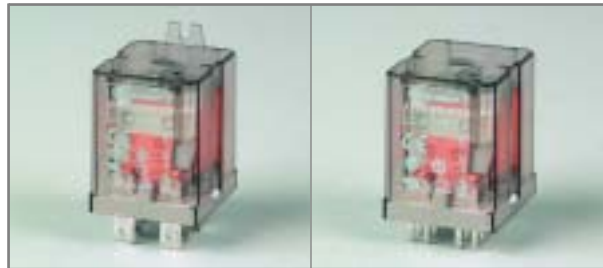
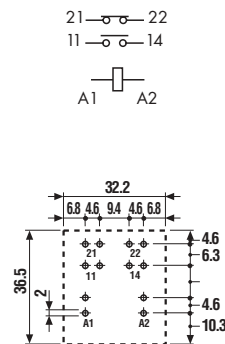
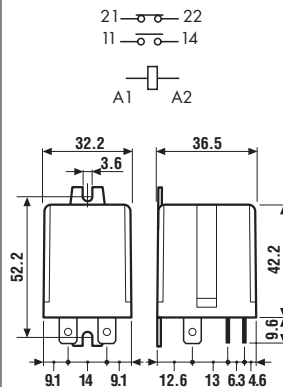


- P.C.B. or flange mount  
- AC or DC coils

**65.31**
**65.61**


- 1NO+1NC (SPST-NO+SPST-NC)  
- Flange mount  
- Faston 250 (6.3x0.8 mm)

- 1NO+1NC (SPST-NO+SPST-NC)  
- P.C.B. mounting  
- Bifurcated terminals



Copper side view  
h = 46 mm

\* With the AgSnO<sub>2</sub> material the maximum peak current is 100 A - 5 ms on NO contact.  
\*\*For 400 V applications, where requirements for pollution degree 2 are met.

Contact specifications		65.31	65.61
Contact configuration		1NO+1NC (SPST-NO+SPST-NC)	1NO+1NC (SPST-NO+SPST-NC)
Rated current/Maximum peak current	A	20/40*	20/40*
Rated voltage/Maximum switching voltage	V AC	250/400**	250/400**
Rated load in AC1	VA	5,000	5,000
Rated load in AC15 (230 V AC)	VA	1,000	1,000
Single phase motor rating (230 V AC)	kW	1.1	1.1
Breaking capacity in DC1: 30/110/220 V	A	20/0.8/0.5	20/0.8/0.5
Minimum switching load	mW (V/mA)	1,000 (10/10)	1,000 (10/10)
Standard contact material		AgCdO	AgCdO
Coil specifications		65.31	65.61
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240 - 400	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240 - 400
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220
Rated power AC/DC	VA (50 Hz)/W	2.2/1.3	2.2/1.3
Operating range	AC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.85...1.1)U <sub>N</sub>	(0.85...1.1)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>	0.8 U <sub>N</sub> /0.6 U <sub>N</sub>
Must drop-out voltage	AC/DC	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>	0.2 U <sub>N</sub> /0.1 U <sub>N</sub>
Technical data		65.31	65.61
Mechanical life AC/DC	cycles	10 · 10 <sup>5</sup> /30 · 10 <sup>6</sup>	10 · 10 <sup>5</sup> /30 · 10 <sup>6</sup>
Electrical life at rated load AC1	cycles	80 · 10 <sup>3</sup>	80 · 10 <sup>3</sup>
Operate/release time	ms	10/12	10/12
Insulation according to EN 61810-1 ed. 2		4 kV/3	4 kV/3
Insulation between coil and contacts (1.2/50 μs)	kV	4	4
Dielectric strength between open contacts	V AC	1,500	1,500
Ambient temperature range	°C	-40...+75	-40...+75
Environmental protection		RT I	RT I
<b>Approvals:</b> (according to type)			

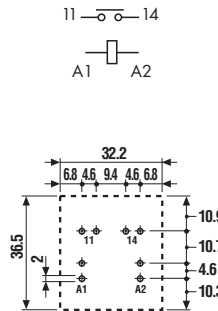
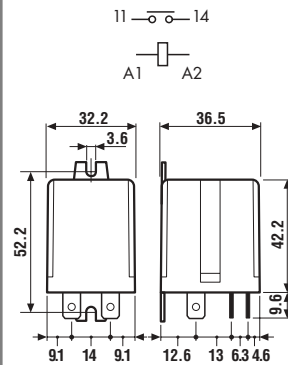
- P.C.B. or flange mount
- AC or DC coils
- 3 mm gap between open contacts on NO (SPST-NO) version

### 65.31-0300

### 65.61-0300



- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>- 1 NO (SPST-NO) 3mm contact gap</li> <li>- Flange mount</li> <li>- Faston 250 (6.3x0.8 mm)</li> </ul> | <ul style="list-style-type: none"> <li>- 1 NO (SPST-NO) 3mm contact gap</li> <li>- P.C.B. mounting</li> <li>- Bifurcated terminals</li> </ul> |
|---|---|



Copper side view  
h = 42 mm

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- \* Distance between contacts  $\geq 3$  mm (EN 60335-1).
- \*\* With the  $AgSnO_2$  material the maximum peak current is 100 A - 5 ms on NO contact.
- \*\*\* For 400 V applications, where requirements for pollution degree 2 are met.

Contact specifications			
Contact configuration		1 NO 3 mm*	1 NO 3 mm*
Rated current/Maximum peak current	A	30/50**	30/50**
Rated voltage/Maximum switching voltage V AC		250/400***	250/400***
Rated load in AC1	VA	7,500	7,500
Rated load in AC15 (230 V AC)	VA	1,250	1,250
Single phase motor rating (230 V AC)	kW	1.5	1.5
Breaking capacity in DC1: 30/110/220 V	A	30/1.1/0.7	30/1.1/0.7
Minimum switching load	mW (V/mA)	1,000 (10/10)	1,000 (10/10)
Standard contact material		AgCdO	AgCdO
Coil specifications			
Nominal voltage ( $U_N$ )	V AC (50/60 Hz)	6 - 12 - 24 - 48 - 60 - 110 - 120 - 230 - 240 - 400	
	V DC	6 - 12 - 24 - 48 - 60 - 110 - 125 - 220	
Rated power AC/DC	VA (50 Hz)/W	2.2/1.3	2.2/1.3
Operating range	AC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.85 \dots 1.1) U_N$	$(0.85 \dots 1.1) U_N$
Holding voltage	AC/DC	$0.8 U_N / 0.6 U_N$	$0.8 U_N / 0.6 U_N$
Must drop-out voltage	AC/DC	$0.2 U_N / 0.1 U_N$	$0.2 U_N / 0.1 U_N$
Technical data			
Mechanical life AC/DC	cycles	$10 \cdot 10^6 / 30 \cdot 10^6$	$10 \cdot 10^6 / 30 \cdot 10^6$
Electrical life at rated load AC1	cycles	$50 \cdot 10^3$	$50 \cdot 10^3$
Operate/release time	ms	15/4	15/4
Insulation according to EN 61810-1 ed. 2		4 kV/3	4 kV/3
Insulation between coil and contacts (1.2/50 $\mu$ s)	kV	4	4
Dielectric strength between open contacts	V AC	2,500	2,500
Ambient temperature range	$^{\circ}$ C	-40...+75	-40...+75
Environmental protection		RT I	RT I

Approvals: (according to type)



## ORDERING INFORMATION

Example: a 65 series power relay, for P.C.B. with bifurcated terminals, 1 NC + 1 NO (SPST-NO + SPST-NC) contact with a 12 V DC coil.

**6 5 . 6 1 . 9 . 0 1 2 . 0 0 0 0**

**Series** \_\_\_\_\_  
**Type** \_\_\_\_\_  
 3 = Faston 250 (6.3x0.8 mm) with rear flange mount  
 6 = P.C.B. with bifurcated terminals

**No. of poles** \_\_\_\_\_  
 1 = 1 NC + 1 NO (SPST-NO + SPST-NC)

**Coil version** \_\_\_\_\_  
 8 = AC (50/60 Hz)  
 9 = DC

**Coil voltage** \_\_\_\_\_  
 see coil specifications

**A: Contact material**  
 0 = Standard AgCdO  
 4 = AgSnO<sub>2</sub>

**B: Contact circuit** \_\_\_\_\_  
 0 = 1 NO + 1 NC (SPST-NO + SPST-NC)  
 3 = NO (≥ 3 mm contact gap)

**D: Special versions**  
 0 = Standard  
 5 = Top flange mount  
 7 = Top 35 mm rail (EN 50022) mount  
 8 = Rear 35 mm rail (EN 50022) mount

**C: Options**  
 0 = None

Only combinations in the same row are possible

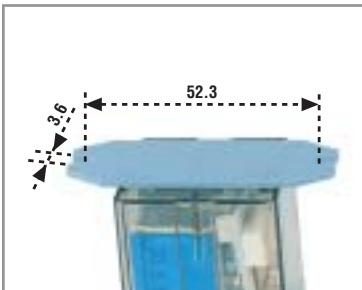
Preferred versions

	coil version	A	B	C	D
65.31	AC-DC	0	0	0	0
65.61	AC-DC	0	0	0	0

All versions

	coil version	A	B	C	D
65.31	AC-DC	0 - 4	0 - 3	0	0 - 5 - 7 - 8
65.61	AC-DC	0 - 4	0 - 3	0	0

## POSSIBLE OPTIONS



Option = 0005  
TOP FLANGE MOUNT



Option = 0008  
REAR 35 mm RAIL MOUNT

## TECHNICAL DATA

### INSULATION

Insulation according to EN 61810-1 ed. 2	insulation rated voltage	V	250
	rated impulse withstand voltage	kV	4
	pollution degree		3
	overvoltage category		III

### CONDUCTED DISTURBANCE IMMUNITY

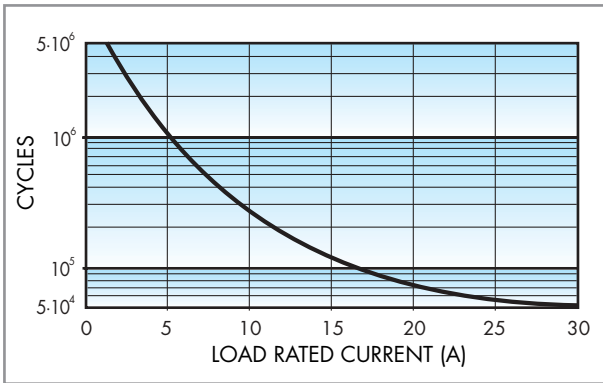
Burst (5...50)ns, 5 kHz, on A1 - A2	EN 61000-4-4	level 4 (4 kV)
Surge (1.2/50 μs) on A1 - A2 (differential mode)	EN 61000-4-5	level 4 (4 kV)

### OTHER DATA

Bounce time: NO/NC	ms	5/6 (for 1NO+1NC or SPST-NO+SPST-NC)	7/- (for NO or SPST-NO)
Vibration resistance (10...55)Hz, max. ± 1 mm: NO/NC	g/g	10/4	
Power lost to the environment		<b>1 NO + 1 NC (SPST-NO+SPST-NC)</b>	<b>1 NO (SPST-NO)</b>
	without contact current	W	1.3
	with rated current	W	2.1
Recommended distance between relays mounted on P.C.B.s	mm	≥ 5	

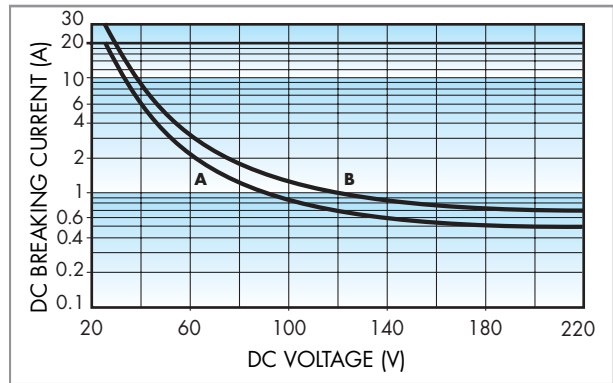
## CONTACT SPECIFICATIONS

### F 65



Electrical life vs AC1 load.

### H 65



Breaking capacity for DC1 load.

Load applied to 1 contact

**A** - 1 NO + 1 NC type

**B** - 1 NO type

- When switching a resistive load (DC1) having voltage and current values under the curve the expected electrical life is  $\geq 100 \cdot 10^3$  cycles.

- In case of DC13 loads the connection of a diode in parallel with the load will permit the same electrical life as for a DC1 load.

**Note:** the release time of load will be increase.

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## COIL SPECIFICATIONS

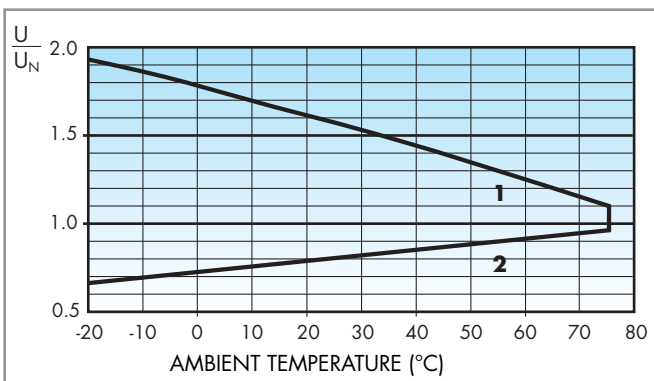
### DC VERSION DATA

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		
6	9.006	5.1	6.6	28	214
12	9.012	10.2	13.2	110	109
24	9.024	8.8	26.4	445	54
48	9.048	40.8	52.8	1,770	27.1
60	9.060	51	66	2,760	21.7
110	9.110	93.5	121	9,420	11.7
125	9.125	100	137.5	12,000	10.4
220	9.220	176	242	37,300	5.8

### AC VERSION DATA

Nominal voltage $U_N$ V	Coil code	Operating range		Resistance R $\Omega$	Rated coil consumption I at $U_N$ (50Hz) mA
		$U_{min}$ V	$U_{max}$ V		
6	8.006	4.8	6.6	4.6	367
12	8.012	9.6	13.2	19	183
24	8.024	19.2	26.4	74	90
48	8.048	38.4	52.8	290	47
60	8.060	48	66	450	37
110	8.110	88	121	1,600	20
120	8.120	96	132	1,940	18.6
230	8.230	184	253	7,250	10.5
240	8.240	192	264	8,500	9.2
400	8.400	320	440	19,800	6

### R 65 DC



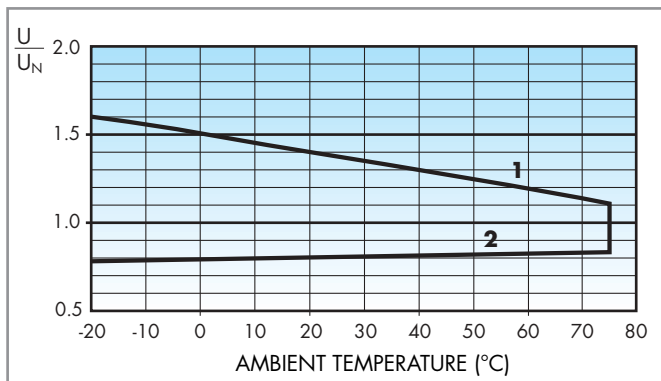
Operating range (DC type) vs ambient temperature.

**1** - Max coil voltage permitted.

**2** - Min pick-up voltage with coil at ambient temperature.

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### R 65 AC



Operating range (AC type) vs ambient temperature.

**1** - Max coil voltage permitted.

**2** - Min pick-up voltage with coil at ambient temperature.