

# CMCP-DVS Digital Vibration Switch

## User Manual



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## INSTALLATION

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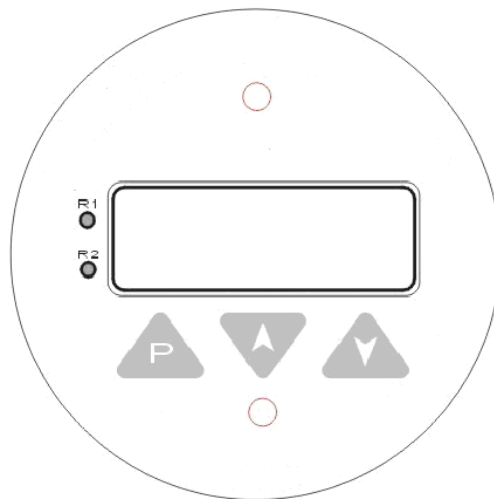
All interconnections to the instrument should be made with strong multi-strand wire of the order of 2.5 sq.mm. The ends of the wires should be properly ferruled and suitable lugs must be used for effective termination.

The cables carrying the input signal should be routed separately and properly isolated from any power line cables in the vicinity, to prevent any electromagnetic interference in the input signal readings from the mains power line. Use of shielded twisted pair cable is recommended for input signals. The shield must be connected to Earth only at the instrument end. The Relay contacts are potential free and any desired voltage may be used in conjunction with the same.

## OPERATION & SETTINGS

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The front panel of the Digital process Indicator Controller is as shown below:


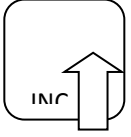
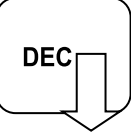


The Digital Indicator Controller has a four-digit display window on the front panel for indicating the process value. Further, two LED indications show the over-range status of the two control Relays

## CONTROL KEYS

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The instrument has three keys on the front panel, functions of which are described below

	<p>The PROG or PROGRAM key is the central coordinating key to access the settings of the instrument. Pressing this Key allows the operator to sequentially view, change and save the parameters such as Zero and Span settings, Decimal position, Relay Set-points, Hysteresis, Relay Control Logic, etc.</p>
	<p>The INC or Incrementing key allows the operator to select the numeral in the digit being set on an increasing scale. The digit will sequentially display 0, 1, 2....9 on each pressing of the INC key. This may be used to set the Zero/Span of the display and Set-points of the Relays. The incrementing speed increases if the key is kept pressed.</p>
	<p>The DEC or Decrementing key allows the operator to select the numeral in the digit being set on a decreasing scale. The digit will sequentially display 9, 8, 7....1 on each pressing of the DEC key. This may be used to set the Zero/Span of the display and Set-points of the Relays. The decrementing speed increases if the key is kept pressed.</p>

## SETTINGS & CALIBRATION

The following is the sequence of settings on the Digital Indicator/Controller:

### CONTROL SETTINGS

KEY PRESSED	INITIAL DISPLAY	ALTERNATING DISPLAY	FUNCTION
(POWER ON)	0000	-- -- -- --	Initialization of internal controller and Lamp Test (self-diagnostics).
-	LO		If Input Signal is below 2 mA or is not connected.
-	HI		If Input Signal is above 22 mA.
PROG P	PASS	0000	Use Increment (▲) or decrement (▼) key to set Password.  Password is "1".
PROG P	dP	0000	Set the DECIMAL POSITION. [Options are : 1000,100.0,10.00, 1.000] These numbers indicate the position of the Decimal with respect to the Least Significant Digit (right-most digit). e.g., 1000 indicates No Decimal Point.
PROG P	r nGL	0000	RANGE LOW setting: The desired Zero (lower) range for the process being measured may be set using ▲ and ▼ keys from -999 to 1000.
PROG P	r nGH	1000	RANGE HIGH setting: The desired Span (higher) range setting for the process being measured may be set using ▲ and ▼ keys from 0000 to 9999.
PROG P	SEt1	0500	The SET-POINT "Set1" for Relay-1 is displayed alternately with the factory preset value.
PROG P	HyS1	0000	The HYSTERESIS value for Relay-1 can be set using Increment (▲) and Decrement (▼) keys from 0000 to 9999.
PROG P	rdL1	0005	RELAY ON DELAY TIME: This is the delay time in seconds to active Relay 1. It can be set from 00 to 99 seconds by using Increment (▲) and Decrement (▼) keys.  e.g. If it is set as 5 then Relay-1 will energize after 5 seconds.
PROG P	LAt1	yES	This is the LATCHING function for Relay-1. [Options are "yES or "nO"]
PROG P	LOG1	HI	The CONTROL LOGIC for Relay-1 may be decided. Options are "HI" (High) or "LO" (Low).  e.g. If "HI" is selected then Relay-1 will energize after set point is reached on the ascending graph and if "LO" is selected, then the Relay will stay energized below the set-point and will de-energize after set point is reached on the ascending graph.

PROG <b>P</b>	Set2	0800	The SET-POINT “Set2” for Relay-1 is displayed alternately with the factory preset value.
PROG <b>P</b>	HyS2	000.5	The HYSTERESIS value for Relay-1 can be set using Increment (▲) and Decrement (▼) keys from 0000 to 9999.
PROG <b>P</b>	rdL2	0005	RELAY ON DELAY TIME: This is the delay time in seconds to active Relay 2. It can be set from 00 to 99 seconds by using Increment (▲) and Decrement (▼) keys.  <b>e.g.</b> If it is set as 5 then Relay-2 will energize after 5 seconds.
PROG <b>P</b>	LA2	yES	This is the LATCHING function for Relay-2. [Options are “yES or “nO”]
PROG <b>P</b>	LOG2	HI	The CONTROL LOGIC for Relay-2 may be decided. Options are “HI” (High) or “LO” (Low).  <b>e.g.</b> If “HI” is selected then Relay-2 will energize after set point is reached on the ascending graph and if “LO” is selected, then the Relay will stay energized below the set-point and will de-energize after set point is reached on the ascending graph.
PROG <b>P</b>	(process value)		(if Input Signal is connected)

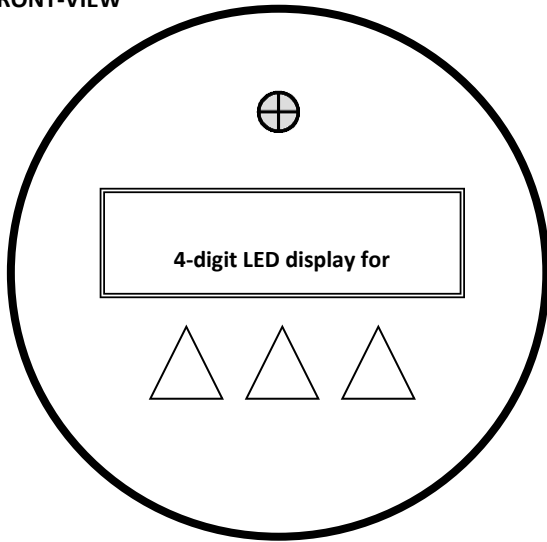
## RELAY LATCHING FUNCTION

In Latching function, the Relay will energize and stay latched with blinking LED indication when its set point is crossed. The Relay will not Reset to normal even when the process value regains normalcy.

It will de-energize after getting Reset command from the Switch. The Reset option is also provided by way of the Decrement Key on the front panel which needs to be pressed for 2 seconds to reset the Relay.

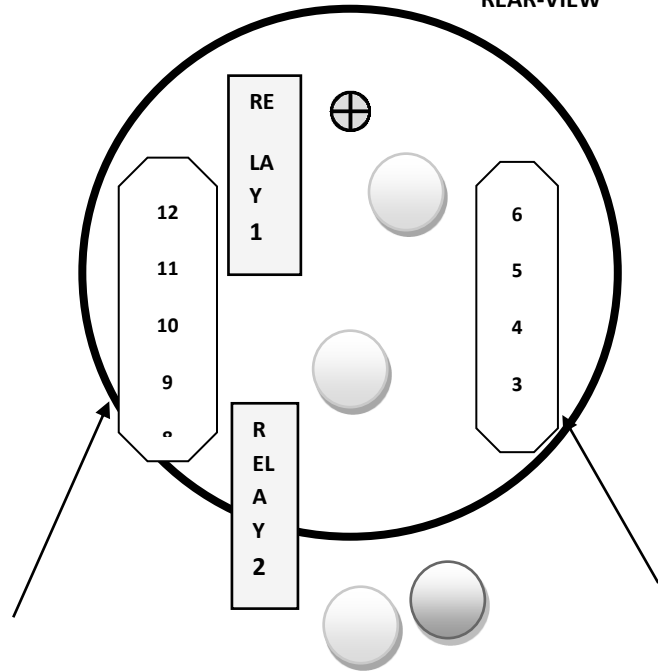
# TERMINAL DIAGRAM

FRONT-VIEW



Terminals  
for Relay Outputs

REAR-VIEW



Terminals  
for  
Input / Power Supply

## TERMINAL BLOCK - 1

1	2	3	4	5	6
+	-	+	+	-/◆	◆
24 V DC POWER SUPPLY		24V OUT	4 to 20 mA INPUT+SW		SW

## TERMINAL BLOCK - 2

7	8	9	10	11	12
C2	NO2	NC2	C1	NO1	NC1
RELAY-2			RELAY-1		

## TERMINAL DETAILS

TERMINAL BLOCK	TERMINAL NO.	NOTATION	DETAILS
TERMINAL BLOCK - 1	1	+	Power Supply
	2	-	24 V DC
	3	+	24 V DC output
	4	+	4 to 20 mA DC INPUT
	5	- / ♦	4 to 20 mA DC INPUT & Common for Switch
	6	♦	External Switch
TERMINAL BLOCK - 2	7	C2	RELAY – 2
	8	NO2	
	9	NC2	
	10	C1	RELAY – 1
	11	NO1	
	12	NC1	

## TECHNICAL SPECIFICATION

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Model	:	8080-RRV.
Type	:	Microcontroller based Digital Process Indicator with control option.
Input Signal	:	4 to 20 mA DC.
Display	:	Seven-segment, Red LED display.
Indications	:	Four-digit display.
Scale Range	:	-999 to 9999 [Fully configurable].
Calibration Range	:	May be calibrated as required.
Decimal point	:	Selectable.
Response time	:	Typically 200 mS.
Output	:	Two control Relay change-over contacts – (control logic selectable) with option of delayed energizing and Latching.
Contact rating	:	5 Ampere @ 230 V AC (Res. Loads).
Memory	:	Non-Volatile (on EEPROM).
Reset function	:	Hard-wired as well as with Reset (Dec) Key.
Settings	:	By Membrane Switchpad on front panel.
Features	:	Configurable for Scale Calibration, Decimal point, Number of active Relays, Control Logic, Set points, Hysteresis, etc.
Accuracy	:	± 0.1% FS.
Power Supply	:	24 V DC (± 20%).