



## Static Voltage Stabilizer

เครื่องควบคุมแรงดันไฟฟ้าอัตโนมัติ



# AVR-SM Series

## Features

- Maintenance-free Thyristor Technology
- 10kva - 3200kva Power Range
- Production at Single Phase, Two Phase, Three Phase
- Production at all industrial Voltage
- Low Voltage Correction up to 60%
- HighVoltage Correction up to 45%
- Response time : 20msec
- Correction Time : 100 msec - 200 msec
- 100% Unbalanced Voltage and Load Capacity
- Continuous protection against voltage fluctuations
- Independent Voltage management on each phase
- Efficiency >98%
- Touchscreen Operator Panel
- Automatic By-pass Unit
- Electronic Overload, Over Temperature Protection
- Low Voltage / High Vo
- Suitable design for industrial environment
- Optional Features
  - RS458/232 and Mod-bus RTU
  - Galvanic Isolation Transformer
  - Surge Arrester
  - Maintenance By-Pass Swith

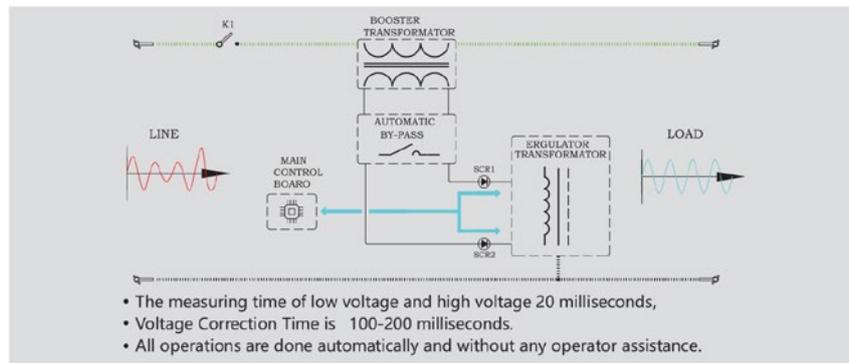
## Application

- Military research & Defense weapons
- Laser cutting & Punching machinery
- CNC machinery
- Electronics & Medical equipment
- Lab instrument
- Medical monitoring System
- Process control system
- Elevator
- IT & OA equipment
- Auto testing equipment
- Safe guard system
- Production line
- SMT machinery
- TV & Radio broadcasting stations
- Video & Audio
- CAD / CAM
- Generator
- Computer & Computer peripherals



# AVR-SM Series Static Voltage Stabilizer

AVR-SM Voltage Stabilizers work on the principle of injecting voltage to the load supply voltage by the help of transformer connected in series between the network and load. High-speed and sensitive measuring circuits of AVR-SM measure voltage drops and fluctuations. Microprocessor-based management board calculates the voltage value to be increased or decreased and performs the voltage injection with Thyristor switches.



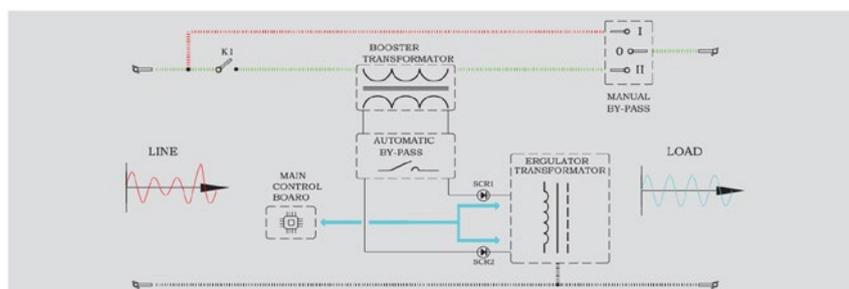
**In Case of Overload or Failure, it Continues to Work With Automatic By-pass. There is Maintenance By-pass Switch for Operator Intervention**

## Built-in Automatic By-pass

An Internal bypass system can be added to AVR-SM Voltage Stabilizers, Which ensures Uninterrupted transfer of loads to the network in case of overload or internal failure. In case of overload or failure, the circuit of internal bypass short-circuits the secondary side of booster transformer, provides a direct connection from the network to output.

## Maintenance By-pass Switch (Optional)

A Maintenance bypass switch can be added to the AVR-SM Voltage Stabilizers, which ensures that the loads are transferred to the grid in case of maintenance of failure. Maintenance bypass switch is an I-0-II position changeover switch and is manually controlled. During the Maintenance bypass operation, the power to the loads is cut for a short time



## Maintenance By-pass Switch (Optional)

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## Galvanic Isolation Transformer

Some models of 258W voltage stabilizer can be produced with isolation transformers. An isolation transformer can be placed at the input or output of the stabilizer in accordance with the customer's request. Voltage changing or vector changing can be done with the isolation transformer.

## IP44, IP54, IP65 Cabinet Option

There is IP44 IP54 IP65 cabinet option for outdoor applications. In special cabinets, full protection against corrosion is provided with zinc coating and prime paint applications before painting. There are also special cooling options for outdoor applications

## Output Switching Option

Input and output voltages can be different in AVR-SM Voltage stabilizers. The output voltage can be adjusted to a different industrial voltage in accordance with the project requirement (Example: Input Voltage can be 400VAC 3P+N

## Output voltage: 220VAC 3P+N)

Surge Arrester-High Voltage Protection Surge arresters can be placed at the inputs and outputs of AVR-SM voltage stabilizers for protection against high voltage and lightning strikes. Please contact with your sales representative for Class-1 or Class-II surge arrester options and all other requests.

# AVR-SM Series Static Voltage Stabilizer

## Specification :

|         |                  |
|---------|------------------|
| MODEL : | <b>AVR-SM</b>    |
|         | <b>30 ~ 3200</b> |
|         | <b>kVA</b>       |

Single Phase / Three Phase

### INPUT

|                   |   |
|-------------------|---|
| Working Principle | SCR based Static Stabilizer   |
| Input Voltage     | 220/380V 3P4W (Other Voltages Available on request)                     |
| Voltage Range     | 176-264V Ph-N, 304-456V Line to Line (Other Range Available on request) |
| Input Frequency   | 50Hz (60Hz Optional)  |

### OUTPUT

|                                 |  |
|---------------------------------|--|
| Output Voltage                  | 220/380V 3P4W (Other Voltages Available on request)      |
| Voltage Tolerance               | Selectable : $\pm 2\%$                                   |
| Frequency / Efficiency          | 50Hz $\pm 5\%$ / $> 98\%$ typical                        |
| Overload Capacity               | 125% 1minute, 150% 10seconds, 151% and above 0.2 seconds |
| Response Time / Correction Time | 20msec / 100 - 200msec                                   |
| Output Wave form distortion     | Nil  |
| Effect of Power factor          | Nil  |

### FEATURES

|                             |  |
|-----------------------------|--|
| Automatic bypass            | Yes (manual bypass Optional)   |
| Voltage Protection          | Electronic Protection for Low Voltage and High Voltage   |
| Current Protection          | Input Circuit Breaker (Output Breaker Optional)  |
| Overload Protection         | Electronic Overload Protection (1min at 125% Overload, 10sec. at 150% Overload, at $> 151\%$ Overload the Power to the load is cut off after 0.2sec) |
| Over Temperature Protection | Electronic Over Temperature Protection (Fan Cooling Works at 50 °C at 80 °C, the power to the load is cut off)                                       |
| Surge Arrester              | Surge Arrester Class-I or Class-II (Optional)  |
| Operator Panel              | Color Touchscreen /Input Voltage, Output Voltage, Current, Frequency, Status, Parameter Setting  |
| Remote Management Interface | MOD-BUS RTU with RS485 Connection (Optional)   |
| Operating temperature       | -10°C - +40°C  |
| Altitude Operating Height   | 1,500M   |
| Humidity                    | 90% Non Condensed  |
| Acoustic Noise              | $< 55\text{dB}$ (at 1m Distance and Doors Closed)  |
| Type-Protection Class       | Free Standing Modular Cabinet, IP21 Indoor type (IP54 and Higher Protection Class, Outdoor Type Cabinets are Optional)                               |
| Cooling                     | Forced air Cooling with thermostat controlled fan  |

### PHYSICAL

| MODEL       | DIMENSION / WEIGHT<br>(WxDxH mm) / kg | MODEL       | DIMENSION / WEIGHT<br>(WxDxH mm) / kg | MODEL       | DIMENSION / WEIGHT<br>(WxDxH mm) / kg |
|-------------|---------------------------------------|-------------|---------------------------------------|-------------|---------------------------------------|
| AVR-SM-30   | 320 x 680 x 760 / 140kg               | AVR-SM-45   | 320 x 680 x 760 / 170kg               | AVRSM-60    | 500 x 920 x 1100 / 245kg              |
| AVR-SM-75   | 500 x 920 x 1100 / 290kg              | AVR-SM-100  | 500 x 920 x 1100 / 345kg              | AVR-SM-120  | 550 x 920 x 1200 / 360kg              |
| AVR-SM-150  | 550 x 920 x 1200 / 380kg              | AVR-SM-200  | 550 x 920 x 1200 / 420kg              | AVR-SM-250  | 1000 x 800 x 1500 / 475kg             |
| AVR-SM-300  | 1000 x 800 x 1500 / 536kg             | AVR-SM-400  | 1000 x 800 x 1500 / 605kg             | AVR-SM-500  | 1200 x 600 x 1600 / 750kg             |
| AVR-SM-600  | 1200 x 600 x 1600 / 890kg             | AVR-SM-800  | 1400 x 100 x 1900 / 1150kg            | AVR-SM-1000 | 1400 x 100 x 1900 / 1350kg            |
| AVR-SM-1250 | 1400 x 100 x 1900 / 1550kg            | AVR-SM-1500 | 1800 x 1200 x 2000/1750kg             | AVR-SM-2000 | 1800 x 1200 x 2000/2100kg             |
| AVR-SM-2500 | 1800 x 1200 x 2000 / 2450kg           | AVR-SM-3200 | 2400 x 1400 x 2000/3500kg             |             |                                       |

\* Specifications are subject to change without prior notice.

Spec. STD V2. 21-03-24



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