx and CSA approved. As standard the F011 is supplied in an GRP panel mount enclosure, which can be converted to an IP67 / NEMA 4X GRP field mount enclosure by the addition of a back case. 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 F011

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Dimensions enclosures
Aluminum & GRP panel mount enclosure

Aluminum & GRP field / wall mount enclosures

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

Terminal connections power supply
PF - PM
**Typical wiring diagram F011-P-PB-(PX)-(ZB)**

![Diagram](image1)

**Typical wiring diagram F011-P-PD-(ZB)**

![Diagram](image2)

**Typical wiring diagram F011-A-PX-ZB**

![Diagram](image3)

**Typical wiring diagram F011-A-PL-ZB**

![Diagram](image4)

**Typical wiring diagram F011-P-PD-ZB**

![Diagram](image5)

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

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

Sensor supply: sensor is externally powered.

* 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:
  Terminal 3: not available. Terminal 6 with type PD: voltage as connected to terminal 5 (internally linked).
**Typical wiring diagram F011-P-PF-ZB**

**Type PF:**
24V AC / DC POWER SUPPLY

Backlight option: type ZB

- Internally powered.

- **Flowmeter input type P:** pulse

**Supply:**

- 24V AC

**Signal:**

- Circuit depends on type of signal

**Common ground:**

* 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.

**Main supply:**

- Power supply type PF: 8 - 24V AC / DC

**Common ground:**

**TERMINAL CONNECTORS**

F0 - series

**Typical wiring diagram F011-A-PF-ZB**

**Type PF:**
24V AC / DC POWER SUPPLY

Backlight option: type ZB

- Internally powered.

- **Flowmeter input type A:** (0)4 - 20mA

**Supply:**

- + 24V DC

**Signal:**

- Circuit depends on type of signal

**Common ground:**

* 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.

**Main supply:**

- Power supply type PF: 8 - 24V AC / DC

**Common ground:**

**TERMINAL CONNECTORS**

F0 - series

**Typical wiring diagram F011-A-PM-ZB**

**Type PM:**
115 - 230V AC POWER SUPPLY

Backlight option: type ZB

- Internally powered.

- **Flowmeter input type A:** (0)4 - 20mA

**Supply:**

- + 115 - 230V AC

**Signal:**

- Circuit depends on type of signal

**Common ground:**

* 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.

**Main supply:**

- Power supply type PM: 115 - 230V AC

**Common ground:**

**TERMINAL CONNECTORS**

F0 - series

**Typical wiring diagram F011-P-PM-ZB**

**Type PM:**
115 - 230V AC POWER SUPPLY

Backlight option: type ZB

- Internally powered.

- **Flowmeter input type P:** pulse

**Supply:**

- + 115 - 230V AC

**Signal:**

- Circuit depends on type of signal

**Common ground:**

* 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.

**Main supply:**

- Power supply type PM: 115 - 230V AC

**Common ground:**

**TERMINAL CONNECTORS**

F0 - series
Hazardous area applications

The F011-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 T 100 °C.

- The IECEx markings for gas and dust applications are:
  - Ga Ex ia IIC T4
  - 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 F011-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 EEx 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

F011-P-PC-(PX)-XI-(ZB) - Battery powered unit

* 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 if power is disconnected.
Configuration example IIA - IIB and IIC - F011-P-PX-XI-(ZB) - Basic power supply 8 - 30V DC

**TERMINAL CONNECTORS**

- Supply backlight
- Common ground
- Main supply
- Signal
- Supply

**HAZARDOUS AREA**

- Backlight option: type ZB
- (not used in this example)

**SAFE AREA**

- Power supply type PX: 8 - 30V DC

- Uo = max. 30V
- Io = max. 200mA
- Pu = max. 1,2W

*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.

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

Configuration example IIA - IIB and IIC - F011-P-PX-XI-ZB - Basic power supply 8 - 30V DC

**TERMINAL CONNECTORS**

- Supply backlight
- Common ground
- Main supply
- Signal
- Supply

**HAZARDOUS AREA**

- Backlight option: type ZB

**SAFE AREA**

- Power supply type PX: 8 - 30V DC

- Uo = max. 30V
- Io = max. 150mA
- Pu = max. 0,92W

*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.

Note: above values are safety values. Consult the technical specification for operational values.
**Configuration example IIA - IIB and IIC - F011-P-PD-XI-ZB - Power supply 16 - 30V DC**

**TERMINAL CONNECTORS**

**F0 - series**

1. **Supply backlight**
2. **Common ground**
3. **Supply**
4. **Main supply**
5. **Signal**
6. **Signal**
7. **Signal**
8. **Common ground**

**HAZARDOUS AREA**

- **Backlight option: type ZB**
- **Power supply type PD: 16 - 30V DC**
- **I.S. flowmeter input type: P pulse**

**SAFE AREA**

- **Power supply**
  - 
  - **Uo = max. 30V**
  - **Io = max. 200mA**
  - **Po = max. 0.75W**
- **Example: MTL5025**

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 - F011-A-PD-XI-ZB - Power supply 16 - 30V DC**

**TERMINAL CONNECTORS**

**F0 - series**

1. **Supply backlight**
2. **Common ground**
3. **Supply**
4. **Main supply**
5. **Signal**
6. **Signal**
7. **Signal**
8. **Common ground**

**HAZARDOUS AREA**

- **Backlight option: type ZB**
- **Power supply type PD: 16 - 30V DC**
- **I.S. flowmeter input type: A (0)4 - 20mA**

**SAFE AREA**

- **Power supply**
  - 
  - **Uo = max. 30V**
  - **Io = max. 200mA**
  - **Po = max. 0.75W**
- **Example: MTL5025**

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 - F011-A-PL-XI-ZB - Input loop powered**

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 - F011-A-PX-XI-ZB - Basic power supply 8 - 30V DC**

*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

**Technical specification**

**General**

**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** Transreflective LCD with bi-color LED-backlight; green / amber. Intensity and color selected through 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** 20 - 30V DC. Power consumption max. 1 Watt.

**Note PB/PC/PM** Not available Intrinsically Safe.

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

**Sensor excitation**

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

**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. With analog input: 8.2 / 12 / 24V DC - max. 400mA @ 24V DC.

**Terminal connections**

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

**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/field 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 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/field 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.

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

![Display example](image-url)
**Hazardous area**

**Intrinsically Safe**
- ATEX certification: Ex ia IIC T4, II 1 G Ex ia IIC T4.
- IECEx certification: Ex ia IIC T4.
- CSA c-us Intrinsically Safe for Class I/II/III, Div. 1, Groups A, B, C, D, E, F, G, Temp. class T4 and Class I, Zone 0, AEx ia IIC T4.
- Ambient: -40°C to +70°C / -40° to +158°F.

**Explosion proof**
- ATEX certification: II 2 GD EEx 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. Maximum frequency depends on signal type and internal low-pass filter. E.g. reed switch with low-pass filter: max. frequency 120Hz.
  - K-Factor: 0.00000 - 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. Low level cut-off programmable.
  - Span: 0.001 / 999,999 with variable decimal position.
  - Update time: Four times per second.
  - Voltage drop: Type A: max. 2V DC @ 20mA.
  - Voltage drop: Type A - PL (loop powered): max. 2.6V DC @ 20mA.
  - Load impedance: 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.

**Operator functions**
- Displayed functions: • Running total.
- • Accumulated total.
- • Total can be reset to zero by pressing the CLEAR-key twice.

**Total**
- Digits: 7 digits.
- Units: L, m³, 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 Grevelap 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.

**Blind plug accessories**
- ACF50: For HA enclosure, includes O-rings.
- ACF55: For HE enclosure, includes locknuts and O-rings.
- ACF56: For HF enclosure, includes locknuts and O-rings.
- ACF57: For HG enclosure, includes locknuts and O-rings.
- ACF58: For HH enclosure, includes locknuts and O-rings.
- ACF59: For HJ enclosure, includes locknuts and O-rings.
- ACF62: For HM enclosure, includes O-rings.
- ACF63: For HN enclosure, includes O-rings.
- ACF64: For HO enclosure, includes O-rings.
- ACF65: For HP enclosure, includes O-rings.
- ACF69: For HT enclosure, includes O-rings.
- ACF70: For HU enclosure, includes O-rings.

**Intrinsically Safe isolators accessories**
- ACG01: MTL5011B - One channel pulse or switch output transfer from hazardous area to safe area, including power supply.
- ACG02: MTL5025 - One channel power supply from safe area to hazardous area (e.g. to power the unit with PD or to power a switching or analog device in hazardous area).
- ACG03: MTL5042 - One channel 4 - 20mA repeater from hazardous area to safe area, including power supply.
- ACG04: MTL 5051 - Bi-direction serial-data-isolator (for Modbus communivation).
- ACG05: MTL5018 - Two channel pulse or switch output transfer from hazardous area to safe area , including power supply.
- ACG06: MTL5012 - One channel pulse or switch output transfer from hazardous area to safe area, including power supply.
- ACG07: MTL5045 - One channel isolated driver bringing 4 - 20mA from safe area to hazardous area, including power supply.
Ordering information
Standard configuration: F011-P-HC-PX-XX-ZX.

<table>
<thead>
<tr>
<th>Ordering information:</th>
<th>F011</th>
<th>-</th>
<th>-H</th>
<th>-P</th>
<th>-X</th>
<th>-Z</th>
</tr>
</thead>
</table>

Flowmeter Sensor input signal
- A (0) - 4mA input.
- P Pulse input: coil, npn, pnp, namur, reed-switch.
- U 0 - 10V DC input.

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 (/8”).
- HG Cable entry: 2 x Ø 20mm.
- HH Cable entry: 6 x Ø 12mm.
- HJ Cable entry: 3 x Ø 22mm (/8”).
- HK Flat bottom, cable entry: no holes.

Panel prot enclosures - IP65 / NEMA4
- HB Aluminum enclosure.
- HC GRP enclosure.

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 1/2”NPT.
- HU Cable entry: 3 x 1/2”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).

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 4 - 20mA (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.

Specifications are subject to change without notice.