

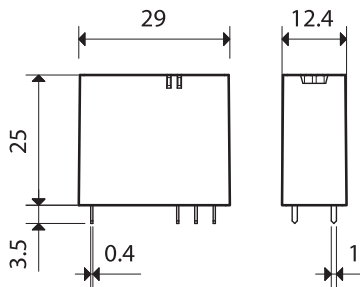
## Features

### 1 Pole relay range

- 40.31 - 1 Pole 12 A (3.5 mm pin pitch)
- 40.61 - 1 Pole 16 A (5 mm pin pitch)

### PCB mount

- DC sensitive coils as standard
- Cadmium Free contact material available
- 6 kV (1.2/50  $\mu$ s) isolation coil-contacts
- 8 mm creepage and clearance distances between coil and contacts
- Meets EN 60335-1 glow wire requirements
- Flux proof: RT II standard, (RT III option)
- AC inductive load rating (related to AC15 utilisation category) 4 A 250 V approved according to EN 61810-1:2008 (Annex B tables B1, B2, B3)



### NEW 40.31-1x2x

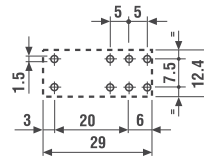
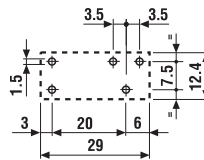
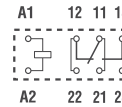
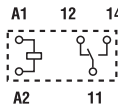


- 3.5 mm contact pin pitch
- 1 Pole 12 A

### NEW 40.61-xx2x



- 5 mm contact pin pitch
- 1 Pole 16 A



Copper side view

Copper side view

Contact specification			
Contact configuration		1 CO (SPDT)	1 CO (SPDT)
Rated current/Maximum peak current	A	12/20	16/30
Rated voltage/Maximum switching voltage V AC		250/400	250/400
Rated load AC1	VA	3,000	4,000
Rated load AC15 (230 V AC)	VA	1,000	1,000
Single phase motor rating (230 V AC)	kW	0.55	0.55
Breaking capacity DC1: 30/110/220 V	A	12/0.3/0.12	16/0.3/0.12
Minimum switching load	mW (V/mA)	300 (5/5)	500 (10/5)
Standard contact material		AgNi	AgCdO
Coil specification			
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	—	—
	V DC	12 - 24	12 - 24
Rated power	W	0.5	0.5
Operating range	AC	—	—
	DC	(0.73...1.5)U <sub>N</sub>	(0.8...1.5)U <sub>N</sub>
Holding voltage	DC	0.4 U <sub>N</sub>	0.4 U <sub>N</sub>
Must drop-out voltage	DC	0.1 U <sub>N</sub>	0.1 U <sub>N</sub>
Technical data			
Mechanical life	cycles	10 · 10 <sup>6</sup>	10 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	200 · 10 <sup>3</sup>	100 · 10 <sup>3</sup>
Operate/release time	ms	10/3	10/3
Insulation between coil and contacts (1.2/50 $\mu$ s)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts V AC		1,000	1,000
Ambient temperature range	°C	-40...+85	-40...+85
Environmental protection		RT II	RT II
Approvals (according to type)			

## Ordering information

Example: 40 series PCB relay, 1 CO (SPDT) - 12 A, 24 V DC coil.

	<b>4</b>	<b>0</b>	.	<b>3</b>	.	<b>1</b>	.	<b>7</b>	.	<b>0</b>	<b>2</b>	<b>4</b>	.	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>		
	Series			Type		No. of poles		Coil version		Coil voltage		A: Contact material		B: Contact circuit		C: Options		D: Special versions	
	40 = 40 series			3 = PCB - 3.5 mm pinning 6 = PCB - 5 mm pinning		1 = 1 pole for: 40.31, 12 A 40.61, 16 A		7 = Sensitive DC		012 = 12 V DC 024 = 24 V DC		1 = AgNi 2 = AgCdO (for 40.61 only)		0 = CO (SPDT) 3 = NO (SPST)		2 = None		0 = Standard flux proof (RT II) 1 = Wash tight (RT III)	

Selecting features and options: only combinations in the same row are possible. Preferred selections for best availability are shown in bold.

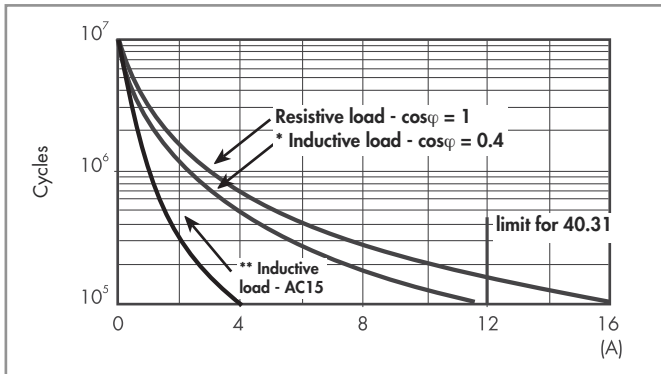
Type	Coil version	A	B	C	D
40.31	DC	<b>1</b>	<b>0</b> - 3	<b>2</b>	<b>0</b> - 1
40.61	DC	1 - <b>2</b>	<b>0</b> - 3	<b>2</b>	<b>0</b> - 1

## 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	4,000	
Insulation between open contacts			
Type of disconnection		Micro-disconnection	
Dielectric strength	V AC/kV (1.2/50 µs)	1,000/1.5	
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	2/5	
Vibration resistance (10...200)Hz: NO/NC	g	20/5	
Shock resistance NO/NC	g	20/5	
Power lost to the environment	without contact current	W	0.5
	with rated current	W	1.2 (40.31)      1.8 (40.61)
Recommended distance between relays mounted on PCB	mm	≥ 5	

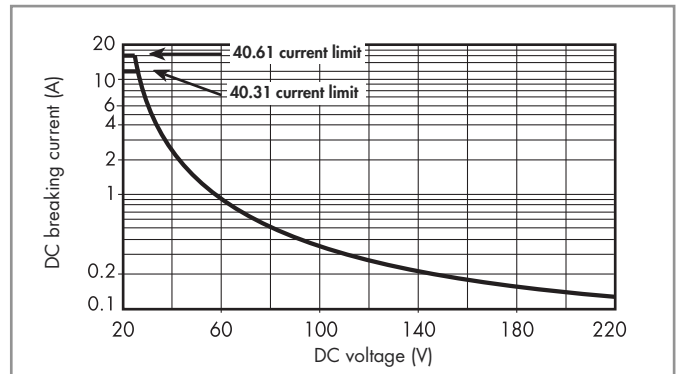
## Contact specification

**F 40 - Electrical life (AC) v contact current**  
Types 40.31/61



\* Inductive load -  $\cos\phi = 0.4$ : inrush current = rated current  
 \*\* Inductive load - AC15: inrush current = 10 x rated current

**H 40 - Maximum DC1 breaking capacity**



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of  $\geq 100 \cdot 10^3$  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

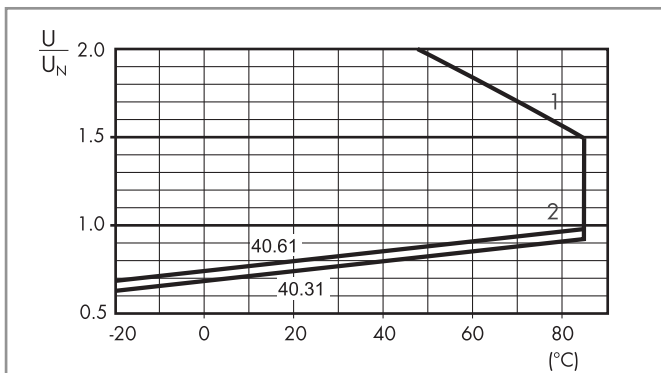
**DC coil data - 0.5 W sensitive (type 40.31)**

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	7.012	8.8	18	300	40
24	7.024	17.5	36	1,200	20

**DC coil data - 0.5 W sensitive (type 40.61)**

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	7.012	9.6	18	300	40
24	7.024	19.2	36	1,200	20

**R 40 - DC coil operating range v ambient temperature**



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

