**LEVEL MONITOR**

**WITH ANALOG AND HIGH / LOW ALARM OUTPUTS**

**Features**
- Displays level, percentage filled and height.
- 4 alarm values can be entered: low-low, low, high and high-high level alarm.
- Large 17mm (0.67”) digits.
- Selectable on-screen engineering units; volumetric or mass.
- Operational temperature -30°C up to +80°C (-22°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 II 1 GD EEx ia IIB/IIC T4 T100°C.
- Explosion/flame proof II 2 GD EEx d IIB T5.
- Alarm and analog signal outputs.
- Full Modbus communication RS232/485/TTL.
- 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**
- Up to 4 free configurable alarm outputs.
- (0)4 - 20mA / 0 - 10V DC according to the level.

**Signal input**
- Level
  - (0)4 - 20mA.
  - 0 - 10V DC.

**Applications**
- Level measurement and continuous level monitoring is important. Also re-transmission of the level or serial communication is required.
- Alternative basic model: F070 - F073 - F077 or more sophisticated model F173.
General information

Introduction
The F170 is a versatile level indicator with continuous level monitoring feature. It offers the facility to set two low level and two high level alarm values. If desired, an ignore function can be set up to allow for an incorrect level for a certain period of time. Up to four outputs are available to transmit the alarm condition. A wide selection of options further enhance this model’s capabilities, including Intrinsically Safe and full Modbus communication.

Display
The display has large 17mm (0.67”) and 8mm (0.31”) digits which can be set to show level, percentage or height and alarm values. The alarm values can be password protected. On-screen engineering units are easily configured from a comprehensive selection.

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. All settings are safely stored in EEPROM memory in the event of sudden power failure.

Analog output signal
The actual level is re-transmitted with the (0)4 - 20mA or 0 - 10V DC output signal. The output signal is updated ten times per second with a filter function being available to smoothen out the signal if desired. The output value is user defined in relation to the level, e.g. 4mA equals to 5m³ and 20mA equals to 20,000 m³. The output signal can be passive, active or isolated where the passive output type will loop power the F170 as well.

Alarm outputs
Up to four configurable outputs are available to transmit the alarm condition. You can have e.g. two the same low alarm outputs, one high alarm output and one “all alarms” output. Type OS offers four mechanical relay outputs. However, only two outputs are available in Intrinsically Safe applications. Three outputs are available in all other configurations. The output signals can be a passive NPN, active PNP or an isolated electro-mechanical relay.

Signal input
The F170 does accept (0)4 - 20mA and 0 - 10V input signals from any type of level measurement device. Also a 4 - 20mA input loop powered model is available.

Communication
All process data and settings can be read and modified manually or through the Modbus communication link (RS232 / RS485). Full Modbus functionality remains available for the Intrinsically Safe version (TTL).

Hazardous areas
For hazardous area applications, this model has been ATEX certified Intrinsically Safe II 1 GD EEx ia IIB / IIIC T4 T100°C with an allowed operational temperature of -30°C to +70°C (-22°F to +158°F). A flame proof enclosure is also available with the rating II 2 GD EEx d IIB T5.

Enclosures
Various types of enclosures can be selected, all ATEX approved. As standard the F170 is supplied in a 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 rugged aluminum field mount enclosure with IP67 / NEMA 4X rating. Both European or U.S. cable gland entry threads are available.

Overview application F170
Dimensions enclosures
Aluminum & GRP panel mount enclosure

Aluminum & GRP field / wall mount enclosures

Terminal connections

Display example - 90 x 40mm (3.5" x 1.6")
**Typical wiring diagram F170-A-AP-CH-OT-PX**

**Typical wiring diagram F170-A-AA-CB-OA-PD**
**Typical wiring diagram F170-A-Al-CI-OR-PM**

**TERMINAL CONNECTORS**

F100-series

115 - 230V AC POWER SUPPLY

- Common ground
- 24V DC
- Main supply
- Earth

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

**Switch output type OR:** mechanic relay
- alarms output 1
- alarm output 2
- alarm output 3
- alarm output 4

**Power supply type PM:** 115 - 230V AC

**Modbus communication type CI:** RS485 - 4 wire

*Supply voltage: 3.2 / 8.2 / 12 / 24V DC to sensor

---

**Typical wiring diagram F170-P-AP-CB-OS-PD**

**TERMINAL CONNECTORS**

F100-series

24V AC / DC POWER SUPPLY

- Common ground
- Main supply
- 24V DC
- Power supply type PD: 24V AC / DC
- Earth

**Analog output type AP:** passive 4 - 20mA (loop powered)

**Switch output type OS:** mechanic relay
- alarm output 1
- alarm output 2
- alarm output 3
- alarm output 4

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

**Modbus communication type CB:** RS232

*Supply voltage: 3.2 / 8.2 / 12 / 24V DC to sensor
**Hazardous area applications**

The F170-XI has been ATEX approved by KEMA for use in Intrinsically Safe applications. It is approved according to II 1 GD EEx ia IIB/IIC T4 T100°C for gas and dust applications with an operational temperature range of -30°C to +70°C (-22°F to +158°F). Besides the I.S. power supplies for the two alarm outputs, it is allowed to connect up to three I.S. power supplies in IIB applications or one in IIC applications. Full functionality of the F170 remains available, including two alarm outputs and 4 - 20mA output and Modbus communication (type CT). Power supply type PD-XI offers a sensor supply according to the connected power supply voltage at terminal 1.

A flame proof enclosure with rating II 2 GD EEx d IIB T5 is available as well. Please contact your supplier for further details.

**Configuration example IIB**

*F170-A-CT-OT-PL-XI - Input loop powered*
Configuration example IIB - F170-A-AP-CT-OT-PX-XI - Output loop powered

**TERMINAL CONNECTORS**

<table>
<thead>
<tr>
<th>F100-series</th>
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<tbody>
<tr>
<td>TXD</td>
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<tr>
<td>RXD</td>
</tr>
<tr>
<td>SDR</td>
</tr>
</tbody>
</table>

**HAZARDOUS AREA**

Modbus communication type CT: TTL

**SAFE AREA**

**ISOLATOR:**
- I.S. Certified Isolator
- TTL to RS232 / RS422 / TTL
- For example: MTL5051

**POWER SUPPLY**
- Uo=max 30V
- Io=max 250mA
- Po=max 850mW
- e.g. sounder
- e.g. indicator

**SWITCH INTERFACE**
- e.g. MTL 5011B

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- e.g. sounder
- e.g. indicator

**SWITCH INTERFACE**
- e.g. MTL 5011B

Note: above values are safety values. Consult the technical specification for operational values.
Configuration example IIB and IIC - F170-A-AP-(CT)-OT-PD-XI - Power supply 16 - 30V DC

**TERMINAL CONNECTORS**

- **F100 - series**
- **HAZARDOUS AREA**
- **SAFE AREA**

**Modbus communication type CT: TTL**

- Please note: communication type CT is not allowed in IIC applications.

**Total Ci of all connected analog apparatus in IIC applications may not exceed 66nF minus 17nF**

(17nF is used by the analog output signal terminal 7 + 8).

**Supply**

- Main supply
- Circuit depends on type of signal
- Power supply type PD: 16 - 30V DC (please note: PD and battery supply (type PC) is NOT allowed in IIC applications).

**Analog output type AP:**

- Passive 4 - 20mA

**Alarm output type OT:**

- Passive transistor

**Level sensor input type:**

- A (0) 4 - 20mA

**Switch output type OT:**

- Passive transistor

**Note:**

- Power supply type PD: the supply voltage to the analog sensor is as connected to terminal 1 (internally linked).

**TOTAL Ci of all connected analog apparatus in IIC applications may not exceed 66nF minus 17nF**

(17nF is used by the analog output signal terminal 7 + 8).

**ISOLATOR:**

- I.S. Certified Isolator
- TTL to RS232 / RS422 / TTL
- For example: MTL5051

**POWER SUPPLY**

- e.g. MTL5025
- Uo=max 30V
- Io=max 100mA
- Po=max 750mW

- Switch INTERFACE
- e.g. MTL 5011B
- Uo=max 30V
- Io=max 100mA
- Po=max 750mW

**Note:**

- Above values are safety values.
- Consult the technical specification for operational values.
Configuration example IIB - F170-A-AF-CT-OT-(PC)-(PD)-(PL)-XI - Power supply 16 - 30V DC, battery or loop powered

**TERMINAL CONNECTORS**

**F100 - series**

**HAZARDOUS AREA**

**SAFE AREA**

**Modbus communication type CT: TTL**

**ISOLATOR:**
- I.S. Certified Isolator
- TTL to RS232 / RS422 / TTL
  - For example: MTL5051

**POWER SUPPLY**
- e.g. MTL 5025
- and / or
- SWITCH INTERFACE
  - e.g. MTL 5011B

- Uo=max 30V
- Io=max 100mA
- Po=max 750mW

**SWITCH INTERFACE**
- e.g. MTL 5011B

- Uo=max 30V
- Io=max 100mA
- Po=max 750mW

**Note:**
- Ci is negligibly small
- Ci is negligibly small
- Ci is negligibly small

**Alarm output 1**
- e.g. sounder

**Alarm output 2**
- e.g. sounder

**Due to analog output type AF, the unit has to be powered with battery type PC, with external power supply type PD or input loop powered type PL.**

**Power supply type PD: 16 - 30V DC.**

- Note power supply type PD: the supply voltage to the analog sensor is connected to terminal 1 (internally linked).

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

Display

**General**

<table>
<thead>
<tr>
<th>Type</th>
<th>High intensity reflective numeric and alphanumeric LCD, UV-resistant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>90 x 40mm (3.5” x 1.6”).</td>
</tr>
<tr>
<td>Digits</td>
<td>Seven 17mm (0.67”) and eleven 8mm (0.31”) digits. Various symbols and measuring units.</td>
</tr>
<tr>
<td>Refresh rate</td>
<td>User definable: 8 times/sec. - 30 secs.</td>
</tr>
<tr>
<td>Option ZB</td>
<td>Transflective LCD with green LED backlight. Good readings in full sunlight and darkness.</td>
</tr>
<tr>
<td>Note ZB</td>
<td>Only available for safe area applications.</td>
</tr>
</tbody>
</table>

**Operating temperature**

-30°C to +80°C (-22°F to +178°F). Intrinsically Safe -30°C to +70°C (-22°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**: 8 - 24V AC / DC ± 10%. Power consumption max. 10 Watt. Intrinsically Safe: 16 - 30V DC; power consumption max. 0.75 Watt.
- **Type PF**: 24V AC / DC ± 10%. Power consumption max. 15 Watt. Input loop powered from sensor signal 4 - 20mA (type “A”) - requires types AI or AF and OT.
- **Type PM**: 115 - 230V AC ± 10%. Power consumption max. 15 Watt.
- **Type PX**: 8 - 30V DC. Power consumption max. 0.5 Watt.
- **Type ZB**: 12 - 24V DC ± 10% or type PD / PF / PM. Power consumption max. 1 Watt.
- **Note PB/PC/PX**: Not available Intrinsically Safe.
- **Note PF/PM**: The total consumption of the sensors and outputs may not exceed 400mA @ 24V.
- **Note** For Intrinsically Safe applications, consult the safety values in the certificate.

**Sensor excitation**

- **Type PB/PC/PX**: 3.2V DC. This is not a real sensor supply. Only suitable for sensors with a very low power consumption.
- **Type PD**: 3.2 / 8.2 / 12 / 24V DC - max. 50mA @ 24V DC.
- **Type PD-XI**: The sensor supply voltage is according to power supply as connected to terminal 1 (internally linked).
- **Type PF / PM**: 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. Data retention at least 10 years.
- **Pass-code**: Configuration settings can be pass-code protected.

**Environment**


Hazardous area

- **Intrinsically Safe**: ATEX approval ref.: II 1 GD EEx ia IIB/IIC T4 T50°C.
- **Type XI**: Maximum ambient +70°C (158°F).
- **Explosion proof**: ATEX approval ref.: 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. 15 Kg.

Casing


Aluminum wall / field mount enclosures

- **General**: Die-cast aluminum wall/fiel 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”) L x H x D.
- **Weight**: 1100 gr.
- **Type HA**: Cable entry: 2 x Φ 6mm and 1 x M20.
- **Type HM**: Cable entry: 2 x Φ 16mm and 1 x M20.
- **Type HD**: Cable entry: 1 x Φ 12mm.
- **Type HM**: Cable entry: 2 x Φ 16mm.
- **Type HP**: Cable entry: 2 x Φ 16mm.
- **Type HF**: Cable entry: 2 x Φ 12mm.
- **Type HH**: Cable entry: 3 x Φ 12mm.
- **Type HK**: Cable entry: no holes.

GRP wall / field mount enclosures

- **General**: GRP wall/fiel mount enclosure IP67 / NEMA 4X, UV-resistant and flame retardant.
- **Dimensions**: 130 x 120 x 75mm (5.12” x 4.72” x 2.95”) L x H x D.
- **Weight**: 600 gr.
- **Type HD**: Cable entry: no holes.
- **Type HE**: Cable entry: 2 x Φ 16mm and 1 x Φ 20mm.
- **Type HF**: Cable entry: 1 x Φ 22mm (7/8”).
- **Type HG**: Cable entry: 2 x Φ 20mm.
- **Type HH**: Cable entry: 6 x Φ 12mm.
- **Type HJ**: Cable entry: 3 x Φ 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”) L 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.
- **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”). L x H x D.
- **Weight**: 450 gr.
- **Type HS**: Cable entry: no holes.
**Signal inputs**

**Level sensor**

<table>
<thead>
<tr>
<th>Type</th>
<th>Signal range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>0 - 20mA</td>
<td>Analog input signal can be scaled to any desired range within 0 - 20mA.</td>
</tr>
<tr>
<td>Type U</td>
<td>0 - 10V DC</td>
<td>Analog input signal can be scaled to any desired range within 0 - 10V DC.</td>
</tr>
</tbody>
</table>

**Accuracy**

- Resolution: 14 bit. Error $< 0.025mA / ± 0.125% FS.
- Low level cut-off programmable.

**Span**

- 0.000010 - 9,999,999 with variable decimal position.

**Offset**

- -999,999 - +999,999 units.

**Update time**

- Four times per second.

**Voltage drop**

- Type A: 2.5V @ 20mA.

**Load impedance**

- Type U: 3kΩ.

**Relationship**

- Linear calculation.

**Note**

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

**Signal outputs**

**Analog output**

- Function: Transmitting level.
- Accuracy: 10 bit. Error $< 0.05\%$. Analog output signal can be scaled to any desired range.
- Update time: Ten times per second.
- Type AA: Active 4 - 20mA output (requires OA + PD, PF or PM).
- Type AB: Active 0 - 20mA output (requires OA + PD, PF or PM).
- Type AF: Passive floating 4 - 20mA output for Intrinsically Safe applications (requires PC, PL or PD).
- Type AI: Passive galvanically isolated 4 - 20mA output - also available for battery powered models (requires PB, PD, PF, PL or PM).
- Type AP: Passive 4 - 20mA output - not isolated. Unit will be loop powered.
- Type AU: Active 0 - 10V DC output (requires OA + PD, PF or PM).

**Alarm outputs**

- Function: User defined: low, low-low, high, high-high or all alarms output.
- Type OA: Three active 24V DC transistor outputs (PNP); max. 50mA per output (requires AA + PD, PF or PM).
- Type OR: Two electro-mechanical relay outputs isolated (N.O.) - max. switch power 230V AC - 0.5A (requires PF or PM) and one transistor output OR or OA (OA in combination with AA only).
- Type OS: Four electro-mechanical relay outputs - isolated; max. switch power 230V AC - 0.5A per relay (requires AP and PD with 24V AC / DC).
- Type OT: Three passive transistor outputs (NPN) - not isolated. Max. 50V DC - 300mA per output.

**Note**

- Intrinsically Safe applications: only two transistor outputs type OT available.

**Communication option**

- Function: Reading display information, reading / writing all configuration settings.
- Protocol: Modbus RTU.
- Speed: 1200 - 2400 - 4800 - 9600 baud.
- Addressing: Maximum 255 addresses.
- Type CB: RS232
- Type CH: RS485 2-wire
- Type CI: RS485 4-wire
- Type CT: TTL Intrinsically Safe.

**Operator functions**

**Operator functions**

- Displayed: Level and percentage or height.
- Functions: Low-low alarm value.
- Low alarm value.
- High alarm value.
- High-high alarm value.
- Alarm values can be set (or only displayed).

**Level**

- Digits: 7 digits.
- Units: L, m³, GAL, USGAL, lb, bbl, no unit.
- Decimals: 0 - 1 - 2 or 3.
- Offset: User defined quantity.

**Percentage**

- Digits: 4 digits.
- Decimals: 1.

**Alarm values**

- Function: Four user defined alarm values to monitor the level.
- Digits: 7 digits.
- Units: According to the settings for level.
- Decimals: According to the settings for level.
- Type of alarm: Low, high, low-low or high-high level alarm.
- Includes alarm delay time and configurable alarm outputs.

**Protection**

- The alarm values can be pass-code protected.

**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.
### Ordering information

**Standard configuration:** F170-A-AP-CX-EX-HC-IX-OT-PX-TX-XX-ZX.

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<th>A</th>
<th>C</th>
<th>EX</th>
<th>H</th>
<th>IX</th>
<th>O</th>
<th>P</th>
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<tr>
<td>A</td>
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<td>0 - 4mA input.</td>
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<td>AF</td>
<td>–</td>
<td>I.S. floating 4 - 20mA output - requires PC, PL or PD.</td>
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<td>Al</td>
<td>–</td>
<td>Isolated 4 - 20mA output - requires PB, PD, PL or PM.</td>
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<td>AP</td>
<td>–</td>
<td>Passive 4 - 20mA output, loop powered unit.</td>
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<td>AU</td>
<td>–</td>
<td>Active 0 - 10V DC output - requires OA + PD, PF or PM.</td>
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<td>Communication RS232 - Modbus RTU.</td>
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<td>Communication RS485 - 2wire - Modbus RTU.</td>
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<td>CI</td>
<td>Communication RS485 - 4 wire - Modbus RTU.</td>
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<td>CT</td>
<td>–</td>
<td>Intrinsically Safe TTL - Modbus RTU.</td>
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<td>CX</td>
<td>–</td>
<td>No communication.</td>
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<td>EX</td>
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<td>No flow equations.</td>
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<td><strong>Panel mount enclosures - IP65 / NEMA4</strong></td>
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<td>HB</td>
<td>–</td>
<td>Aluminum enclosure.</td>
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<tr>
<td>HC</td>
<td>–</td>
<td>GRP enclosure.</td>
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<td><strong>GRP field / wall mount enclosures - IP67 / NEMA4X</strong></td>
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<tr>
<td>HD</td>
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<td>Cable entry: no holes.</td>
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<td>HE</td>
<td>–</td>
<td>Cable entry: 2 x Ø 16mm &amp; 1 x Ø 20mm.</td>
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<td>HF</td>
<td>–</td>
<td>Cable entry: 1 x Ø 22mm (3/4&quot;).</td>
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<td>HG</td>
<td>–</td>
<td>Cable entry: 2 x Ø 20mm.</td>
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<td>HH</td>
<td>–</td>
<td>Cable entry: 6 x Ø 12mm.</td>
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<td>HJ</td>
<td>–</td>
<td>Cable entry: 3 x Ø 22mm (3/4&quot;).</td>
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<td>HK</td>
<td>–</td>
<td>Flat bottom, cable entry: no holes.</td>
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<td><strong>Aluminum field / wall mount enclosures - IP67 / NEMA4X</strong></td>
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<td>HA</td>
<td>–</td>
<td>Cable entry: 2 x PG9 + 1 x M20.</td>
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<td>HM</td>
<td>–</td>
<td>Cable entry: 2 x M10 + 1 x M20.</td>
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<td>HN</td>
<td>–</td>
<td>Cable entry: 1 x M20.</td>
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<td>HO</td>
<td>–</td>
<td>Cable entry: 2 x M20.</td>
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<td>HP</td>
<td>–</td>
<td>Cable entry: 6 x M12.</td>
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<td>HT</td>
<td>–</td>
<td>Cable entry: 1 x 1/2&quot;NPT.</td>
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<td>HU</td>
<td>–</td>
<td>Cable entry: 3 x 1/2&quot;NPT.</td>
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<td>HZ</td>
<td>–</td>
<td>Cable entry: no holes.</td>
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<td><strong>ABS field / wall mount enclosures</strong></td>
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<tr>
<td>HS</td>
<td>–</td>
<td>Silicone free ABS field enclosure IP65 – Cable entry: no holes (old HD enclosure).</td>
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<td><strong>Additional inputs</strong></td>
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<tr>
<td>IX</td>
<td>–</td>
<td>No additional input.</td>
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<td><strong>Outputs</strong></td>
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<td>OA</td>
<td>–</td>
<td>Three active transistor outputs - requires AA, AB or AU and PD, PF or PM.</td>
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<td>OR</td>
<td>–</td>
<td>Two mechanical relay outputs + one OT or OA - requires PF or PM.</td>
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<td>OS</td>
<td>–</td>
<td>Four mechanical relay outputs - requires AP and PD.</td>
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<td>OT</td>
<td>–</td>
<td>Three passive transistor outputs - standard configuration.</td>
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<td><strong>Power supply</strong></td>
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<td>PB</td>
<td>–</td>
<td>Lithium battery powered.</td>
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<td>PC</td>
<td>–</td>
<td>Lithium battery powered - Intrinsically Safe.</td>
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<td>PD</td>
<td>–</td>
<td>8 - 24V AC/DC + sensor supply - with XI: 16 - 30V DC.</td>
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<td>PF</td>
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<td>24V AC/DC + sensor supply.</td>
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<td>PL</td>
<td>–</td>
<td>Input loop powered from sensor signal type “A” - requires AI or AF and OT.</td>
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<td>PM</td>
<td>–</td>
<td>115 - 230V AC + sensor supply.</td>
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<td>PX</td>
<td>–</td>
<td>Basic power supply 8 - 30V DC (no real sensor supply). Unit requires external loop AP.</td>
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<td><strong>Temperature input signal</strong></td>
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<td>TX</td>
<td>–</td>
<td>No temperature input signal.</td>
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<td>XI</td>
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<td>Intrinsically Safe.</td>
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<td>XF</td>
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<td>EExd enclosure - 3 keys.</td>
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<tr>
<td>XX</td>
<td>–</td>
<td>Safe area only.</td>
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<td><strong>Other options</strong></td>
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<td>ZB</td>
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<td>Backlight.</td>
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<td>ZX</td>
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<td>No options.</td>
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</table>

The bold marked text contains the standard configuration.

For further information, please contact: FLUIDWELL bv
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5460 AA - Veghel - The Netherlands
Tel.: +31 (0)413 343786
Fax.: +31 (0)413 363443
sales@fluidwell.com
Internet: www.fluidwell.com

Specifications are subject to change without notice.