

# 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 ec nC) option available\*
- **HazLoc** Class I Div. 2 Group A, B, C, D - T4 - T5 - T6 option available\*

\* Characteristics page 8, 9

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 10

**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: 24/110/220 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

AgSnO<sub>2</sub>

AgSnO<sub>2</sub>

**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)



**66.22**

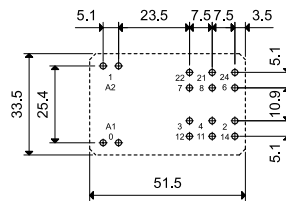
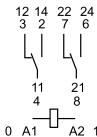


- 30 A rated contacts
- PCB mount - bifurcated terminals

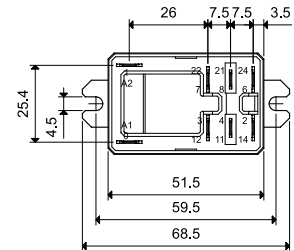
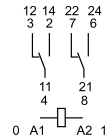
**66.82**



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



Copper side view



**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 ec nC) option available\*
- **HazLoc** Class I Div. 2 Group A, B, C, D - T4 - T5 - T6 option available\*

\* Characteristics page 8, 9

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 10

**Contact specification**

Contact configuration

Rated current/Maximum peak current A

Rated voltage/  
Maximum switching voltage V AC

Rated load AC1 VA

Rated load AC15 (230 V AC) VA

Single phase motor rating (230 V AC) kW

Breaking capacity DC1: 24/110/220 V A

Minimum switching load mW (V/mA)

Standard contact material

**Coil specification**

Nominal voltage (U<sub>N</sub>)

V AC (50/60 Hz)

V DC

Rated power AC/DC VA (50 Hz)/W

Operating range

AC

DC

Holding voltage

AC/DC

Must drop-out voltage

AC/DC

**Technical data**

Mechanical life AC/DC cycles

Electrical life at rated load AC1 cycles

Operate/release time ms

Insulation between coil and contacts (1.2/50 μs) kV

Dielectric strength between open contacts V AC

Ambient temperature range °C

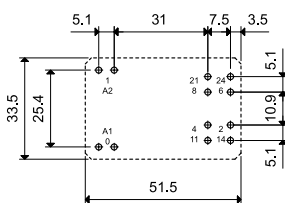
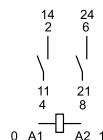
Environmental protection

**Approvals** (according to type)

**66.22-x30x**



- 30 A rated contacts
- PCB mount - bifurcated terminals

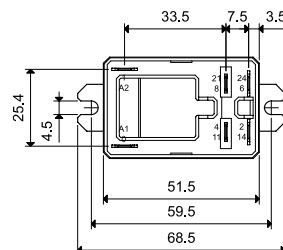
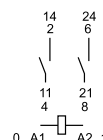


Copper side view

**66.82-x30x**



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



2 NO (DPST-NO)

2 NO (DPST-NO)

30/50

30/50

250/440

250/440

7500

7500

1200

1200

1.5

1.5

25/0.7/0.3

25/0.7/0.3

1000 (10/10)

1000 (10/10)

AgSnO<sub>2</sub>

AgSnO<sub>2</sub>

6 - 12 - 24 - 110/115 - 120/125 - 230 - 240

6 - 9 - 12 - 24 - 110 - 125

3.6/1.7

3.6/1.7

(0.8...1.1)U<sub>N</sub>

(0.8...1.1)U<sub>N</sub>

(0.8...1.1)U<sub>N</sub>

(0.8...1.1)U<sub>N</sub>

0.8 U<sub>N</sub> / 0.5 U<sub>N</sub>

0.8 U<sub>N</sub> / 0.5 U<sub>N</sub>

0.2 U<sub>N</sub> / 0.1 U<sub>N</sub>

0.2 U<sub>N</sub> / 0.1 U<sub>N</sub>

10 · 10<sup>6</sup>

10 · 10<sup>6</sup>

100 · 10<sup>3</sup>

100 · 10<sup>3</sup>

8/10

8/10

6 (8 mm)

6 (8 mm)

1500

1500

-40...+70

-40...+70

RT II

RT II



**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 ec nC) option available\*
- **HazLoc** Class I Div. 2 Group A, B, C, D - T4 - T5 - T6 option available\*

\* Characteristics page 8, 9

FOR UL RATINGS SEE:

"General technical information" page V

For outline drawing see page 10

**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: 24/110/220 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		AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>

**Coil specification**

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>		

**Technical data**

Mechanical life	cycles	10 · 10 <sup>6</sup>	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>	100 · 10 <sup>3</sup>
Operate/release time	ms	15/4	15/4	15/4
Insulation between coil and contacts (1.2/50 μs)	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

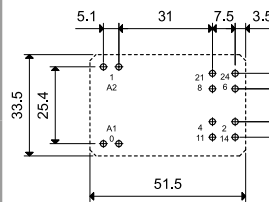
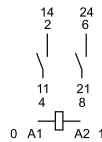
**Approvals** (according to type)



**66.22-x60x**



- PCB mount - bifurcated terminals

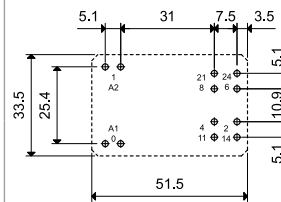
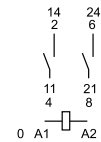


Copper side view

**66.22-x60xS**



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

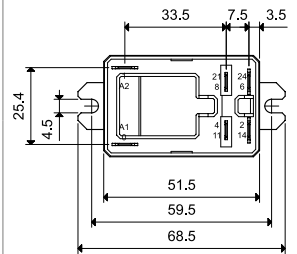
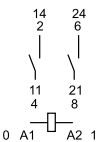


Copper side view

**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



**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 = AgCdO  
only ATEX versions  
1 = AgNi  
4 = Standard AgSnO<sub>2</sub>  
**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 and  
Atex/HazLoc  
versions)

**D: Special versions**  
0 = Standard  
1 = Wash tight (RT III)  
3 = Atex (Ex ec nC) and HazLoc  
Class I Div. 2 compliant

**C: Options**  
0 = None

**Selecting features and options: only combinations in the same row are possible.**

**Options for ATEX/HAZLOC versions: 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>4 - 1</b>	<b>0 - 3</b>	<b>0</b>	<b>0 - 1</b>
	DC	<b>4 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1</b>
66.22...S	DC	<b>4 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1</b>
	AC - DC	<b>4 - 1</b>	<b>0 - 3</b>	<b>0</b>	<b>0 - 1</b>
66.82	AC - DC	<b>4 - 1</b>	<b>0 - 3</b>	<b>0</b>	<b>0 - 1</b>
	DC	<b>4 - 1</b>	<b>6</b>	<b>0</b>	<b>0 - 1</b>

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

### 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	4000

### Insulation between adjacent contacts

Type of insulation		Basic
Overvoltage category		III
Rated impulse voltage	kV (1.2/50 μs)	4
Dielectric strength	V AC	2500

### Insulation between open contacts

	2 CO	2 NO, ≥ 1.5 mm (x60x version)
Type of disconnection	Micro-disconnection	Full-disconnection*
Overvoltage category	—	II
Rated impulse voltage	kV (1.2/50 μs)	2.5
Dielectric strength	V AC/kV (1.2/50 μs)	1500/2

### Insulation between coil terminals

Rated impulse voltage (surge) differential mode (according to EN 61000-4-5)	kV (1.2/50 μs)	4
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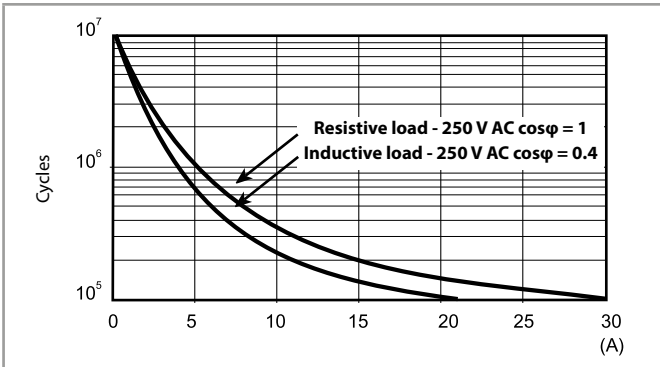
### Other data

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

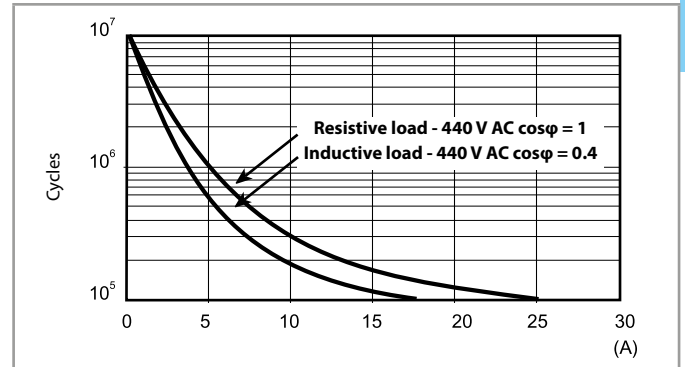
\* Only in applications where over voltage category II is permitted. In applications of over voltage category III: Micro-disconnection.

### Contact specification

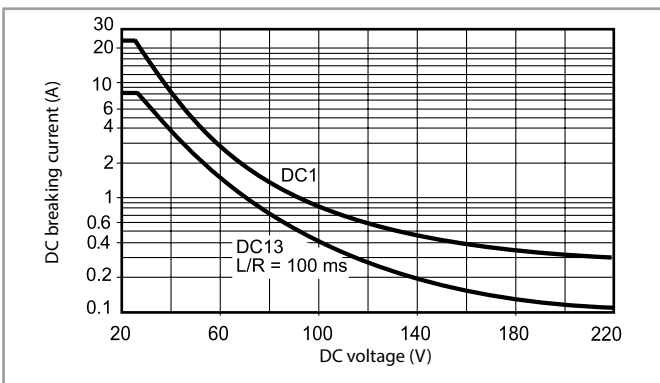
**F 66 - Electrical life (AC) v contact current**  
250 V (normally open contact)



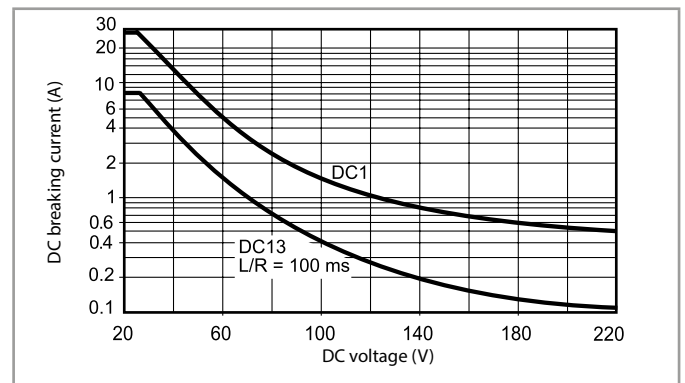
**F 66 - Electrical life (AC) v contact current**  
440 V (normally open contact)



**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

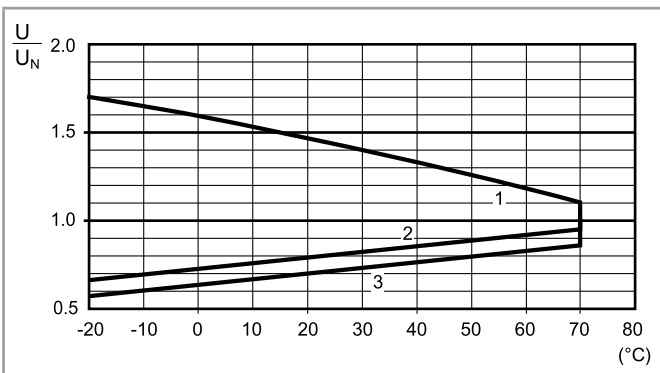
#### DC coil data

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

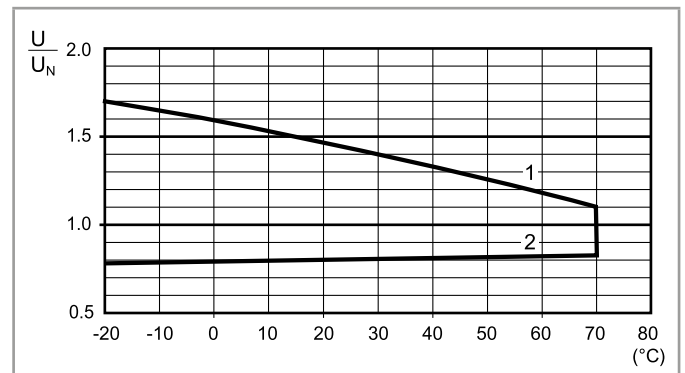
#### AC coil data

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

### ATEX - Electrical characteristics

Contact specification ATEX	66.82	66.22...S
Rated current/Maximum peak current	A 30/50 (NO) - 10/20 (NC)	25/50 (NO) - 10/20 (NC)
Rated voltage/Maximum switching voltage	V AC	250/440
Rated load AC1	VA 7500 (NO) - 2500 (NC)	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)
<b>Characteristics of coil</b>		
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>
<b>General characteristics</b>		
Ambient temperature	°C	-40...+70

### Special condition for safe use

The component must be placed inside an enclosure that ensures a degree of protection IP54 (or greater) according to standard EN 60529 and EN 60079-0 and that complies with the requirements of type of protection "Ex e" and EPL Gc (or better).

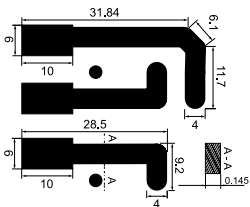
### Wiring

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

The connections must be made in compliance with the requirements of clause 4.2 of EN IEC 60079-7:2015+A1:2018.

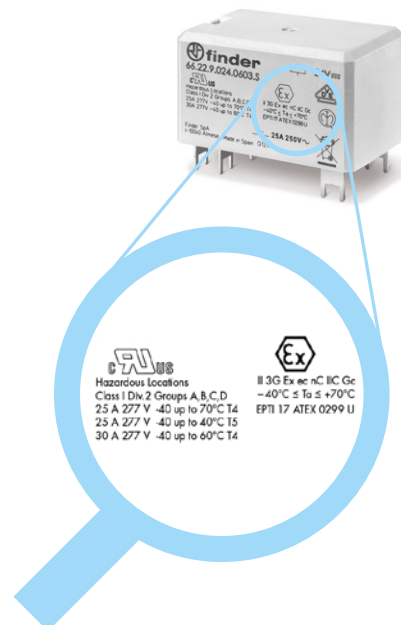
### Layout pcb

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 4.01 mm for Type 66.22...S.



### Markings - ATEX versions - ATEX, II 3G Ex ec nC IIC Gc

MARKING	
	Specific marking of explosion protection
II	Component for surface plant (different from mines)
3	Category 3: normal level of protection
GAS	<b>G</b> Explosive atmosphere due to presence of combustible gas vapour or mist
	<b>Ex ec</b> Increased safety (type of protection for category 3G)
	<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>EPTI 17 ATEX 0299 U</b> EPTI: laboratory which issues the voluntary type certificate 17: year of issue of certificate 0299: number of CE type certificate	
U: Ex component	
Xyy: production batch identification (X year, yy week)	





## Markings - Hazardous Location Class I Div. 2 Groups A, B, C, D - T4 - T5 - T6 and other data

HazLoc Class I Div. 2 Group A, B, C, D - T4 - T5 - T6		Meaning
Class I		Areas in which flammable gases and vapours may be present
Div. 2		Low probability to find ignitable concentration of hazards because are typically present in containers or closed systems from which can escape through their accidental rupture or breakdown
Group A, B, C, D		Kind of combustible, flammable gases and vapours can be in the atmosphere.
Permissible Surface temperature		
T4	135 °C	275 °F
T5	100 °C	212 °F
T6	85 °C	185 °F

A

Model	T4				
	Type of load	Voltage	Current/Power	Temperature °C	Note
66.22	DC General Use Res Heating	30 V	25 A	-40...+70	only 66.xx.9.x6x3
66.22/66.82	AC Motor Starting, Discharge Lamps Break All lines	240 V	2 Hp	-40...+70	12FLA/69 LRA
		120 V	1 Hp	—	16FLA/96 LRA
		120 V	1/2 Hp	—	9.8FLA/58.8 LRA

Model	T5				
	Type of load	Voltage	Current/Power	Temperature °C	Note
66.22.x.xxx.xxx3 x	DC General Use Res Heating	30 V	30 A	-40...+60	only 66.xx.9.x6x3
	AC Motor Starting, Discharge Lamps Break All lines	240 V	2 Hp	-40...+60	12FLA/69 LRA
		120 V	1 Hp		16FLA/96 LRA
		120 V	1/2 Hp		9.8FLA/58.8 LRA
T6					
	Type of load	Voltage	Current	Temperature °C	—
	AC General Use	277 V	10 A (NC)	-40...+70	—

Model	T5				
	Type of load	Voltage	Current/Power	Temperature °C	Note
66.82.x.xxx.xxx3 x	AC General Use	277 V	25 (NO)	-40...+40	—
	DC General Use	30 V	30 A	-40...+60	only 66.xx.9.x6x3
	AC Motor Starting, Discharge Lamps Break All lines	240 V	2 Hp	-40...+60	12FLA/69 LRA
		120 V	1 Hp		16FLA/96 LRA
		120 V	1/2 Hp		9.8FLA/58.8 LRA
T6					
	Type of load	Voltage	Current	Temperature °C	—
	AC General Use	277 V	10 A (NC)	-40...+70	—

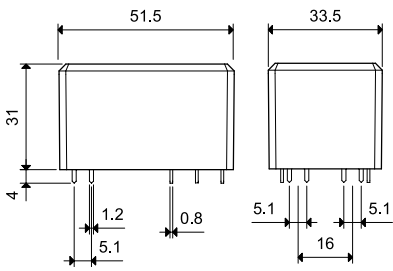
## HazLoc - Electrical characteristics

Contact specification HazLoc		HazLoc Class I Div. 2 T4 @ 60°C	HazLoc Class I Div. 2 T4 @ 70°C
Rated current/Maximum peak current	A	30/50 (NO) - 10/20 (NC)	25/50 (NO) - 10/20 (NC)
Rated voltage/Maximum switching voltage	V AC	250/400	250/400
Rated load AC1	VA	7500 (NO) - 2500 (NC)	6250 (NO) - 2500 (NC)
Rated load AC15	VA	1200 (NO)	1200 (NO)
Capacity for single phase motor (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)
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	

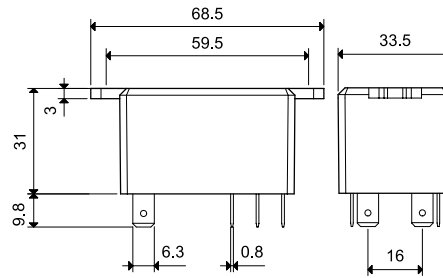
## Outline drawings

A

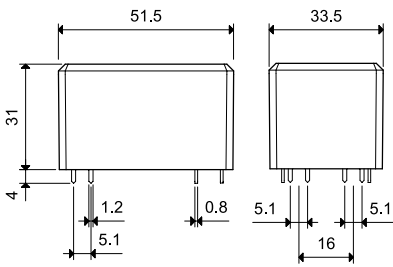
Type 66.22



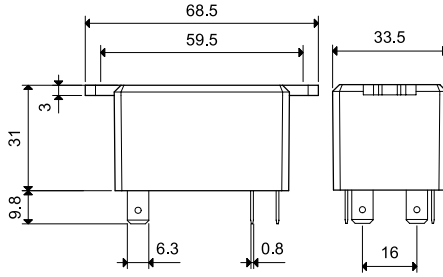
Type 66.82



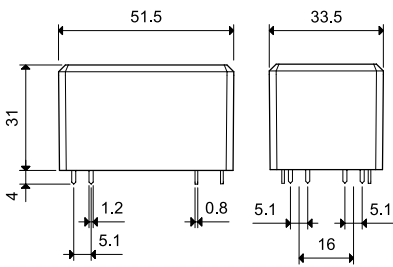
Type 66.22-x300



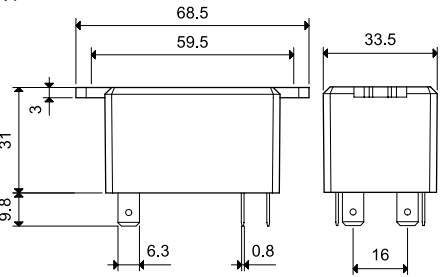
Type 66.82-x300



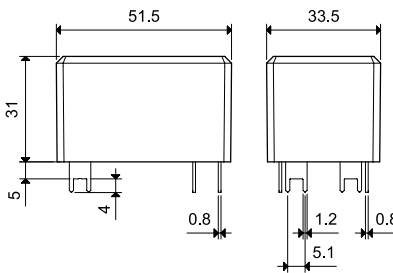
Type 66.22-x600



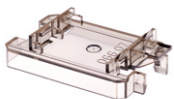
Type 66.82-x600



Type 66.22-x600S



## Accessories



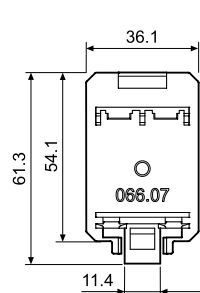
066.07



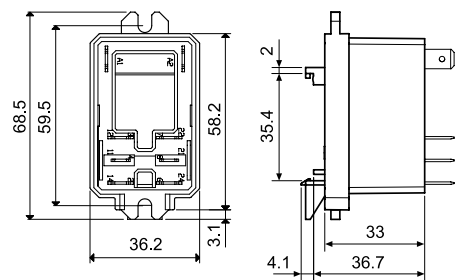
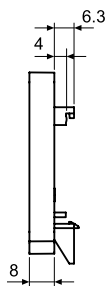
066.07 with relay

Top 35 mm rail (EN 60715) mount for types 66.82.xxxx-xx00

066.07



066.07



066.07 with relay