

TRICOR Series TCM Coriolis Mass Flow Meters

Technical Datasheet



TRICOR - Coriolis Mass Flow Meters

Description

The TRICOR Coriolis Mass Flow Meters from TASI Flow are absolutely reliable and robust sensors in a variety of processes, performing multiple measurements simultaneously with customizable process parameters and multiple communication languages. The TRICOR production team mechanically balances every meter, assuring the dual tubes are dynamically aligned and in perfect balance before flow begins. The unique design and cutting edge manufacturing procedures ensure a meter with the highest resistance to external influences.

Features

- All-in-one instrument: direct measurement of mass flow, density and temperature, calculated measurement of volumetric flow
- No moving parts: low maintenance, no need for recalibration
- Easy to install: no straight run of pipe required and multiple mounting options available
- Mechanically balanced tubes and superior mechanical design for best-in-class density measurement
- Exceptional mechanical design resists external interference
- API gravity reading in software
- Exceptional ease of use and fast setup time: we will pre-program your process parameters
- Frequency output up to 10,000 Hz resolution
- Superior meter calibration: DAkkS-Accreditation as per DIN EN ISO/IEC 17025:2005
- Easily accessible, integrated meter diagnostics to verify meter health & performance
- Hazardous area certifications: ATEX, IECEx, cCSAus, EAC (TR-CU)
- Customized process connections available

Additional Options

- Net Oil software
- High pressure designs available up to 345 bar/5,000 psi
- Special calibrations for an oil viscosity up to 100 mm²/s
- Integrated pressure compensation
- Customizable installation length
- Extended warranty

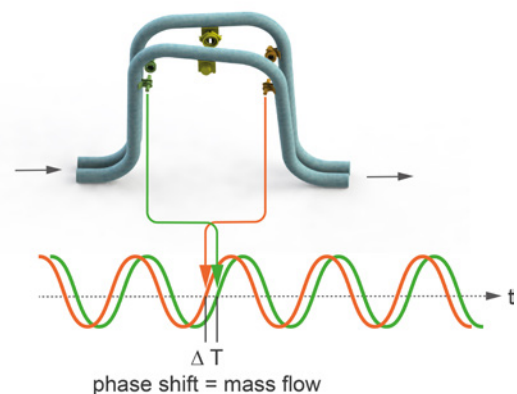
Principle of operation

Coriolis Mass Flow Meters (TCM) operate with two parallel tubes with coils that cause them to oscillate at their resonance frequency. Should a measurement flow enter the measuring tube, Coriolis forces are the result. Coriolis forces appear in oscillating systems when a mass moves towards or away from a rotational axis. These forces act on the inlet and outlet side in the opposite direction and minimally deform the measuring tubes. The deflection of the measurement tubes is captured by sensors on the inflow and outflow side. These two sensors measure a phase shift that is proportional to the mass flow.

The resonance frequency of the tubes varies depending on the density of the medium to be measured. This effect is used to measure the density of the medium.

Since the elastic properties of the flow tubes depend on the temperature, a temperature measurement is carried out for compensation.

The primary characteristics such as mass flow rate, density and temperature are measured with a single flow meter. The volume flow can be determined based on the mass flow rate and density.



Product Overview

Compact version



Exd housing: Wall mounted (remote version)



Version with TCE 6000 (including options)



Housing: Panel mounted (remote version)



TRICOR - Coriolis Mass Flow Meters

TCM Transducer - Technical Data for Liquids

| | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|---------------------------|--|----------|----------|----------|----------|----------|----------|----------|----------|
| Max. Flow Rate (kg/h) | 325 | 650 | 1,550 | 3,100 | 5,500 | 7,900 | 28,000 | 65,000 | 230,000 |
| Max. Flow Rate (lb/min) | 12 | 24 | 57 | 114 | 202 | 290 | 1,029 | 2,388 | 8,450 |
| Basic Accuracy (% o.r.) | ±0.1 | | | | | | | | |
| Zero Stability (% f.s.) | ±0.01 | | | | | | | | |
| Repeatability (% o.r.) | ±0.05 | | | | | | | | |
| Density Measuring Range | 0 - 2,500 kg/m ³ , 2.5 g/cm ³ (higher ranges on request) | | | | | | | | |
| Density Accuracy | ±1.0 kg/m ³ , ±0.001 g/cm ³ (special calibration on request) | | | | | | | | |
| Density Repeatability | ±0.5 kg/m ³ , ±0.0005 g/cm ³ | | | | | | | | |
| Temperature Accuracy | ±1.8 °F ±0.5 % of reading (±1 °C ±0.5 % of reading) | | | | | | | | |
| Temperature Repeatability | ±0.36 °F (±0.2 °C) | | | | | | | | |

| Process and Ambient | | |
|---------------------------------|--|---|
| Process Connections | female thread 1/2" adaptors for flanges, dairy and tri-clamp | flanges EN1092, ANSI B16.5, DIN2512, threaded tri-clamp |
| Max. Pressure Standard (Option) | 200 bar/2,900 psi (345 bar/5,000 psi) | 100 bar/1,450 psi |
| Pressure Drop at Max. Flow | for detail information please contact us | |
| Process Temperature (non Ex) | -40 °F ... +212 °F (-40 °C ... +100 °C) (standard) -40 °F ... +302 °F (-40 °C ... +150 °C) (optional) -76 °F ... +392 °F (-60 °C ... +200 °C) (optional) | |
| Process Temperature (Ex) | meter mount | -40 °F ... +158 °F (-40 °C ... +70 °C) (T4) n/a |
| | remote version | -40 °F ... +158 °F (-40 °C ... +70 °C) (T4) -40 °F ... +275 °F (-40 °C ... +135 °C) (T3) -76 °F ... +392 °F (-60 °C ... +200 °C) (T2) |
| Ambient Temperature | -40 °F ... +158 °F (-40 °C ... +70 °C) | |
| Storage Temperature | -40 °F ... +212 °F (-40 °C ... +100 °C) | |
| Electr. Connections Remote | screw type terminals | |
| Electr. Connections Meter Mount | none (internally connected to the electronics) | |
| Ingress Protection | IP65 (IP66/IP67 on request) | |

| General | | | | | | | | | |
|---------------------|------------------|------------|----------|------------|------------|------------|------------|------------|------------|
| Tube Arrangement | 2 serial | 2 parallel | 2 serial | 2 parallel | 2 parallel | 2 parallel | 2 parallel | 2 parallel | 2 parallel |
| Tube Inner Diameter | 4 mm | 4 mm | 8 mm | 8 mm | 7 mm | 9 mm | 16 mm | 28 mm | 43 mm |
| Tube Material | 1.4404/AISI 316L | | | | | | | | |
| Housing Material | 1.4404/AISI 316L | | | | | | | | |
| Dimensions | see drawings | | | | | | | | |

Calibration for Liquids and Gases:

The TRICOR flowmeters are always factory calibrated with water.

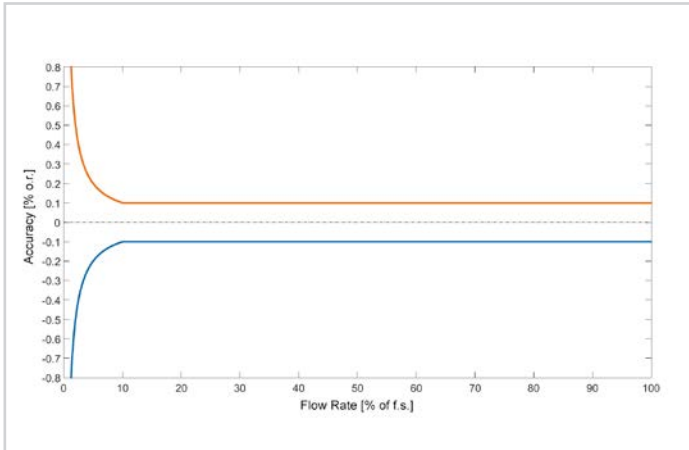
Calibration Conditions: Water : 68 °F ... 77 °F (20 °C ... 25 °C), ambient temperature : 68 °F ... 77 °F (20 °C ... 25 °C).

All specifications are based on above mentioned calibration reference conditions, a flow calibration protocol is attached to each instrument.

Stated accuracy combines the effects of repeatability, linearity and hysteresis.

Typical flow dynamics based on max. flow rate is 100:1.

Accuracy for Liquids



| Flow Rate of full Scale | Accuracy |
|--|---|
| $\geq \frac{\text{Zero Point}}{\text{Basic Accuracy}} * 100$ | $\pm \text{Basic Accuracy}$ |
| $< \frac{\text{Zero Point}}{\text{Basic Accuracy}} * 100$ | $\pm \frac{\text{Zero Point}}{\text{Measured Value}} * 100$ |

Example for a TCM 0325:

$325 \text{ kg/h} * \text{Zero Point (0.01 \%)} = 0.0325 \text{ kg/h}$ $12 \text{ lb/min} * 0.01 \% = 0.0012 \text{ lb/min}$
 $325 \text{ kg/h} * \text{Basic Accuracy (0.1 \%)} = 0.325 \text{ kg/h}$ $12 \text{ lb/min} * 0.1 \% = 0.012 \text{ lb/min}$
 Result: $(0.0325 / 0.325) * 100 = 10 \% (32.5 \text{ kg/h})$ $(0.0012 / 0.012) * 100 = 10 \% (1.2 \text{ lb/min})$

All flow rates $\geq 10 \%$ or 32.5 kg/h (1.2 lb/min): Measured error = Basic Accuracy

All flow rates $< 10 \%$ or 32.5 kg/h (1.2 lb/min): Measured error = $(\text{Zero Point} / \text{Measured Value}) * 100$

TRICOR - Coriolis Mass Flow Meters

TCM Transducer - Technical Data for Gases

| | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|--|-----------------|----------------|----------------|---------------|--------------|--------------|-------------|-------------|------------|
| Nom. Flow Rate (kg/h) ^{1) 3)} | 78 | 177 | 333 | 740 | 910 | 1,430 | 5,100 | 15,650 | 48,900 |
| Nom. Flow Rate (lb/min) ^{1) 3)} | 3 | 7 | 12 | 27 | 34 | 53 | 188 | 575 | 1,797 |
| Nom. Flow Rate (Nm ³ /h) ^{1) 2)} | 109 | 247 | 464 | 1,031 | 1,268 | 1,993 | 7,109 | 21,813 | 68,157 |
| Nom. Flow Rate (SCFM) ^{1) 2)} | 64 | 146 | 273 | 607 | 747 | 1,173 | 4,184 | 12,838 | 40,115 |
| Basic Accuracy (% o.r.) | ±0.5 | | | | | | | | |
| Zero Stability in kg/h (lb/min) | 0.0325 (0.0012) | 0.065 (0.0024) | 0.155 (0.0057) | 0.31 (0.0114) | 0.55 (0.020) | 0.79 (0.029) | 2.8 (0.103) | 6.5 (0.239) | 23 (0.845) |
| Repeatability (% o.r.) | ±0.25 | | | | | | | | |

| | | | | | | | | | |
|-------------------------|--|--|--|--|--|--|--|--|--|
| Density Measuring Range | see comment ³⁾ | | | | | | | | |
| Density Accuracy | ±2.0 kg/m ³ , ±0.002 g/cm ³ (special calibration on request) | | | | | | | | |
| Density Repeatability | ±1 kg/m ³ , ±0.001 g/cm ³ | | | | | | | | |

| | | | | | | | | | |
|---------------------------|---|--|--|--|--|--|--|--|--|
| Temperature Accuracy | ±1.8 °F ±0.5 % of reading (±1 °C ±0.5 % of reading) | | | | | | | | |
| Temperature Repeatability | ±0.36 °F (±0.2 °C) | | | | | | | | |

Process and Ambient

| | | | |
|---------------------------------|--|---|-------------------|
| Process Connections | female thread 1/2" adaptors for flanges, dairy and tri-clamp | flanges EN1092, ANSI B16.5, DIN2512, threaded tri-clamp | |
| Max. Pressure Standard (Option) | 200 bar/2,900 psi (345 bar/5,000 psi) | | 100 bar/1,450 psi |
| Pressure Drop at Max. Flow | for detail information please contact us | | |
| Process Temperature (non Ex) | -40 °F ... +212 °F (-40 °C ... +100 °C) (standard) -40 °F ... +302 °F (-40 °C ... +150 °C) (optional) -76 °F ... +392 °F (-60 °C ... +200 °C) (optional) | | |
| Process Temperature (Ex) | meter mount | -40 °F ... +158° F (-40 °C ... +70 °C) (T4) | n/a |
| | remote version | -40 °F ... +158 °F (-40 °C ... +70 °C) (T4) -40 °F ... +275 °F (-40 °C ... +135 °C) (T3) -76 °F ... +392 °F (-60 °C ... +200 °C) (T2) | |
| Ambient Temperature | -40 °F ... +158 °F (-40 °C ... +70 °C) | | |
| Storage Temperature | -40 °F ... +212 °F (-40 °C ... +100 °C) | | |
| Electr. Connections Remote | screw type terminals | | |
| Electr. Connections Meter Mount | none (internally connected to the electronics) | | |

| | | | | | | | | | |
|--------------------|-----------------------------|--|--|--|--|--|--|--|--|
| Ingress Protection | IP65 (IP66/IP67 on request) | | | | | | | | |
|--------------------|-----------------------------|--|--|--|--|--|--|--|--|

General

| | | | | | | | | | |
|---------------------|------------------|------------|----------|------------|------------|------------|------------|------------|------------|
| Tube Arrangement | 2 serial | 2 parallel | 2 serial | 2 parallel | 2 parallel | 2 parallel | 2 parallel | 2 parallel | 2 parallel |
| Tube Inner Diameter | 4 mm | 4 mm | 8 mm | 8 mm | 7 mm | 9 mm | 16 mm | 28 mm | 43 mm |
| Tube Material | 1.4404/AISI 316L | | | | | | | | |
| Housing Material | 1.4404/AISI 316L | | | | | | | | |
| Dimensions | see drawings | | | | | | | | |

Max. allowed flow velocity (Ma 0.5).

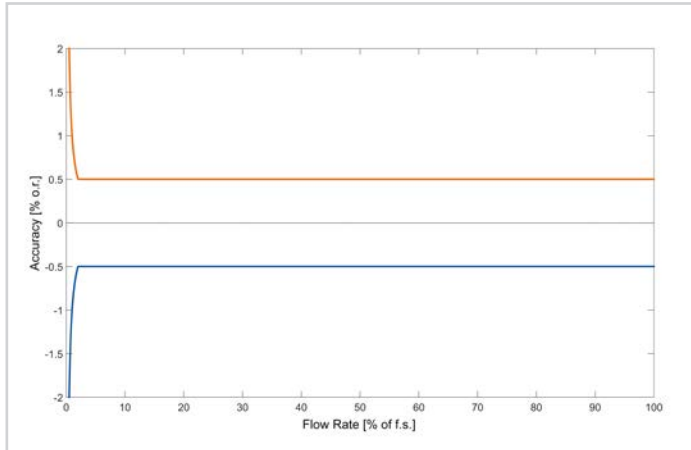
For gas applications, flow rate and pressure drop for individual sensor sizes are dependent on operating temperature, pressure and fluid composition. Therefore, when selecting a sensor for any particular gas application, please use the the TSP (TRICOR Sizing Program) or contact us.

¹⁾ Nominal flow rates that produce approximately 3 bar (43 psi) pressure drop for natural gas at 50 bar (725 psi) operational pressure.

²⁾ Normal reference conditions (Nm³/h) are 1,013 bar und 0 °C. Standard (SCFM) reference conditions are 14.7 psi und 60 °F.

³⁾ Flow rate and density range depend on the gas density and the pressure range.

Accuracy for Gases



| Flow Rate of full Scale | Accuracy |
|--|---|
| $\geq \frac{\text{Zero Point}}{\text{Basic Accuracy}} * 100$ | $\pm \text{Basic Accuracy}$ |
| $< \frac{\text{Zero Point}}{\text{Basic Accuracy}} * 100$ | $\pm \frac{\text{Zero Point}}{\text{Measured Value}} * 100$ |

Analogous to calculation for liquids.

Only the basic accuracy value (% o. r.) is deviant from the calculation for liquids.

Example for a TCM 0325:

$325 \text{ kg/h} * \text{ZeroPoint} (0.01 \%) = 0.0325 \text{ kg/h}$ $12 \text{ lb/min} * 0.01 \% = 0.0012 \text{ lb/min}$
 $325 \text{ kg/h} * \text{Basic Accuracy} (0.5 \%) = 1.625 \text{ kg/h}$ $12 \text{ lb/min} * 0.5 \% = 0.06 \text{ lb/min}$
 Result: $(0.0325 / 1.625) * 100 = 2 \%$ (6.5 kg/h) $(0.0012 / 0.06) * 100 = 2 \%$ (0.24 lb/min)

All flow rates $\geq 2 \%$ or 6.5 kg/h (0.24 lb/min): Measured error = Basic Accuracy

All flow rates $< 2 \%$ or 6.5 kg/h (0.24 lb/min): Measured error = $(\text{Zero Point} / \text{Measured Value}) * 100$

Ex Certifications

| | |
|--|--|
| ATEX (Ex) | Zone 1: Group IIC or IIB, T2...T4 |
| ATEX (Exn) | Zone 2: II 3G Ex nA IIC T2...T4 Gc |
| IECEX (Ex) | Zone 1: Group IIC or IIB, T2...T4 |
| cCSAus (Ex1) ⁴⁾ | Class 1, Division 1: Group A, B, C, D or C, D, T2...T4 |
| ATEX + IECEX + cCSAus triple approval (Ex3) ^{4) 5)} | Zone 1: Group IIC or IIB, T2...T4 and Class 1, Division 1: Group A, B, C, D or C, D, T2...T4 |
| EAC (TR-CU) ⁴⁾ | Group IIC or IIB, T2 ... T4 |

⁴⁾ For Ex1, Ex3, EAC (TR-CU) the electronic is only available in aluminum housing.

⁵⁾ Only with remote electronics.

TRICOR - Coriolis Mass Flow Meters

TCE 8000/8100 Transmitter - Technical Data

| General | |
|---|--|
| Display | back-lit LCD screen, 132 x 32 dot |
| Supply Voltage | 24 V DC, $\pm 20\%$ or 90 ... 264 V (version dependent) |
| Programming | via front keyboard or Windows-based TRICOR configurator program (MODBUS) |
| Interface | RS485 (MODBUS-RTU), Option HART®, Foundation Fieldbus®, other options on request |
| EMC | according to EN 61000-6-4 and 61000-6-2 |
| Power Consumption | max. 6 W |
| ExD Housing: Wall-mounted | |
| Dimensions | see drawing |
| Electrical Connections | cage clamp terminals |
| Cable Glands | for 7-13 mm cables |
| Housing Material | aluminum diecast (option: 1.4404/AISI 316L) |
| Protection Class | IP65 (IP66/IP67 on request) |
| Weight | with aluminum diecast housing: 3.8 kg/8.3 lb with 3 m cable with 1.4404/AISI 316L housing: 6.15 kg/13.56 lb |
| Temperature | ambient: -40 °F ... +158 °F (-40 °C ... +70 °C) storage and transport: -40 °F ... +176 °F (-40 °C ... +80 °C) |
| Housing: Panel-mounted (only TCE 8000) | |
| Dimensions | see drawing |
| Electrical Connections | cage clamp terminals |
| Housing Material | Noryl |
| Protection Class | front: IP50, rear: IP30 |
| Weight | 0.4 kg/0.88 lb |
| Temperature | ambient: 32 °F ... +140 °F (0 °C ... +60 °C) storage and transport: -4 °F ... +158 °F (-20 °C ... +70 °C) |
| Analog Output | |
| Current Outputs (2x) | 4 ... 20 mA passive, two-wire, isolated |
| Resolution | 14 bit |
| Linearity | $\pm 0.05\%$ of full scale |
| Temperature Drift | 0.05 % per 10 K |
| Load | < 620 Ω (at 24 V supply) |
| Output Value | programmable: flow, total, density, temperature |
| Pulse Output | |
| Frequency Range | 0.5 - 10,000 Hz (in TOTAL mode: 0 - 100 Hz) |
| Output Signal | active push pull output for flow rate |
| Status In- and Output | |
| Status Output | push pull programmable (in FREQUENCY mode: 0.5 - 10,000 Hz) |
| Control Input | programmable |
| Analog Input (option) | |
| Input Type | 4 ... 20 mA active for two-wire passive pressure sensor |
| Resolution | 12 bit |
| Linearity | $\pm 0.05\%$ of full scale |
| Temperature Drift | 0.05 % per 10 K |
| Supply Voltage | > 20 V (at 20 mA sensor current) |

TCE 6000 Transmitter - Technical Data

| General | |
|------------------------|--|
| Supply Voltage | 24 V DC, $\pm 20\%$ |
| Programming | via TRD 8001 or via interface |
| Interface | RS485, USB (option) |
| EMC | according to EN 61000-6-4 and EN 61000-6-2 |
| Power Consumption | max. 4 W |
| Electrical Connections | connectors M12 |
| Housing Material | aluminum diecast |
| Temperature | ambient: $-40\text{ }^{\circ}\text{F} \dots +158\text{ }^{\circ}\text{F}$ ($-40\text{ }^{\circ}\text{C} \dots +70\text{ }^{\circ}\text{C}$) storage and transport: $-40\text{ }^{\circ}\text{F} \dots +176\text{ }^{\circ}\text{F}$ ($-40\text{ }^{\circ}\text{C} \dots +80\text{ }^{\circ}\text{C}$) |
| Protection Class | IP65 |
| Analog Output | |
| Current Output | 4 ... 20 mA active |
| Resolution | 14 bit |
| Linearity | $\pm 0.05\%$ |
| Temperature Drift | 0.05 % per 10 K |
| Load | $< 800\ \Omega$ |
| Output Value | programmable: flow, total, density, temperature |
| Pulse Output | |
| Frequency Range | 0.5 - 10,000 Hz (for ESTA (OPTV receiver) 0.5 – 5,000 Hz) |
| Output Signal | active push pull output for flow rate, optional: insulated optical frequency output |
| Status In- and Output | |
| Status Output | push pull programmable (option) (in TOTAL mode: 0.5 - 100 Hz) |
| Control Input | programmable (standard: 1 input/option: 2 inputs), optional: insulated optical control input |

Note: For parameterization of the flow meter, the interface may be used.

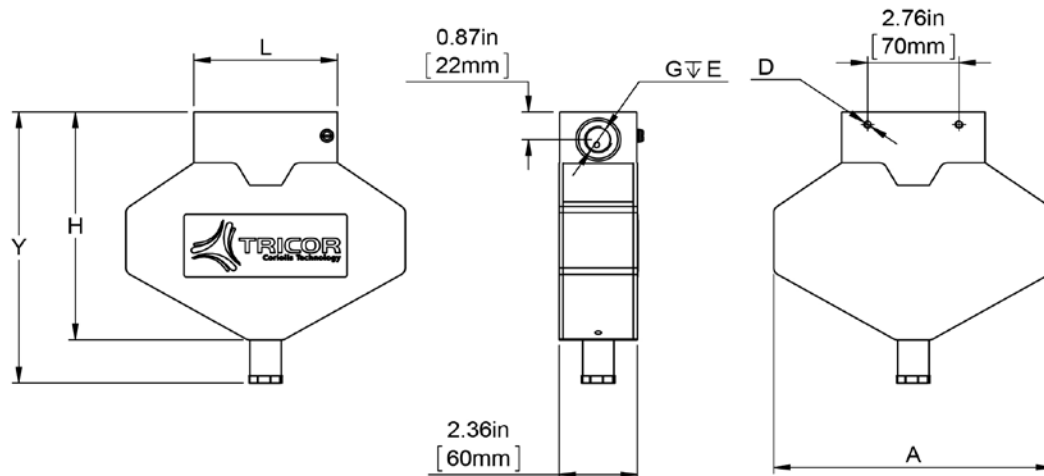
Prerequisite: Parameter setting is not allowed during active ESTA operation.

TRD 8001 Remote Display - Technical Data

| | |
|------------------------|--|
| Display | back-lit LCD screen, 132 x 32 dot |
| Supply Voltage | via interface |
| Programming | via front keyboard |
| Interface to TCE | RS485 |
| EMC | according to EN 61000-6-4 and 61000-6-2 |
| Dimensions | 90 x 120 x 50 mm (h x w x d) |
| Electrical Connections | connectors M12, B coded |
| Housing Material | ABS-FR (plastic, flame retardant) |
| Protection Class | IP64 |
| Weight | 0.4 kg/0.88 lb |
| Temperature | operation: $32\text{ }^{\circ}\text{F} \dots +140\text{ }^{\circ}\text{F}$ ($0\text{ }^{\circ}\text{C} \dots +60\text{ }^{\circ}\text{C}$) storage and transport: $-4\text{ }^{\circ}\text{F} \dots +176\text{ }^{\circ}\text{F}$ ($-20\text{ }^{\circ}\text{C} \dots +80\text{ }^{\circ}\text{C}$) |
| Wall Mount | hidden screws |

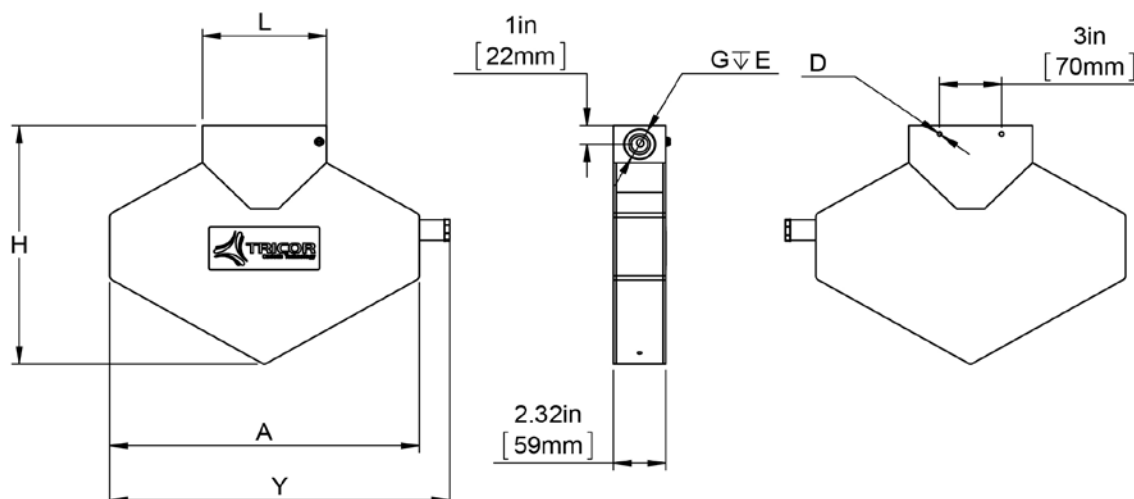
TRICOR - Coriolis Mass Flow Meters

TCM 0325 to TCM 0650



| Sensor Type | A | D | E | G ⁶⁾ | H | L ⁷⁾ | Y |
|-------------|---------------------|---------|--------------------|-----------------|---------------------|---------------------|---------------------|
| TCM 0325 | 8.43 in (214 mm) | M6 ∇ 10 | 0.59 in (15 mm) | G ½" | 7.17 in (182 mm) | 4.33 in (110 mm) | 8.50 in (216 mm) |
| TCM 0650 | 8.43 in (214 mm) | M6 ∇ 10 | 0.59 in (15 mm) | G ½" | 7.17 in (182 mm) | 4.33 in (110 mm) | 8.50 in (216 mm) |

TCM 1550 to TCM 3100

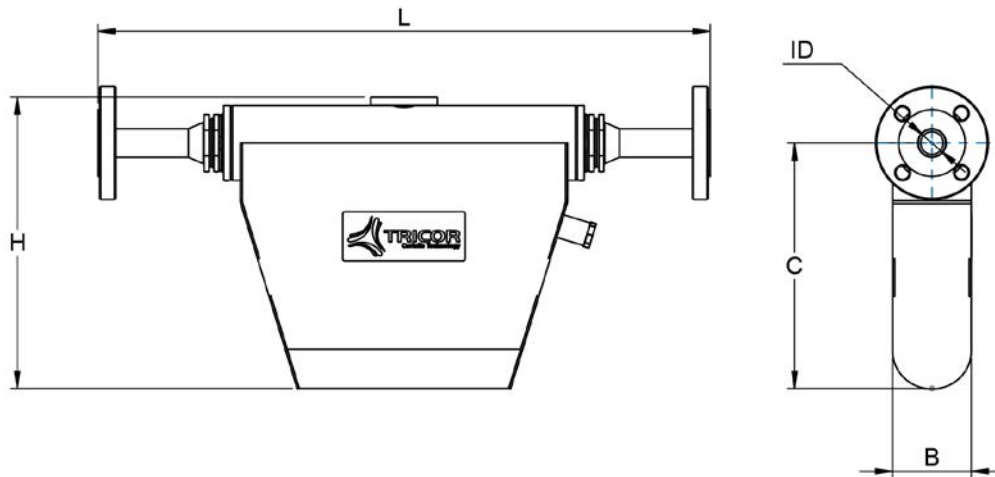


| Sensor Type | A | D | E | G ⁶⁾ | H | L ⁷⁾ | Y |
|-------------|----------------------|---------|--------------------|-----------------|----------------------|---------------------|----------------------|
| TCM 1550 | 13.78 in (350 mm) | M6 ∇ 10 | 0.71 in (18 mm) | G ½" | 11.02 in (280 mm) | 5.51 in (140 mm) | 15.12 in (384 mm) |
| TCM 3100 | 13.78 in (350 mm) | M6 ∇ 10 | 0.71 in (18 mm) | G ½" | 11.02 in (280 mm) | 5.51 in (140 mm) | 15.12 in (384 mm) |

⁶⁾ Other connections on request.

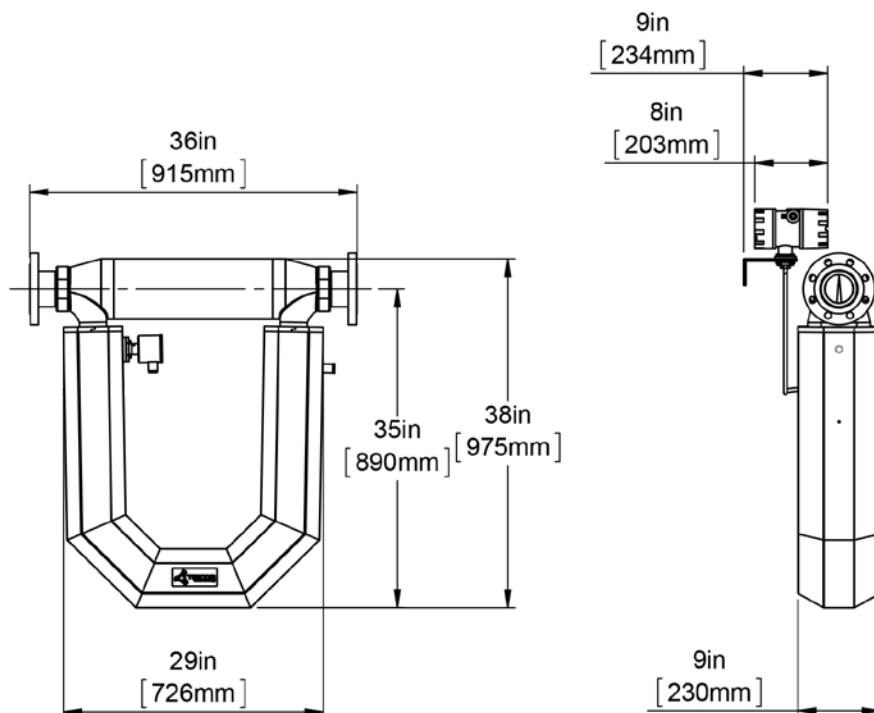
⁷⁾ Further lengths on request.

TCM 5500 to TCM 065K



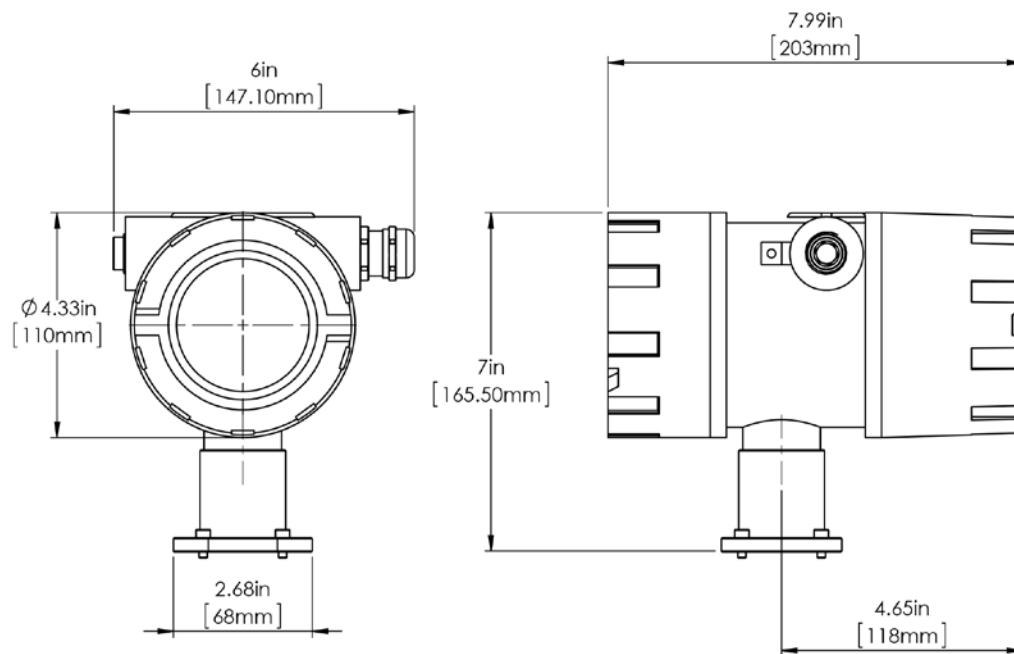
| Sensor Type | B | C | H | L ⁶⁾ | I.D. | Connection |
|----------------|---------------------|----------------------|----------------------|----------------------|------------------------|------------|
| TCM 5500, 7900 | 2.40 in (61 mm) | 8.03 in (204 mm) | 10.24 in (260 mm) | 18.11 in (460 mm) | Ø 0.51 in (Ø 13 mm) | on request |
| TCM 028K | 3.15 in (80 mm) | 9.96 in (253 mm) | 12.40 in (315 mm) | 24.61 in (625 mm) | Ø 0.91 in (Ø 23 mm) | on request |
| TCM 065K | 5.94 in (151 mm) | 15.24 in (387 mm) | 18.90 in (480 mm) | 32.68 in (830 mm) | Ø 1.57 in (Ø 40 mm) | on request |

TCM 230K

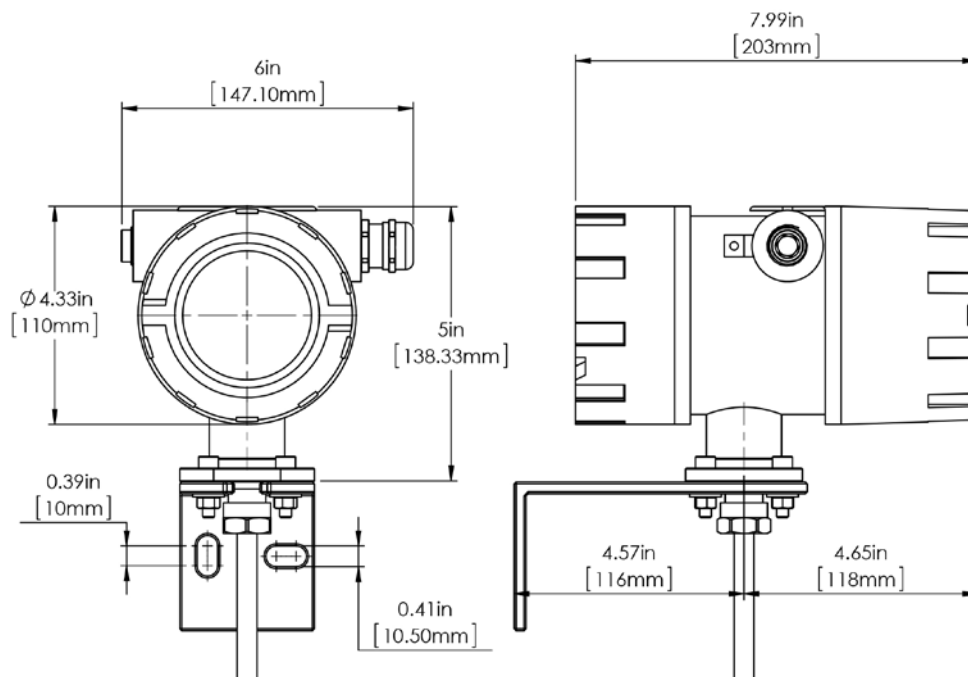


TRICOR - Coriolis Mass Flow Meters

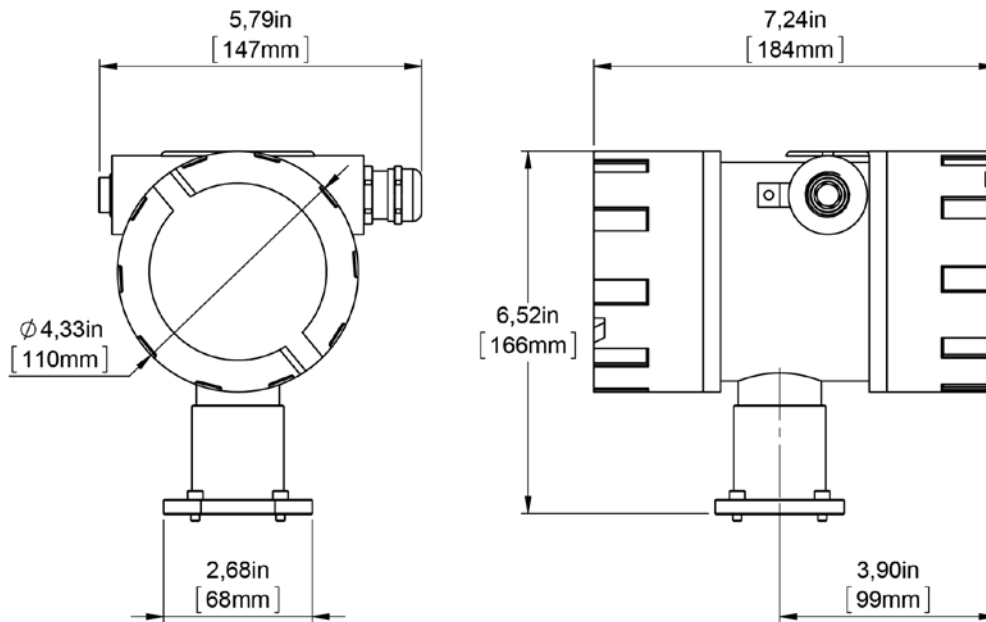
Meter-Mount Electronics TCE 8000/8100



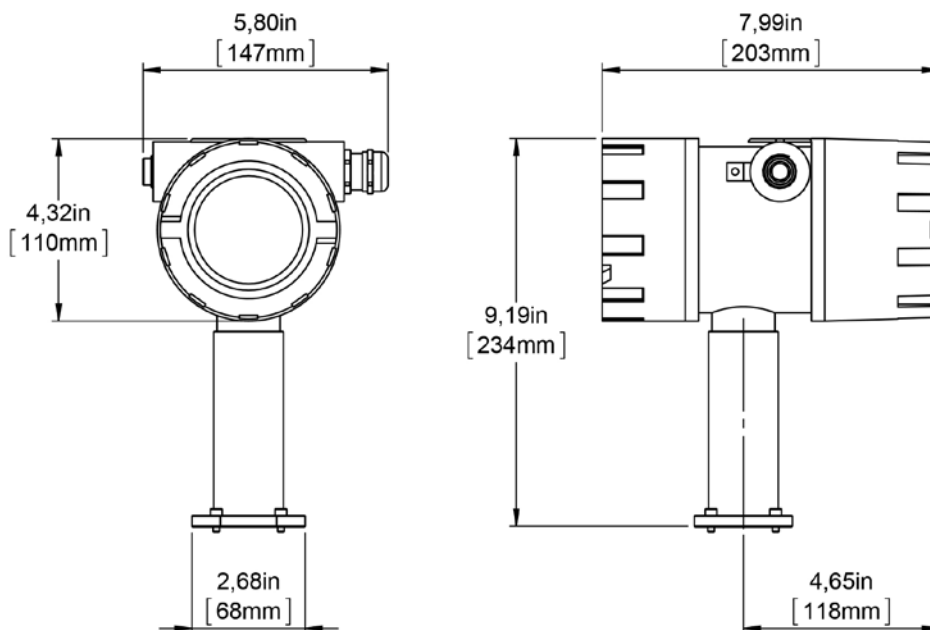
Wall-Mount Electronics TCE 8000/8100



Meter-Mount Electronics TCE 8000/8100 with blind cover

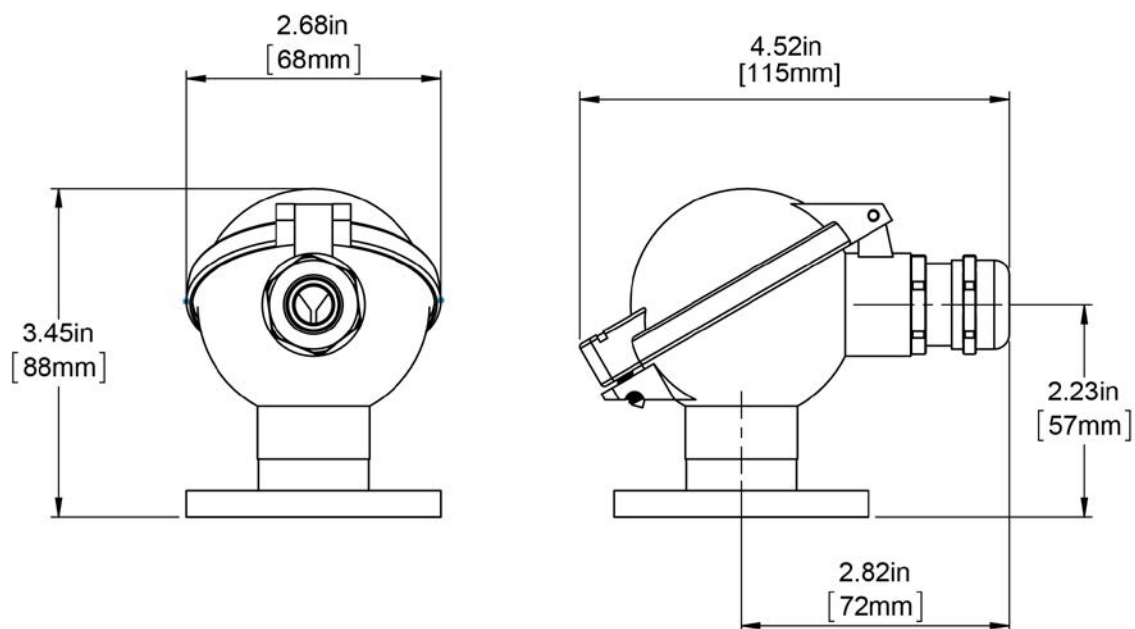


Meter-Mount Electronics TCE 8000/8100 High Temperature

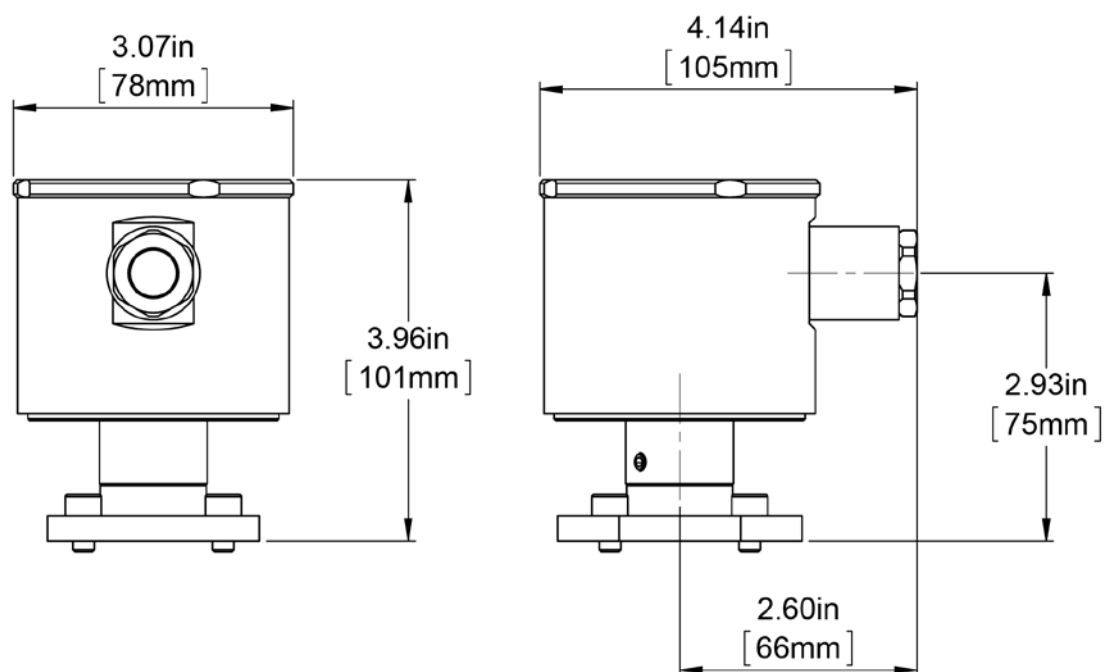


TRICOR - Coriolis Mass Flow Meters

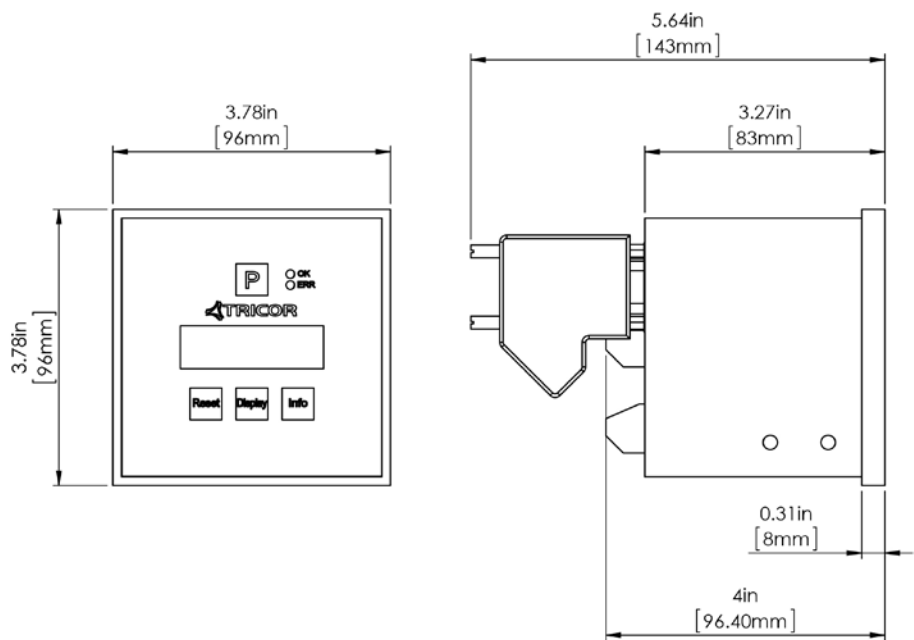
Standard Connection Head (A)



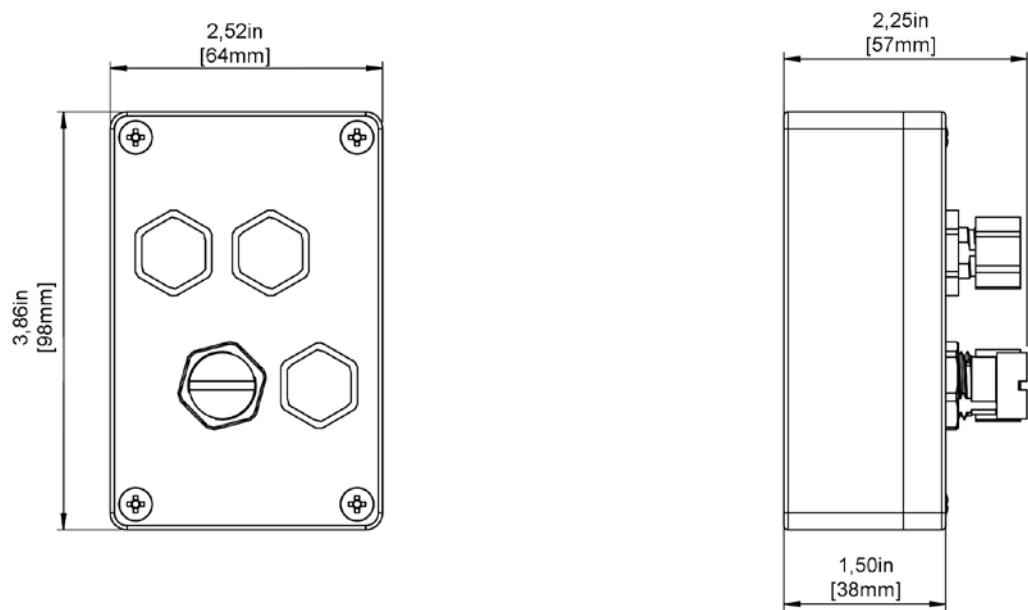
High Temperature Connection Head (H)



Panel-Mounted Housing

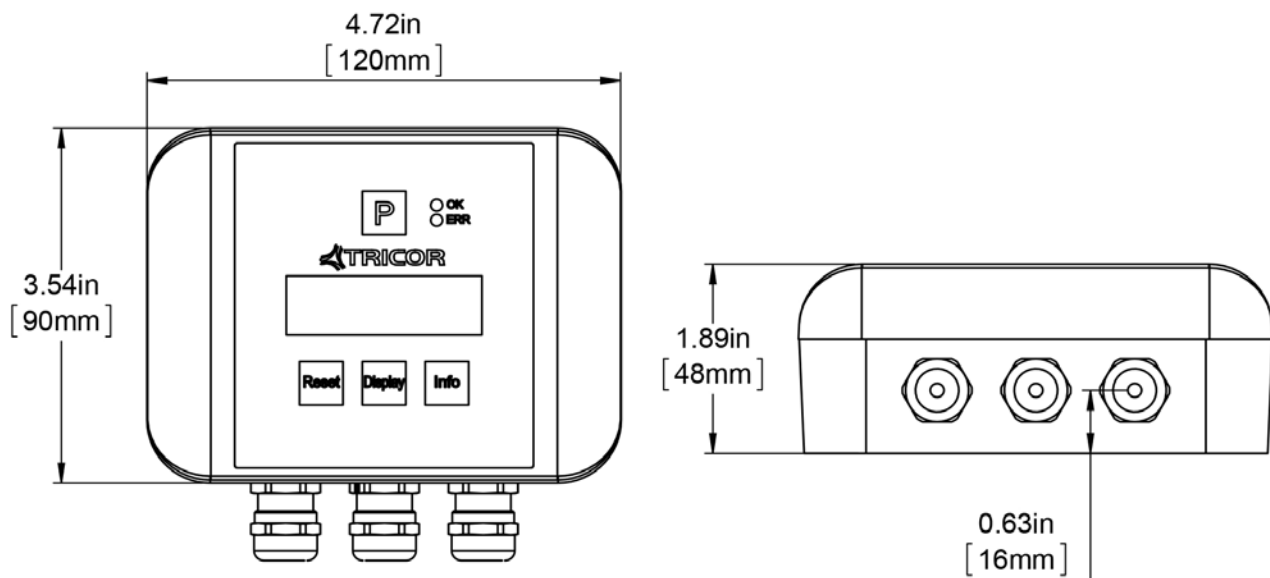


Meter-Mount Electronics TCE 6000 (F)



TRICOR - Coriolis Mass Flow Meters

Remote Display TRD 8001



Ordering Information TCM Meter (Series TRICOR)

| TCM | XXXX | - | XX | - | X | X | X | X | - | X | X | X | X | - | Ex | - | XX |
|--|------|---|----|---|---|---|---|---|---|---|---|---|---|---|-----|---|----|
| Process connections⁸⁾ | | | | | | | | | | | | | | | | | |
| see page 17 ff | | | XX | | | | | | | | | | | | | | |
| Mechanical options | | | | | | | | | | | | | | | | | |
| Medium Temperature range | | | | | | | | | | | | | | | | | |
| -40 °F...+212 °F (-40 °C...+100 °C) | | | | | S | | | | | | | | | | | | |
| -40 °F...+302 °F (-40 °C...+150 °C) Ex _{max} : 275 °F (135 °C) | | | | | H | | | | | | | | | | | | |
| -40 °F...+158 °F (-40 °C...+70 °C) Ex, compact | | | | | E | | | | | | | | | | | | |
| -76 °F...+392 °F (-60 °C...+200 °C) | | | | | T | | | | | | | | | | | | |
| Pressure range | | | | | | | | | | | | | | | | | |
| With rupture disc max. 4 bar (58 psi) | | | | | G | | | | | | | | | | | | |
| Mechanical Design | | | | | | | | | | | | | | | | | |
| Standard | | | | | S | | | | | | | | | | | | |
| Face to face length | | | | | | | | | | | | | | | | | |
| Standard (other length on request) | | | | | S | | | | | | | | | | | | |
| Electronics options | | | | | | | | | | | | | | | | | |
| Electronics type | | | | | | | | | | | | | | | | | |
| Junction box Alu (only for replacements) | | | | | | | | | | A | Z | Z | S | | | | |
| Junction box 1.4404/316L | | | | | | | | | | H | Z | Z | S | | | | |
| Meter mount electronics TCE 8000 (NPT) ⁹⁾ | | | | | | | | | | C | | | | | | | |
| Meter mount electronics TCE 8000 (M20 x 1.5) ⁹⁾ | | | | | | | | | | K | | | | | | | |
| Meter mount electronics TCE 8100 (NPT) ⁹⁾ | | | | | | | | | | M | | | | | | | |
| Meter mount electronics TCE 8100 (M20 x 1.5) ⁹⁾ | | | | | | | | | | O | | | | | | | |
| Meter mount electronics TCE 6000 ¹⁰⁾ | | | | | | | | | | F | | | | | | | |
| Interface¹¹⁾ | | | | | | | | | | | | | | | | | |
| RS485 (Modbus RTU) | | | | | | | | | | S | | | | | | | |
| RS485 (Modbus RTU) and HART® | | | | | | | | | | A | | | | | | | |
| RS485 (Modbus RTU) + FF (not with Ex) | | | | | | | | | | B | | | | | | | |
| FF (Foundation Fieldbus®) | | | | | | | | | | D | | | | | | | |
| RS485 (Modbus RTU) + USB (only TCE 6000) | | | | | | | | | | F | | | | | | | |
| Not used | | | | | | | | | | Z | | | | | | | |
| Supply voltage | | | | | | | | | | | | | | | | | |
| 24 V DC | | | | | | | | | | D | | | | | | | |
| 90 ... 264 V AC | | | | | | | | | | M | | | | | | | |
| Not used | | | | | | | | | | Z | | | | | | | |
| Options | | | | | | | | | | | | | | | | | |
| Pressure compensation, 4 ... 20 mA input | | | | | | | | | | A | | | | | | | |
| 8 pin I/O connector (TCE 6000 only) | | | | | | | | | | B | | | | | | | |
| Optical I/O (TCE 6000 only) | | | | | | | | | | C | | | | | | | |
| No option | | | | | | | | | | S | | | | | | | |
| EX-protection | | | | | | | | | | | | | | | | | |
| ATEX + IECEx Zone1: Group IIC or IIB, T2...T4 | | | | | | | | | | | | | | | Ex | | |
| ATEX Zone 2: II 3G Ex nA IIC, T2...T4 Gc | | | | | | | | | | | | | | | Exn | | |
| cCSAus: Class 1, Division 1: Group A, B, C, D or C, D, T2...T4 ¹²⁾ | | | | | | | | | | | | | | | Ex1 | | |
| ATEX+IECEx: Zone 1: Group IIC or IIB, T2...T4 and cCSAus: Class 1, Division 1: Group A, B, C, D or C, D, T2...T4 ¹²⁾ 13) | | | | | | | | | | | | | | | Ex3 | | |
| EAC (TR-CU): Group IIC or IIB, T2 ... T4 ¹²⁾ | | | | | | | | | | | | | | | ExR | | |
| Special Options | | | | | | | | | | | | | | | | | |
| NOC (Net Oil Computer) | | | | | | | | | | | | | | | | | |

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⁸⁾ For connections not indicated with installation length, please contact manufacturer.

⁹⁾ For TCM compact version with Ex-protection temperature class T4 only.

¹⁰⁾ Ex-protection only available in the option Exn. TCE 6000 electronic is not applicable for TCM 230K.

¹¹⁾ Other interfaces on request.

¹²⁾ For Ex1, Ex3, EAC (TR-CU) the electronic is only available in aluminum housing.

¹³⁾ Only with remote electronics.

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Ordering Information TCE Transmitter (Series 8XXX)

| TCE | 8 X X X | - X | - X X X X | - X X | - XX |
|--|---------|-----|-----------|-------|------|
| TCM 0325 to TCM 7900 (Alu) | 8 0 0 1 | | | | |
| TCM 028K to TCM 065K (Alu) | 8 0 1 1 | | | | |
| TCM 230K (Alu) | 8 0 1 2 | | | | |
| TCM 0325 to TCM 7900 (1.4404/316L) | 8 1 0 1 | | | | |
| TCM 028K to TCM 065K (1.4404/316L) | 8 1 1 1 | | | | |
| TCM 230K (1.4404/316L) | 8 1 1 2 | | | | |
| Housing | | | | | |
| Wall mount (NPT) | | W | | | |
| Wall mount (M20 x 1.5) | | I | | | |
| Panel mount ¹⁴⁾ | | S | | | |
| Panel mount, wide for "Ex", "associated equipment" ¹⁴⁾ | | L | | | |
| Options | | | | | |
| Interface¹⁵⁾ | | | | | |
| RS485 (MODBUS RTU) | | | S | | |
| RS485 (MODBUS RTU) + HART [®] | | | A | | |
| Supply Voltage | | | | | |
| 24 V DC + 90 ... 264 V AC (only housing S+L) | | | B | | |
| 24 V DC | | | D | | |
| 90 ... 264 V AC (only housing W, I) | | | M | | |
| Electronic Options | | | | | |
| Standard | | | S | | |
| Pressure compensation, 4 ... 20 mA input | | | A | | |
| Cable length | | | | | |
| 3 Meters/≈ 10 ft., Standard (high temperature) | | | | S (H) | |
| 6 Meters/≈ 20 ft., (high temperature) | | | | B (I) | |
| 10 Meters/≈ 33 ft., (high temperature) | | | | C (J) | |
| 15 Meters/≈ 49 ft., (high temperature) | | | | D (O) | |
| 20 Meters/≈ 65 ft., (high temperature) | | | | E (P) | |
| D-SUB Connector, (housing L+S) seperate cable required | | | | N | |
| EX-Protection | | | | | |
| ATEX + IECEx Zone1: Group IIC or IIB, T2...T4 | | | | Ex | |
| ATEX Zone 2: II3G Ex nA IIC, T2...T4 Gc | | | | Exn | |
| cCSAus: Class 1, Division 1: Group A, B, C, D or C, D, T2...T4 ¹⁶⁾ | | | | Ex1 | |
| ATEX+IECEx, Zone 1: Group IIC or IIB, T2...T4 and cCSAus: Class 1, Div. 1: Group A, B, C, D or C, D, T2...T4 ¹⁶⁾ | | | | Ex3 | |
| EAC (TR-CU): Group IIC or IIB, T2 ... T4 ¹⁶⁾ | | | | ExR | |
| Special Options | | | | | |
| NOC (Net Oil Computer) | | | | | 01 |

¹⁴⁾ Only for TCE 80XX.

¹⁵⁾ Other interfaces on request.

¹⁶⁾ For Ex1, Ex3, EAC (TR-CU) the electronic is only available in aluminum housing.

Slip on, process connection dim. + facing acc. ANSI B16.5 Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|----------|
| ½" ANSI flange class 150 | AA | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ½" ANSI flange class 300 | AB | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ½" ANSI flange class 600 | AC | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ½" ANSI flange class 900 | AD | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ½" ANSI flange class 1500 | BV | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| ½" ANSI flange class 2500 | BE | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| | | | | | | | | | | |
| ¾" ANSI flange class 150 | BA | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ¾" ANSI flange class 300 | BB | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ¾" ANSI flange class 600 | BC | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ¾" ANSI flange class 900 | BD | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| ¾" ANSI flange class 1500 | AI | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| | | | | | | | | | | |
| 1" ANSI flange class 150 | AE | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1" ANSI flange class 300 | AF | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1" ANSI flange class 600 | AG | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1" ANSI flange class 900 | AH | 390 (15.35) | 390 (15.35) | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1" ANSI flange class 1500 | AQ | 390 (15.35) | 390 (15.35) | | | 460 (18.11) | | | | |
| 1" ANSI flange class 2500 | BN | 390 (15.35) | 390 (15.35) | | | | | | | |
| | | | | | | | | | | |
| 1½" ANSI flange class 150 | AJ | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1½" ANSI flange class 300 | AK | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1½" ANSI flange class 600 | AL | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1½" ANSI flange class 900 | AM | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| 1½" ANSI flange class 1500 | BI | | | | | 460 (18.11) | | | | |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

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Slip on, process connection dim. + facing acc. ANSI B16.5 Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|
| 2" ANSI flange class 150 | AN | | | | | | | 625 (24.61) | 830 (32.68) | |
| 2" ANSI flange class 300 | AO | | | | | | | 625 (24.61) | 830 (32.68) | |
| 2" ANSI flange class 600 | AP | | | | | | | 625 (24.61) | 830 (32.68) | |
| 2" ANSI flange class 900 | AR | | | | | | | 625 (24.61) | 830 (32.68) | |
| 2" ANSI flange class 1500 | BU | | | | | | | | 830 (32.68) | |
| 2½" ANSI flange class 150 | BT | | | | | | | | 830 (32.68) | |
| 2½" ANSI flange class 300 | BY | | | | | | | | 830 (32.68) | |
| 2½" ANSI flange class 600 | BQ | | | | | | | | 830 (32.68) | |
| 2½" ANSI flange class 900 | BW | | | | | | | | 830 (32.68) | |
| 3" ANSI flange class 150 | AS | | | | | | | 625 (24.61) | 830 (32.68) | 915 (36.02) |
| 3" ANSI flange class 300 | AT | | | | | | | | 830 (32.68) | 915 (36.02) |
| 3" ANSI flange class 600 | AU | | | | | | | | 830 (32.68) | 915 (36.02) |
| 3" ANSI flange class 900 | AV | | | | | | | | 830 (32.68) | 915 (36.02) |
| 4" ANSI flange class 150 | AW | | | | | | | | 830 (32.68) | 915 (36.02) |
| 4" ANSI flange class 300 | AX | | | | | | | | 830 (32.68) | 915 (36.02) |
| 4" ANSI flange class 600 | AY | | | | | | | | 830 (32.68) | 915 (36.02) |
| 4" ANSI flange class 900 | AZ | | | | | | | | 830 (32.68) | 915 (36.02) |
| 5" ANSI flange class 150 | BF | | | | | | | | | 915 (36.02) |
| 5" ANSI flange class 300 | BG | | | | | | | | | 915 (36.02) |
| 5" ANSI flange class 600 | BH | | | | | | | | | 915 (36.02) |
| 5" ANSI flange class 900 | BJ | | | | | | | | | 915 (36.02) |
| 6" ANSI flange class 150 | BM | | | | | | | | | 915 (36.02) |
| 6" ANSI flange class 600 | BX | | | | | | | | | 915 (36.02) |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

Slip on, process connection dim. + facing acc. EN 1092-1 Form B Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|---|------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------|----------|
| DN 10, EN flange PN 16 | DY | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 40 | DS | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 63 | DZ | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 100 | EA | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 160 | EB | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 250 | EC | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 10, EN flange PN 400 | ED | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | | | | | |
| DN 15, EN flange PN 16 | EE | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| DN 15, EN flange PN 40 | DA | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| DN 15, EN flange PN 63 | EF | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| DN 15, EN flange PN 100 | DB | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | | | |
| DN 15, EN flange PN 160 | EG | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| DN 15, EN flange PN 250 | EH | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| DN 15, EN flange PN 400 | EI | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| DN 20, EN flange PN 40 | DT | | | | | 460 (18.11) | 460 (18.11) | | | |
| DN 25, EN flange PN 16 | EZ | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 25, EN flange PN 40 | DC | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 25, EN flange PN 63 | EJ | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 25, EN flange PN 100 | DD | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 25, EN flange PN 160 | DW | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| DN 25, EN flange PN 160 Mat.: 2.4602 | DW | | | | | | | 625 (24.61) | | |
| DN 25, EN flange PN 250 | DP | 390 (15.35) | 390 (15.35) | 420 (16.54) | 420 (16.54) | 460 (18.11) | | | | |
| DN 25, EN flange PN 400 | DV | 390 (15.35) | 390 (15.35) | | | 460 (18.11) | | | | |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

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Slip on, process connection dim. + facing acc. EN 1092-1 Form B Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|
| DN 32, EN flange PN 40 | DR | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 40, EN flange PN 16 | DU | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 40, EN flange PN 40 | DE | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 40, EN flange PN 63 | EK | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 40, EN flange PN 100 | DF | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 40, EN flange PN 160 | EL | | | | | 460 (18.11) | | | | |
| DN 40, EN flange PN 250 | EM | | | | | 460 (18.11) | | | | |
| DN 40, EN flange PN 400 | EN | | | | | 460 (18.11) | | | | |
| DN 50, EN flange PN 16 | EO | | | | | | | 625 (24.61) | 830 (32.68) | |
| DN 50, EN flange PN 40 | DG | | | | | | | 625 (24.61) | 830 (32.68) | |
| DN 50, EN flange PN 63 | EP | | | | | | | 625 (24.61) | 830 (32.68) | |
| DN 50, EN flange PN 100 | DH | | | | | | | 625 (24.61) | 830 (32.68) | |
| DN 65, EN flange PN 16 | EQ | | | | | | | | 830 (32.68) | |
| DN 65, EN flange PN 40 | DQ | | | | | | | | 830 (32.68) | |
| DN 65, EN flange PN 63 | ER | | | | | | | | 830 (32.68) | |
| DN 65, EN flange PN 100 | ES | | | | | | | | 830 (32.68) | |
| DN 80, EN flange PN 16 | ET | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 80, EN flange PN 40 | DJ | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 80, EN flange PN 63 | EU | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 80, EN flange PN 100 | DK | | | | | | | | 830 (32.68) | 915 (36.02) |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

Slip on, process connection dim. + facing acc. EN 1092-1 Form B Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|----------|----------|----------|----------|----------|----------|----------|----------------|----------------|
| DN 100, EN flange PN 16 | EV | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 100, EN flange PN 40 | DL | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 100, EN flange PN 63 | EW | | | | | | | | 830 (32.68) | 915 (36.02) |
| DN 100, EN flange PN 100 | DM | | | | | | | | 830 (32.68) | 915 (36.02) |
| | | | | | | | | | | |
| DN125, EN flange PN 16 | EX | | | | | | | | | 915 (36.02) |
| DN125, EN flange PN 40 | DN | | | | | | | | | 915 (36.02) |
| DN125, EN flange PN 63 | EY | | | | | | | | | 915 (36.02) |
| DN125, EN flange PN 100 | DO | | | | | | | | | 915 (36.02) |
| | | | | | | | | | | |
| DN150, EN flange PN 16 | DI | | | | | | | | | 915 (36.02) |
| DN150, EN flange PN 40 | DX | | | | | | | | | 915 (36.02) |

EN flange weld neck Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|---|------|----------|----------|----------|----------|----------------|----------------|----------------|----------|----------|
| DN 32, PN40 DIN 2635 – 1.4404/316L Type C Face | VO | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 32, PN64 DIN 2636 – 1.4404/316L Type E Face | VP | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |
| DN 32, PN100 DIN 2637 – 1.4404/316L Type E Face | VQ | | | | | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |

Triclamp Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------|----------|
| ½" Triclamp | TA | 220 (8.66) | 220 (8.66) | 250 (9.84) | 250 (9.84) | | | | | |
| | | | | | | | | | | |
| DN 25 Triclamp PN 16 DIN 32676 | TL | 210 (8.27) | 210 (8.27) | 240 (9.45) | 240 (9.45) | 460 (18.11) | 460 (18.11) | 625 (24.61) | | |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

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Female thread Installation length in mm (inch)

| Process connection ¹⁷⁾ | Code | TCM 0325 | TCM 0650 | TCM 1550 | TCM 3100 | TCM 5500 | TCM 7900 | TCM 028K | TCM 065K | TCM 230K |
|-----------------------------------|------|---------------|---------------|---------------|---------------|----------------|----------------|-------------|----------------|-------------|
| ¼" NPT female thread | FJ | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | | | | | |
| ¾" NPT female thread | FL | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | 460 (18.11) | 460 (18.11) | | | |
| ½" NPT female thread | FK | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | 460 (18.11) | 460 (18.11) | | | |
| 2" NPT female thread | FQ | | | | | | | | 880 (34.65) | |
| | | | | | | | | | | |
| ¼" G, female thread | FB | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | | | | | |
| ¾" G, female thread | FR | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | | | | | |
| ¾" G, female thread | FC | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | 460 (18.11) | 460 (18.11) | | | |
| ½" G, female thread | FA | 110 (4.33) | 110 (4.33) | 140 (5.51) | 140 (5.51) | 460 (18.11) | 460 (18.11) | | | |

¹⁷⁾ Connections without installation length are not possible or need manufacturer release. Please contact the manufacturer.

Connection Cable for TCE 8000-S or TCE 8000-L to TCM

| | | | | | |
|-----|---|---|---|---|---|
| TCC | X | X | - | X | X |
|-----|---|---|---|---|---|

Lenght

| | | | |
|--------------------|------------|---|---|
| 3 Meter (Standard) | (≈ 10 ft.) | 0 | 3 |
| 6 Meter | (≈ 20 ft.) | 0 | 6 |
| 10 Meter | (≈ 33 ft.) | 1 | 0 |
| 15 Meter | (≈ 49 ft.) | 1 | 5 |
| 20 Meter | (≈ 66 ft.) | 2 | 0 |

Additional Accessories

Model Code /GSD

| | |
|---|------------|
| DAkKS-Calibration (ILAC) according to DIN EN ISO/IEC 17025:2005 | 3.KAL-0100 |
| CON.USB.RS: USB interface cable to RS 485 1.8 m (TRICOR configurator) | 200490 |
| IPS 9-14: IP65 Protection for TCE-80**-L | 217212 |
| IPS 9-9: IP65 Protection for TCE-80**-S | 217211 |
| HSA 96: adapter TCE-80**-S and TCE-80**-L for rail mounting | 217594 |
| TRD 8001: remote display for TCE 6000 | 184830 |
| TRD-TCE-6-2: Connection cable TRD-TCE 6000, 2 m | 217012 |
| TRD-TCE-6-5: Connection cable TRD-TCE 6000, 5 m | 217011 |
| KAB-USB-TCE: USB Cable, USB to mini USB M12, 2 m, for TCE 6000 | 217174 |
| KAB-RS485-TCE: RS485 to USB connector cable 1.8 m for TCE 6000; FSDS;FFDB, FSDC | 219563 |
| Inspection certificate 3.1 according to DIN 50 049 / EN 10204 | 3.WKZ-0100 |
| Oxygen cleaning TCM | 219269 |
| TAG Plate (1.4404/316L) | 219705 |
| Pneumatic Power Gen. for TCE 6000 Version FSDC; 7.5W, 24 VDC, Plug M8, 3 pin, 2.5 m cable | 220657 |
| LW-LA-10 for FOP50/60 10m (5.5mm) fiber optic cable for TCE 6000 Version FSDC | LW-LA-10 |
| OPTV-10/02 light pulse emitter and receiver, DIN - rail for TCE 6000 Version FSDC | OPTV-10/02 |



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