



STI Vibration Monitoring Inc.

Vibration Monitoring and Machine Protection Systems

www.stiweb.com

CMCP7504

Compact API670 Machinery Protection System



UK
CA
CE

Features

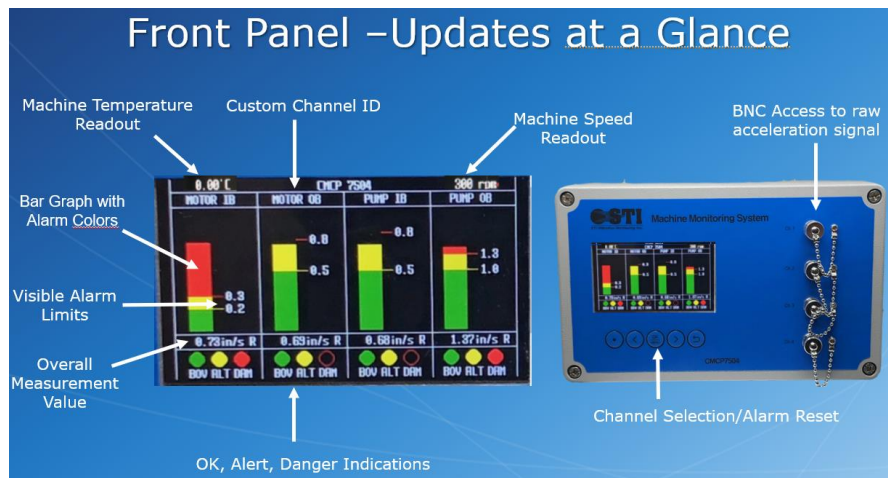
- Continuous Monitoring for Machine Protection
- 4 Variable Inputs Plus Speed and Temperature
- Local Bar Graph Display with Alarm Indicators
- 3 Levels of Alarm Per Channel
- Four Configurable 4-20 mA Recorder Outputs
- Modbus TCP/IP and RTU Outputs
- DataView Signal Saver
- Two Buffered Outputs per Channel (BNC and Terminal)

The CMCP7504 Compact Machinery Protection System was designed to continuously monitor Essential and Balance of Plant machinery, in all industries, where the cost of larger rack-based systems cannot be justified. The CMCP7504's flexible design allows it to accept a combination of four vibration, position, temperature, speed, or analog inputs and can be used in conjunction with a PLC, DCS or SCADA system. The system also allows for a single temperature and speed input for readout and visual alarming. Four dedicated BNC Buffered Outputs are located on the front cover and provide convenient access to the raw sensor signals for portable vibration analyzers. Buffered output signals are also available on screw terminals for hardwiring to online systems.

The local LCD display provides bar graphs, alarm indicators, and the overall vibration value directly on the front of the enclosure. Speed and temperature are also displayed on the front panel. The configuration software included with the system allows the user to program the four inputs, nine relay outputs and four recorder outputs with a laptop or PC via USB cable.

STI's DataView FFT Saver function allows advanced diagnostic capability by allowing the user to access a recording of the sensor's raw signal. Recordings are collected on alarm (alert and danger) and are saved to the internal SD Card as a .wav file which allows the user to review the waveform or FFT using a portable data collector or online monitoring system.

The CMCP7504 is rated IP65 and protects against dust and water ingress. Enclosures are available for additional protection. An internal Micro SD-Card records a rolling buffer of the overall values which can be reviewed at a later time.



1010 East Main Street
League City, Texas 77573
USA

Phone: +1 (281) 334-0766
Fax: +1 (281) 334-4255
SalesSupport@stiweb.com

Condition Monitoring Custom Products

Specifications

Electrical

Number of Inputs:	Four (4) Plus Speed and Temperature
Signal Types:	Accelerometer, Velocity Sensor, Proximity Probes or Analog Signals (mA or VDC)
Analog Outputs:	Four (4) Isolated 4-20 mA Outputs
Buffered Outputs:	Two Buffered Outputs Per Channel (BNC and Screw Terminal)
Frequency Response:	Velocity: 10-1,000 Hz (ISO) or 2 to 2,000 (ISO LF) Acceleration: 2 to 20,000 Hz Displacement: 2 to 2,000 Hz Thrust/Position: DC Enveloping: Filter #2 and #3 (Jumper Selectable)
Power:	85-264 VAC, 50/60 Hz or 24 VDC (1 Amp)
Accuracy:	±1% Full Scale
Input Module Accuracy:	±5% of Full Scale
Communications:	Modbus TCP/IP and RS485
Signal Detection:	RMS, Peak or Peak to Peak (User Defined)
Sensor Power:	Internal 4.4 mA Constant Current Diode for IEPE Style Sensor +24VDC for 4-20mA Sensors
Sensor OK Detection:	Continuous Monitoring of Sensor Bias Voltage
Number of Alarms/Relays	9 (4 Alerts, 4 Danger, 1 Common System OK)
Alarm Indication:	OK = Green LED, Alert = Yellow LED, Danger = Red LED
Relay Specification:	Form C, SPDT, 5 Amp 250 VAC, Latching or Non-Latching Selectable Normally Energized or Normally De-Energized (User Defined)
Alarm Time Delay:	1 to 90 Seconds (User Defined)
Reset Function:	Push Button
Case:	Powder Coated Aluminum, Isolated
Terminals:	Screw Type, 24 AWG min., 12 AWG max.
Programming:	Software and USB Cable Included (Windows Required)
Display Type:	Color LCD

DataView Signal Processing

Storage:	1GB
Raw Signal Length:	30 Seconds
Recordings Saved:	Up to 1,000
Recording Format:	.wav
Overall Value Save:	Continuous – First in First Out
Overall Value File Format:	.txt

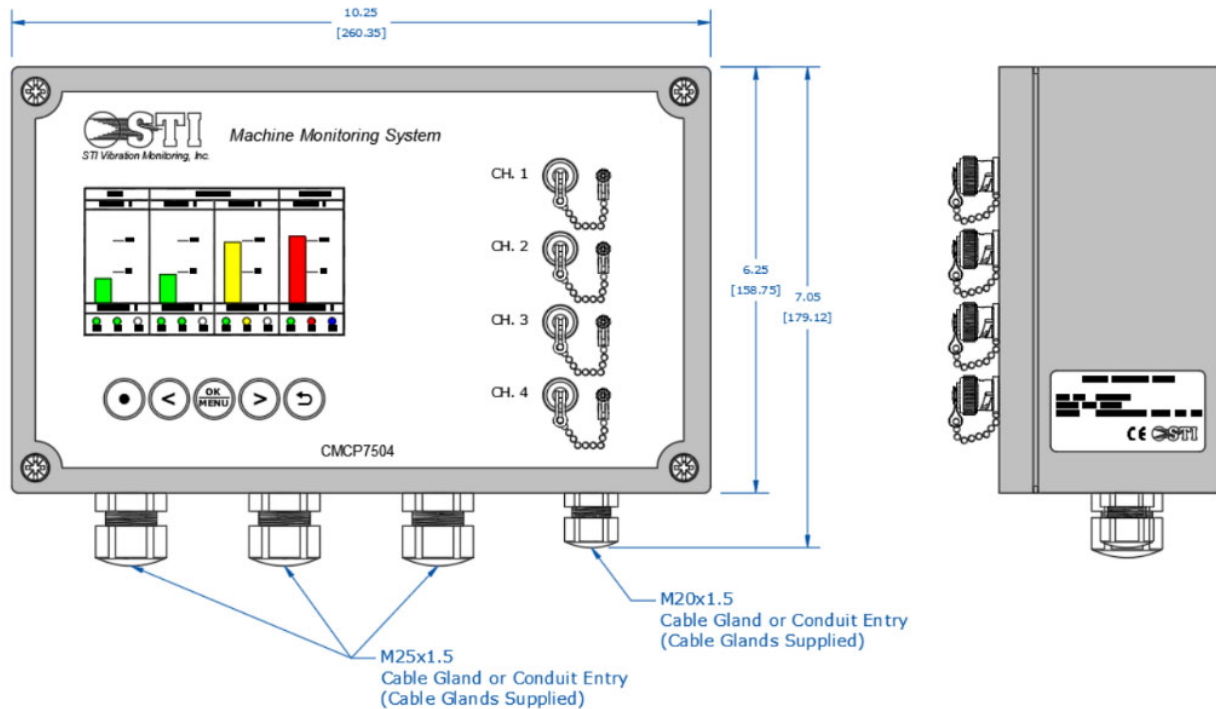
Environmental Specifications

Operating Temperature:	-4 to 176°F (-20 to +80°C)
Storage Temperature:	-40 to 185°F (-40 to +85°C)
Relative Humidity:	10 - 95% Non-Condensing
Enclosure Rating:	IP65

Mechanical Specifications

Housing Material:	Gray Aluminum, Die-Cast
Mounting:	Mounting Bolts
Dimensions:	10.24" x 6.3" x 3.55" (260 x 160 x 90mm)
Weight:	25 oz. (700g)
Certifications:	CE Approved - EN 60950-1

Dimensions



Ordering Information

CMCP7504 -XX -XX -XX -XX Channel Selection

- Input 1 Module Type, Specify Ordering Code from Table Below
- Input 2 Module Type, Specify Ordering Code from Table Below
- Input 3 Module Type, Specify Ordering Code from Table Below
- Input 4 Module Type, Specify Ordering Code from Table Below

Note: Each CMCP7504 is supplied with a USB cable and USB thumb drive containing the setup software.

Input Module Type

Ordering Code Description

-AC	Acceleration, Input from Accelerometer
-VA	Velocity, Input from Accelerometer
-VV	Velocity, Input from Velocity Sensor
-DS	Displacement, Input from Proximity Probe
-TP	Thrust Position, Input from Proximity Probe
-EV	Enveloped Acceleration, Input from Accelerometer
-AM	Analog Input, mA or VDC
-TM	Temperature Input (100Ohm Plat or 10mV/°C from Dual Output Accelerometer)
-XX	Empty Slot, Unused

Example Part Number:

CMCP7504-VA-EV-VA-EV

Four Channel Monitoring System
 Module 1: Velocity, Accelerometer Input
 Module 2: Enveloped Acceleration
 Module 3: Velocity, Accelerometer Input
 Module 4: Enveloped Acceleration

What's Included:

- 1x CMCP7504 (Configured as Ordered)
- 3x M25x1.5 Cable Glands
- 1x M20x1.5 Cable Gland
- 1x USB Thumb Drive with Software and Manual
- 1x USB Programming Cable
- 1x Calibration Certificate

CMCP7504 Setup Application

CMCP7500 Configuration Program for Client

Point Name	CH1	CH2	CH3	CH4
Used/Not Used	Test ch1	Test ch2	Test ch3	Test ch4
Speed Sync	Used	Used	Used	Used
Engineering Unit	mm/s R	mm/s R	mm/s R	mm/s R
Voltage Check	Check	Check	Check	Check
Alarm Setting Danger	T1 8.0	T1 8.0	T1 8.0	T1 8.0
Alarm Setting Alert	T1 5.0	T1 5.0	T1 5.0	T1 5.0
Relay Type(NE/NDE)	NE	NE	NE	NE
Alarm Operating Type	NonLatch	NonLatch	NonLatch	NonLatch
Alarm Delay Time(Sec)	0.0	0.0	0.0	0.0
Alert Operating Type	NonLatch	NonLatch	NonLatch	NonLatch
Alert Delay Time(Sec)	0.0	0.0	0.0	0.0
Signal Full Scale Max	25.0	25.0	25.0	25.0
Signal Full Scale Min	0.0	0.0	0.0	0.0
View Scale Max	15.0	15.0	15.0	15.0
View Scale Min	0.0	0.0	0.0	0.0
Scale(4~20mA)Max	20.0	20.0	20.0	20.0
Scale(4~20mA)Min	4.0	4.0	4.0	4.0

Ver 4.0

Send Set Ch1 Send Set Ch2 Send Set Ch3 Send Set Ch4

AUX Temperature: Used 10mV/? Speed: Used 1 H1 10.0 L1 5.0 Ev.Cnt 1 Send Set Aux

Net Config IP: 192 168 0 40 Set Load

MAC Address (HEX) A1 A2 A3 A4 A5 A6 00 00 00 00 00 EE Set Load

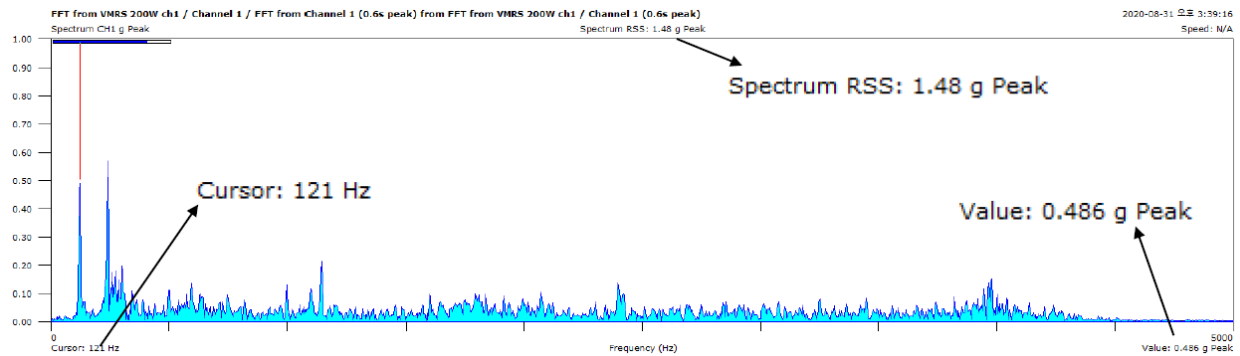
Time Time Syn All Send Load

Com Port Connect Dis Con Setup

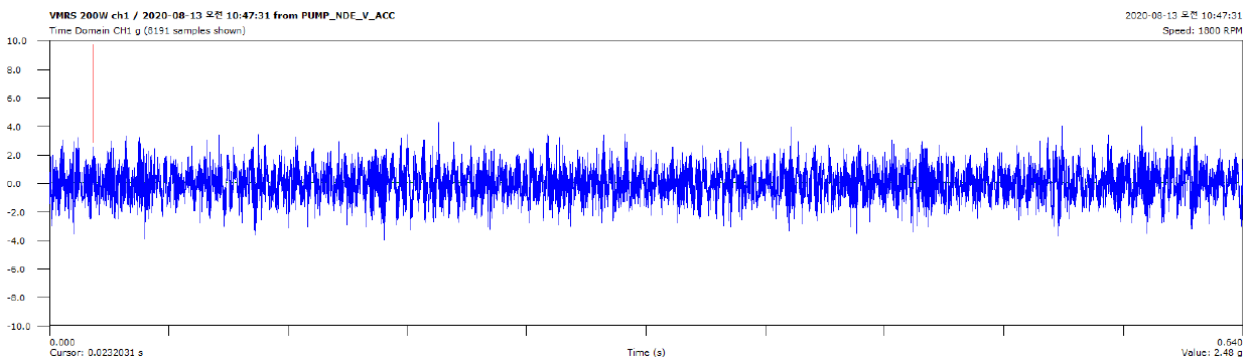
File Save Open

SYSTEM ModBus Slave No. 1 Baud b9600 Data d8 Stop s1 Parity NON SN: 20220217 Send Set Data

DataView Signal Processing – FFT Using SKF Microlog GX



DataView Signal Processing – Time Waveform Using SKF Microlog GS



Accessories Enclosures

Additional enclosures for harsh environments

Material

-FG Option	Compression Molded Fiberglass
-PS Option	14 AWG Mild Steel Polyester Powder Coated
-SS Option	14 AWG 304 Stainless Steel

NEMA Rating

-FG and -SS:	NEMA 4, 4X, 12 and 13
-PS:	NEMA 4, 12 and 13

IP Rating:

IP66

Door Closure:

1/4 Turn Quick Release Latch (Steel) or Quick Release Latch (Fiberglass)

Optional Cord Grips

Material:

Nylon

IP Rating:

IP68

Cable Diameter:

0.17"-0.22" Cable Diameter

Location:

Enclosure Bottom



CMCP7504H	-XX	-XX		Description
	-FG			NEMA 4X, IP66, Fiberglass Enclosure with Door Window
	-PS			NEMA 4, IP66, Painted Steel Enclosure with Door Window
	-SS			NEMA 4X, IP66, Stainless Steel Enclosure with Door Window
		-01		For One CMCP7504 (14"x12"x6")
		-02		For up to Two CMCP7504's (16"x14"x8")
		-04		For up to Four CMCP7504's (24"x20"x8")
			-CG	With Cord Grips, 1x CMCP261-03 & 1x CMCP262-01 (for Sensor Inputs)

Example:

CMCP7504H-FG-01-CG

Fiberglass Enclosure for 1x CMCP7504, with Cord Grip Cable Entries

Adapters



CMCP7500DR Din Rail Kit



Blanking Plugs



Thread

Din Rail Adapter Kit

CMCP7500DR Din Rail Mounting Clip & Adapter Plate

Blanking Plugs

CP2105009-1 Blanking Plug for M20x1.5 Entry

CP2105009-2 Blanking Plug for M25x1.5 Entry

Conduit Adapters

CP2105010-NPT M20x1.5 to 1/2" NPT Conduit Adapter

CP2105010-2 M25x1.5 to 3/4" NPT Conduit Adapter

CP2105010-3 M20x1.5 to PG11 Adapter

CP2105010-4 M25x1.5 to PG16 Adapter

CMCP793V

Velocity Sensor, Top Entry 2 Pin MS Connector



Features:

- Top Exit Velocity Sensor
- 100 or 500 mV/In/Sec $\pm 10\%$ (4mV or 20mV/mm/s)
- 140°C Max Temperature Range
- 2 Pin MS 5015 Connector
- Class 1 Division 2 Approved
- Class 1 Division 1 Approved with IS Barrier or Isolator
- 1/4"-28 UNF and M8x1.25 Mounting Studs Included
- Sealed to IP68

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:	
CMCP793V:	100mV/In/Sec (4mV/mm/s) $\pm 10\%$ Nominal 80Hz at 22°C
CMCP793V-500:	500mV/Sec (20mV/mm/s) $\pm 10\%$ Nominal 80Hz at 22°C
Frequency Response:	3 Hz to 4.5 kHz $\pm 10\%$ (180 cpm to 270k cpm)
	2 Hz to 6 kHz $\pm 3\text{dB}$ (120 cpm to 260k cpm)
Isolation:	Base Isolated
Measurement Range:	
100mV/In/Sec Option:	40 In/Sec
500mV/In/Sec Option:	10 In/Sec
Transverse Sensitivity:	Less than 5%

Electrical

Electrical Noise:	0.1mg max
Current Range:	0.5mA to 8mA
Bias Voltage:	10-12 Vdc
Settling Time:	1 Second
Output Impedance:	200 Ohms max.
Case Isolation:	$>10^8$ Ohms at 500 Volts

Environmental

Operating Temperature Range:	-67 to 284°F (-55 to 140°C)
Sealing:	IP68 / Hermetically Sealed
Maximum Shock:	5000 g
Approvals:	CE Approved
	CSA/UL Class 1 Division 2, Groups B, C and D

Mechanical

Case Material:	Stainless Steel
Sensing Element:	PZT/Compression
Mounting Torque:	5.9ft. lbs (8Nm)
Weight:	4.4 Oz (125 grams)
Mounting:	1/4"-28 UNF and M8x1.25 Mounting Studs Provided
Mating Connector:	2 Pin MIL 5015 MS Connector

Hazardous Location Ratings

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

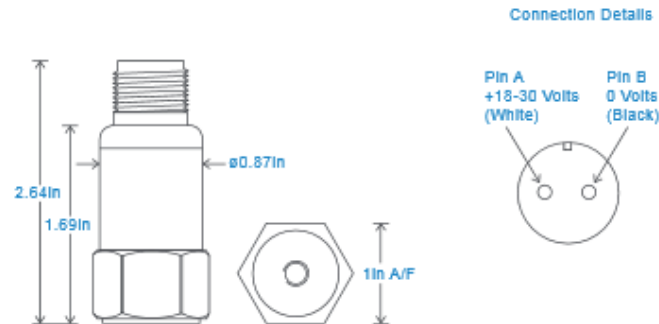
Class 1, Zone 0, AEx, ia, IIC, T4, Ga, -55°C to + 110°C

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

Dimensions



Ordering Information:

CMCP793V Velocity Sensor, Top Entry 2 Pin MS Connector, 100mV/in/s (4mV/mm/s)
CMCP793V-500 Velocity Sensor, Top Entry 2 Pin MS Connector, 500mV/in/s (20mV/mm/s)

Recommended Cable Assemblies:

General Purpose TPE Jacketed Cable (Rated to 120°C)

CMCP602L Series 2 Socket MS Connector, Locking Collar, IP67

CMCP602LST Series 2 Socket MS Connector, Push On Seal Tight, IP68

High Temperature FEP Jacketed Cable (Rated to 200°C)

CMCP602H Series 2 Socket MS Connector, Locking Collar, IP67

CMCP602HST Series 2 Socket MS Connector, Push On Seal Tight, IP68

Similar Products



M12 Connector
CMCP793V-M12



Submersible
CMCP793V-IP



Integral Armored Cable
CMCP793V-I



CMCP602H Series

High Temperature 2 Socket MS Cable Assembly
IP68 Locking Collar Connector – Yellow FEP Jacket



Features

- High Temperature Cable Assembly
- Rugged Design for Permanent Installations
- 2 Socket MS Connector, MIL-C 5015 Style
- IP68 Locking Collar (Screw-On)
- Viton Strain Relief Boot
- Corrosion Resistant Gold-Plated Contacts
- Yellow Flame Retardant FEP Jacketed Cable
- UV, Oil and Chemical Resistant Cable
- Suitable for Class 1 Division 1/2 Locations
- Braided Shield with Drain Wire
- 200°C (392°F Temperature Rating
- Lifetime Warranty

Typical Applications

Mates with Industrial Sensors featuring a 2 Pin MS Connector.

Connector Specifications

Connector Type:	2 Socket MS 5015 MIL-C Style
IP Rating:	IP68
Shield Isolation:	Isolated or Non-Isolated Shielding (See Ordering Information)
Locking Collar Material:	316 Stainless Steel
Strain Relief Material:	Viton
MS Insert Material:	PA4
Contact Pin Material:	Gold Plated Pins

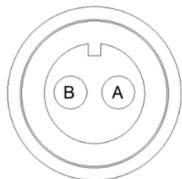
Cable Specifications

Jacket Material:	FEP (Fluorinated Ethylene Propylene)
Jacket Color:	Yellow
Insulation:	Fiberglass
Conductors:	2 Plus Drain Wire
Wire AWG:	20AWG (0.52 mm ²)
Drain Wire AWG:	24AWG (0.21 mm ²)
Shielding:	Braided Shield
Cable Diameter:	0.19" (4.8 mm)
Weight:	0.048 Lbs/Ft (0.0714 kg/m)
Temperature Range:	-67 to +392°F (-55 to +200°C)
Capacitance Per Foot (pF/ft):	30 pF/ft (98.42 pF/m)

Warranty: Lifetime

Connector Pinout / Wire Color

Color Code:	A = White
	B = Black
	Shield = Bare



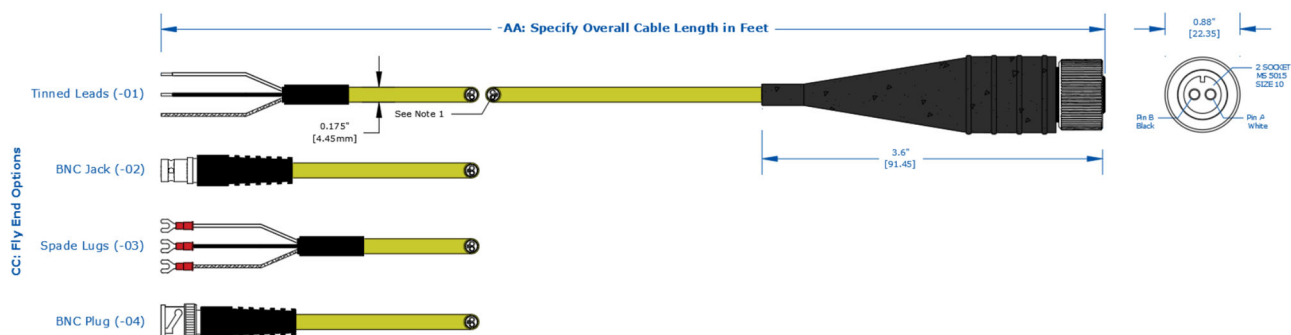
Ordering Information

CMCP602H -XX -XX -XX -XX	2 Pin MS 5015 Sensor Extension Cable, Yellow FEP Cable
-16	16' (5 m) Long
-32	32' (10 m) Long
-64	64' (20 m) Long
-XX	Specify Cable Length in Feet in Place of XX
-01	Standard Cable, Non-Armored
-01	Tinned Leads on Fly End (Terminal Block Connection)
-02	Spade Lugs Installed on Leads (for Screw Terminals)
-03	BNC Jack on Fly End
-04	BNC Plug on Fly End
	Isolated – Shield Not Connected at Sensor (Standard)
-NI	Non-Isolated – Shield Connected at Sensor End

Example Part Number:

CMCP602H-16-01-01
 2 Socket MS Cable Assembly
 16' (5m) Long
 Standard Cable, No Armor
 Tinned Leads on Fly End

Dimensions



Similar Products



Note:

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