selec

SINE-1P-2.5-180/280V / SINE-1P-5-180/280V

Operating Instructions

OP2035-V01

SAFETY PRECAUTIONS

All safety related codifications, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of the operating personnel as well as the instrument.

If the equipment is not used in a manner specified by the manufacturer it might impair the protection provided by the equipment.

If there is physical damage to the unit then do not use it.

Read complete instructions prior to installation and operation of the unit.

WARNING

A. SETUP

1. The hazard of electric shock, is present due to the presence of high voltages within the SVR.
2. Do not install the SVR near heat source, water or in damp environments.
3. Do not block off the ventilation openings of SVR.
4. The unit should be opened, installed or serviced only by trained persons.
5. Servicing of the unit should be carried out while ensuring compliance with all safe electrical work practices and use of protective equipment.

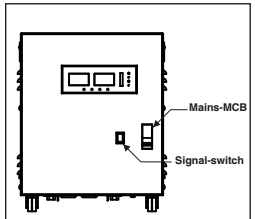
B. INSTALLATION

1. Make sure that all cables used in the SVR system are properly insulated with no visible bare patches.
2. For secure operation ensure the protective-earth connection to the system is proper.
3. Make sure that no overload equipment is connected to the system.
4. Ensure that the connections at input and output terminals of SVR are proper before switching ON the system.

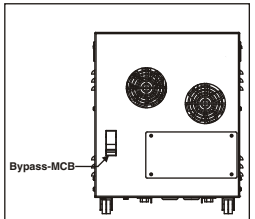
C. OPERATION

1. Do not disconnect any cable from the SVR during its operation.
2. Before disconnecting the system ensure that the load is safely turned-off.
3. Make sure that no fluids or any other foreign objects enter the SVR.

STARTUP, SHUTDOWN AND MANUAL BYPASS PROCEDURE



SVR FRONT-PANEL



SVR BACK-PANEL

A. STARTUP

1. Make sure that the Bypass-MCB located on the back-panel is in OFF position.
2. Turn ON the Mains-MCB located on the front-panel.
3. Wait 10s before turning ON the signal-switch.
4. Turn ON the signal-switch located on the front-panel.

B. SHUTDOWN

1. Turn OFF the signal-switch and then the Mains-MCB located on the front-panel.

C. MANUAL BYPASS

1. Turn OFF the signal-switch and then the Mains-MCB located on the front-panel.
2. Turn ON the Bypass-MCB located on the back-panel.

SPECIFICATIONS

Display Specifications

7 Segment LED Display	Regular input and output
Bar Graph LED	Load indication with resolution of 10%
LED Indication	Over-load, Over-voltage, Under-voltage, Over-current
Buzzer Indication	Power-on, Over-load, Over-voltage, Under-voltage, Over-current, Over-temperature

Technical Specifications

Eliminates voltage sags	Upto 50V (22% considering 230V nominal)
Swell compensation	Upto 50V (20% considering 230V nominal)
Compensation irrespective of phase	Yes
Compensation of depth & long disturbances	Continuous correction possible (24x7)

Input Specifications

Nominal Input Voltage	230V AC (L-N)
Input Voltage Range	180 - 280V AC (L-N)
Relaxed Input Voltage Range	160 - 300V AC (L-N)
Operating Frequency	47-65 Hz
Max. Rated Input Current	27A / 14A*
Input MCB Rating	40A X 1 Pole / 20A X 1 Pole
Input Connection	Barrier terminal [R, N & E]
Input Wire Size	4 sq.mm / 2.5 sq.mm*

Output Specifications

Output Voltage	220 - 230 - 240V L-N (Selectable)
Power Efficiency	Typically over 97% (with 20-100% load conditions)
Correction Initiation	Less than 20 msec
Voltage Compensation	Upto 50V
Technology	PWM based IGBT switching
Max. rated Output Current	22A / 11A*
Voltage Regulation	±0.5%
Output Connection	Barrier terminal [L, N & E]
Load Bypass	Manual (Optional)

Protection Functions

Input protection	Line Over-current, Over-voltage, Under-voltage
Output Protection	Over-load, Over-current trip
Overload & Short-Circuit	Through suitable input circuit breaker
Surge-test Conditions	As per Class 2 Surge (Combination Wave)
Surge Let-through Voltages	1.2 X 50µs, 6kV, 8 X 20µs, 3kA waveform, L-N < 300V

Power Specifications

Capacity	5KVA / 2.5KVA*
Power consumption	100VA

Physical Specifications

Dimensions	282W x 353H x282D mm
Weight	28 / 18 * kg Approx.
Mounting	4 High Quality Castor wheels
Ambient Temp.	0 - 50°C,10-90% RH non-condensing
Cooling Method	Fan Cooling
IP rating	IP20

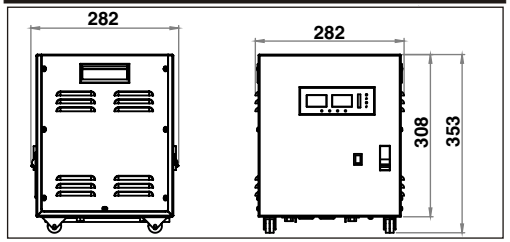
ACCURACY

Measurement	Accuracy
Input Voltage	±0.5% of Full Scale
Output Voltage	±0.5% of Full Scale
Load Percentage	±10% of Full Scale

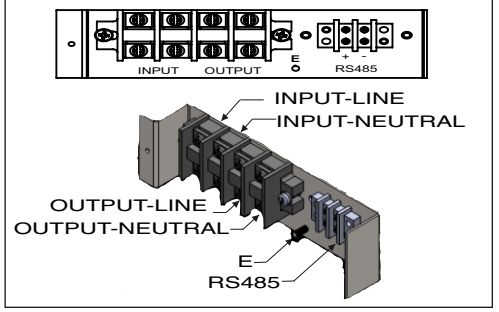
SERIAL COMMUNICATION

Interface standard and protocol	RS485 and MODBUS RTU
Communication address	1 to 255
Transmission mode	Half duplex
Data types	Float and Integer
Transmission distance	500m maximum
Transmission Speed	4800, 9600,19200, 38400 (in bps)
Parity	None, Odd, Even
Stop bits	1 or 2
Response time	100ms (max and independent of baud rate)

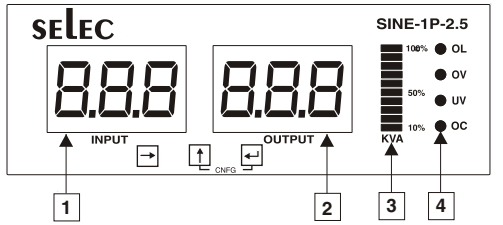
DIMENSIONS (All in mm)



TERMINAL CONNECTIONS



DISPLAY DESCRIPTION



No.	Description	
1	Input Voltage	
2	Output Voltage	
3	Load (KVA)	
4	Fault	Over-Load, Over-Voltage, Under-Voltage, Over-Current

NOTE : *Marked values are only valid for SINE-1P-2.5-180/280V

CONFIGURATION MENU

Press ↵ + ↑ for 5sec. to enter configuration menu.

MAIN MENU

Press → to edit the Password OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 100 [Fixed]

SUB MENU

Press → to edit the Output Voltage OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 230

Press → to edit the Power Rating OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 5 / 2.5*

Press → to edit the choice for Over-Voltage Set OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : YES

NOTE :
This parameter will only appear if **YES** is selected in **Over-Voltage Set**.

Press → to edit the Over-Voltage OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 280

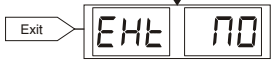
Press → to edit the Under-Voltage OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 160

Press → to edit the Slave ID OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 1

Press → to edit the Baud Rate OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 4

Press → to edit the Data Format OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : 1

Press → to edit the choice for Default OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : NO



Press → to edit the choice for Exit OR change the position of cursor while editing.
Press ↑ to change / toggle the value.
Press ↵ to confirm the edited value / move into new parameter
Default value : NO

NOTE : *Marked values are only valid for SINE-1P-2.5-180/280V

CONFIGURATION PAGE

PG.	DISPLAY	DESCRIPTION	RANGE		DEFAULT
			Min	Max	
A	PSY	Password	—	—	100
1	VO	Output Voltage	220	240	230
2	KVA	Power Rating	1	5 / 2.5*	5
3	OVS	Over- Voltage Set	Yes / No		YES
Press ↑ and then ↵ on page-3 to set over-voltage on page-3.1					
3.1	OV	Over - Voltage	260	280	280
4	UV	Under - Voltage	160	200	160
4	SId	Slave ID	1	255	1
4	bdr	Baud Rate	1	5	4
4	dF	Data Format	0	5	1
5	dFt	Default	Yes / No		NO
6	EHt	Exit	Yes / No		NO

MODUS REGISTER ADDRESS LIST

Readable parameters : [Length (Register) : 2 ; Data Structure : F32]

Address	Parameter
30000	Input voltage
30002	Output voltage
30004	Current
30006	Load parcentage
30008	Fault Code

Readable / writeble parameters for communication [Length (Register) : 1: Resolution :1]

Address	Parameter	Range		Default	Data Structure
40000	Output voltage Set	220-240		230	u16
40001	KVA	1-5 / 2.5*		5 /2.5*	u8
40002	Over-voltage selection	0-1		1	u8
40003	Over-voltage range	260-280		280	u16
40004	Under-voltage range	160-200		180	u16
40005	Slave ID	1-255		1	u16
40006	Baud rate	1-2400 2-4800 3-9600	4-19200 5-38400	4	u16
40007	Data format	0-8N1 1-8N2 2-8E1	3-8E2 4-8O1 5-8O2	0	u16

FAULT CODE DESCRIPTION

Fault Type	Decimal Value
Over-Current	2
Over-Load	4
Over-Voltage	8
Under-Voltage	16
Over-Temperature	32

ONLINE PAGE

Parameter	Default	Condition	Display position
Input Voltage	Vin	- - - -	Seven Segment Display: Left Hand Side
Output Voltage	Vout	- - - -	Seven Segment Display: Right Hand Side
KVA	ON	At step of 10%. **Range** - **Min** : 0% **Max** :100%	LED Bar Graph
Over Load	- - -	ON as per fault	LED : OL
Over Voltage	- - -		LED : OV
Over Current	- - -		LED : OC
Under Voltage	- - -		LED : UV

ORDERING INFORMATION

Product Code	Supply Voltage	Certification
SINE-1P-2.5-180/280V	180 to 280V AC (L-N)	—
SINE-1P-5-180/280V	180 to 280V AC (L-N)	—

NOTE : *Marked values are only valid for SINE-1P-2.5-180/280V

(Specifications are subject to change, since development is a continuous process.)

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