



finder®

SWITCH TO THE FUTURE

66
SERIES

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

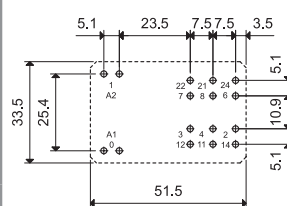
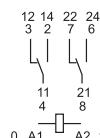


- 30 A rated contacts
- Flange mount
- Faston 250 connections

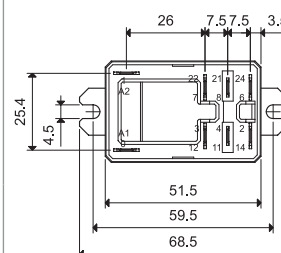
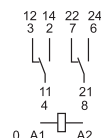
For outline drawing see page 9

For UL RATINGS SEE:

"General technical information" page V



Copper side view



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_N)	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	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
Holding voltage	AC/DC	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$
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	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$
Operate/release time	ms	8/15	8/15
Insulation between coil and contacts (1.2/50 μ s)	kV	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	1500	1500
Ambient temperature range	$^{\circ}$ 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

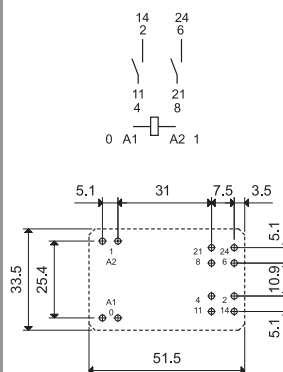
Type 66.82-x30x

- 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

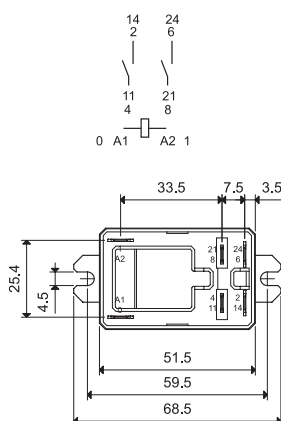
- 30 A rated contacts
- PCB mount - bifurcated terminals



Copper side view

66.82-x30x

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



For outline drawing see page 9

FOR UL RATINGS SEE:

"General technical information" page V

Contact specification

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

Nominal voltage (U_N)	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	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
	DC	$(0.8 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
Holding voltage	AC/DC	$0.8 U_N / 0.5 U_N$	$0.8 U_N / 0.5 U_N$
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	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$
Operate/release time	ms	8/10	8/10
Insulation between coil and contacts (1.2/50 μ s)	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

Contact specification

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

Coil specification

Nominal voltage (U_N)	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	$(0.8 \dots 1.1) U_N$	$(0.7 \dots 1.1) U_N$	$(0.8 \dots 1.1) U_N$
Holding voltage	AC/DC	—/0.5 U_N	—/0.5 U_N	—/0.5 U_N
Must drop-out voltage	AC/DC	—/0.1 U_N	—/0.1 U_N	—/0.1 U_N

Technical data

Mechanical life	cycles	$10 \cdot 10^6$	$10 \cdot 10^6$	$10 \cdot 10^6$
Electrical life at rated load AC1	cycles	$100 \cdot 10^3$	$100 \cdot 10^3$	$100 \cdot 10^3$
Operate/release time	ms	15/4	15/4	15/4
Insulation between coil and contacts (1.2/50 μ s)	kV	6 (8 mm)	6 (8 mm)	6 (8 mm)
Dielectric strength between open contacts	V AC	2500	2500	2500
Ambient temperature range	°C	-40...+70	-40...+70	-40...+70
Environmental protection		RT II	RT II	RT II

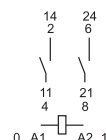
Approvals (according to type)



66.22-x60x



- PCB mount - bifurcated terminals

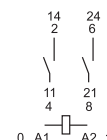


Copper side view

66.22-x60xS



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

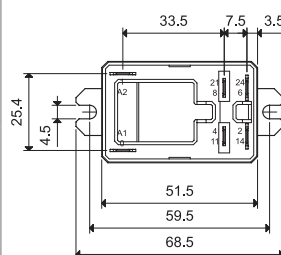
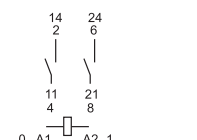


Copper side view

66.82-x60x



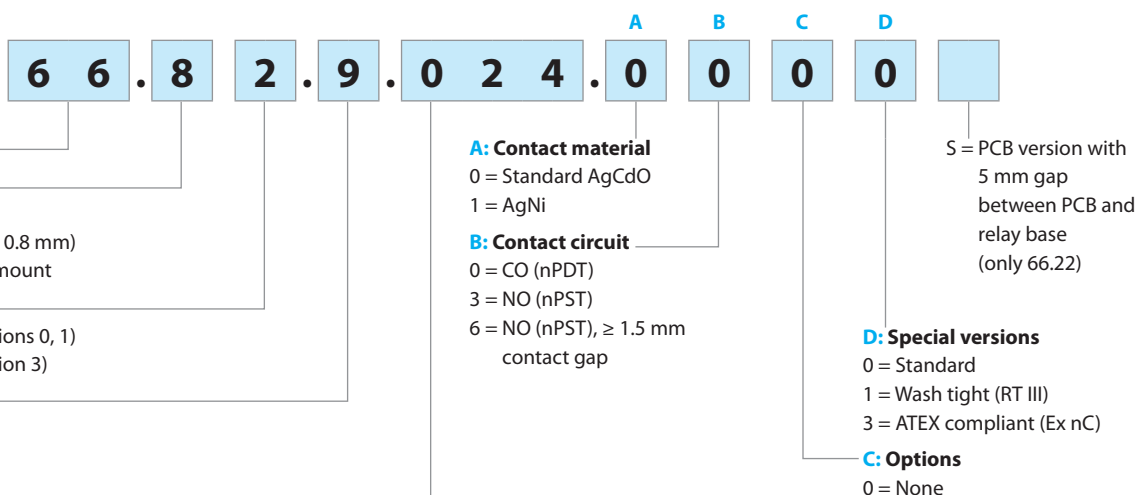
- Flange mount
- Faston 250 connections



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



Type	Coil version	A	B	C	D
66.22	AC-DC	0 - 1	0 - 3	0	0 - 1
	DC	0 - 1	6	0	0 - 1
66.22...S	DC	0 - 1	6	0	0 - 1 - 3
66.82	AC-DC	0 - 1	0 - 3	0	0 - 1 - 3
	DC	0 - 1	6	0	0 - 1 - 3

Technical data

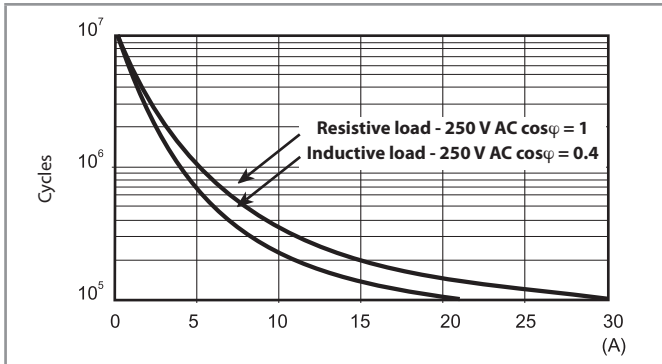
Insulation according to EN 61810-1

Nominal voltage of supply system	V AC	230/400
Rated insulation voltage	V AC	400
Pollution degree		3
Insulation between coil and contact set		
Type of insulation		Reinforced (8 mm)
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 μ s)	6
Dielectric strength	V AC	4000
Insulation between adjacent contacts		
Type of insulation		Basic
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 μ s)	4
Dielectric strength	V AC	2500
Insulation between open contacts		
		2 CO
Type of disconnection		Micro-disconnection
Overvoltage category		II
Rated impulse voltage	kV (1.2/50 μ s)	2.5
Dielectric strength	V AC/kV (1.2/50 μ s)	1500/2
Insulation between coil terminals		
Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)	kV(1.2/50 μ s)	4
Other data		
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 2.3
	with rated current	W 5
Recommended distance between relays mounted on PCB	mm	≥ 10

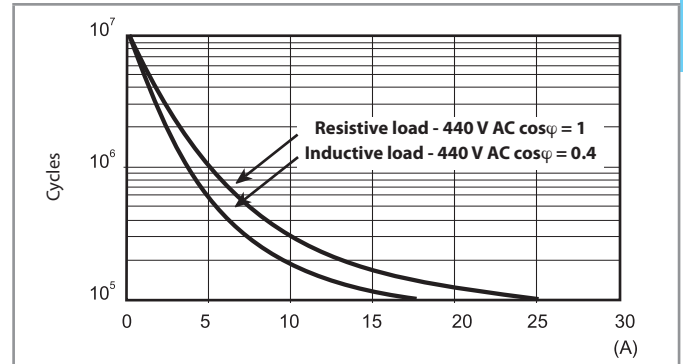
* Only in applications where over voltage category II is permitted. In applications of over voltage category III: Micro-disconnection.

Contact specification

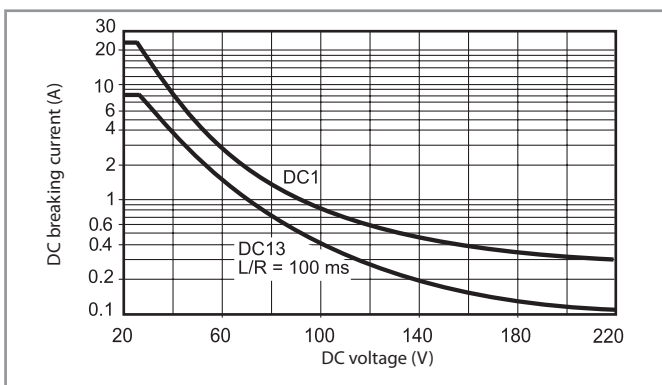
F 66 - Electrical life (AC) v contact current
250 V (normally open contact)



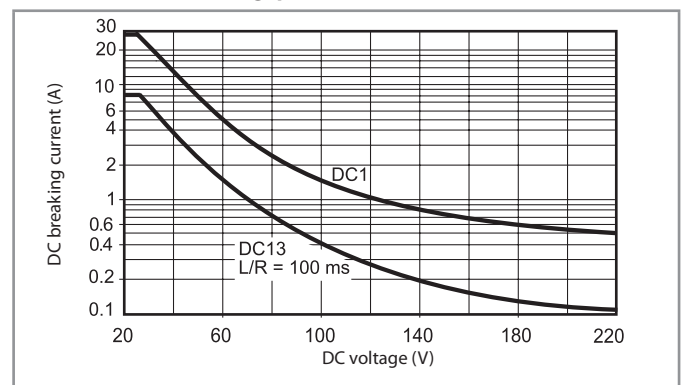
F 66 - Electrical life (AC) v contact current
440 V (normally open contact)



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

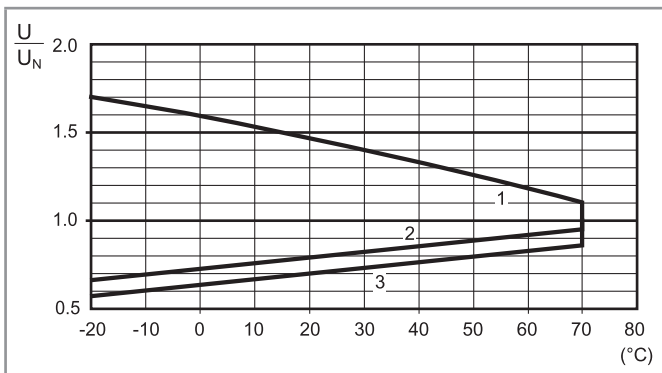
DC coil data

Nominal voltage	Coil code	Operating range		Resistance	Rated coil Consumption
U_N		U_{min}	U_{max}	R	I at U_N
V		V	V	Ω	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

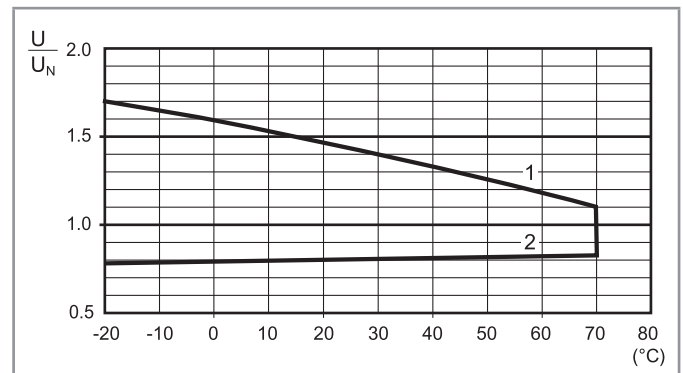
AC coil data

Nominal voltage	Coil code	Operating range		Resistance	Rated coil Consumption
U_N		U_{min}	U_{max}	R	I at U_N (50 Hz)
V		V	V	Ω	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

MARKING



Specific marking of explosion protection

II

Component for surface plant (different from mines)

3

Category 3: normal level of protection

GAS

G

Explosive atmosphere due to presence of combustible gas vapour or mist

Ex nC

Sealed device (type of protection for category 3G)

IIC

Gas group

Gc

Equipment Protection Level

 $-40^{\circ}\text{C} \leq T_a \leq +70^{\circ}\text{C}$

Ambient temperature

EUT 14 ATEX 0150 U

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_N)	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	$(0.8 \dots 1.1) U_N$

General characteristics

Ambient temperature	$^{\circ}\text{C}$	$-40 \dots +70$
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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.

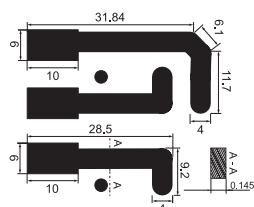
The connections must be made in compliance with the requirements of clause 7.2.4 or 7.2.5 of EN 60079-15.

Wiring

The cross-section of conductors connected to the terminals, must be at least 4 mm² for the Type 66.82.

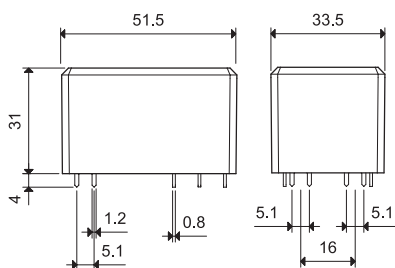
Layout pcb

The minimum cross-section of the tracks of the printed circuit board must be 0.58 mm², while the width must be at least 4 mm for Types "66.22" and "66.22....S".

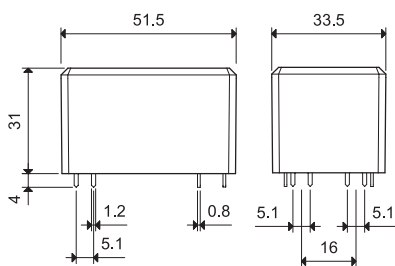


Outline drawings

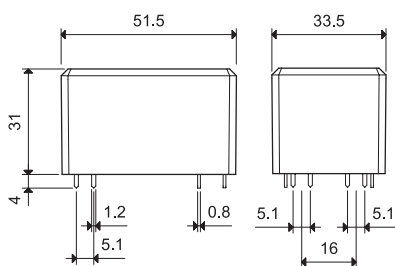
Type 66.22



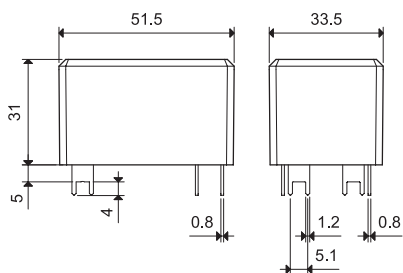
Type 66.22-0300



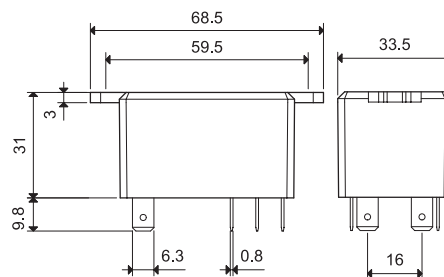
Type 66.22-0600



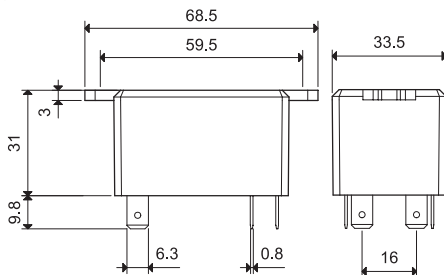
Type 66.22-0600S



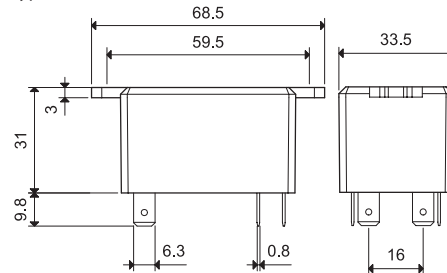
Type 66.82



Type 66.82-0300



Type 66.82-0600



Accessories



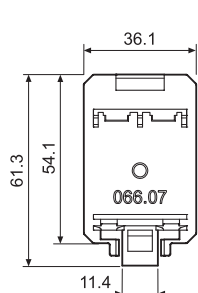
066.07



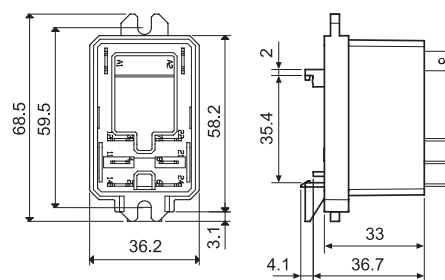
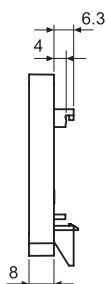
066.07 with relay

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

066.07



066.07



066.07 with relay

