

Technical Datasheet

Starting from version: V06-12



VTC/VIC (Ex)

Local Display

with analog and frequency output

Local Display – VTC/VIC (Ex)

Description

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

A temperature sensor integrated into the sensor tip is available in the VTC version, thereby making it possible to measure the medium temperature.

All measurement results and parameters relevant for the process can be shown directly on the VTC/VIC 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 VTC/VIC 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.

Depending on the version, the electrical connection is realized via a plug connector or a screw terminal strip that is exposed when the front cover is flipped open.

Applications (depending on version)

- Ex-Approval
- 360° turnable housing
- Temperature measurement
- 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 for NAMUR or EX available)
Operation	4-keys
Frequency Range	VTC: 1 to 3,000 Hz (typical 0.5 to 5,000 Hz) VIC: 7 to 3,000 Hz (typical 5 to 5,000 Hz)
Media Temperature	Form K: -40 °C up to +120 °C [-40 °F up to +248 °F] ¹⁾ Form L: -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: screw clamping strips for the cable gland (clamping range 7 - 13 mm, M20*1.5) Version 8: 8-pin M12 plug connector (A-coded)
Pin Assignment	Version dependent (see wiring diagram , page 6)
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 up to 30 V, controlled
Load	< 400 Ω (at 24 V)
Resolution	12 Bit
Temp. Drift	< 100 ppm/K
Linearity	± 0.05 % F.S.
Sensor Material	Stainless steel 1.4104 [AISI 430 F]

Impulse-Frequency Output-Limit

Quantity	1
Output Type	Digital Design/Type „N“: NAMUR according to DIN19234 „P“: Push/Pull (I_{max} 20 mA U_B max 30 V)
Output Mode	a. Direct frequency b. Normalized frequency (1.2 Hz - 1,000 Hz) c. Divider with programmable pulse time (1 - 420 ms) d. Batch e. Limit (actual value or temperature)

Temperature Sensor (VTC only)

Measuring Range	-40 °C up to +150 °C [-40 °F up to +302 °F]
Accuracy	± 1.5 % of actual flow

Housing

Sensor Housing Material	Stainless steel 1.4104 [AISI 430 F]
Housing Material	Aluminum powder-coated blue [RAL 5005]
Turnable Display	360°
Weight	400 g
Protection Class	IP65 (higher on request)
Dimensions	See dimensional drawing (page 4 and 5)

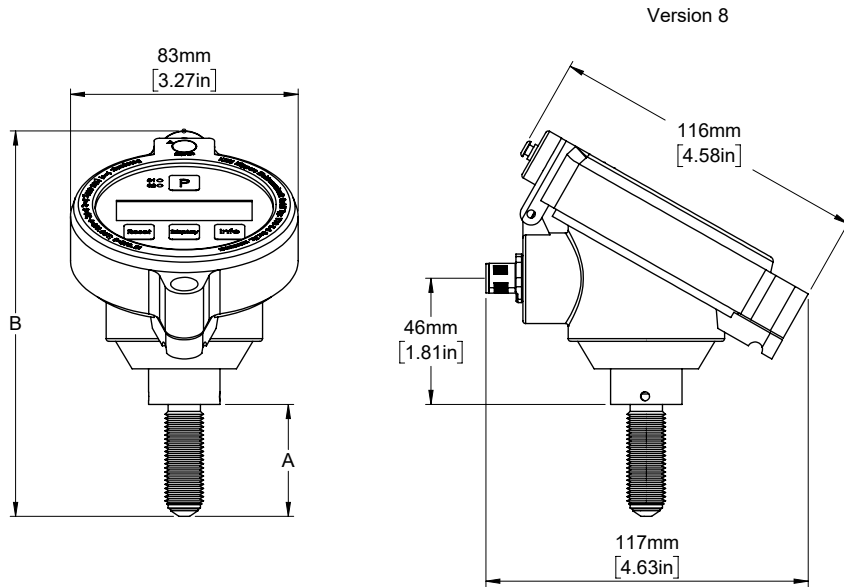
Control Inputs

Quantity	2 (1 for version with cable gland and Push Pull output)
Level	Active high at $U_{in} > 3$ V in relation to pin 3
Internable Resistance	3.3 k
Programmable Function	Totalizer reset, hold, switch to linearisation tables

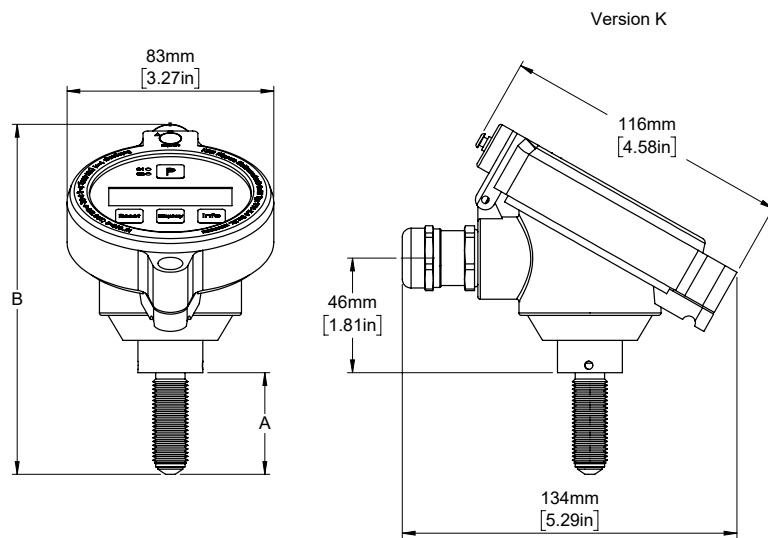
Local Display – VTC/VIC (Ex)

Dimensional Drawing

Connection Version 8



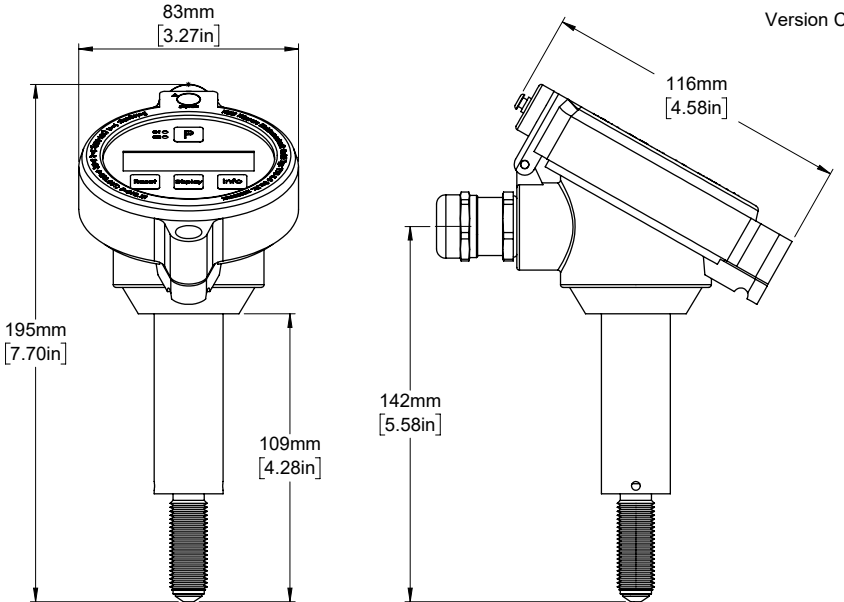
Connection Version K



Sensor Type	A	B
K	42 mm [1.65 in]	139 mm [5.47 in]
L	76 mm [2.99 in]	173 mm [6.81 in]

Dimensional Drawing

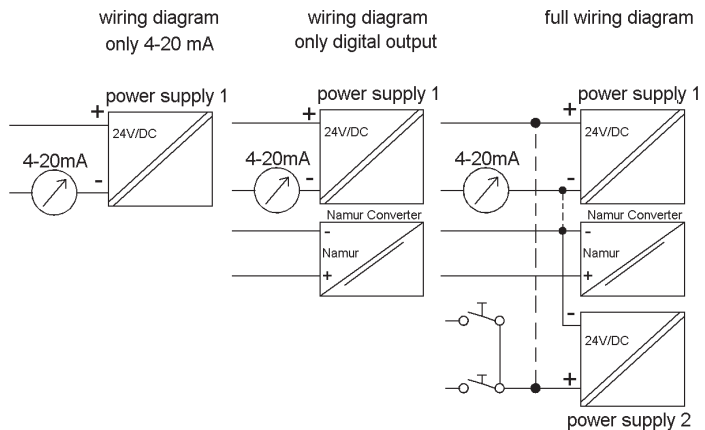
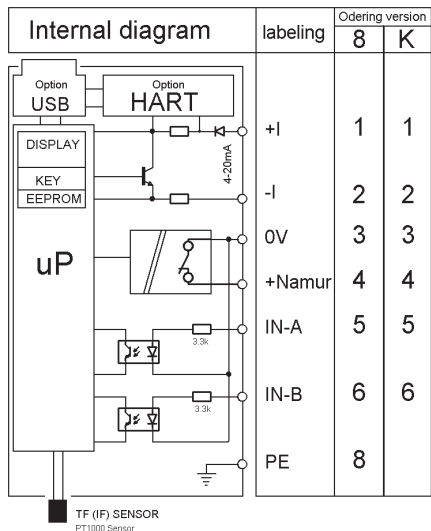
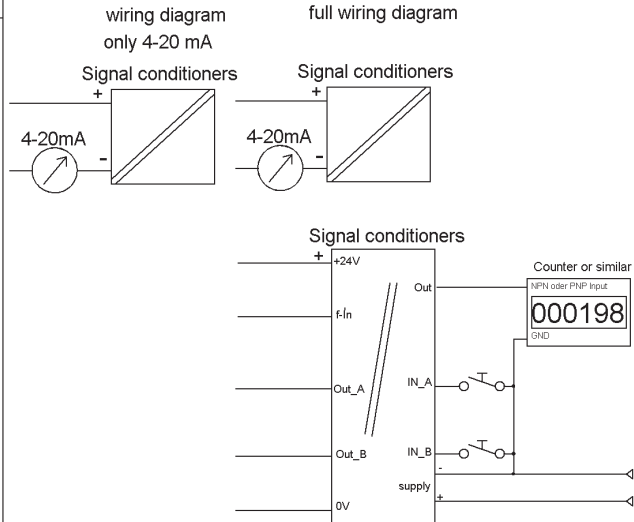
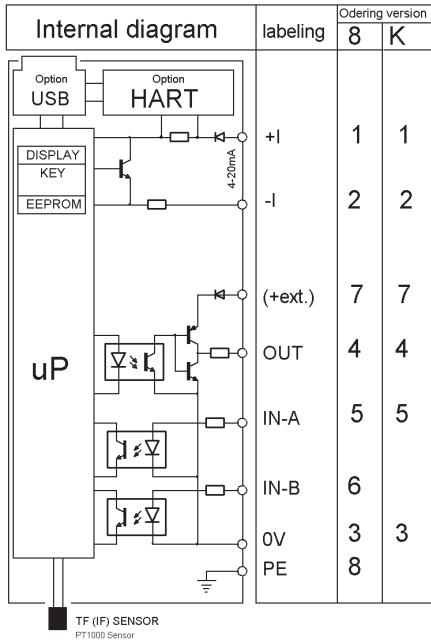
Connection Version K - Sensor Type C



Local Display – VTC/MIC (Ex)

Wiring Diagramm

with push/pull 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^{*C} **** - Ex please follow the related rules for hazardous areas.
- No backlight for Ex versions or versions with NAMUR available.

Ordering Code

	V	X	C	-	X	-	X	-	X	-	X	-	X
Pickup-System													
Carrier frequency		T											
Inductive		I											
Mechanical Sensor													
ZHM 01/* - 04, HM SRZ Serie					K								
ZHM 01/* - 07, HM SRZ Serie					L								
HM C Serie					C								
Connection Type													
Cable gland							K						
8 pin connector							8						
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 (no backlight)													Ex
ATEX													Exn
Zone 1 II 2G Ex ia IIC T4 Gb													
Zone 2 II 3G Ex nA IIC T4 Gc													



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