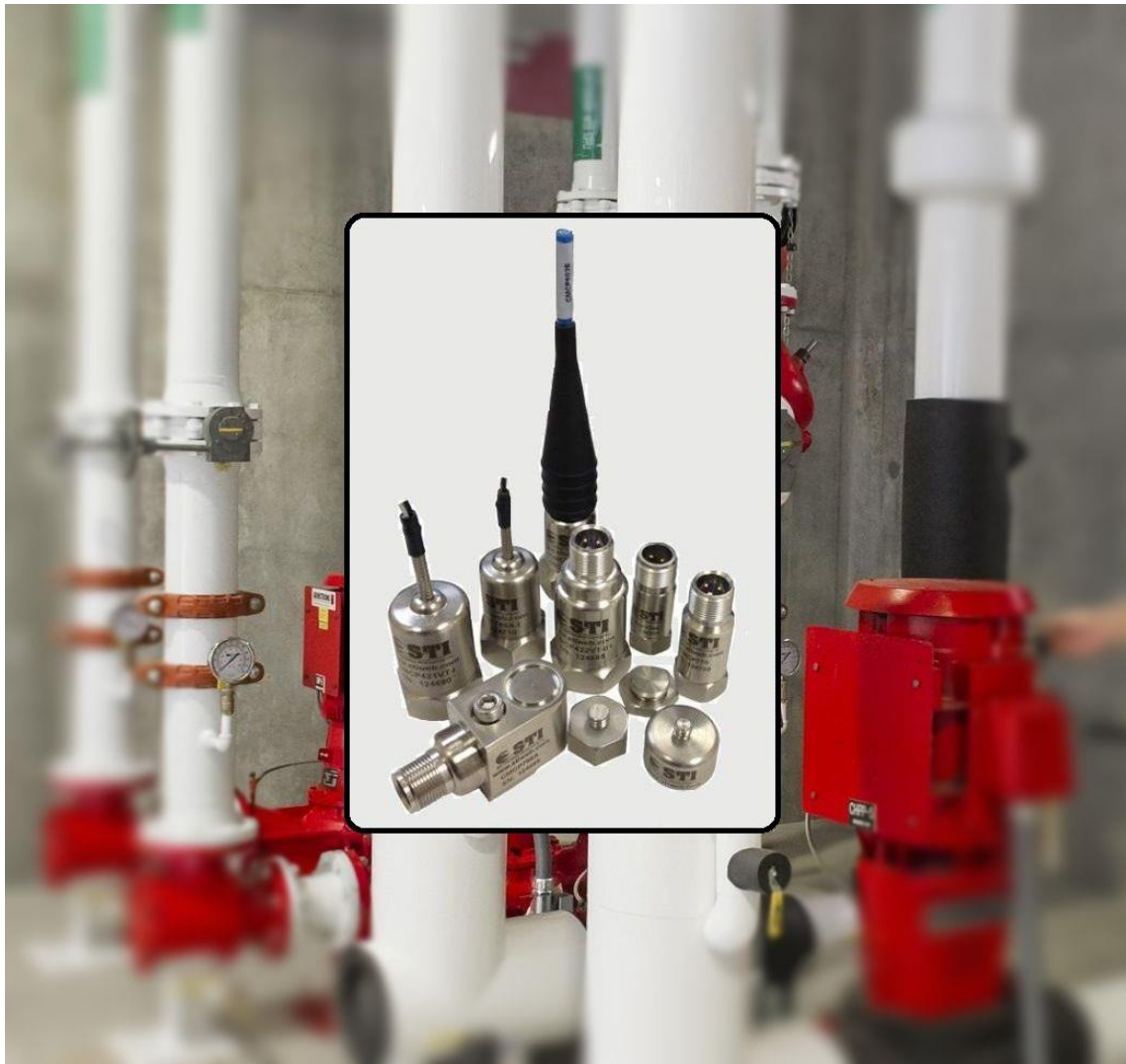


2022/2023

CMCP700 Series Sensor Brochure



Selection of Industrial Accelerometers

Industrial Accelerometers for Vibration Monitoring

STI's accelerometer offering has been extended and streamlined on both sides of the spectrum. On the low end, economical sensors with good specifications are added and on the high end are our precision, premium sensors with extended temperature range.

All of our CMCP700 Sensor Series and CMCP1100 Accelerometers come with a Lifetime Warranty and Sensors with standard options are in stock ready for quick delivery.

This Brochure provides an overview of the new accelerometer selection. For more information and the complete sensor data sheets, please visit us online, <https://www.stiweb.com>

Accelerometer Selection

For Standard Accelerometers there are three categories: Economical, General and Premium Sensors. Each accelerometer is fully enclosed in a 316 Stainless Steel case with the same dimensions regardless of the category. However, the sensors differ by its specifications, approvals, and connector options.



Shown above: CMCP700 Series of Economical, General and Premium Sensors

Economical Sensors

- When the application does not require hazardous approvals, the new Economical Sensors can be considered, -and money saved.

General Application Sensors

- The General-Purpose Accelerometers are for widespread applications and feature different connector options, -at no additional cost.

Premium Sensors

- The Premium Sensors with the extended temperature to 150 deg C (302°F) and a very competitive price, -an outstanding offer.

Common Specifications

Please refer to the individual sensor data sheets for specific information.

Technical Performance

Mounted Base Resonance: 22 kHz (nominal) top exit and 27 kHz for side exit
Sensitivity: 100 mV/g Standard, optional 10, 30, 50, 250 or 500 mV/g
Isolation: Base Isolated
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
Output Impedance: 200 Ohms max.
Case Isolation: $>10^8$ Ohms at 500 Volt



Environmental

Sealing: IP68 and IP65 for sensors with Integral Overbraided Cable
Maximum Shock: 5000 g
Approvals: CE Approved

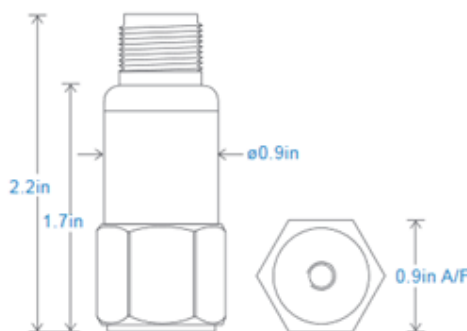
Mechanical

Case Material: Stainless Steel
Sensing Element: PZT/Compression
Mounting Torque: 5.9 lbs-ft (8 Nm)
Weight: 4.9 oz (139 gram)
Mounting, top exit: 1/4-28 UNF and M8x1.25 Mounting Studs Provided
Mounting, side exit: 1/4-28 UNF or M8x1.25 Captive Mounting Bolt

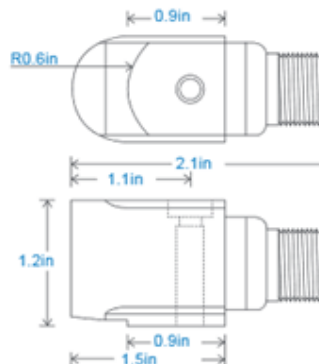
Hazardous Location Ratings for General and Premium Sensors

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, IIC, 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

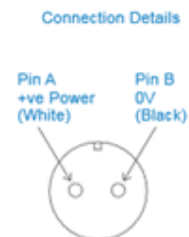
Dimensions



CMCP700 Top Exit



Side Exit



Connector

The CMCP700 sensor series is designed so that cross wiring will not harm the internal components and provides protection against ground loops. The sensors are waterproof and can be hosed down or submersed when using the proper extension cable such as the CMCP602 series. However, for constant submersion we recommend the sensor with thermoplastic (PUR) integral cables, like the CMCP785A-IP/786A-IP.

Additional sensitivities such as 10 mV/g, 30 mV/g, 50 mV/g, 250 mV/g, 500 mV/g and 1,000 mV/g are also available in the same sensor package and can be ordered by adding the sensitivity after the base part number.

Economical Sensors

The **CMCP782A Top Exit** and the **CMCP783A Side Exit Economical Accelerometer** are the ideal accelerometers for rotating equipment where hazardous approvals are not required. The sensors are lightweight and can be used for route based or permanent mount applications.



Shown above: CMCP782A Top and CMCP783A Side Exit Economical Accelerometer

Standard Sensitivity and Precision:	100 mV/g +/-10%
Connector:	2 PIN MS Connector (Military Standard)
Frequency Response at +/-10%:	1.5 Hz to 10 kHz (90 cpm to 600 kcpm)
Settling Time:	2 s (2 Second)
Operating Temperature:	-55 to +130°C (-67 to +266°F)

Lifetime Warranty

Top Exit Mounting:	1/4"-28 UNF and M8x1.25 Studs (both provided)
Side Exit Mounting:	1/4"x28 UNF or M8x1.25 Captive Mounting Bolt



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Condition Monitoring Custom Products

General Application Sensors

The **CMCP786A Top Exit** and the **CMCP785A Side Exit General Purpose Accelerometers** are the most common choice when it comes to monitoring different types of rotating equipment. The CMCP785A's side exit requires less clearance and accommodates a flush installation. Weighing less than five ounces (139 gram), the sensors can be used for walk-around programs (PdM) or permanently installed on-line systems.



Shown above: CMCP700 Series of General Accelerometers

Top Features

Sensitivity (Precision):	100 mV/g (+/-10%)
Connector:	2-PIN MS or 4-PIN M12 Connector (or integral cable)
Frequency Response:	0.8 Hz to 12 kHz (48 cpm to 720 kcpm) at +/-3 dB
Settling Time:	1.5 s (1.5 Seconds)
Operating Temperature:	-55 to +140°C (-67 to +284°F)
Approvals:	Class 1 Division II Lifetime Warranty
Top Exit Mounting:	1/4"-28 UNF and M8x1.25 Studs (both provided)
Side Exit Mounting:	1/4"x28 UNF or M8x1.25 Captive Mounting Bolt

Premium Sensors

The **CMCP787A Premium Side Exit** and the **CMCP788A Top Exit Accelerometers** are supreme accelerometers for rotating equipment in adverse environment. The high limit of the operating Temperature was extended to 150 deg C (302 deg F). The CMCP787A/CMCP788A are very precise and are used for route based or permanent mount applications.

Quick Comparison Table

Category	NEW: Economical	General	Premium
Part ID Top Part ID Side	CMCP782A CMCP783A	CMCP786A CMCP785A	CMCP788A CMCP787A
Specifications	Good	All-Purpose	Precision and High Temperature
Sensitivity Precision	10%	10%	5%
Temperature High Limit	130 °C (266 °F)	140 °C (284 °F)	150 °C (302 °F)!
Measurement Range	60 g Peak	80 g Peak	80 g Peak
Frequency Range at 10%	1.5 Hz to 10 kHz	1.0 Hz to 10 kHz	1.0 Hz to 13 kHz
Connector Options	2-Pin MIL	2-Pin MIL, M12 or Integral cable with or without armor	2-Pin MS, M12 or Integral cable with or without armor
Hazardous Approvals	No	CL1 Div2	Cl 1 Div2
		Class 1 Division 1 approved with IS Barrier or Isolator	
MSRP for top exit starting at	\$ 115.00	\$ 175.00	\$ 202.00

Accelerometers with Integral Cable

The General and Premium Sensor Series features Accelerometers with overbraided integral cable or polyurethane (PUR) cable jacket.



General: CMCP786A-I CMCP786A-IP
Premium: CMCP788A-I CMCP788A-IP

CMCP785A-I CMCP787A-I
CMCP785A-IP CMCP787A-IP

Cable Options for General and Premium Sensors

Category	Part ID			
General: Premium:	CMCP786A-I CMCP788A-I	CMCP785A-I CMCP787A-I	CMCP786A-IP CMCP788A-IP	CMCP785A-IP CMCP787A-IP
Specifications	Mechanical Protection		Submersible	
Sensitivity	100 mV/g standard. Option of 10, 30, 50, 250 or 500 mV/g			
Ingress Protection	Ingress Protection IP65		Ingress Protection IP68	
Case Material Stainless Steel				
Cable	Includes 5 meter of overbraided, integral cable or specify length		Includes 5 meter of Polyurethane (PUR) integral cable or specify length	
Hazardous Approvals	Class 1 Division 2, CL1 Div1 approved with IS Barrier or Isolator			
MSRP for General top exit starting at	\$ 175.00			

Conclusion:

- Standard Sensors with a sensitivity of 100 mV/g are stocked items. Other sensitivities are available at no additional cost with slightly longer delivery time.
- Connector options are offered at the same price, as are the Sensors with integral cable. Sensors with 5 m, 10 m, 20-meter integral cable are stocked items. The cost for 5-meter integral cable (Overbraided or PTE jacketed cable) remain the same as for sensors with connectors.
- The Premium Sensors with 5% sensitivity precision feature the same options regarding sensitivity and connectors (or integral cable).
- Top exit and side exit sensors follow the same principle and the CMCP785A General Accelerometer with side exit starts at \$ 189.00.



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Condition Monitoring Custom Products

Compact Sensors

STI's Compact Accelerometers have very similar features as standard Accelerometers except that they are smaller and lighter. They are designed to fit in tight locations and have the added benefit of having improved frequency response due to their smaller size.



CMCP1100C
M8 Connector

CMCP770A
2-Pin MIL Top

CMCP780A
2-Pin MIL Side Exit

Shown above: Compact Accelerometers

Compact Sensor Specifications Table

Category	Low Cost	Compact General
Part ID Top Part ID Side	CMCP1100C	CMCP770A CMCP780A
Specifications	Good	Superior
Sensitivity Precision	10%	10%
Temperature High Limit	85°C (185°F)	130°C (266°F)
Measurement Range	50 g Peak	80 g Peak
Frequency Range at 10%	1.5 Hz to 7 kHz	1.5 Hz to 16 kHz
Connector Options	3 Pin Male Gold Plated M8 Connector	2-Pin MIL
Hazardous Approvals	No	CL1 Div2 (CL1 Div1 with barrier)
MSRP for top exit starting at	\$ 99.00	\$ 215.00

Conclusion:

- The **Compact Accelerometers** have a sensitivity of 100 mV/g and are ideal for use in small spaces.
- The General Compact sensors are waterproof and can be hosed down or submersed when using the proper extension cable such as the CMCP602 series.
- Compact Sensors are available with integral cables.

Dual Output Sensors

STI's Dual Output Accelerometers divide into the Low Cost, General Dual Output and Premium Dual Output category. All of them provide both a standard 100 mV/g vibration and a 10 mV/°C temperature signal using a 3-pin Connector. The Low-Cost category is represented by the CMCP1100T series.

General Purpose Dual Output Sensors, like the CMCP786T Accelerometer with Temperature Top Exit and the CMCP785T Side Exit Sensor, feature a temperature range from 0 to 100 deg C and various connector options.

https://www.stiweb.com/Accelerometers_with_Temperature_s/89.htm

Premium Dual Output Sensors, for example the CMCP788T Accelerometer with Temperature Top Exit or the CMCP787T Side Exit Sensor, feature a temperature range from 0 to 150 deg C and various connector options.

General and Premium Dual Output Sensors are Class 1, Division 2 Hazardous Area rated and come with a Lifetime Quality Warranty.

Other Subcategories, as Low Frequency Accelerometers, Biaxial/Triaxial Sensors, Piezo Velocity Transducers, or 4-20 mA Output Sensors, can be found on our Accelerometer Home page:

https://www.stiweb.com/Industrial_Accelerometers_s/37.htm

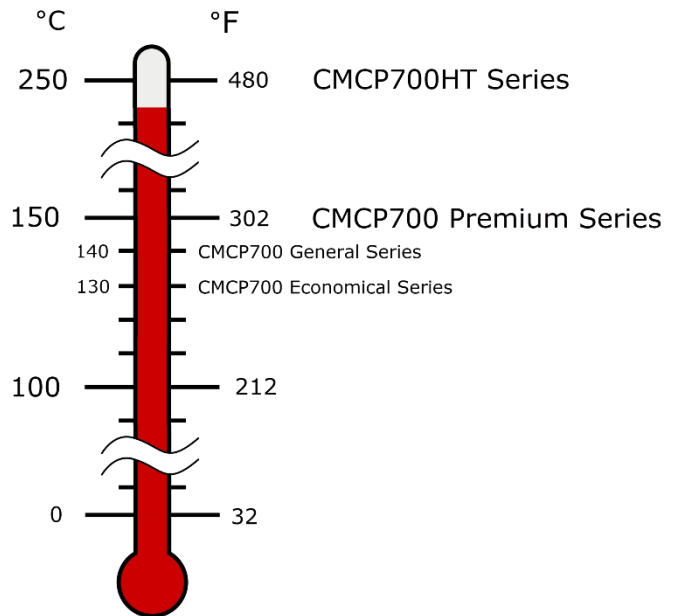


High Temperature Accelerometers



With charge amplifiers and an accurate output, the CMCP700HT High Temperature Accelerometer are rated up to 250 °C (480° F), perfect for use in adverse environments and inside machinery.

The CMCP700HT is a charge mode accelerometer that generates an electrical output proportional to the applied acceleration. The series is ideal for high temperature vibration applications because they lack internal microelectronics which limits the use of standard industrial sensors to about +150 °C (302 °F).



Shown Above: Accelerometers on a Temperature Scale

Features

- Top Exit or Side Exit High Temperature Sensor
- 480°F (250°C) Temperature Range
- External Charge Amplified
- 2 Hz to 15 kHz Frequency Range
- 6 Standard Sensitivities
- Quick Fit Adapter for Easy Installation and Removal
- Sealed to IP67
- Braided Armor Cable Sensor Cable (Sensor to Charge Amp)
- High Temperature Silicone Charge Amp Cable (Low Noise Cable)

[Please click here for the CMCP700HT High Temperature Accelerometer data sheet.](#)