



Solid State Relay With integrated heat sink



For resistive, capacitive as inductive load

Zero switching

Rated operational current up to 50 A

Rated operational voltage up to 480 VAC

Indication of control input

Varistor integrated

Protective cover included

PROFILE

The demand on moduls applied as interfaces between open or closed loop controls and loads is growing steadily. This means, that in numerous applications, where contactors together with their protective components use to be installed, power semiconductor devices, so called SOLID STATE RELAYS (SSR) are used.

An SSR does not incorporate any moving parts, thus it has an increased life time compared to electromechanical devices. As long as it is not exposed to excessive thermal stress it will outlast a contactor multiple times.

High quality optocouplers ensure galvanical separation between control input and power output. The input current necessary to control the output is kept at a very low level and thus in nearly all cases logic compatible.

TECHNICAL DATA

INPUT

Rated current	10 A; 20 A	30 A; 50 A
Control voltage	5 ... 32 VDC	5 ... 24 VDC
Input current	14 mA	< 9 mA
Pick-up voltage	≤ 4,5 VDC	4 VDC
Drop-out voltage	≥ 1 VDC	3 VDC
Varistor rated voltage	50 V	-
Response time, pick-up	≤ ½ cycle	
Response time, drop-out	≤ ½ cycle	

- 1) Off-state at rated voltage and – frequency
- 2) repetitive, t = 1s
- 3) Non repetitive, t = 10 ms (short circuit)
- 4) see basics

OUTPUT

Type 9407-509-	32031	32131	32231	32431
Operational voltage VAC	42 ... 530			
Non rep. peak voltage	1200 V			
Varistor-voltage	510 V			
Operat. current ⁴⁾ AC 1	10 A	20 A	30 A	50 A
AC 3	3 A	5 A	6 A	12 A
Min. operational current	200 mA			
Overload current ²⁾ [A]	-	-	< 55	< 125
Surge current ³⁾ [As]	230	300	250	600
Pt for fusing 10ms [A²s]	≤ 265	≤ 450	≤ 310	≤ 1800
Critical du/dt	≥ 500 V/µs			
Leakage current ¹⁾	≤ 1 mA			

Load frequency: 45 up to 65 Hz
Power factor $\cos \varphi \geq 0,5$ at 480 VAC

THERMAL SPECIFICATIONS

Rated current	10 A; 20 A	30 A; 50 A
Operating temperature	- 20... + 70 °C	
Storage temperature	-40...+100 °C	-20...+70 °C

Humidity: 95 % r.H. not condensing

Rated current	10 A	20 A	30 A	50 A
AC1 @ Ta = 30°C [A]	10	20	30	50
AC1 @ Ta = 40°C [A]	10	20	25	50
AC1 @ Ta = 50°C [A]	10	16,5	23	50
AC1 @ Ta = 60°C [A]	10	12,5	20	35
AC3 @ Ta = 30°C [A]	3	5	6	12

ELECTRICAL SAFETY

Overvoltage categorie: III
Overvoltage protection: Optocoupler and Varistor
Isolation voltage: 4000 V

GENERAL

Electrical connections

Screws with self-lifting terminals
Control circuit: conductor from 0,5 mm² (AWG 20) up to 4 mm² (AWG 12)

Load circuit: conductor from 2 x 1 mm² (AWG 16) up to 2 x 6 mm² (AWG 6 resp. 10) max. 1 x 10 mm²

Mounting

DIN rail 35 mm to DIN EN 50022
Wallmounting (only 10 A, 20 A version)

Mode of protection: IP 20

Material of housing

10 A / 20 A version: PBT
30 A / 50 A version: Noryl GFK
Heat sink: Aluminium

Weight

10 A / 20 A version: 0,22 kg
30 A / 50 A version: 0,47 kg

APPROVALS

EN 50082-2
UL 508

ORDERING INFORMATION

Description SSR	Order number
480 V 10 A (thin)	9407-509-32031
480 V 20 A (thin)	9407-509-32131
480 V 30 A (wide)	9407-509-32231
480 V 50 A (wide 90 mm)	9407-509-32431

Fig. 1 dimensions, version 10 A / 20 A, mounting,

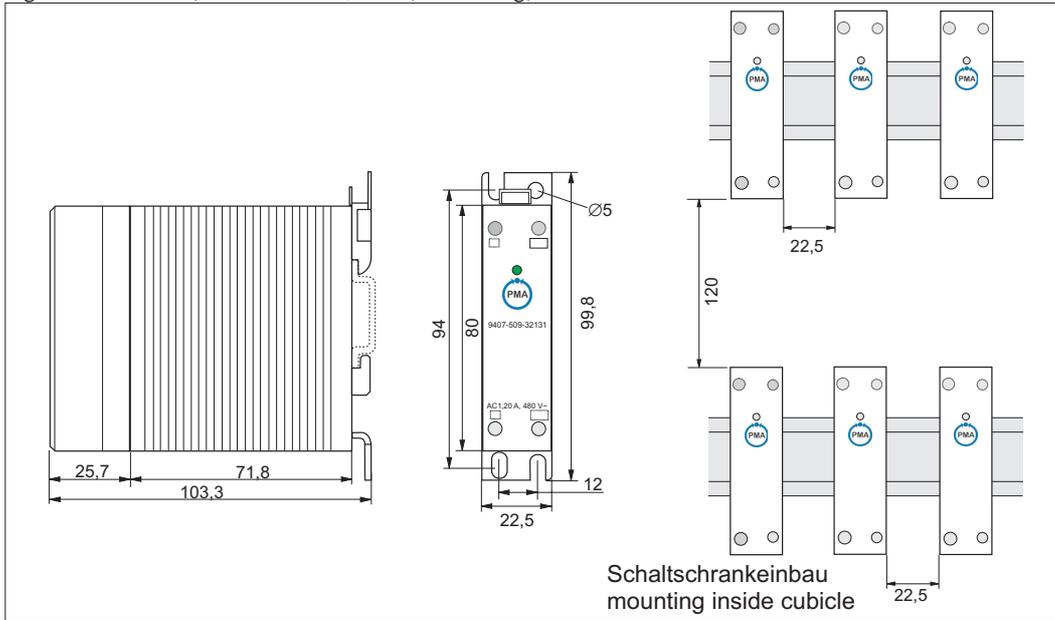


Fig. 2 dimensions 30 A / 50 A version, mounting see above

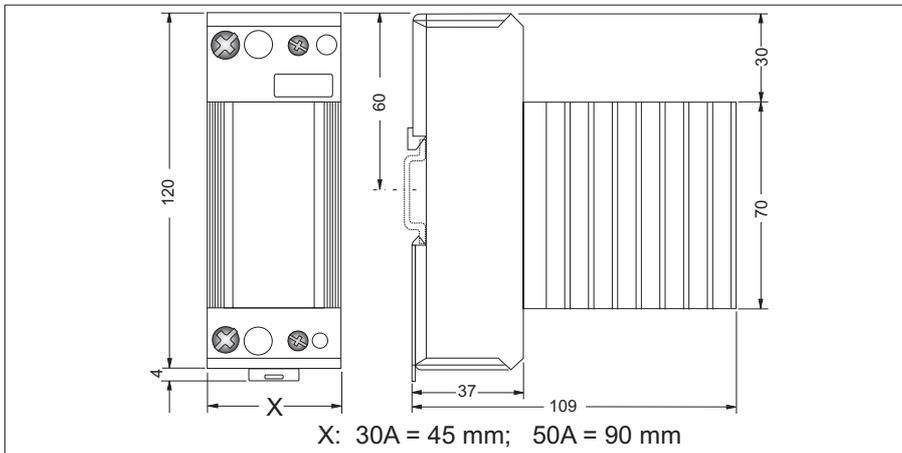
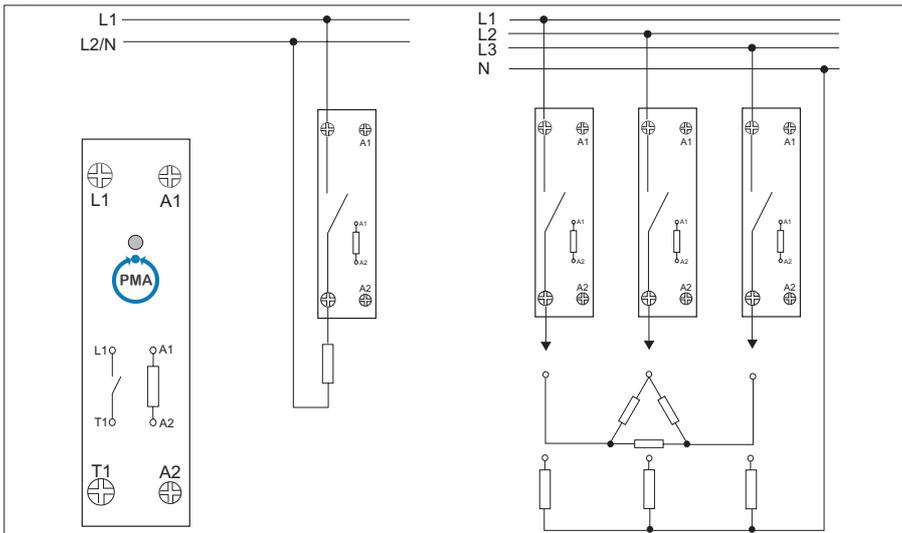


Fig. 3 applications



Deutschland

PMA Prozeß- und Maschinen- Automation GmbH
Miramstrasse 87, D-34123 Kassel

Your local distributor

Tel./Fax: (0561) 505 - 1307/1710
E-mail: mailbox@pma-online.de
Internet: <http://www.pma-online.de>