

RA 5-1 Interface Relays



RA 5-1

1SBC 101 005 F0014

Application

RA 5-1 interface relay is designed to receive 24 V d.c. signals delivered by PLC's or other sources **with a low output power** and to restore them with **sufficient power** to operate the coils of the relevant **A 9 ... A 110** contactors or the **N...** contactor relays.

Description

RA 5-1 interface relay is made up of a miniature electromechanical relay equipped with a N.O. contact and with a low consumption 24 V d.c. coil.

The interface relay coil is controlled by the PLC while the N.O. contact ensures switching of the power contactor.

Coil switching gives rise to overvoltages which have adverse effects on the electronic devices, insulators and, more generally, on component lifetime. The RA 5-1 is equipped with surge suppressors:

- on the 24 V d.c. relay coil via a diode,
- on the power contactor coil via a varistor.

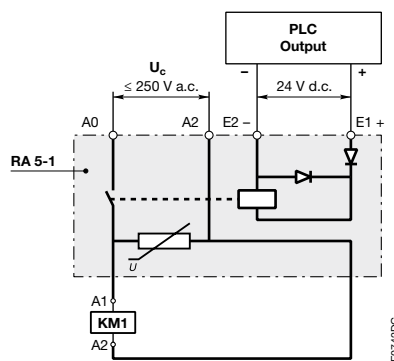
Furthermore, the RA 5-1 is protected against relay pole reversal by a diode inserted between the E1 and E2 input terminals.

Connection

The "E1+" and "E2-" input terminals must be connected, according to their polarity, to the PLC output.

The **RA 5-1** is equipped with two terminal pads for connection to the A1 and A2 terminals of the contactor coil. This coil is supplied between the A0 and A2 terminals of the RA 5-1.

RA 5-1 interface relay



Mounting

Terminal pads clamped inside the contactor coil terminals.

Ordering Details

For contactors	Coil voltages	Control voltage U_c	Type	Order code	Pack ^{ing} pieces	Weight kg 1 piece
A 9 ... A 110, N	24 ... 250 V / 50-60 Hz	24 V d.c.	RA 5-1	1SBN 060 300 R1000	1	0.050
			RA 5-1	1SBN 060 300 T1000	10	0.050

Notes: The interface relays provided for the A... contactors can be used for the UA, UA..RA and GA types.

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Technical Data

General technical data

Compliance with standards		IEC 60255-5
Rated insulation voltage U_i according to IEC 60947-4-1	V a.c.	250
Permissible ambient temperature:		
– for free air operation:		
– at $U_c = 24$ V d.c. (between E1 and E2)	°C	-25 ... +70
– from 0.85 to 1.1 U_c	°C	-25 ... +55
– for storage	°C	-40 ... +70
Climatic withstand		Complies with that of associated contactors
Operating altitude	m	≤ 3000
Mounting position		No limitation
Fixing		Using the contactor A1 and A2 terminal connecting parts
Connecting terminals (delivered in open position)		M3.5 (+, -) pozidriv 2 screws with cable clamp
Connecting capacity (min. ... max.)		
– rigid solid	2 x mm ²	1 ... 4
– flexible with cable end	2 x mm ²	0.75 ... 2.5
Tightening torque		
– recommended	Nm	1.00
– max.	Nm	1.20
Degree of protection according to IEC 60947-1 / EN 60947-1 and IEC 60529 / EN 60529		Protection against direct contact in acc. with EN 50274 RA5-1 wired and mounted on the associated contactor

Working data

Surge suppression:		
– for contactor coil		Varistor
– for interface relay coil		Diode
Protection against polarity reversal between terminals E1 and E2		Diode
Interface relay operating time	ms	Closing and drop-out ≤ 10
Total operating time, interface relay + contactor:		
– between energization and:		
N.O. contact closing	ms	20 ... 37
N.C. contact opening	ms	17 ... 32
– between de-energization and:		
N.O. contact opening	ms	17 ... 25
N.C. contact closing	ms	20 ... 28

Electrical input data

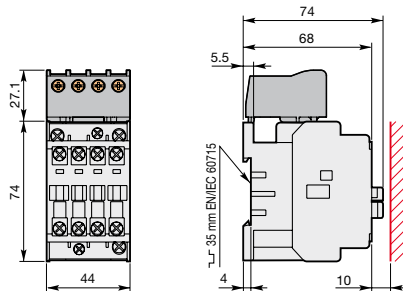
Control voltage (E1 and E2 terminals) U_c		
– rated value	V d.c.	24
– max. range at ambient temperature 20 °C	V d.c.	19 ... 30
Max. consumption for $U_c = 24$ V d.c., $\theta = 20$ °C	W	0.3
"0" status (relay open) for U_c	V d.c.	≤ 2.4
or I_c	mA	< 1
"1" status (relay closed) for U_c	V d.c.	≥ 19
Max. short supply interruption immunity time	ms	2

Electrical output data

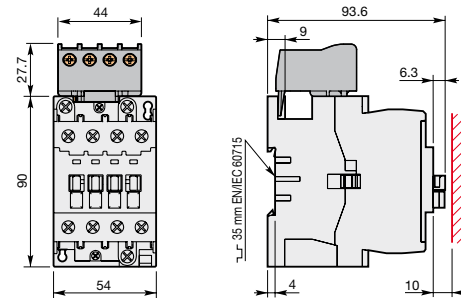
Switching voltage (A0 and A2 terminals)	V a.c.	≤ 250
Electrical durability million of operating cycles		2 (600 cycles/h) on A 9 ... A 75 contactors or N... contactor relay 0.5 (600 cycles/h) on A 95 and A 110 contactors

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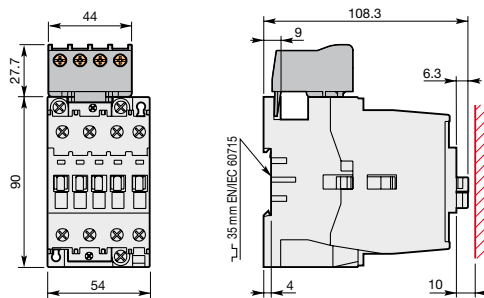
Dimensions



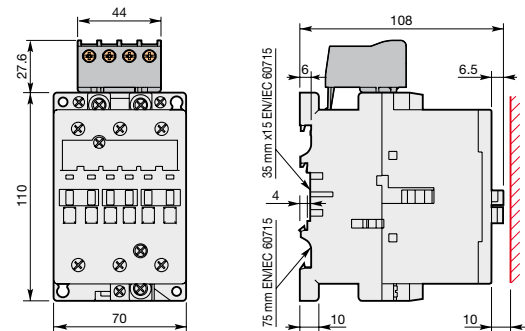
**3-pole A 9, A 12 and A 16 contactors,
4-pole A9 and A16 contactors, N... contactor relays
+ RA 5-1 interface relay**



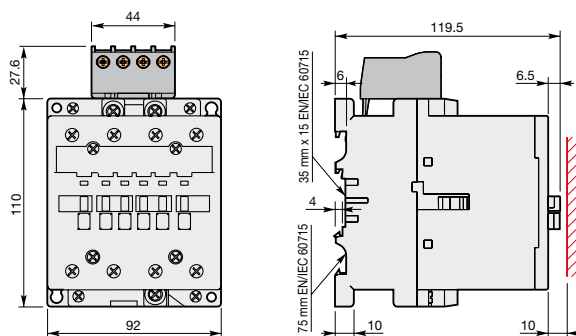
**3-pole and 4-pole A 26 contactors
+ RA 5-1 interface relay**



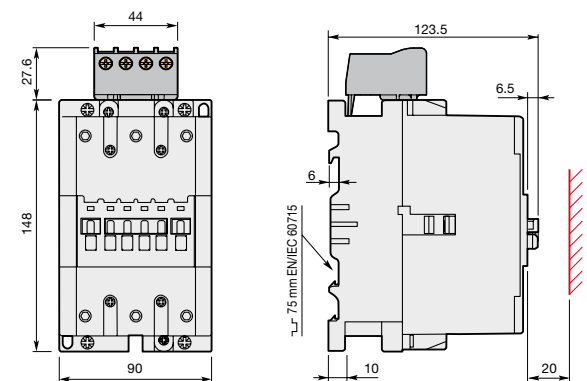
**3-pole A 30 and A 40 contactors
+ RA 5-1 interface relay**



**3-pole A 50, A 63 and A 75 contactors
+ RA 5-1 interface relay**



**4-pole A 45, A 50 and A 75 contactors
+ RA 5-1 interface relay**



**3-pole A 95 and A 110 contactors
+ RA 5-1 interface relay**