eddicy A Schaltbau Brand

R300

1 and 2 pole AC and DC high-voltage relays for test benches

R300 – 1 and 2 pole high-voltage relays for test benches

The new, compact R300 high-voltage relay has been specially developed for use in modern test systems. It serves to ensure electrical safety during testing by isolating all non-active components during high-voltage and insulation tests. The robust and durable device is capable of safely switching currents of up to 25 amps during protective conductor testing. The open main contact system can withstand voltages of up to 10 kilovolts and can be easily integrated into various test environments. It offers a cost-effecient and safe solution for demanding test applications that require the highest safety standards.

Features

Modular configurable main contact system
Available in 1- and 2-pole versions for AC and DC applications. The contact system can be flexibly configured as a normally open or changeover contact to meet the specific requirements of the test system.

Permanently low power dissipation
The contact bridge with large contact tips ensures uniform contact and consistently low contact resistance.

Hassle-free load disconnection for continuous currents
The main contact system ensures reliable switching function for both positive and negative polarity, regardless of the direction of current flow. The bidirectional high-voltage relay thus enables hassle-free load disconnection for currents up to 25 amps, regardless of polarity.

Easy installation and high installation compatibility
Simple, screwless DIN rail mounting in accordance with industry standards. All connections for main contacts and coil drive with flat plug connections. No additional fastening components are required for installation.

Low energy consumption
PWM module for coil control with precise parameterization, low pull-in and holding power for reduced heat generation, and constant pull-in and switching behavior regardless of the ambient or coil temperature.

Maximum performance and protection
Due to its special design, the R300 has generously dimensioned clearances in the contact area despite its compact design. The open contact can withstand voltages of up to 10 kilovolts, which is significantly higher than the impulse withstand voltage required by standards.

Ordering code

R311-25-24I

Series
R300 High-voltage relay, industry version

Contact configuration
1 Main contacts NO
3 Main contacts NO + NC

Number of poles
1 1 pole
2 2 pole

Conv. thermal current
25 25 A

Coil tolerance
–15 ... +10 %, with PWM module **I**

Coil voltage
24 V DC **24**

Note: Only preferred types are shown in this flyer. Minimum order quantities apply for some variants. Please also ask for your customised version

Standards

IEC 60947-4-1
Low-voltage switchgear and controlgear – Part 4-1: Contactors and motor starters – Electromechanical contactors and motor starters

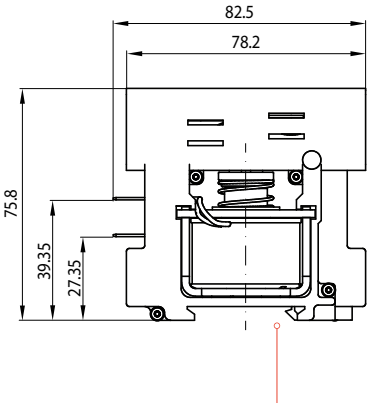
UL 60947-4-1
Low-Voltage Switchgear and Controlgear – Part 4-1: Contactors and Motor-Starters – Electromechanical Contactors and Motor-Starters.

Specifications

R300 series		1 pole	2 pole
Type of voltage		DC (bi-directional) / AC (f ≤ 60 Hz)	DC (bi-directional) / AC (f ≤ 60 Hz)
Main contacts, configuration		1x SPST-NO / 1x DPST NC+NO	2x SPST-NO / 2x DPST (NC+NO)
Switching voltage max. U		5,000 V	5,000 V
Main contacts	IEC/UL 60947-4-1		
Rated operational voltage U_e		1,000 V	1,000 V
Rated insulation voltage U_i		1,000 V @ PD3 or 1,500 V @ PD2	1,000 V @ PD3 or 1,500 V @ PD2
Rated impulse withstand voltage U_{imp}		10 kV	10 kV
Overvoltage category		OV3	OV3
Dielectric strength	Pole – Pole Pole – Coil	10 kV 12.8 kV	10 kV 12.8 kV
Conventional free air thermal current I_{th}	@ 40° C @ min. wire gauge	25 A * 4 mm²	25 A * 4 mm²
Rated operational current I_e		0.5 A @ 1,000 V	0.5 A @ 1,000 V
Rated short-time withstand current I_{cw}		450 A	450 A
Rated short-circuit making capacity I_{cm}	NO NC	900 A 25 A	900 A 25 A
Breaking capacity	@ U_e = 500 V / T = 1 ms, typical	10 A	10 A
Contact material		$AgSnO_2$	$AgSnO_2$
Terminals		Flat tabs 6.3 x 0.8 mm	Flat tabs 6.3 x 0.8 mm
Magnetic drive (monostable)			
Coil control supply voltage U_s		24 V	
Coil current consumption @ T_a = 20° C	Pull-in / holding	< 500 mA / < 50 mA	
Coil tolerance	IEC 60947-4-1	–15 ... +10 % U_s	
Coil suppression		PWM module	
Terminals	EN 61210	Flat tabs 4.8 x 0.8 mm	
Mounting position		vertical / horizontal	
Degree of protection	IEC 60529	IP00	
Mechanical endurance		> 5,000,000 operating cycles	
Shock / Vibration	IEC 61373	Category 1, Class B	
Environmental conditions			
Operating temperature / Storage temperature		-5° C ... +40° C / -40° C ... +85° C	
Altitude / Humidity (EN 50125-1)		< 2,000 m above sea level / < 75 % on an annual average	
Approvals		CE cULus UKCA	
Weight		approx. 0.27 kg	approx. 0.34 kg

* Higher continuous currents available on request

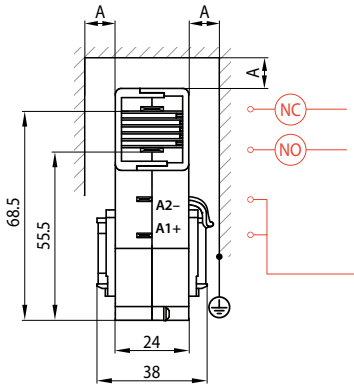
Dimension diagrams, circuit diagrams



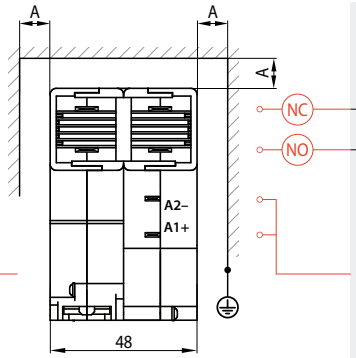
DIN rail mounting
Mounting on DIN rail NS 35/15
according to IEC 60715

Dimension "A"
Minimum distance 10 mm
For the R300 series there is a minimum distance of 10 mm to magnetically active, live or earthed parts.

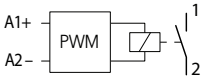
1 pole design with NO / NO + NC



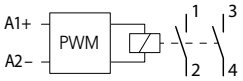
2 pole design with NO / NO + NC



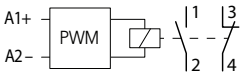
Circuit diagram 1 pole NO



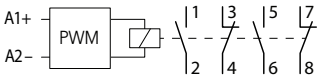
Circuit diagram 2 pole NO



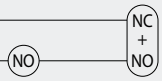
Circuit diagram 1 pole NO+NC



Circuit diagram 2 pole NO+NC



Main contact terminals
1 and 2 pole designs with:
NO **NO+NC**



All connections
flat tabs 6.3 x 0.8 mm

Coil terminals
Flat tabs 4.8 x 0.8 mm

Available variants
- R311-25-24I: 1 pole NO
- R331-25-24I: 1 pole NO+NC
- R312-25-24I: 2 pole NO
- R332-25-24I: 2 pole NO+NC

Coil voltage U_s: 24 V;
PWM module integrated

We enable electrification for a sustainable future

Schaltbau is a global technology leader specializing in contactors, connectors, switches, and electrical devices.

As pioneers of electrification, Schaltbau has been championing safety on rail for generations. Building on nearly a century of rail experience, with our brand Eddicy we also create future-oriented products and solutions with the highest standards of safety and reliability to switch, connect, control and protect DC applications in energy and e-mobility.

Headquartered in Germany, Schaltbau has a worldwide presence with 12 production and sales sites on all major continents.

Find out more on www.schaltbau.com.

SCHALTBAU
Schaltbau GmbH
contact@schaltbau.com
www.schaltbau.com

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