



## SR4A, SR6A, SR8A, SR9A, SR32A Static Voltage Regulators

SR\_A voltage regulators are applicable to any size or type of alternator/exciter system.

### FEATURES

- Output voltage ratings of 32, 63, and 125 VDC available.
- 1/2% regulation.
- Fast regulator response.
- No electrolytic capacitors.
- For use with brush or brushless rotary excitors or as a shunt type static exciter.
- Available for either 50/60 or 400 Hz operation.
- Single or three phase sensing available.
- Paralleling provisions.
- Adjustable stability circuit.
- Available with any of three time constants.
- Designed to withstand severe shock and vibration.
- Complete line of accessories available.
- CSA certified.

### ADDITIONAL INFORMATION

#### INSTRUCTION MANUAL

Request Publication 9017700990 (SR4 and 8), 9017700991 (SR6 and 9),  
9075000990 (SR32)

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**Basler Electric**

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## DESCRIPTION

As more sophisticated power consuming devices become available, electrical energy sources must develop greater and more precise power capabilities to satisfy their demands. Ideally suited for alternator systems of larger size and for more precise regulation requirements, the Basler SR\_A series of regulators has been proven on all types of power systems throughout the world. Over 25,000 SR\_As are meeting the requirements of emergency, "no-break", peaking and continuous power systems every day. The Basler SR\_A regulators are an outstanding value in performance, reliability, and cost.

Basler SR\_A regulators are available with 7 ampere

continuous capability for 50/60 Hz or 400 Hz generator applications having either a 63 or 125 volt field, or with 20 ampere continuous capability for 50/60 Hz generating systems with 32 VDC fields. Complete ratings, outline dimensions, and typical interconnections are included in this bulletin. Paralleling provisions and three phase sensing are optional and become an integral part of the regulator when specified at the time of order placement.

A complete line of accessory devices complements the SR\_A regulators for 50/60 Hz installations. Many of these same accessories are available for 400 Hz machines. A list of accessory devices for SR\_A regulators is included in this bulletin.

## SPECIFICATIONS

MODEL	POWER INPUT (1)			OUTPUT RATING				SENSING (2)		PARALLEL COMPENSATION		FIELD RESISTANCE		MAX. WEIGHT	
	Volts	Freq. Hz	VA (3)	Max. Continuous		1 Minute Max. Forcing		Volts	Max. VA Burden Per phase	Amps (Input)	VA Burden	Min. Ohms	Max. Ohms	Net Lbs.	Shipping Lbs.
				Volts	Amps	Volts	Amps								
SR4A	120	50/60	840	63	7	90	10	NEMA STD. 120/208/ 240/416/ 480/600	10	5	25	9	400	12.5	14
SR6A	120	400	840	63	7	90	10		10	5	25	9	400	12.5	14
SR8A	240	50/60	1680	125	7	180	10		10	5	25	18	400	12.5	14
SR9A	240	400	1680	125	7	180	10		10	5	25	18	400	12.5	14
SR32A	60	50/60	1200	32	20	45	28		10	5	25	1.6	400	18	20

NOTES: 1. If correct voltage is not available for power input, a suitable power transformer must be selected. (See Power Isolation Transformer Bulletin).  
2. Sensing voltage may be single or three phase.

3. When regulator is operated at less than maximum output, power isolation transformer rating can be determined by multiplying input volts by DC output current.

**TABLE 1**

### REGULATION ACCURACY:

Less than  $\pm 1/2\%$  over full range of alternator loading.

### REGULATOR RESPONSE:

Less than 17 milliseconds.

### REGULATOR DRIFT:

Less than  $\pm 1/2\%$  per  $104^{\circ}\text{F}$  ( $40^{\circ}\text{C}$ ) ambient temperature change.

### REGULATOR SENSING:

Both single and three phase sensing are available (See Table 2).

### VOLTAGE ADJUST RANGE:

Minimum  $\pm 10\%$  of nominal voltage.

### FINISH:

Dark brown, lusterless, textured, baked enamel.

### AMBIENT OPERATING TEMPERATURE:

From  $-67^{\circ}\text{F}$  ( $-55^{\circ}\text{C}$ ) to  $+158^{\circ}\text{F}$  ( $+70^{\circ}\text{C}$ ) without derating.

### STORAGE TEMPERATURE RANGE:

From  $-85^{\circ}\text{F}$  ( $-65^{\circ}\text{C}$ ) to  $+212^{\circ}\text{F}$  ( $+100^{\circ}\text{C}$ ) with no degradation of components.

### PARALLEL COMPENSATION:

5A @ 25 VA, droop adjustable to approximately 5%.

### POWER DISSIPATION:

Less than 60 Watts at continuous rating, less than 170 Watts in the SR32.

### SHOCK:

Withstands up to 15 Gs.

### VIBRATION:

Withstands up to 5 Gs at 260 Hz.

### WEIGHT:

See Table 1.

## ACCESSORIES

- POWER ISOLATION TRANSFORMERS
- EXCITATION SUPPORT SYSTEM  
(Series Boost Option)
- UNDERFREQUENCY/OVERVOLTAGE PROTECTION
- VAR/POWER FACTOR CONTROLLER, SCP 250
- CURRENT TRANSFORMERS
- MANUAL VOLTAGE CONTROL
- MOTOR OPERATED CONTROL

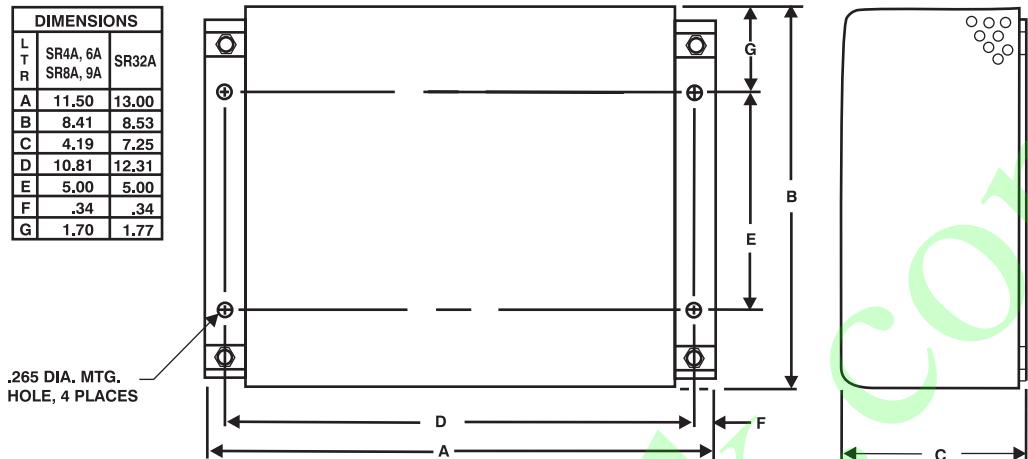


Figure 1 - Outline Drawing (SR\_A Regulator)

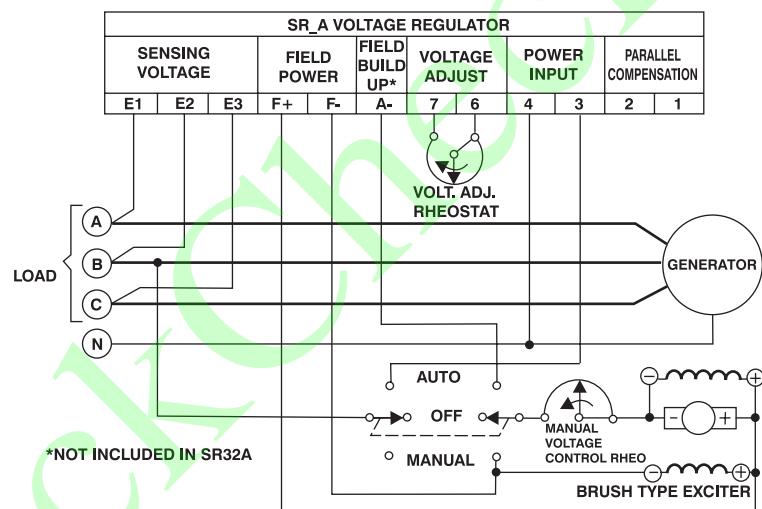


Figure 2 - Typical Interconnection Diagram (For operation with brush-type rotary exciter)

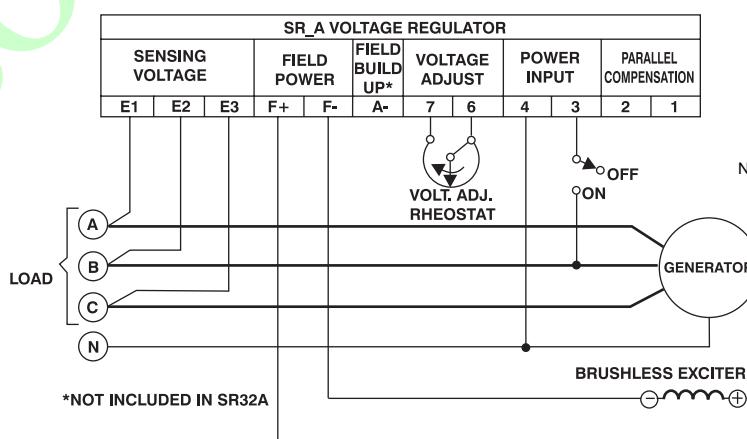


Figure 3 - Typical Interconnection Diagram (For operation with brushless rotary exciter)

## SAMPLE SPECIFICATION

The voltage regulator shall be a static type, equipped with a silicon diode and thyristor (SCR) power stage to control the exciter field current as required to maintain a constant and stable generator output voltage within  $\pm 1\%$  of nominal for all steady state loads from no load to full load. A 5% variation in frequency and the effects of field heating shall not affect the unit's regulation performance. The regulator shall have (single) (three) phase sensing with the sensing circuit isolated from the power stage. Stability and voltage range adjustments shall be mounted on the regulator circuit board. The voltage reference shall be

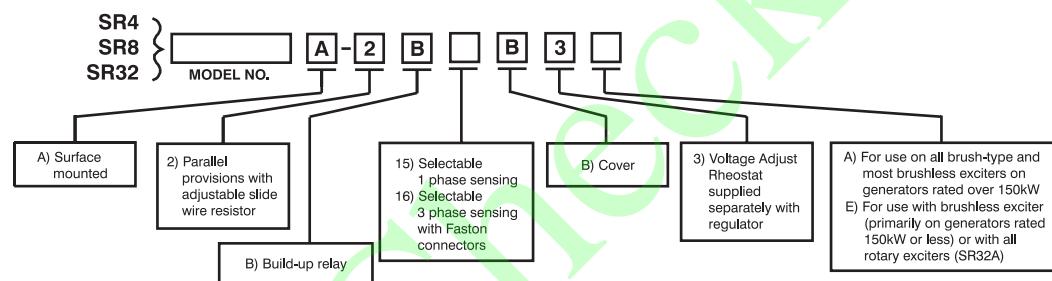
obtained from a zener diode of low thermal coefficient for stability over a wide operating temperature range. Paralleling provisions, if necessary, shall be an integral part of the regulator and shall be isolated from the sensing voltage input in such a way as to permit reactive load compensation by either the reactive droop or the reactive differential (cross-current) method.

The voltage regulator shall be a Basler Electric Company type SR\_A, or approved equal.

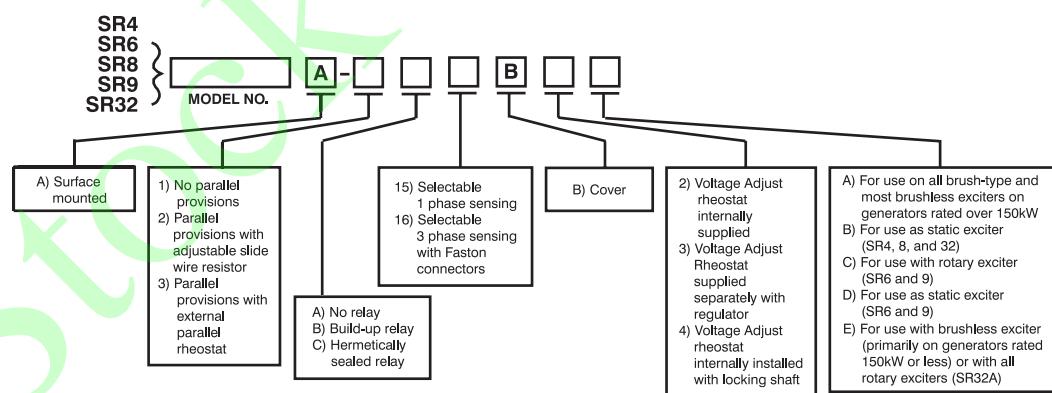
## HOW TO ORDER

Specify model and description: Basler Model SR\_A-\_\_\_\_\_ Voltage regulator. The model number of the SR\_A regulator is a combination of letters and numbers indicating the features which are included in a particular regulator.

The following style chart represents the standard product offering. These models are available with a 3-day standard lead time, subject to total order demand and parts availability.



The following styles are available on a special order basis. The lead time is 8 weeks.



**B** Basler Electric

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