



OPERATING INSTRUCTIONS COP-V (ANSI –27,59)



MRM **PROCOM** Pvt Ltd

An ISO-9001-2008 certified organization

Works: Plot No. 20-21, Sector 59, Phase –II, Faridabad, Haryana -121004

Ph: 0129-4700400 (10 lines) Email: pankajgupta@mrmprocom.com,

Web: www.mrmprocom.com

Index

- 1.0 Introduction**
- 2.0 Protection, Supervision Salient features**
- 3.0 Contacts**
- 4.0 Switches Description**
- 5.0 Setting Procedure**
 - 5.1 Parameter Settings**
 - 5.2 Alarm Setting**
 - 5.3 Blocking setting**
- 6.0 Reset and Blocking**
 - 6.1 Auto Reset**
 - 6.2 Manual Reset**
 - 6.3 Blocking**
- 7.0 Terminal description**
- 8.0 Model selection**
- 9.0 Specifications**
- 10.0 Connection Diagram**

1.0 Introduction

- 16 Bit RISC, state of art, microcontroller based System.
- Fundamental measurement of all measured parameters with 1% accuracy of measured value (Not full scale)
- Backlit LCD Display for easy reading and parameter settings. No need to consult the manual while programming the unit.
- All the inputs, such as AC Voltage and auxiliary voltages are completely isolated.
- All system parameters are user programmable
- Fast Fourier Transformation to extract fundamental components of current and voltage to avoid spurious tripping
- Housed in 92X92mm Din Standard housing.

2.0 Protection, Supervision Salient features

Protection

- Two Stage, Three Phase Under Voltage
- Two Stage Three Phase Over Voltage

Display and Measurements

- Display of R,Y,B Voltage

Additional Functions

- Wide range SMPS auxiliary supply (supply range from 50 to 300 VAC/DC Or 8-35 VDC)
- Digital fast Fourier transformation.
- Selectable display of voltage in primary or secondary value
- Two digital inputs for external reset and external blocking.
- One common trip contact
- Three programmable alarm contact
- Selectable auto / manual scroll of measurement

3.0 Contacts

The following Output Contacts (NO) are provided.

- Trip (NO Contact)
- Alarm 1 (NO Contact)
- Alarm 2 (NO Contact)
- Alarm 3 (NO Contact)

4.0 Switches Description

COP-V has four switch provided on its front panel. Switch can have more than one functions assigned to them. The table below describes the operation of these.

S.No.	Switch Symbol	Switch Function	Description
1	⬆	Next	Normal operation mode: In this mode this scrolls the displayed parameters. Programming Mode: This key is used to select the next parameter to be programmed.
2	+	Increment	Programming Mode: It's used to increment the value of the parameters under programming.
3	-	Decrement	Programming Mode: It's used to decrement

			the value of the parameter under programming.
4	R	Reset	In manual reset option this Key is used to reset the faults flags
5	R & –	Programming Mode Entry	Press “R” Key and than press “–” while the “R” Key is pressed to enter the programming mode.

5.0 Setting Procedure

COP -V has provision to program the operating parameters.

Press R & “–“ switches simultaneously.

The LCD shall display, “Parameter Mode”

To enter parameter setting mode press \uparrow .

To go to next menu press \rightarrow .

The LCD shall display “Set Alarm”.

This menu can be entered by pressing \uparrow .

To go to next menu press \rightarrow .

The LCD shall display “Set Blocking”.

This menu can be entered by pressing \uparrow .

5.1 Parameter Mode

Sl. No	Display	Explanation of parameter	Factory setting	Setting Range	Setting step
1	Uv> in V/Vn	Under Voltage value in % of rated Voltage	0.80	0.5-1.7 V/Vn	0.05V/Vn
2	Uv> Def Time	Definite time delay in seconds.	1.0	0.01 – 20 Sec	0.01 Sec
3	Uv >> in V/Vn	Under Voltage high set value in % of rated Voltage.	0.60	0.5-1.7 V/Vn	0.05V/Vn
4	Uv>> Def Time	Definite time delay in seconds.	0.10	0.01 – 20 Sec	0.01 Sec
5	Ov> in V/Vn	Over Voltage value in % of rated Voltage.	1.10	0.5-1.7 V/Vn	0.05V/Vn
6	Ov> Def Time	Definite time delay in seconds.	1.0	0.01 – 20 Sec	0.01 Sec
7	Ov>> in V/Vn	Over Voltage high set value in % of rated Voltage	1.20	0.5-1.7 V/Vn	0.05V/Vn
8	Ov>> Def Time	Definite time delay in seconds.	0.10	0.01 – 20 Sec	0.01 Sec
9	PT Ratio	Ratio of Voltage transformer, Rated VT Primary voltage / Rated PT Secondary voltage	1	1-1200	1
10	Input Connection	Voltage connection to the controller is selectable for 3Phase 4 wire, system and for 3Phase 3wire system.	Ph-Neu - 230 V	Ph-Neu-230 V, Ph-Ph-110 V 1Ph 230 VAC	
11	Reset Delay	Delay time for resetting the trip contact, after fault clearance.	1	0.1- 20 Sec	0.1 Sec.
12	Dis I in Pri/Sec	Selection of voltage display in primary values or secondary values	Primary	Primary/Secondary	
12	Disp Auto Scroll	Measurement display auto scroll or manual scroll selection	Auto Scroll On	Auto Scroll On / Auto Scroll off	
13	Trip Reset	Reset type for tripped LED indication	Manual	Auto / Manual	
14	Power on U/V Pickup	Initial trip can be blocked by selecting “less than under voltage setting.” In	0V	0 Volt / less than under voltage	

		this case under voltage element will activate only if the voltage value once goes above the pickup value of undervoltage.		setting	
--	--	---------------------------------------------------------------------------------------------------------------------------	--	---------	--

5.2 Set Alarm

Alarm Contact 1,2 & 3 can be programmed / activated on different protection functions e.g. for activating alarm 1 on over voltage, set 1.

By default no alarm is active. If the alarms are required, they have to be programmed at the time of installing the relay

The protections on which alarms can be programmed are:

Protection Function	Protection Symbol	Activated Alarm, default setting	Remark
Over Voltage Low Set	OV >	0	No Alarm activated on OV >
Over Voltage High Set	OV >>	0	No Alarm activated on OV >>
Under Voltage Low Set	UV <	0	No Alarm activated on UV <
Under Voltage High Set	UV <<	0	No Alarm activated on UV <<

5.3 Set Blocking

Group of Selected protection function can be disabled on activation of blocking input (By externally shorting terminal 7 and 8)

e.g. If . UV >> and OV >> are programmed as enabled for blocking input then on shorting terminal 7 and 8 and High set over and under voltage protection will be blocked/disable.

Following are default settings

Protection Function	Protection Symbol	Blocking enable/ Disable default setting	Remark
Over Voltage Low Set	OV >	Disable	Blocking function is disable
Over Voltage High Set	OV >>	Disable	Blocking function is disable
Under Voltage Low Set	UV >	Disable	Blocking function is disable
Under Voltage High Set	UV >>	Disable	Blocking function is disable

6.0 Auto / Manual Reset of Faults

There are two categories of reset

- Auto Reset : The trip contact will reset automatically after Reset Delay, Indication will reset automatically after clearance of fault and expiry of reset delay.
- Manual Reset : The trip contact will reset automatically after Reset Delay, Indication will reset after pressing the reset button.

7.0 Terminal description

Terminal Number	Description
1	R Phase Voltage
2	Y Phase Voltage
3	B Phase Voltage
4	Neutral
5	Not Connected
6	Not Connected
7	Common for external reset and blocking
8	External Block
9	External Reset
10	Auxiliary Supply
11	Auxiliary Supply
12	Not Connected
13	Trip NO Contact

COP-V Numeric Voltage Relay

14	Trip NO Contact
15	Alarm 1 NO
16	Alarm 2 NO
17	Alarm 3 NO
18	Common terminal for Alarm 1,2 & 3.
19,20	Not Connected
21,22	Not Connected
23,24	Not Connected

8.0 Model Selection

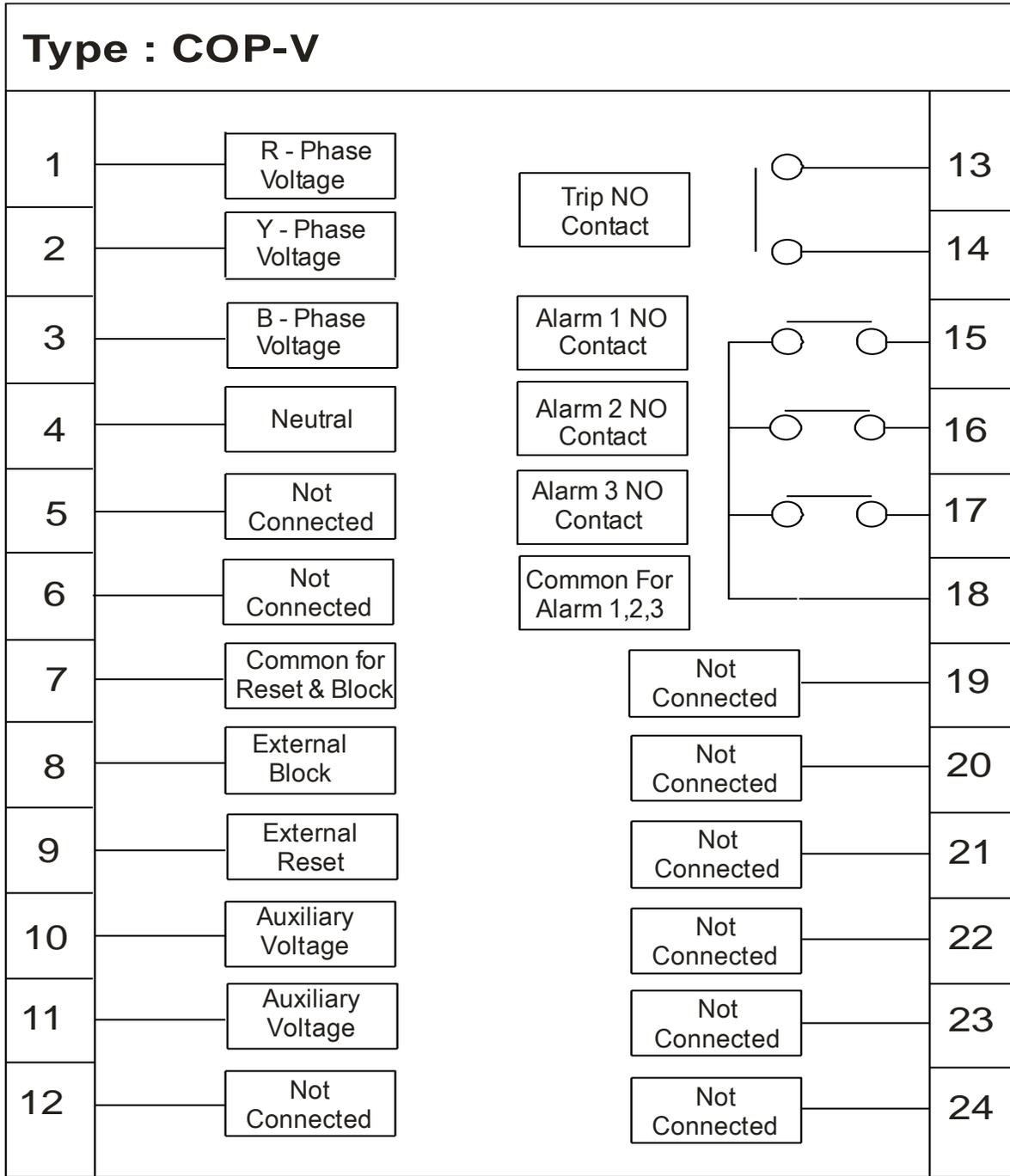
The nomenclature for selecting the model is as follows:

COP-V- - 110/230- L/H (L : Auxiliary supply from 10-35 VDC, H: Auxiliary supply from 50-300 VDC/AC)

9.0 Specifications

AC voltage withstand	330 VAC (Phase to neutral)
Measurement Accuracy	
Voltage & Current	± 2%
Frequency	± 0.05 Hz.
Surge 1.2/50Usec	2.5KV
Auxiliary Voltage	10-35V/DC OR 50-300 V AC/DC
Contact Rating	230 VAC, 5A
Cut out Dimensions	90mm X 90mm
Depth	120mm

10.0 Connection Diagram



It is our endeavour to constantly upgrade our products, hence specifications are subject to change without any notice.