chanhvinh.com

finder
SWITCH TO THE FUTURE

45
SERIES

Miniature PCB Relays
10 - 16 A

- Burners, boilers and furnaces
- Film projectors
- Infrared and microwave ovens
- Jacuzzis and hot tubs
- Electronic circuit boards



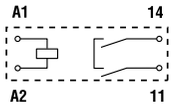
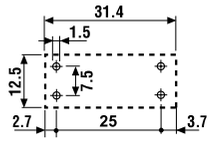
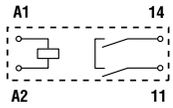
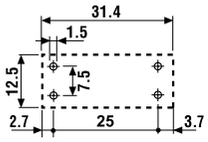
chanhvinh.com

FINDER reserves the right to alter characteristics at any time without notice. FINDER assumes no liability for damage to persons or property, caused as a result of the incorrect use or application of its products.

chanhvinh.com

Relay for +105 °C ambient use
PCB mount - high contact gap
- 45.31…x310, 1 Pole normally open (≥ 3 mm contact gap)
- 45.31…0610, 1 Pole normally open (≥ 3.6 mm contact gap)

- Contact gap ≥ 3 mm or ≥ 3.6 mm according to EN 60730-1
- Sensitive DC coil - 360 mW (45.31…x310 type)
- Cadmium Free contact material
- Reinforced insulation between coil and contacts according to EN 60335-1, EN 50178, EN 60204 with safe separation and 8 mm clearance and creepage distance
- 6 kV (1.2/50 µs) isolation, coil-contacts
- Flux proof: RT II

	45.31…x310	45.31…0610
		
	• 1 NO (SPST-NO), ≥ 3 mm gap • Max ambient temperature +105 °C • PCB mounting	• 1 NO (SPST-NO), ≥ 3.6 mm gap • Max ambient temperature +105 °C • PCB mounting
	 45.31…x310 (1 NO/SPST-NO) 	 45.31…0610 (1 NO/SPST-NO) 
	Copper side view	Copper side view

For UL ratings see:
"General technical information" page V

For outline drawing see page 7

Contact specification			
Contact configuration		1NO (SPST-NO) ≥ 3 mm gap	1NO (SPST-NO) ≥ 3.6 mm gap
Rated current/Maximum peak current	A	16/30	10/30
Rated voltage/ Maximum switching voltage	V AC	250/400	500/500
Rated load AC1	VA	4000	5000
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	16/4/1	10/4/1
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgNi	AgNi
Coil specification			
Nominal voltage (U_N)	V AC (50/60 Hz)	—	—
	V DC	6 - 12 - 24 - 48 - 60	6 - 12 - 24 - 48 - 60
Rated power AC/DC	VA (50 Hz)/W	—/0.36	—/0.55
Operating range	AC	—	—
	DC	(0.7…1.2)U_N	(0.8…1.2)U_N
Holding voltage	AC/DC	—/0.4 U_N	—/0.4 U_N
Must drop-out voltage	AC/DC	—/0.1 U_N	—/0.1 U_N
Technical data			
Mechanical life AC/DC	cycles	—/$10 \cdot 10^6$	—/$2 \cdot 10^6$
Electrical life at rated load AC1	cycles	$30 \cdot 10^3$	$10 \cdot 10^3$
Operate/release time	ms	12/2	12/2
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	2500	3000
Ambient temperature range	°C	–40…+105	–40…+105
Environmental protection		RT II	RT II
Approvals (according to type)			

chanhvinh.com

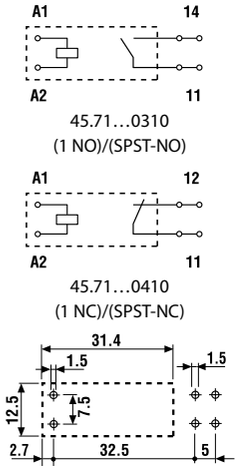
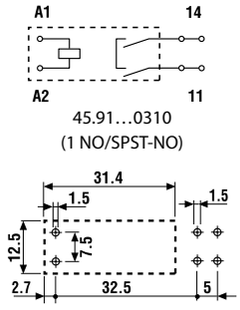
45 SERIES
Miniature PCB relays 16 A

Relays for +125 °C ambient use
PCB mount - Faston 250 contact connections
- **45.71, 1 Pole normally open or normally closed**
- **45.91, 1 Pole normally open (≥ 3 mm contact gap)**

- Contact gap ≥ 3 mm according to EN 60730-1 (45.91 type)
- Sensitive DC coil - 360 mW
- Cadmium Free option available
- Reinforced insulation between coil and contacts according to EN 60335-1, EN 50178, EN 60204 with safe separation and 8 mm clearance and creepage distance
- 6 kV (1.2/50 µs) isolation, coil-contacts
- Flux proof: RT II standard, (RT III option)

For UL ratings see: "General technical information" page V

For outline drawing see page 7

	45.71	45.91
		
	• 1 NO or 1 NC (SPST-NO or SPST-NC) • Max ambient temperature +125 °C • PCB mounting + Faston 250	• 1 NO (SPST-NO), ≥ 3 mm gap • Max ambient temperature +125 °C • PCB mounting + Faston 250
		
	Copper side view	Copper side view

Contact specification			
Contact configuration		1NO or 1NC (SPST-NO or SPST-NC)	1NO (SPST-NO) ≥ 3 mm gap
Rated current/Maximum peak current	A	16/30	16/30
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	4000	4000
Rated load AC15 (230 V AC)	VA	750	750
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	16/0.3/0.13	16/4/1
Minimum switching load	mW (V/mA)	500 (10/5)	500 (10/5)
Standard contact material		AgCdO	AgNi
Coil specification			
Nominal voltage (U_N)	V AC (50/60 Hz)	—	—
	V DC	6 - 12 - 24 - 48 - 60	6 - 12 - 24 - 48 - 60
Rated power AC/DC	VA (50 Hz)/W	—/0.36	—/0.36
Operating range	AC	—	—
	DC	(0.7…1.2)U_N	(0.7…1.2)U_N
Holding voltage	AC/DC	—/0.4 U_N	—/0.4 U_N
Must drop-out voltage	AC/DC	—/0.1 U_N	—/0.1 U_N
Technical data			
Mechanical life AC/DC	cycles	—/10 · 10^6	—/10 · 10^6
Electrical life at rated load AC1	cycles	100 · 10^3	30 · 10^3
Operate/release time	ms	10/2	12/2
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1000	2500
Ambient temperature range	°C	–40…+125	–40…+125
Environmental protection		RT II	RT II
Approvals (according to type)			

chanhvinh.com

Ordering information

Example: 45 series for PCB relay + Faston 250, 1 NO (SPST-NO), 12 V DC coil.

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

Series

Type
3 = PCB mount, ≥ 3 mm or ≥ 3.6 mm contact gap
7 = PCB + Faston 250 mount
9 = PCB + Faston 250 mount, ≥ 3 mm

No. of poles
1 = 1 pole, 16 A

Coil version
7 = Sensitive DC
9 = Standard DC (45.31…0610 only)

Coil voltage
See coil specifications

A: Contact material
0 = Standard AgCdO for 45.71, Standard AgNi for 45.31 and 45.91
1 = AgNi
2 = AgCdO

B: Contact circuit
3 = NO (SPST)
4 = NC (SPST) 45.71 only
6 = NO (SPST), ≥ 3.6 mm

C: Options
1 = None

D: Special versions
0 = Flux proof (RT II)
1 = Wash tight (RT III) 45.71 and 45.91 only

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

Type	Coil version	A	B	C	D
45.31	sensitive DC	0 - 2	3	1	0
	standard DC	0	6	1	0
45.71	sensitive DC	0 - 1	3 - 4	1	0 - 1
45.91	sensitive DC	0 - 2	3	1	0 - 1

Technical data

Insulation according to EN 61810-1					
		45.71		**45.31 / 45.91**	
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		Reinforced (8 mm)		Reinforced (8 mm)	
Overvoltage category		III		III	
Rated impulse voltage	kV (1.2/50 µs)	6		6	
Dielectric strength	V AC	4000		4000	
Insulation between open contacts					
Type of disconnection		Micro-disconnection		Full-disconnection	
Overvoltage category		—		III	
Rated impulse voltage	kV (1.2/50 µs)	—		4	
Dielectric strength	V AC/kV (1.2/50 µs)	1000/1.5		2500/4	
Insulation between coil terminals					
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)	kV (1.2/50 µs)	2			
Other data		**45.71**		**45.31 / 45.91**	
Bounce time: NO/NC	ms	3/3		2/—	
Vibration resistance (10…150)Hz: NO/NC	g	20/10		20/—	
Shock resistance	g	20			
Power lost to the environment — without contact current	W	0.4			
Power lost to the environment — with rated current	W	1.8			
Recommended distance between relays mounted on PCB	mm	≥ 5			

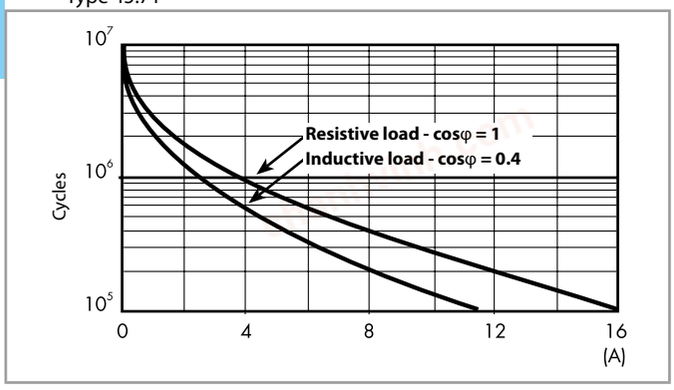
chanhvinh.com

Contact specification

A

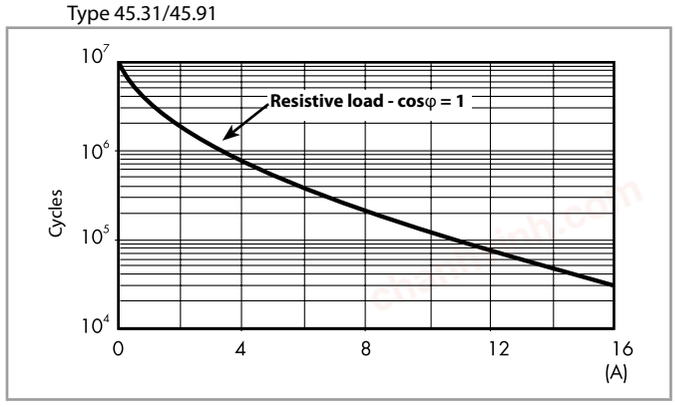
F 45 - Electrical life (AC) v contact current

Type 45.71

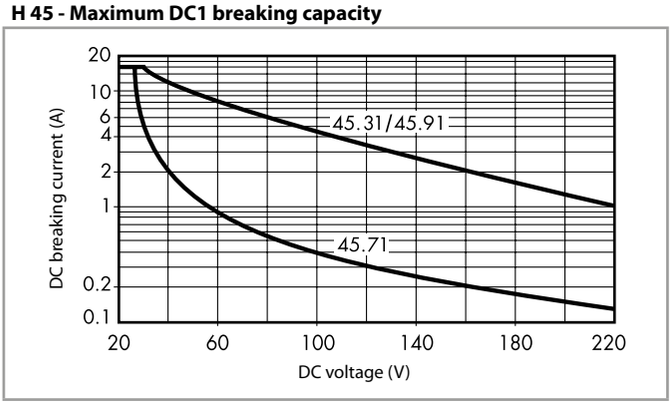


F 45 - Electrical life (AC) v contact current

Type 45.31/45.91



H 45 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 100 · 10^3 cycles (45.71) and ≥ 30 · 10^3 cycles (45.31, 45.91) 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

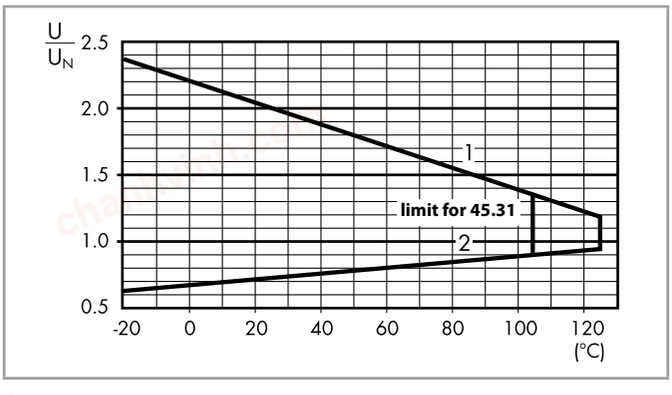
DC coil data - 0.36 W sensitive

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
6	**7**.006	4.2	7.2	100	60
12	**7**.012	8.4	14.4	400	30
24	**7**.024	16.8	28.8	1600	15
48	**7**.048	33.6	57.6	6400	7.5
60	**7**.060	42	72	10000	6

DC coil data - 0.55 W standard

Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	mA
6	**9**.006	4.2	7.2	72	83
12	**9**.012	8.4	14.4	300	40
24	**9**.024	16.8	28.8	1150	21
48	**9**.048	33.6	57.6	4400	11
60	**9**.060	42	72	7200	8.3

R 45 - DC coil operating range v ambient temperature



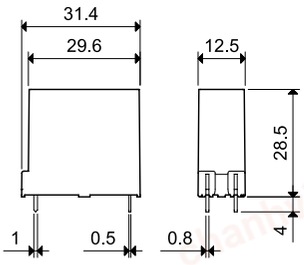
1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

XII-2018, www.findernet.com

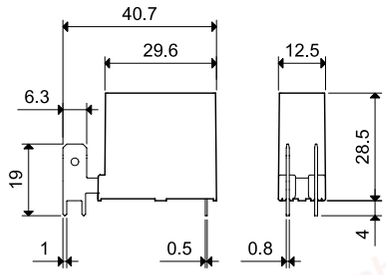
chanhvinh.com

Outline drawings

Type 45.31



Types 45.71/91



chanhvinh.com

chanhvinh.com
chanhvinh.com
chanhvinh.com
chanhvinh.com
chanhvinh.com
chanhvinh.com