Features
• Large display shows preset value and running batch value simultaneously.
• The analog output value reflects the course of the batch process; fourteen different profiles can be selected.
• Self-learning overrun correction.
• Easy operation to enter a batch value and to control the process.
• Count-up and count-down function available.
• Ability to process all types of flowmeter signals.
• 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 Ex ia IIB/IIC T4 T100°C.
• Explosion/flame proof II 2 GD Ex e IIB T5.
• 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 configurable control outputs: for two-stage or one-stage control.
• (0)4 - 20mA / 0 - 10V DC according to the batch process.
• Scaled pulse output according to acc. total.

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

Status
• Remote control: start.
• Remote control: pause / stop.

Applications
• For batch applications where retransmission of the course of the process is required.
  Alternative basic model: F030, F130 and F131 or more sophisticated models: 300 series.
General information

Introduction
The F136 offers in addition to the standard functions an analog output signal in relation to the batch process. This to transmit the course of the process. The operator can enter a batch quantity easily or execute repeating batches. During the batch, the preset value is displayed as well as the batched (or remaining) quantity. The automatic self-learning overrun correction will ensure an accurate result each batch again.

Display
The display has large 17mm (0.67”) and 8mm (0.31”) digits. Besides the process information, a seven digit resettable "day total" is available as well as an eleven digit non-resettable accumulated total. All are backed-up in EEPROM memory every minute.

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

Analog output signal
The (0)4 - 20mA or 0 - 10V DC output signal is related to the batch process. For example, a 4mA will be generated when START has been pressed and this value will increase smoothly to 18.7mA when the overrun correction closes the valve. The end value will be 20mA when the batch is finished. Fourteen different profiles are available to re-transmit the course of the process (see section profiles). The output signal can be passive, active or isolated where the passive output type will loop power the F136 as well.

Control outputs
Two outputs are available which can be configured to operate as two stage control for large batch quantities or one stage control for smaller batches, where the second output is available as a scaled pulse output. The output signals can be a passive NPN, active PNP or an isolated electro-mechanical relay.

Signal input
The F136 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.

Communication
All process data and settings can be read and modified manually or through the Modbus communication link (RS232 / RS485). If desired, the batch process can even be started and stopped through communication. 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 F136 is supplied in a GRP panel mount enclosure, which can be converted to a field mount enclosure. 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 F136
**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")**

**Actual**

2973.4

**Preset**

6350.0

**Dimensions in mm**

- **HB & HC enclosures**
  - 130 mm (5.12")
  - 75 mm (2.95")
  - 112 mm (4.40")
- **Panel cut-out**
  - 120 mm (4.72")
  - 75 mm (2.95")
  - 112 mm (4.40")

- **Aluminum & GRP enclosures**
  - **HB**
    - 130 mm (5.12")
  - **HC**
    - 112 mm (4.40")
  - **Flat bottom, no holes available.**

**Terminal connections**

- **Communications RS485**
  - 4 wire (A, B, RXD, TXD)
  - 2 wire (A, B)
- **Control**
  - RS232
  - TTL Intrinsically Safe
  - Reed Switch / NPN
  - Active Signal
  - 0 - 20mA
- **Control / Pulse**
  - passive trans.
  - active 24V DC
  - Mechanical Relay
- **Flowmeter Input**
  - passive trans.
  - active 24V DC
  - Mechanical Relay
- **Start Input**
  - 4 - 20mA
  - 0 - 10V
- **Stop Input**
  - 4 - 20mA
  - 0 - 10V
- **Communication / Backlight**
  - passive trans.
  - active 24V DC
- **Power Supply**
  - 8 - 24V AC
  - 8 - 24V DC
  - 24V AC
  - 115 - 230V AC
  - 24V DC
  - 16 - 30V DC
  - 4 - 20mA
  - 0 - 10V
  - 0 - 20mA
- **Output Loop Powered Unit**
  - 4 - 20mA
- **Battery Powered Internal Long Life Lithium Battery**
  - terminals GND - 1 - 2 are not available.
- **Connection & Mounting Options**
  - M16 x 1.5
  - M20 x 1.5
  - M25 x 1.5
  - PG9
  - PG13
  - M20 x 1.5
  - M25 x 1.5
  - M30 x 1.5
  - M40 x 1.5
  - 3/4" NPT
  - 1/2" NPT
  - 1/2" NPT
  - 1/2" NPT
  - 1/2" NPT
  - 1/4" NPT

**Device Dimensions**

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

**Device Specifications**

- **Aluminum**
  - HA
  - HD
  - HM
  - HE
  - HN
  - HF
  - HO
  - HG
  - HP
  - HH
  - HT
  - HJ
  - HU
  - HK
  - HZ

- **GRP**
  - GB
  - GD
  - GM
  - GE
  - GN
  - GF
  - GO
  - GG
  - GP
  - GH
  - GT
  - GJ
  - GU
  - GZ

**Note:** Dimensions and specifications are approximate and subject to change. Refer to the manufacturer's documentation for the most accurate information.
**Typical wiring diagram F136-P-AP-CH-OT-PX**

**Typical wiring diagram F136-A-AA-CB-OA-PD**

**TERMINAL CONNECTORS**

F100 - series

**OUTPUT LOOP POWERED**

- **Modbus communication type CH: RS485 - 2 wire**
- **Control output type OT: passive transistor**
- **Analog output type AP: passive 4 - 20mA (loop powered)**
- **Flowmeter input type: P pulse**
- **Main supply**
- **Power supply type PD:**

**24V AC / DC POWER SUPPLY**

- **Logic input:**
  - **PAUSE / STOP**
  - **START**
  - **PAUSE / STOP**

- **Control output type OA: active 24V DC pulse**
- **Analog output type AA:**
  - **active 4 - 20mA**
- **Flowmeter input type: P pulse**
- **Control output type OA:**
  - **passive transistor**
  - **passive transistor**

**Circuit depends on type of signal**

- **Supply voltage:**
  - 1.2 / 3.2V DC to sensor
  - 3.2 / 8.2 / 12 / 24V DC to sensor

*Supply voltage: 1.2 / 3.2V DC to sensor

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

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**TERMINAL CONNECTORS**

**F100 - series**

**24V AC / DC POWER SUPPLY**

- **Logic input:**
  - **PAUSE / STOP**
  - **START**

- **Control output type OA:**
  - **active 24V DC pulse**

- **Analog output type AA:**
  - **active 4 - 20mA**

- **Flowmeter input type: P pulse**

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**TERMINAL CONNECTORS**

**F100 - series**

**OUTPUT LOOP POWERED**

- **Modbus communication type CH: RS232**
- **Control output type OT: passive transistor**
- **Analog output type AP: passive 4 - 20mA (loop powered)**
- **Flowmeter input type: P pulse**
- **Main supply**
- **Power supply type PD:**

**24V AC / DC POWER SUPPLY**

- **Logic input:**
  - **PAUSE / STOP**
  - **START**
  - **PAUSE / STOP**

- **Control output type OA: active 24V DC pulse**
- **Analog output type AA:**
  - **active 4 - 20mA**
- **Flowmeter input type: P pulse**
- **Control output type OA:**
  - **passive transistor**
  - **passive transistor**

**Circuit depends on type of signal**

- **Supply voltage:**
  - 1.2 / 3.2V DC to sensor
  - 3.2 / 8.2 / 12 / 24V DC to sensor

*Supply voltage: 1.2 / 3.2V DC to sensor

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

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**TERMINAL CONNECTORS**

**F100 - series**

**24V AC / DC POWER SUPPLY**

- **Logic input:**
  - **PAUSE / STOP**
  - **START**

- **Control output type OA:**
  - **active 24V DC pulse**

- **Analog output type AA:**
  - **active 4 - 20mA**

- **Flowmeter input type: P pulse**

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**TERMINAL CONNECTORS**

**F100 - series**

**OUTPUT LOOP POWERED**

- **Modbus communication type CH: RS232**
- **Control output type OT: passive transistor**
- **Analog output type AP: passive 4 - 20mA (loop powered)**
- **Flowmeter input type: P pulse**
- **Main supply**
- **Power supply type PD:**

**24V AC / DC POWER SUPPLY**

- **Logic input:**
  - **PAUSE / STOP**
  - **START**
  - **PAUSE / STOP**

- **Control output type OA: active 24V DC pulse**
- **Analog output type AA:**
  - **active 4 - 20mA**
- **Flowmeter input type: P pulse**
- **Control output type OA:**
  - **passive transistor**
  - **passive transistor**

**Circuit depends on type of signal**

- **Supply voltage:**
  - 1.2 / 3.2V DC to sensor
  - 3.2 / 8.2 / 12 / 24V DC to sensor

*Supply voltage: 1.2 / 3.2V DC to sensor

*Supply voltage: 3.2 / 8.2 / 12 / 24V DC to sensor
Typical wiring diagram F136-P-AP-CH-OR-PF

**TERMINAL CONNECTORS**

**F100 - series**

**24V AC / DC POWER SUPPLY**

*Supply voltage: 1.2 - 3.2 - 8.2 - 12 - 24V DC to sensor

*Logic input: PAUSE / STOP

*Logic input: START

**Flowmeter input type A:**

(e.g. 4 - 20mA)

**Control or pulse output type OR:**

(e.g. relay or solenoid)

**Power supply type PF:**

24V AC / DC

**Main supply**

**Common ground**

**Earth**

**Modbus communication type CH: RS485 - 2 wire**

**Power supply type PM:**

115 - 230V AC

**115 - 230V AC POWER SUPPLY**

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

Typical wiring diagram F136-A-AI-CI-OR-PM

**TERMINAL CONNECTORS**

**F100 - series**

**115 - 230V AC POWER SUPPLY**

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

The F136-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 control 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 F136 remains available, including two stage control, 4 - 20mA output, pulse output and Modbus communication (type CT). Power supply type PD-XI offers a 8.2V sensor supply e.g. for one Namur sensor. A 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 03ATEX1074 X

Configuration example IIB and IIC
F136-P-AP-(CT)-OT-PX-XI - Output loop powered unit

* Note sensor supply voltage: 1.2V DC for coil sensors or 3.2V DC for other pulse sensors.
Configuration example IIB - F136-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

RS332 / 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

e.g. relay

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.

**Logic input:**

- PAUSE / STOP

+ 3.2V

Low-pass filter

Ci is negligibly small

LAUX

PAUSE / STOP

Common ground

- +

- 3.2V

Low-pass filter

Ci is negligibly small

Logic input

- Power supply type PD: 16 - 30V DC

**Control output type OT:**

- passive transistor

Ci is negligibly small

e.g. relay or counter

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.

**Logic input:**

- START

+ 3.2V

Low-pass filter

Ci is negligibly small

1M

Common ground

- +

- 3.2V

Low-pass filter

Ci is negligibly small

Logic input

- Power supply type PD: 16 - 30V DC

**Note:**

- Uo: maximum operating voltage
- Io: maximum operating current
- Po: maximum operating power

Consult the technical specification for operational values.

**Note:**

- Uo: maximum operating voltage
- Io: maximum operating current
- Po: maximum operating power

Consult the technical specification for operational values.

**Note:**

- Uo: maximum operating voltage
- Io: maximum operating current
- Po: maximum operating power

Consult the technical specification for operational values.

**Note:**

- Uo: maximum operating voltage
- Io: maximum operating current
- Po: maximum operating power

Consult the technical specification for operational values.
Profiles increasing output
Selectable profiles analog output signal:

-25%: Situation before a next batch start.
0%: The moment after START has been pressed.
75%: Valve will be closed due to the overrun correction.
100%: End of overrun-time which is end-of-batch.
125% Situation after end-of-batch.
Profiles decreasing output

Selectable profiles analog output signal:

-25%: Situation before a next batch start.
0%: The moment after START has been pressed.
75%: Valve will be closed due to the overrun correction.
100%: End of overrun-time which is end-of-batch.
125% Situation after end-of-batch.
**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:** Transflective LCD with green LED backlight. Good readings in full sunlight and darkness.
- **Note ZB:** 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**

- **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.
- **Type PL:** 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 for pulse signals and 1.2V DC for coil pick-up.
- **Type PD:** 1.2 / 3.2 / 8.2 / 12 / 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 A or U: the sensor supply voltage is according to the power supply voltage connected to terminal 1. Also terminal 2 offers the same voltage.
- **Type PF / PM:** 1.2 / 3.2 / 8.2 / 12 / 24V DC - max. 400mA @ 24V DC.

**Terminal connections**

- **Type:** Removable plug-in terminal strip.
- **Wire max.:** 1.5mm² and 2.5mm².

**Data protection**

- **Type:** EEPROM backup of all settings. Backup of running totals every minute. Data retention at least 10 years.
- **Pass-code:** Configuration settings can be pass-code protected.

### Hazardous area

**Intrinsically Safe**

- ATEX approval ref.: II 1 GD EEx ia IIB/IIC T4 Tsoo°C.
- Maximum ambient +70°C (158°F).

** Explosion proof**

- ATEX approval ref.: II 2 GD EEx d IIB T5.
- 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.

### Environment

**Electromagnetic compatibility**


### 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 HN:** Cable entry: 1 x M20.
- **Type HO:** Cable entry: 2 x M20.
- **Type HP:** Cable entry: 6 x M12.
- **Type HT:** Cable entry: 1 x 1/2" NPT.
- **Type HU:** Cable entry: 3 x 1/2" NPT.
- **Type HZ:** Cable entry: no holes.

### GRP wall / field mount enclosures

**General**

- GRP wall/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.
Signal inputs
Flowmeter
Type P
Coil / sine wave (minimum 20 mVpp or 80 mVpp - sensitivity selectable), NPN/PNP, open collector, reed-switch, Namur, active pulse signals 8 - 12 and 24 V DC.
Frequency
Minimum 0 Hz - maximum 7 kHz 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 120 Hz.
K-Factor
0.000001 - 9,999,999 with variable decimal position.
Low-pass filter
Available for all pulse signals.
Option ZF
coil sensitivity 10 mVpp.
Type A
(0)4 - 20 mA. Analog input signal can be scaled to any desired range within 0 - 20 mA.
Type U
0 - 10 V DC. Analog input signal can be scaled to any desired range within 0 - 10 V DC.
Accuracy
Resolution: 14 bit. Error < 0.025 mA / ± 0.125% FS. Low level cut-off programmable.
Span
0.000010 - 9,999,999 with variable decimal position.
Update time
Four times per second.
Voltage drop
Type A: 2.5 V @ 20 mA.
Load impedance
Type U: 3 kΩ.
Relationship
Linear and square root calculation.
Note
For signal type A and U: external power to sensor is required; e.g. type PD.

Logic inputs
Function
Two terminal inputs to start, stop and reset the batch process.
Type
Internally pulled-up switch contact - NPN.
Duration
Minimum pulse duration 100 msec.

Signal outputs
Analog output
Function
Transmitting process situation.
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 - 20 mA output (requires OA + PD, PF or PM).
Type AB
Active 0 - 20 mA output (requires OA + PD, PF or PM).
Type AF
Passive floating 4 - 20 mA output for Intrinsically Safe applications (requires PC, PL or PD).
Type AI
Passive galvanically isolated 4 - 20 mA output - also available for battery powered models (requires PB, PD, PF, PL or PM).
Type AP
Passive 4 - 20 mA output - not isolated. Unit will be loop powered.
Type AU
Active 0 - 10 V DC output (requires OA + PD, PF or PM).

Control / pulse output
Function
User defined: batch process one or two stage control - scaled pulse output according the running batch or according accumulated total.
Frequency
Max. 64 Hz. Pulse length user definable between 7.8 msec up to 2 seconds.
Type OA
Two active 24 V DC transistor outputs (PNP); max. 50 mA per output (requires AA + PD, PF or PM).
Type OR
Two electro-mechanical relay outputs (N.O.) - isolated; max. switch power 230 V AC - 0.5 A per relay (requires PF or PM).
Type OT
Two passive transistor outputs (NPN) - not isolated. Max. 50 V DC - 300 mA per output.

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.

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

Preset / 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 - 56 mm.
ACF07
Two stainless steel worm gear clamps Ø 58 - 75 mm.
ACF08
Two stainless steel worm gear clamps Ø 77 - 95 mm.
ACF09
Two stainless steel worm gear clamps Ø 106 - 138 mm.
ACF10
Customized Grevopal tagplates for ACF02 and ACF05, including stainless steel screws.
Dimension: 95 mm x 12.5 mm (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.
Ordering information

Standard configuration: F136-P-AP-CX-EX-HC-IX-OT-PX-TX-XX-ZX.

**Flowmeter input signal**

- **A**: 0-4 - 20mA input.
- **P**: Pulse input: coil, npn, pnp, namur, reed-switch.
- **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, PL or PD.
- **AI**: Isolated 4 - 20mA output - requires PB, PD, PF, PL or PM.
- **AP**: Passive 4 - 20mA output, loop powered unit.
- **AU**: Active 0 - 10V DC output - requires OA + PD, PF or PM.

**Flow equations**

- **EX**: No flow equations.

**Panel mount enclosures**

- **IP65 / NEMA4**
- **HC**: GRP enclosure.

**GRP field / wall mount enclosures**

- **IP67 / NEMA4X**
- **HC**: GRP enclosure.

**GRP field / wall mount enclosures**

- **IP67 / NEMA4X**
- **HD**: Cable entry: no holes.
- **HF**: Cable entry: 2 x Ø 16mm & 1 x Ø 20mm.
- **HG**: Cable entry: 2 x Ø 22mm (7/8").
- **HH**: Cable entry: 6 x Ø 12mm.
- **HJ**: Cable entry: 3 x Ø 22mm (7/8").
- **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 1/2"/NPT.
- **HU**: Cable entry: 3 x 1/2"/NPT.
- **HZ**: Cable entry: no holes.
- **ABS field / wall mount enclosures**
- **IP65**
- **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**: 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**: ExExd enclosure - 3 keys.
- **XX**: Safe area only.

**Other options**

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

The bold marked text contains the standard configuration.

Available Intrinsically Safe.