Ultra-slim 1 Pole - 6 A relay

Printed circuit mount
- direct or via PCB socket
35 mm rail mount
- via screw, screwless or push-in terminal sockets

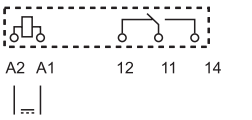
- 1 Pole changeover contacts or 1 Pole normally open contact
- Ultra slim (5 mm), package
- Sensitive DC coil - 170 mW (Dual AC/DC coil drive possible using 93 series sockets)
- UL Listing (certain relay/socket combinations)
- Cadmium Free contact materials
- 8/8 mm clearance/creepage distance
- 6 kV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

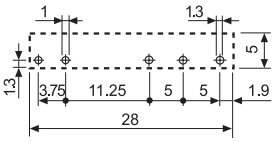
NEW **34.51**

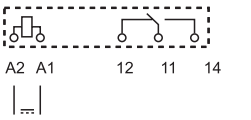
- 5 mm wide
- Low coil power
- PCB or 93 series sockets

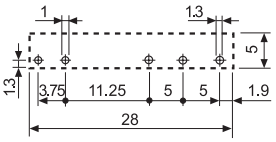
NEW **34.51-5010**

- 5 mm wide
- Low coil power
- PCB or 93 series sockets
- Contact AgNi + Au









FOR UL RATINGS SEE:
"General technical information" page V

For outline drawing see page 9		Copper side view	Copper side view
Contact specification			
Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/ Maximum peak current	A	6/10	6/10
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	1500	1500
Rated load AC15 (230 V AC)	VA	300	300
Single phase motor rating (230 V AC)	kW	0.185	0.185
Breaking capacity DC1: 30/110/220 V	A	6/0.2/0.12	6/0.2/0.12
Minimum switching load	mW (V/mA)	500 (12/10)	50 (5/2)
Standard contact material		AgNi	AgNi + Au
Coil specification			
Nominal voltage (U_N)	V AC (50/60 Hz)	—	—
	V DC	5 - 12 - 24 - 48 - 60	5 - 12 - 24 - 48 - 60
Rated power AC/DC	VA (50 Hz)/W	—/0.17	—/0.17
Operating range	AC	—	—
	DC	(0.7…1.5)U_N	(0.7…1.5)U_N
Holding voltage	AC/DC	—/0.4 U_N	—/0.4 U_N
Must drop-out voltage	AC/DC	—/0.05 U_N	—/0.05 U_N
Technical data			
Mechanical life AC/DC	cycles	—/10 · 10^6	—/10 · 10^6
Electrical life at rated load AC1	cycles	60 · 10^3	60 · 10^3
Operate/release time	ms	5/3	5/3
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	1000
Ambient temperature range	°C	–40…+85	–40…+85
Environmental protection		RT II	RT II
Approvals (according to type)			

Ordering information

Electromechanical relay (EMR)

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

										A	B	C	D	
3	4	.	5	1	.	7	.	0	2	4	.	0	0	1	0	

Series

Type
5 = Electromechanical type

No. of poles
1 = 1 pole, 6 A

Coil version
7 = Sensitive DC

Coil voltage
See coil specifications

A: Contact material
0 = Standard AgNi
4 = $AgSnO_2$
5 = AgNi + Au

B: Contact circuit
0 = CO (SPDT)
3 = NO (SPST)

C: Options
1 = None

D: Special versions
0 = Flux proof (RT II)
9 = Flat version

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	**0** - 4 - 5	**0** - 3	**1**	**0**
34.51	sens. DC	0 - 4 - 5	0	1	9

Solid state relay (SSR)

Example: 34 series solid state relay, 6 A 24 V DC output, 24 V DC supply.

3	4	.	8	1	.	7	.	0	2	4	.	9	0	2	4	

Series

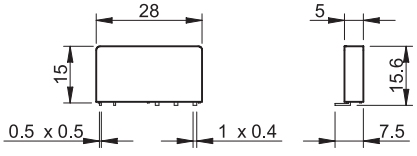
Type
8 = SSR type

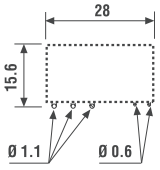
Output
1 = 1 NO (SPST-NO)

Input circuit
See input specifications

Output circuit
9024 = 6 A - 24 V DC
7048 = 0.1 A - 48 V DC
7220 = 0.2 A - 220 V DC
8240 = 2 A - 240 V AC

Flat pack version

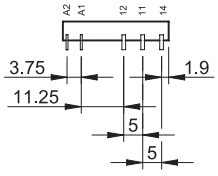




Copper side view

Option = 34.51.7xxx.x019

Environmental protection RT I



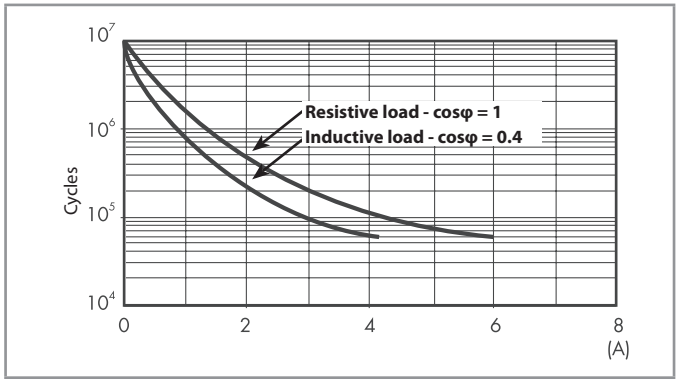
Electromechanical relay

Technical data

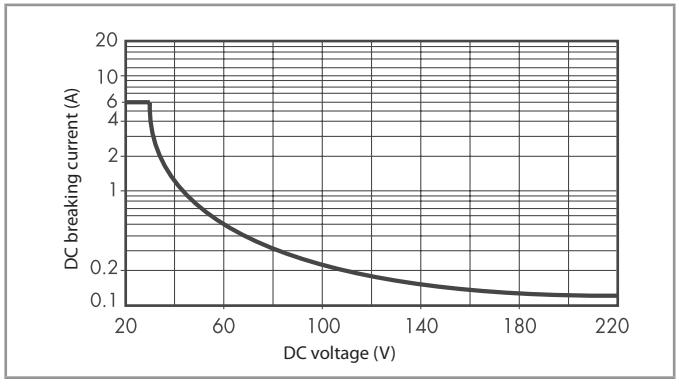
Insulation according to EN 61810-1				
Nominal voltage of supply system		V AC	230/400	
Rated insulation voltage		V AC	250	400
Pollution degree			3	2
Insulation between coil and contact set				
Type of insulation			Reinforced	
Overvoltage category			III	
Rated impulse voltage		kV (1.2/50 µs)	6	
Dielectric strength		V AC	4000	
Insulation between open contacts				
Type of disconnection			Micro-disconnection	
Dielectric strength		V AC/kV (1.2/50 µs)	1000/1.5	
Conducted disturbance immunity				
Burst (5…50)ns, 5 kHz, on A1 - A2 according to EN 61000-4-4			level 4 (4 kV)	
Surge (1.2/50 µs) on A1 - A2 (differential mode) according to EN 61000-4-5			level 3 (2 kV)	
Other data				
Bounce time: NO/NC		ms	1/6	
Vibration resistance (5…55)Hz: NO/NC		g	10/5	
Shock resistance		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



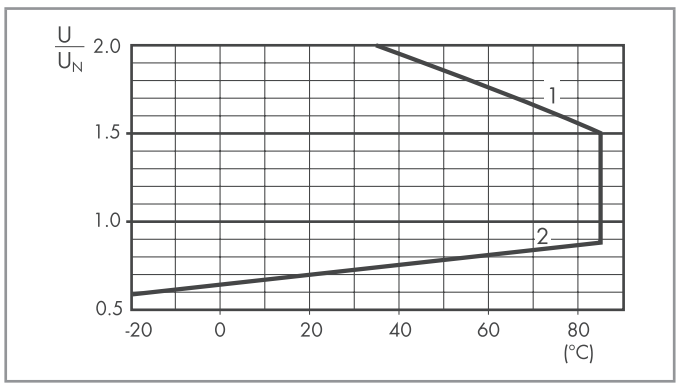
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ $60 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
  Note: the release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

Coil specifications

DC coil data

Nominal voltage U_N	Coil code	Operating range U_{min}	Operating range U_{max}	Resistance R	Rated coil consumption I at U_N
V		V	V	Ω	mA
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	3350	7.1
48	**7**.048	33.6	72	12300	3.9
60	**7**.060	42	90	19700	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

A

Technical data

Insulation			Dielectric strength	Impulse (1.2/50 µs)
Between input and output			3000 V AC	4 kV
EMC specifications		**Reference standard**		
Electrostatic discharge	contact discharge	EN 61000-4-2	4 kV	
	air discharge	EN 61000-4-2	8 kV	
Radiated electromagnetic field (80…1000 MHz)		EN 61000-4-3	10 V/m	
Fast transients on supply terminals (burst 5/50 ns, 5 and 100 kHz)		EN 61000-4-4	2 kV	
Voltage pulses on supply terminals (surge 1.2/50 µs)	common mode	EN 61000-4-5	0.7 kV	
	differential mode	EN 61000-4-5	0.7 kV*	
Radio-frequency common mode voltage (0.15…230 MHz)		EN 61000-4-6	10 V	
Other data				
Power lost to the environment	without output current	W	0.15	
	with rated current	W	0.4	

* For 34.81.7.005…= 0.3 kV ; for 34.81.7.012…= 0.5 kV

Input specification

Input data - DC types

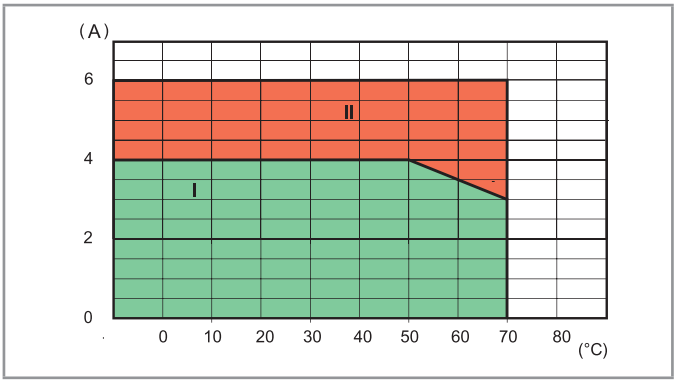
Nominal voltage U_N	Input code	Operating range U_{min}	Operating range U_{max}	Release voltage	Impedance	Control current I at U_N
V		V	V	V	Ω	mA
5	**7**.005	3.5	12*	1	715	7*
12	**7**.012	8	17	4	1715	7
24	**7**.024	16	30	10	3430	7
60	**7**.060	35	72	20	17000	3.5

* For 34.81.7.005.8240: U_{MAX} = 10 V, I @ 5 V = 12 mA

Output specification

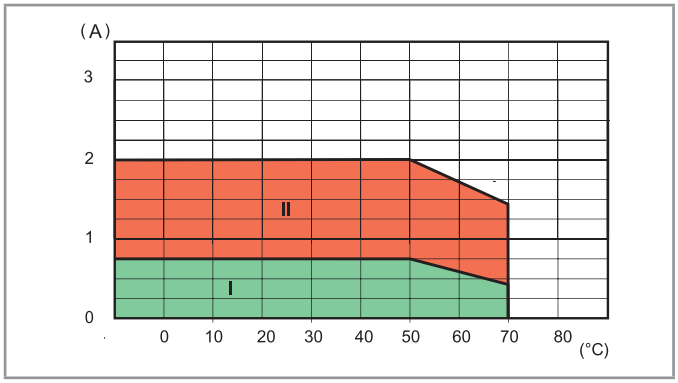
L 34-1 - Output DC current v ambient temperature

34.81.7…9024



L 34 - Output AC current v ambient temperature

34.81.7…8240



I: SSR installed on 93 series sockets as a group (without gap between sockets)

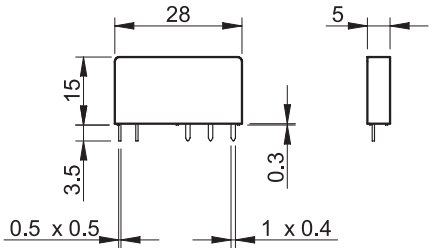
II: SSR installed individually in free air , or with a gap ≥ 9 mm, which implies a not significant influence from nearby components

Max recommended switching frequency (Cycles/Hour, with 50% Duty-cycle) at ambient temperature 50°C, single mounting

Load	34.81.7xxx.**9024**	34.81.7xxx.**8240**	34.81.7xxx.**7048**	34.81.7xxx.**7220**
24 V 6 A DC1	180 000	—	—	—
24 V 3 A DC L/R = 10 ms	5000	—	—	—
24 V 2 A DC L/R = 40 ms	3600	—	—	—
24 V 1 A DC L/R = 40 ms	6500	—	—	—
24 V 0.8 A DC L/R = 40 ms	9000	—	—	—
24 V 1.5 A DC L/R = 80 ms	3250	—	—	—
230 V 2 A AC1	—	60 000	—	—
230 V 1.25 A AC15	—	3600	—	—
48 V 0.1 A DC1	—	—	60 000	—
220 V 0.2 A DC1	—	—	—	60 000

Outline drawings

Type 34.51



Type 34.81