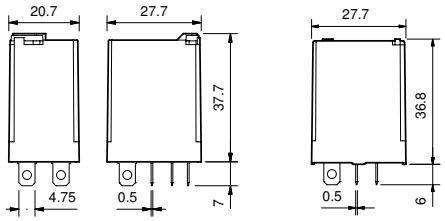
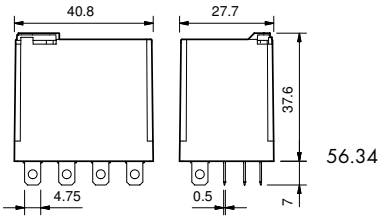
Features

Plug-in
12 A Power relay, 2 & 4 pole

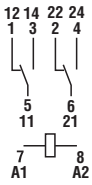
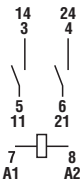
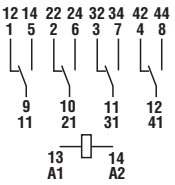
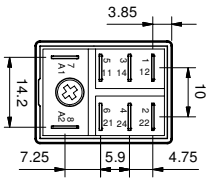
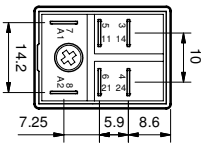
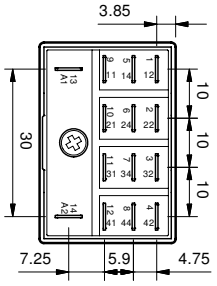
- Flange mount option - (Faston 187, 4.8x0.5 mm termination)
- AC coils & DC coils
- Lockable test button and mechanical flag indicator
- Cadmium Free contacts (standard version)
- Contact material options
- 96 series sockets
- Coil EMC suppression
- Accessories





* For 4 CO (4PDT) only.

For UL Horsepower and Pilot Duty ratings
See "General technical information" page V

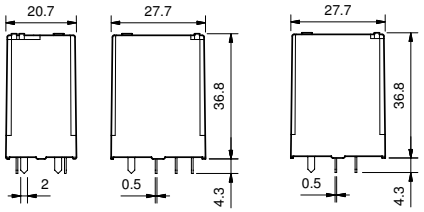
	56.32	56.32-0300	56.34
			
	• 2 pole changeover contact • Plug-in/Faston 187	• 2 pole normally open contact (≥1.5 mm gap) • Plug-in/Faston 187	• 4 pole changeover contact • Plug-in/Faston 187
			
			

Contact specification				
Contact configuration		2 CO (DPDT)	2 NO (DPST-NO) - ≥ 1.5 mm gap	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 AC1	VA	3,000	3,000	3,000
Rated load AC15 (230 V AC)	VA	700	700	700
Single phase motor rating (230 V AC)	kW	0.55	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	12/0.5/0.25	12/1/0.5	12/0.5/0.25
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi	AgNi
Coil specification				
Nominal voltage (U_N)	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	—	6-12-24-48-60-110-125-220
Rated power AC/DC	VA (50 Hz)/W	1.5/1	1.5/—	2/1.3
Operating range	AC	$(0.8...1.1)U_N$	$(0.85...1.1)U_N$	$(0.8...1.1)U_N$
	DC	$(0.8...1.1)U_N$	—	$(0.85...1.1)U_N$
Holding voltage	AC/DC	0.8 U_N/0.6 U_N	0.85 U_N/—	0.8 U_N/0.6 U_N
Must drop-out voltage	AC/DC	0.2 U_N/0.1 U_N	0.2 U_N/—	0.2 U_N/0.1 U_N
Technical data				
Mechanical life AC/DC	cycles	$20 \cdot 10^6/50 \cdot 10^6$	$20 \cdot 10^6$/—	$20 \cdot 10^6/50 \cdot 10^6$
Electrical life at rated load AC1	cycles	$200 \cdot 10^3$	$200 \cdot 10^3$	$150 \cdot 10^3$
Operate/release time	ms	8/8	8/8	8/8
Insulation between coil and contacts (1.2/50 µs)	kV	4	4	5
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)				

Features

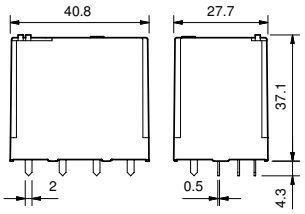
Printed circuit mount
12 A Power relay

- 2 & 4 pole
- AC coils & DC coils
- Cadmium Free contacts (standard version)
- Contact material option
- RT III (wash tight) option available



56.42

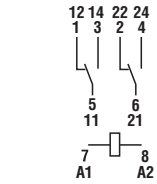
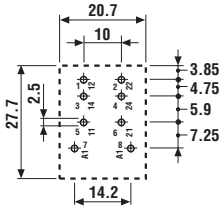
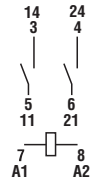
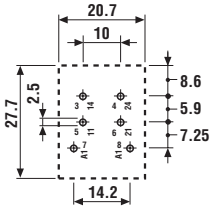
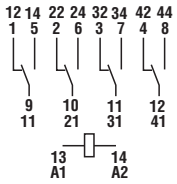
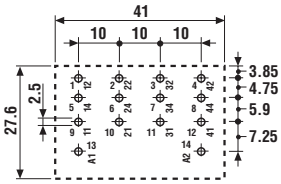
56.42-0300



56.44

* For 4 CO (4PDT) only.

For UL Horsepower and Pilot Duty ratings See "General technical information" page V

	56.42	56.42-0300	56.44
			
	• 2 pole changeover contact • PCB mount	• 2 pole normally open contact (≥ 1.5 mm gap) • PCB mount	• 4 pole changeover contact • PCB mount
	  	  	 
	Copper side view	Copper side view	Copper side view
Contact specification			
Contact configuration	2 CO (DPDT)	2 NO (DPST-NO) - ≥ 1.5 mm gap	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 AC1 VA	3,000	3,000	3,000
Rated load AC15 (230 V AC) VA	700	700	500
Single phase motor rating (230 V AC) kW	0.55	0.55	0.55
Breaking capacity DC1: 30/110/220 V A	12/0.5/0.25	12/1/0.5	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 specification			
Nominal voltage (U_N) 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	—	6-12-24-48-60-110-125-220
Rated power AC/DC VA (50 Hz)/W	1.5/1	1.5/—	2/1.3
Operating range AC	(0.8...1.1)U_N	(0.85...1.1)U_N	(0.8...1.1)U_N
DC	(0.8...1.1)U_N	—	(0.85...1.1)U_N
Holding voltage AC/DC	0.8 U_N/0.6 U_N	0.85 U_N/—	0.8 U_N/0.6 U_N
Must drop-out voltage AC/DC	0.2 U_N/0.1 U_N	0.2 U_N/—	0.2 U_N/0.1 U_N
Technical data			
Mechanical life AC/DC cycles	20 · 10^6/50 · 10^6	20 · 10^6/—	20 · 10^6/50 · 10^6
Electrical life at rated load AC1 cycles	200 · 10^3	200 · 10^3	150 · 10^3
Operate/release time ms	8/8	8/8	8/8
Insulation between coil and contacts (1.2/50 µs) kV	4	4	5
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: 56 series plug-in relay, 2 CO (DPDT), 12 V DC coil, lockable test button and mechanical indicator.

5 6	.	3	2	.	9	.	0 1 2	.	A: 0	B: 0	C: 4	D: 0

Series

Type
3 = Plug-in
4 = PCB

No. of poles
2 = 2 pole, 12 A
4 = 4 pole, 12 A

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

Coil voltage
See coil specifications

A: Contact material
0 = Standard AgNi
2 = AgCdO
4 = $AgSnO_2$

B: Contact circuit
0 = CO (nPDT)
3 = NO (nPST), ≥ 1.5 mm contact gap (2 pole only)

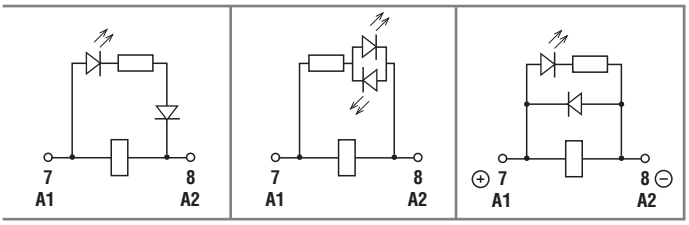
D: Special versions
0 = Standard
1 = Wash tight (RT III) for 56.42 and 56.44 only

C: Options
0 = None
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* = Double LED (DC non-polarized)
7* = Lockable test button + double LED (DC non-polarized)
74* = Lockable test button + double LED (DC non-polarized) + mechanical indicator
8* = LED + diode (DC, polarity positive to pin 7) for 56.32 only
9* = Lockable test button + LED + diode (DC, polarity positive to pin 7) for 56.32 only
94* = Lockable test button + LED + diode (DC, polarity positive to pin 7) + mechanical indicator for 56.32 only
* Options not available for 220 V DC and 400 V AC versions.

Selecting features and options: only combinations in the same row are possible.
Preferred selections for best avaliability are shown in **bold.**

Type	Coil version	A	B	C	D
56.32	AC	**0** - 2 - 4	**0**	0 - 2 - 3 - **4** - 5	**0**
	AC	0 - 2 - 4	0	54	/
	AC	0 - 2 - 4	3	0 - 3 - 5	0
	DC	**0** - 2 - 4	**0**	0 - 2 - **4** - 6 - 7 - 8 - 9	**0**
	DC	0 - 2 - 4	0	74 - 94	/
56.34	AC	**0** - 2 - 4	**0**	**0** - 2 - 3 - **4** - 5	**0**
	AC	0 - 2 - 4	0	54	/
	DC	**0** - 2 - 4	**0**	**0** - 2 - **4** - 6 - 7	**0**
	DC	0 - 2 - 4	0	74	/
56.42	AC-DC	**0** - 2 - 4	**0**	**0**	**0** - 1
	AC	0 - 2 - 4	3	0	0 - 1
56.44	AC-DC	**0** - 2 - 4	**0**	**0**	**0** - 1

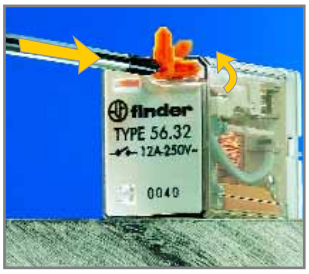
Descriptions: options and special versions



C: Option 3, 5, 54
LED (AC)

C: Option 6, 7, 74
Double LED
(DC non-polarized)

C: Option 8, 9, 94
LED + diode (DC, polarity positive to pin 7) - (56.32 only)



Lockable test button and mechanical flag indicator (0040, 0050, 0054, 0070, 0074, 0090, 0094)

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.

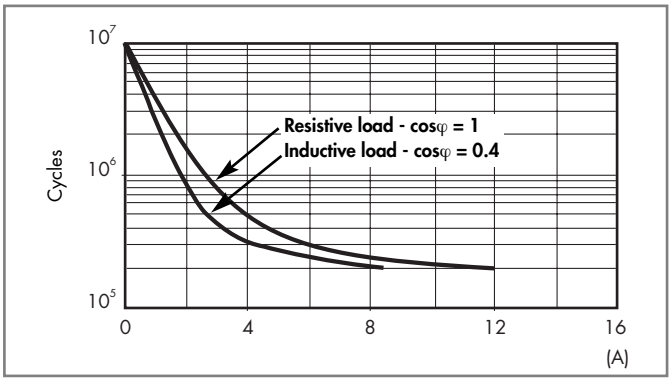
Technical data

*Only in applications where over voltage category II is permitted. In applications of over voltage category III: Micro-disconnection.

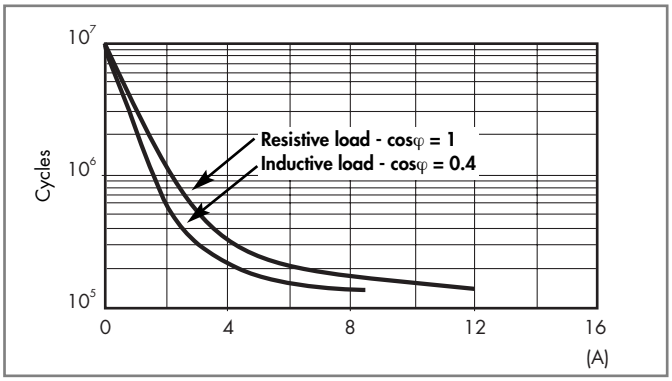
Insulation according to EN 61810-1:2004			2 CO - 4 CO		2 NO	
Nominal voltage of supply system		V AC	230/400		230/400	
Rated insulation voltage		V AC	250	400	250	400
Pollution degree			3	2	3	2
Insulation between coil and contact set						
Type of insulation			Basic		Basic	
Overvoltage category			III		III	
Rated impulse voltage		kV (1.2/50 µs)	4		4	
Dielectric strength		V AC	2,500		2,500	
Insulation between adjacent contacts						
Type of insulation			Basic		Basic	
Overvoltage category			III		III	
Rated impulse voltage		kV (1.2/50 µs)	4		4	
Dielectric strength		V AC	2,500		2,500	
Insulation between open contacts						
Type of disconnection			Micro-disconnection		Full-disconnection*	
Overvoltage category			—		II	
Rated impulse voltage		kV (1.2/50 µs)	—		2.5	
Dielectric strength		V AC/(1.2/50 µs)	1,000/1.5		2,000/3	
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	1/3 (changeover)		3/— (normally open)	
Vibration resistance (10...150 Hz): NO/NC		g	17/14			
Shock resistance NO/NC		g	20/14			
Power lost to the environment	without contact current	W	1 (56.32, 56.42)		1.3 (56.34, 56.44)	
	with rated current	W	3.8 (56.32, 56.42)		6.9 (56.34, 56.44)	
Recommended distance between relays mounted on PCB		mm	≥ 5			

Contact specification

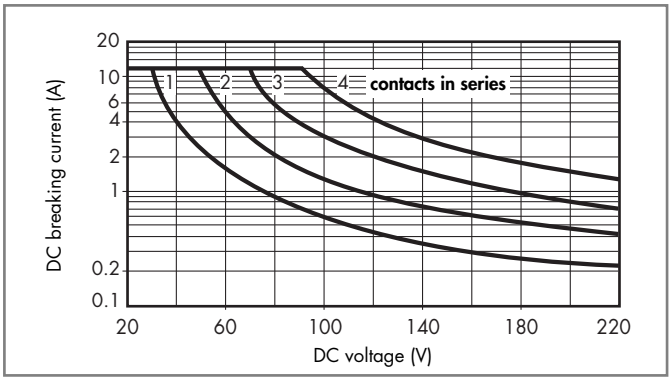
F 56 - Electrical life (AC) v contact current
2 pole relays



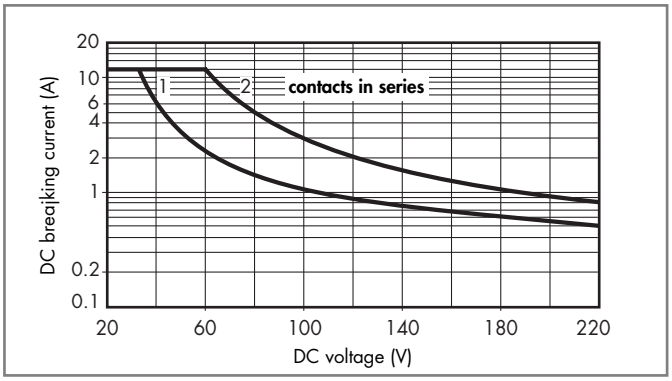
F 56 - Electrical life (AC) v contact current
4 pole relays



H 56 - Maximum DC1 breaking capacity
Changeover version



H 56 - Maximum DC1 breaking capacity
Normally open version



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 100·10³ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
  Note: the release time of the load will be increased.

Coil specifications

DC coil data, 2 pole relay

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range 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
125	**9**.125	100	137.5	17,300	7.2
220	**9**.220	176	242	54,000	4

AC coil data, 2 pole relay

Nominal voltage U_N	Coil code	Operating range U_{min}*	Operating range 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	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

* U_{min} = 0.85 U_N for normally open version.

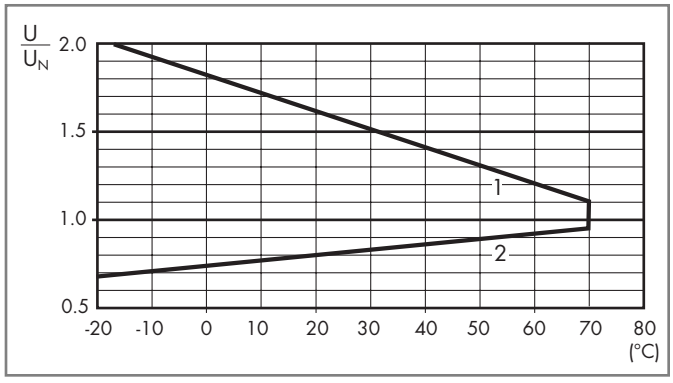
DC coil data, 4 pole relay

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Resistance R	Rated coil consumption I at U_N
V		V	V	Ω	mA
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	107	137.5	14,200	8.8
220	**9**.220	187	242	44,000	5

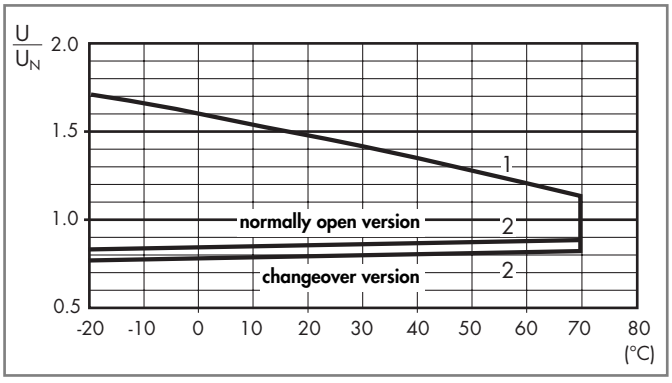
AC coil data, 4 pole relay

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

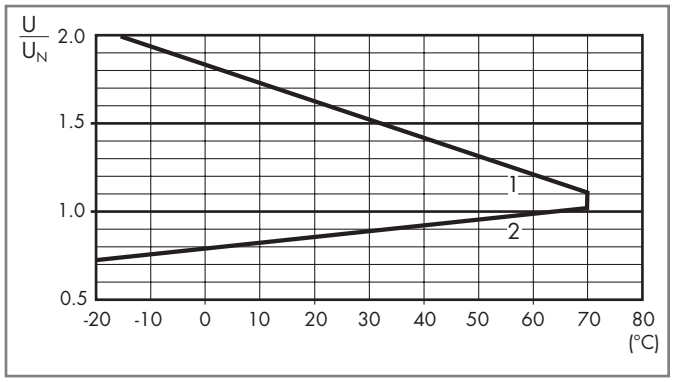
R 56 - DC coil operating range v ambient temperature
2 pole relay



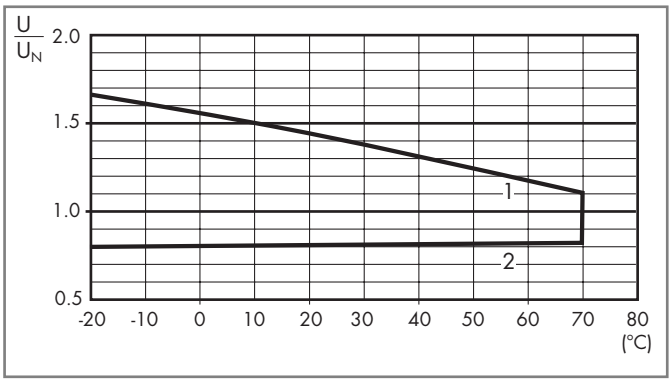
R 56 - AC coil operating range v ambient temperature
2 pole relay



R 56 - DC coil operating range v ambient temperature
4 pole relay



R 56 - AC coil operating range v ambient temperature
4 pole relay



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

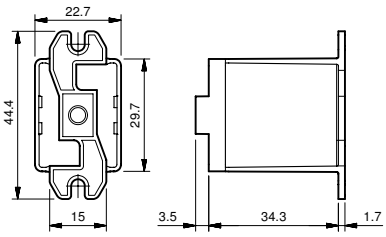
1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Accessories

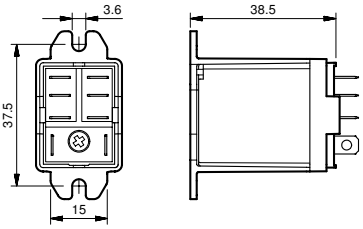

056.25


056.25 with relay

Top flange mount adaptor for 56.32 | 056.25



056.25

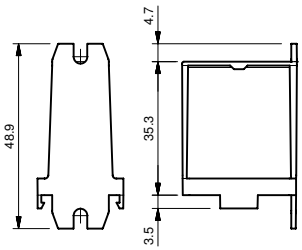


056.25 with relay

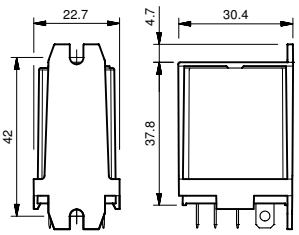

056.26


056.26 with relay

Rear flange mount adaptor for 56.32 | 056.26



056.26

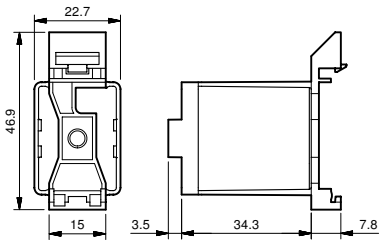


056.26 with relay

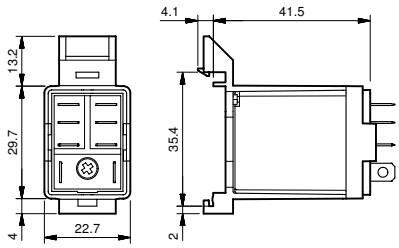

056.27


056.27 with relay

Top 35 mm rail (EN 50022) adaptor for 56.32 | 056.27



056.27

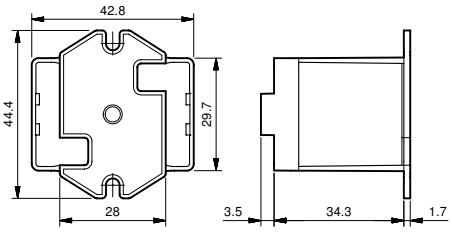


056.27 with relay

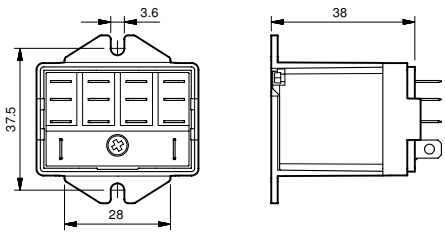

056.45


056.45 with relay

Top flange mount adaptor for 56.34 | 056.45



056.45

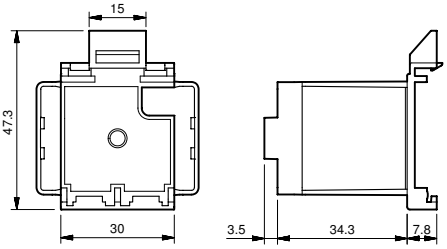


056.45 with relay

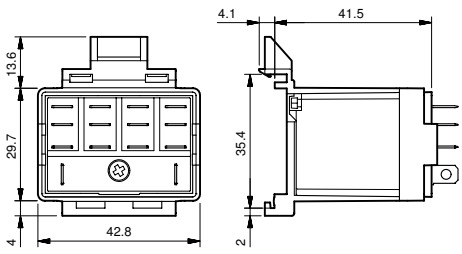

056.47


056.47 with relay

Top 35 mm rail (EN 50022) adaptor for 56.34 | 056.47



056.47



056.47 with relay


060.72

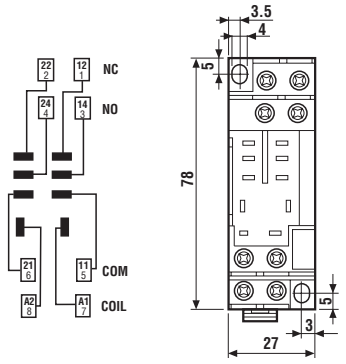
Sheet of marker tags for relay type 56.34, plastic, 72 tags, 6x12 mm | 060.72

96 Series - Sockets and accessories for 56 series relays

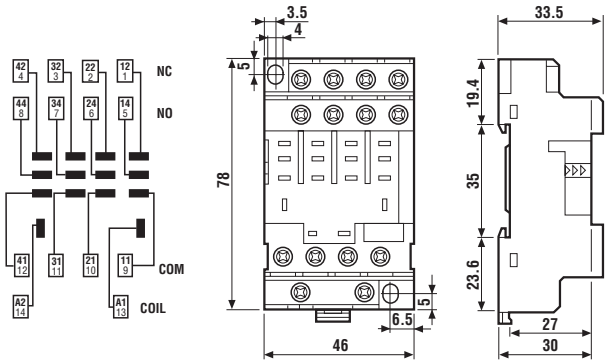
Approvals (according to type):

Approvals (according to type):

Screw terminal (Plate clamp) socket panel or 35 mm rail (EN 50022) mount		96.72 Blue	96.72.0 Black	96.74 Blue	96.74.0 Black
For relay type		56.32		56.34	
Accessories					
Metal retaining clip (supplied with socket - packaging code SMA)		094.71		096.71	
Modules (see table below)		99.01			
Technical data					
Rated values		12 A - 250 V			
Dielectric strength		2 kV AC			
Protection category		IP 20			
Ambient temperature	°C	–40...+70			
Screw torque	Nm	0.8			
Wire strip length	mm	10			
Max. wire size for 96.72 and 96.74 sockets		solid wire		stranded wire	
	mm²	1x4 / 2x4		1x4 / 2x2.5	
	AWG	1x12 / 2x12		1x12 / 2x14	



96.72



96.74

Approvals (according to type):

99.01 coil indication and EMC suppression modules for types 96.72 and 96.74 sockets

		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	(110...240)V AC	99.01.8.230.07

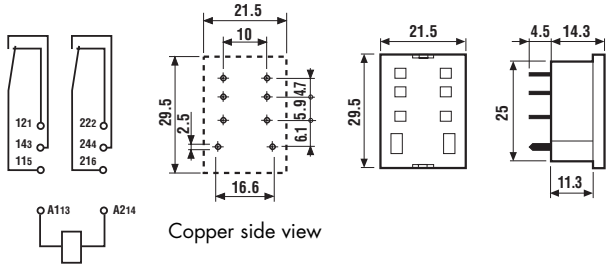
* Modules in Black housing are available on request.

Green LED is standard. Red LED available on request.

96.12

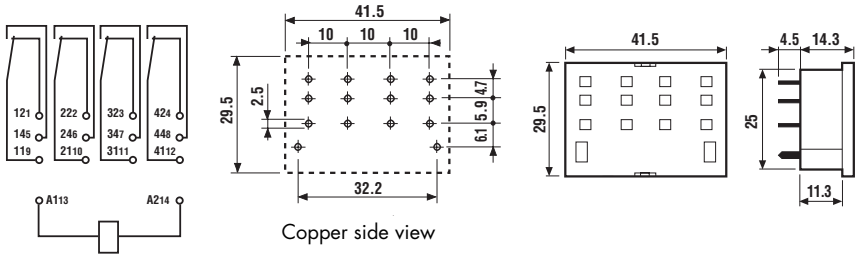
Approvals (according to type):

PCB socket	96.12 (blue)	96.12.0 (black)	96.14 (blue)	96.14.0 (black)
For relay type	56.32		56.34	
Accessories				
Metal retaining clip (supplied with socket - packaging code SMA)	094.51			
Technical data				
Rated values	15 A - 250 V			
Dielectric strength	2 kV AC			
Protection category	IP 20			
Ambient temperature °C	–40...+70			



Copper side view

96.12



Copper side view

96.14

Packaging code

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

Example:

9 6 . 7	4	S M	A

A Standard packaging

SM Metal retaining clip

9 6 . 7	4		

Without retaining clip