



# Power relays 30 A



Power generators



Industrial washing machines



Burners, boilers and furnaces



Industrial furnaces and ovens



Air conditioners



Hoists and cranes



Back-up generators



Industrial motors





**2 Pole Changeover (DPDT)  
30 A Power relay**

**Type 66.22**

- PCB connections & mount

**Type 66.82**

- Faston 250 connections and Flange mount

- Reinforced insulation between coil and contacts according to EN 60335-1; 8 mm creepage and clearance distances
- AC coils & DC coils
- Cadmium Free option available
- ATEX compliant (EX nC) option available

**66.22**

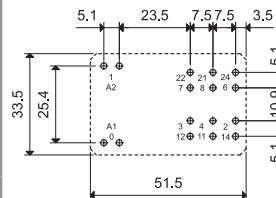
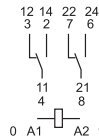


- 30 A rated contacts
- PCB mount - bifurcated terminals

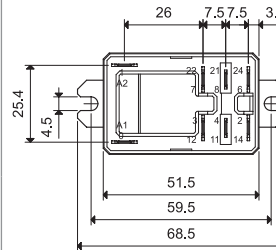
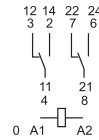
**66.82**



- 30 A rated contacts
- Flange mount
- Faston 250 connections



Copper side view



For outline drawing see page 9

FOR UL RATINGS SEE:

"General technical information" page V

**Contact specification**

Contact configuration		2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current	A	30/50 (NO) - 10/20 (NC)	30/50 (NO) - 10/20 (NC)
Rated voltage/ Maximum switching voltage	V AC	250/440	250/440
Rated load AC1	VA	7500 (NO) - 2500 (NC)	7500 (NO) - 2500 (NC)
Rated load AC15 (230 V AC)	VA	1200 (NO)	1200 (NO)
Single phase motor rating (230 V AC)	kW	1.5 (NO)	1.5 (NO)
Breaking capacity DC1: 30/110/220 V	A	25/0.7/0.3 (NO)	25/0.7/0.3 (NO)
Minimum switching load	mW (V/mA)	1000 (10/10)	1000 (10/10)
Standard contact material		AgCdO	AgCdO

**Coil specification**

Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 110/115 - 120/125 - 230 - 240	
	V DC	6 - 9 - 12 - 24 - 110 - 125	
Rated power AC/DC	VA (50 Hz)/W	3.6/1.7	3.6/1.7
Operating range	AC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> / 0.5 U <sub>N</sub>	0.8 U <sub>N</sub> / 0.5 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**

Mechanical life AC/DC	cycles	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>
Operate/release time	ms	8/15	8/15
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)



**2 Pole NO (DPST-NO)****30 A Power relay****Type 66.22-x30x**

- PCB mount

**Type 66.82-x30x**

- Faston 250 connections and Flange mount

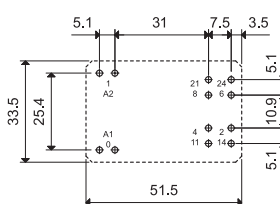
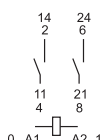
- Reinforced insulation between coil and contacts according to EN 60335-1; 8 mm creepage and clearance distances
- AC coils & DC coils
- Cadmium Free option available
- ATEX compliant (EX nC) option available

**66.22-x30x**

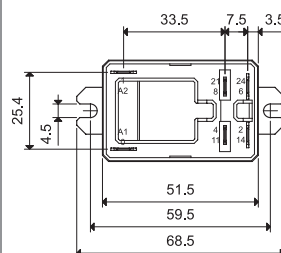
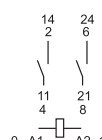
- 30 A rated contacts
- PCB mount - bifurcated terminals

**66.82-x30x**

- 30 A rated contacts
- Flange mount
- Faston 250 connections



Copper side view



For outline drawing see page 9

FOR UL RATINGS SEE:

"General technical information" page V

**Contact specification**

		66.22-x30x	66.82-x30x
Contact configuration		2 NO (DPST-NO)	2 NO (DPST-NO)
Rated current/Maximum peak current	A	30/50	30/50
Rated voltage/Maximum switching voltage	V AC	250/440	250/440
Rated load AC1	VA	7500	7500
Rated load AC15 (230 V AC)	VA	1200	1200
Single phase motor rating (230 V AC)	kW	1.5	1.5
Breaking capacity DC1: 30/110/220 V	A	25/0.7/0.3	25/0.7/0.3
Minimum switching load	mW (V/mA)	1000 (10/10)	1000 (10/10)
Standard contact material		AgCdO	AgCdO

**Coil specification**

		66.22-x30x	66.82-x30x
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 110/115 - 120/125 - 230 - 240	6 - 12 - 24 - 110/115 - 120/125 - 230 - 240
	V DC	6 - 9 - 12 - 24 - 110 - 125	6 - 9 - 12 - 24 - 110 - 125
Rated power AC/DC	VA (50 Hz)/W	3.6/1.7	3.6/1.7
Operating range	AC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
	DC	(0.8...1.1)U <sub>N</sub>	(0.8...1.1)U <sub>N</sub>
Holding voltage	AC/DC	0.8 U <sub>N</sub> / 0.5 U <sub>N</sub>	0.8 U <sub>N</sub> / 0.5 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**

		66.22-x30x	66.82-x30x
Mechanical life AC/DC	cycles	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>
Operate/release time	ms	8/10	8/10
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)



**2 Pole NO (DPST-NO), ≥ 1.5 mm contact gap  
30 A Power relay**

**Type 66.22-x60x**

- PCB mount

**Type 66.22-x60xS**

- PCB mount, 5 mm gap between PCB and relay base

**Type 66.82-x60x**

- Faston 250 connections and Flange mount

- ≥ 1.5 mm contact gap (according to VDE 0126-1-1 for solar inverter applications)
- Reinforced insulation between coil and contacts according to EN 60335-1; 8 mm creepage and clearance distances
- Wash tight version (RT III) available
- DC coils
- Cadmium Free option available
- ATEX compliant (EX nC) option available

For outline drawing see page 9

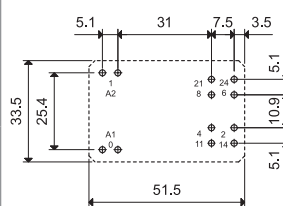
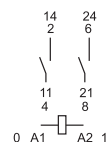
FOR UL RATINGS SEE:

"General technical information" page V

**66.22-x60x**



- PCB mount - bifurcated terminals

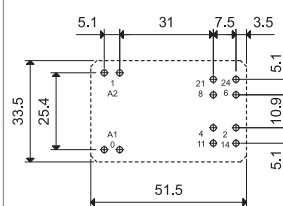
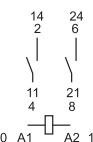


Copper side view

**66.22-x60xS**



- PCB mount - bifurcated terminals
- 5 mm gap between PCB and relay base

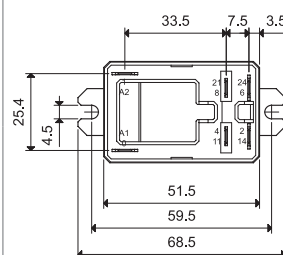
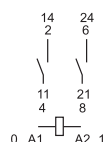


Copper side view

**66.82-x60x**



- Flange mount
- Faston 250 connections



<b>Contact specification</b>				
Contact configuration		2 NO (DPST-NO)	2 NO (DPST-NO)	2 NO (DPST-NO)
Rated current/Maximum peak current	A	30/50	30/50	30/50
Rated voltage/				
Maximum switching voltage	V AC	250/440	250/440	250/440
Rated load AC1	VA	7500	7500	7500
Rated load AC15 (230 V AC)	VA	1200	1200	1200
Single phase motor rating (230 V AC)	kW	1.5	1.5	1.5
Breaking capacity DC1: 30/110/220 V	A	25/1.2/0.5	25/1.2/0.5	25/1.2/0.5
Minimum switching load	mW (V/mA)	1000 (10/10)	1000 (10/10)	1000 (10/10)
Standard contact material		AgCdO	AgCdO	AgCdO
<b>Coil specification</b>				
Nominal voltage (U <sub>N</sub> )	V AC (50/60 Hz)	—		
	V DC	6 - 9 - 12 - 24 - 110 - 125		
Rated power AC/DC	VA (50 Hz)/W	—/1.7	—/1.7	—/1.7
Operating range	AC	—		
	DC	(0.8...1.1)U <sub>N</sub>		
Holding voltage	AC/DC	—/0.5 U <sub>N</sub>		
Must drop-out voltage	AC/DC	—/0.1 U <sub>N</sub>		
<b>Technical data</b>				
Mechanical life	cycles	10 · 10 <sup>6</sup>		
Electrical life at rated load AC1	cycles	100 · 10 <sup>3</sup>		
Operate/release time	ms	15/4		
Insulation between coil and contacts (1.2/50 μs)	kV	6 (8 mm)		
Dielectric strength between open contacts	V AC	2500		
Ambient temperature range	°C	-40...+70		
Environmental protection		RT II		
<b>Approvals</b> (according to type)				

## Ordering information

Example: 66 series relay, Faston 250 (6.3x0.8 mm) with top flange mount, 2 CO (DPDT) 30 A contacts, 24 V DC coil.

A



**Series**  
66 = 66 Series

**Type**  
2 = PCB  
8 = Faston 250 (6.3 x 0.8 mm) with top flange mount

**No. of poles**  
2 = 2 pole 30 A (versions 0, 1)  
2 = 2 pole 25 A (version 3)

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

**Coil voltage**  
See coil specifications

**A: Contact material**  
0 = Standard AgCdO  
1 = AgNi

**B: Contact circuit**  
0 = CO (nPDT)  
3 = NO (nPST)  
6 = NO (nPST), ≥ 1.5 mm contact gap

S = PCB version with 5 mm gap between PCB and relay base (only 66.22)

**D: Special versions**  
0 = Standard  
1 = Wash tight (RT III)  
3 = ATEX compliant (Ex nC)

**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
66.22	AC-DC	<b>0 - 1</b>	<b>0 - 3</b>	<b>0</b>	<b>0 - 1</b>
	DC	<b>0 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1</b>
66.22...S	DC	<b>0 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1 - 3</b>
66.82	AC-DC	<b>0 - 1</b>	<b>0 - 3</b>	<b>0</b>	<b>0 - 1 - 3</b>
	DC	<b>0 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1 - 3</b>

## Technical data

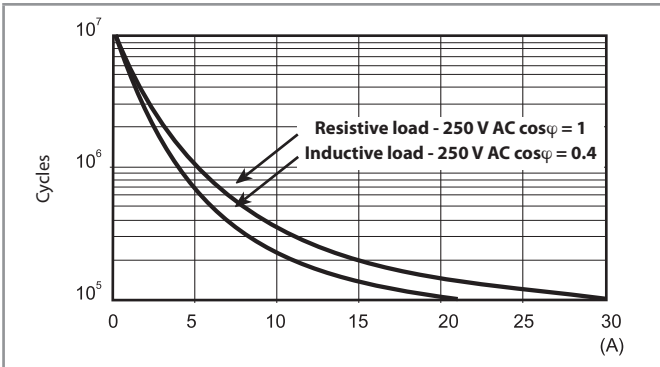
### Insulation according to EN 61810-1

Nominal voltage of supply system	V AC	230/400
Rated insulation voltage	V AC	400
Pollution degree		3
<b>Insulation between coil and contact set</b>		
Type of insulation		Reinforced (8 mm)
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 µs)	6
Dielectric strength	V AC	4000
<b>Insulation between adjacent contacts</b>		
Type of insulation		Basic
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 µs)	4
Dielectric strength	V AC	2500
<b>Insulation between open contacts</b>		
Type of disconnection		<b>2 CO</b> Micro-disconnection
Overvoltage category		<b>2 NO, ≥ 1.5 mm (x60x version)</b> Full-disconnection*
Rated impulse voltage	kV (1.2/50 µs)	—
Dielectric strength	V AC/kV (1.2/50 µs)	1500/2
<b>Insulation between coil terminals</b>		
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)	kV(1.2/50 µs)	4
<b>Other data</b>		
Bounce time: NO/NC	ms	7/10
Vibration resistance (10...150)Hz: NO/NC	g	20/19
Shock resistance	g	20
Power lost to the environment	without contact current	W
	with rated current	W
Recommended distance between relays mounted on PCB	mm	≥ 10

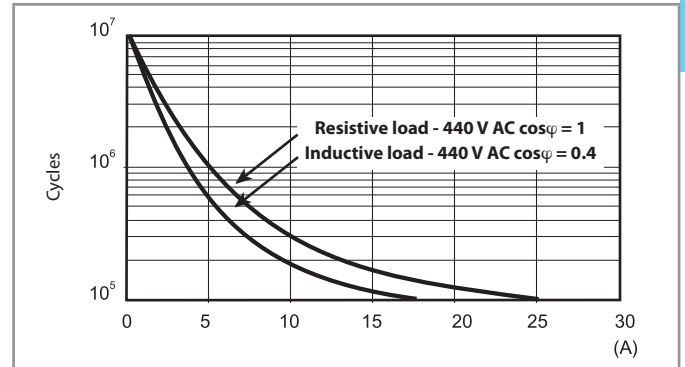
\* Only in applications where over voltage category II is permitted. In applications of over voltage category III: Micro-disconnection.

## Contact specification

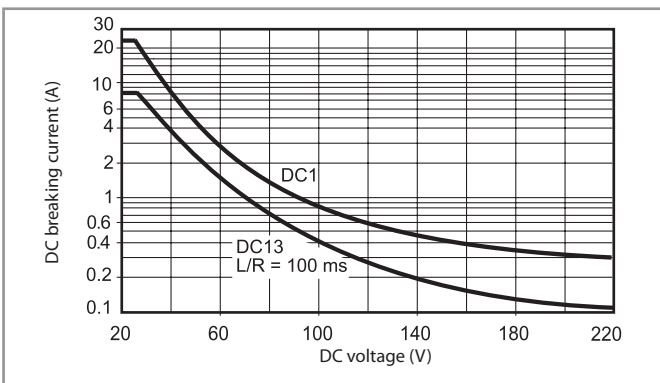
**F 66 - Electrical life (AC) v contact current**  
250 V (normally open contact)



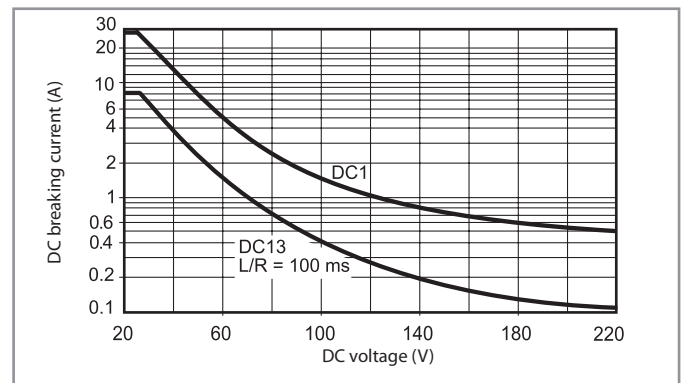
**F 66 - Electrical life (AC) v contact current**  
440 V (normally open contact)



**H 66 - Maximum DC breaking capacity**



**H 66 - Maximum DC breaking capacity, x60x versions**  
(> 1.5 mm contact gap)



- 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

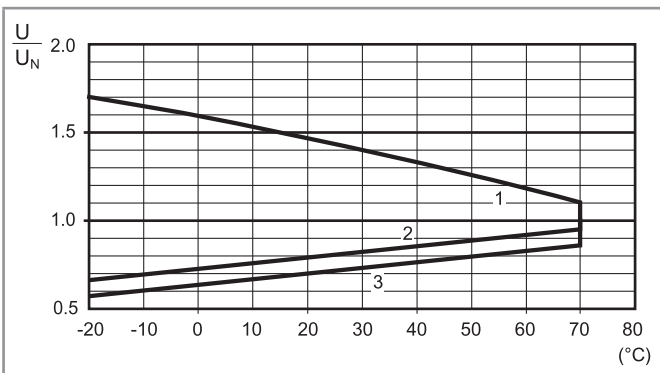
### DC coil data

Nominal voltage	Coil code	Operating range		Resistance	Rated coil Consumption
		$U_{min}$	$U_{max}$		
V		V	V	$\Omega$	I at $U_N$ mA
6	9.006	4.8	6.6	21	283
9	9.009	7.2	9.9	45	200
12	9.012	9.6	13.2	85	141
24	9.024	19.2	26.4	340	70.5
110	9.110	88	121	7000	15.7
125	9.125	100	138	9200	13.6

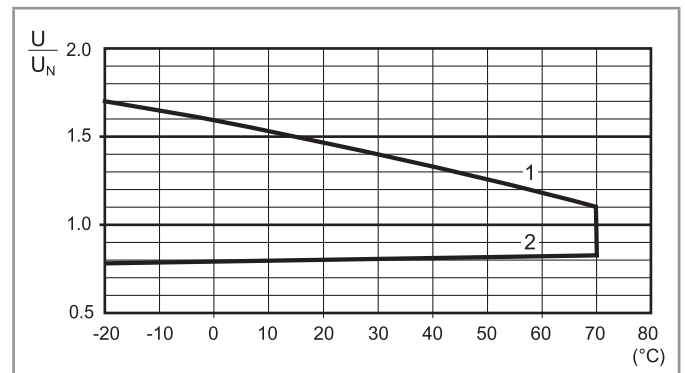
### AC coil data

Nominal voltage	Coil code	Operating range		Resistance	Rated coil Consumption
		$U_{min}$	$U_{max}$		
V		V	V	$\Omega$	I at $U_N$ (50 Hz) mA
6	8.006	4.8	6.6	3	600
12	8.012	9.6	13.2	11	300
24	8.024	19.2	26.4	50	150
110/115	8.110	88	126	930	32.6
120/125	8.120	96	137	1050	30
230	8.230	184	253	4000	15.7
240	8.240	192	264	5500	15

**R 66 - DC coil operating range v ambient temperature**



**R 66 - AC coil operating range v ambient temperature**




- 1 - Max. permitted coil voltage.  
2 - Min. pick-up voltage with coil at ambient temperature.  
3 - Min. pick-up voltage with coil at ambient temperature (66.22-x60x5)

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

## Features compliant variant ATEX, II 3G Ex nC IIC Gc

A

<b>MARKING</b>	
	Specific marking of explosion protection
<b>II</b>	Component for surface plant (different from mines)
<b>3</b>	Category 3: normal level of protection
<b>GAS</b>	<b>G</b> Explosive atmosphere due to presence of combustible gas vapour or mist
	<b>Ex nC</b> Sealed device (type of protection for category 3G)
	<b>IIC</b> Gas group
	<b>Gc</b> Equipment Protection Level
<b>-40 °C ≤ Ta ≤ +70 °C</b> Ambient temperature	
<b>EUT 14 ATEX 0150 U</b> EUT: laboratory which issues the CE type certificate 14: year of issue of certificate 0150: number of CE type certificate U: ATEX component	



## Electrical characteristics

### Characteristics of terminals

Rated current/Maximum peak current	A	25/50 (NO) - 10/20 (NC)
Rated voltage/Maximum switching voltage	V AC	250/400
Rated load AC1	VA	6250 (NO) - 2500 (NC)
Rated load AC15	VA	1200 (NO)
Capacity for single phase motor (230 V AC)	kW	1.5 (NO)
Breaking capacity DC1: 30/110/220 V	A	25/0.7/0.3 (NO)

### Characteristics of coil

Rated voltage (U <sub>N</sub> )	V AC (50/60 Hz)	6 - 12 - 24 - 110/115 - 120/125 - 230 - 240
	V DC	6 - 12 - 24 - 110 - 125
Rated Power AC/DC	VA (50 Hz)/W	3.6/1.7
Operating range	AC/DC	(0.8...1.1)U <sub>N</sub>

### General characteristics

Ambient temperature	°C	-40...+70
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## Special condition for safe use

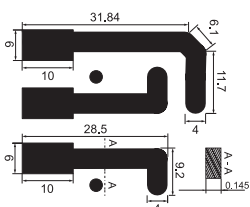
The component must be placed inside an enclosure that meets the general requirements for enclosures as per clause 6.3 of EN 60079-15. The connections must be made in compliance with the requirements of clause 7.2.4 or 7.2.5 of EN 60079-15.

## Wiring

The cross-section of conductors connected to the terminals, must be at least 4 mm<sup>2</sup> for the Type 66.82.

## Layout pcb

The minimum cross-section of the tracks of the printed circuit board must be 0.58 mm<sup>2</sup>, while the width must be at least 4 mm for Types "66.22" and "66.22...S".

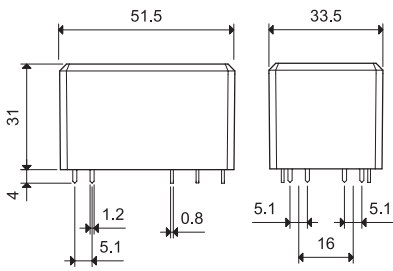




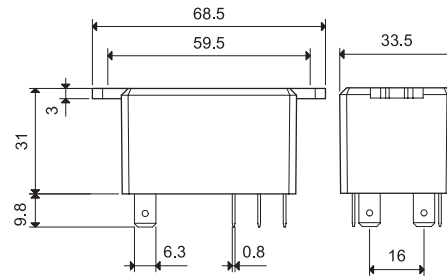
**A**

**Outline drawings**

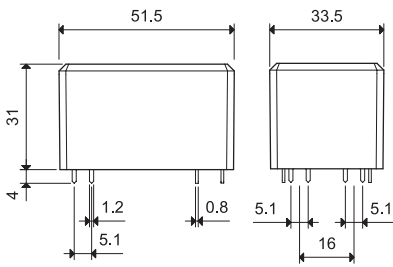
Type 66.22



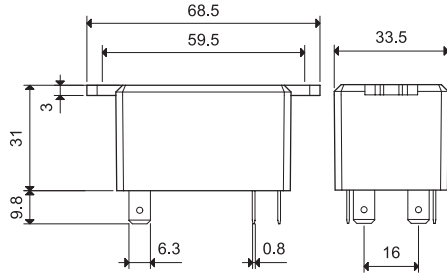
Type 66.82



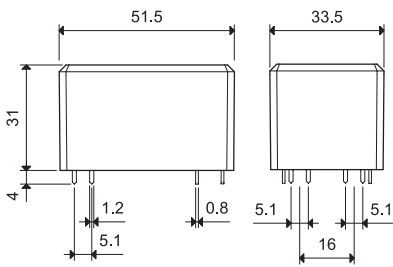
Type 66.22-0300



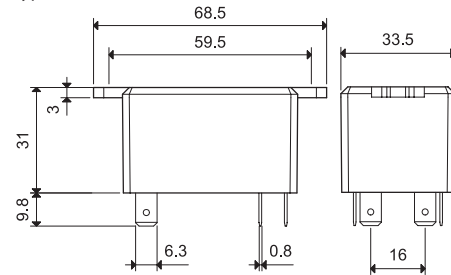
Type 66.82-0300



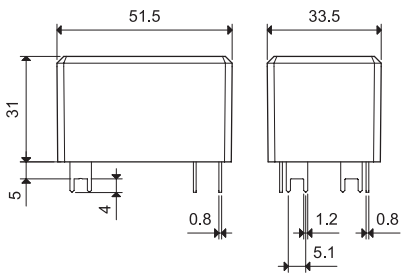
Type 66.22-0600



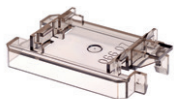
Type 66.82-0600



Type 66.22-0600S



**Accessories**



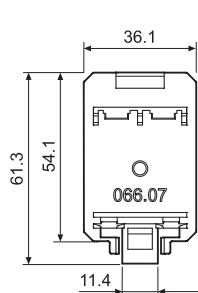
**066.07**

**Top 35 mm rail (EN 60715) mount for types 66.82.xxxx.0x00**

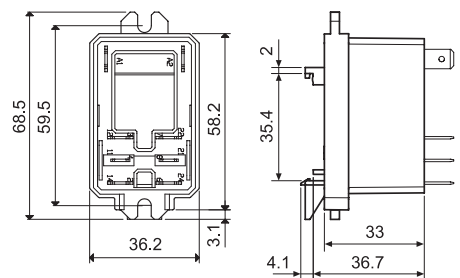
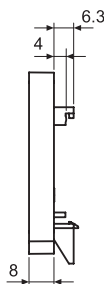
**066.07**



**066.07 with relay**



**066.07**



**066.07 with relay**

