

Technical Datasheet

Starting from version: V06-12



VTG/VIG (Ex)

Local Display

for wall mount with analog and frequency output

Description

Compact on-site display with external carrier frequency or inductive sensor for the evaluation of volume flows.

All measurement results and parameters relevant for the process can be shown directly on the VTG/VIG via the graphic display (that can be illuminated) and changed using the four membrane keys.

3 linearization banks with 20 points each are available to improve the accuracy. They are used to linearize the measurement signal depending on the chosen operating mode (external control, fixed assignment).

In pure 2-conductor operation (4 - 20 mA) the instantaneous value (flow) is dimensionally output on the current loop according to the programming.

A programmable digital output and a maximum of two control inputs (see technical data) are available in addition for further processing and control.

The VTG/VIG has an interface that allows operating parameters to be set and measured values to be read with the help of the CON.USB interface adapter and the "KEM EasyControl" visualization software. Optionally this interface can also be carried out as HART or USB.

The electrical connection is realized via a screw terminal strip that is exposed when the front cover is unscrewed and the display unit is flipped open.

Applications (depending on version)

- Ex-Approval
- Stainless steel or aluminum housing
- 3 x 20 points linearisation
- Graphic display
- Fast setup
- Integrated interface
- Programming and visualisation via KEM „Easy Control“ possible
- Setting of operation type
- Normalized frequency output
- Control inputs
- 2 Status-LEDs

Technical Data

General

| | |
|-----------------------|--|
| Display | Intelligent LCD graphic display 132 * 32 dot View 15 * 50 mm |
| Backlight | Yellow/green (not EX available or for NAMUR) |
| Operation | 4-keys |
| Frequency Range | VTG: 1 to 3,000 Hz (typical 0.5 to 5,000 Hz) VIG: 7 to 3,000 Hz (typical 5 to 5,000 Hz) |
| Media Temperature | Form K + R: -40 °C up to +120 °C [-40 °F up to +248 °F] ¹⁾ Form L + S: -40 °C up to +150 °C [-40 °F up to +302 °F] ²⁾ Max. medium temperature +120°C [248 °F] independent from sensor form (Ex, T4) |
| Ambient Temperature | -20 °C up to +70 °C [-4 °F up to +158 °F] (non Ex / Ex, T4) |
| Electrical Connection | Version K: External screw type terminals (Cable gland for 7 -13 mm) Internal screw type terminals (Cable gland for 0.14 - 1.5mm ²) |
| Pin Assignment | Digital output: „P“ „N“ 1 = +I 1 = +I 2 = -I 2 = -I 3 = 0 V 3 = 0 V 4 = DIG.OUT 4 = + NAMUR 5 = IN_A 5 = IN_A 7 = +24 V 6 = IN_B |
| EMC | According to EN 61000-6-4 and EN 61000-6-2 |
| Ex-Approval | ATEX II 2G Ex ia IIC T4 Gb |

¹⁾ With a distance >25 mm between flow meter and electronic housing

²⁾ With a distance >65 mm between flow meter and electronic housing

Analogue Output

| | |
|-----------------|-------------------------------------|
| Type | 4 - 20 mA, 2-wire (passive) |
| Supplier | 15 to 30 V, controlled |
| Load | < 400 Ω (at 24 V) |
| Resolution | 12 Bit |
| Temp. Drift | < 100 ppm/K |
| Linearity | \pm 0.05 % F.S. |
| Sensor Material | Stainless steel 1.4104 [AISI 430 F] |

Digital output (Impulse-Frequency Output-Limit)

| | |
|-------------|---|
| Quantity | 1 |
| Output Type | Digital execution: „N“: NAMUR „P“: Push/Pull (I_{max} 20 mA U_B max 30 V) |
| Output Mode | a. Direct frequency b. Normalized frequency (1.2 - 1,000 Hz) c. Divider with programmable pulse time (1 - 420 ms) d. Batch e. Limit (actual value or temperature) |

Housing

| | |
|------------------|---|
| Housing Material | Version A: Aluminum powder-coated blue [RAL 5015] Version B: Stainless steel DIN 1.4104 [AISI 316] |
| Weight | Version A: ca. 1.5 kg Version B: ca. 3.4 kg |
| Protection Class | IP65 (higher on request) |
| Dimensions | See dimensional drawing (page 4) |

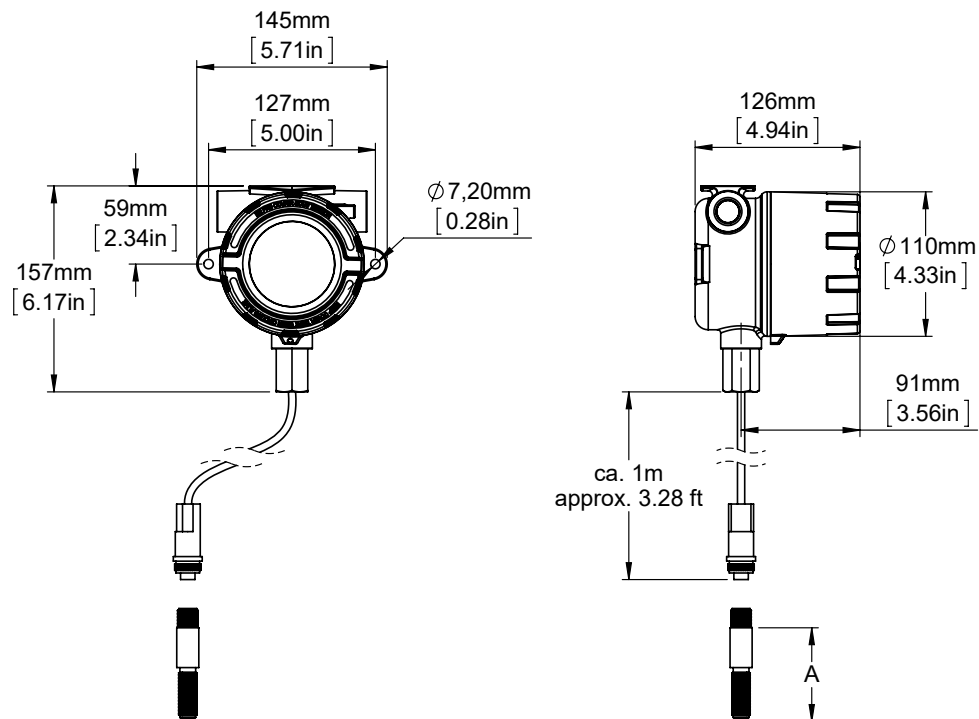
Interface (only one available)

| | |
|----------|---|
| Standard | „CON.USB.WT“ and incidental remote software „KEM EasyControl“ |
| Option H | HART 7 |
| Option U | USB |

Control Inputs

| | |
|-----------------------|--|
| Quantity | 1 for version with cable gland „P“ 2 for version with cable gland „N“ |
| Level | Active high at $U_{in} > 3$ V related to pin 3 |
| Internable Resistance | 3.3 k |
| Programmable Function | Totalizer reset, hold, switch to linearisation tables |

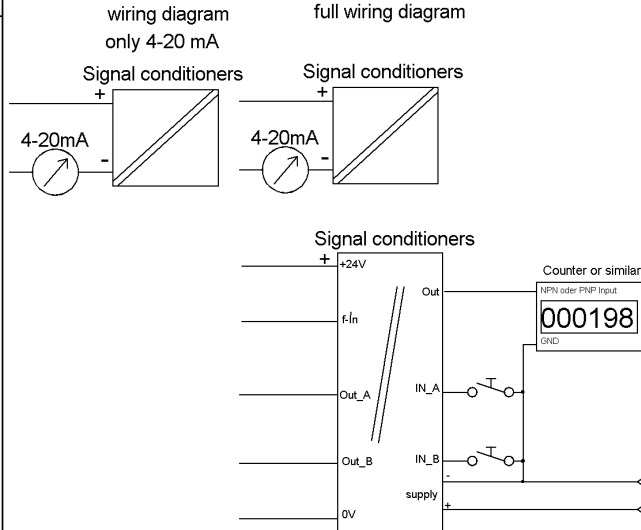
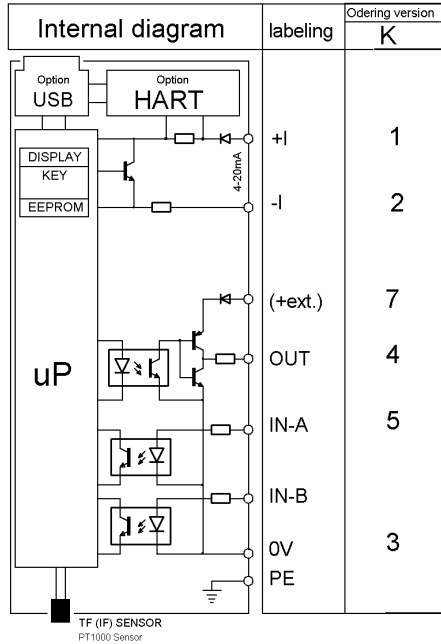
Dimensional Drawing



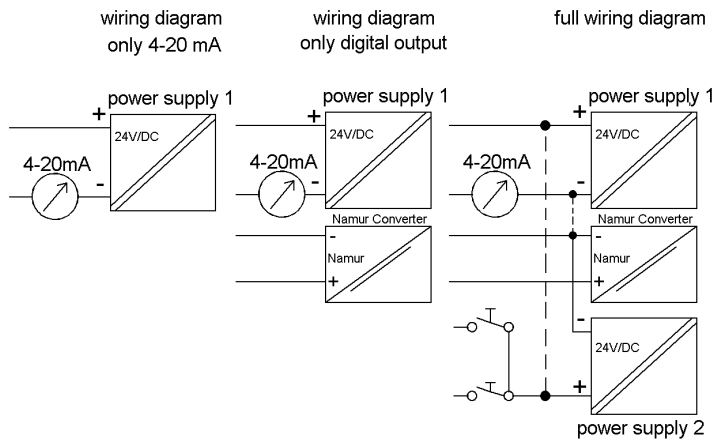
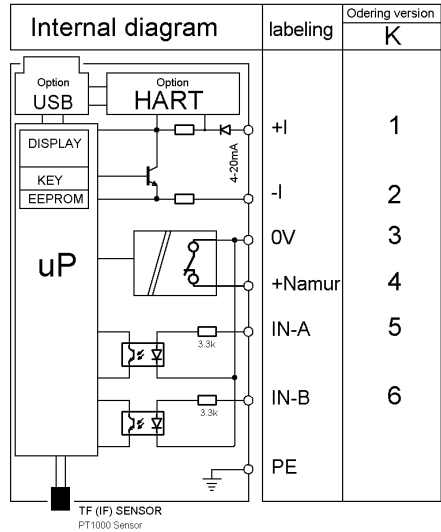
| Type | A |
|--------|---------------------|
| K or R | 72 mm [2.83 in] |
| L or S | 100 mm [3.94 in] |

Wiring Diagramm

with push/pull output (Ex and no Ex)



with NAMUR output (Ex and no Ex)



Note: connect " - - - " if you use only power supply 1

Safety Instructions

- Always supply pin 1 and 2.
- When the V*G **** - Ex please follow the related rules for hazardous areas.
- No backlight for Ex versions or versions with NAMUR available.

Ordering Code

| | V | X | G | X | - | X | - | X | - | X | - | X | - | X |
|--|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|
| Pickup-System | | | | | | | | | | | | | | |
| Carrier frequency | | T | | | | | | | | | | | | |
| Inductive | | I | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | | | |
| Aluminium pressure die-casting, painted | | | | A | | | | | | | | | | |
| Stainless steel 1.4401 | | | | S | | | | | | | | | | |
| Mechanical Sensor | | | | | | | | | | | | | | |
| ZHM 01/* - 04, HM Serie | | | | | | K | | | | | | | | |
| ZHM 01, SRZ Serie, LFM Serie | | | | | | R | | | | | | | | |
| ZHM 01/* -07, HM Serie | | | | | | L | | | | | | | | |
| ZHM 01, SRZ Serie, LFM Serie | | | | | | S | | | | | | | | |
| Connection Version | | | | | | | | | | | | | | |
| Cable gland | | | | | | | | K | | | | | | |
| Interface | | | | | | | | | | | | | | |
| HART-Interface | | | | | | | | | | H | | | | |
| USB-Interface (do not use in hazardous areas) | | | | | | | | | | U | | | | |
| KEM-Interface (do not use in hazardous areas) | | | | | | | | | | N | | | | |
| Digital Output | | | | | | | | | | | | | | |
| Push/Pull Output | | | | | | | | | | | | | P | |
| NAMUR Output | | | | | | | | | | | | | N | |
| Ex Protection | | | | | | | | | | | | | | |
| Ex-version Ex I (no backlight for Ex), ATEX Zone 1 II 2G Ex ia IIC T4 Gb | | | | | | | | | | | | | | Ex |
| ATEX Zone 2 II 3G Ex nA IIC T4 Gc | | | | | | | | | | | | | | Exn |

Options on request:

- cable entry M20x1.5 (only VTGS)
- Ingress protection IP66/67



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