

## Features

**Ultra-slim 1 Pole - 6 A relay**

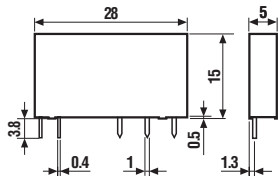
**Printed circuit mount**

- direct or via PCB socket

**35 mm rail mount**

- via screw or screwless sockets

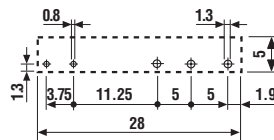
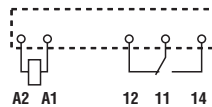
- 1 Pole changeover contacts or 1 Pole normally open contact
- Ultra slim, 5 mm, package
- Sensitive DC coil - 170 mW (Dual AC/DC coil drive possible using 93 series sockets)
- UL Listed (certain relay/socket combinations)
- Flux proof: RT II
- Cadmium Free contact materials
- 8/8 mm clearance/creepage distance
- 6 kV (1.2/50  $\mu$ s) insulation, coil-contacts



## 34.51



- 5 mm wide
- Low coil power
- PCB or 93 series sockets



Copper side view

Contact specification		
Contact configuration		1 CO (SPDT)
Rated current/Maximum peak current	A	6/10
Rated voltage/Maximum switching voltage V AC		250/400
Rated load AC1	VA	1,500
Rated load AC15 (230 V AC)	VA	300
Single phase motor rating (230 V AC)	kW	0.185
Breaking capacity DC1: 30/110/220 V	A	6/0.2/0.12
Minimum switching load	mW (V/mA)	500 (12/10)
Standard contact material		AgNi
Coil specification		
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	—
	V DC	5 - 12 - 24 - 48 - 60
Rated power AC/DC	VA (50 Hz)/W	—/0.17
Operating range	AC	—
	DC	(0.7...1.5)U <sub>N</sub>
Holding voltage	AC/DC	—/0.4 U <sub>N</sub>
Must drop-out voltage	AC/DC	—/0.05 U <sub>N</sub>
Technical data		
Mechanical life AC/DC	cycles	—/10 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	60 · 10 <sup>3</sup>
Operate/release time	ms	5/3
Insulation between coil and contacts (1.2/50 $\mu$ s)	kV	6
Dielectric strength between open contacts	V AC	1,000
Ambient temperature range	°C	-40...+85
Environmental protection		RT II
<b>Approvals</b> (according to type)		

## Features

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**Ultra-slim - Solid State Relays**

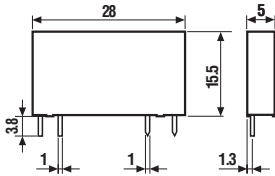
**Printed circuit mount**

- direct or via PCB socket

**35 mm rail mount**

- via screw or screwless sockets

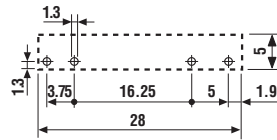
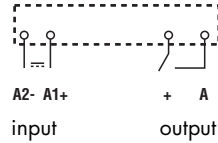
- Single circuit output switching options
  - 2 A 24 V DC
  - 0.1 A 48 V DC
  - 2 A 240 V AC
- Silent, high speed switching with long electrical life
- Ultra slim, 5 mm, package
- Sensitive DC Input circuits (Dual AC/DC input drive possible using 93 series sockets)
- UL Listed (certain relay/socket combinations)
- Wash tight: RT III
- 2,500 V insulation, input-output



### 34.81-9024



- 2 A, 24 V DC output switching
- PCB or 93 series sockets

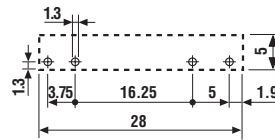
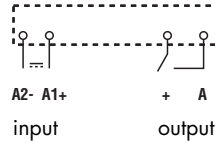


Copper side view

### 34.81-7048



- 0.1 A, 48 V DC output switching
- PCB or 93 series sockets

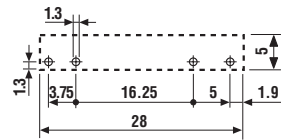
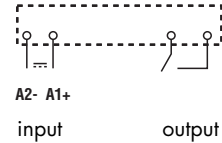


Copper side view

### 34.81-8240



- 2 A, 240 V AC output switching
- Zero crossing switching
- PCB or 93 series sockets



Copper side view

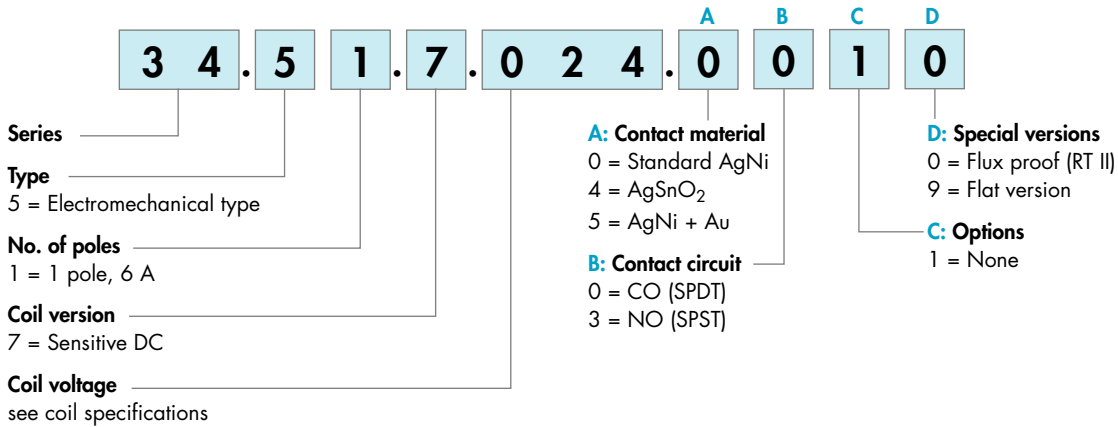
Output circuit									
Contact configuration		1 NO (SPST-NO)			1 NO (SPST-NO)		1 NO (SPST-NO)		
Rated current/Maximum peak current (10 ms)	A	2/20			0.1/0.5		2/40		
Rated voltage/Maximum blocking voltage	V	(24/33)DC			(48/60)DC		(240/275)AC		
Switching voltage range	V	(1.5...24)DC			(1.5...48)DC		(12...240)AC		
Minimum switching current	mA	1			0.05		22		
Max. "OFF-state" leakage current	mA	0.001			0.001		1.5		
Max. "ON-state" voltage drop	V	0.12			1		1.6		
Input circuit									
Nominal voltage	V DC	5	24	60	24	60	5	24	60
Operating range	V DC	3.5...12	16...30	35...72	16...30	35...72	3.5...10	16...30	35...72
Control current	mA	7	7	3	7	3	12	7	3
Release voltage	V DC	1	10	20	10	20	1	10	20
Impedance	Ω	715	3,200	21,300	3,200	21,300	416	3,200	21,300
Technical data									
Operate/release time	ms	0.1/0.3*			0.02/0.1*		12/12*		
Dielectric strength between input/output	V	2,500			2,500		2,500		
Ambient temperature range	°C	-20...+60			-20...+60		-20...+60		
Environmental protection		RT III			RT III		RT III		
Approvals (according to type)							—		

\* Note: All technical data relates to using the relay directly on PCB or PCB socket type 93.11.  
If the relay is use with 35 mm rail socket types 93.01 or 93.51, refer to the technical data of 38 Series, page 115.

## Ordering information

### Electromechanical relay (EMR)

Example: 34 series slim electromechanical relay, 1 CO (SPDT) 6 A contacts, 24 V sensitive DC coil.



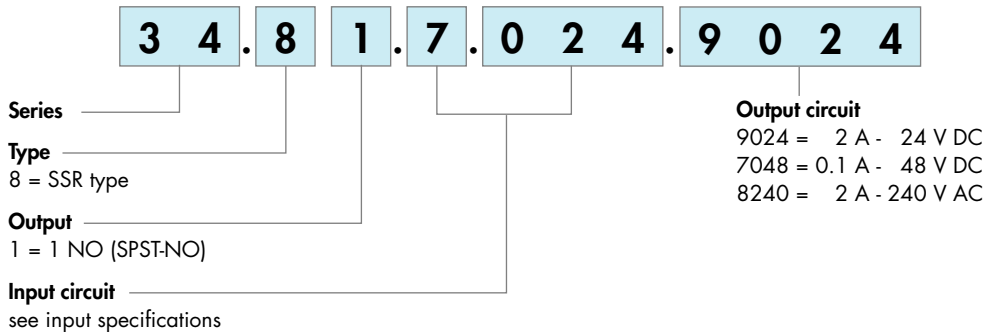
Selecting features and options: only combinations in the same row are possible.

Preferred selections for best availability are shown in **bold**.

Type	Coil version	A	B	C	D
34.51	sens. DC	<b>0</b> - 4 - 5	<b>0</b> - 3	<b>1</b>	<b>0</b>
34.51	sens. DC	0 - 4 - 5	0	1	9

### Solid state relay (SSR)

Example: 34 series SSR relay, 2 A output, 24 V DC supply.



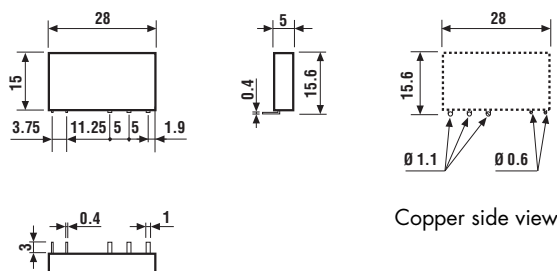
Note: All technical data relates to using the relay directly on PCB or PCB socket type 93.11.

If the relay is use with 35 mm rail socket types 93.01 or 93.51, refer to the technical data of 38 Series, page 115.

### Flat pack version



Option = 34.51.7xxx.x019



Copper side view

## Electromechanical relay

### 34 Technical data

#### Insulation

Insulation according to EN 61810-1 ed. 2	insulation rated voltage	V	250	400
	rated impulse withstand voltage	kV	4	4
	pollution degree		3	2
	overvoltage category		III	III
Insulation between coil and contacts (1.2/50 μs)		kV	6	
Dielectric strength between open contacts		V AC	1,000	

#### Conducted disturbance immunity

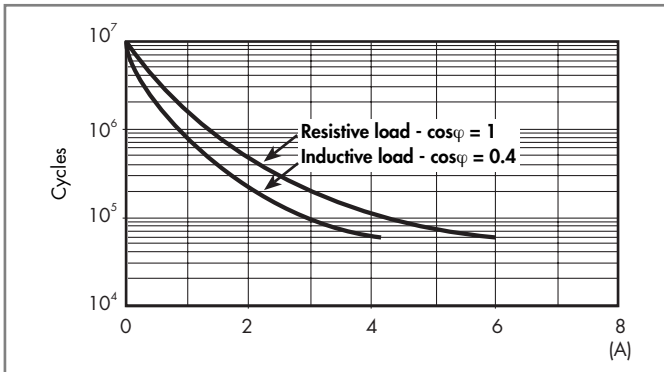
Burst (5...50)ns, 5 kHz, on A1 - A2	EN 61000-4-4	level 4 (4 kV)
Surge (1.2/50 μs) on A1 - A2 (differential mode)	EN 61000-4-5	level 3 (2 kV)

#### Other data

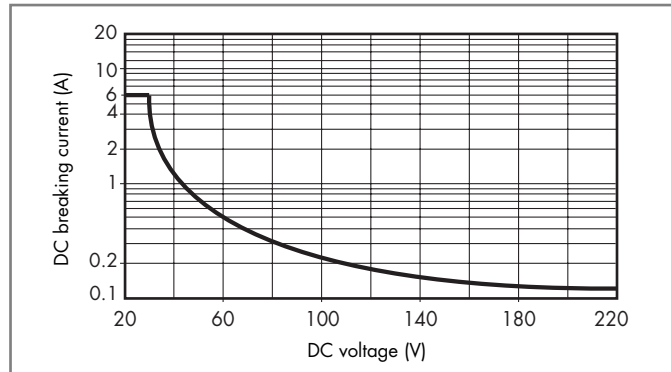
Bounce time: NO/NC	ms	1/6	
Vibration resistance (5...55)Hz, max. ± 1 mm: NO/NC	g/g	10/5	
Shock resistance	g/g	20/14	
Power lost to the environment	without contact current	W	0.2
	with rated current	W	0.5
Recommended distance between relays mounted on PCB	mm	≥ 5	

### Contact specification

F 34 - Electrical life (AC) v contact current



H 34 - Maximum DC1 breaking capacity



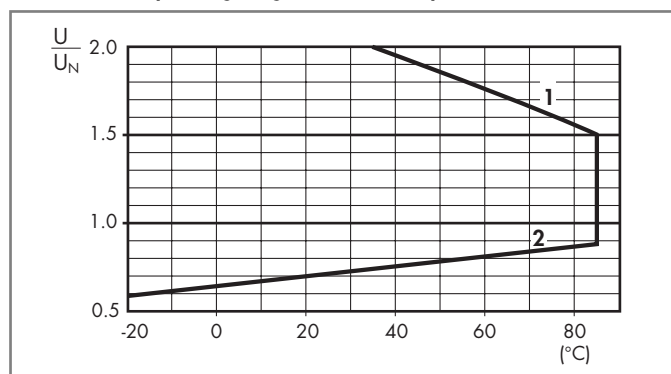
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of  $\geq 60 \cdot 10^3$  can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load. Note: the release time for the load will be increased.

### Coil specifications

#### DC coil data

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		
5	7.005	3.5	7.5	130	38.4
12	7.012	8.4	18	840	14.2
24	7.024	16.8	36	3,350	7.1
48	7.048	33.6	72	12,300	3.9
60	7.060	42	90	19,700	3

R 34 - DC coil operating range v ambient temperature



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

## Solid state relay

### Technical data

#### Other data

Power lost to the environment	without output current	W	0.17
	with rated current	W	0.4

### Input specification

#### Input data - DC types

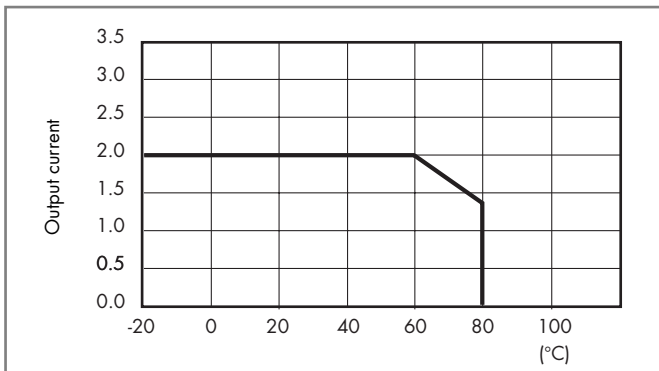
Nominal voltage $U_N$	Input code	Operating range		Release voltage	Impedance	Control current I at $U_N$
		$U_{min}$	$U_{max}$			
V		V	V	V	$\Omega$	mA
5	7.005	3.5	12 (10)*	1	715 (416)*	7 (12)*
24	7.024	16	30	10	3,200	7
60	7.060	35	72	20	21,300	3

\* AC Output version.

### Output specification

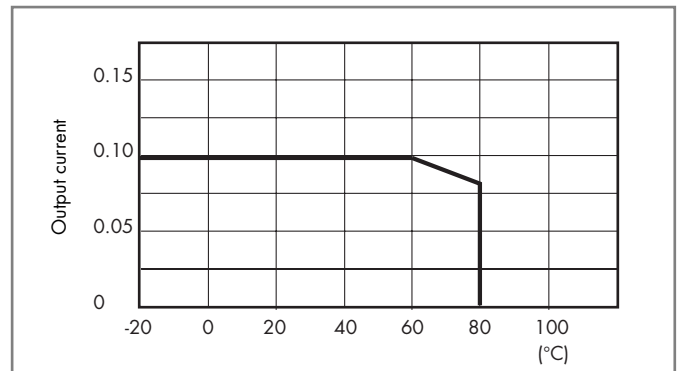
#### L 34 - Output current v ambient temperature

SSR - 2 A DC & AC output types



#### L 34 - Output current v ambient temperature

SSR - 0.1 A DC output types



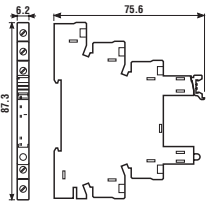
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Approvals  
(according to type):



Listed: certain relay/  
socket combinations



Screw terminal socket 35 mm (EN 50022) mounting		
Supply voltage	Relay type	Socket type
12 V AC/DC	34.51.7.012.xx10	93.01.0.024
24 V AC/DC	34.51.7.024.xx10	93.01.0.024
48 V AC/DC	34.51.7.048.xx10	93.01.0.060
60 V AC/DC	34.51.7.060.xx10	93.01.0.060
(110...125)V AC/DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.01.0.125
(220...240)V AC/DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.01.0.240
(110...125)V AC/DC*	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.01.3.125*
(220...240)V AC*	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.01.3.240*
6 V DC	34.51.7.005.xx10	93.01.7.024
12 V DC	34.51.7.012.xx10	93.01.7.024
24 V DC	34.51.7.024.xx10 or 34.81.7.024.xxxx	93.01.7.024
48 V DC	34.51.7.048.xx10	93.01.7.060
60 V DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.01.7.060
Accessories		
20-way jumper link	093.20 (see specification next page)	
Plastic separator	093.01 (see specification next page)	
Sheet of marker tags	093.64 (see specification next page)	
Technical data		
Rated values	6A - 250 V	
Insulation	≥ 6 kV (1.2/50 μs) between coil and contacts	
Protection category	IP 20	
Ambient temperature	(-40...+70)°C (U <sub>N</sub> ≤ 60 V), (-40...+55)°C (U <sub>N</sub> ≥ 60 V)	
Screw torque	Nm	0.5
Wire strip length	mm	10
Max. wire size for 93.01 socket	solid wire	stranded wire
	mm <sup>2</sup>	1x2.5 / 2x1.5
	AWG	1x14 / 2x16

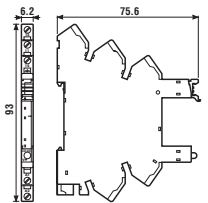
\* Leakage current suppression.



Approvals  
(according to type):

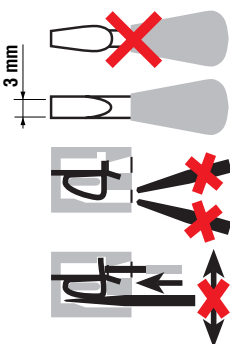


Listed: certain relay/  
socket combinations



Screwless terminal socket 35 mm (EN 50022) mounting		
Supply voltage	Relay type	Socket type
12 V AC/DC	34.51.7.012.xx10	93.51.0.024
24 V AC/DC	34.51.7.024.xx10	93.51.0.024
(110...125)V AC/DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.51.0.125
(220...240)V AC/DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.51.0.240
(110...125)V AC/DC*	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.51.3.125*
(220...240)V AC*	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.51.3.240*
12 V DC	34.51.7.012.xx10	93.51.7.024
24 V DC	34.51.7.024.xx10 or 34.81.7.024.xxxx	93.51.7.024
60 V DC	34.51.7.060.xx10 or 34.81.7.060.xxxx	93.51.7.060
Accessories		
20-way jumper link	093.20 (see specification next page)	
Plastic separator	093.01 (see specification next page)	
Sheet of marker tags	093.64 (see specification next page)	
Technical data		
Rated values	6A - 250 V	
Insulation	≥ 6 kV (1.2/50 μs) between coil and contacts	
Protection category	IP 20	
Ambient temperature	(-40...+70)°C (U <sub>N</sub> ≤ 60 V), (-40...+55)°C (U <sub>N</sub> ≥ 60 V)	
Wire strip length	mm	10
Max. wire size for 93.51 socket	solid wire	stranded wire
	mm <sup>2</sup>	1x2.5
	AWG	1x14

\* Leakage current suppression.





93.11

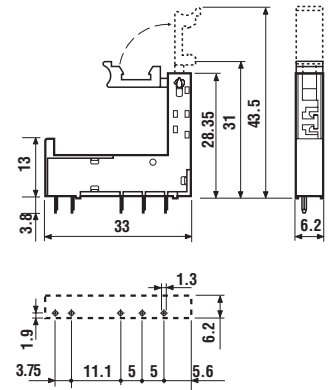
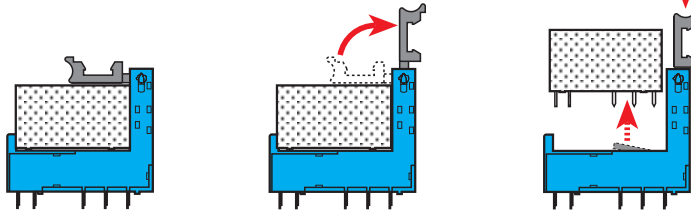
Approvals  
(according to type):



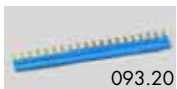
<b>PCB socket with retaining and release clip</b>	<b>93.11 (blue)</b>
For relay type	34.51, 34.81
<b>Technical data</b>	
Rated values	6 A - 250 V
Insulation	≥ 6 kV (1.2/50 μs) between coil and contacts
Protection category	IP 20
Ambient temperature	°C -40...+70

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**Retaining and release clip use:**



Copper side view

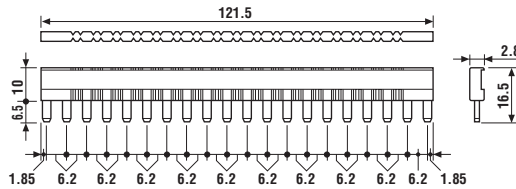


093.20

Approvals  
(according to type):



<b>20-way jumper link for 93.01 and 93.51 sockets</b>	<b>093.20</b>
Rated values	36 A - 250 V



<b>Plastic separator for 93.01 and 93.51 sockets</b>	<b>093.01</b>
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Thickness 2 mm, required at the start and the end of a group of interfaces.

Can be used for visual separation of groups. Must be used for:

- protective separation of different voltages of neighbouring PLC interfaces according to VDE 0106-101
- protection of cut jumper links



093.01

<b>Sheet of marker tags, plastic, 64 tags, 6x10 mm for 93.01 and 93.51 sockets</b>	<b>093.64</b>
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093.64

