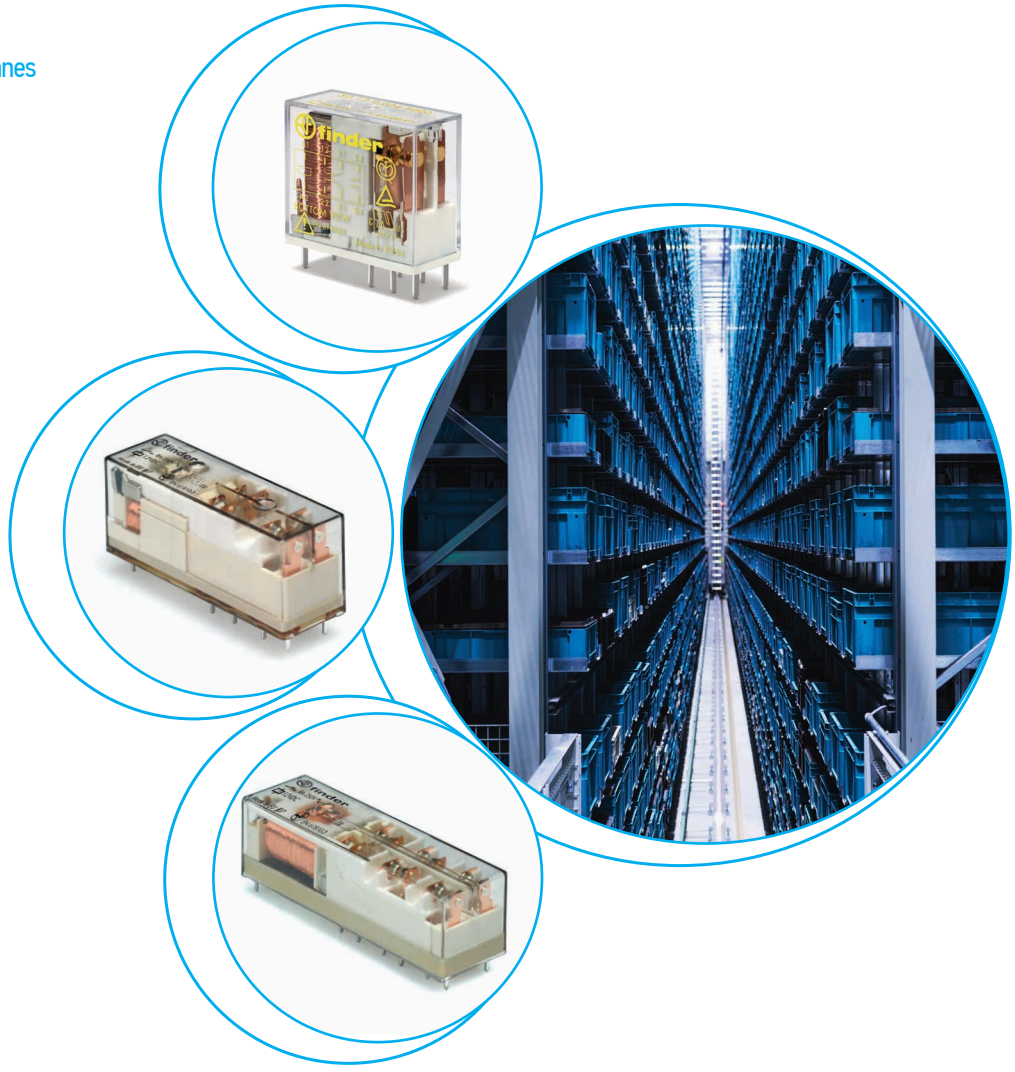
finder
RELAYING INNOVATION

50
SERIES

PCB Relay with forcibly guided contacts 8 A

- Hoists and cranes
- Escalators
- Medical and dentistry
- Hospitals
- Carousel warehouses
- Elevators and lifts
- Disabled lift
- Wood-processing machines



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In case of discrepancies between the printed and online versions, the latter prevails.

PCB Relay with forcibly guided contacts according to EN 61810-3 (previously EN 50205)
Type B
2 CO contacts*

Type 50.12…x000
- 2 pole 8 A
- Contact AgNi, $AgSnO_2$

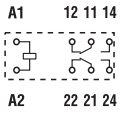
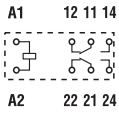
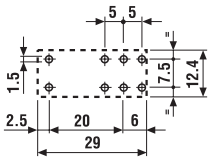
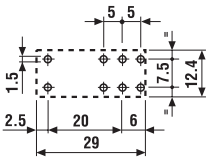
Type 50.12…5000
- 2 pole 8 A
- Contact AgNi + Au

- High physical separation between adjacent contacts
- Cadmium Free contact materials
- 8 mm, 6 kV (1.2/50 µs) isolation, coil-contacts
- "Enclosed break device" relay version tested according to **ATEX** EN 60079-1 § 15.5 following «dc» method for group IIA gases
- Flux proof: RT II

* According to EN 61810-3 only 1 NO and 1 NC (11-14 and 21-22 or 11-12 and 21-24) shall be used as forcibly guided contacts.

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

For outline drawing see page 7

	50.12…x000	**50.12…5000**
		
	• For medium duty switching, suggested for DC loads • 2 pole 8 A • 5 mm pinning • PCB mounting • Group IIA gases version	• For safety applications • Gold plate contacts for low level switching capability • 5 mm pinning • PCB mounting • Group IIA gases version
		
		
	Copper side view	Copper side view
Contact specification		
Contact configuration	2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current A	8/15	8/15
Rated voltage/ Maximum switching voltage V AC	250/400	250/400
Rated load AC1 VA	2000	2000
Rated load AC15 (230 V AC) VA	500	500
Single phase motor rating (230 V AC) kW	0.37	0.37
Breaking capacity DC1: 24/110/220 V A	8/0.65/0.4	8/0.65/0.4
Minimum switching load mW (V/mA)	500 (10/10)	50 (5/5)
Standard contact material	AgNi, $AgSnO_2$	AgNi + Au
Coil specification		
Nominal voltage (U_N) V AC (50/60 Hz)	—	—
V DC	5 - 6 - 12 - 24 - 48 - 60 - 110 - 125	5 - 6 - 12 - 24 - 48 - 60 - 110 - 125
Rated power AC/DC VA (50 Hz)/W	—/0.7	—/0.7
Operating range AC (50 Hz)	—	—
DC	(0.75…1.2)U_N	(0.75…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	100 · 10^3
Operate/release time ms	10/4	10/4
Insulation between coil and contacts (1.2/50 µs) kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts V AC	1500	1500
Ambient temperature range °C	–40…+70	–40…+70
Environmental protection	RT II	RT II
Approvals (according to type)		

50 SERIES
Forcibly guided contacts relay 8 A

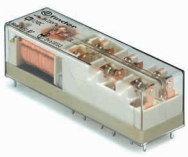
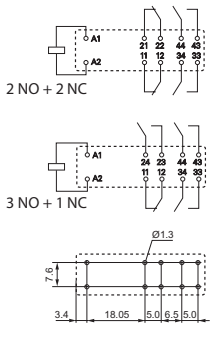
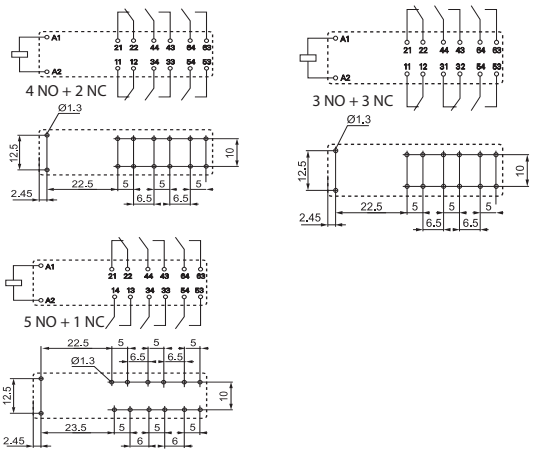
PCB Relay with forcibly guided contacts according to EN 61810 (previously EN 50205)
Type A

Type 50.14...4220/4310
- 4 pole 8 A (2 NO + 2 NC) or (3 NO +1 NC)
- Contact $AgSnO_2$

Type 50.16...5420/5510/5330
- 6 pole 8 A (4 NO + 2 NC) or (5 NO +1 NC) or (3 NO+ 3 NC)
- Contact $AgSnO_2$ + Au

- High physical separation between adjacent contacts
- Cadmium Free contact materials
- DC coil 800 mW
- 8 mm, 6 kV (1.2/50 µs) isolation, coil-contacts
- PCB mounting
- Wash tight: RT III

C

50.14	50.16
	
• For safety applications • 4 pole 8 A • PCB mounting	• For safety applications • 6 pole 8 A • PCB mounting
	
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		2 NO + 2 NC, 3 NO + 1 NC	4 NO + 2 NC, 5 NO + 1 NC, 3 NO+ 3 NC
Rated current/Maximum peak current	A	8/15	8/15
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	2000	2000
Rated load AC15 (230 V AC)	VA	700	1100
Single phase motor rating (230 V AC)	kW	0.37	0.37
Breaking capacity DC1: 24/110/220 V	A	8/0.6/0.2	8/0.6/0.2
Minimum switching load	mW (V/mA)	50 (5/10)	50 (5/10)
Standard contact material		$AgSnO_2$	$AgSnO_2$ + Au
Coil specification			
Nominal voltage (U_N)	V AC (50/60 Hz)	—	—
	V DC	12 - 24 - 48 - 110	12 - 24 - 48 - 110
Rated power AC/DC	VA (50 Hz)/W	—/0.8	—/0.8
Operating range	AC (50 Hz)	—	—
	DC	(0.75…1.2)U_N	(0.75…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	100 · 10^3
Operate/release time	ms	10/4	10/4
Insulation between coil and contacts (1.2/50 µs)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1500	1500
Ambient temperature range	°C	–40…+70	–40…+70
Environmental protection		RT III	RT III
Approvals (according to type)			

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Ordering information

Example: 50 series forcibly guided contacts, 2 CO (DPDT) 8 A contacts, 24 V DC coil.

										A	B	C	D	
5	0	.	1	2	.	9	.	0	2	4	. 5	0	0	0

Series

Type
1 = PCB

No. of poles
2 = 2 pole 8 A
4 = 4 pole 8 A
6 = 6 pole 8 A

Coil version
9 = DC

Coil voltage
See coil specifications

A: Contact material
1 = AgNi (50.12)
4 = $AgSnO_2$ (50.12, 50.14)
5 = AgNi + Au (50.12)
5 = $AgSnO_2$ + Au (50.16)

B: Contact circuit
0 = CO (nPDT)
2 = 2 NO (DPST-NO)
3 = 3 NO (3PST-NO)
4 = 4 NO (4PST-NO)
5 = 5 NO (5PST-NO)

D: Special versions
0 = Flux proof (RT II)
0 = Wash tight (RT III), 50.14, 50.16

C: Options
0 = CO (nPDT)
1 = 1 NC (SPST-NC)
2 = 2 NC (DPST-NC)
3 = 3 NC (3PST-NC)

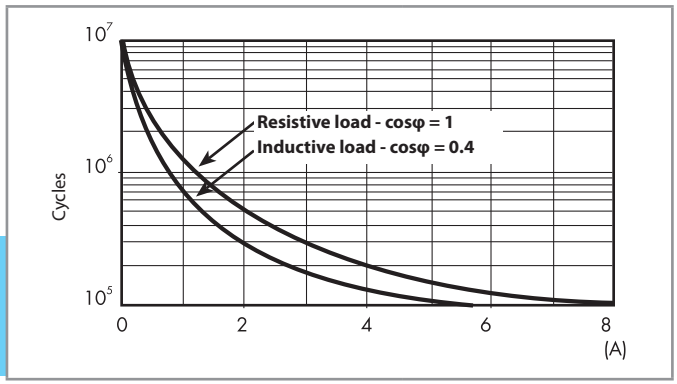
C

Technical data

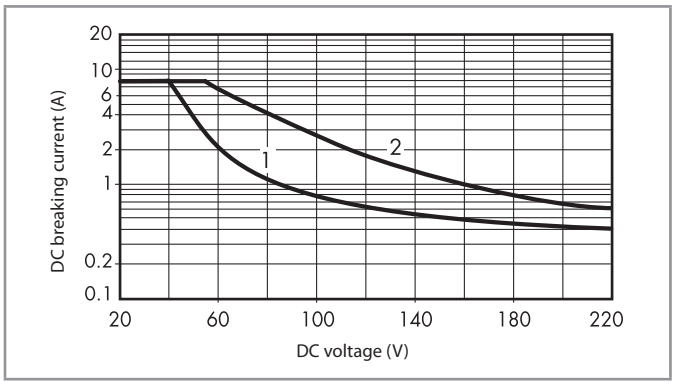
Insulation according to EN 61810-1				
Nominal voltage of supply system		V AC	230/400	
Rated insulation voltage		V AC	250	400
Pollution degree			3	2
Insulation between coil and contact set				
Type of insulation			Reinforced (8 mm)	
Overvoltage category			III	
Rated impulse voltage		kV (1.2/50 µs)	6	
Dielectric strength		V AC	4000	
Insulation between adjacent contacts				
Type of insulation			Basic	
Overvoltage category			III	
Rated impulse voltage		kV (1.2/50 µs)	4	
Dielectric strength (50.12, 50.16)		V AC	3000	
Dielectric strength (50.14)		V AC	2500	
Insulation between open contacts				
Type of disconnection			Micro-disconnection	
Dielectric strength		V AC/kV (1.2/50 µs)	1500/2.5	
Insulation between coil terminals				
Rated impulse voltage (according to EN 61180)		kV (1.2/50 µs)	2	
Other data				
Bounce time: NO/NC		ms	2/10	
Vibration resistance (10…200)Hz: NO/NC		g	20/6	
Shock resistance NO/NC		g	20/5	
Power lost to the environment	without contact current	W	0.7	
	with rated current	W	1.2	
Recommended distance between relays mounted on PCB		mm	≥ 5	

Contact specification

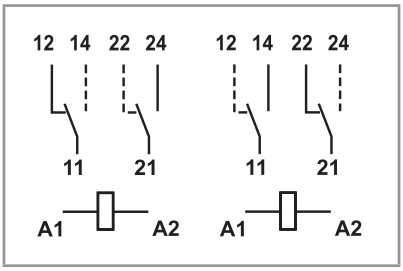
F 50 - Electrical life (AC) v contact current (type 50.12)



H 50 - Maximum DC1 breaking capacity (type 50.12)



- 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 for the load will be increased.



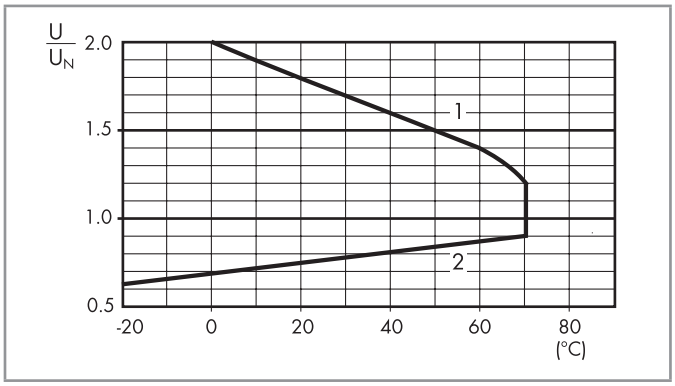
Alternative selection of NO and NC contacts to provide Forcibly guided (mechanically linked) contacts, in accordance with EN 61810-3 (type B).

Coil specifications

DC coil data (type 50.12)

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	**9**.005	3.8	6	35	143
6	**9**.006	4.5	7.2	50	120
12	**9**.012	9	14.4	205	58.5
24	**9**.024	18	28.8	820	29.3
48	**9**.048	36	57.6	3280	14.4
60	**9**.060	45	72	5140	11.7
110	**9**.110	82.5	131	17250	6.4
125	**9**.125	93.7	150	22300	5.6

R 50 - DC coil operating range v ambient temperature
Standard coil (type 50.12)



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

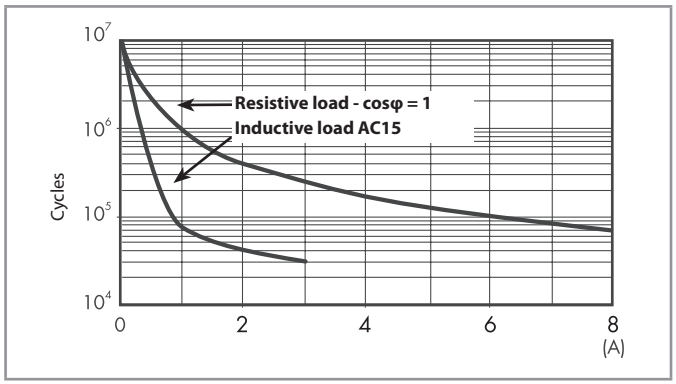
DC coil data (type 50.14/16)

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
12	**9**.012	9	14.4	180	66.6
24	**9**.024	18	28.8	720	33.3
48	**9**.048	36	57.6	2880	16.6
110	**9**.110	82.5	131	15125	7.7

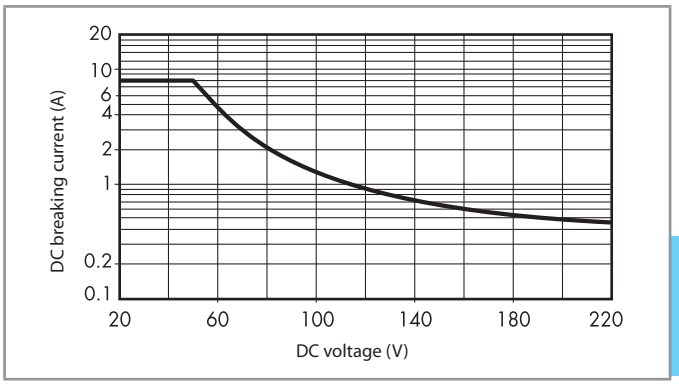
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Contact specification

F 50 - Electrical life (AC) v contact current (type 50.14)

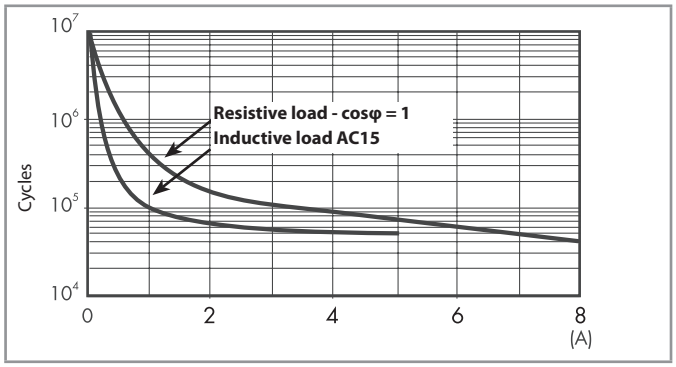


H 50 - Maximum DC1 breaking capacity (type 50.14)

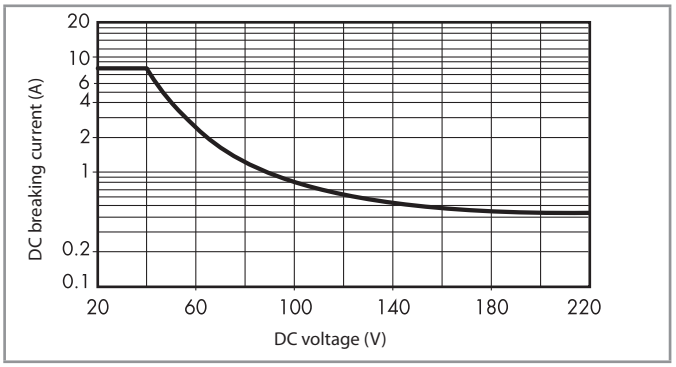


- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ $100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
  Note: the release time for the load will be increased.

F 50 - Electrical life (AC) v contact current (type 50.16)



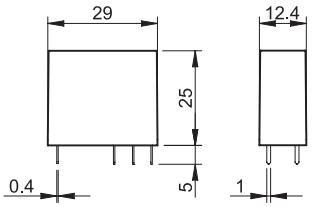
H 50 - Maximum DC1 breaking capacity (type 50.16)



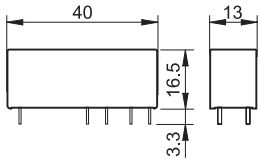
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ $100 \cdot 10^3$ can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.
  Note: the release time for the load will be increased.

Outline drawings

Types 50.12…x000/50.12…5000



Type 50.14



Type 50.16

