

RAM1A..G



1-pole, solid state relay with LED and built-in Varistor, VDE certified



Main features

- AC switching Solid State Relay
- Direct copper bonding (DCB) technology
- Back to Back thyristor output
- VDE certified for Glow wire test according to IEC/EN 60335-1
- 100,000 cycles UL endurance test*
- Integrated overvoltage protection
- LED for control presence indication
- Clip-on IP20 protection cover
- Self-lifting terminals
- 65 kA UL short circuit current rating

* selected models

Description

The industrial, 1-phase relay with antiparallel thyristor output is the most widely used industrial SSR due to its multiple application possibilities. The relay can be used for resistive, inductive and capacitive loads. The zero switching relay switches ON when the sinusoidal curve crosses zero and switches OFF when the current crosses zero. The built-in varistor secures transient protection. The LED indicates the status of the control input. The clipon cover secures touch protection (IP 20). Protected output terminals can handle cables up to 16 mm².

Specifications are at a surrounding temperature of 25°C unless otherwise specified.

Applications

Plastic injection machines, Extrusion machines, Blow moulding machines, Thermoformers, Dryers, Electrical ovens, Fryers, Shrink tunnels, Air handling units, Sterilisation equipment, Climatic chambers, Ovens and furnaces, Ambient heating.

Main functions

- 1-pole, zero cross switching
- Rated output voltage up to 660 VAC
- Rated output current up to 125 AAC
- 3(4)-32 VDC or 20-280 VAC/22-48 VDC control voltage range

Selection guide

Rated voltage, Blocking voltage, Switching mode	Control voltage	Maximum rated operational current				
		25 AAC (525 A ² s)	50 AAC (1800 A ² s)	51 AAC (3200 A ² s)	100 AAC (6600 A ² s)	125 AAC (18000 A ² s)
230 VAC, 650 Vp, ZC	3-32 VDC	RAM1A23D25G	RAM1A23D50G	-	-	-
	20-280 VAC, 24-48 VDC	RAM1A23A25G	RAM1A23A50G	-	-	-
600 VAC, 1200 Vp, ZC	4-32 VDC	RAM1A60D25G	RAM1A60D50G	RAM1A60D51G	RAM1A60D100G	RAM1A60D125G
	20-280 VAC, 24-48 VDC	RAM1A60A25G	RAM1A60A50G	RAM1A60A51G	RAM1A60A100G	RAM1A60A125G

Carlo Gavazzi compatible components

Description	Component code	Notes
FASTON terminals	RM48**/F4*	- Faston tabs (pack of 20) - Tab dimensions according to DIN 46342 part 1 - Pure tin-plated brass
Fork terminals	RM635FK/P	- Terminal adaptors for 35mm ² cable - Type RM635FK (P version with touch protection) - Pack size: 10 pieces
Thermal pads	KK071CUT	- Graphite thermal pad with adhesive on one side - Dimensions: 35 x 43 x 0.25mm - Packing quantity: 50pcs
Touch safety cover	RMIP20	- IP20 protection degree - Pack size: 20 pieces
Heatsinks	RHS	Heatsink and accessories
Mounting screws kit	SRWKITM5X10MM	- M5 x 10 mm with captivated washer - Pack size: 20 pieces

Carlo Gavazzi further reading

Information	Where to find it	Notes
Datasheet	https://gavazziautomation.com/images/PIM/DATASHEET/ENG/SSR_Accessories.pdf	Solid state relay Accessories (including Heatsinks)
	https://gavazziautomation.com/nsc/hq/en/solid_state_relays	Online Heatsink selector tool

Features

General data

Material	PA66 or PA6 (UL94 V0), RAL7035 Glow wire ignition temperature and Glow wire flammability index conform to EN 60335-1 requirements	
Mounting	Panel mount	
Touch Protection	IP20	
Baseplate	25 A, 50 A 100 A, 125 A	Aluminium Copper, nickel-plated
Overvoltage Category	III, 6 kV (1.2/50 μ s) rated impulse withstand voltage	
Isolation	Input and Output to case Input to Output	4000 Vrms 4000 Vrms
Weight	25 A, 50 A 100 A, 125 A	approx. 60g approx. 100g

Performance

Output specifications

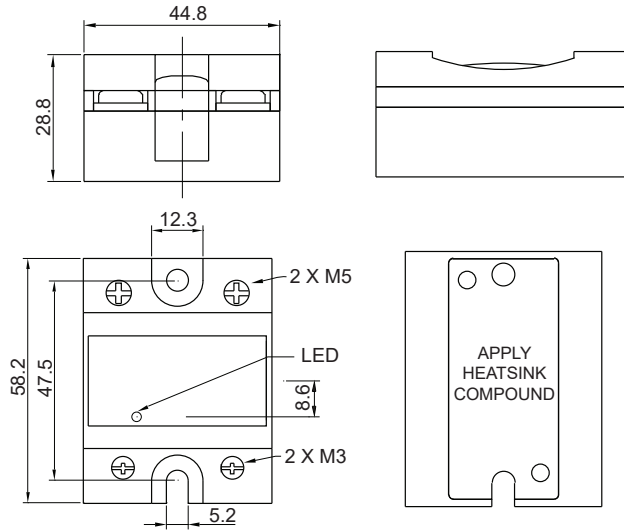
	RAM1A..25	RAM1A..50	RAM1A..51	RAM1A..100	RAM1A..125
Max. operational current¹: AC-51	25 AAC	50 AAC	50 AAC	100 AAC	125 AAC
Max. operational current¹: AC-53a	5 AAC	15 AAC	15 AAC	20 AAC	30 AAC
Operational frequency range	45 to 65 Hz				
Output protection	Integrated varistor				
Leakage current @ rated voltage	<3 mAAC				
Minimum operational current	150 mAAC	250 mAAC	400 mAAC	400 mAAC	500 mAAC
Repetitive overload current t=1 s	< 55 AAC	< 125 AAC	< 125 AAC	< 150 AAC	< 200AAC
Non-repetitive surge current (I_{TSM}), t=10 ms	325 Ap	600 Ap	800 Ap	1150 Ap	1900 Ap
I²t for fusing (t=10 ms), minimum	525 A ² s	1800 A ² s	3200 A ² s	6600 A ² s	18000 A ² s
Power factor	>0.5 at rated voltage				
Critical dV/dt (@T_j init = 40°C)	1000 V/ μ s				
Endurance testing acc. to UL 508²	100,000 cycles	100,000 cycles	6,000 cycles	100,000 cycles	6,000 cycles

1. Refer to Heatsink selection section
2. UL requirement for General Use Endurance Testing is 6,000 cycles

Output voltage specifications

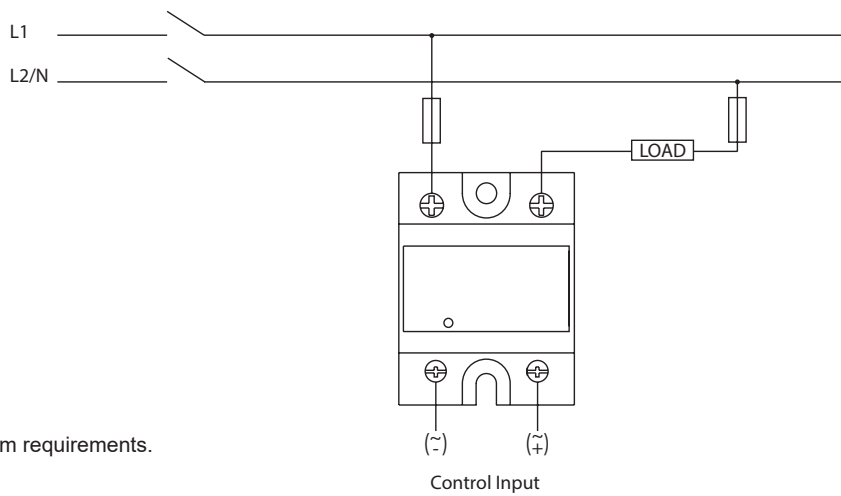
	RAM1A23..	RAM1A60..
Operational voltage range	24 to 265 VACrms	42 to 660 VACrms
Blocking voltage	650 Vp	1200 Vp

Dimensions



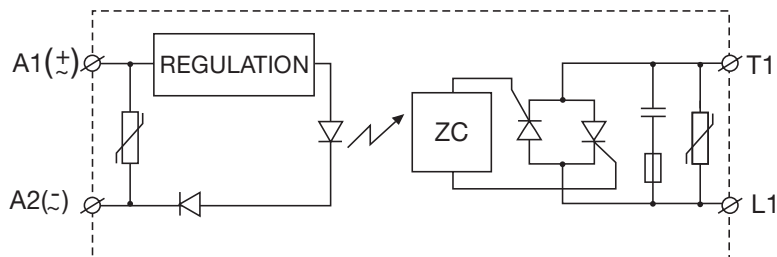
Dimensions in mm.
Tolerances ± 0.5 mm.

Connection diagram



* Depends on system requirements.

Functional diagram



* Varistor across input applies to AC control versions only.