

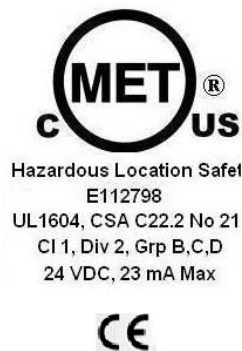


# OPERATION MANUAL

## *CMCP420VT Series Loop Powered Transmitters*

*CMCP420VT-01  
CMCP420VT-02  
CMCP420VT-T1  
CMCP420VT-T2*

REV. J 8-15-2013



### **IMPORTANT!**

**After installation of this unit, no connections are to be made or broken while any connection on the unit is powered up.**

Après l'installation de cette unité, pas de connexions doivent être faites ou cassé pendant toute connexion de l'appareil est sous tension.

STI Vibration Monitoring, Inc.  
1010 East Main Street  
League City, Texas 77573 USA  
Tel.: 281.334.0766  
[www.stiweb.com](http://www.stiweb.com)

**Model Description:**

The **CMCP420VT Series Transmitters** are solid state loop powered Velocity and Velocity/Temperature Sensors. Each parameter provides a 4-20mA output that is proportional to overall vibration and/or temperature in terms of velocity and degrees Celsius or Fahrenheit. The CMCP420VT Series continuously monitors machinery health and transmits directly into a PLC or DCS for trending, alarm and machine shutdown. The dynamic output terminals on the CMCP420VT provides the user with a direct connection to the internal accelerometer for connecting data collectors. The CMCP420VT-T is not equipped with a dynamic output.

**Ranges:**

Vibration and Dynamic Output (VT Series)

CMCP420VT-01 0-1.0 In/Sec RMS (0-25.4mm/Sec)

CMCP420VT-02 0-2.0 In/Sec RMS (0-50.8mm/Sec)

Vibration and Temperature Output (VT-T Series)

CMCP420VT-T1 0-1.0 In/Sec RMS (0-25.4mm) and 0-100°C (32-212°)

CMCP420VT-T2 0-2.0 In/Sec RMS (0-50.8mm) and 0-100°C (32-212°)

**Power Requirements**

+22 to +36 VDC Per 4-20mA Loop

**R-Load**

RL max = 600 Ohms

The Recommended RL for most installations is: 250 Ohms or 100 Ohms, @ Vs = 24 Vdc

**Loop Connections:**

Vibration	V+ V-	CMCP420VT and CMCP420VT-T Series, 4-20mA Loop Output
Temperature	T+ T-	CMCP420VT-T Series Only, 4-20mA Loop Output
Dynamic	D+ D-	CMCP420VT Series Only, 100mV/g Output

**Case:**

316 Stainless Steel

**Mounting Options:**

Supplied with ¼"-28 x ½" mounting stud

**Dimensions:**

Case: 2 5/8" H x 1 1/16" W

3/4" NPT Top Fitting for Conduit

**Weight:**

8 oz.

**Environmental:**

Operating Temperature: -20°C to +80°C

Sealed: Epoxy Encapsulated

**Certifications:**

UL and CSA Approved Class I Division II, Groups B, C and D

CE Approved

RoHS Compliant

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**Power Requirements**

+22 to +36 VDC Per 4-20mA Loop

**R-Load**

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The Recommended RL for most installations is: 250 Ohms or 100 Ohms, @ Vs = 24 Vdc

**Loop Connections:**

Vibration	V+	CMCP420VT and CMCP420VT-T Series, 4-20mA Loop Output
	V-	
Temperature	T+	CMCP420VT-T Series Only, 4-20mA Loop Output
	T-	
Dynamic	D+	CMCP420VT Series Only, 100mV/g Output
	D-	

**Case:**

316 Stainless Steel

**Mounting Options:**

Supplied with ¼"-28 x ½" mounting stud

**Dimensions:**

Case: 2 5/8" H x 1 1/16" W

3/4" NPT Top Fitting for Conduit

**Weight:**

8 oz.

**Environmental:**

Operating Temperature: -20°C to +80°C

Sealed: Epoxy Encapsulated

**Certifications:**

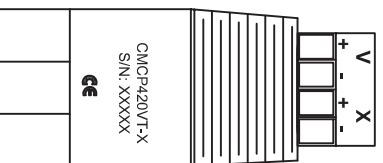
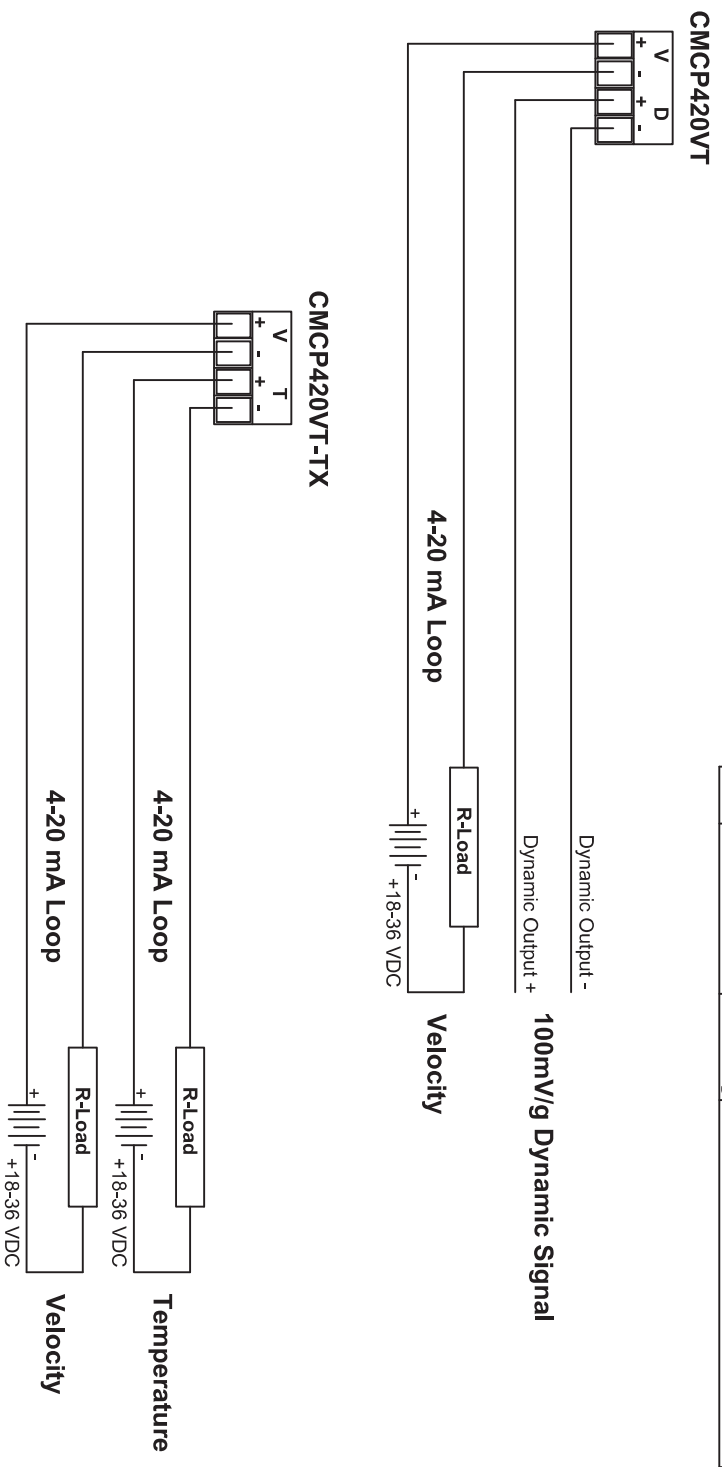
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Parameters:	
V	Velocity
T	Temperature
D	Dynamic
	4-20mA
	100mV/g
	CMCP420VT and CMCP420VT-T
	CMCP420VT-T Only
	CMCP420VT Only



- Notes:
1. Power Requirements  
+18 to 36 Vdc Per Loop
  2. Maximum Load  
600 Ohms max. @ Vs = 22 to 36 Vdc  
300 Ohms max. @ Vs = 18 Vdc  
Case Isolated
  3. Grounding

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REV.	DATE	DRAWN	DESCRIPTION

CUSTOMER		STI		STI Vibration Monitoring League City, Texas	
LOCATION					
ORDER NO.					
SR. NO.					
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE INCHES.					
TOLERANCES:					
FRACTIONS .XX ± 0.01					
DECIMALS .XXX ± 0.005					
ANGLES ± 1.0					
DATE	3/20/2012				
ORDER MCH					
DATE	3/20/2012				
PRICE					
APPRO.					
CMCP420VT Series Connections					
SCALE: NONE					
SHEET 1 OF 1					

A

B

C

D

8 7 6 5 4 3 2 1

A

B

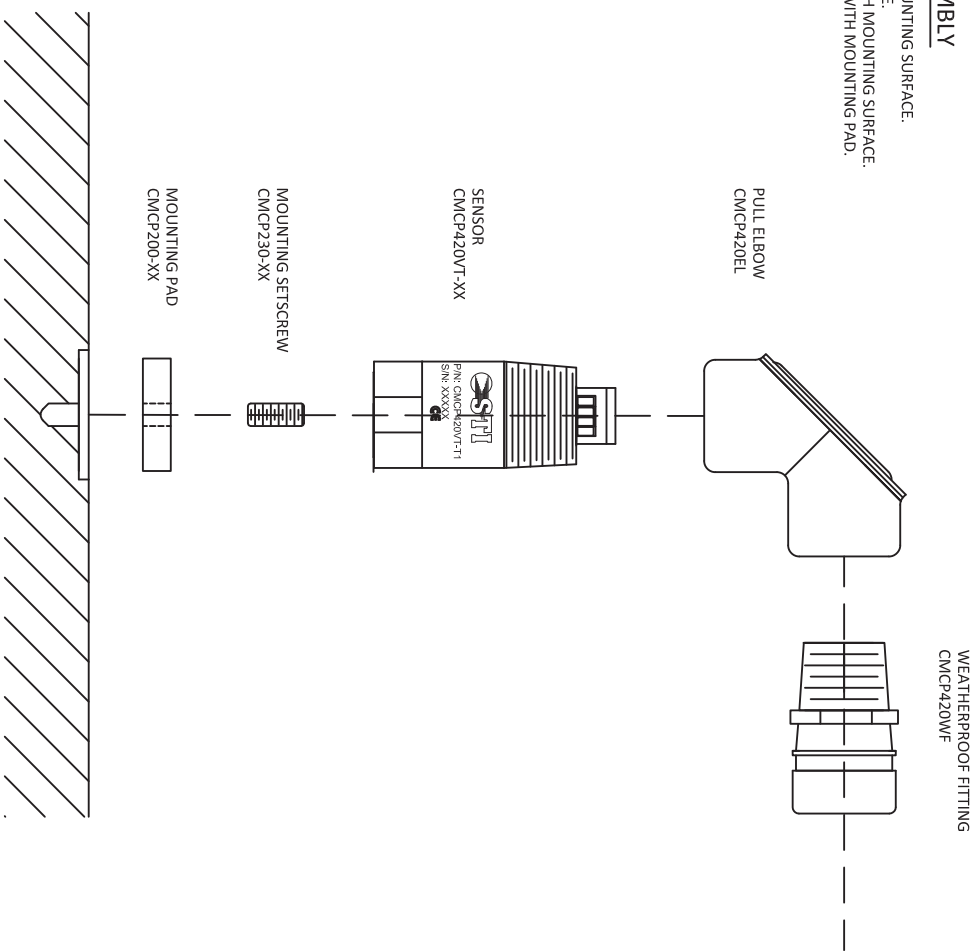
C

D

8 7 6 5 4 3 2 1

### CMCP420VT SERIES INSTALLATION AND ASSEMBLY

1. REMOVE ANY DEBRIS FROM THREADED HOLE DRILLED INTO MOUNTING SURFACE.
2. INSTALL SENSOR SETSCREW (CMCP230-XX) INTO THREADED HOLE.
3. THREAD MOUNTING PAD ONTO SETSCREW UNTIL CONTACT WITH MOUNTING SURFACE.
4. THREAD CMCP420VT ONTO SETSCREW UNTIL IT IS IN CONTACT WITH MOUNTING PAD.  
MAX TORQUE 30 INCH-POUNDS
5. INSTALL CMCP420EL ONTO SENSOR.
6. USE WRENCH TO HOLD CMCP420VT WHILE TIGHTENING ELBOW.
7. IF USED, INSTALL THE CMCP420WF FITTING ON THE ELBOW.  
FLEXIBLE CONDUIT CAN BE USED IN PLACE OF THE CMCP420EL.
8. REMOVE ELBOW COVER AND MAKE TERMINAL CONNECTIONS.



WEATHERPROOF FITTING  
CMCP420WF

PULL ELBOW  
CMCP420EL

SENSOR  
CMCP420VT-XX

MOUNTING SETSCREW  
CMCP230-XX

MOUNTING PAD  
CMCP200-XX

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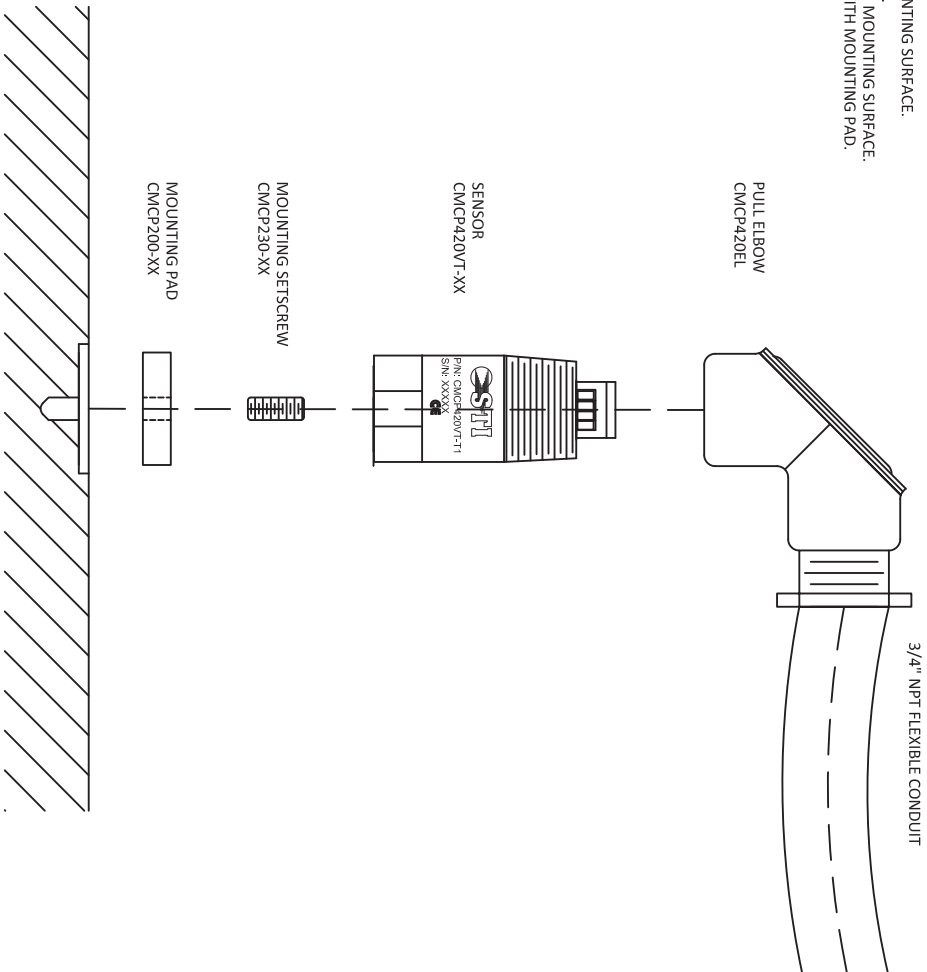
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DECIMALS .XX ± 0.01		DATE: 11/19/09		REV. A	
ANGLES ± 1.0		DATE: 11/19/09		VTINSTALL001	
DRAWN		DATE: 11/19/09		SHEET 1 OF 1	
CHECKED		DATE: 11/19/09		REV. A	
APPROVED		DATE: 11/19/09		VTINSTALL001	
SCALE: NONE		DATE: 11/19/09		SHEET 1 OF 1	



- Note:
1. OPTIONAL INSTALLATION TOOL KIT - CMCP20A-01
  - 2.
  - 3.
  - 4.
  - 5.

### CMCP420VT SERIES INSTALLATION AND ASSEMBLY

1. REMOVE ANY DEBRIS FROM THREADED HOLE DRILLED INTO MOUNTING SURFACE.
2. INSTALL SENSOR SETSCREW (CMCP230-XX) INTO THREADED HOLE.
3. THREAD MOUNTING PAD ONTO SETSCREW UNTIL CONTACT WITH MOUNTING SURFACE.
4. THREAD CMCP420VT ONTO SETSCREW UNTIL IT IS IN CONTACT WITH MOUNTING PAD.  
MAX TORQUE 30 INCH-POUNDS
5. INSTALL CMCP420EL ONTO SENSOR.
6. USE WRENCH TO HOLD CMCP420VT WHILE TIGHTENING ELBOW.
7. CONNECT RIGID OR FLEXIBLE CONDUIT TO CMCP420EL.
8. REMOVE ELBOW COVER AND MAKE TERMINAL CONNECTIONS.



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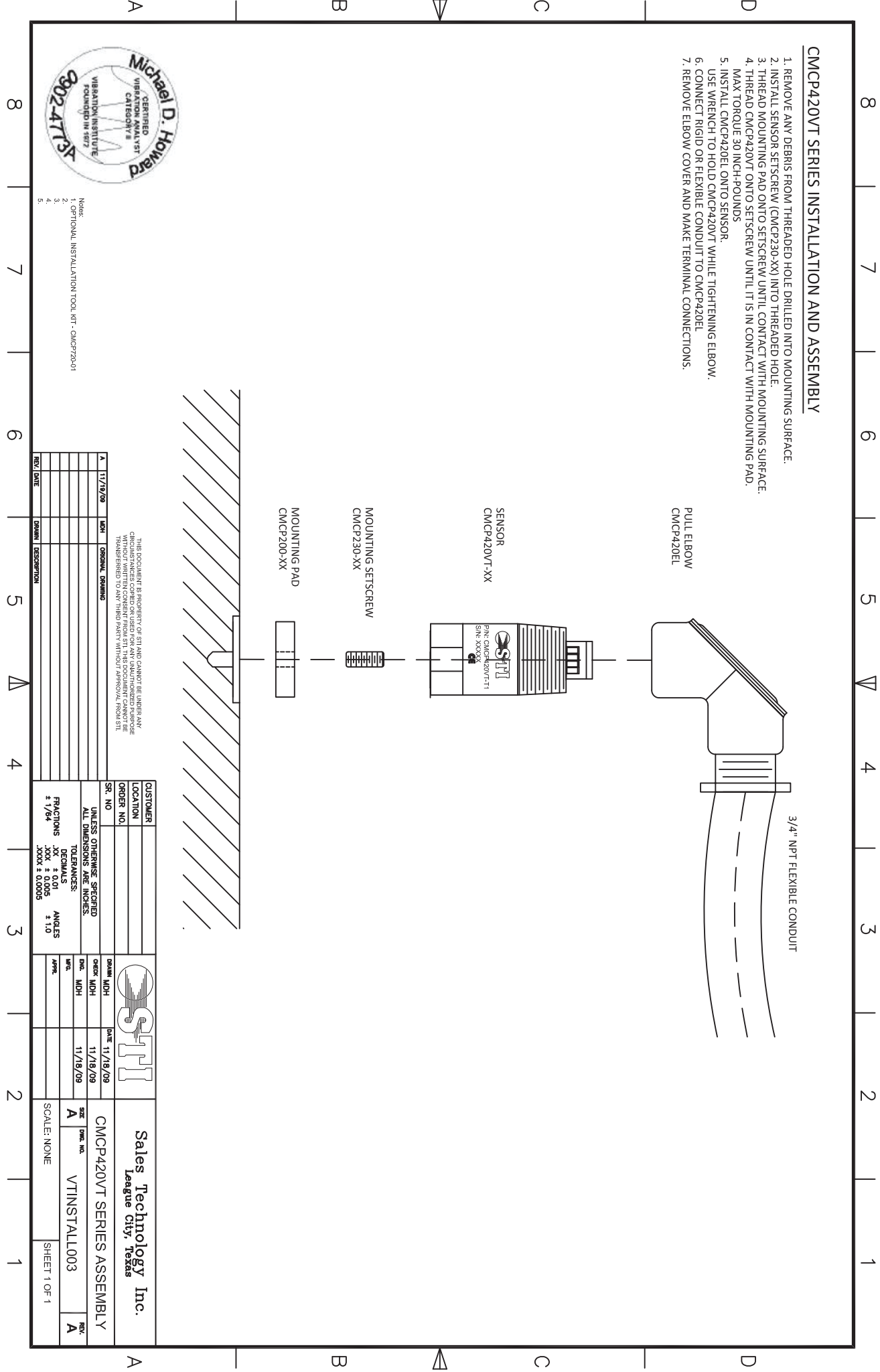
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FRACTIONS 1/16"	DECIMALS .XX ± 0.01	ANGLES 1/10
TOLERANCES .00XX ± 0.005		

STI	DATE 11/19/09
Order MCH	11/19/09
Part. MCH	11/19/09
Appr.	

Sales Technology Inc. League City, Texas		CMCP420VT SERIES ASSEMBLY	REV. A
SCALE: NONE	VTINGSTALL003	SHEET 1 OF 1	

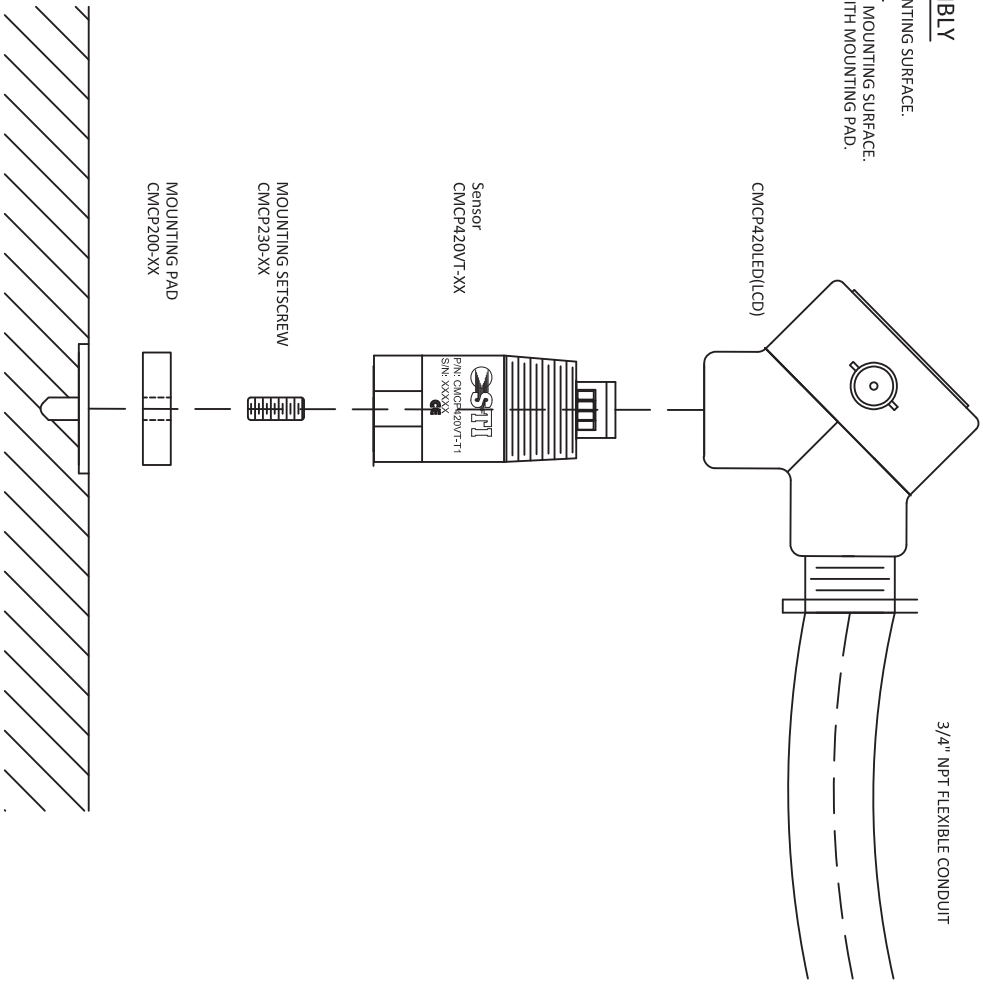


- Note:
1. OPTIONAL INSTALLATION TOOL KIT - CMCP20-01
  - 2.
  - 3.
  - 4.
  - 5.



**CMCP420VT SERIES INSTALLATION AND ASSEMBLY**

1. REMOVE ANY DEBRIS FROM THREADED HOLE DRILLED INTO MOUNTING SURFACE.
2. INSTALL SENSOR SETSCREW (CMCP230-XX) INTO THREADED HOLE.
3. THREAD MOUNTING PAD ONTO SETSCREW UNTIL CONTACT WITH MOUNTING SURFACE.
4. THREAD CMCP420VT ONTO SETSCREW UNTIL IT IS IN CONTACT WITH MOUNTING PAD.  
MAX TORQUE 30 INCH-POUNDS
5. INSTALL CMCP420LED ONTO SENSOR (SEE WIRING DIAGRAM).
6. USE WRENCH TO HOLD CMCP420VT WHILE TIGHTENING ELBOW.  
USE WRENCH TO HOLD CMCP420LED WHILE TIGHTENING ELBOW.
6. CONNECT RIGID OR FLEXIBLE CONDUIT TO CMCP420LED(LCD)



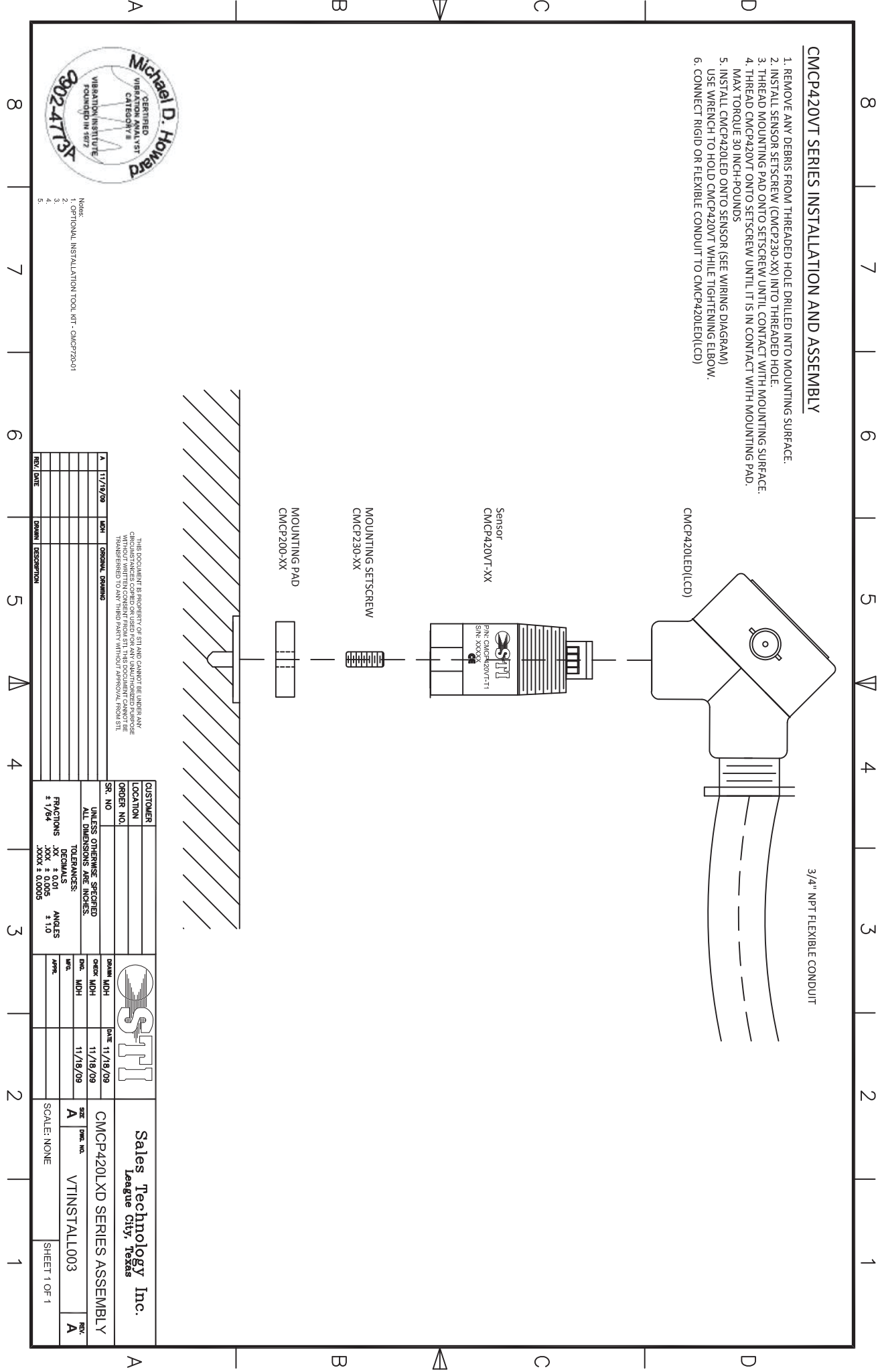
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REV.	DATE	DRAWN	DESCRIPTION
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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.		TOLERANCES: .XX ± 0.01		ANGLES: ± 1.0°	
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STI		DATE: 11/19/09		DATE: 11/19/09	
Sales Technology Inc. League City, Texas		CMCP420LXD SERIES ASSEMBLY		SCALE: NONE	
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SHEET 1 OF 1		SCALE: NONE		REV. A	

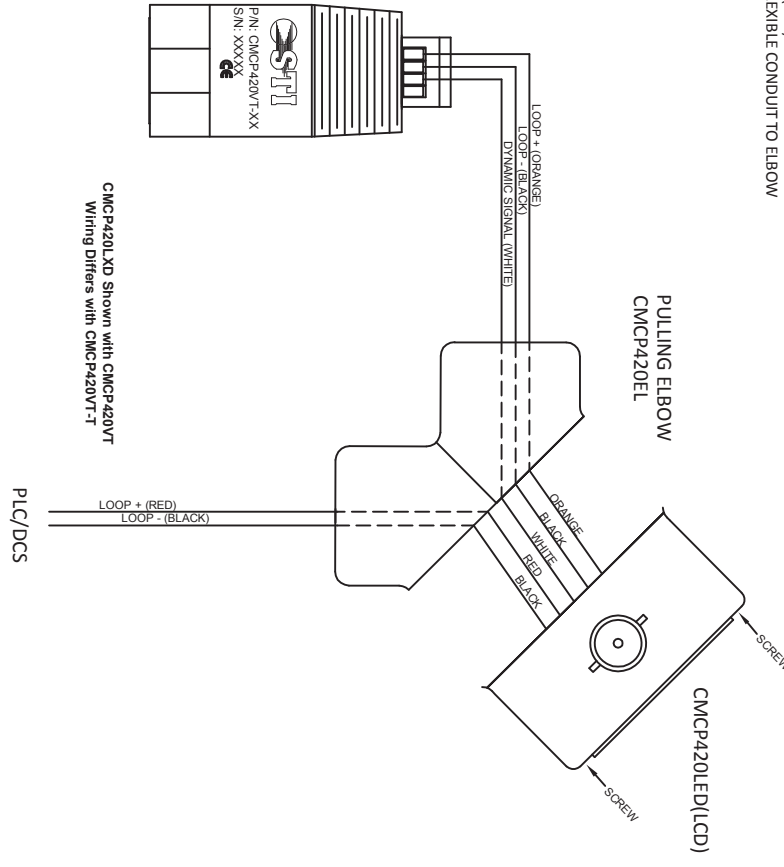


Notes:  
1. OPTIONAL INSTALLATION TOOL KIT - CMCP20-01

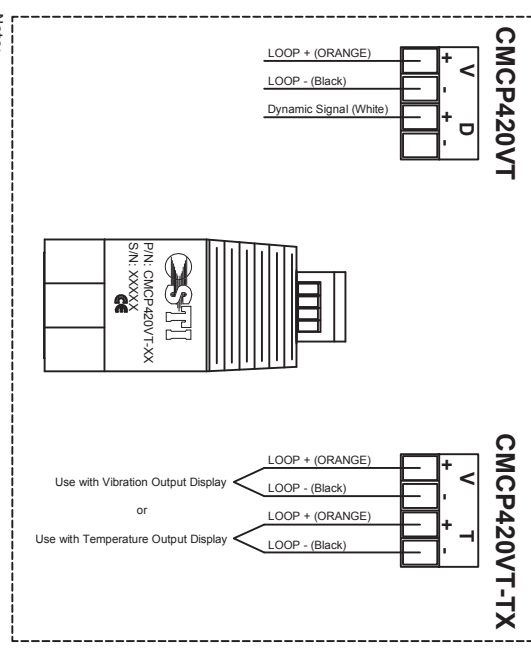


### CMCP420VTLCD(LCD) INSTALLATION AND ASSEMBLY

1. REMOVE TWO (2) SCREWS FROM CMCP420LED(LCD) THAT CONNECT ELBOW
2. INSERT WIRES FROM CMCP420LCD(LED) THROUGH ELBOW
3. CONNECT WIRES TO CMCP420VT or CMCP420VT-T
4. SLIDE ELBOW DOWN WIRES AND TIGHTEN TO CMCP420LED(LCD)
5. USE WRENCH TO HOLD CMCP420VT WHILE TIGHTENING ELBOW
6. CONNECT PLC/DCS WIRES TO CMCP420LED
7. ATTACH CMCP420LED(LCD) BACK TO ELBOW
8. CONNECT RIGID OR FLEXIBLE CONDUIT TO ELBOW



CMCP420LXD Shown with CMCP420VT  
Wiring Differs with CMCP420VT-T



Note:  
1. Dynamic Output BNC not used with CMCP420VT-TX Vibration and Temperature Sensors.



Notes:  
1. USE DRAWING TWISTED SHIELDED CABLE  
2.  
3.  
4.  
5.

REV.	DATE	DESCRIPTION
1	1/17/2010	ISSUE
2	5/9/17/2012	REVISED DRAWING FOR CMCP420VT-T

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CUSTOMER LOCATION	ORDER NO.	SER. NO.	DATE	SCALE	SHEET
			1/25/10	A	1 OF 1

DESCRIPTION	DATE	SCALE	SHEET
CMCP420LXD SERIES ASSEMBLY	1/25/10	A	1 OF 1

STI	SALES
STI	League City, Texas