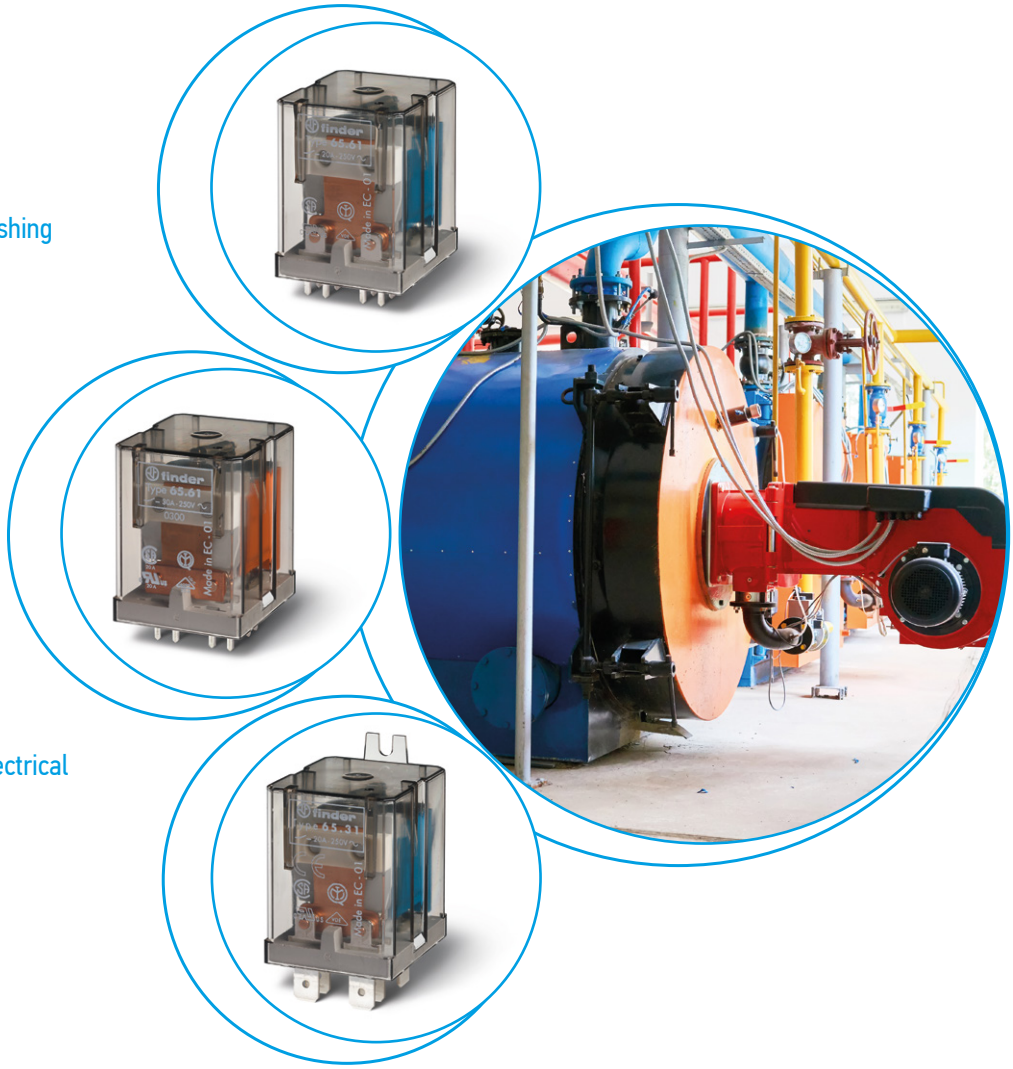
finder
RELAYING INNOVATION

65
SERIES

Power relays 20 - 30 A

- Infrared and microwave ovens
- Industrial washing machines
- Burners, boilers and furnaces
- Jacuzzis and hot tubs
- Power generators
- Panels for electrical distribution
- Back-up generators
- Industrial motors



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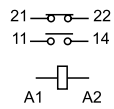
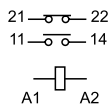
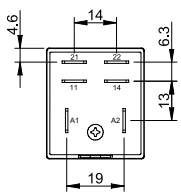
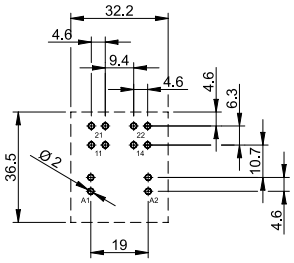
20 A Power relays
1 NO + 1 NC (SPST-NO + SPST-NC)

Type 65.31
- Flange mount and Faston 250 connections

Type 65.61
- PCB mount

- AC coils & DC coils

		65.31	65.61
		• 20 A rated contacts • Faston 250 (6.3 x 0.8 mm) connection • Flange mount	• 20 A rated contacts • PCB mount • Bifurcated terminals
			
* Maximum peak current is 120 A - 5 ms on NO contact. *For UL ratings see:* *"General technical information" page* IX For outline drawing see page 7			 Copper side view
Contact specification			
Contact configuration		1NO + 1NC (SPST-NO+SPST-NC)	1NO + 1NC (SPST-NO+SPST-NC)
Rated current/Maximum peak current	A	20/120*	20/120*
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	5000	5000
Rated load AC15 (230 V AC)	VA	1000	1000
Single phase motor rating (230 V AC)	kW	1.1	1.1
Breaking capacity DC1: 24/110/220 V	A	20/0.8/0.5	20/0.8/0.5
Minimum switching load	mW (V/mA)	1000 (10/10)	1000 (10/10)
Standard contact material		$AgSnO_2$	$AgSnO_2$
Coil specification			
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	$(0.8…1.1)U_N$	$(0.8…1.1)U_N$
	DC	$(0.85…1.1)U_N$	$(0.85…1.1)U_N$
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	$80 \cdot 10^3$	$80 \cdot 10^3$
Operate/release time	ms	10/12	10/12
Insulation between coil and contacts (1.2/50 µs)	kV	4	4
Dielectric strength between open contacts	V AC	1500	1500
Ambient temperature range	°C	–40…+75	–40…+75
Environmental protection		RT I	RT I
Approvals (according to type)		CE UKCA CSA EAC 03 cULus VDE	

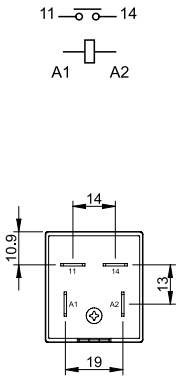
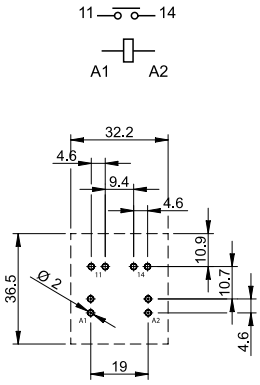
A

30 A Power relays
1 NO (SPST-NO)

Type 65.31-4300
- Flange mount and Faston 250 connections

Type 65.61-4300
- PCB mount

- ≥ 3 mm contact gap
- AC coils & DC coils

	65.31-4300	65.61-4300
	• 30 A rated contacts • Faston 250 (6.3 x 0.8 mm) connection • Flange mount	• 30 A rated contacts • PCB mount • Bifurcated terminals
		
		Copper side view

* Distance between contacts ≥ 3 mm (EN 60335-1).

** Maximum peak current is 120 A - 5 ms on NO contact.

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

For outline drawing see page 7

		65.31-4300	65.61-4300
Contact specification			
Contact configuration		1 NO (SPST-NO), ≥ 3 mm*	1 NO (SPST-NO), ≥ 3 mm*
Rated current/Maximum peak current	A	30/120**	30/120**
Rated voltage/ Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	7500	7500
Rated load AC15 (230 V AC)	VA	1250	1250
Single phase motor rating (230 V AC)	kW	1.5	1.5
Breaking capacity DC1: 24/110/220 V	A	30/1.1/0.7	30/1.1/0.7
Minimum switching load	mW (V/mA)	1000 (10/10)	1000 (10/10)
Standard contact material		$AgSnO_2$	$AgSnO_2$
Coil specification			
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	$(0.8…1.1)U_N$	$(0.8…1.1)U_N$
	DC	$(0.85…1.1)U_N$	$(0.85…1.1)U_N$
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	$30 \cdot 10^3$	$30 \cdot 10^3$
Operate/release time	ms	15/4	15/4
Insulation between coil and contacts (1.2/50 µs)	kV	4	4
Dielectric strength between open contacts	V AC	2500	2500
Ambient temperature range	°C	–40…+75	–40…+75
Environmental protection		RT I	RT I
Approvals (according to type)			

Ordering information

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

6 5	.	6	1	.	9	.	0 1 2	.	4 (A)	0 (B)	0 (C)	0 (D)

Series

Type
3 = Faston 250 (6.3 x 0.8 mm) with rear flange mount
6 = PCB with bifurcated terminals

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

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

Coil voltage
See coil specifications

A: Contact material
4 = $AgSnO_2$

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

C: Options
0 = None

D: Special versions
0 = Standard
9 = Type 65.31 without rear flange mount

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
65.31	AC-DC	4	**0** - 3	**0**	**0** - 9
65.61	AC-DC	4	**0** - 3	**0**	**0**

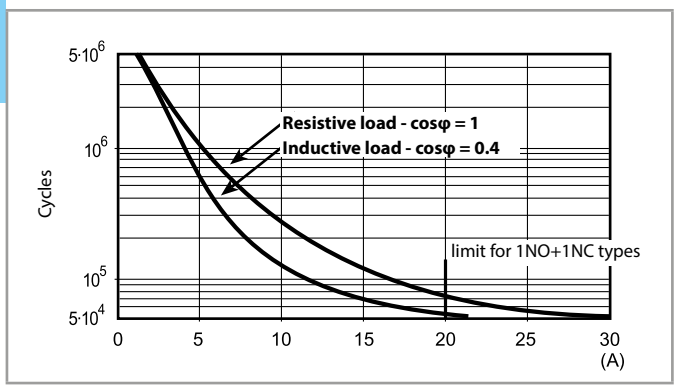
Technical data

Insulation according to EN 61810-1					
		1 NO + 1 NC		**1 NO**	
Nominal voltage 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		Basic		Basic	
Overvoltage category		III		III	
Rated impulse voltage	kV (1.2/50 µs)	4		4	
Dielectric strength	V AC	2500		2500	
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)	1500/2		2500/4	
Insulation between coil terminals					
Rated impulse voltage (according to EN 61180)	kV (1.2/50 µs)	4			
Other data					
Bounce time: NO/NC	ms	5/6 (1 NO + 1 NC)		7/— (1 NO)	
Vibration resistance (10…150)Hz: NO/NC	g	20/13			
Shock resistance	g	20			
Power lost to the environment without contact current	W	1.3			
Power lost to the environment with rated current	W	2.1 (65.31, 65.61)		3.1 (65.31/.61.4300)	
Recommended distance between relays mounted on PCB	mm	≥ 5			

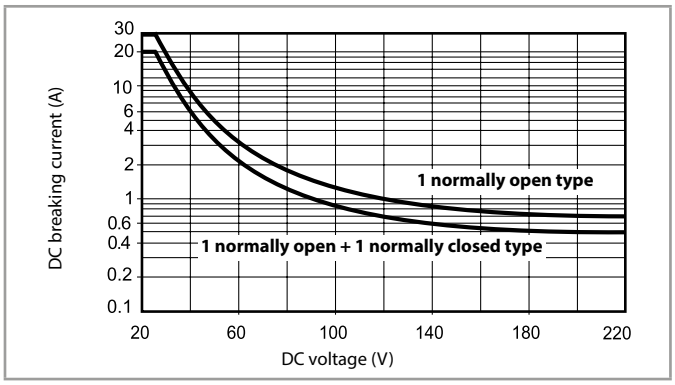
Contact specification

A

F 65 - Electrical life (AC) v contact current



H 65 - Maximum DC1 breaking capacity



- When switching a resistive load (DC1) having voltage and current values under the curve, an electrical life of ≥ 80 · 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

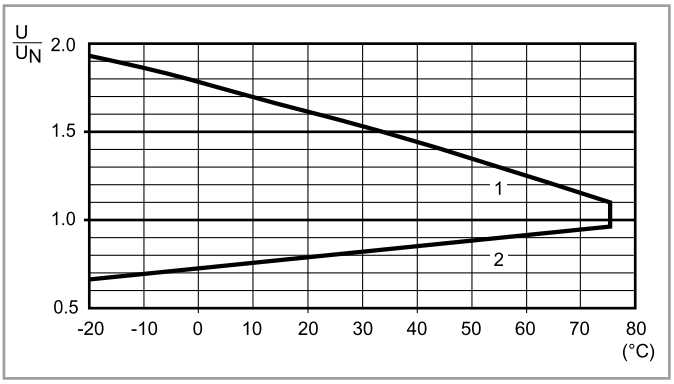
DC coil data

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	5.1	6.6	28	214
12	**9**.012	10.2	13.2	110	109
24	**9**.024	20.4	26.4	445	54
48	**9**.048	40.8	52.8	1770	27.1
60	**9**.060	51	66	2760	21.7
110	**9**.110	93.5	121	9420	11.7
125	**9**.125	106	138	12000	10.4
220	**9**.220	187	242	37300	5.8

AC coil data

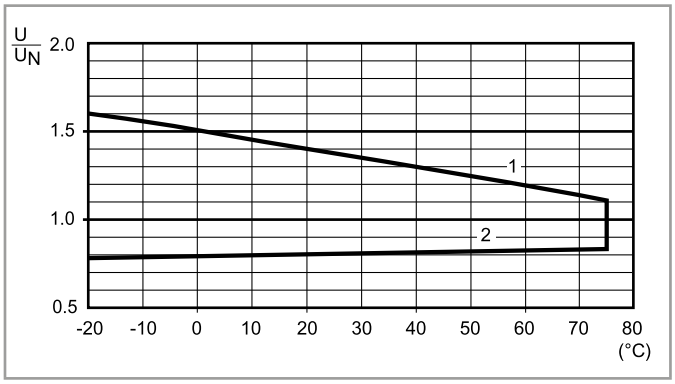
Nominal voltage	Coil code	Operating range		Resistance	Rated coil consumption
U_N		U_{min}	U_{max}	R	I at U_N (50 Hz)
V		V	V	Ω	mA
6	**8**.006	4.8	6.6	4.6	367
12	**8**.012	9.6	13.2	19	183
24	**8**.024	19.2	26.4	74	90
48	**8**.048	38.4	52.8	290	47
60	**8**.060	48	66	450	37
110	**8**.110	88	121	1600	20
120	**8**.120	96	132	1940	18.6
230	**8**.230	184	253	7250	10.5
240	**8**.240	192	264	8500	9.2
400	**8**.400	320	440	19800	6

R 65 - DC coil operating range v ambient temperature



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

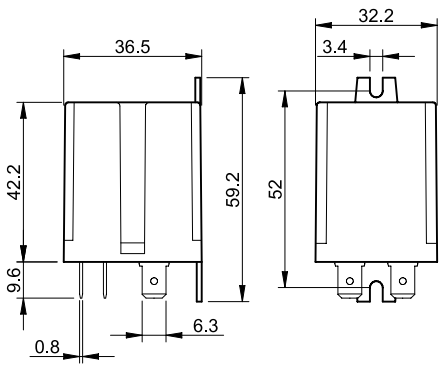
R 65 - AC coil operating range v ambient temperature



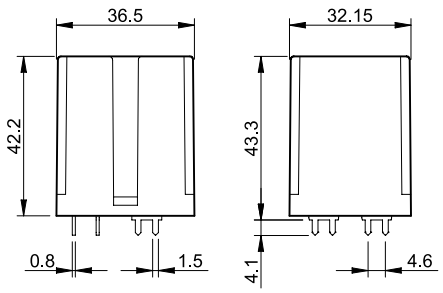
1 - Max. permitted coil voltage.
2 - Min. pick-up voltage with coil at ambient temperature.

Outline drawings

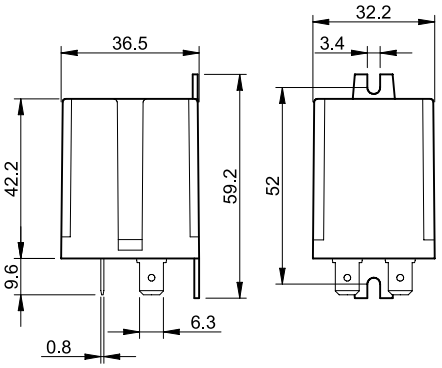
Type 65.31



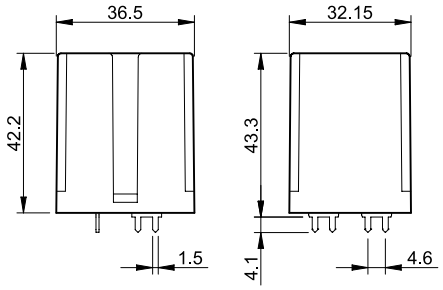
Type 65.61



Type 65.31- 4300



Type 65.61- 4300



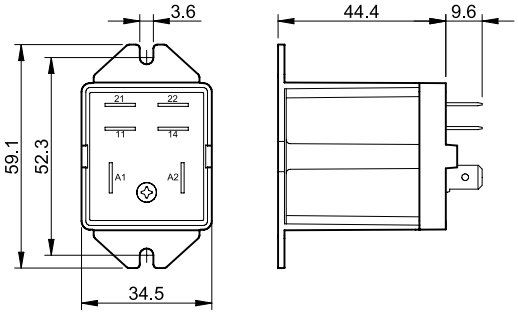
Accessories

A

065.05

065.05 with relay

Top flange mount for types 65.31.x.xxx.xxx9	065.05

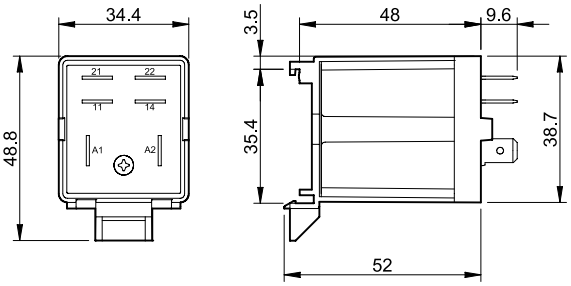


065.05 with relay

065.07

065.07 with relay

Top 35 mm rail (EN 60715) mount for types 65.31.x.xxx.xxx9	065.07

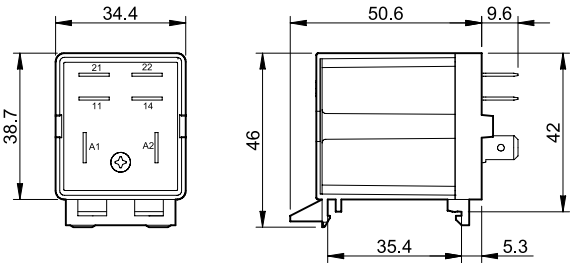


065.07 with relay

065.08

065.08 with relay

Rear 35 mm rail (EN 60715) mount for types 65.31.x.xxx.xxx9	065.08



065.08 with relay