

# TCMH 0450 Coriolis Mass Flow Meter

## for high pressure gas applications

### Specification Sensor (\* reference gases):

Nom. Flow Rates:

\*@ 20°C air, pressure drop 10 bar: 394 kg/h @ 1050 bar, 14.5 lb/min @ 15,200 psi  
 362 kg/h @ 690 bar, 13.3 lb/min @ 10,000 psi  
 316 kg/h @ 414 bar, 11.6 lb/min @ 6,000 psi

\*@ 20°C H<sub>2</sub>, pressure drop 50 bar: 254 kg/h @ 1050 bar, 9.30 lb/min @ 15,200 psi  
 240 kg/h @ 875 bar, 8.80 lb/min @ 12,690 psi  
 222 kg/h @ 690 bar, 8.15 lb/min @ 10,000 psi  
 184 kg/h @ 414 bar, 6.75 lb/min @ 6,000 psi

Pressure Drop (max.):

Connection: 3/8" Autoclave (MP), other connections available

Pressure Rating:

TCMH 0450-HC-SPPS (or -SPMS)<sup>1)</sup> 1,050 bar, 15,200 psi

TCMH 0450-HC-SRPS (or -SRMS)<sup>1)</sup> 690 bar, 10,000 psi

TCMH 0450-HC-SSPS (or -SSMS)<sup>1)</sup> 414 bar, 6,000 psi

### Accuracy:

Flow: ±1 % of reading  
 Mass Repeatability: ±0.5 % of reading  
 Zero Stability: 0.45 kg/h, 0.0165 lb/min  
 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: Gas

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<sup>1)</sup> or Sandvik Alloy HP160<sup>1)</sup>

Manifold: 1.4435/AISI 316L

Housing: 1.4404/AISI 316L

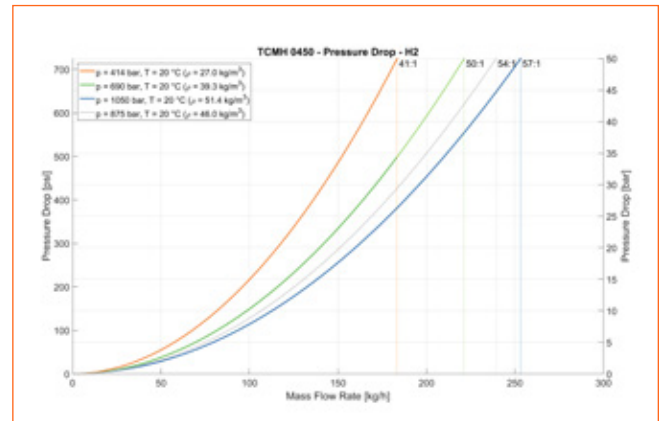
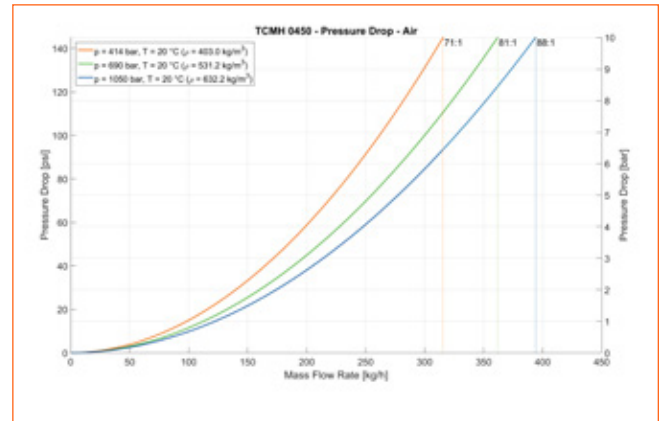
### Burst Protection:

Rupture Disc: G1/2"

### Cabling:

Signal Cable Connection: Push-Pull connector

For triple Ex approval (Ex3)<sup>3)</sup>



<sup>1)</sup> P respectively 1.4404/AISI 316L = NACE compliant, M respectively HP160 = not NACE compliant.

<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<sup>®</sup>

## 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"!



www.tricorflow.com

N & S AMERICA:

AW-Lake Company  
2440 W. Corporate Preserve Dr. #600, Oak Creek WI 53154, USA, Tel.: +1 414 574 4300

SINGAPORE:

TASI Flow Souteast Asia, Representative Office (RO) Singapore  
1003 Bukit Merah Central #06-32, Singapore 159836, UEN: T15RF0080G, P: +65 6274 1130

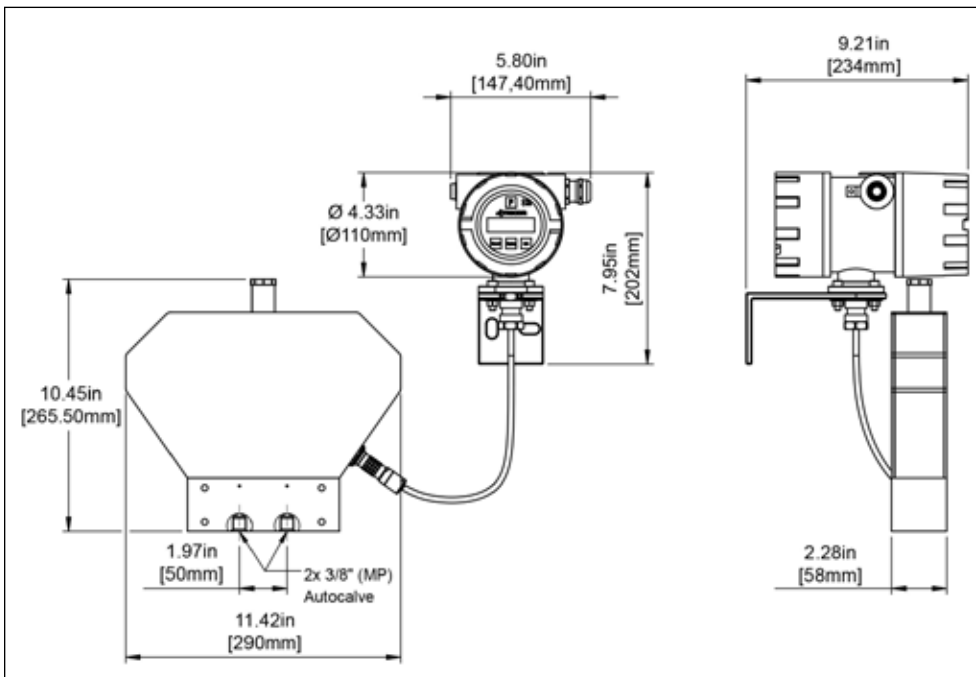
CHINA:

TASI Flow China  
Rm. 2429, JinYuan Office Building, No. 36, CN- BeiYuan Road, Beijing 100012, P.R. CHINA, Tel.: +86 10 520 037 38

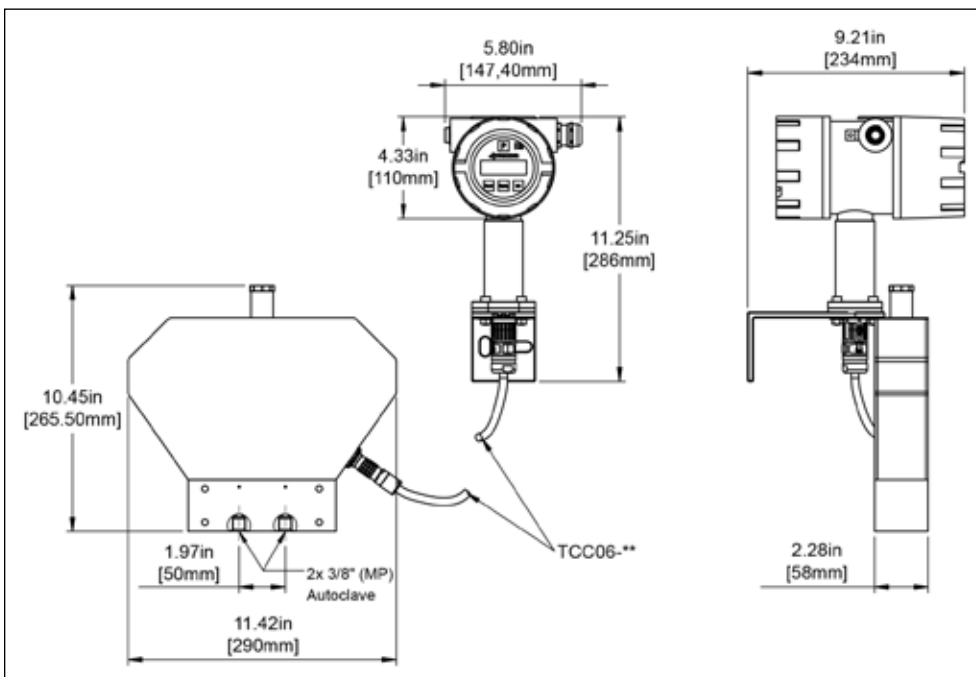
Rest of the World:

KEM Küppers Elektromechanik GmbH, Liebigstraße 5, 85757 Karlsfeld, Germany, Tel.: +49 8131 59391-0

Meter Dimensions:



Ex/Ex1



Ex3