

DUAL INPUT FLOWRATE / TOTALIZER

WITH TWO PULSE SIGNAL OUTPUTS



Features

- Displays for each flow the flowrate, total and accumulated total.
- Large 17mm (0.67") digit selection for flowrate or total.
- Selectable on-screen engineering units; volumetric or mass.
- Ability to process all types of flowmeter signals.
- Auto backup of settings and running totals.
- 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 1GD EEx ia IIB/IIC T4 T100°C.
- Explosion/flame proof ⊕ II 2G EEx d IIB T5.
- For each flow one pulse signal output.
- 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

- Two scaled pulse outputs according to accumulated total of flow A and flow B.

Signal input

Flow

- Reed-switch.
- NAMUR.
- NPN/PNP pulse.
- Coil (sine wave).
- Active pulse signals.
- (0)4 - 20mA.
- 0 - 10V DC.

Applications

- For those applications where instead of two just one indicator is desired. Alternative basic models: two F014's.



General information

Introduction

The F111 incorporates two fully separated flowrate / totalisers in one enclosure, including a pulse signal output for each flow. There is no relationship between the flows, even different pulse signal input types can be used. A wide selection of options is available to 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 flowrate and/or totals. For each flow, on-screen engineering units are easily configured from a comprehensive selection. Both accumulated totals can register up to 11 digits and are backed-up in EEPROM memory every minute. The F111 can be set to show the selected information manually or with an automatic toggle function.

Configuration

All configuration settings are accessed via a simple operator menu which can be pass-code protected. Each setting is clearly indicated with an alphanumeric 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.

Pulse output

The unit has two scaleable pulse outputs, one for flow A and the other for flow B. The outputs reflect the count on the accumulated display. The pulse length is user defined from 0.008 second up to 2 seconds. The maximum output frequency is 64Hz. The output signal can be a passive NPN, active PNP or an isolated electro-mechanical relay.

Signal input

The F111 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 or jumpers. The analog input versions are even available as 4-20mA input loop powered displays. For the pulse type input, different signal types can be used.

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).

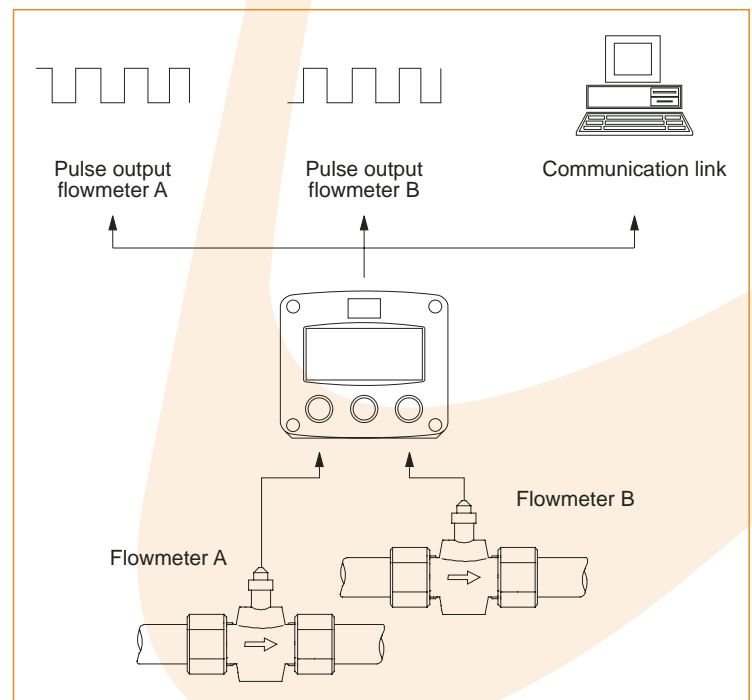
Hazardous areas

For hazardous area applications, this model has been ATEX certified intrinsically safe $\text{Ex II 1GD EEx ia IIB / IIC T4 T100}^\circ\text{C}$ with an allowed operational temperature of -30°C to $+70^\circ\text{C}$ (-22°F to $+158^\circ\text{F}$). A flame proof enclosure is also available with the rating $\text{Ex II 2G EEx d IIB T5}$.

Enclosures

Various types of enclosures can be selected, all ATEX approved. As standard the F111 is supplied in an ABS panel mount enclosure, which can be converted to an IP67 / NEMA 4X ABS 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 F111



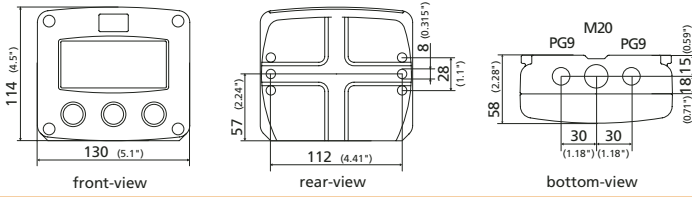
Dimensions enclosures

Enclosure HA

Aluminum field mount enclosure

IP67 / NEMA 4X

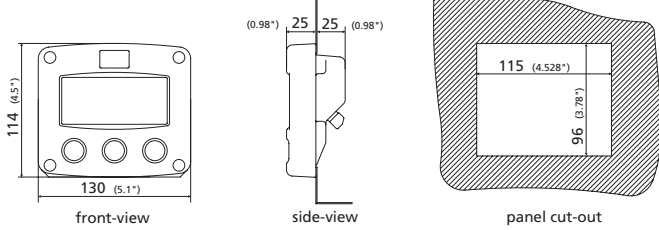
Tapped holes: European thread



Enclosure HB

Aluminum panel mount enclosure

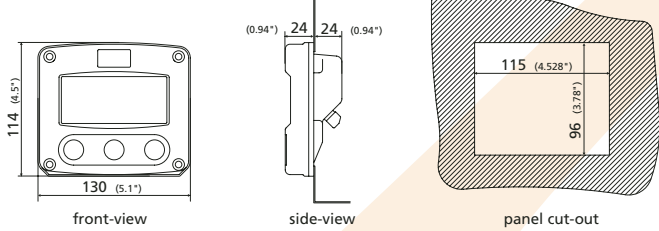
IP65 / NEMA 4



Enclosure HC (standard)

ABS panel mount enclosure

IP65 / NEMA 4

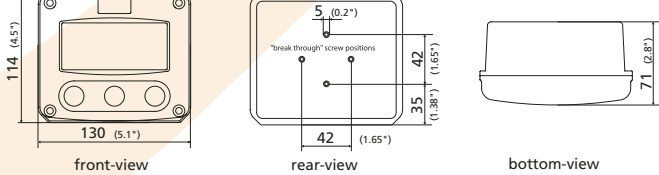


Enclosure HD

ABS wall mount enclosure

IP67 / NEMA 4X

Holes user defined

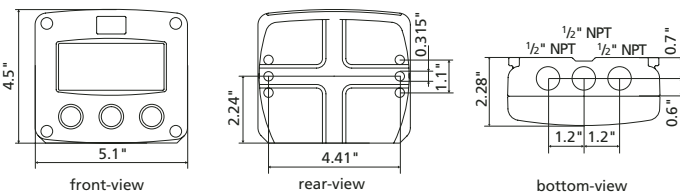


Enclosure HU

Aluminum field mount enclosure

IP67 / NEMA 4X

Tapped holes: U.S. thread

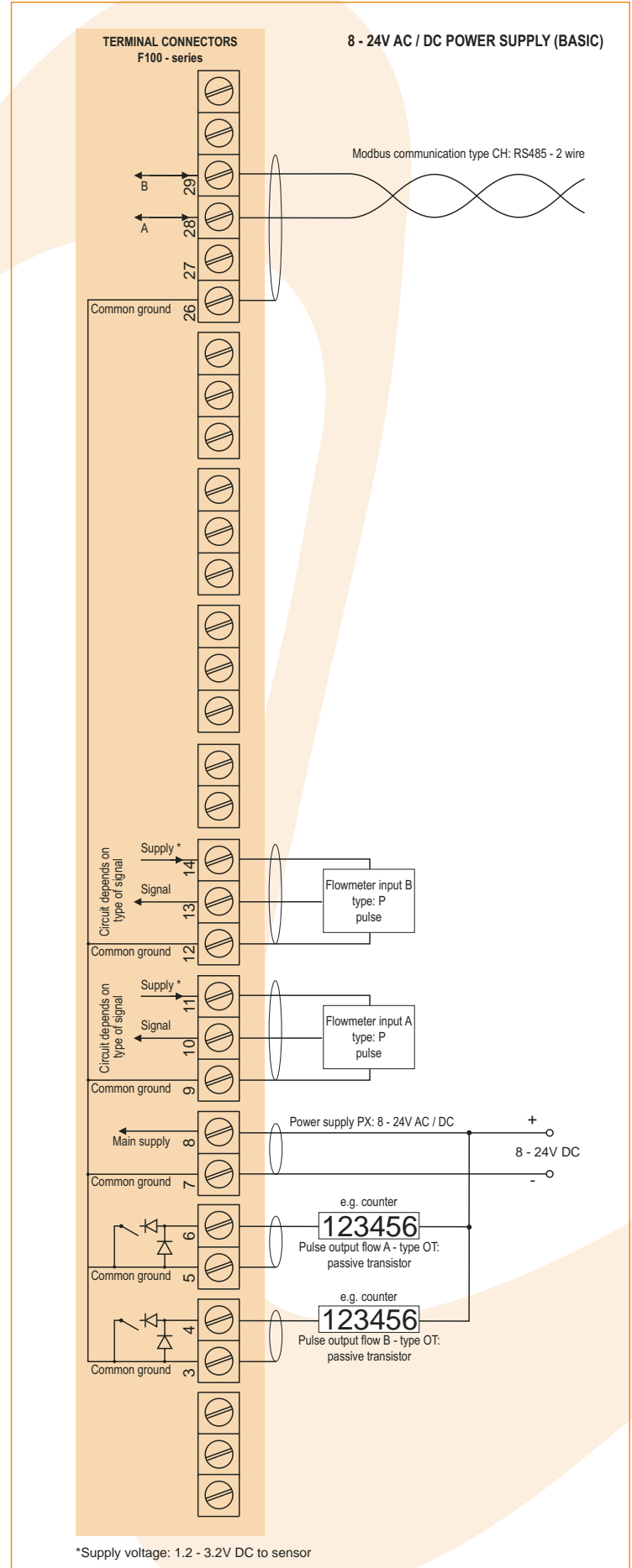
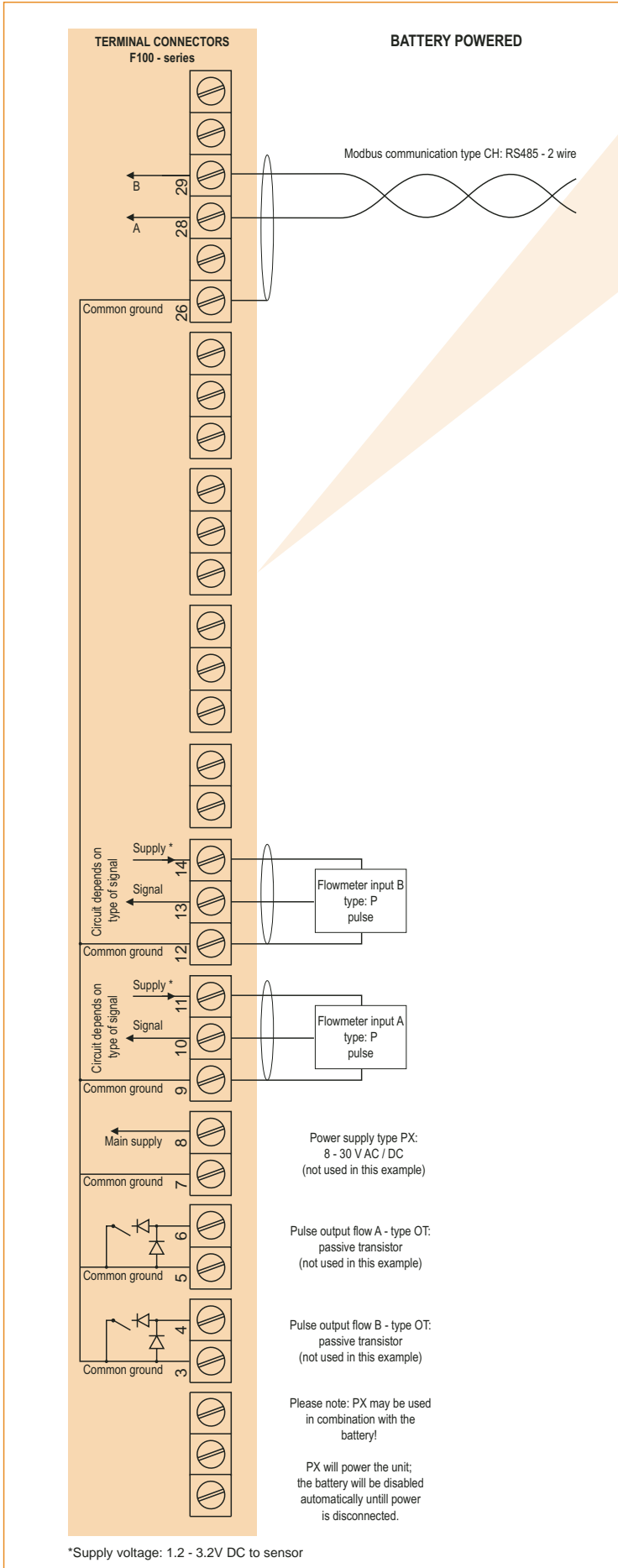


Terminal connections

| Terminal | COMMUNICATION | FLOWMETER INPUT B | FLOWMETER INPUT A | POWER SUPPLY STANDARD | PULSE OUTPUT A | PULSE OUTPUT B | POWER SUPPLY OPTIONAL |
|----------|----------------------------|-------------------|-------------------|-----------------------|----------------|----------------|-----------------------|
| 26 | CB: RS232 | | | 7 | | | 1 |
| 27 | DTR +12V | ~ | ~ | 8 | | | 2 |
| 28 | RXD | + | + | | | | |
| 29 | TXD | ~ | ~ | | | | |
| 30 | CH: RS485 - 2 wire | + | + | | | | |
| 31 | A | - | - | | | | |
| | B | + | + | | | | |
| | CI: RS485 - 4 wire | - | - | | | | |
| | A | + | + | | | | |
| | B | - | - | | | | |
| | CT: TTL Intrinsically Safe | + | + | | | | |
| | DTR +12V | ~ | ~ | | | | |
| | RXD | + | + | | | | |
| | TXD | - | - | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |
| | | - | - | | | | |
| | | ~ | ~ | | | | |
| | | + | + | | | | |

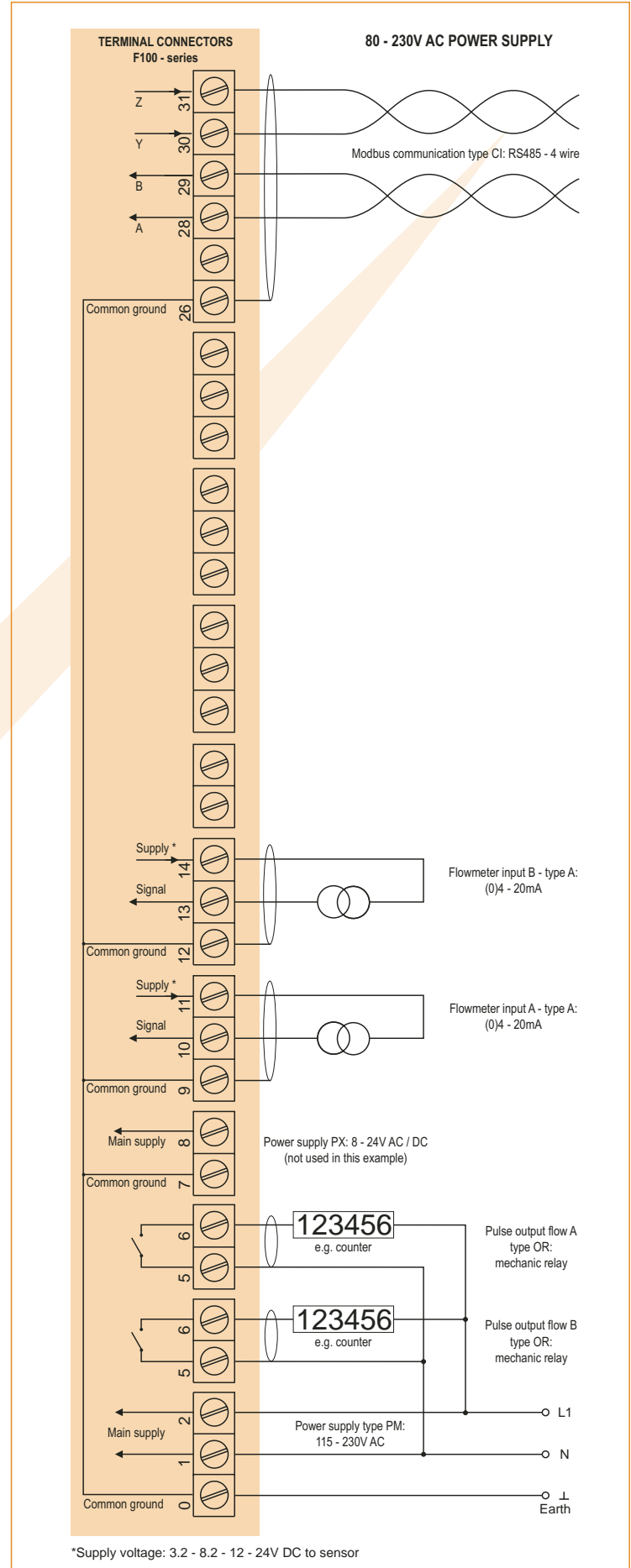
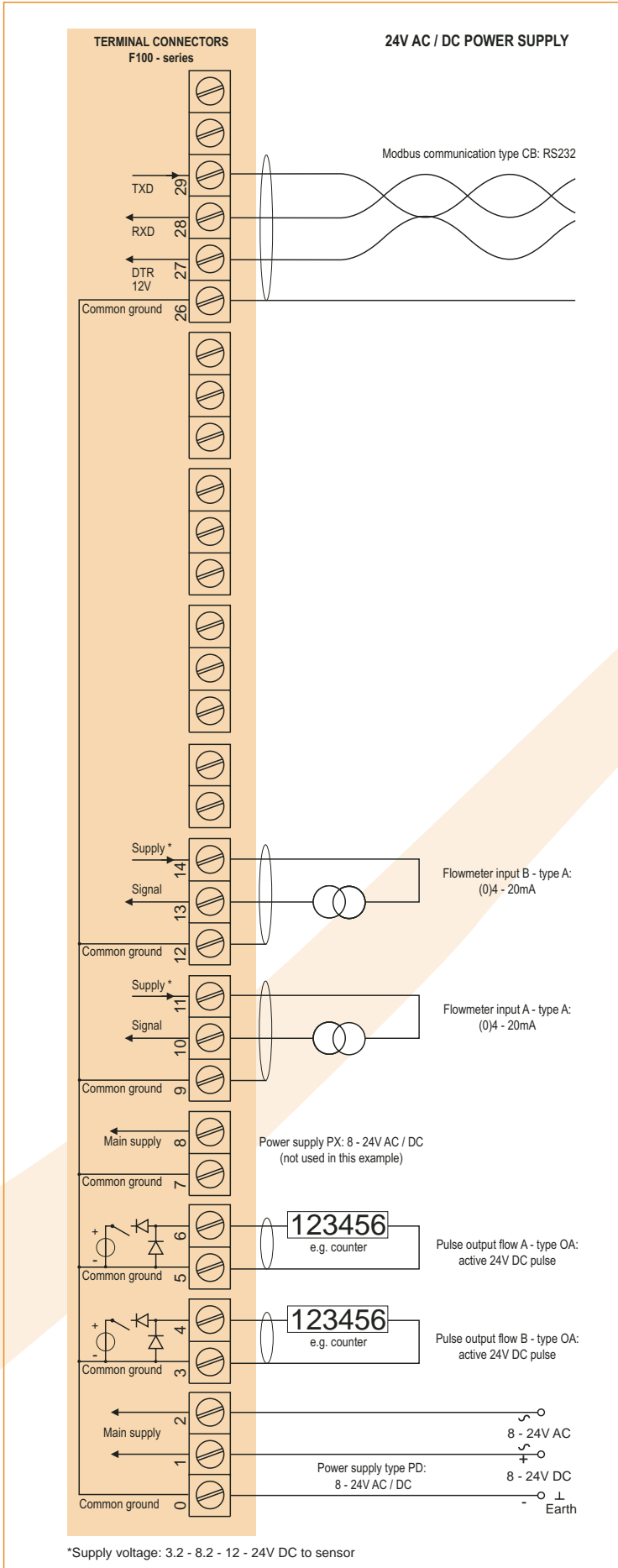
Typical wiring diagram F111-P-CH-PB-(PX)-OT

Typical wiring diagram F111-P-CH-PX-OT



Typical wiring diagram F111-A-CB-OA-PD

Typical wiring diagram F111-A-CI-OR-PM



Hazardous area applications

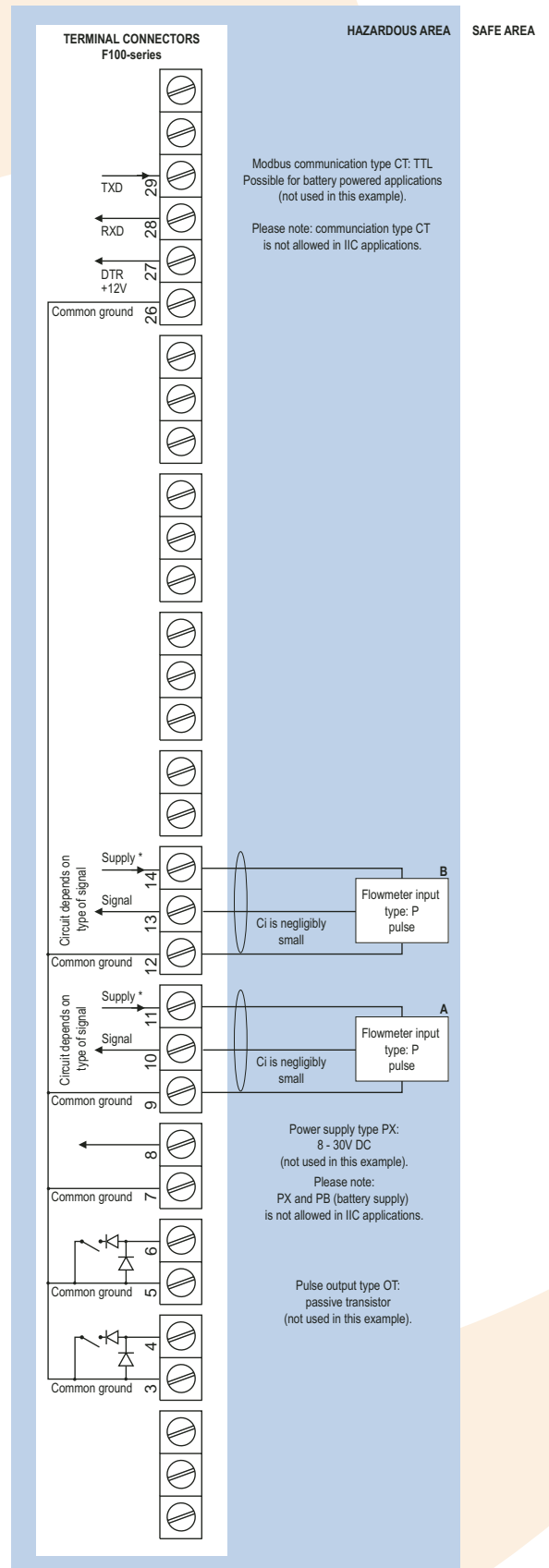
The F111-XI has been ATEX approved by KEMA for use in intrinsically safe applications. It is approved according to II 2G EEx d IIB T5 is available as well. Please contact your supplier for further details.

Certificate of conformity KEMA 03ATEX1074 X



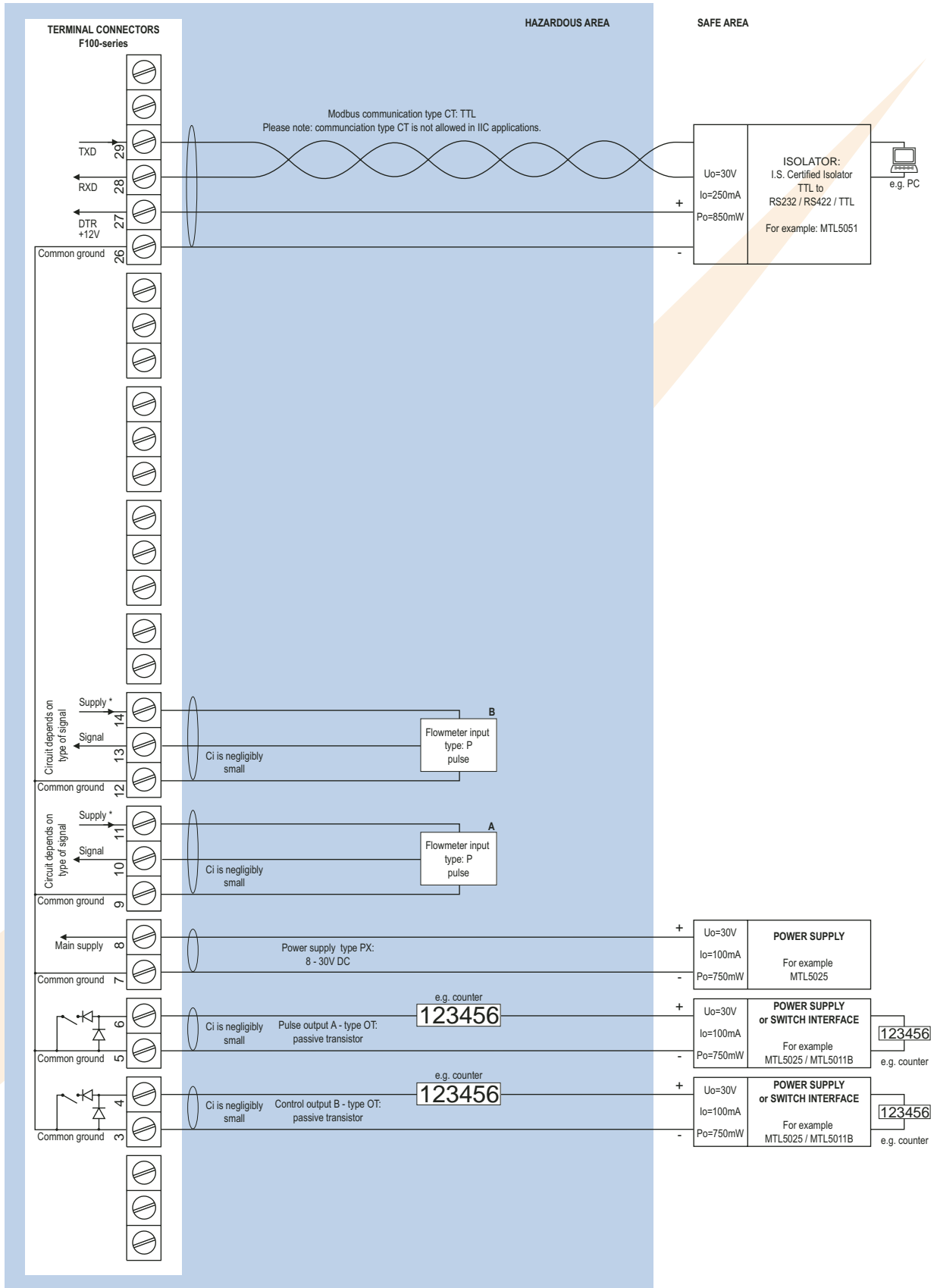
Configuration example IIB and IIC

F111-P-(CT)-(OT)-(PB)-(PX)-XI - battery powered unit



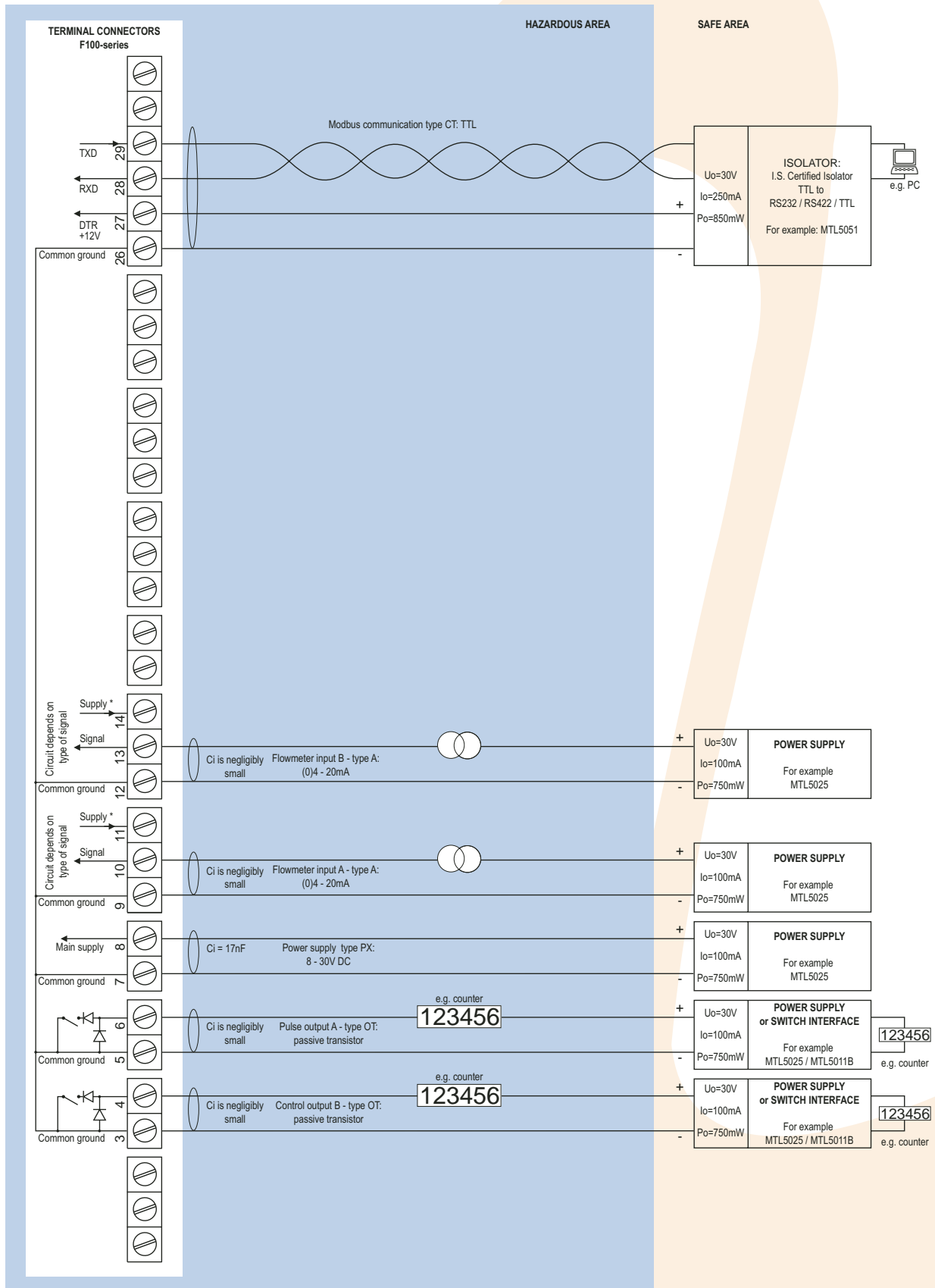
* Note sensor supply voltage: 1.2V DC for coil sensors or 3.2V DC for other pulse sensors.

Configuration example IIB and IIC - F111-P-(CT)-OT-XI



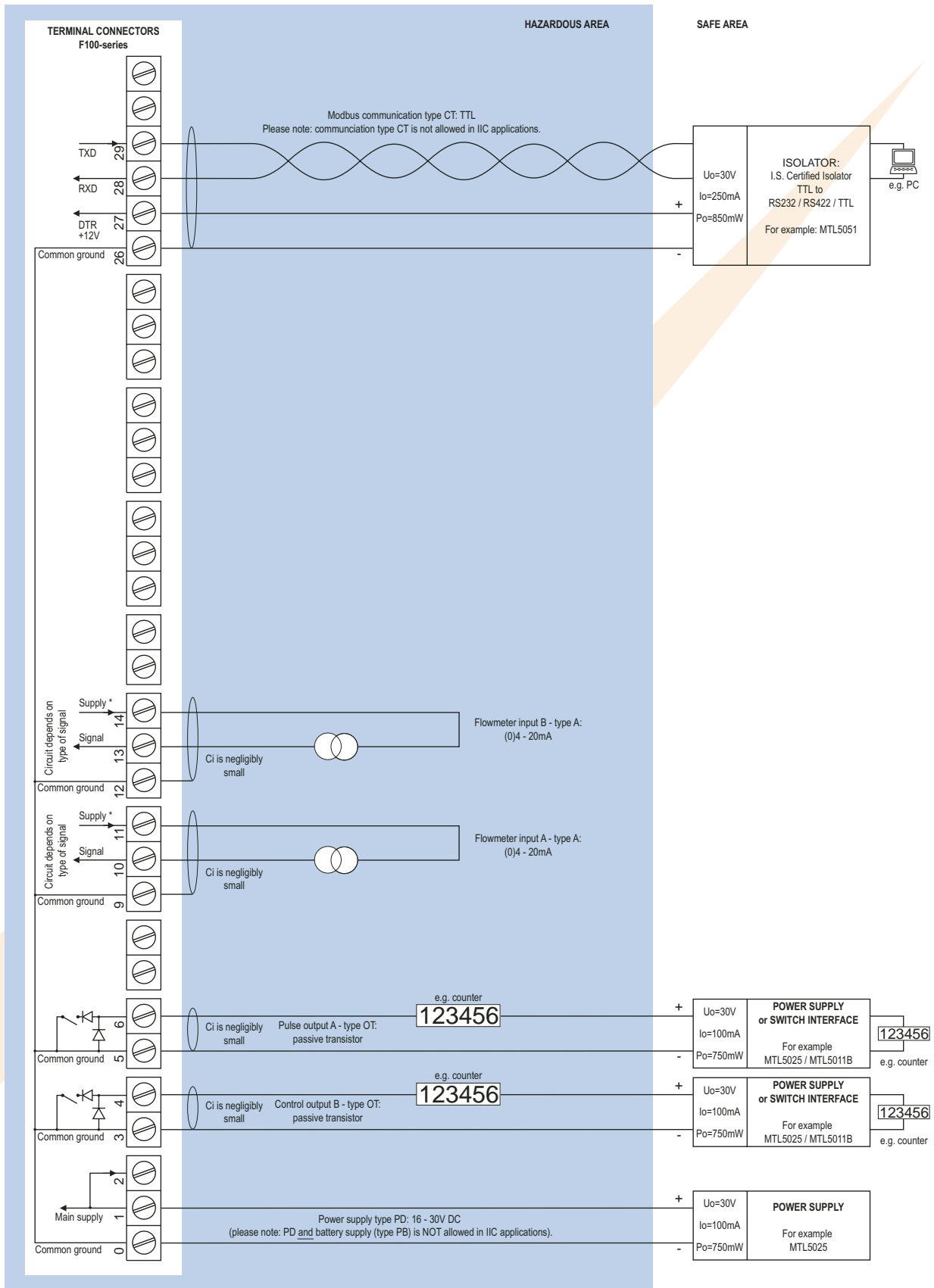
* Note sensor supply voltage: 1.2V DC for coil sensors or 3.2V DC for other pulse sensors.

Configuration example IIB - F111-A-CT-OT-PX-XI



* Note sensor supply voltage: 3.2V DC.

Configuration example IIB and IIC - F111-A-(CT)-OT-PD-XI



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

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. |
| Option ZB | LED-backlight - available appr. Jan. 2005. |

| Casing | |
|---------------|---|
| Window | Polycarbonate window. |
| Sealing | EPDM and PE. |
| Control keys | Three industrial micro-switch keys. UV-resistant polyester keypad. |
| Type HA | Die-cast aluminum field mount enclosure IP67 / NEMA 4X with 2-component UV-resistant coating. |
| Dimensions | 130 x 114 x 58mm (5.1" x 4.5" x 2.28") - W x H x D. |
| Cable Entry | 2 x PG9 and 1 x M20 tapped hole in the centre. |
| Weight | 950 gr. |
| Type HB | Die-cast aluminum panel mount enclosure IP65 / NEMA 4 with 2-component UV-resistant coating. |
| Dimensions | 130 x 114 x 50mm (5.1" x 4.5" x 1.97") - W x H x D. |
| Panel cut-out | 115 x 96mm (4.53" x 3.78") L x H. |
| Weight | 525 gr. |
| Type HC | ABS panel mount enclosure IP65 / NEMA 4, UV-resistant and flame retardent. |
| Dimensions | 130 x 114 x 48mm (5.1" x 4.5" x 1.89") - W x H x D. |
| Panel cut-out | 115 x 96mm (4.53" x 3.78") L x H. |
| Weight | 300 gr. |
| Type HD | ABS wall mount enclosure IP67 / NEMA 4X, UV-resistant and flame retardent. |
| Dimensions | 130 x 114 x 71mm (5.1" x 4.5" x 2.8") - W x H x D. |
| Cable Entry | None, user defined. |
| Weight | 400 gr. |
| Type HU | Die-cast aluminum field mount enclosure IP67 / NEMA 4X with 2-component UV-resistant coating. |
| Dimensions | 5.1" x 4.5" x 2.28" - W x H x D. |
| Cable Entry | 3 x 1/2" NPT tapped hole. |
| Weight | 950 gr. |

| Operating temperature | |
|-----------------------|-----------------------------------|
| Operational | -30°C to +80°C (-22°F to +178°F). |

| Power requirements | |
|--------------------|--|
| Type PB | Long life Lithium battery - life-time depends upon settings and configuration - up to 5 years. |
| Type PD | 8 - 24V AC/DC \pm 10%. |
| Type PD-XI | 16 - 30V DC (Intrinsically Safe). |
| Type PF | 24V AC/DC \pm 10%. |
| Type PL | Input loop powered from sensor signal 4 - 20mA (type "A") - requires type OT. |
| Type PM | 115 - 230V AC \pm 10%. |
| Type PX | 8 - 24V AC/DC. |

| Sensor excitation | |
|-------------------|--|
| Type PB / PX | 3.2V DC for pulse signals and 1.2V DC for coil pick-up. |
| Type PD | 1.2 - 3.2 - 8.2 - 12 and 24V DC - max. 50mA@24V DC. |
| Type PD-XI | 1.2 - 3.2 - 8.2V DC - max. 7mA@8.2V DC and mains power supply voltage (as connected to terminal 1). |
| Note | In case PD-XI and signal input type A or U, the sensor supply volage will be according to power supply as connected to terminal 1. |
| Type PF / PM | 1.2 - 3.2 - 8.2 - 12 and 24V DC - max. 200mA@24V DC. |

| Terminal connections | |
|----------------------|--|
| Type | Removable plug-in terminal strip. Wire max. 1.5mm ² and 2.5mm ² . |

| 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. |

| Hazardous area | |
|--------------------|--|
| Intrinsically safe | ATEX approval ref: Ex II 1GD EEx ia IIB/IIC T4 T100°C. |
| Type XI | CSA/FM pending. Maximum ambient +70°C (158°F). |
| Explosion proof | ATEX approval ref: Ex II 2G EEx d IIB T5. |
| Type XD/XF | Dimensions of enclosure: 218 x 418 x 210mm (8.58" x 16.45" x 8.38") L x H x D. |
| Weight | 16 Kg. |

| Environment | |
|-------------------------------|--|
| Electromagnetic compatibility | Compliant ref: EN 61326 (1997), EN 61010-1 (1993). |

| Signal inputs | |
|-----------------|--|
| Flowmeter | |
| 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 flowrate. Maximum frequency depends on signal type and internal low-pass filter. E.g. reed switch with low-pass filter: max. frequency 120Hz. |
| K-Factor | 0.000010 - 9,999,999 with variable decimal position. |
| Low-pass filter | Available for all pulse signals. |
| Option ZF | coil sensitivity 10mVpp. |
| 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 | 14 bit. Error < 0.05%. 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: 3k Ω . |
| Relationship | Linear and square root calculation. |
| Note | For signal type A and U: external power to sensor is required; e.g. type PD. |

Signal outputs

Pulse output

| | |
|--------------|---|
| Function | Pulse output - transmitting accumulated total. |
| Type OA | two active 24V DC transistor outputs (PNP); max. 50mA per output (requires PD, PF or PM). |
| Type OR | two electro-mechanical relay outputs - isolated; max. switch power 230V AC (N.O.) - 0.5A per relay (requires PF or PM). |
| Type OT | two passive transistor outputs (NPN) - not isolated. |
| Load | Max. 50V DC - 300mA per output. |
| Pulse output | Max. frequency 64Hz. Pulse length user definable between 7.8msec up to 2 seconds. |
| Note | Intrinsically Safe applications: only two transistor outputs type OT available. |

Communication option

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

Operational

Operator functions

| | |
|---------------------|--|
| Displayed functions | <ul style="list-style-type: none"> Flowrate and / or total flow A. Total and accumulated total flow A. Flowrate and / or total flow B. Total and accumulated total flow B. Total A and total B can individually be reset to zero by pressing the CLEAR-key twice. |
|---------------------|--|

Total

| | |
|----------|---|
| Digits | 7 digits. |
| Units | L, m ³ , 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. |

Flowrate

| | |
|------------|--|
| Digits | 7 digits. |
| Units | mL, L, m ³ , Gallons, KG, Ton, lb, bl, cf, RND, ft ³ , scf, Nm ³ , NI, ical - no units. |
| Decimals | 0 - 1 - 2 or 3. |
| Time units | /sec - /min - /hr - /day. |

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

| | | |
|-------|----------------------------------|-------|
| TOTAL | 1397853 ^{m³} | |
| ▲ | | |
| RATE | 1853.9 ^{RUN} | L/MIN |

Ordering information

Example (standard configuration)

F111-P-CX-HC-OT-PX-XX-ZX.

Explanation standard configuration:

P: flowmeter signal: pulse; **CX**: no communication; **HC**: ABS panel mount enclosure; **OT**: two passive transistor outputs; **PX**: the unit has a basic power supply: 8 - 28V AC / DC; **XX**: Safe area; **ZX**: no options.

| Ordering information: | F111 | - | -C | -H | -O | -P | -X | -Z |
|-------------------------------|------|---|----|----|----|----|----|----|
| Flowmeter input signal | | | | | | | | |
| A | ⊗ | (0)4 - 20mA input. | | | | | | |
| P | ⊗ | Pulse input: coil, npn, pnp, namur, reed-switch. | | | | | | |
| U | ⊗ | 0 - 10V DC input. | | | | | | |
| Communication | | | | | | | | |
| CB | | Communication RS232 - Modbus ASCII / RTU. | | | | | | |
| CH | | Communication RS485 - 2-wire - Modbus ASCII / RTU. | | | | | | |
| CI | | Communication RS485 - 4-wire - Modbus ASCII / RTU. | | | | | | |
| CT | ⊗ | Intrinsically Safe TTL - Modbus ASCII / RTU. | | | | | | |
| CX | ⊗ | No communication. | | | | | | |
| Enclosure | | | | | | | | |
| HA | ⊗ | Aluminum field mount enclosure IP67 / NEMA 4X. | | | | | | |
| HB | ⊗ | Aluminum panel mount enclosure IP65 / NEMA 4. | | | | | | |
| HC | ⊗ | ABS panel mount enclosure IP65 / NEMA 4. | | | | | | |
| HD | ⊗ | ABS wall mount enclosure IP67 / NEMA 4X. | | | | | | |
| HU | ⊗ | Aluminum field mount enclosure IP67 / NEMA 4X. | | | | | | |
| Outputs | | | | | | | | |
| OA | | two active transistor outputs - requires PD, PF or PM. | | | | | | |
| OR | | Two mechanic relay outputs - requires PF or PM. | | | | | | |
| OT | ⊗ | Two passive transistor outputs - standard configuration. | | | | | | |
| Power supply | | | | | | | | |
| PB | ⊗ | Lithium battery powered. | | | | | | |
| 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 OT. | | | | | | |
| PM | | 115 - 230V AC + sensor supply. | | | | | | |
| PX | ⊗ | Basic power supply: 8 - 24V AC / DC. | | | | | | |
| Hazardous area | | | | | | | | |
| XI | ⊗ | Intrinsically safe. | | | | | | |
| XD | ⊗ | EExd enclosure - 1 key. | | | | | | |
| XF | ⊗ | EExd enclosure - 3 keys. | | | | | | |
| XX | | Safe area only. | | | | | | |
| Other options | | | | | | | | |
| ZB | ⊗ | Backlight (available appr. Jan. 2005). | | | | | | |
| ZF | ⊗ | Coil input 10mVpp. | | | | | | |
| ZX | ⊗ | No options. | | | | | | |

The bold marked text contains the standard configuration.

⊗ Available Intrinsically Safe.

Specifications are subject to change without notice.