

# TCMH 0450 Coriolis Mass Flow Meter

## for high pressure liquid applications

### Specification Sensor:

Nom. Flow Rates @ 850 kg/m <sup>3</sup> :	180 kg/h @ 1 cSt, 6.6 lb/min @ 1 cSt
Pressure Drop max. 2 bar	150 kg/h @ 10 cSt, 5.5 lb/min @ 10 cSt
	65 kg/h @ 30 cSt, 2.4 lb/min @ 30 cSt

Connection:	3/8" Autoclave (MP)
Pressure Rating:	
TCMH 0450-HC-SPOS:	1,050 bar, 15,200 psi
TCMH 0450-HC-SROS:	690 bar, 10,000 psi
TCMH 0450-HC-SSOS:	414 bar, 6,000 psi

### Accuracy:

Flow:	±0.2 % of reading
Mass Repeatability:	±0.1 % of reading
Zero Stability <sup>1)</sup> :	0.34 kg/h (0.16 kg/h <sup>1)</sup> 0.012 lb/min (0.005 lb/min <sup>1)</sup> )
Temperature:	±1.8 °F ±0.5 % of reading (±1 °C ±0.5 % of reading)

### Operating Conditions - Process<sup>2)</sup>:

Medium Temperature:	-40 °F ... +212 °F (-40 °C ... +100 °C)
Fluid:	Liquid
Pressure Effect on Sensitivity:	0.0002 %/bar, 0.000014 %/psi

### Operation Conditions - Environment:

Ambient Temperature:	-40 °F ... +158 °F (-40 °C ... +70 °C)
Relative Humidity:	max. 95 %

### Material of Construction:

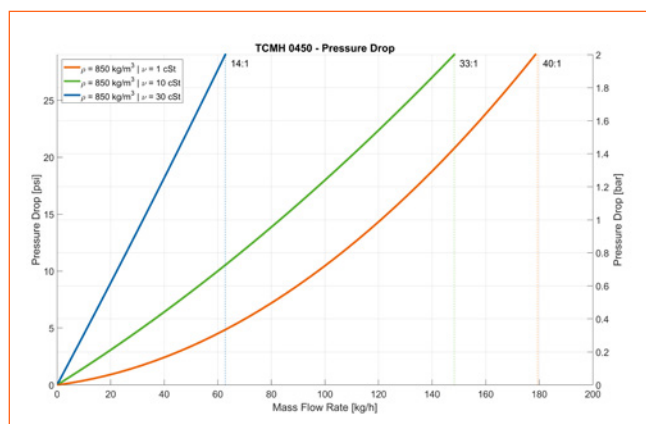
Tubes:	1.4404/AISI 316L
Manifold:	1.4435/AISI 316L
Housing:	1.4404/AISI 316L

### Burst Protection:

Rupture Disc:	G1/2"
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### Cabling:

Signal Cable Connection:	Push-Pull connector
For triple Ex approval (Ex3) <sup>3)</sup>	



<sup>1)</sup> Customer information required for density and viscosity at operation temperature for Reynolds number compensation.

<sup>2)</sup> Customer specific pressure compensation curves on request.

<sup>3)</sup> With connector M23 (TCE) and with connector Lemo (TCM), x m cable length (TCC-06-xx).

## Specification Electronics:

Power Supply: 24 V DC  $\pm$ 20 % or 90 ... 264 V AC  
Housing: aluminum diecast (1.4404/AISI 316L)  
Display: LCD Display

## Output signals:

Analog : 2 x 4 ... 20 mA passive two-wire, galvanically free  
Accuracy  $\pm$ 0.05 % of f.s.  
Temperature drift 0.05 % per 10 K  
Load <620  $\Omega$  (with 24 V supply)  
Output value programmable  
Frequency/Pulse: 5 - 10,000 Hz / Active Push-Pull for flowrate  
Status: Push-Pull programmable

## Input signals:

Control Input: 0/24 V DC  
Analog (optional): 4 ... 20 mA active for passive 2-wire-pressure sensor  
Supply >20 V (sensor current 20 mA)  
Interface: RS485 RTU (Modbus), optional HART®

## Ingress Protection:

IP65 (NEMA 4)  
IP66 (NEMA 4X) optional

## Dimensions:

Meter Dimensions: see drawing  
Meter Weight: 7.5 kg/16.5 lb  
Electronics Dimensions: see drawing  
Electronics Weight  
with aluminum diecast housing: 3.8 kg/8.3 lb  
with 1.4404/AISI 316L housing: 6.15 kg/13.56 lb

## Remote Field Mount



## Ex-Certifications:

ATEX (Ex)	Zone 1: Group IIC, T2...T4
ATEX (Exn)	Zone 2: II 3G Ex nA IIC T2...T4 Gc
IECEX (Ex)	Zone 1: Gruppe IIC, T2...T4
cCSAus (Ex1) <sup>4)</sup>	Class 1, Division 1: Group A, B, C, D, T2...T4
ATEX + IECEX + cCSAus triple approval (Ex3) <sup>4)</sup>	Zone 1: Group IIC, T2...T4 and Class 1, Division 1: Group A, B, C, D, T2...T4

<sup>4)</sup> For cCSAus the electronic is only available in aluminum housing.



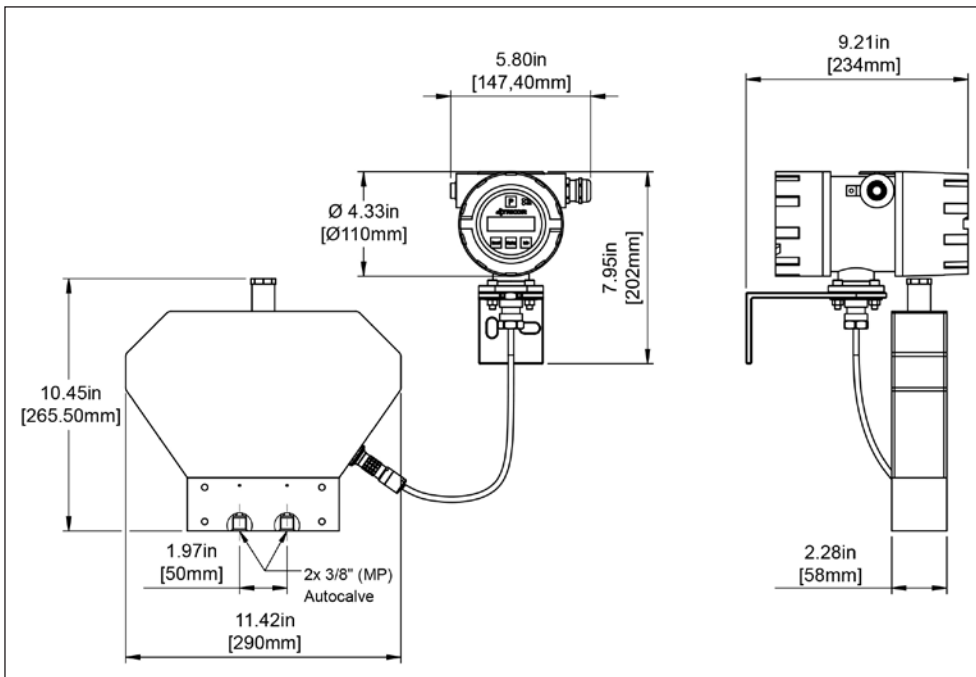
Users of explosion proof instruments should first refer to "Installation Manual for Hazardous Areas"!



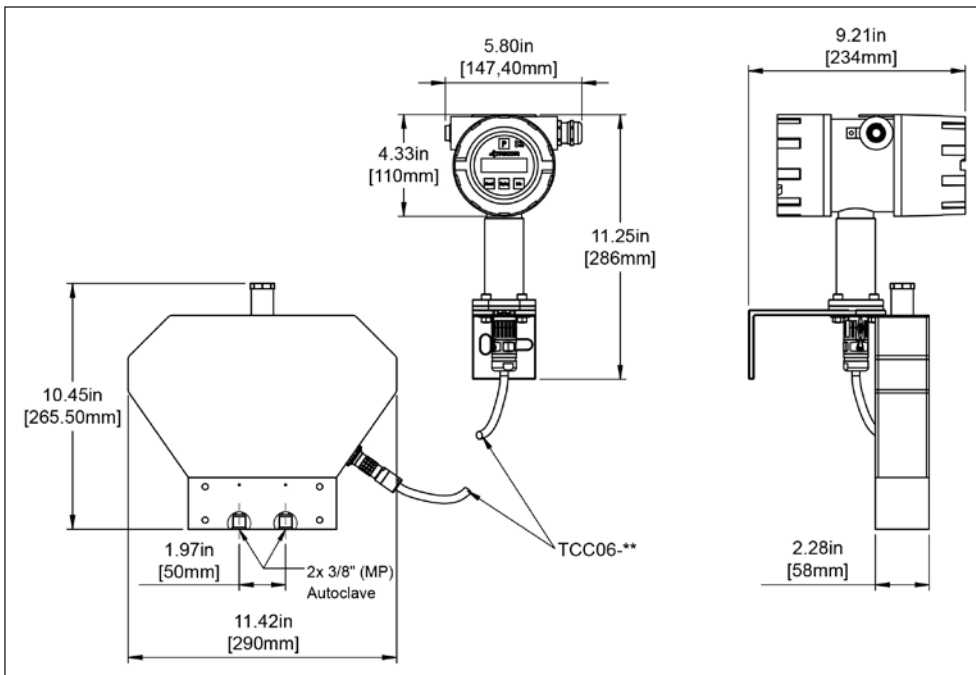
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Meter Dimensions:



Ex/Ex1



Ex3