

Solid State Relays Low Noise **SOLITRON** With Integrated Heatsink

CARLO GAVAZZI



- Single pole Solid State Contactor
- Zero switching for motor and heating application
- 1-, 2- and 3-phase application
- Rated operational current 25 A
- Rated operational voltage 230, 400 and 480 VAC
- Full CE conformance, no filters needed to comply with EN 50 081-1
- Transient overvoltage protection built-in
- LED-indication
- IP 20 protection
- DIN-rail mounting

Product Description

The **SOLITRON** Solid State Contactor is designed to switch both inductive and ohmic loads in light industrial environment, where low electromagnetic emission is essential. The EN 50 081-1 Generic Emission Standard is fulfilled with this relay.

The Solid State Contactor is capable of switching loads with up to 25 AAC per load. The Solid State Contactor is designed for DIN-rail mount-

ing with integrated heatsink and overvoltage protection. The heatsink is moved to the front for optimal convection cooling in the panel. Cable ducting system will not stop the airflow.

The contactor elements are soldered directly on to the Direct Copper Bonded substrate (DCB-Technology).

Build-in LED-status indication for applied control voltage.

Ordering Key

RN 1 L 40 M 25

Solid State Relay
Number of poles
Switching type
Rated operational voltage
Control voltage
Rated operational current

Type Selection

Rated operational voltage	Rated control voltage	Rated operational current 25 A Heatsink type RHN1
230 VAC	24 VAC	RN 1L23M25
400 VAC	24 VAC	RN 1L40M25
480 VAC	24 VAC	RN 1L48M25

General Specifications

	RN1L 23M25	RN1L 40M25	RN1L 48M25
Operational voltage range	100 - 265 VAC	100 - 440 VAC	100 - 530 VAC
Non-rep. peak voltage	800 V _p	1000 V _p	1200 V _p
Varistor voltage	275 VAC	420 VAC	510 VAC
Operational frequency range	45 to 65 Hz	45 to 65 Hz	45 to 65 Hz
Power factor at rated voltage	> 0.5	> 0.5	> 0.5
Approvals	UL, cUL, CSA	UL, cUL, CSA	UL, cUL, CSA
CE-marking*	Yes	Yes	Yes

Norms fulfilled HD 419.2S1 Low-voltage controlgear semiconductor contactors
 EN 50082-1 Generic Immunity Standard. Residential, Commercial & Light Industry Environment
 EN 50082-2 Generic Immunity Standard. Industrial Environment

* Emission only tested for AC mains according to EN 55022 Class B

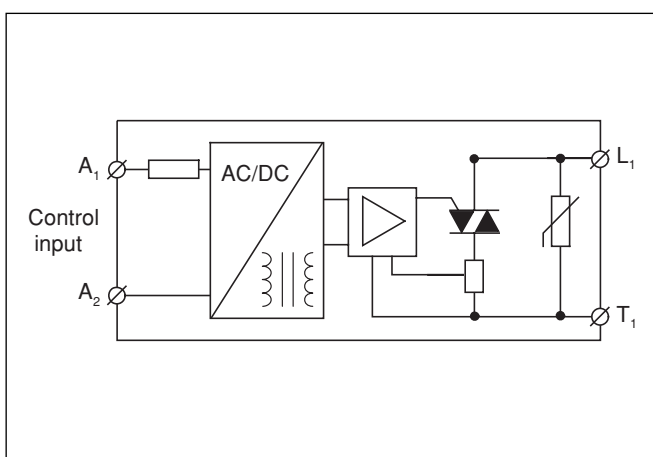
Input Specifications

Control voltage range	20 - 30 VAC (28 - 40 VDC)
Pick-up voltage	20 VAC
Drop-out voltage	5 VAC
Input current	< 26 mA avg
Response time	
Pick-up time max. (50 Hz)	30 ms
Drop-out time max. (50 Hz)	70 ms
LED ON-indication (green)	Yes
On state voltage drop	≤1.2 Vrms

Output Specifications

Rated operational current		
AC51	@Ta=30°C	24 A
	@Ta=40°C	20 A
	@Ta=50°C	16 A
	@Ta=60°C	14 A
AC53a	@Ta=40°C	4 A
Zero crossing detection	Yes	
Min. operational current	2 A	
Non-rep. surge current		
(Tj init.< 25°C) t= 10 ms		230 A _p
Off-state leakage current,		
@ rated voltage and frequency		
(Tj.=125°C, max.)		8 mA
I ² t for fusing t=1 to 10 ms		265 A ² s
Critical di/dt 50 Hz		10 A/μs
Critical dv/dt off-state		500 V/μs

Wiring Diagram



Thermal Specifications

Operational temperature	
I _L > 2 A	+10° to +60°C (+50° to +140°F)
Storage temperature	-40° to +100°C (-40° to +212°F)

Housing Specifications

Mounting	DIN-rail 35 mm
Weight with RHN1	470 g
Housing material	Noryl SEI, GFN1, Black
LED window material	PC Lexan 141R
Base plate	Aluminium, nickel plated
Potting compound	Polyurethane, Casco Nobel
Terminals	Screw with captive wire clamp
Control terminals nominal	4 mm ² or 2 x 2.5 mm ² AWG 12 or 2 x AWG 14
Min.	0.5 mm ² , AWG 20
Mounting torque max.	0.6 Nm
Power terminals nominal	10 mm ² or 2 x 6 mm ² AWG 6 or 2 x AWG 10
Min.	1 mm ² , AWG 16
Mounting torque max.	2.0 Nm
Heatsink compound used	Electrolube HTS

Insulation

Rated impulse withstand voltage	
Input to output	4000 V _{imp.}
Rated impulse withstand voltage	
Output to heatsink	4000 V _{imp.}

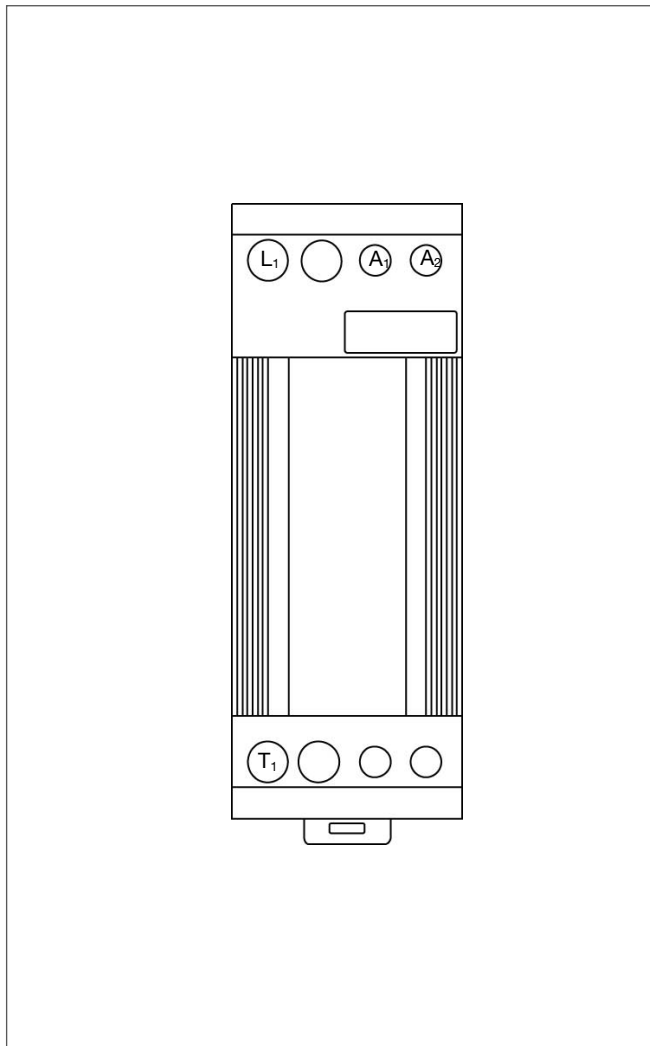
Environment Specifications

Humidity max.	95%, no condensation
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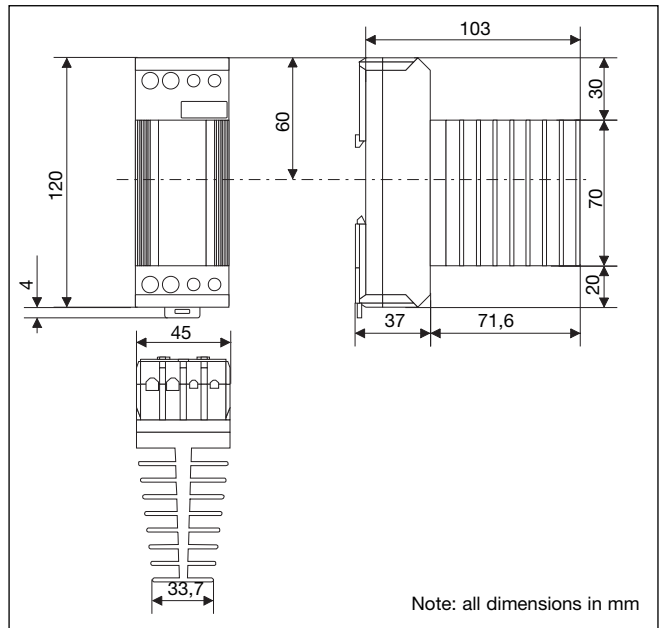
Dimensions

Dimension	(H x W x D) 120 x 45 x 110 mm
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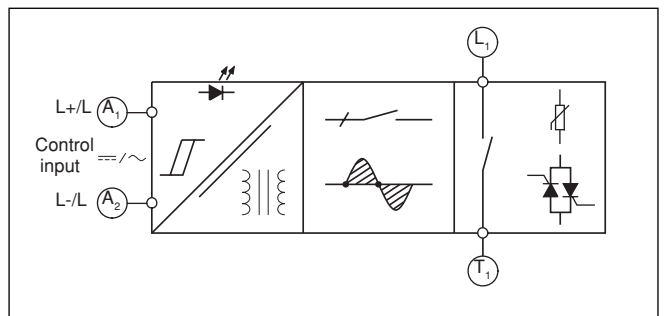
Terminal Layout



Dimensions



Functional Diagram



Applications

