



# Coriolis Mass Flow Meter High Pressure Liquid Injection up to 1000 bar

## TM-HP / UMC4

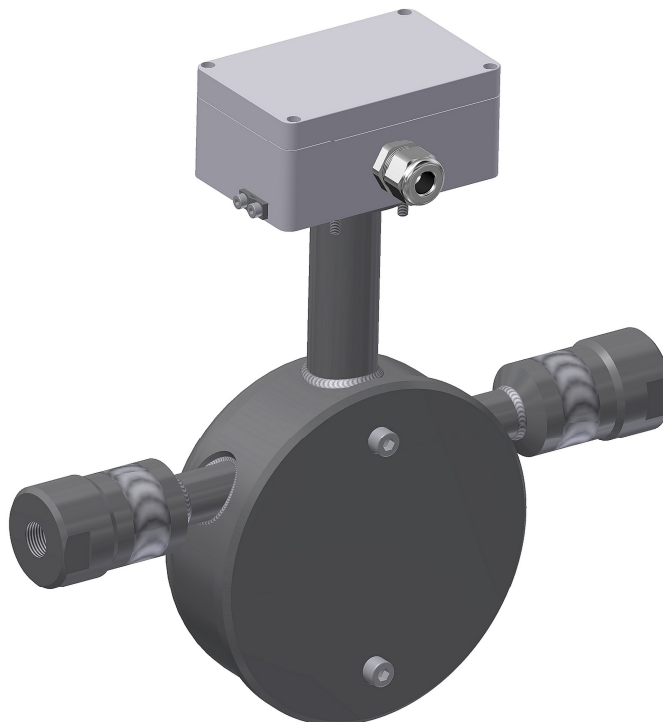
- Pressure resistant up to 1000 bar
- Ranges up to 20 l/min
- Microprocessor monitored,
- 2 current output signals 4 – 20mA
- Pulse- / frequency output
- Status output
- Data Storage System (DSB)

### Application

TM-HP High Pressure Coriolis Mass Flow Meters are specially designed to operate with high pressurized liquids.

Due to peak operation e.g. during injection process, high pressurized liquid processes require a special measuring pipe material treatment which guarantee extremely high zero point and long term stability values.

In particular the instruments are suited for high pressure liquid injection at low flow and high viscosity conditions on e.g. drilling rigs, oil and fracking gas exploration. Thus the instruments are well suited for extreme environmental conditions like for offshore use.



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## **Technical Data:**

### **Sensor:**

**TM - HP 05**

System: dual bent pipe  
Ranges: max. 30 kg/h  
Accuracy: Liquid:  $\pm 0,3$  % of actual  $\pm$  ZP stability  
Repeatability: 0,25% of actual flow

### **Materials:**

#### Wetted parts:

**TM-HP 05**  
Hastelloy C4, stainless steel 316 TI (1.4571)  
(HP 160 / Alloy 286 on request)

#### Process connections:

st.st. 1.4571(316 TI), 1/2 NPT F ; Hofer 7/8" ;  
Autoclave 6MF 9/16-18 ; Make Butech 3/8"

#### Sensor housing:

stainless steel

#### Approval:

ATEX II 1/2 G EEx ia IICT6-T2

#### Max. process pressure:

**TM-HP 05** 900 bar (20°C);  
Max. process temperature: -40....+110°C

#### Options:

Heating system, density calibration, pressure relief membrane for the instrument housing

## **Transmitter**

### **Model:**

**UMC4**

#### Power supply:

19 - 36 VDC,  
90 - 265 VAC ; 24 VAC +5%; -20% ; 50/60 Hz

#### Signal outputs:

(galvanically sealed)

#### Analog:

2 x 4-20 mA HART, passive ( Standard or Ex „i“)

#### Pulse output:

passive, via opto-coupler,  $U_i=30$  V,  $I_i=60$ mA,  $P_i=1,8$  W  
as Frequency output max. 1 KHz

#### (or Frequency output)

#### Status output:

passive, via opto-coupler,  $U_i=30$  V,  $I_i=60$ mA,  $P_i=1,8$  W

#### Ambient temperature:

-20 °C .... +60 °C

#### Ingress protection:

IP 68 (EN60529)

#### Ex classification:

II (1)2G Ex d [ia Ga] IICT3-T4 Gb

#### CE-Marking:

EMV-Guideline 2004/108/EG  
EN 61000-6-2:2005 immunity industrial environment  
EN 61000-6-3:2007 emission residential, commercial  
Ex-Guideline 94/9/EG

#### Communication:

HART®

#### Transmitter Mounting:

Remote mounting only - connection to sensor via  
a) terminal connection box IP 67  
b) Harting plug IP 65

**Dimensions ( mm)**

