Features
- Displays level and percentage filled.
- 15 point linearisation of the tank shape - with interpolation.
- Four 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 linearised level.

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

Applications
- Level measurement where linearisation and continuous level monitoring is important. Also re-transmission of the level or serial communication is required.
- Alternative basic model: F070 - F073 - F077 and F170.
General information

Introduction
The F173 is a versatile level indicator with linearisation and 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 Intrinsic Safety 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 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 F173 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 F173 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 / IIC 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 F173 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 F173
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 F173-A-AP-CH-OT-PX**

**Transparent wiring diagram F173-A-AA-CB-OA-PD**

**Terminal Connectors F100 - series**

**Output loop powered**

- Modbus communication type CH: RS485 - 2 wire

**Time Diagrams**

- Switch output type OT: passive transistor
- Switch output type OA: passive transistor
- Switch output type OA: active 24V DC signal
- Alarm output 3
- Alarm output 2
- Alarm output 1
- Analog output type AP: passive 4-20mA (loop powered)
- Analog output type AA: active 4-20mA
- Power supply type PD: 8-24V AC / DC
- Power supply type PD: 8-24V DC
- Power supply type PD: Earth

**Common ground**

*Supply voltage: 3.2V DC to sensor*
**Typical wiring diagram F173-A-AI-CI-OR-PM**

**115 - 230V AC POWER SUPPLY**

- **TERMINAL CONNECTORS**
- **F100 - series**
- **Common ground**
- **Supply**
- **Signal**
- **Main supply**

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

**Switch output type OR:**
- mechanic relay
- e.g. indicator

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

**Analog output type AI:**
- passive isolated 4 - 20mA

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

**28 31 30 29**

**Common ground**

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

---

**Typical wiring diagram F173-A-AP-CB-OS-PD**

**24V AC / DC POWER SUPPLY**

- **TERMINAL CONNECTORS**
- **F100 - series**
- **Common ground**
- **Supply**
- **Signal**
- **Main supply**

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

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

**Switch output type OT:**
- passive transistor
- 8 - 24V DC

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

**Modbus communication type CB:**
- RS232

**24V AC / DC POWER SUPPLY**

- **TERMINAL CONNECTORS**
- **F100 - series**
- **Common ground**
- **Supply**
- **Signal**
- **Main supply**

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

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

---
Hazardous area applications
The F173-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 F173 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
F173-A-AF-CT-OT-PL-XI - Input loop powered unit

Certificate of conformity KEMA 03ATEX1074 X
**Configuration example IIB - F173-A-AP-CT-OT-PX-XI - Output loop powered**

**TERMINAL CONNECTORS**

- **F100 - series**

**HAZARDOUS AREA**

- Modbus communication type CT: TTL

**SAFE AREA**

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

**POWER SUPPLY**

- e.g. MTL 5025
- Uo= max 30V
- Io= max 100mA
- Po= max 750mW

**SWITCH INTERFACE**

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

**Alarm output 1**

- e.g. sounder

**Alarm output 2**

- e.g. sounder

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

* Note sensor supply voltage: 3.2V DC - not suitable to power analog sensors.
**Configuration example IIB and IIC - F173-A-AP-(CT)-OT-PD-XI - Power supply 16 - 30V DC**

**TERMINAL CONNECTORS**

- **Ci = 17nF**
- **3 4 91 0 11**
- **Common ground**
- **Signal**

**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**
- **Common ground**

**Modbus communication type CT: TTL**

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

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

(please note: PD and battery supply (type PC) is NOT allowed in IIC applications).

**Alarm output type OT:**

- **Passive transistor**

**Alarm output 1**

**Alarm output 2**

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

**ISOLATOR:**

- **I.S. Certified Isolator TTL to TTL**
- **RS232 / RS422 / TTL**

For example: MTL5911

**POWER SUPPLY**

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

(e.g. sounder)

**SWITCH INTERFACE**

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

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

---

* Note power supply type PD: the supply voltage to the analog sensor is as connected to terminal 1 (internally linked).
Configuration example IIB - F173-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
For example MTL5025

+ 

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

* Note power supply type PD: the supply voltage to the analog sensor is as connected to terminal 1 (internally linked).
# Technical Specification

## General

### Display

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High intensity reflective numeric and alphanumeric LCD, UV-resistant.</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

### Option ZB

- Transflective LCD with green LED backlight.
- Good readings in full sunlight and darkness.
- Only available for safe area applications.

### Operating temperature

- Operational: -30°C to +80°C (-22°F to +178°F).
- Intrinsically Safe: -30°C to +70°C (-22°F to +158°F).

### Power requirements

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB</td>
<td>Long life Lithium battery - life-time depends upon settings and configuration - up to 5 years.</td>
</tr>
<tr>
<td>PC</td>
<td>Intrinsically Safe long life lithium battery - life-time depends upon settings and configuration - up to 5 years.</td>
</tr>
<tr>
<td>PD</td>
<td>8 - 24V AC / DC ± 10%. Power consumption max. 10 Watt. Intrinsically Safe: 16 - 30V DC; power consumption max. 0.75 Watt.</td>
</tr>
<tr>
<td>PF</td>
<td>24V AC / DC ± 10%. Power consumption max. 15 Watt.</td>
</tr>
<tr>
<td>PL</td>
<td>Input loop powered from sensor signal 4 - 20mA (type “A”) - requires types AI or AF and OT.</td>
</tr>
<tr>
<td>PM</td>
<td>115 - 230V AC ±10%. Power consumption max. 15 Watt.</td>
</tr>
<tr>
<td>PX</td>
<td>8 - 30V DC. Power consumption max. 0.5 Watt.</td>
</tr>
<tr>
<td>ZB</td>
<td>12 - 24V DC ± 10% or type PD / PF / PM. Power consumption max. 1 Watt.</td>
</tr>
</tbody>
</table>

### Note PB/PC/PX

- Not available Intrinsically Safe.

### Note PF/PM

- The total consumption of the sensors and outputs may not exceed 400mA @ 24V.

### Sensor excitation

- Type PB/PC/PX: 3.2V DC.
- Note: This is not a real sensor supply. Only suitable for sensors with a very low power consumption.

### 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 Tsoo°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

### General

- Window: Polycarbonate window.
- Sealing: Silicone.
- Control keys: Three industrial micro-switch keys. UV-resistant silicone keypad.

### Aluminum wall / field mount enclosures

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA</td>
<td>Cable entry: 2 x PG9 and 1 x M20.</td>
</tr>
<tr>
<td>HM</td>
<td>Cable entry: 2 x M16 and 1 x M20.</td>
</tr>
<tr>
<td>HN</td>
<td>Cable entry: 1 x M20.</td>
</tr>
<tr>
<td>HO</td>
<td>Cable entry: 2 x M20.</td>
</tr>
<tr>
<td>HP</td>
<td>Cable entry: 6 x M12.</td>
</tr>
<tr>
<td>HT</td>
<td>Cable entry: 1 x 1/2″ NPT.</td>
</tr>
<tr>
<td>HU</td>
<td>Cable entry: 3 x 1/2″ NPT.</td>
</tr>
<tr>
<td>HZ</td>
<td>Cable entry: no holes.</td>
</tr>
</tbody>
</table>

### GRP wall / field mount enclosures

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>Cable entry: no holes.</td>
</tr>
<tr>
<td>HE</td>
<td>Cable entry: 2 x Ø 16mm and 1 x Ø 20mm.</td>
</tr>
<tr>
<td>HF</td>
<td>Cable entry: 1 x Ø 22mm (7/8″).</td>
</tr>
<tr>
<td>HG</td>
<td>Cable entry: 2 x Ø 20mm.</td>
</tr>
<tr>
<td>HH</td>
<td>Cable entry: 6 x Ø 12mm.</td>
</tr>
<tr>
<td>HJ</td>
<td>Cable entry: 3 x Ø 22mm (7/8″).</td>
</tr>
<tr>
<td>HK</td>
<td>Flat bottom, cable entry: no holes.</td>
</tr>
</tbody>
</table>

### Panel mount enclosures

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Panel cut-out</th>
<th>Type HB</th>
<th>Weight</th>
<th>Type HC</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 x 120 x 60mm (5.12″ x 4.72″ x 2.36″) - W x H x D.</td>
<td>115 x 98mm (4.53″ x 3.86″) L x H.</td>
<td>Die-cast aluminum panel mount enclosure IP65 / NEMA 4.</td>
<td>600 gr.</td>
<td>GRP panel mount enclosure IP65 / NEMA 4.</td>
<td>450 gr.</td>
</tr>
</tbody>
</table>

### ABS wall / field mount enclosures

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Panel cut-out</th>
<th>Type HS</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>130 x 114 x 71mm (5.1″ x 4.5″ x 2.8″) - W x H x D.</td>
<td>115 x 98mm (4.53″ x 3.86″) L x H.</td>
<td>Silicone free ABS wall/field mount enclosure IP65 with EPDM and PE sealings. UV-resistant polyester keypad (old HD enclosure).</td>
<td>450 gr.</td>
</tr>
</tbody>
</table>
**Signal inputs**

**Level sensor**

- **Type A**: (0) - 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: 14 bit. Error < 0.025mA / ± 0.125% FS. Low level cut-off programmable.
- **Span**: 0.000001 - 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 linearised 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, PD or PL).
- **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**

- **Displayed functions**: Level and percentage.
- **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, KG, 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 ignore 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.

**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.
## Ordering information

**Standard configuration:** F173-A-AP-CX-EX-IX-OT-PX-TX-XX-ZX.

### Ordering information:

<table>
<thead>
<tr>
<th>F173</th>
<th>A _</th>
<th>C _</th>
<th>EX</th>
<th>H _</th>
<th>IX</th>
<th>O _</th>
<th>P _</th>
<th>TX</th>
<th>X _</th>
<th>Z _</th>
</tr>
</thead>
</table>

### Level input signal

- **A**  (0)4 – 20mA input.
- **U**  0 - 10V DC input.

### Analog output signal

- **AA** Active 4 - 20mA output - requires OA + PD, PF or PM.
- **AB** Active 0 - 20mA output - requires OA + PD, PF or PM.
- **AF** I.S. floating 4 - 20mA output - requires PC, PD or PL.
- **AI** Isolated 4 - 20mA output - requires PB, PD, PF or PM.
- **AP** Passive 4 - 20mA output, loop powered unit.
- **AU** Active 0 - 30V DC output - requires OA + PD, PF or PM.

### Communication

- **CB** Communication RS232 - Modbus RTU.
- **CH** Communication RS485 - 2wire - Modbus RTU.
- **CI** Communication RS485 - 4 wire - Modbus RTU.
- **CT** Intrinsically Safe TTL - Modbus RTU.
- **CX** No communication.

### Flow equations

- **EX** No flow equations.

### 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 (⅞”).
- **HG** Cable entry: 2 x Ø 20mm.
- **HH** Cable entry: 6 x Ø 12mm.
- **HJ** Cable entry: 3 x Ø 22mm (⅞”).
- **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 ⅜”/NPT.
- **HU** Cable entry: 3 x ⅜”/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).

### Additional inputs

- **IX** No additional input.

### Outputs

- **OA** Three active transistor outputs - requires AA, AB or AU and PD, PF or PM.
- **OR** Two mechanical relay outputs + one OT or OA - requires PF or PM.
- **OS** Four mechanical relay outputs - requires AP and PD.
- **OT** Three passive transistor outputs - standard configuration.

### Power supply

- **PB** Lithium battery powered.
- **PC** Lithium battery powered - Intrinsically Safe.
- **PD** 8 - 24V AC/DC + sensor supply - with XI: 16 - 30V DC.
- **PF** 24V AC/DC + sensor supply.
- **PL** Input loop powered from sensor signal type “A” - requires AI or AF and OT.
- **PM** 115 - 230V AC + sensor supply.
- **PX** Basic power supply 8 - 30V DC (no real sensor supply). Unit requires external loop AP.

### Temperature input signal

- **TX** No temperature input signal.

### Hazardous area

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

### Other options

- **ZB** Backlight.
- **ZX** No options.

The bold marked text contains the standard configuration.

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