

## CMCP700S Series User Manual



CMCP700S-CV

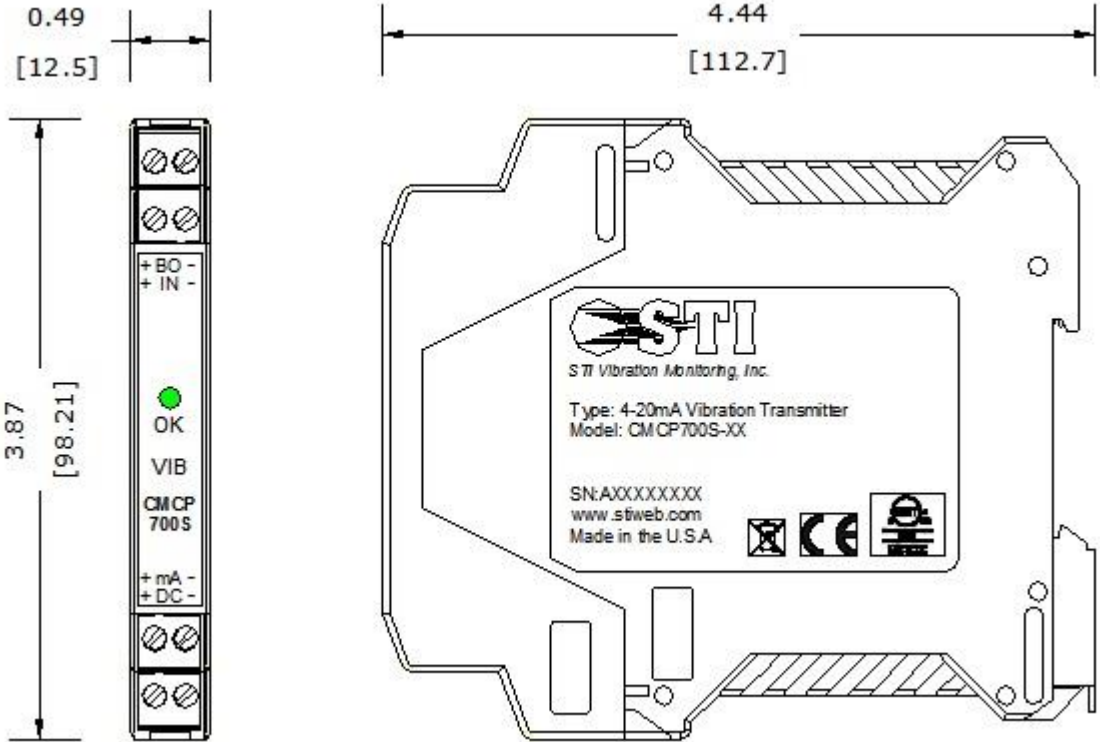
CMCP700S-DC

CMCP700S-RV

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# Physical Dimensions

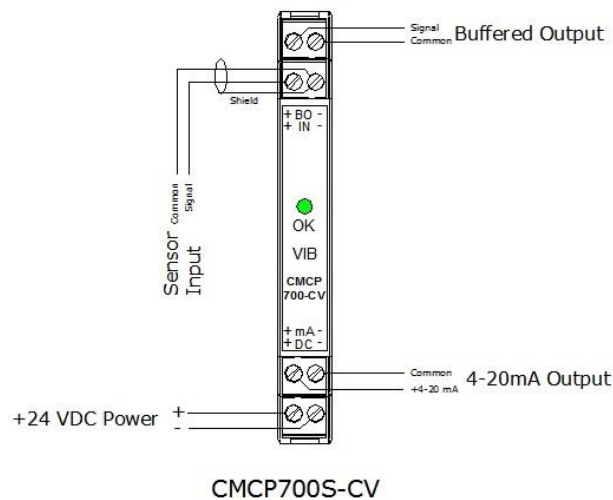


## CMCP700S-CV Case Vibration Transmitter

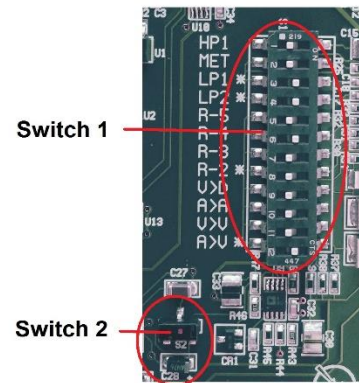


The **CMCP700S-CV** is easy to setup if something other than standard “as shipped” is desired. There are two (2) Dip Switches on the circuit board. S1 has twelve (12) switches and S2 only a single switch. Frequency Bandwidth, Full Scale Range, Metric or English Engineering Units, Input/Output Terms and the Signal Detection method may be selected. The CMCP700S ships with a standard setup of 10 Hz to 1 kHz Bandwidth (ISO Standard), Acceleration In/Velocity Out, 0 to 1.0 in/sec Full Scale and RMS Signal Detection.

CMCP700S-CV Wiring Diagram:



CMCP700S-CV Setup and Switch Selection:



The **CMCP700S-CV** is “Front Loaded”. To modify or change the standard setup of the CMCP700S simply release the top and bottom latches and pull the circuit board straight out to the front. The Dip switches are clearly marked as to their function. Review the information below to modify per your wishes. The image at top shows how the circuit board slides out. Some things to keep in mind:

- Velocity and Acceleration can be either RMS or Peak Detection!
- RMS is the most common form of signal detection!
- ISO Standard is 10 Hz to 1 kHz!
- Displacement is only available with a Velocity input!
- Displacement is always Peak to Peak or 2xPeak!

### High Pass and Low Pass Filters:

Transmitter bandwidth is selected by HP1 (High Pass), LP1 and LP2 (Low Pass) on Switch 1. HP1 Selects the High Pass Filter or the lowest frequency you want to transmitter to react to. Using LP1 and LP2 together you can select the highest frequency you are interested in. ISO Standard for Velocity is a High Pass of 10 Hz and Low Pass of 1 kHz. For ISO Low Frequency Monitoring you would select a High Pass of 2 Hz and a Low Pass of either 1 kHz or 2 kHz. When measuring g's Acceleration, a Low Pass of 20 kHz is usually used. As shipped selections are marked with a "\*" .

### High Pass Filter Selection:

High Pass Filter	Off	On
HP1	*10 Hz	2 Hz

### Low Pass Filter Selection:

Low Pass Filter		
LP1	LP2	Low Pass Filter Results
Off	Off	20 kHz (Use for Acceleration Out)
Off	On	2 kHz
On	On	*1 kHz

### Metric or English Engineering Units:

Either English or Metric Engineering Units (EU) may be selected by the switch marked "MET" on Switch 1. Acceleration "g's" is used for both English and Metric measurements. Velocity measurements are inches/second in English and mm/sec for Metric. Displacement measurements are mils (0.001") for English and Microns for Metric.

EU	Off	On
MET	English	Metric

### Full Scale Range:

Five Full Scale Ranges are selectable using switches R1 to R4. Even though there are only 4 switches the fifth range is available by setting all four (4) switches to Off. Full Scale Ranges always begin at Zero (0.0).

R1	R2	R3	R4	Range
On	Off	Off	Off	English: 0 to 0.5 ips, 0 to 5.0 g's or 0 to 5 mils Metric: 0 to 12.5 mms, 0 to 5.0 g's or 0 to 125 microns
Off	On	Off	On	English: 0 to 1.0 ips, 0 to 10.0 g's or 0 to 10 mils Metric: 0 to 25.0 mms, 0 to 10.0 g's or 0 to 250 microns
Off	Off	On	Off	English: 0 to 1.5 ips, 0 to 15.0 g's or 0 to 15 mils Metric: 0 to 37.5 mms, 0 to 15.0 g's or 0 to 375 microns
Off	Off	Off	On	English: 0 to 2.0 ips, 0 to 20.0 g's or 0 to 20 mils Metric: 0 to 50.0 mms, 0 to 20.0 g's or 0 to 500 microns
Off	Off	Off	Off	0 to 2.5 ips, 0 to 25.0 g's or 0 to 25 mils Metric: 0 to 62.5 mms, 0 to 25.0 g's or 0 to 625 microns

### Engineering Units, Velocity, Acceleration or Displacement:

Engineering Units are selected based on the sensor you are using and the output that you desire. An Accelerometer Sensor has an input in g's and can have an output in either acceleration g's or velocity in in/sec or mm/sec. A Velocity Sensor has an input in velocity terms and can have an output in either velocity or displacement terms.

V>D	A>A	V>V	A>V	Range
On	Off	Off	Off	Velocity Input and Displacement Output
Off	On	Off	Off	Acceleration Input and Acceleration Output
Off	Off	On	Off	Velocity Input and Velocity Output
Off	Off	Off	On	Acceleration Input and Velocity Output

### Signal Detection

Switch 2 is used to select the signal detection method which can be either RMS (Root Mean Square) or Peak Detection. Acceleration and Velocity measurement can be either RMS or Peak. Selecting a Displacement Output provides a Peak to Peak Detection method.

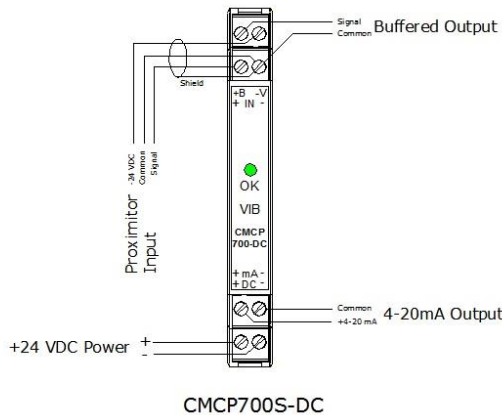
	Off	On
S2	RMS	Peak

# CMCP700S-DC Vibration Displacement Transmitter

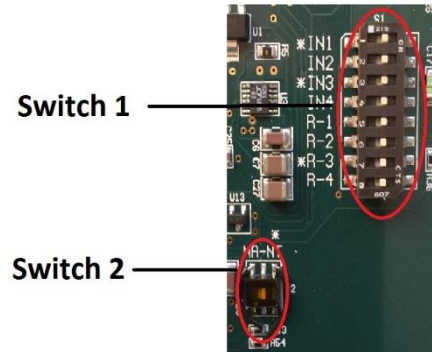


The **CMCP700S-DC** Transmitter can be used with Eddy Current Probes to monitor Thrust Position, or Differential Expansion. Other parameters such as Case Expansion sensed by a DC LVDT, or Temperature from a Solid State Temperature Sensor can also be monitored. Virtually any process variable with a DC Voltage output of 0-5Vdc, 0-10Vdc, 1-5Vdc, 1-6Vdc or 0-1.25Vdc can also be used. The **CMCP700S-DC** Vibration Displacement Transmitter is easy to setup if something other than standard “as shipped” is desired. There is one 8 position Dip-Switch on the circuit board (S1) that is used to select the type of sensor being used, and the associated full-scale range. A second switch S2 is used to select the “up-scale” direction when used with Eddy Current probes.

CMCP700S-DC Wiring Diagram:



CMCP700S-DC Setup and Switch Selection:



The **CMCP700S-DC** is “Front Loaded”. To modify or change the standard setup of the CMCP700S-DC simply release the top and bottom latches and pull the circuit board straight out to the front. The Dip switches are clearly marked as to their function. Review the information below to modify per your wishes. The image at top shows how the circuit board slides out.

## Input Sensor:

Sensor type and sensitivity are selectable using the switches marked IN1 to IN4.

IN1	IN2	IN3	IN4	Input Type
On	Off	On	Off	Negative DC Voltage inputs: Eddy Current Probes: 200 mV/mil, 100 mV/mil, 50 mV/mil, 25 mV/mil, 10 mV/mil
Off	Off	Off	On	Positive DC Voltage inputs: 0-5Vdc, 0-10Vdc, 1-5Vdc, 1-6Vdc. Solid State Temperature Inputs: 0-1.25Vdc @ 10 mV/deg. C

### Full Scale Range:

Full Scale Ranges are selectable using the switches marked R-1 to R-4. Full Scale Ranges always begin at Zero (0.0) mils or mm.

R-1	R-2	R-3	R-4	Nominal Range:
Off	Off	Off	Off	-20Vdc
Off	Off	Off	Off	-18Vdc
On	Off	Off	Off	-16Vdc (+/-40 or 0-80 mils @ 200 mV/mil)
Off	On	Off	Off	-12Vdc
Off	Off	On	Off	-8Vdc (+/-20 or 0-40 mils@200 mV/mil)
On	Off	Off	Off	+10Vdc
	Off	Off	Off	+5Vdc (0-5Vdc or 1-6Vdc input)
Off	Off	Off	Off	+4Vdc (1-5Vdc input)
Off	Off	Off	Off	+1.25 Vdc (0-1.25 Vdc from SS Temperature Sensor)

### Up-Scale Direction:

Switch S2 allows for selection of the up-scale direction of the output.

S2	Up-scale direction
NT	Normally Towards Probe
NA	Normally Away From Probe

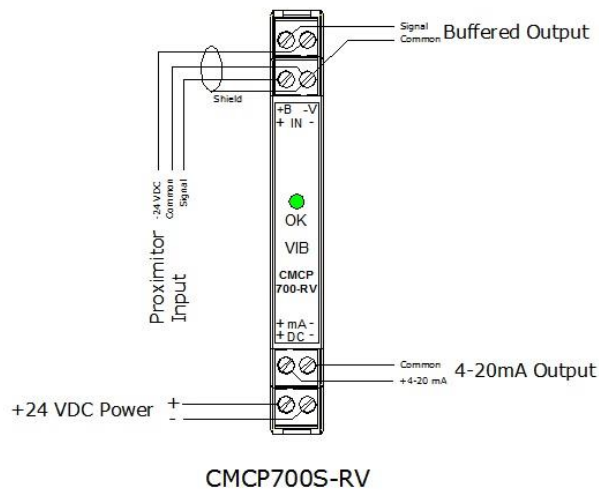


# CMCP700S-RV Vibration Displacement Transmitter

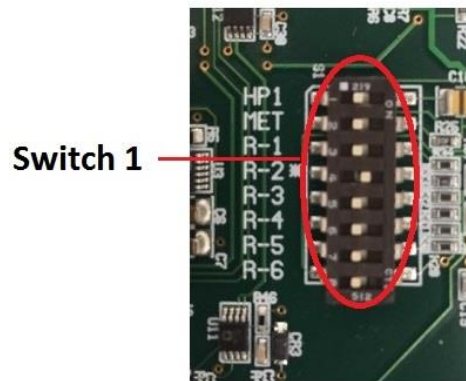


The **CMCP700S-RV** Vibration Displacement Transmitter is easy to setup if something other than standard “as shipped” is desired. There is one 8 position Dip-Switch on the circuit board. Frequency Bandwidth, Metric or English Engineering units and Full Scale Range are selected using this switch. The CMCP700S-RV ships with the following settings: 4Hz to 1.0 kHz Bandwidth (ISO Standard), 200 mV/mil input, 0 to 10 mils pp Full Scale, 4-20 mA output.

CMCP700S-RV Wiring Diagram:



CMCP700S-RV Setup and Switch Selection:



The **CMCP700S-RV** is “Front Loaded”. To modify or change the standard setup of the CMCP700S-RV simply release the top and bottom latches and pull the circuit board straight out to the front. The Dip switches are clearly marked as to their function. Review the information below to modify per your wishes. The image at top shows how the circuit board slides out.

Some things to keep in mind:

- Signal Detection for Displacement is Peak-To-Peak!
- Displacement is only available with a displacement input (Eddy Current Probe)

## High Pass Filter:

The CMCP700S-RV Factory setting for the High Pass filter is 4 Hz. Turning ON the HP1 switch changes the High Pass filter to 2 Hz for lower frequency applications. The Low Pass Filter is fixed at 10 kHz.

### High Pass Filter Selection:

High Pass Filter	Off	On
HP1	*4Hz	2 Hz

### Metric or English Engineering Units:

Either English or Metric Engineering Units (EU) may be selected by the switch marked "MET". Displacement measurements are mils (0.001") for English and Microns for Metric.

EU	Off	On
MET	English	Metric

### Full Scale Range:

Six Full Scale Ranges are selectable using the switches marked R-1 to R-6. Full Scale Ranges always begin at Zero (0.0).

R-1	R-2	R-3	R-4	R-5	R-6	Range
On	Off	Off	Off	Off	Off	English: 0 to 5 mils pp Metric: 0 to 125 microns
Off	On	Off	Off	Off	Off	English: 0 to 10 mils pp Metric: 0 to 250 microns
Off	Off	On	Off	Off	Off	English: 0 to 15 mils pp Metric: 0 to 375 microns
Off	Off	Off	On	Off	Off	English: 0 to 20 mils pp Metric: 0 to 500 microns
Off	Off	Off	Off	On	Off	English: 0 to 25 mils pp Metric: 0 to 625 microns
Off	Off	Off	Off	Off	On	0 to 50 mils pp Metric: 0 to 1300 microns