



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

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

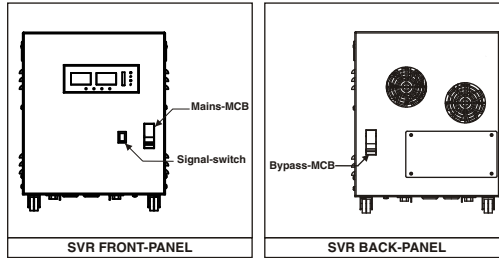
B. INSTALLATION

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

C. OPERATION

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

STARTUP, SHUTDOWN AND BYPASS PROCEDURE



A. STARTUP

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

B. SHUTDOWN

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

C. MANUAL BYPASS

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

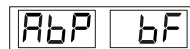
D. AUTO-BYPASS

- Make sure that the Auto-Bypass setting present in the Configuration Menu is set to 'YES'
- After activating the Auto-Bypass feature make sure that the Bypass-MCB located on the back panel is in OFF position.
- The unit will now activate Bypass upon detection of following fault condition:

A) Over-Temperature



B) Board Failure



SPECIFICATIONS

Display Specifications

7 Segment LED Display	Regular input and output Load indication with resolution of 10%
Bar Graph LED	
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	42A / 55A*
Input MCB Rating	50A X 1 Pole / 63A X 1 Pole*
Input Connection	Barrier terminal [R, N & E]
Input Wire Size	6 sq.mm / 10 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 Technology	Upto 50V PWM based IGBT switching
Max. rated Output Current	33A / 44A*
Voltage Regulation	±0.5%
Output Connection	Barrier terminal [L, N & E]
Load Bypass	Auto & Manual

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	7.5KVA / 10KVA*
Power consumption	100VA

Physical Specifications

Dimensions	353W x 445H x 347D mm
Weight	35 / 50 * kg Approx.
Mounting	4 High Quality Castor wheels, 2 with brakes
Ambient Temp.	0 - 50°C, 10-90% RH non-condensing
Cooling Method	Fan Cooling
IP rating	IP20

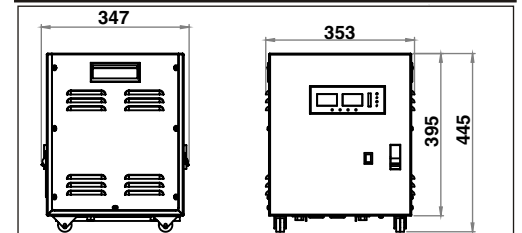
ACCURACY

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

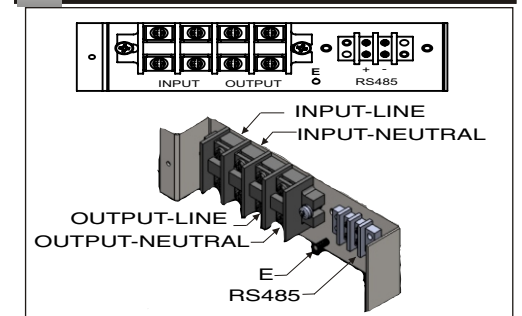
SERIAL COMMUNICATION

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	2400, 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)



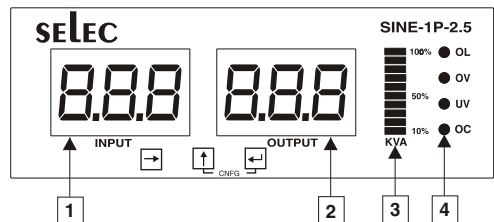
TERMINAL CONNECTIONS



NOTE :

*Marked values are only valid for SINE-1P-10-180/280V

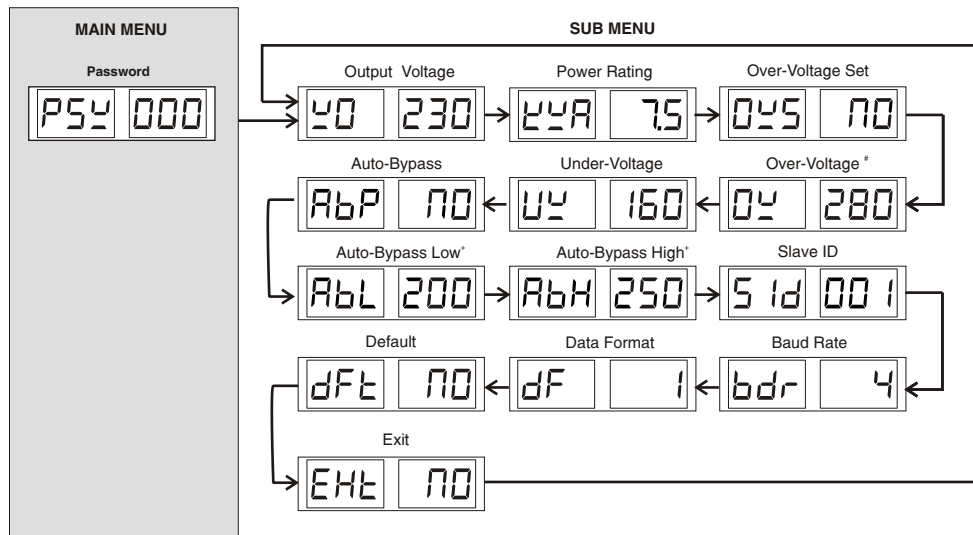
DISPLAY DESCRIPTION



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

CONFIGURATION MENU

Key	Description
→	Press to edit the concerned parameter in configuration menu OR change the position of cursor while editing.
↑	Press to change / toggle the value.
←	Press to save edited value / move to new parameter
← + ↑	Press for 5sec. to enter configuration menu.



NOTE :

- * Marked values are only valid for SINE-1P-10-180/280V
- * Marked parameter will only appear if YES is selected in Over-Voltage Set.
- * Marked parameter will only appear if YES is selected in Auto-Bypass

CONFIGURATION PAGE

PG.	DISPLAY	DESCRIPTION	RANGE		DEFAULT
			Min	Max	
A	PSY	Password	—	—	100
1	40	Output Voltage	220	240	230
2	24A	Power Rating	1	7.5 / 10*	75 10*
3	045	Over- Voltage Set	Yes / No		NO
3.1	04	Over - Voltage	260	280	280
4	Uy	Under - Voltage	155	200	160
5	AbP	Auto-Bypass	Yes / No		NO
5.1	AbL	Auto-Bypass Low	190	220	200
5.2	AbH	Auto-Bypass High	240	300	250
6	51d	Slave ID	1	255	001
7	bdr	Baud Rate	1-2400 2-4800 3-9600	4-19200 5-38400	4
8	dF	Data Format	0-8N1 1-8N2 2-8E1	3-8E2 4-8O1 5-8O2	1
9	dFt	Default	Yes / No		NO
10	Eht	Exit	Yes / No		NO

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
Auto Bypass Status	- - -	Displayed when control is transferred to Auto Bypass.	Seven Segment Display: Left Hand Side
Fault	- - -	Displayed due to the occurrence of the following fault conditions: 1. Over- Temperature 2. Board Failure	Seven Segment Display: Right Hand Side

MODUS REGISTER ADDRESS LIST

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

Address	Parameter
30000	Input voltage
30002	Output voltage
30004	Load Power (KVA)
30006	Load percentage
30008	Fault Code

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

Address	Parameter	Range	Default	Data Structure
40000	Output voltage Set	220-240	230	u16
40001	KVA	1-7.5 / 10*	7.5 / 10*	u8
40002	Over-voltage selection	0-1(YES- NO)	0 (NO)	u8
40003	Over-voltage range	260-280	280	u16
40004	Under-voltage range	155-200	160	u16
40005	Slave ID	1-255	1	u16
40006	Baud rate	1-2400 2-4800 3-9600	4-19200 5-38400	u16
40007	Data format	0-8N1 1-8N2 2-8E1	3-8E2 4-8O1 5-8O2	u16
40008	Auto-Bypass	0-1(YES- NO)	0 (NO)	u8
40009	Auto-Bypass Low	190-220	200	u16
40010	Auto-Bypass High	240-300	250	u16

NOTE :

1.*Marked values are only valid for SINE-1P-10-180/280V

FAULT CODE DESCRIPTION

Fault Type	Decimal Value
Over-Current	2
Over-Load	4
Over-Voltage	8
Under-Voltage	16
Over-Temperature	32
Board Failure	64

ORDERING INFORMATION

Product Code	Supply Voltage	Certification
SINE-1P-7.5-180/280V	180 to 280V AC (L-N)	—
SINE-1P-10-180/280V	180 to 280V AC (L-N)	—

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

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