

INSTALLATION INSTRUCTIONS FOR S2 DMPR

MANUFACTURED BY:



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 Motor Protection relay (S2 DMPR).The following installation instructions would guide you in installing your S2 DMPR and making the best use of it.

The unit operating on IEEE/NEMA standard method for unbalanced detection. It is micro-controller based current monitoring relay.It uses state of the art digital technology to measure various parameters related to current 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 current 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 -

- * Under Current Condition.
- * Over Load Condition.
- * Current Unbalance Condition.
- * Current Single Phase Condition.
- * Current Reverse Phase Condition.

Your S2 DMPR 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 instaling 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.

OPERATION

- 1.In healthy condition, LCD display shows Line1 (R Phase) Current Value and Line3 (B Phase) Current Value .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 DMPR 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

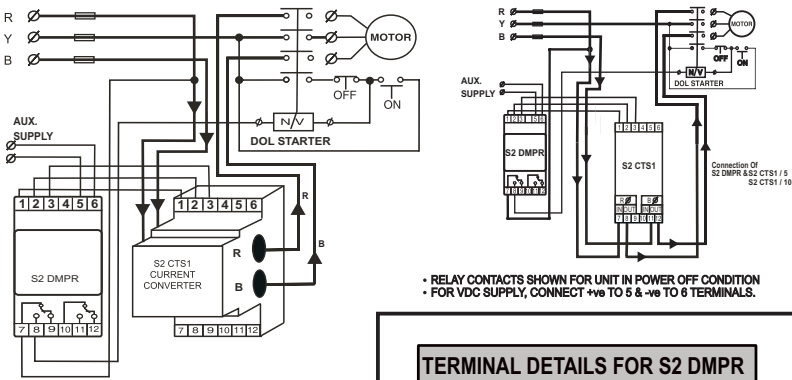
S2 DMPR



WARRANTY

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

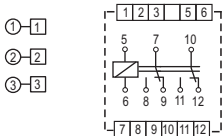
ELECTRICAL CONNECTION IN POWER & CONTROL
WIRING FOR S2 DMPR



NOTES

RELAY CONTACTS SHOWN FOR UNIT IN
POWER OFF CONDITION
FOR VDC SUPPLY, CONNECT +ve TO 5 & -ve TO 6 TERMINALS

TERMINAL DETAILS FOR S2 DMPR



INDICATIONS:

- ON - POWER ON
- TRIP - STEADY ON WHEN RELAY IS TRIPPED DUE TO FAULT SP / UB / RP / UC / OC

NOTE:

- RELAY CONTACTS SHOWN FOR RELAY IN POWER OFF CONDITION
- FOR VDC SUPPLY, CONNECT +VE TO 5 & -VE TO 6 TERMINALS
- OUTPUT OF EXTERNAL SUITABLE CURRENT CONVERTER

TECHNICAL SPECIFICATIONS OF S2 DMPR:

System Supply	100 – 120 / 220 – 240 / 380 – 440 VAC -25%,+20%
Auxiliary Supply	100 – 120 / 220 – 240 / 415 VAC ± 20%, 24 VDC +10% -15%.
Frequency	48 – 63 Hz
Power Consumption	25 VA max
Output Relay Contact	2 CO 5A@250VAC/ 30VDC (Resistive)
Monitoring	Current
Protections	Under Current, Over Current, Current Unbalance, Single Phase, Reverse Phase
Display	LCD (3 Digit Liquid Crystal Display With Backlight)
Display Parameter	Current
Resolution	Current : 0.10/1 AMP
Display Accuraccy	± 5% (± 0.1 digit) at rated current
Setting Accuracy	UC/OC/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:

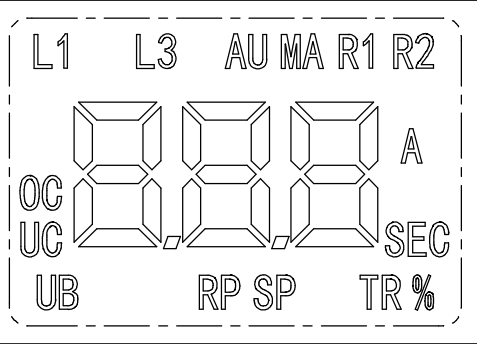
PARAMETER	TYPE	MIN	MAX	DEFAULT	TRIP DELAY			STEP
					MIN	MAX	DEF	
UNDER CURRENT	NA	40 % OF FLC IN AMP	90 % OF FLC IN AMP	50 % OF FLC IN AMP	1 SEC	10 SEC	5 SEC	0.01/0.05/0.1/ 0.5/1A &1 SEC
CURRENT UNBALANCE	NA	10 %	50%	50%			3 SEC	
SINGLE PHASING	NA	NA	NA	NA				
OVER CURRENT	NA	NA	NA	120% OF FLC	AS PER IDMT CURVE			2/5/10/15/20 SEC
REVERSE PHASING	NA	NA	NA	NA	1 SEC ±1 SEC			NA
FLC LIMIT	NA	40 % OF CTS IN AMP	100 % OF CTS IN AMP	100 % OF CTS IN AMP	NA			0.05,0.1,0.5,1A
RECOVERY DELAY	NA	NA	NA	NA	5 SEC ±1 SEC FIXED			NA
CTS MODULE	1.25/2.5/5/10/20 /40/80/120 A	NA	NA	5	NA			NA
POWER ON DELAY(POD)	NA	1 SEC	60 SEC	10 SEC	NA			NA
RESET	AUTO / MANUAL	NA	NA	MANUAL	NA			NA

UNBALANCE CURRENT :

This is percentage unbalance current calculated as per IEEE std.
Setting procedure is same as **UNDER CURRENT** (Trip delay is fixed 04 sec).

% UB =
$$\frac{\text{Max. deviation with ref.to Average current value}}{\text{Average current value}} \times 100$$

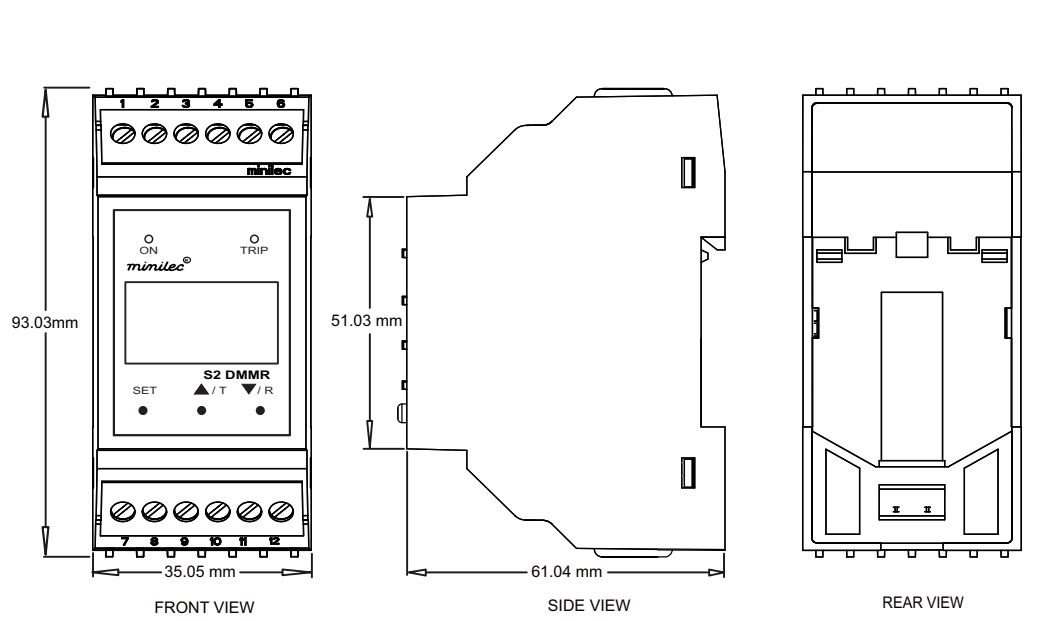
DISPLAY LAYOUT



SR.NO.	DISPLAY PARAMETER	DISCRIPTION
1	L1	Line 1 Current
2	L3	Line 3 Current
3	AU	Auto Reset Mode
4	MA	Manual Reset Mode
5	R1	Relay 1
6	R2	Relay 2
7	A	Ampere
8	SEC	Second
9	TR	Trip
10	UC	Under Current Fault

SR.NO.	DISPLAY PARAMETER	DISCRIPTION
11	OC	Over Current Fault
12	UB	Unbalance Fault
13	RP	Reverse Phase Fault
14	SP	Single Phase Fault
15	%	Percentage

ENCLOSURE DIMENSIONS



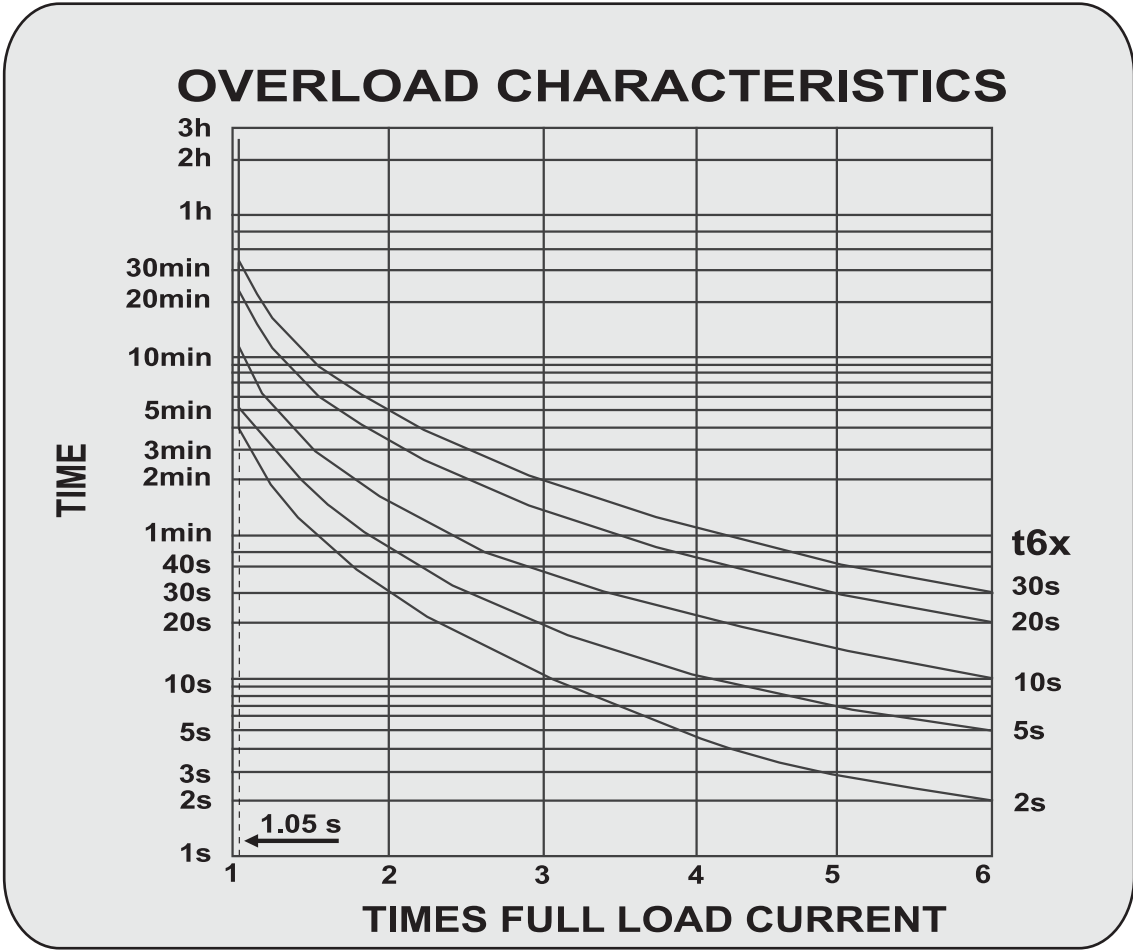
Instructions for Screw Gun torque adjustment –

- 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 ne done as per guidelines or handover it to Ewaste processing authorized agencies. For more details contact us.

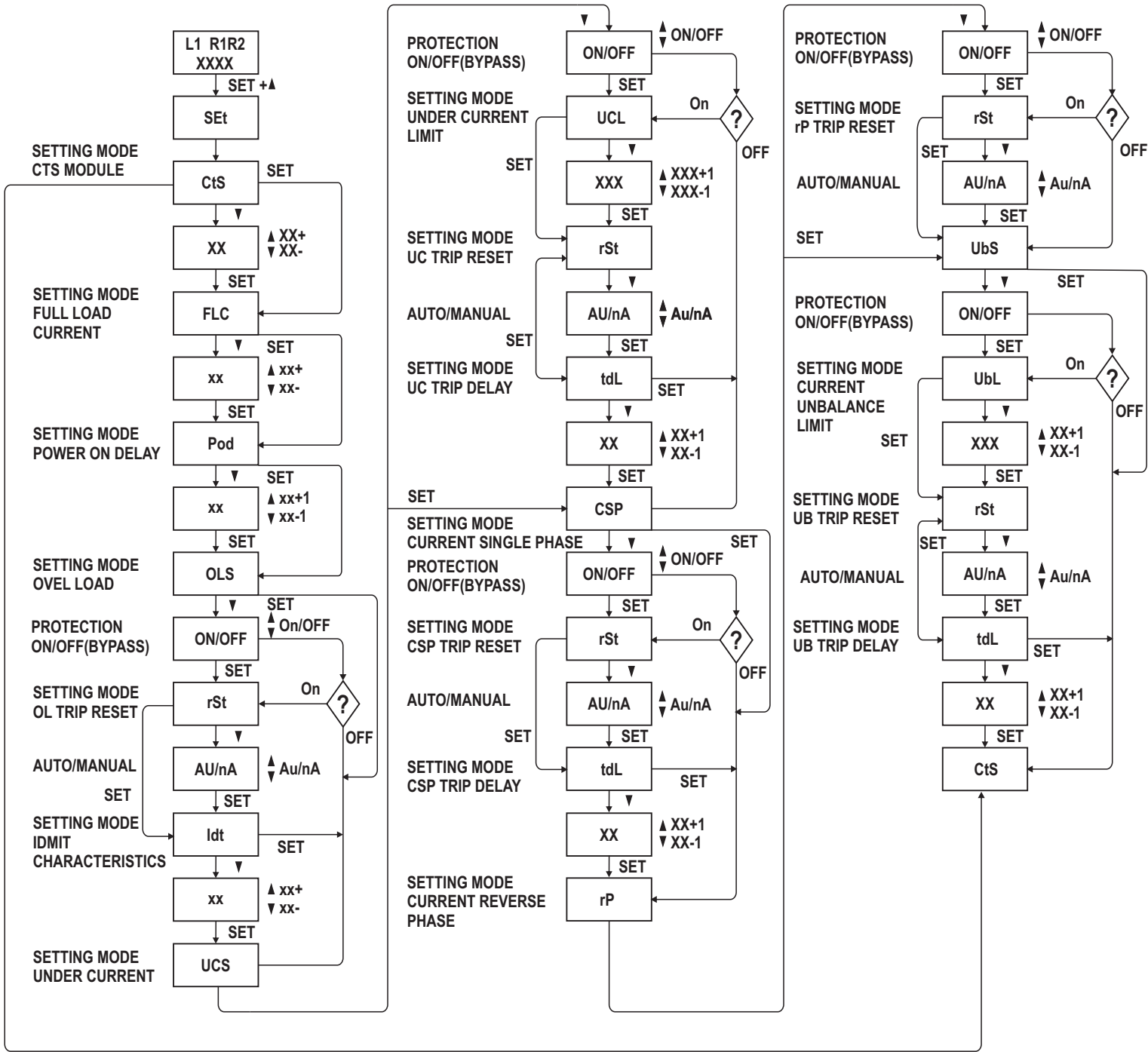
S2 CTS1 SELECTION CHART			
CURRENT RANGE			MODEL
HP From - To	KW From - To	FULL LOAD AMPS RANGES	CURRENT SENSORS
< 0.75	< 0.50	0.5 to 1.25 AMPS	S2 CTS 1/1.25
0.75 - 1.75	0.50 - 1.3	1 to 2.5 AMPS	S2 CTS 1/2.5
1.75 - 3.00	1.30 - 2.25	2 to 5 AMPS	S2 CTS 1/5
3.00 - 6.00	2.20 - 4.50	4 to 10 AMPS	S2 CTS 1/10
6.00 - 12.50	4.50 9.40	8 to 20 AMPS	S2 CTS 1/ 20
12.50 - 30.0	9.40 - 22.50	16 to 40 AMPS	S2 CTS 1/ 40
30.0 - 60.0	22.5 - 45.0	32 to 80 AMPS	S2 CTS 1/ 80
40.0 - 75.0	30.0 - 56.25	48 to 120 AMPS	CTS 120

INVERSE TIME CHARACTERISTICS (IDMTL) GRAPH



S2 DMPR 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	CtS	CT secondary
3	FLC	Full Load Current
4	P0d	Power ON Delay
5	OLS	Over Load Setting
6	rSt	Fault Trip Reset mode
7	AU	Auto
8	nA	Manual
9	Idt	IDMT Tripping Characteristics
10	UCS	Under Current Setting Mode
11	UbL	Unabalance Limit
12	OFF	Fault Protection OFF(Bypass)
13	On	Fault Protection ON (Enable)
14	UCL	Under Current Limit

SR.NO.	SETTING PARAMETER	DISCRIPTION
15	CSP	Current Single Phase
16	tdL	trip delay
17	rp	Reverse Phase
18	UbS	Unbalance setting
19	tst	Test mode