ERICH OTT

SRSP3 . . .

Voltage controller / limiter

Nominal voltage	**400 V (230 V, 500 V)**
Nominal current	**25 A (20 A, 50 A)**
Voltage adjuster	**40 - 400 V (20- 230 V)**
Current transformer output	**25 /1 A (depends on design)**
Measuring sensor	**Pt - 100 3- wire**
Amperemeter	**3/ 25 A (depends on design)**
Limiter	**‹ 10% nominal voltage (optionally)**
Y- regulating variable	**4-20 mA**

Voltage controller compact device	SRSP3 ... K
Voltage controller rack-mounitng unit	SRSP3 ... S
Voltage controller and current limiter	SRSP3 ... B

Voltage controller

Voltage controller for 3-wire technique at not accessible or nonexistent neutral point. By use of a voltage controller the effective current for heating is adjusted and if necessary monitored on min, current by means of a TRB-P.. Optionally available with current limitation.

Erich Ott GmbH & Co. KG
Partner für den Ex-Bereich
D-65189 Wiesbaden
Rüdigerstrasse 15
Telephone +49 (0) 611 - 94587267
Telefax +49 (0) 611 - 94586124
mail info@erich-ott.de
web www.erich-ott.de

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Warning
The installation, configuration and commissioning may only be carried out by accordingly trained persons. The local installation and safety regulations must be respected.

Reservation
We reserve the right for technical changes. Aberrations and printing errors do not constitute grounds for any claims to damages. For safety components and systems the relevant standards and regulations as well as the according instruction manual and the assembly instructions should be observed.

Repair
Dismantling takes place in reverse order than the installation. A Repair of the device is not possible concerning the switching element. All other repairs may only take place in the factory of the manufacturer. The basic devices (Inserted parts without terminal box) are, capillaries excluded, irreparable. These may only be changed in the factory. An intervention is not permitted.
Changes, that modify the design of the device, will cause that the validity of the certificate and any claim for damage void.

Read through this operating manual carefully, before you take the device into operation. Keep the operating manual at a place accessible to all users at any time.

Please support us to improve this operating manual..
We are grateful for your suggestions.

Please contact us for technical queries!
TELEPHONE: +49 (0)611 94587267
TELEFAX: +49 (0)611 94586124
E-Mail: info@erich-ott.de

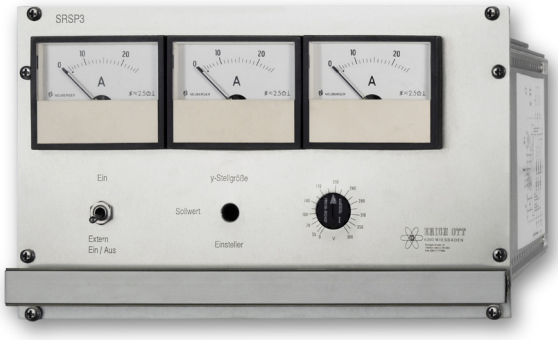
1.0 DESCRIPTION

Characteristics

- Constant output voltage
- Effective value display
- Regulating variable input
- Easy installation
- Also available with current limiter

These devices provide voltage regulation, preferably for 3-wire technology for heating circuits with not accessible or not available neutral point. By use of the voltage controller the effective current for the heating is adjusted. The adjustment is controlled at the ampèremeter and if necessary monitored at min. current via a TRB-P. Only the current of one phase can be adjusted, the two other adjust itself.

- Constant output voltage by control to the adjusted setpoint value
- Activation and deactivation via optocoupler (VDE)
- Stromwandlerausgang (nach VDE 0551)
- Effective value display
- Regulating variable input (Ex-i signal or standard)
- Effective constant current transmitter
- For increased ambient temperature



Plug-in unit S

Plug-in unit K

2.0 TECHNICAL DATA

Nominal voltage	400 V~ (230 V~; 500 V~)
Nominal current	25 A (50 A) (for SRSP3...S 20 A)
Setting ranges voltage	40 - 400 V~ (20 - 230 V~) depends on design
Max. current load of the semiconductor	0,2 s; 200 A - 500 A
Built-in fuses	2 x 80 mA; 6 x 50 mA
Upstreaming fuses	≤ 25 A (50 A (only for SRSP3K)), 20 A (only for SRSP3S)
Current transformer output	25/1 A (6/1; 15/1; 50/1; 2,5/1) R_i 0 - 1,5 Ω
Input optocoupler	3 V R_i = 2 kΩ; 15 - 24 V R_i =5 kΩ; 110 - 230 V R_i = 82 kΩ disconnection according to VDE 0700
Auxiliary voltage	-15 V = R_i = 2 kΩ
Dimensions	
Plug-in (b x h x t)	24 TE x 3 HE x 266 mm (for installation racks 175, 3 low printed circuit boards 100 x 160)
Compact unit (b x h x t in mm)	213 x 155 (125) x 350 Anchor point ∅ 4,5; 203 x 145 mm
Connections	
Plug-in	Load unit (left plug) DIN 41612 H 15 Controller (right plug, 180° rotated) DIN 41612 F 32 b + z
Compact unit Output ON switch	4 mm² to 25 A 10 mm² 50 A load terminals U_{max} = 15 V I_{max} = 0,5 mA
Additional facility	
Input buffer amplifier	
Test voltage	4 kV~
y- signal	4 - 20 mA; 5 Ri 10 Ω
Ex - i - y- signal	4 - 20 mA; Riz 10 Ω EEx ib IIC Ex - 90.C.2029
Minimum resistance of the heating for 25 A design	230 V~ ≥ 5,5 Ω 400 V ~ ≥ 9,5 Ω

3.0 TECHNICAL DESCRIPTION

Display
Depending on the requirements the display device can, for the purpose of improved reading of the operating current, be delivered with measuring range end value 50 A*, 25 A*, 15 A, 10 A, 6 A, 4 A or 2,5 A (*via current transformer "/1)

Switching input
The preferential position is the function "on". If a function "on" is predetermined, the device can not be switched off by the other functions. Exception: y-regulating variable input. The voltage regulation always takes place on the maximum phase voltage between the load terminals (no overload at lack of one phase).
Fuses
The voltage controller SRSP3 has 8 fuses for the internal current supply. The overload protection must be carried out extern.

Constant current transmitter
By means of an additional facility this device can also be delivered as constant current transmitter, that means the current that starts to flow is independant from the load as far as possible. It is, however, only controlled on the current of phase 1. The load voltage is in this connection symmetrically to the greatest possible extent. The max. output voltage can be limited by the setpoint poti.

Current transformer output
The current transformer output is designed as transmitter for the current input of the temperature controller TRB-P. Standard 25/1 A or rather 50/1 A. If desired, also the current values 10/1 A, 6/1 A, 2,5/1 Aund 1/1 A can be delivered.

y-regulating variable input
Devices, which are equipped with this buffer amplifier, serve as actuator for analog controllers. The output voltage must be limited with the setpoint pot with voltage scale to the desired max. value (serves as overload protection or as limiter of the overshoots during the adjustment.

4.0 TYPE CODE

SRSP3 _ 1 _ 2 _ 3 _ 4 _ 5

1	-	Standard
	y	Regulating variable 4 - 20 mA
	ey	Regulating variable 4 - 20 mA intrinsically safe

2	-	Nominal voltage 400 V
	2	Nominal voltage 230 V
	5	Nominal voltage 500 V

3	-	Nominal current 25 A (for plug-in devices max. 20 A continuous load)
	50	Nominal current 50 A

4	S	Plug-in unit
	K	Compact unit

5	-	Standard version
	G	Constant current transmitter
	B	Current limiter

Example:
Standard device with nominal voltage 400 V, Nominal current 25 A, as plug-in unit without constant current transmitter:

SRSP3 _ 1 _ 2 _ 3 **S** 4 _ 5

5.0 VOLTAGE CONTROLLER WITH CURRENT LIMITER

This device has an additionally integrated device which monitores the current of all 3 phases. The monitoring value is adjusted during the commissioning. Limiter release at 10% above the nominal current.

Additional technical data:
Fault signalling relay: 250 V~, 3 A (closed current principle)

Current transformer output:
At this device the current transformer output is not applicable. It is used for the internal current monitoring. Special version with external output for remote indication of the current on request.

6.0 COMMISSIONING LIMITER

1. Switch "Setpoint" to "Adjuster"
2. Voltage controller poti to "0" (left stop)
3. Limiter poti to maximum (right stop)
4. Switch "On" in position "Operation"
5. Switch on voltage
6. Temperature controller to heating "on" - e.g. yellow pilot lamp at TRB-P (is not applicable with y- regulating variable input, as then the external "On" at the SRSP3..B is short-circuited as a rule.)
7. Adjust desired amperage at the voltage controller
8. Set switch "on" to neutral position (adjustment position)
9. Turn limiter poti to the left until shutdown follows. The desired current strength shall be pending longer than 30 se conds before the limiter setpoint is adjusted.
10. Set voltage controller to 0 Volt
11. Swich "On" up, type "limiter resetting" and set back to "operation" (lo wer setting)
12. Ajust desired operating current by use of voltage poti
13. Set switch "Setpoint" to "y- regulating variable"

Note:
According to operating condition it can be necessary to set the release current to be adjusted larger than the operating current.

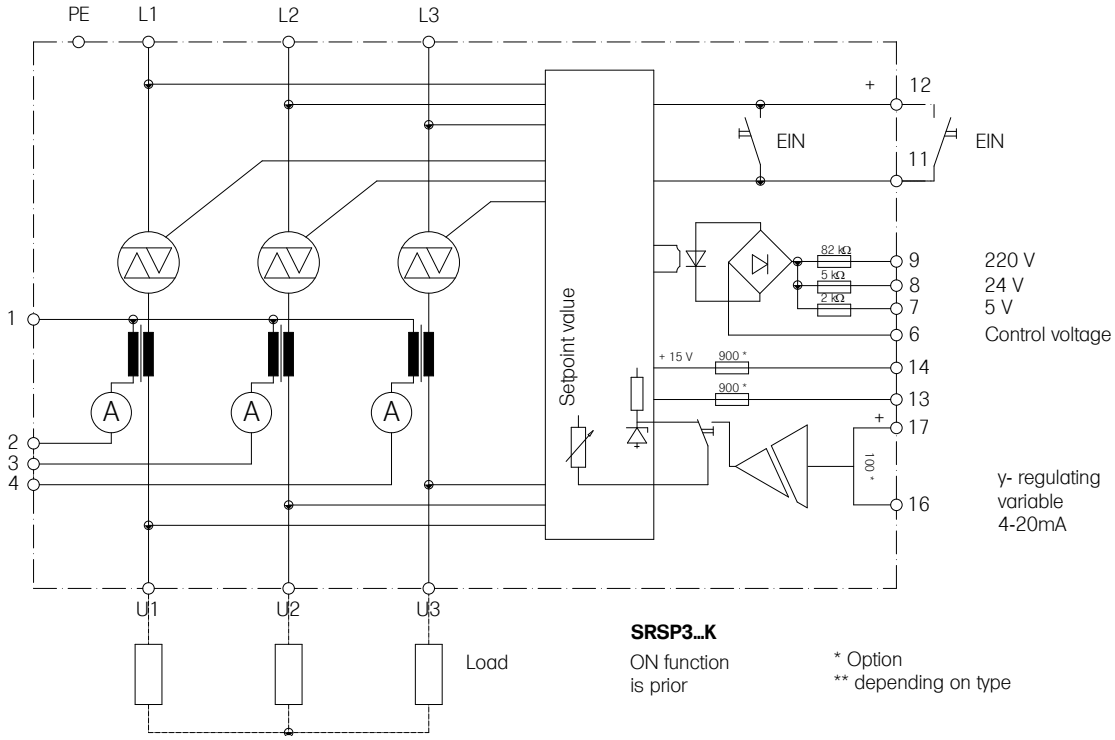
y- control variable:
If a y-regulating variable input is integrated in the device, a continuous operation in the setting "Adjuster" of the switch "Setpoint" is not admissible. The switch position must then be switched to y-regulating variable.

The voltage controller poti may not be adjusted anymore, as now 20 mA are similarly assigned to the maximum admissible operating current, so that on the part of the controller no release of the current limiter is possible.

Via the limiter an electronical deactivation of the y-signal occurs, so that the looping of the fault indicating relay into the temperature limiter release loop is not imperative and that this contact can be used as remote indication into the control-room.

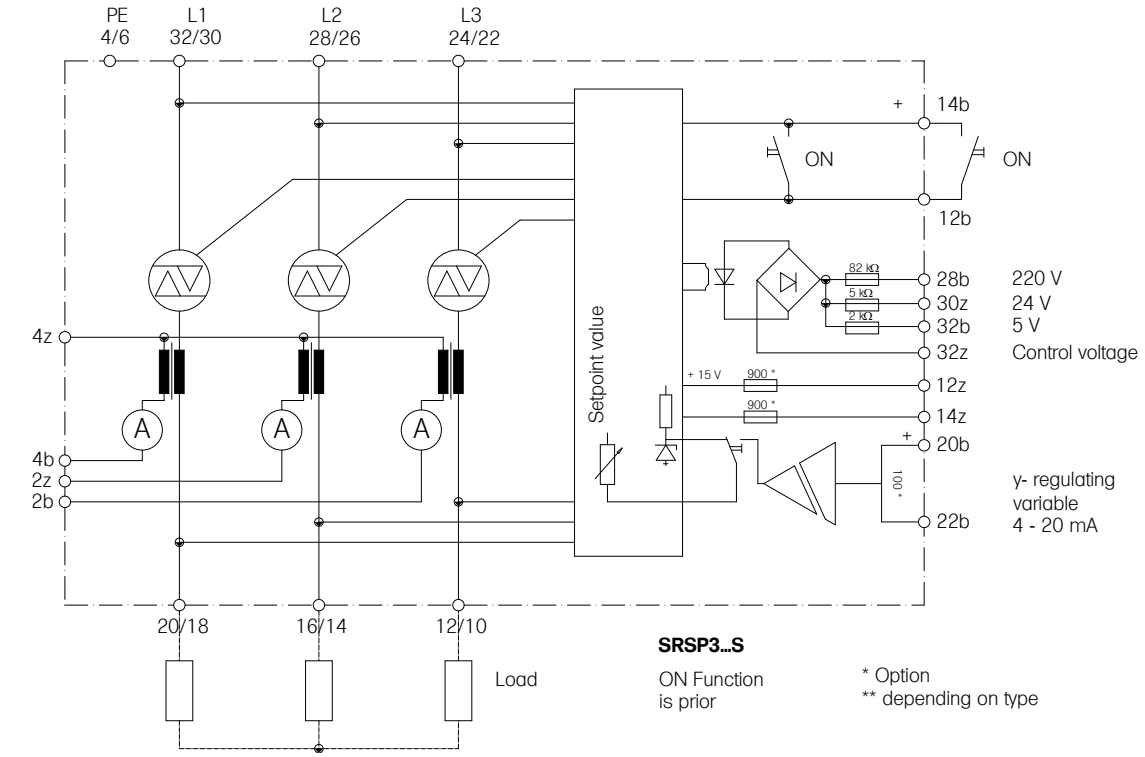
7.0 CONNECTION DIAGRAM SRSP3... K

Net 400 V~ Series fuse 15 A ** flink

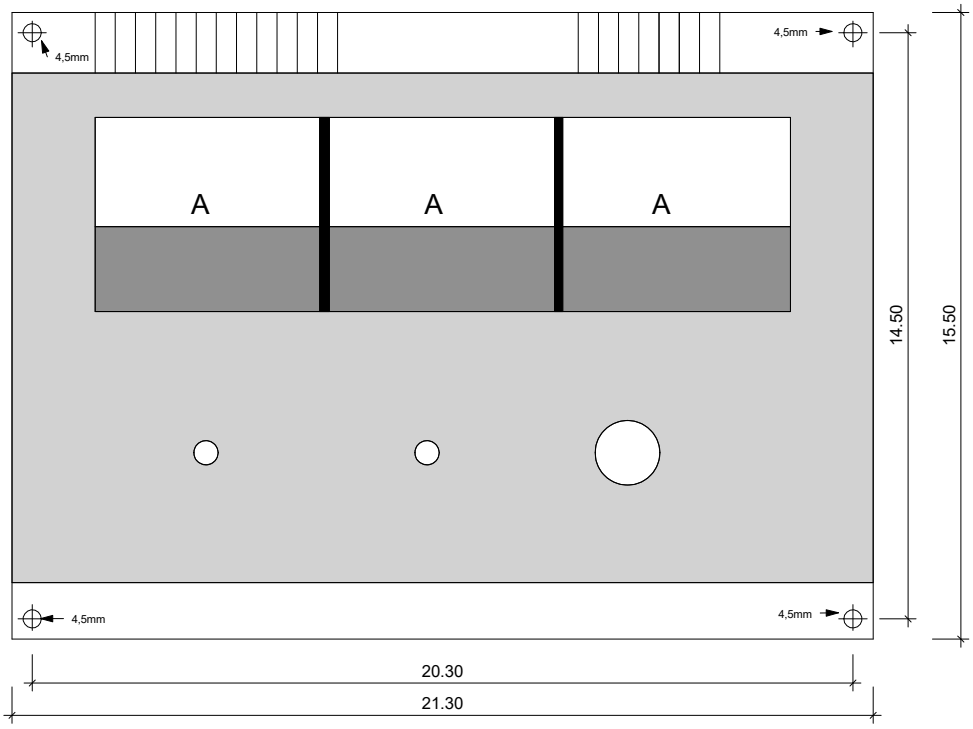


7.1 CONNECTION DIAGRAM SRSP3... S

Net 400 V~ Series fuse 15 A ** fast-acting



8.0 MOUNTING DIMENSIONS



Depth plug-in devices:

SRSP 3 with 50 A: 340 mm
SRSP 3 with 25 A: 270 mm

Depth compact devices: 340 mm

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web www.erich-ott.de