

- Plug-in version
- AC or DC coils
- Lockable test button and mechanical flag indicator as standard on 2 CO (DPDT) relay type
- Sockets and accessories: see 96 and 99 series

### 56.32

### 56.32-0300

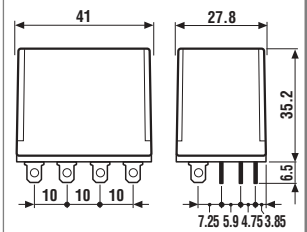
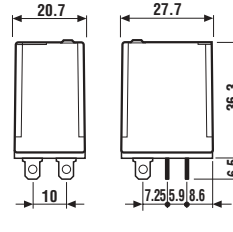
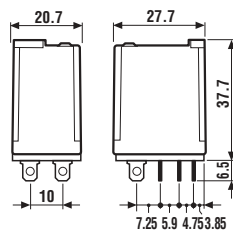
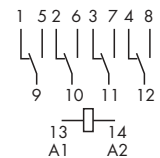
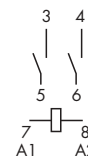
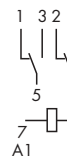
### 56.34



- 2 pole  
- Plug-in for use with 96 series sockets (Faston 187, 4.8x0.5 mm)

- 2 NO (DPST-NO), 1.5 mm gap  
- Plug-in for use with 96 series sockets (Faston 187, 4.8x0.5 mm)

- 4 pole  
- Plug-in for use with 96 series sockets (Faston 187, 4.8x0.5 mm)



\* For 400 V applications, where requirements for pollution degree 2 are met.

\*\*For 4 CO (4PDT) only

Contact specifications		56.32	56.32-0300	56.34
Contact configuration		2 CO (DPDT)	2 NO (DPST-NO) - 1.5 mm	4 CO (4PDT)
Rated current/Maximum peak current	A	12/20	12/20	12/20
Rated voltage/Maximum switching voltage	V AC	250/400*	250/400*	250/400*
Rated load in AC1	VA	3,000	3,000	3,000
Rated load in AC15 (230 V AC)	VA	500	500	500
Single phase motor rating (230 V AC)	kW	0.55	0.55	0.55
Breaking capacity in DC1: 30/110/220 V	A	12/0.25/0.12	12/0.6/0.3	12/0.25/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi	AgNi
Coil specifications				
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240 - 400**		
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220		
Rated power AC/DC	VA (50 Hz)/W	1.5/1	1.5/1	2/1.3
Operating range	AC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>
Must drop-out voltage	AC/DC	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>
Technical data				
Mechanical life AC/DC	cycles	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	200 · 10 <sup>3</sup>	200 · 10 <sup>3</sup>	150 · 10 <sup>3</sup>
Operate/release time	ms	8/8	8/8	8/8
Insulation according to EN 61810-1 ed. 2		4 kV/3	4 kV/3	4 kV/3
Insulation between coil and contacts (1.2/50 μs)	kV	4	4	4
Dielectric strength between open contacts	V AC	1,000	2,000	1,000
Ambient temperature range	°C	-40...+70	-40...+70	-40...+70
Environmental protection		RT I	RT I	RT I

Approvals (according to type):



- P.C.B. version  
- AC or DC coils

56

56.42

56.42-0300

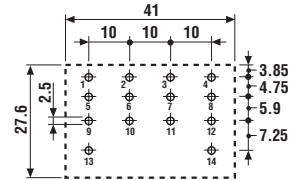
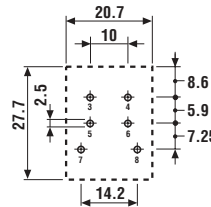
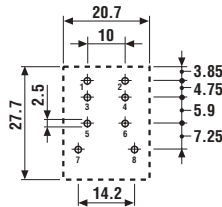
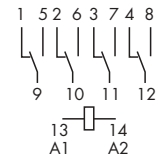
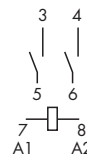
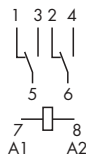
56.44



- 2 pole  
- P.C.B. mounting

- 2 NO (DPST-NO),  
1.5 mm gap  
- P.C.B. mounting

- 4 pole  
- P.C.B. mounting



Copper side view  
h = 37.7 mm

Copper side view  
h = 36.3 mm

Copper side view  
h = 35.2 mm

\* For 400 V applications, requirements for pollution degree 2 are met.

\*\*For 4 CO (4PDT) only

		56.42	56.42-0300	56.44
<b>Contact specifications</b>				
Contact configuration		2 CO (DPDT)	2 NO (DPST-NO) 1.5 mm	4 CO (4PDT)
Rated current/Maximum peak current	A	12/20	12/20	12/20
Rated voltage/Maximum switching voltage V AC		250/400*	250/400*	250/400*
Rated load in AC1	VA	3,000	3,000	3,000
Rated load in AC15 (230 V AC)	VA	500	500	500
Single phase motor rating (230 V AC)	kW	0.55	0.55	0.55
Breaking capacity in DC1: 30/110/220 V	A	12/0.25/0.12	12/0.6/0.3	12/0.25/0.12
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi	AgNi
<b>Coil specifications</b>				
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240 - 400**		
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220		
Rated power AC/DC	VA (50 Hz)/W	1.5/1	1.5/1	2/1.3
Operating range	AC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>
Must drop-out voltage	AC/DC	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>
<b>Technical data</b>				
Mechanical life AC/DC	cycles	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>	20 · 10 <sup>6</sup> /50 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	200 · 10 <sup>3</sup>	200 · 10 <sup>3</sup>	150 · 10 <sup>3</sup>
Operate/release time	ms	8/8	8/8	8/8
Insulation according to EN 61810-1 ed. 2		4 kV/3	4 kV/3	4 kV/3
Insulation between coil and contacts (1.2/50 μs)	kV	4	4	4
Dielectric strength between open contacts	V AC	1,000	2,000	1,000
Ambient temperature range	°C	-40...+70	-40...+70	-40...+70
Environmental protection		RT I	RT I	RT I

Approvals (according to type):



## ORDERING INFORMATION

Example: a 56 series plug-in relay with 2 CO (DPDT) contacts, coil rated 12 V DC with a lockable test button and mechanical indicator.

	<b>5 6 . 3 2 . 9 . 0 1 2 . 0 0 4 0</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>Series</b>		<b>A: Contact material</b>			<b>D: Special versions</b>
<b>Type</b>		0 = Standard AgNi			0 = Standard
3 = Plug-in		2 = AgCdO			5 = Top flange mount (56.34 only)
4 = P.C.B.		4 = AgSnO <sub>2</sub>			6 = Rear flange mount
<b>No. of poles</b>		<b>B: Contact circuit</b>			7 = Top 35 mm rail mount (56.34 only)
2 = 2 pole, 12 A		0 = CO (nPDT)			8 = Rear 35 mm rail mount (56.34 only)
4 = 4 pole, 12 A		3 = NO (nPST), 1.5 mm gap			<b>C: Options</b>
<b>Coil version</b>					0 = None
8 = AC (50/60 Hz)					1 = Test button
9 = DC					2 = Mechanical indicator
<b>Coil voltage</b>					3 = LED (AC only)
see coil specifications					4 = Lockable test button + mechanical indicator
					5 = Lockable test button + LED (AC only)
					54 = Lockable test button + LED (AC only) + mechanical indicator
					6 = Double LED (DC not polarized)
					7 = Lockable test button + double LED (DC not polarized)
					74 = Lockable test button + double LED (DC not polarized) + mechanical indicator
					8 = LED + diode (polarity positive to pin 7, DC)
					9 = Lockable test button + LED + diode (polarity positive to pin 7, DC)
					94 = Lockable test button + LED + diode + mechanical indicator (polarity positive to pin 7, DC)

Only combinations in the same row are possible

Preferred versions

	coil version	A	B	C	D
56.32	AC/DC	0	0	4	0
56.34	AC/DC	0	0	0	0
56.42	AC/DC	0	0	0	0
56.44	AC/DC	0	0	0	0

All versions

	coil version	A	B	C	D
56.32	AC	0 - 2 - 4	0	0 - 2 - 3 - 4 - 5	0 - 6
	AC	0 - 2 - 4	0	54	/
	AC	0 - 2 - 4	3	0 - 3 - 5	0 - 6
	DC	0 - 2 - 4	0	0 - 2 - 4 - 8 - 9	0 - 6
	DC	0 - 2 - 4	0	94	/
	DC	0 - 2 - 4	3	0	0
56.34	AC/DC	0 - 2 - 4	0	0 - 1	0 - 5 - 6 - 7 - 8
56.42	AC/DC	0 - 2 - 4	0 - 3	0	0
56.44	AC/DC	0 - 2 - 4	0	0	0

## POSSIBLE OPTIONS

AC

Option = 0030  
0050

DC - Non polarized

Option = 0060  
0070  
0074

DC - Standard polarity

Option = 0080  
0090  
0094

Option = 0006  
REAR FLANGE MOUNT



### LOCKABLE TEST BUTTON AND MECHANICAL FLAG INDICATOR (0040)

The dual-purpose Finder test button can be used in two ways:

Case 1) The plastic pip (located directly above the test button) remains intact. In this case, when the test button is pushed, the contacts operate. When the test button is released the contacts return to their former state.

Case 2) The plastic pip is broken-off (using an appropriate cutting tool). In this case, (in addition to the above function), when the test button is pushed and rotated, the contacts are latched in the operating state, and remain so until the test button is rotated back to its former position.

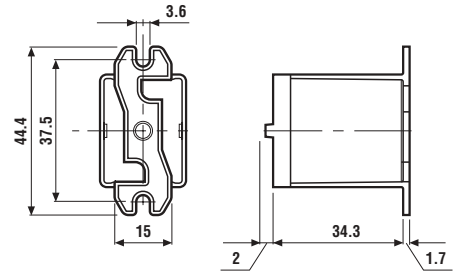
In both cases ensure that the test button actuation is swift and decisive.

## ACCESSORIES



Adaptor with top mount flange for 56.32.x.xxx.xx00

056.05



## TECHNICAL DATA

### INSULATION

Insulation according to EN 61810-1 ed. 2	insulation rated voltage	V	250
	rated impulse withstand voltage	kV	4
	pollution degree		3
	overvoltage category		III
Dielectric strength between adjacent contacts	V AC		2,500

### CONDUCTED DISTURBANCE IMMUNITY

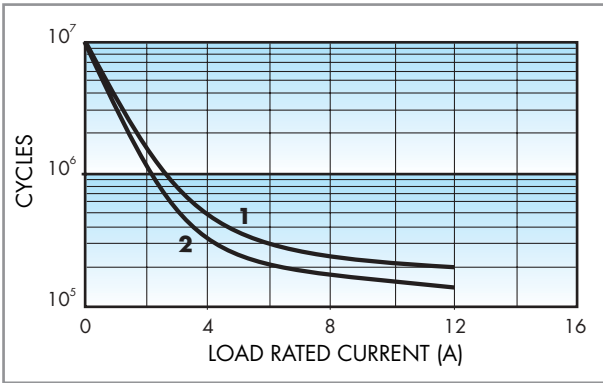
Burst (5...50)ns, 5 kHz, on A1 - A2	EN 61000-4-4	level 4 (4 kV)
Surge (1.2/50 μs) on A1 - A2 (differential mode)	EN 61000-4-5	level 4 (4 kV)

### OTHER DATA

Bounce time: NO/NC	ms	3/— (for NO or nPST-NO)	1/3 (for CO or nPDT)
Vibration resistance (10...55)Hz, max. ± 1 mm: NO/NC	g/g	8/8	
Power lost to the environment		<b>2 CO (DPDT) / 2 NO (DPST-NO)</b>	<b>4 CO (4PDT)</b>
	without contact current	W	1
	with rated current	W	3.8
Recommended distance between relays mounted on P.C.B.s	mm	≥ 5	

## CONTACT SPECIFICATIONS

### F 56

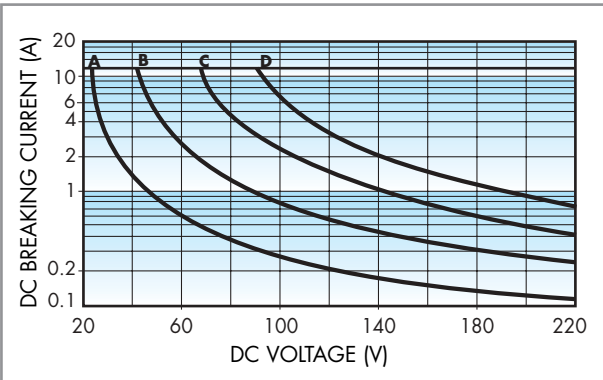


Electrical life vs AC1 load.

1 - Types 56.32/42

2 - Types 56.34/44

### H 56 (CO/nPDT)



Breaking capacity for DC1 load.

A - Load applied to 1 contact

B - Load applied to 2 contacts in series

C - Load applied to 3 contacts in series

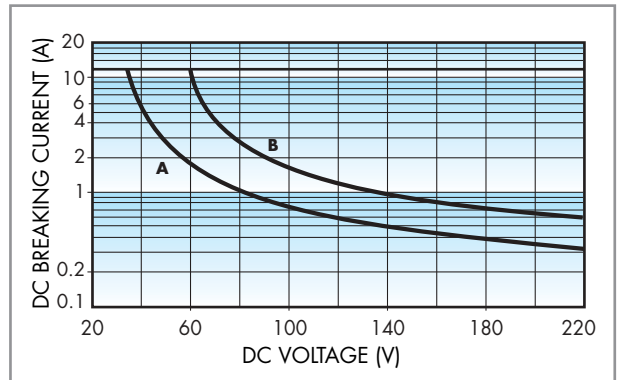
D - Load applied to 4 contacts in series

- When switching a resistive load (DC1) having voltage and current values under the curve the expected electrical life is  $\geq 100 \cdot 10^3$  cycles.

- In case of DC13 loads the connection of a diode in parallel with the load will permit the same electrical life as for a DC1 load.

**Note:** the release time of load will be increase.

### H 56 (NO/nPST-NO)



Breaking capacity for DC1 load.

A - Load applied to 1 contact

B - Load applied to 2 contacts in series

- When switching a resistive load (DC1) having voltage and current values under the curve the expected electrical life is  $\geq 100 \cdot 10^3$  cycles.

- In case of DC13 loads the connection of a diode in parallel with the load will permit the same electrical life as for a DC1 load.

**Note:** the release time of load will be increase.

## COIL SPECIFICATIONS

DC VERSION DATA (2 CO/DPDT, 2 NO/DPST-NO)

Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ mA
		$U_{min}$ V	$U_{max}$ V		
6	9.006	5.1	6.6	40	150
12	9.012	10.2	13.2	140	86
24	9.024	20.4	26.4	600	40
48	9.048	40.8	52.8	2,400	20
60	9.060	51	66	4,000	15
110	9.110	93.5	121	12,500	8.8
125	9.125	100	137.5	17,300	7.2
220	9.220	176	242	54,000	4

AC VERSION DATA (2 CO/DPDT, 2 NO/DPST-NO)

Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ (50Hz) mA
		$U_{min}$ V	$U_{max}$ V		
6	8.006	4.8	6.6	12	200
12	8.012	9.6	13.2	50	97
24	8.024	19.2	26.4	190	53
48	8.048	38.4	52.8	770	25
60	8.060	48	66	1,200	21
110	8.110	88	121	3,940	12.5
120	8.120	96	132	4,700	12
230	8.230	184	253	17,000	6
240	8.240	192	264	19,100	5.3

56

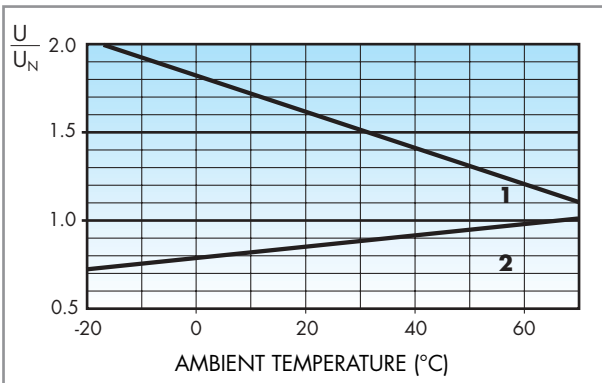
DC VERSION DATA (4 CO/4PDT)

Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ mA
		$U_{min}$ V	$U_{max}$ V		
6	9.006	5.1	6.6	32.5	185
12	9.012	10.2	13.2	123	97
24	9.024	20.4	26.4	490	49
48	9.048	40.8	52.8	1,800	27
60	9.060	51	66	3,000	20
110	9.110	93.5	121	10,400	10.5
125	9.125	100	137.5	14,200	8.8
220	9.220	176	242	44,000	5

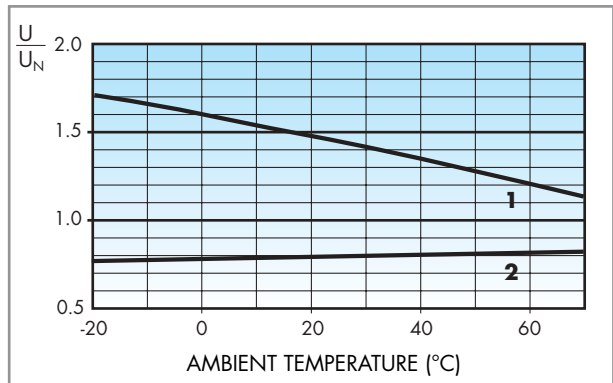
AC VERSION DATA (4 CO/4PDT)

Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ (50Hz) mA
		$U_{min}$ V	$U_{max}$ V		
6	8.006	4.8	6.6	5.7	300
12	8.012	9.6	13.2	22	150
24	8.024	19.2	26.4	81	90
48	8.048	38.4	52.8	380	37
60	8.060	48	66	600	30
110	8.110	88	121	1,900	16.5
120	8.120	96	132	2,560	13.4
230	8.230	184	253	7,700	9
240	8.240	192	264	10,000	7.5
400	8.400	320	440	26,000	4.9

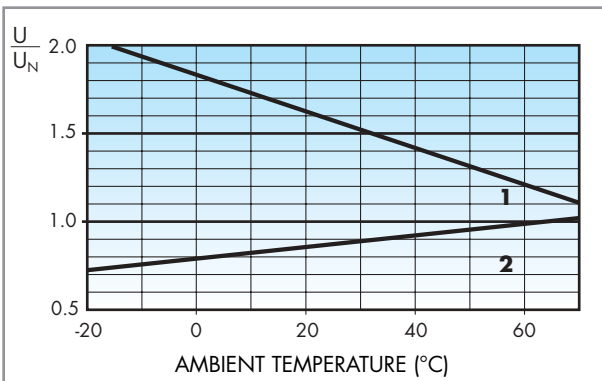
R 56 DC (2 CO/DPDT, 2 NO/DPST-NO)



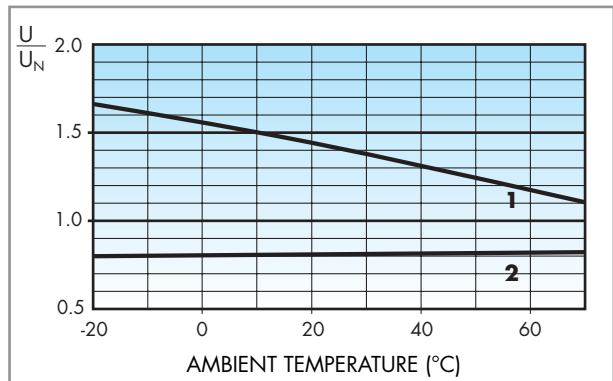
R 56 AC (2 CO/DPDT, 2 NO/DPST-NO)



R 56 DC (4 CO/4PDT)



R 56 AC (4 CO/4PDT)



Operating range (DC type) vs ambient temperature.

- 1 - Max coil voltage permitted.
- 2 - Min pick-up voltage with coil at ambient temperature.

Operating range (AC type) vs ambient temperature.

- 1 - Max coil voltage permitted.
- 2 - Min pick-up voltage with coil at ambient temperature.



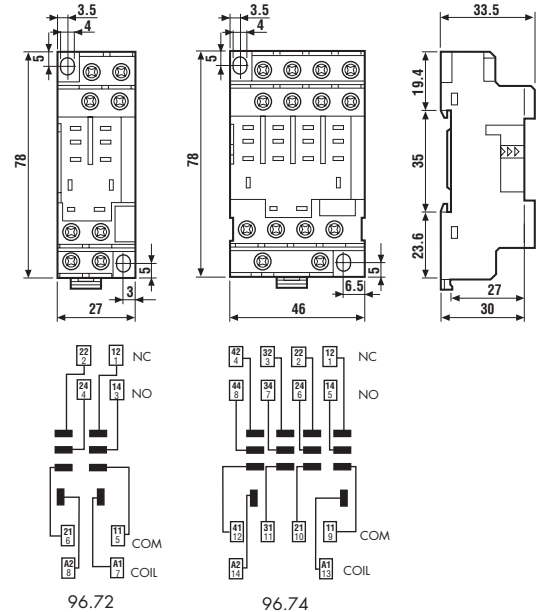
Relay type	56.32		56.34	
Colour	BLUE	BLACK	BLUE	BLACK
Screw terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71/096.71 supplied with socket packaging code SMA	96.72	96.72.0	96.74	96.74.0
Metal retaining clip	094.71		096.71	
Modules (see table below)	99.01			

Approvals  
(according to type):



- Rated values: 12 A - 250 V
- Dielectric strength:  $\geq 2$  kV AC
- Protection category: IP 20
- Ambient temperature: (-40...+70)°C
- Screw torque: 0.8 Nm
- Wire strip length: 10 mm
- Max wire size:

	solid wire	stranded wire
mm <sup>2</sup>	1x4 / 2x4	1x4 / 2x2.5
AWG	1x12 / 2x12	1x12 / 2x14



### FOR 96.72 AND 96.74 SOCKETS:



Approvals  
(according to type):  
GOST

\* Modules in Black housing are available on request.

\*\*For DC supply, apply the positive to terminal A1.

Green LED is standard. Red LED available on request.

99.01 coil indication and EMC suppression modules (see technical data page 209)		BLUE*
Diode** (+A1, standard polarity)	(6...220)V DC	99.01.3.000.00
Diode (+A2, non standard polarity)	(6...220)V DC	99.01.2.000.00
LED	(6...24)V DC/AC	99.01.0.024.59
LED	(28...60)V DC/AC	99.01.0.060.59
LED	(110...240)V DC/AC	99.01.0.230.59
LED + Diode** (+A1, standard polarity)	(6...24)V DC	99.01.9.024.99
LED + Diode** (+A1, standard polarity)	(28...60)V DC	99.01.9.060.99
LED + Diode** (+A1, standard polarity)	(110...220)V DC	99.01.9.220.99
LED + Diode (+A2, non standard polarity)	(6...24)V DC	99.01.9.024.79
LED + Diode (+A2, non standard polarity)	(28...60)V DC	99.01.9.060.79
LED + Diode (+A2, non standard polarity)	(110...220)V DC	99.01.9.220.79
LED + Varistor	(6...24)V DC/AC	99.01.0.024.98
LED + Varistor	(28...60)V DC/AC	99.01.0.060.98
LED + Varistor	(110...240)V DC/AC	99.01.0.230.98
RC circuit	(6...24)V DC/AC	99.01.0.024.09
RC circuit	(28...60)V DC/AC	99.01.0.060.09
RC circuit	(110...240)V DC/AC	99.01.0.230.09
Residual current by-pass (62 k $\Omega$ /1W)	(110...240)V AC	99.01.8.230.07

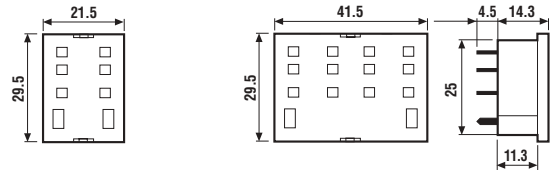


Relay type	56.32		56.34	
Colour	BLUE	BLACK	BLUE	BLACK
<b>P.C.B. socket</b>	96.12	96.12.0	96.14	96.14.0
retaining clip 094.51 supplied with socket packaging code SMA				
Metal retaining clip	094.51			

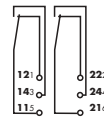
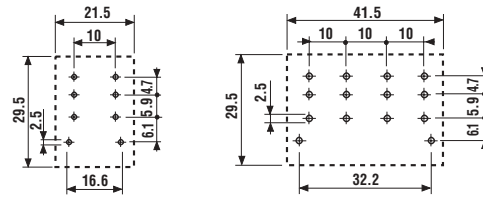
Approvals  
(according to type):



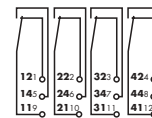
- Rated values: 15 A - 250 V (10 A max for each contact circuit)
- Dielectric strength:  $\geq 2$  kV AC
- Ambient temperature: (-40...+70)°C



Copper side view



96.12

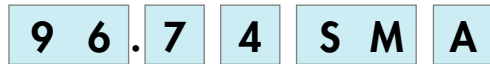


96.14

## PACKAGING CODES

How to code and identify retaining clip and packaging options for sockets.

Code options according to the last three letters:



**A** Standard packaging

**SM** Metal retaining clip



Without retaining clip