

# Low profile PCB relays 10 - 16 A



Medical and  
dentistry



Alarm systems



Air conditioners



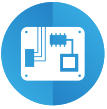
Burners,  
boilers and  
furnaces



Electric and  
electronic toys  
and games



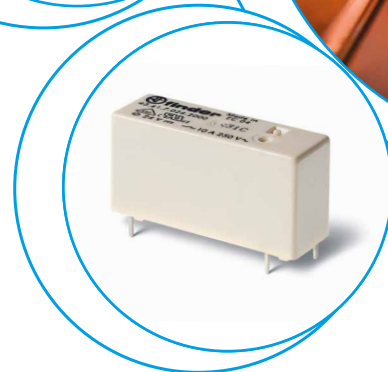
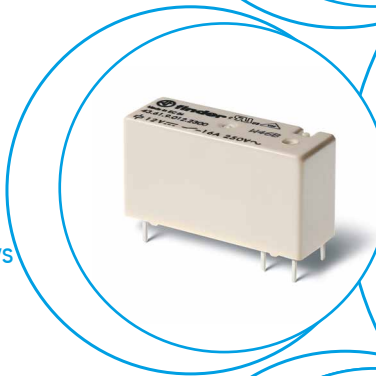
Door and  
gate openers



Electronic circuit  
boards



Vending  
machines





**1 Pole - Low profile (15.4 mm height)**

**Type 43.41**

- 1 Pole, 10 A (3.2 mm pin pitch)

**Type 43.41-0300**

- 1 Pole NO, 10 A (5 mm pin pitch)

**Type 43.61-0300**

- 1 Pole NO, 16 A (5 mm pin pitch)

**PCB mount - direct or via PCB socket (43.41 version)**

- Sensitive DC coil:
  - 250 mW (10 A version)
  - 400 mW (16 A version)
- Very high coil-contact isolation 10 mm, 6 kV (1.2/50 μs)
- Cadmium Free contacts (preferred version)
- Flux proof: RT II standard, (RT III option)

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 5

**Contact specification**

Contact configuration		1 CO (SPDT)	1 NO (SPST-NO)	1 NO (SPST-NO)
Rated current/Maximum peak current	A	10/15	10/15	16/25
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400	250/400
Rated load AC1	VA	2500	2500	4000
Rated load AC15 (230 V AC)	VA	500	500	750
Single phase motor rating (230 V AC)	kW	—	—	—
Breaking capacity DC1: 24/110/220 V	A	10/0.3/0.12	10/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	300 (5/5)	300 (5/5)
Standard contact material		AgNi	AgNi	AgNi

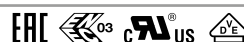
**Coil specification**

Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	—	—	—
	V DC	3 - 6 - 9 - 12 - 18 - 24 - 36 - 48	3 - 6 - 9 - 12 - 18 - 24 - 36 - 48	12 - 24 - 48
Rated power AC/DC	VA (50 Hz)/W	—/0.25	—/0.25	—/0.4
Operating range	AC	—	—	—
	DC	(0.7...1.5)U <sub>N</sub>	(0.7...1.5)U <sub>N</sub>	(0.7...1.2)U <sub>N</sub>
Holding voltage	AC/DC	—/0.4 U <sub>N</sub>	—/0.4 U <sub>N</sub>	—/0.4 U <sub>N</sub>
Must drop-out voltage	AC/DC	—/0.05 U <sub>N</sub>	—/0.05 U <sub>N</sub>	—/0.05 U <sub>N</sub>

**Technical data**

Mechanical life AC/DC	cycles	—/10 · 10 <sup>6</sup>	—/10 · 10 <sup>6</sup>	—/10 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	100 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>	50 · 10 <sup>3</sup>
Operate/release time	ms	6/4	6/2	6/2
Insulation between coil and contacts (1.2/50 μs)	kV	6 (10 mm)	6 (10 mm)	6 (10 mm)
Dielectric strength between open contacts	V AC	1000	1000	1000
Ambient temperature range	°C	-40...+85	-40...+85	-40...+85
Environmental protection		RT II	RT II	RT II

**Approvals** (according to type)



	43.41	43.41-0300	43.61-0300
	<ul style="list-style-type: none"> <li>• 3.2 mm contact pin pitch</li> <li>• 1 Pole CO, 10 A</li> <li>• PCB direct or via socket</li> </ul>	<ul style="list-style-type: none"> <li>• 5.0 mm contact pin pitch</li> <li>• 1 Pole NO, 10 A</li> <li>• PCB mount</li> </ul>	<ul style="list-style-type: none"> <li>• 5.0 mm contact pin pitch</li> <li>• 1 Pole NO, 16 A</li> <li>• PCB mount</li> </ul>
	Copper side view	Copper side view	Copper side view

## Ordering information

Example: 43 series low-profile PCB relay, 1 CO (SPDT), 24 V DC coil.

A

**4 3 . 4 1 . 7 . 0 2 4 . 2 0 0 0**

**Series**

**Type**

- 4 = PCB - 3.2 mm pinning (CO/SPDT, 10 A)
- PCB - 5 mm pinning (NO/SPST-NO, 10 A)
- 6 = PCB - 5 mm pinning (NO/SPST-NO, 16 A)

**No. of poles**

- 1 = 1 pole

**Coil version**

- 7 = Sensitive DC (only for 43.41)
- 9 = DC (only for 43.61)

**Coil voltage**

See coil specifications

**A: Contact material**

- 0 = AgNi
- 2 = AgCdO
- 4 = AgSnO<sub>2</sub>
- 5 = AgNi + Au

**B: Contact circuit**

- 0 = CO (SPDT) - (for 43.41 only)
- 3 = NO (SPST)

**D: Special versions**

- 0 = Flux proof (RT II)
- 1 = Wash tight (RT III)

**C: Options**

- 0 = None

**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
43.41	sensitive DC	<b>0</b> - 2 - 4 - 5	<b>0</b> - 3	<b>0</b>	<b>0</b> - 1
43.61	DC	<b>0</b> - 2 - 4	<b>3</b>	<b>0</b>	<b>0</b>

## 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 (10 mm)
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

### Insulation between coil terminals

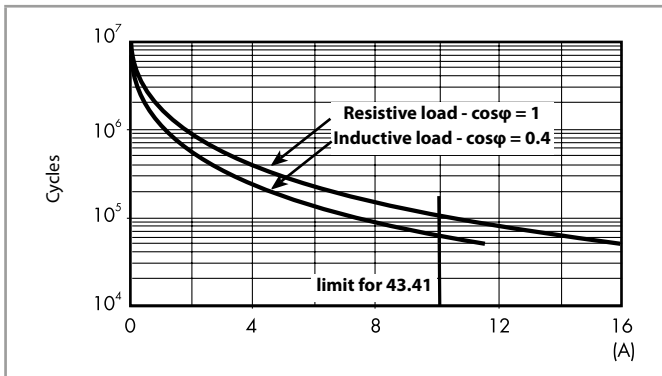
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)	kV (1.2/50 μs)	2
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### Other data

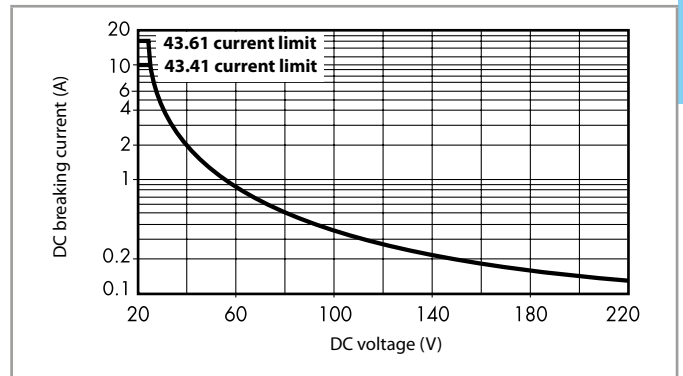
Bounce time: NO/NC	ms	3/6
Vibration resistance (5...55)Hz: NO/NC	g	15/3
Shock resistance	g	15
Power lost to the environment	without contact current	W 0.25 (43.41) 0.4 (43.61)
	with rated current	W 1.3 (43.41) 2 (43.61)
Recommended distance between relays mounted on PCB	mm	≥ 5

## Contact specification

F 43 - Electrical life (AC) v contact current



H 43 - Maximum DC1 breaking capacity



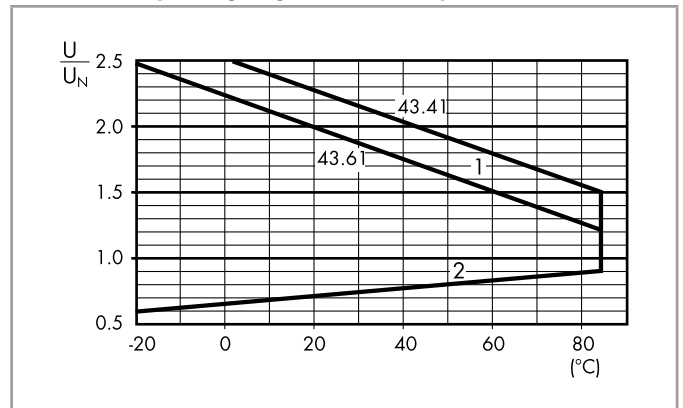
- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of  $\geq 100 \cdot 10^3$  for 43.41 and  $\geq 50 \cdot 10^3$  for 43.61 can be expected.
- In the case of DC13 loads, the connection of a diode in parallel with the load will permit a similar electrical life as for a DC1 load.  
Note: the release time for the load will be increased.

## Coil specifications

DC coil data - 0.25 W sensitive (type 43.41)

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		
3	7.003	2.2	4.5	36	83.5
6	7.006	4.2	9	150	40
9	7.009	6.5	13.5	324	27.7
12	7.012	8.4	18	580	20.7
18	7.018	13	27	1300	13.8
24	7.024	16.8	36	2200	10.9
36	7.036	25.2	54	5200	6.9
48	7.048	33.6	72	9200	5.2

R 43 - DC coil operating range v ambient temperature



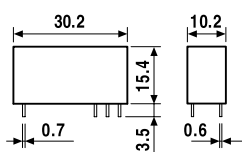
- 1 - Max. permitted coil voltage.
- 2 - Min. pick-up voltage with coil at ambient temperature.

DC coil data - 0.4 W standard (type 43.61)

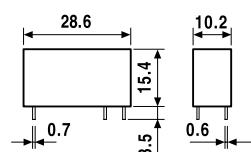
Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ mA
		$U_{min}$ V	$U_{max}$ V		
12	9.012	8.4	14.4	360	33.3
24	9.024	16.8	28.8	1400	17.1
48	9.048	33.6	57.6	5760	8.3

## Outline drawings

Type 43.41



Types 43.41-0300/43.61-0300





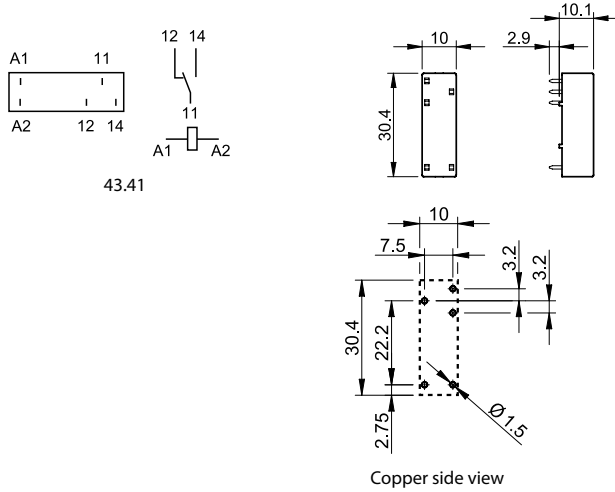
A

95.23

Approvals  
(according to type):



PCB socket (for changeover contacts only)	95.23 (blue)	95.23.0 (black)
For relay type	43.41	43.41
<b>Accessories</b>		
Metal retaining clip (supplied with socket - packaging code SNA)		095.43
<b>Technical data</b>		
Rated values	10 A - 250 V	
Insulation	6 kV (1.2/50 μs) between coil and contacts	
Protection category	IP 20	
Ambient temperature	°C -40...+70	



## Packaging codes

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

Example:

