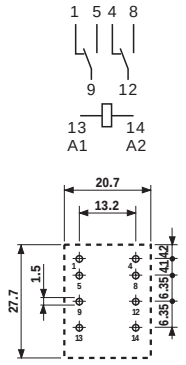
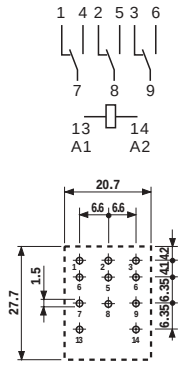
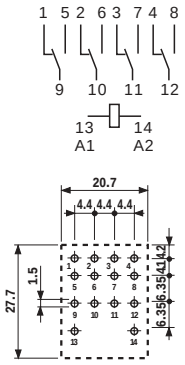
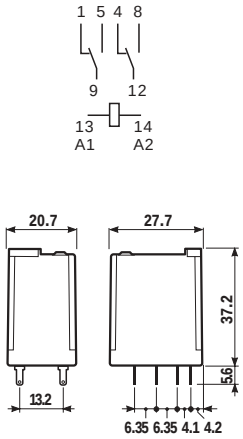
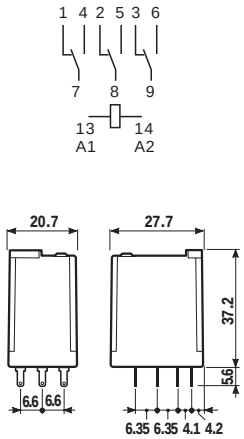
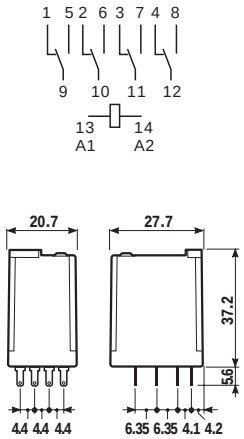
55 Series - Miniature General Purpose Relays 5 -10 A

- *Plug-in or P.C.B. versions*
- *AC or DC coils*
- *Lockable test button and mechanical flag indicator as standard on 2 and 4 CO relays types*
- *Sockets and accessories: see 94, 99 and 86 series*
- *RT III (wash tight) version available*

	55.12	55.13	55.14
	- 2 pole - P.C.B. mounting	- 3 pole - P.C.B. mounting	- 4 pole - P.C.B. mounting
			
	Copper side view h = 35.8 mm	Copper side view h = 35.8 mm	Copper side view h = 35.8 mm
Contact specifications			
Contact configuration	2 CO	3 CO	4 CO
Rated current / Maximum peak current A	10 / 20	10 / 20	5 / 10
Rated voltage / Maximum switching voltage V AC	250 / 400	250 / 400	250 / 250
Rated load in AC1 VA	2,500	2,500	1,250
Rated load in AC15 (230 VAC) VA	500	500	250
Single phase motor rating (230 VAC) kW	0.37	0.37	0.125
Breaking capacity in DC1: 30 / 110 / 220V A	10 / 0.25 / 0.12	10 / 0.25 / 0.12	5 / 0.25 / 0.12
Minimum switching load mW (V / mA)	300 (5 / 5)	300 (5 / 5)	300 (5 / 5)
Standard contact material	AgNi	AgNi	AgNi
Coil specifications			
Nominal voltage (U_N) V AC (50 / 60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240		
V DC	6 - 12 - 24 - 48 - 60 - 110		
Rated power AC / DC VA (50 Hz) / W	1.5 / 1	1.5 / 1	1.5 / 1
Operating range AC (50 Hz)	(0.8...1.1)U_N	(0.8...1.1)U_N	(0.8...1.1)U_N
DC	(0.8...1.1)U_N	(0.8...1.1)U_N	(0.8...1.1)U_N
Holding voltage AC / DC	0.8 U_N / 0.5 U_N	0.8 U_N / 0.5 U_N	0.8 U_N / 0.5 U_N
Must drop-out voltage AC / DC	0.2 U_N / 0.1 U_N	0.2 U_N / 0.1 U_N	0.2 U_N / 0.1 U_N
Technical data			
Mechanical life AC / DC cycles	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$
Electrical life at rated load AC1 cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Operate / release time (bounce included) ms	10 / 15	10 / 15	10 / 15
Insulation according to EN 61810-5	3.6 kV / 2	3.6 kV / 2	3.6 kV / 2
Insulation between coil and contacts (1.2 / 50µs) kV	3.6	3.6	3.6
Dielectric strength between open contacts V AC	1,000	1,000	1,000
Ambient temperature range °C	–40...+70	–40...+70	–40...+70
Environmental protection	RT I	RT I	RT I
Approvals: (according to type)	CE B BEAB SP D FI GOST M N RINA S S c UL us NF VDE		

55 Series - Miniature General Purpose Relays 5 -10 A

- *Plug-in or P.C.B. versions*
- *AC or DC coils*
- *Lockable test button and mechanical flag indicator as standard on 2 and 4 CO relays types*
- *Sockets and accessories: see 94, 99 and 86 series*

	55.32	55.33	55.34
	- 2 pole - Plug-in for use with 94 Series sockets	- 3 pole - Plug-in for use with 94 Series sockets	- 4 pole - Plug-in for use with 94 Series sockets
			
Contact specifications			
Contact configuration	2 CO	3 CO	4 CO
Rated current / Maximum peak current A	10 / 20	10 / 20	5 / 10
Rated voltage / Maximum switching voltage V AC	250 / 400	250 / 400	250 / 250
Rated load in AC1 VA	2,500	2,500	1,250
Rated load in AC15 (230 VAC) VA	500	500	250
Single phase motor rating (230 VAC) kW	0.37	0.37	0.125
Breaking capacity in DC1: 30 / 110 / 220V A	10 / 0.25 / 0.12	10 / 0.25 / 0.12	5 / 0.25 / 0.12
Minimum switching load mW (V / mA)	300 (5 / 5)	300 (5 / 5)	300 (5 / 5)
Standard contact material	AgNi	AgNi	AgNi
Coil specifications			
Nominal voltage (U_N) V AC (50 / 60 Hz)	6 - 12- 24 - 48 - 60 - 110 - 120 - 230 - 240		
V DC	6 - 12 - 24 - 48 - 60 - 110		
Rated power AC / DC VA (50 Hz) / W	1.5 / 1	1.5 / 1	1.5 / 1
Operating range AC (50 Hz)	(0.8...1.1)U_N	(0.8...1.1)U_N	(0.8...1.1)U_N
DC	(0.8...1.1)U_N	(0.8...1.1)U_N	(0.8...1.1)U_N
Holding voltage AC / DC	0.8 U_N / 0.5 U_N	0.8 U_N / 0.5 U_N	0.8 U_N / 0.5 U_N
Must drop-out voltage AC / DC	0.2 U_N / 0.1 U_N	0.2 U_N / 0.1 U_N	0.2 U_N / 0.1 U_N
Technical data			
Mechanical life AC / DC cycles	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$	$20 \cdot 10^6 / 50 \cdot 10^6$
Electrical life at rated load AC1 cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Operate / release time (bounce included) ms	10 / 15	10 / 15	10 / 15
Insulation according to EN 61810-5	3.6 kV / 2	3.6 kV / 2	3.6 kV / 2
Insulation between coil and contacts (1.2 / 50µs) kV	3.6	3.6	3.6
Dielectric strength between open contacts V AC	1,000	1,000	1,000
Ambient temperature range °C	–40...+70	–40...+70	–40...+70
Environmental protection	RT I	RT I	RT I
Approvals: (according to type)	CE B BEAB SP D FI GOST Y N RINA S S c UL us NF VDE		

ORDERING INFORMATION

Example: a 55 series plug-in relay, 4 CO contacts, coil rated 12 V DC with a lockable test button and mechanical indicator.

5 5	.	3	4	.	9	.	0 1 2	.	0 (A)	0 (B)	4 (C)	0 (D)

Series

Type
1 = P.C.B.
3 = Plug-in

No. of poles
2 = 2 pole, 10 A
3 = 3 pole, 10 A
4 = 4 pole, 5 A

Coil version
8 = AC (50/60 Hz)
9 = DC

Coil voltage
see coil specifications

A: Contact material
0 = Standard AgNi
2 = AgCdO
5 = AgNi + 5µm Au

B: Contact circuit
0 = CO

C: Options
0 = None
1 = Lockable test button
2 = Mechanical indicator
3 = LED (AC)
4 = Lockable test button + mechanical indicator
5 = Lockable test button + LED (AC)
54 = Lockable test button + LED (AC) + mechanical indicator
6 = LED + diode (positive to pin A2/14, DC non standard polarity)
7 = Lockable test button + LED + diode (positive to pin A2/14, DC non standard polarity)
74 = Lockable test button + LED + diode (positive to pin A2/14, DC non standard polarity) + mechanical indicator
8 = LED + diode (positive to pin A1/13, DC standard polarity)
9 = Lockable test button + LED + diode (positive to pin A1/13, DC standard polarity)
94 = Lockable test button + LED + diode (positive to pin A1/13, DC standard polarity) + mechanical indicator

D: Special versions
0 = Standard
1 = Wash tight (RT III) for 55.12, 55.13 and 55.14 only
6 = Rear flange mount

Only combinations in the same row are possible

Preferred versions

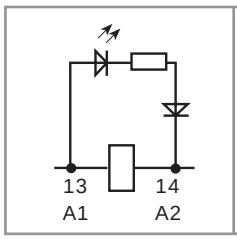
	coil version	A	B	C	D
55.32/34	AC/DC	0	0	4	0
55.12/13/14	AC/DC	0	0	0	0
55.33	AC/DC	0	0	0	0

All versions

	coil version	A	B	C	D
55.32/34	AC/DC	0 - 2 - 5	0	0	0 - 6
	AC	0 - 2 - 5	0	2 - 3 - 4 - 5	0 - 6
	AC	0 - 2 - 5	0	54	/
	DC	0 - 2 - 5	0	2 - 4 - 6 - 7 - 8 - 9	0 - 6
	DC	0 - 2 - 5	0	74 - 94	/
55.33	AC/DC	0 - 2 - 5	0	0	0 - 6
	AC	0 - 2 - 5	0	1 - 3 - 5	0 - 6
	DC	0 - 2 - 5	0	1 - 6 - 7 - 8 - 9	0 - 6
55.12/13/14	AC/DC	0 - 2 - 5	0	0	0 - 1

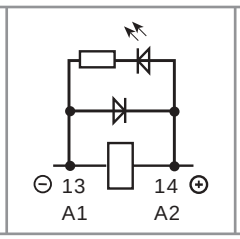
POSSIBLE OPTIONS

AC



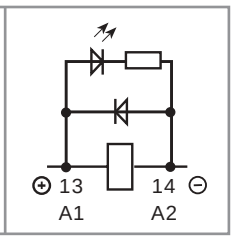
Option = 0030
0050
0054

DC - Non standard polarity

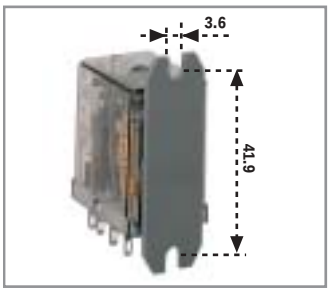


Option = 0060
0070
0074

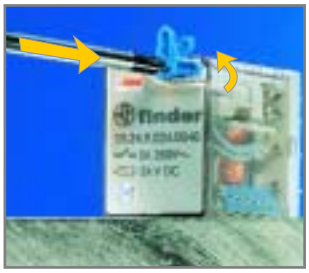
DC - Standard polarity



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.

TECHNICAL DATA

INSULATION

INSULATION according to EN 61810-5	insulation rated voltage	V	250
	rated impulse withstand voltage	kV	3.6
	pollution degree		2
	overvoltage category		III

IMMUNITY

CONDUCTED DISTURBANCE IMMUNITY	BURST (according to EN 61000-4-4) level 4 (4 kV)
	SURGE (according to EN 61000-4-5) level 4 (4 kV)

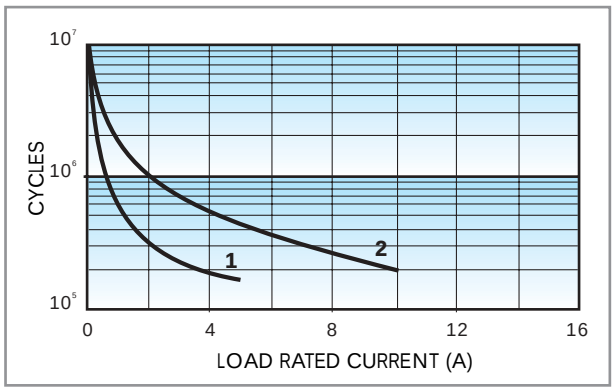
OTHER DATA

VIBRATION RESISTANCE (10...55Hz): NO/NC	g/g	6/6		
POWER LOST TO THE ENVIRONMENT		2 CO	3 CO	4 CO
without contact current	W	1	1	1
with rated current	W	3	4	2.6
RECOMMENDED DISTANCE between RELAYS mounted on P.C.B.s	mm	≥5		

55

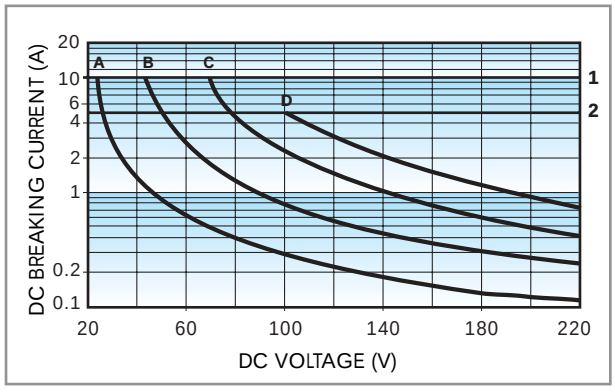
CONTACT SPECIFICATIONS

F 55



Electrical life vs AC1 load.
1 = 4 CO relay type (5 A).
2 = 2 - 3 CO relay type (10 A).

H 55



Breaking capacity for DC1 load.
1 = 2 - 3 CO type.
2 = 4 CO type.
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 ≥ $100 \cdot 10^3$ 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

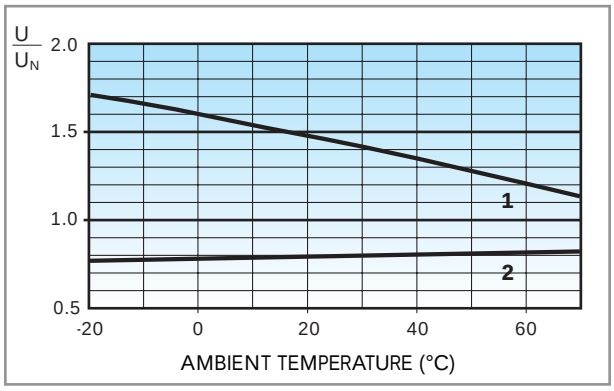
AC VERSION DATA

Nominal voltage U_N	Coil code	Operating range U_{min}	U_{max}	Resistance R	Rated coil consumption I at U_N (50Hz)
V		V	V	Ω	mA
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	4,000	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

DC VERSION DATA

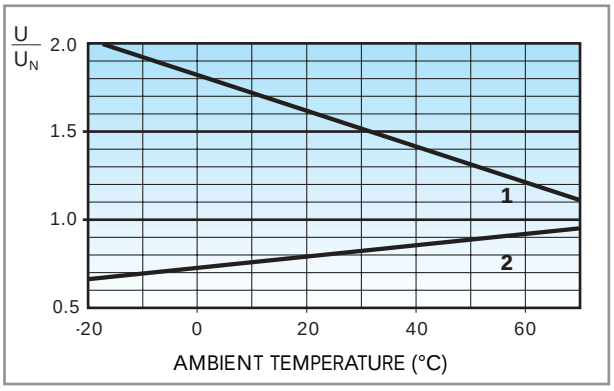
Nominal voltage U_N	Coil code	Operating range U_{min}	U_{max}	Resistance R	Rated coil consumption I at U_N
V		V	V	Ω	mA
6	**9**.006	4.8	6.6	40	150
12	**9**.012	9.6	13.2	140	86
24	**9**.024	19.2	26.4	600	40
48	**9**.048	38.4	52.8	2,400	20
60	**9**.060	48	66	4,000	15
110	**9**.110	88	121	12,500	8.8

R 55 AC



Operating range (AC type) vs ambient temperature.
1 - Max coil voltage permitted.
2 - Min pick-up voltage with coil at ambient temperature.

R 55 DC



Operating range (DC type) vs ambient temperature.
1 - Max coil voltage permitted.
2 - Min pick-up voltage with coil at ambient temperature.

94 Series - Sockets and Accessories for 55 Series Relays

94.04

Approvals (according to type):

CE GOST

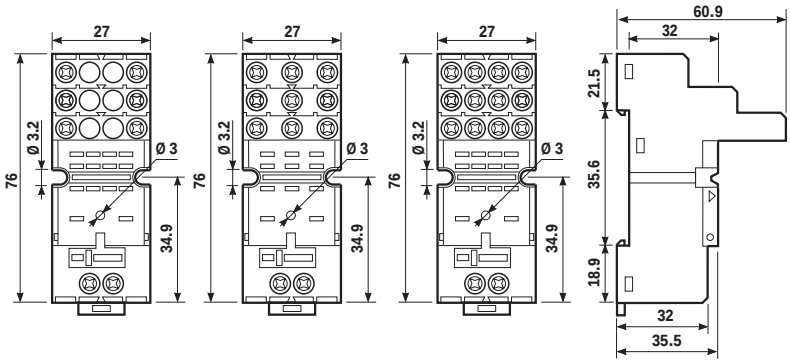
cULus

Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.02	94.02.0	94.03	94.03.0	94.04	94.04.0
Metal retaining clip	094.71					
Plastic retaining and release clip	094.01					
6-way jumper link for 94.02, 94.03 and 94.04 sockets	094.06	094.06.0	094.06	094.06.0	094.06	094.06.0
Identification tag	094.00.4					
Modules (see table below)	99.02					
Timer modules	86.10, 86.20					
Sheet of marker tags for retaining and release clip 094.01	060.72					

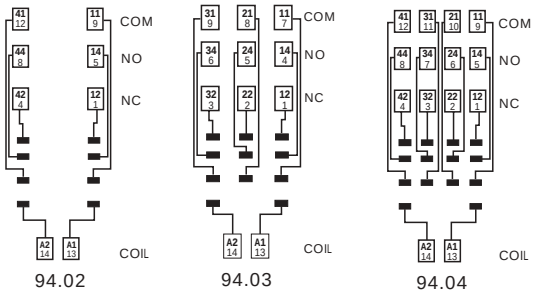
55

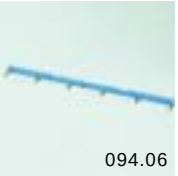
- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 8 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14

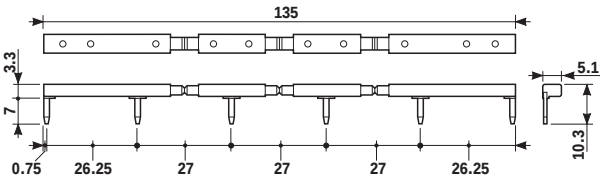


094.01




094.06

6-way jumper link for 94.02, 94.03 and 94.04 sockets	094.06



- RATED VALUES: 10 A - 250 V

99.02

99.02 modules for 94.02, 94.03 and 94.04 sockets		BLUE
Diode** (+A1)	(6...220) V DC	99.02.3.000.00
Diode (inverted polarity)	(6...220) V DC	99.02.2.000.00
LED	(6...24) V DC/AC	99.02.0.024.59
LED	(28...60) V DC/AC	99.02.0.060.59
LED	(110...240) V DC/AC	99.02.0.230.59
LED + Diode** (+A1)	(6...24) V DC	99.02.9.024.99
LED + Diode** (+A1)	(28...60) V DC	99.02.9.060.99
LED + Diode** (+A1)	(110...220) V DC	99.02.9.220.99
LED + Diode (inverted polarity)	(6...24) V DC	99.02.9.024.79
LED + Diode (inverted polarity)	(28...60) V DC	99.02.9.060.79
LED + Diode (inverted polarity)	(110...220) V DC	99.02.9.220.79
LED + Varistor	(6...24) V DC/AC	99.02.0.024.98
LED + Varistor	(28...60) V DC/AC	99.02.0.060.98
LED + Varistor	(110...240) V DC/AC	99.02.0.230.98
RC circuit	(6...24) V DC/AC	99.02.0.024.09
RC circuit	(28...60) V DC/AC	99.02.0.060.09
RC circuit	(110...240) V DC/AC	99.02.0.230.09
No - remanence (62 kΩ/1W)	(110...240) V AC	99.02.8.230.07

**For DC supply, apply the positive to terminal A1. Modules in Black housing are available on request.

94 Series - Sockets and Accessories for 55 Series Relays

94.74

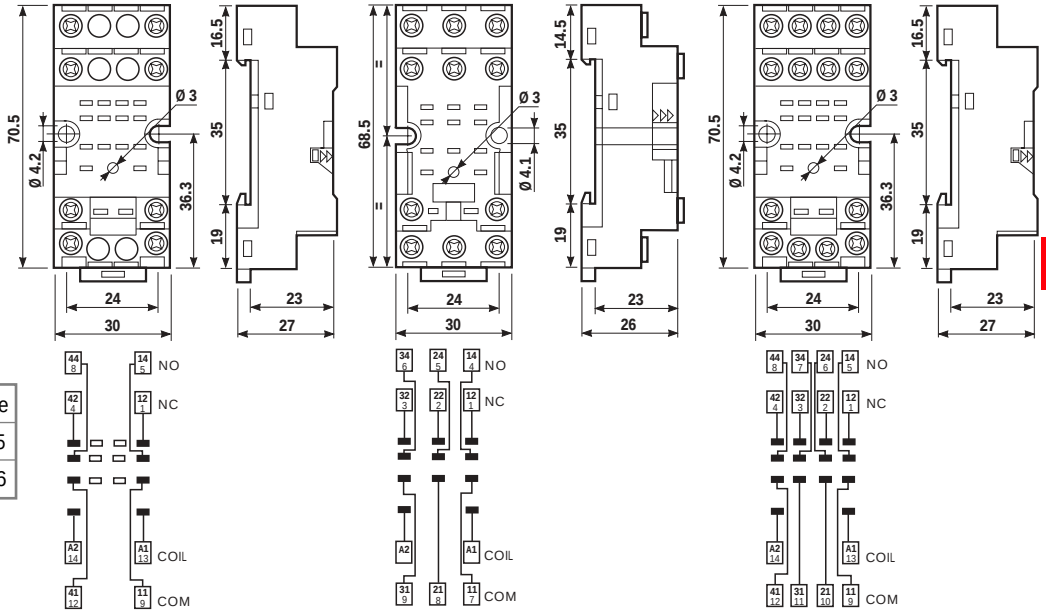
Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Screw terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.72	94.72.0	94.73	94.73.0	94.74	94.74.0
Retaining clip	094.71					
Modules (see table below)	99.01					

Approvals (according to type):

GOST

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 8 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x2.5 / 2x1.5	1x2.5 / 2x1.5
AWG	1x14 / 2x16	1x14 / 2x16



94.72 94.73 94.74

94.82

Relay type	55.32	
Colour	BLUE	BLACK
Screw terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.82	94.82.0
Retaining clip	094.71	
Modules (see table below)	99.01	

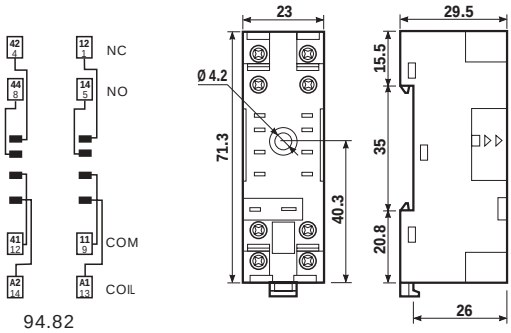
Approvals (according to type):

GOST

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 9 mm

- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x2.5 / 2x1.5	1x2.5 / 2x1.5
AWG	1x14 / 2x16	1x14 / 2x16



94.82

99.01

99.01 modules for 94.72, 94.73, 94.74 and 94.82 sockets		BLUE
Diode** (+A1)	(6...220) V DC	99.01.3.000.00
Diode (inverted 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)	(6...24) V DC	99.01.9.024.99
LED + Diode** (+A1)	(28...60) V DC	99.01.9.060.99
LED + Diode** (+A1)	(110...220) V DC	99.01.9.220.99
LED + Diode (inverted polarity)	(6...24) V DC	99.01.9.024.79
LED + Diode (inverted polarity)	(28...60) V DC	99.01.9.060.79
LED + Diode (inverted 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
No - remanence (62 kΩ/1W)	(110...240) V AC	99.01.8.230.07

**For DC supply, apply the positive to terminal A1. Modules in Black housing are available on request.
Green LED is standard. Red LED available on request.

94 Series - Sockets and Accessories for 55 Series Relays

Relay type	55.32, 55.34	
Colour	BLUE	BLACK
Clamp terminal socket: panel or 35 mm rail (EN 50022) mount retaining clip 094.71 supplied with socket packaging code SMA	94.84.1	94.84.10
Retaining clip	094.71	
Identification tag	094.80.2	
Modules (see table below)	99.80	

Approvals (according to type):

GOST

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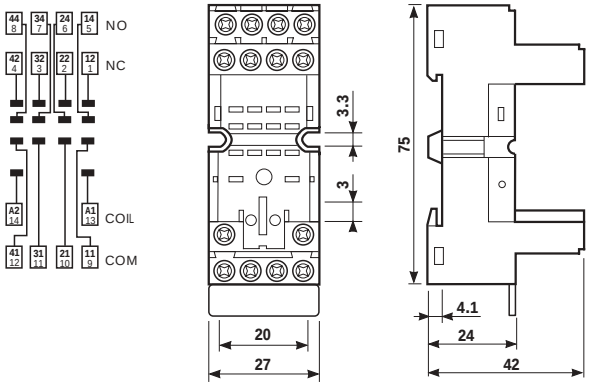
- PROTECTION CATEGORY: IP 20
- AMBIENT TEMPERATURE: (-40...+70)°C
- SCREW TORQUE: 0.5 Nm
- WIRE STRIP LENGTH: 7 mm
- MAX WIRE SIZE:

	solid wire	stranded wire
mm²	1x6 / 2x2.5	1x4 / 2x2.5
AWG	1x10 / 2x14	1x12 / 2x14



99.80 modules for 94.84.1 sockets		BLUE
Diode** (+A1)	(6...220) V DC	99.80.3.000.00
LED	(6...24) V DC/AC	99.80.0.024.59
LED	(28...60) V DC/AC	99.80.0.060.59
LED	(110...240) V DC/AC	99.80.0.230.59
LED + Diode** (+A1)	(6...24) V DC	99.80.9.024.99
LED + Diode** (+A1)	(28...60) V DC	99.80.9.060.99
LED + Diode** (+A1)	(110...220) V DC	99.80.9.220.99
LED + Varistor	(6...24) V DC/AC	99.80.0.024.98
LED + Varistor	(28...60) V DC/AC	99.80.0.060.98
LED + Varistor	(110...240) V DC/AC	99.80.0.230.98
RC circuit	(6...24) V DC/AC	99.80.0.024.09
RC circuit	(28...60) V DC/AC	99.80.0.060.09
RC circuit	(110...240) V DC/AC	99.80.0.230.09
No - remanence (62 kΩ/1W)	(110...240) V AC	99.80.8.230.07

**For DC supply, apply the positive to terminal A1. Modules in Black housing are available on request.
Green LED is standard. Red LED available on request.

Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
P.C.B. socket retaining clip 094.51 supplied with socket packaging code SMA	94.12	94.12.0	94.13	94.13.0	94.14	94.14.0
Metal retaining clip	094.51					

Approvals (according to type):

GOST

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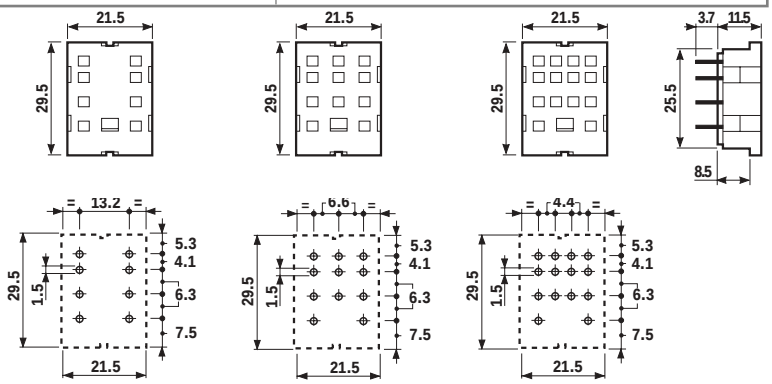


94.12 94.13 94.14

Copper side view

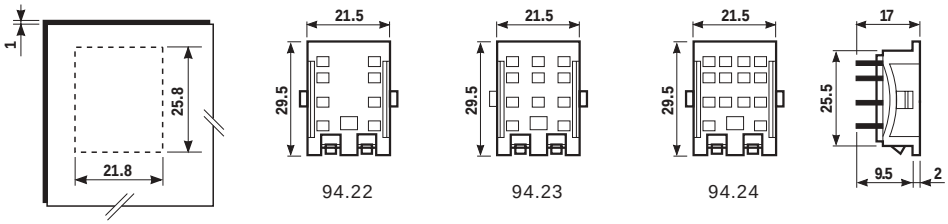
94.22

Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Panel mount solder socket: 1 mm thick panel retaining clip 094.51 supplied with socket packaging code SMA	94.22	94.22.0	94.23	94.23.0	94.24	94.24.0
Metal retaining clip	094.51					

Approvals
(according to type):

GOST

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- AMBIENT TEMPERATURE: (-40...+70)°C



55

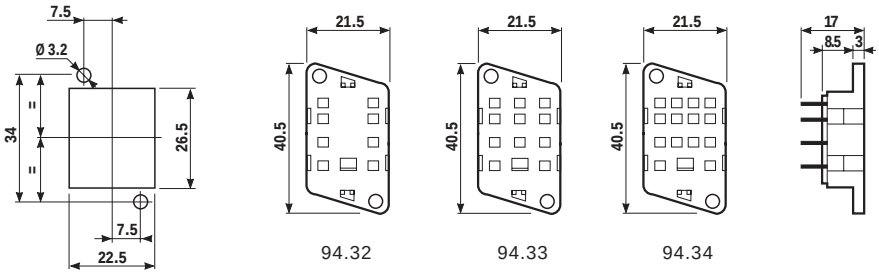
94.34

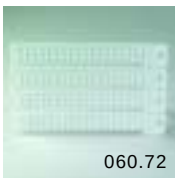
Relay type	55.32		55.33		55.32, 55.34	
Colour	BLUE	BLACK	BLUE	BLACK	BLUE	BLACK
Panel mount socket: M3 screw mount - solder connections retaining clip 094.51 supplied with socket packaging code SMA	94.32	94.32.0	94.33	94.33.0	94.34	94.34.0
Metal retaining clip	094.51					

Approvals
(according to type):

GOST

- RATED VALUES: 10 A - 250 V
- DIELECTRIC STRENGTH: ≥ 2 kV AC
- AMBIENT TEMPERATURE: (-40...+70)°C




060.72

Sheet of marker tags for retaining clip 094.01 (72 tags)	060.72

PACKAGING CODES

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

Code options according to the last three letters:

9 4 0 4 S M A

A Standard packaging

SM Metal retaining clip
SP Plastic retaining clip
SX No retaining clip