

INSTALLATION INSTRUCTIONS FOR S2 DVMR

MANUFACTURED BY:

minilec®

www.minilecgroup.com

NO. 1073/ 1-2-3, AT POST:

PIRANGUT, TAL: MULSHI, DIST:PUNE (INDIA)

PIN :412 115

VERSION 02 (25/07/2026)

● INTRODUCTION

Thank you for selecting and purchasing **MINILEC** make voltage monitoring relay (S2 DVMR).The following installation instructions would guide you in installing your S2 DVMR and making the best use of it.

The unit operating on IEEE/NEMA standard method for unbalanced detection.

It is micro-controller based voltage monitoring relay.It uses state of the art digital technology to measure various parameters related to voltage and take corresponding corrective actions. The system consists of hardware design to provide high degree of accuracy and reliability.The micro-controller based protection ensures high accuracy and disturbance free operation.It has LCD Display(3 Digit Liquid Crystal Display with Backlight) to display voltage and other parameter values.It has three pushbuttons to set various parameters. We can set trip parameter values, bypass each protections, set trip delay. It offers protection against -

- * Unbalanced Voltage Condition.
- * Phase Failure Condition.
- * Phase Sequence Reversal Condition.
- * Under & Over Voltage Condition.
- * Under & Over Frequency Condition.
- * Neutral Fail Condition.

Your S2 DVMR unit is an auxiliary relay & it should be used along with the starter only. The effective working of the unit will depend on efficient working of the starter Before installing your unit check weather the starter is operating perfectly by starting with the "ON" push button. If the operation of START and STOP are imperfect,the starter needs to be serviced.

Do not install your unit with faulty starter.

● ELECTRICAL CONNECTION

See Fig. 1 for installation of the unit in the power & control wiring. Connect L1, L2, L3 phase at terminal 1, 3, & 5, In case of 3P 4W Connect Neutral (N) at terminal 6 as shown in Fig. 1

NOTE:

Three-phase sensing with under and over voltage detection are derived from the L1, L2, and L3 sensing points located at terminals 1, 3 and 5 respectively. In case of 3P 4W, phase voltages are derived with reference to Neutral (N).

● OPERATION

- 1.In healthy condition, LCD display shows voltages of phase to phase (3P 3W Mode) & Phase to Neutral (3P 4W Mode).TRIP LED will be OFF.
- 2.If any fault occurs then unit will trip after trip time delay and LCD display shows that particular fault name and TR message with LED backlight flashing. TRIP LED will be ON.
- 3.At power ON Backlight of LCD will be ON for 1 minute. After 1 minute it will OFF. If any key pressed then backlight will be ON for 1 minute.
- 4.If fault reset mode is set to manual then press ▼ / R key to reset fault.
- 5.Press ▲ / T key to Enter in test mode.
- 6.Press ▼ / T key to Exit from test mode.

● CAUTION ⚠

Ensure That Your S2 DVMR is-

- * Not installed near any heat sources like BURNER, SUNLIGHT, ELECTRIC ARC etc.
- * Not subjected to abnormal vibrations.
- * Installed as near to stater as possible.
- * Not subjected to DIRECT HEAT, SUNLIGHT, RAIN, STORMY WIND & DUST.

Working of the products is affected by frequency variations and Harmonic distortion in applications like Genset Supply or UPS Supply. Care should be taken to ensure that net resultant unbalance Supply is not beyond the unbalance trip limits of your unit.

If the product is not installed as per guideline given by minilec,our company will not be responsible for any wrong connection, damage, injury, accident etc

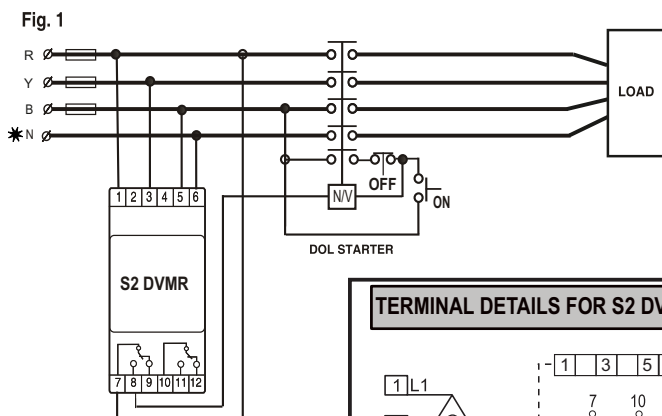
S2 DVMR



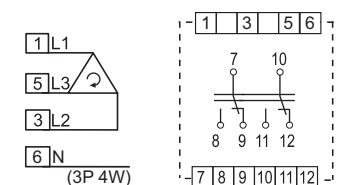
WARRANTY

AGAINST ALL MANUFACTURING DEFECTS FOR 18 MONTHS
FROM DATE OF SUPPLY OR 12 MONTHS FROM DATE OF INSTALLATION
WHICHEVER IS EARLIER

ELECTRICAL CONNECTION IN POWER & CONTROL WIRING FOR S2 DVMR



TERMINAL DETAILS FOR S2 DVMR



● NOTES

RELAY CONTACTS ARE SHOWN FOR UNIT IN POWER OFF CONDITION.

CONNECT NEUTRAL "N" ONLY IN CASE OF 3P 4W CONDITION.

● INDICATIONS:

- ON (GREEN)-POWER ON (STEADY)
- TRIP(RED) -STEADY ON WHEN RELAY IS, TRIPPED DUE TO FAULT SP /UB /RP /UV /OV /UF /OF /NF

● NOTE:

RELAY CONTACTS ARE SHOWN FOR RELAY IN POWER OFF CONDITION.

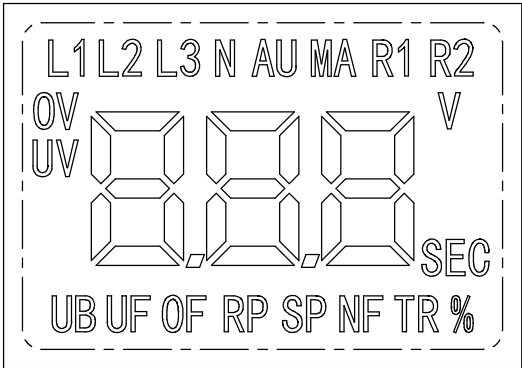
TECHNICAL SPECIFICATIONS OF S2 DVMR:

System Supply	100 – 120 / 220 – 240 / 380 – 440 VAC -25%,+20% (3 Ph. 3W /4W)		
Auxiliary Supply	Built In		
Frequency	45 – 65 Hz		
Power Consumption	25 VA max		
Output Relay Contact	(1 CO + 1CO) /2 CO 5A@250VAC/ 30VDC (Resistive)		
Monitoring	PH- PH Voltages OR PH - N Voltages (Software Selectable)		
Protections	Phase Failure, Phase Sequence Reversal, Voltage Unbalance, Under Voltage, Over Voltage, Under Frequency, Over Frequency, Neutral Fail.		
Display	LCD (3 Digit Liquid Crystal Display With Backlight)		
Display Parameter	Rotational display of PH- PH Voltages OR PH - N Voltages		
Resolution	Voltage	: 1V	
	Frequency	: 1 Hz	
Display Accuracy	± (1 % ± 5 Volts) Of Actual Voltage		
Setting Accuracy	UV/OV/UB	: ±2% of set value.	
	Power On Delay/Trip Delay	: ±5% of set value. (±1sec for 1 to 10 Sec Ranges)	
Resetting	Auto/Manual Reset.		
Indications	ON (Green)	: Power ON	
	TRIP (Red)	: Relay Trip due to any fault.	
	*Display Backlight flash (ON & OFF) if unit trip due to any fault.		
Operating Conditions	Operating temperature	: -5°C to + 60 °C	
	Storage temperature	: -10°C to + 60 °C	
	Humidity	: Up to 95% R.H.	
Enclosure	S2 FR GRADE Enclosure		
Dimensions(mm) -Overall	93 x 35 x 61 mm (L X W X H)		
Mounting	35 mm Din Rail mounting		
Weight (approx.)	150 gms. Approx.		

PARAMETER SETTING:

PARAMETER		TYPE	MIN.	MAX	DEFAULT	HYSTERESIS	TRIP DELAY			STEP	
							MIN	MAX	DEF		
UNDER VOLTAGE	380 – 440 VAC	3P 3 Wire	285 VAC	425 VAC	350 VAC	3 % of Trip Value (±1%) (FIXED)	1 SEC	10 SEC	5 SEC	1 V & 1 SEC	
		3P 4 Wire	165 VAC	245 VAC	170 VAC						
	220 – 240 VAC	3P 3 Wire	165 VAC	225 VAC	180 VAC						
		3P 4 Wire	95 VAC	135 VAC	100 VAC						
	100 – 120 VAC	3P 3 Wire	75 VAC	115 VAC	80 VAC						
		3P 4 Wire	45 VAC	65 VAC	50 VAC						
OVER VOLTAGE	380 – 440 VAC	3P 3 Wire	400 VAC	520 VAC	450 VAC		INSTANTANEOUS				
		3P 4 Wire	230 VAC	310 VAC	270 VAC						
	220 – 240 VAC	3P 3 Wire	230 VAC	300 VAC	270 VAC						
		3P 4 Wire	130 VAC	270 VAC	220 VAC						
	100 – 120 VAC	3P 3 Wire	105 VAC	150 VAC	140 VAC						
		3P 4 Wire	60 VAC	90 VAC	80 VAC						
UNDER FREQUENCY		NA	45 Hz	65 Hz	45 Hz	2 Hz				1 Hz	
OVER FREQUENCY		NA	45 Hz	65 Hz	65 Hz	2 Hz				1 Hz	
VOLTAGE UNBALANCE		NA	2 %	20%	10 %	2%				1%	
SINGLE PHASING		NA	NA	NA	NA	NA	INSTANTANEOUS			NA	
NEUTRAL FAIL		NA	NA	NA	NA	NA				NA	
REVERSE PHASING		NA	NA	NA	NA	NA				NA	
RECOVERY DELAY		NA	NA	NA	NA	NA	5 SEC			NA	
POWER ON DELAY(POD)		NA	1 SEC	60 SEC	10 SEC	NA	NA			1 SEC	
RELAY MODE		1 CO + 1CO / 2CO	NA	NA	1CO + 1CO	NA	NA			NA	
RELAY STATE		FAIL SAFE/NON FAIL SAFE	NA	NA	FAIL SAFE	NA	NA			NA	
RESET		AUTO / MANUAL	NA	NA	AUTO	NA	NA			NA	

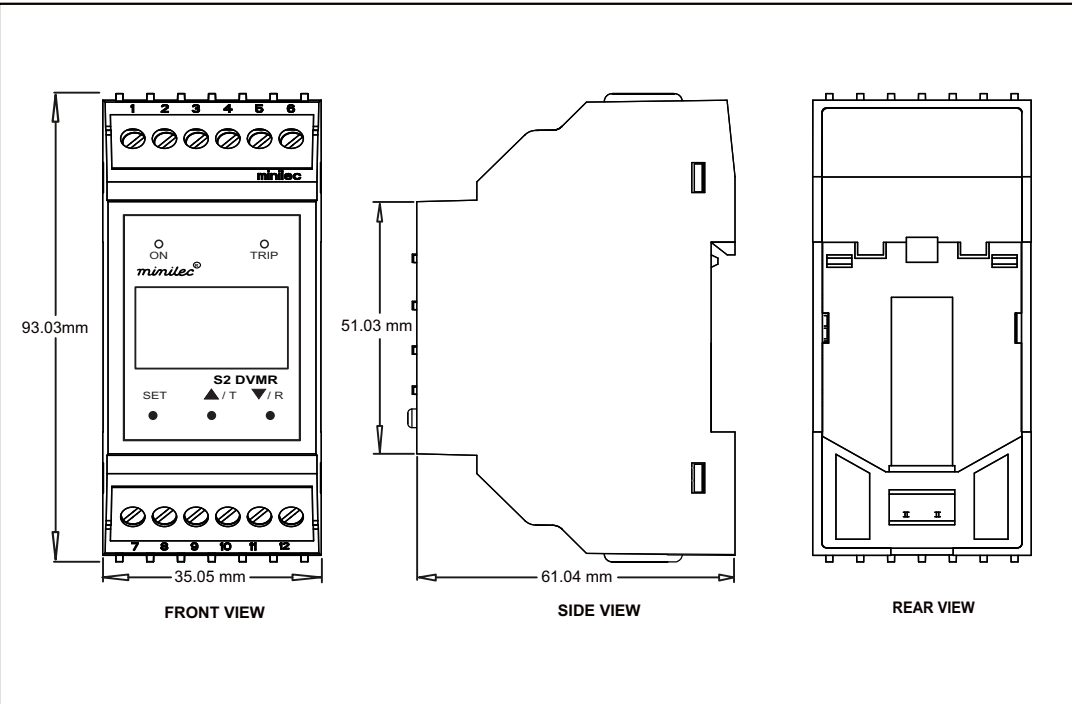
DISPLAY LAYOUT



SR.NO.	DISPLAY PARAMETER	DISCRIPTION
1	L1	Line 1 Supply
2	L2	Line 2 Supply
3	L3	Line 3 Supply
4	N	Neutral
5	AU	Auto Reset Mode
6	MA	Manual Reset Mode
7	R1	Relay 1
8	R2	Relay 2
9	V	Voltage
10	SEC	Second

SR.NO.	DISPLAY PARAMETER	DISCRIPTION
11	TR	Trip
12	NF	Neutral Fail Fault
13	SP	Single Phase Fault
14	RP	Reverse Phase Fault
15	OF	Over Frequency Fault
16	UF	Under Frequency Fault
17	UB	Unbalance Fault
18	UV	Under Voltage Fault
19	OV	Over Voltage Fault
20	%	Percentage

ENCLOSURE DIMENSIONS

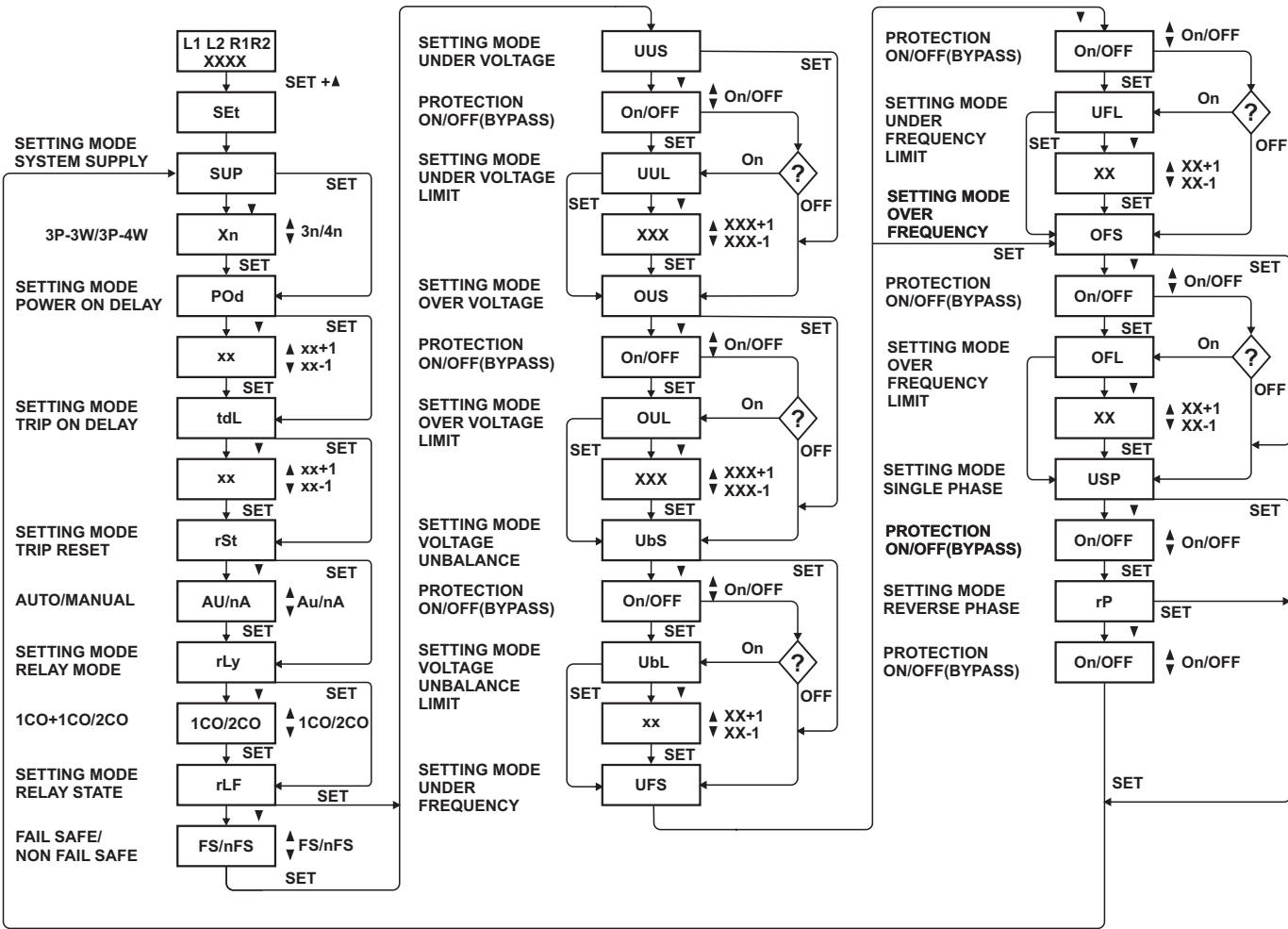


Instructions for Screw Gun torque adjustment –
•Torque should be 0.6 Nm max.
•Max 2.5 sq. mm size wire can be used.

WEEE (Waste Electrical & Electronic Equipment)
Regulations: After end of equipment life, recycle or disposal needs to be done as per guidelines or handover it to Ewaste processing authorized agencies. For more details contact us.

S2 DVMR PARAMETER SETTING PROCEDURE

With the help of push button provided on front, you can set parameter values. Please refer following setting flow chart.



ABBREVIATIONS USED IN PARAMETER SETTING MODE:

SR.NO.	SETTING PARAMETER	DISCRIPTION
1	SEt	Setting
2	SUP	Supply mode
3	3n	3 Phase 3 Wire mode
4	4n	3 Phase 4 Wire mode
5	Pod	Power ON Delay
6	tdL	trip Delay
7	rSt	Fault Trip Reset mode
8	AU	Auto
9	nA	Manual
10	rLF	Relay fail safe/non fail safe setting mode
11	FS	Fail Safe
12	nFS	Non Fail Safe
13	UUS	Under Voltage Setting mode

SR.NO.	SETTING PARAMETER	DISCRIPTION
14	OFF	Fault Protection OFF(Bypass)
15	On	Fault Protection ON (Enable)
16	UUL	Under Voltage Limit
17	OUS	Over Voltage Setting mode
18	OUL	Over Voltage Limit
19	UbS	Unbalance Setting mode
20	UbL	Unabalance Limit
21	UFS	Under Frequency Setting mode
22	UFL	Under Frequency Limit
23	OFS	Over frequency Setting mode
24	OFL	Over frequency Limit
25	USP	Voltage Single Phasing
26	rP	Voltage Reverse Phase setting mode
27	tst	Test mode