

# **OPERATION MANUAL**

CMCP500 Series Alarm Module

## **ALARM MODULE:**

### **Alert and Danger Alarm Set-Point Adjustment:**

The Alert and Danger alarm set-points can be independently set in the field by turning the front panel selector switch to the associated position (A or D) and adjusting the associated front-panel potentiometer until the correct DC voltage is measured at the BNC connector located directly above the selector switch. Adjusting the set-point requires the use of a digital volt-meter, knowledge of the full scale range of the monitor, and the desired set-point as a percentage of the full scale range. The voltage measured at the BNC will vary between 0 Vdc and 5 Vdc, corresponding to 0 to Full-scale. IE: 2.5 Vdc represents 50% of full scale, 3.75 Vdc represents 75% of full scale. To calculate the required set point voltage, use the equation,  $5(.xx)$  where  $.xx$  is the desired percentage expressed as a decimal fraction of the full scale range. IE.  $5(.60) = 3.00$  Vdc for a set-point of 60% of the full scale range. Turning the potentiometer clockwise increases the set point voltage.

### **Alert and Danger Alarm Delay Adjustment:**

The Alert and Danger alarm delays can be independently set by internal jumper selection to .1, 1, 3, 6, or 10 seconds. The purpose of the delay is to reduce nuisance alarms caused by external electrical noise and/or transient vibration events. Both the Alert and Danger delay are factory set to the 3 second position.. To change the delay, open the unit and move the delay jumpers to the proper position (See: CMCP500 SERIES ALARM MODULE JUMPER LOCATIONS, at the back of this manual).

### **Latching/Non-Latching Alarms:**

The Alert and Danger alarms are factory set for NON-LATCHING operation. This means that whenever the vibration level drops below the associated set-point for more than about 1 second, the associated relay will de-energize and the alarm LED will turn off. The alarms can also be set for LATCHING operation by installing shunts on jumpers E1 and E2 respectively on the Alarm module circuit board (See: CMCP500 SERIES ALARM MODULE JUMPER LOCATIONS, at the back of this manual). Latched alarms may be reset by closing the RESET (RST) and COMMON (COM) contacts at the top of the unit. This may be done with an external switch, dry contact relay, or by shorting the terminals together by hand. **DO NOT APPLY VOLTAGE TO EITHER THE "RST" or "COM" TERMINALS.** If several monitors are mounted together, the "RST" terminals may be daisy-chained together and switched to "COM" (system common) as a group.

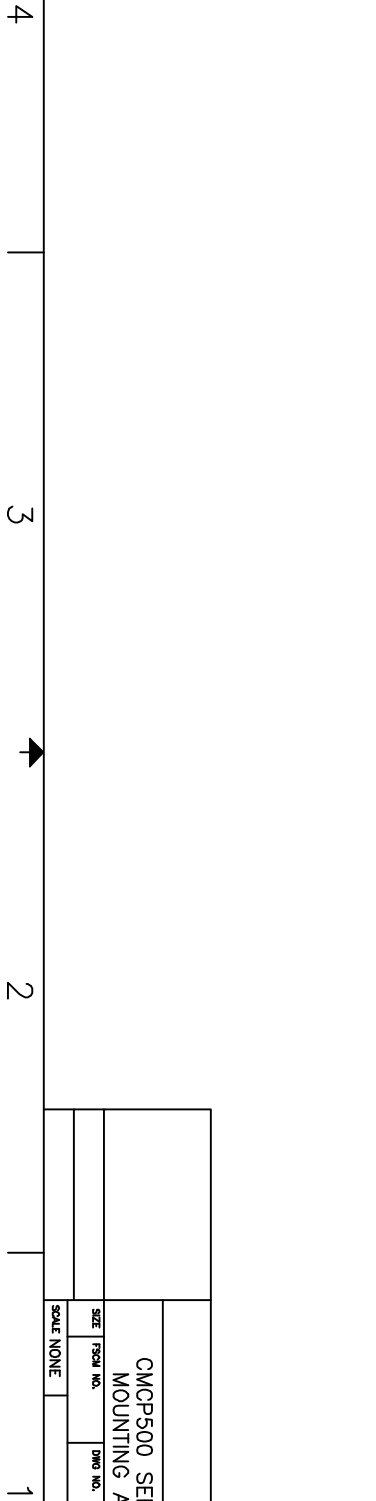
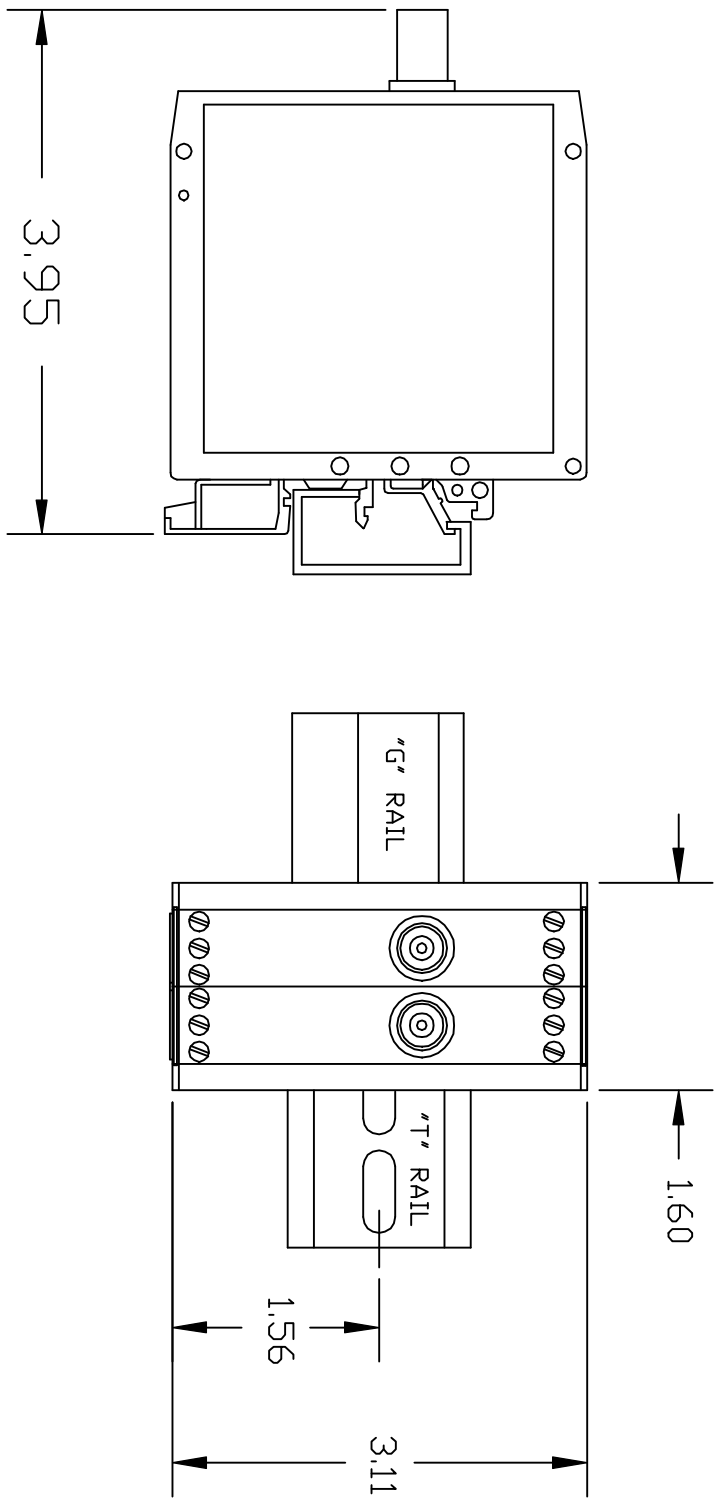
## **Trip Multiply:**

The alarm module provides a trip multiply feature. This feature the user temporarily double (standard) or triple (jumper selectable) the normal set points during periods of normal high vibration such as start-ups. To actuate the trip multiply feature, the Tx terminal at the top of the alarm module must be closed to the adjacent "COM" terminal. This may be done with an external switch, dry contact relay, or by shorting the terminals together by hand. **DO NOT APPLY VOLTAGE TO EITHER THE "Tx" or "COM" TERMINALS.** If several monitors are mounted together, the "Tx" terminals may be daisy-chained together and switched to "COM" (system common) as a group.

## **Alarm Relays:**

The Alert Danger and OK relays are independent, single-pole-double throw relays. NO, ARM, and NC contacts are available via plugable screw-connector at the bottom of the monitor. Ok relay contacts are available on fixed screw terminals at the bottom front of the alarm module (See drawing: CMCP500 Series Relays And External Connections). Relay contacts are rated 5 Amps at 30 Vdc or 125 Vac, resistive load. This rating includes any inrush current that the load draws. For loads that are not purely resistive the contact switching capability will need to be considered carefully in terms of this inrush current. The entire subject of relay application is too large to address here, so the user is cautioned to use care in the application of the relays. The factory intended purpose of providing relay contacts is to operate relatively low power alarm annunciators, act as a dry or low dc voltage contact closure input to other systems, or act to actuate an appropriately sized slave relay for larger loads such as shutting down a motor. Relays are socketed and can be replaced.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED



CMCP500 SERIES MONITOR MOUNTING AND OUTLINE			
SIZE	FORM NO.	DWG NO.	REV
SCALE NONE			
SHEET 1 OF 1			

4

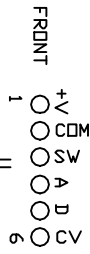
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

TOP PLUGGABLE TERMINAL (for external meter connections)



- +V - AUX. POWER OUTPUT (+20VDC at 20 mA max.)
- CDM - AUX. COMMON
- SW - SWITCHED (front panel rotary switch) OUTPUT (0-5VDC)
- A - ALERT SET-POINT (0-5VDC)
- D - DANGER SET-POINT (0-5VDC)
- CV - CURRENT VALUE (0-5VDC)

Alarm reset ('RST'), and trip multiply ('TX') terminals. External contact closure to the adjacent 'CDM' terminal, or to instrument common activates

'DANGER' LED - Turns on when Danger setpoint is exceeded

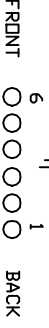
BNC connector - Read switch selected values, using digital volt meter

Rotary switch - selects output to BNC connector above

Potentiometers for adjusting 'ALERT' and 'DANGER' setpoints. (Based on 0 to 5Vdc proportional to zero to full scale range of unit)

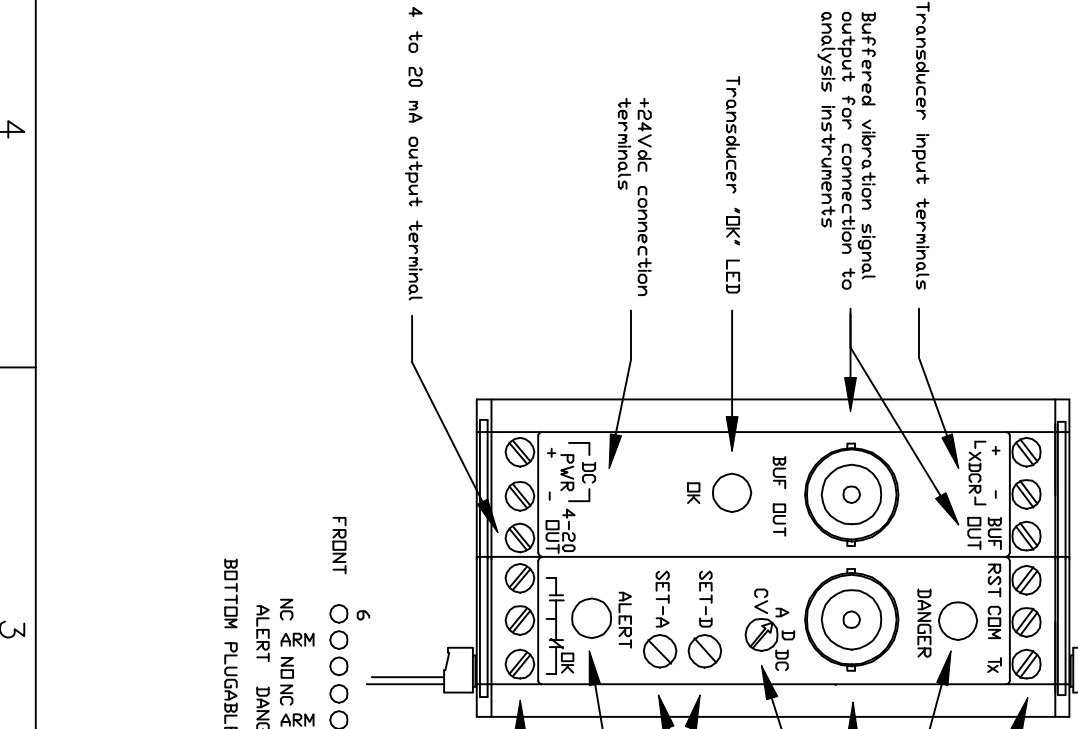
'ALERT' LED - Turns on when Danger setpoint is exceeded

'DK RELAY' - Normally energized. Contacts shown in 'DK' condition.



- NC - NO NC - NO
- ALERT DANGER
- ALERT & DANGER RELAYS - NORMALLY DE-ENERGIZED

BOTTOM PLUGGABLE TERMINAL



CMC500 SERIES CONNECTIONS

SIZE	PSAL NO.	DWG NO.	REV
SCALE	NONE		SHEET 1 OF 1

4

3

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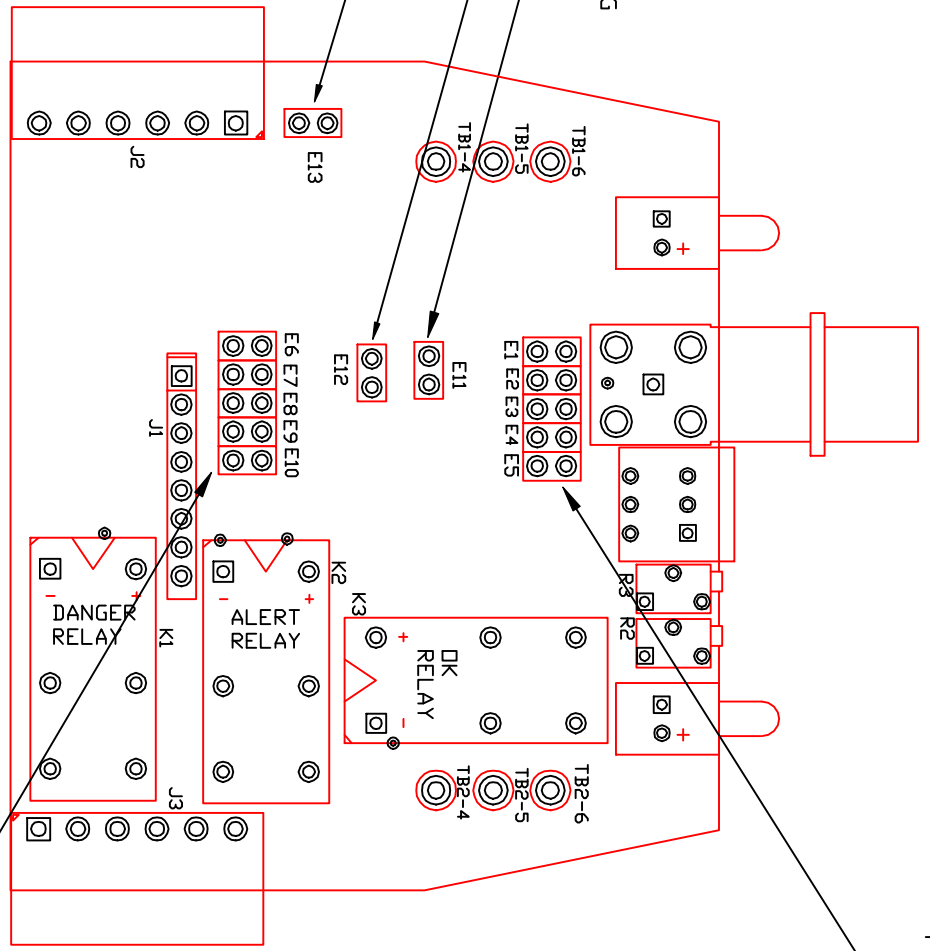
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

ALERT DELAY:  
 E1 - .1 SEC  
 E2 - 1 SEC  
 E3 - 3 SEC  
 E4 - 6 SEC  
 E5 - 10 SEC

JUMPER INSTALLED - LATCHING  
 JUMPER REMOVED - NON-LATCHING

ALERT LATCH  
 DANGER LATCH  
 TRIP MULTIPLY  
 OPEN - 2X  
 JUMP - 3X



DANGER DELAY:  
 E6 - .1 SEC  
 E7 - 1 SEC  
 E8 - 3 SEC  
 E9 - 6 SEC  
 E10 - 10 SEC

CMCP500 SERIES ALARM MODULE  
 JUMPER LOCATIONS

SIZE	FORM NO.	DWG. NO.	REV.
C			
SCALE	NONIE	SHEET 1 OF 1	

A

B

C

D

A

B

C

D

4

3

2

1