



CMCP787T-I/IS

Intrinsically Safe Precision Accelerometer with Temperature, Integral Overbraided Cable, Side Entry



Features

- Intrinsically Safe Precision Side Entry Accelerometer
- ATEX, IECEx, CSA and UL Approved
- 100 mV/g $\pm 5\%$ and 10 mV/ $^{\circ}\text{C}$
- 150 $^{\circ}\text{C}$ Max Temperature Range
- ± 80 g Dynamic Range
- Integral Overbraided Cable
- 1/4"-28 UNF or M8x1.25 Captive Mounting Bolt
- Sealed to IP65

Typical Applications

Fans, Motors, Pumps, Compressors, Centrifuges, Conveyors, Air Handlers, Gearboxes, Rolls, Dryers, Presses, Cooling, HVAC, Spindles, Machine Tooling, Process Equipment and many more.

Technical Performance

Mounted Base Resonance:	22 kHz (nominal)
Sensitivity (Acceleration):	100 mV/g $\pm 5\%$ Nominal 80 Hz at 22 $^{\circ}\text{C}$
Sensitivity (Temperature):	10 mV/ $^{\circ}\text{C}$ (0-100 $^{\circ}\text{C}$ Range)
Frequency Response:	1.5 Hz to 10 kHz $\pm 5\%$ (90 cpm to 600 kcpm) 0.5 Hz to 12 kHz $\pm 10\%$ (30 cpm to 780 kcpm) 0.2 Hz to 15 kHz $\pm 3\text{dB}$ (12 cpm to 900 kcpm)
Isolation:	Base Isolated
Measurement Range:	± 80 g
Transverse Sensitivity:	Less than 5%

Electrical

Electrical Noise:	0.1 mg max
Current Range:	0.5 mA to 8 mA
Bias Voltage:	10-12 Vdc
Settling Time:	1.0 Second
Output Impedance:	200 Ohm max.
Case Isolation:	$> 10^8$ Ohm at 500 Volt

Environmental

Operating Temperature Range:	-67 to 302 $^{\circ}\text{F}$ (-55 to 150 $^{\circ}\text{C}$)
Sealing:	IP65
Maximum Shock:	5000 g
Approvals:	CE Approved Intrinsically Safe (ATEX, IECEx, CSA and UL Approved)

Mechanical

Case Material:	Stainless Steel
Sensing Element:	PZT/Compression
Mounting Torque:	5.9ft. lbs (8Nm)
Weight:	4.9 Oz (139 gram)
Mating Connector:	Integral Cable
Mounting Thread:	CMCP787T-I/IS: 1/4"-28 UNF Captive Bolt Supplied with Sensor CMCP787T-I/IS-M8: M8x1.25 Captive Bolt Supplied with Sensor

Hazardous Location Ratings

Class I, II, III, Division 1 and 2, Groups A-G, T4, -55°C to + 110°C IP65

Class 1, Zone 0, AEx, ia, IIC, T4, Ga, -55°C to + 110°C

Zone 20, AEx, ia, IIIC, T130°C, IP65, Da, -55°C to + 110°C

Class I, II, III, Division 1, 2, Groups A-G, T6, -55°C to + 110°C

Zone 20, AEx, ia, IIIX, T80°C, IP65, DA, -55°C to + 110°C

Intrinsically Safe Requirements

Certificate details: Group I

IECEx 18.0082X

Baseefa18ATEX0130X

EI M 1

Ex ia I Ma

Certificate details: Group II and III

IECEx 18.0082X

Baseefa18ATEX0130X

Ex II 1GD

Ex ia IIC T6..T4 Ga

Ex ia IIIC T135°C Da

Ex ia IIIB T110°C..T145°C Da

Terminal Parameters Connector

Ui = 28V, Ii = 93mA, Pi = 0.65W

Ci = 1.2nF

Li = 0

500V Isolation

Units Will Pass A 500V Isolation Test

Standards Applied to Product

EN IEC 60079-0:2018

EN 60079-11:2012

IEC 60079-0 Edition 7 2017

IEC 60079-11 Edition 6 2011

Barrier

2 x Pepperl + Fuchs Galvanic Isolator

KFD2-VR4-Ex1.26 (BAS02ATEX7206)

2 x MTL Zener Barrier MTL7728+ (CMCP245-02)

or any other barrier that conforms with the terminal parameters

Certified Temperature Range

Ex ia IIC T6 Ga (-55°C ≤ Ta ≤ +57°C) (Gas)

Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +103°C) (Gas)

Ex ia IIIB T110°C Da (-55°C ≤ Ta ≤ +57°C) (Dust)

Ex ia IIIC T135°C Da (-55°C ≤ Ta ≤ +70°C) (Dust)

Ex ia IIIB T145°C Da (-55°C ≤ Ta ≤ +92°C) (Dust)

Ex ia I Ma (-55°C ≤ Ta ≤ +103°C) (Mining)

Australian Approval Group I

IECEx ExTC 18.0032X

Ex ia I Ma

(-55°C < Ta < +104°C)

US/Canada Approvals

Certificate No. SGSNA/19/BAS/00005

Cl I, II, III, Div 1, 2 Gr A-G T*

Cl I Zn 0 AEx ia IIC T6...T4 Ga

Cl II Zn 20 AEx ia IIIC T135°C Da

Ex ia IIC T6...T4 Ga

Ex ia IIIC T135°C Da

Or

Cl I, II, III, Div 1, 2 Gr A-D G and F T*

Cl I Zn 0 AEx ia IIC T6...T4 Ga

Cl II Zn 20 AEx ia IIIB T110°C...T145°C Da

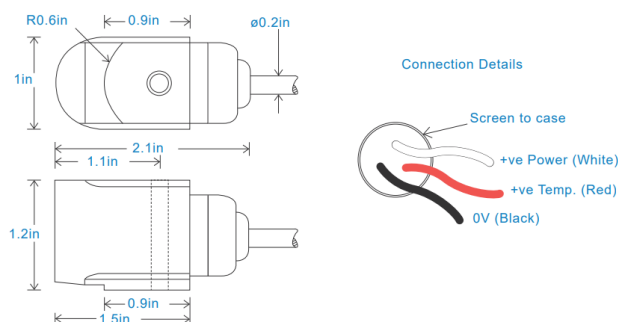
Ex ia IIC T6...T4 Ga

Ex ia IIIC T110°C...T145°C Da

Control Drawing

CMCP700A(Integral) System Connections

Dimensions



Ordering Information

Part ID: CMCP787T-I/IS

Description: Intrinsically Safe Side Entry Accelerometer with Temperature, 100 mV/g and 10 mV/°C, with 5 m (16 ft) Integral Braided Cable

Part IDs of different cable lengths

CMCP787A-**IXX**/IS Replace **XX** with length in Meter

CMCP787A-I20/IS-M8 Intrinsically Safe Side Entry Accelerometer with Temperature, 100 mV/g and 10 mV/°C, with 20 m (64 ft) Integral Braided Cable, M8x1.25 Captive Bolt

Note: Due to STI's continuous process improvement, specifications are subject to change without notice.