

Power relays 30 A



Power generators



Industrial washing machines



Burners, boilers and furnaces



Industrial furnaces and ovens



Air conditioners



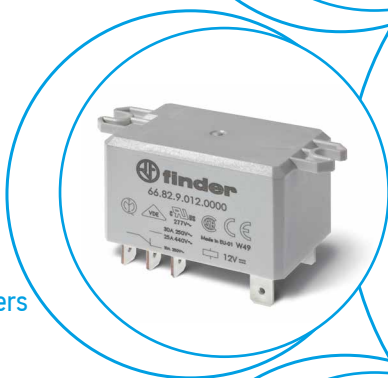
Hoists and cranes



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*
- 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 | | 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...1.1)U _N | (0.8...1.1)U _N |
| | DC | (0.8...1.1)U _N | (0.8...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

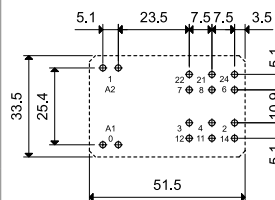
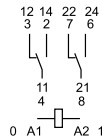
| | | | |
|--|--------|-----------------------|-----------------------|
| Mechanical life AC/DC | cycles | 10 · 10 ⁶ | 10 · 10 ⁶ |
| Electrical life at rated load AC1 | cycles | 100 · 10 ³ | 100 · 10 ³ |
| Operate/release time | ms | 8/15 | 8/15 |
| Insulation between coil and contacts (1.2/50 μs) | 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

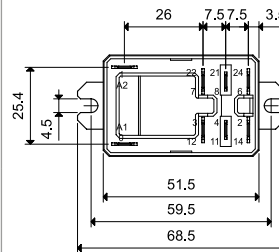
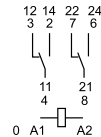


Copper side view

66.82



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



A

**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*
- **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) |
| 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: 24/110/220 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...1.1)U _N | (0.8...1.1)U _N |
| | DC | (0.8...1.1)U _N | (0.8...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 · 10 ⁶ | 10 · 10 ⁶ |
| Electrical life at rated load AC1 | cycles | 100 · 10 ³ | 100 · 10 ³ |
| 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 |

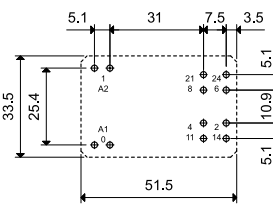
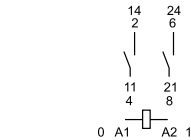
Approvals (according to type)



66.22-x30x



- 30 A rated contacts
- PCB mount - bifurcated terminals

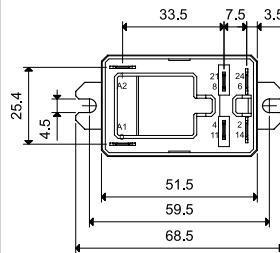
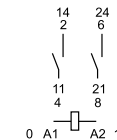


Copper side view

66.82-x30x



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



**2 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*
- **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 | | AgCdO | AgCdO | AgCdO |

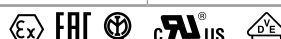
Coil specification

| | | | | |
|-----------------------------------|-----------------|-----------------------------|-------|-------|
| 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...1.1)U _N | | |
| Holding voltage | AC/DC | —/0.5 U _N | | |
| Must drop-out voltage | AC/DC | —/0.1 U _N | | |

Technical data

| | | | | |
|--|--------|-----------------------|-----------------------|-----------------------|
| Mechanical life | cycles | 10 · 10 ⁶ | 10 · 10 ⁶ | 10 · 10 ⁶ |
| Electrical life at rated load AC1 | cycles | 100 · 10 ³ | 100 · 10 ³ | 100 · 10 ³ |
| 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 |

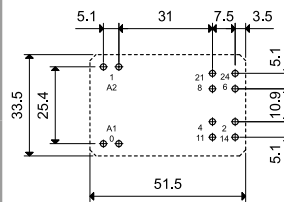
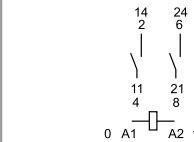
Approvals (according to type)



66.22-x60x



- PCB mount - bifurcated terminals

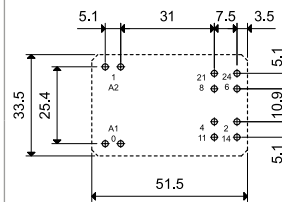
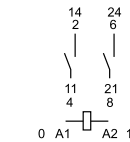


Copper side view

66.22-x60xS



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

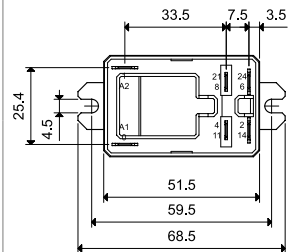
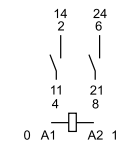


Copper side view

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

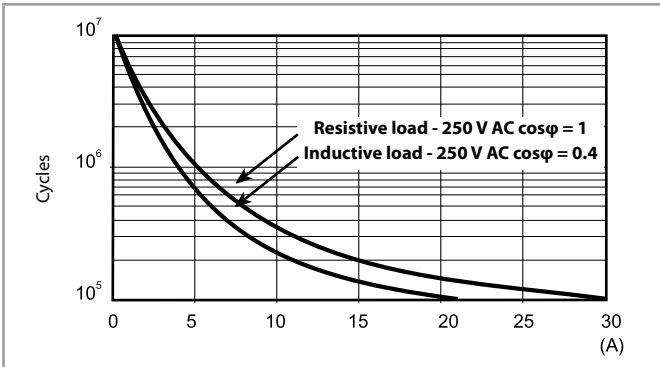
Insulation according to EN 61810-1

| | | |
|--|-------------------------|------------------------------------|
| 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 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 | | |
| Type of disconnection | | 2 CO Micro-disconnection |
| Overvoltage category | | — |
| Rated impulse voltage | kV (1.2/50 µs) | — |
| 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 |
| 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 |
| | with rated current | W |
| Recommended distance between relays mounted on PCB | mm | ≥ 10 |

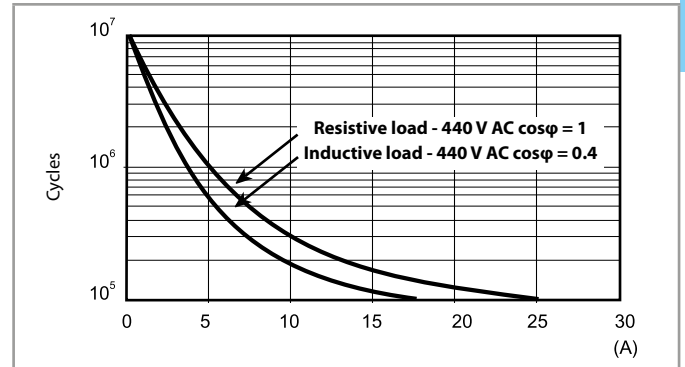
* Only in applications where over voltage category II is permitted. In applications of over voltage category III: Micro-disconnection.

Contact specification

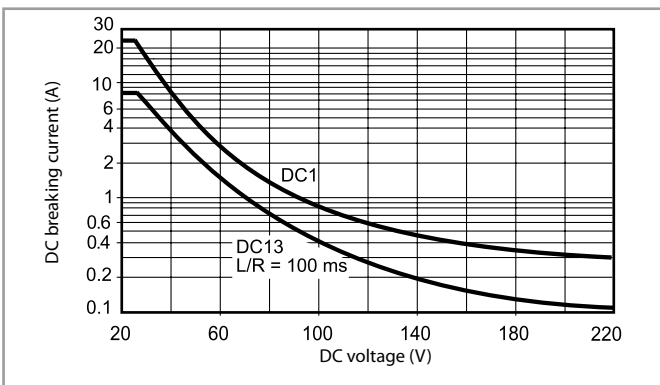
F 66 - Electrical life (AC) v contact current
250 V (normally open contact)



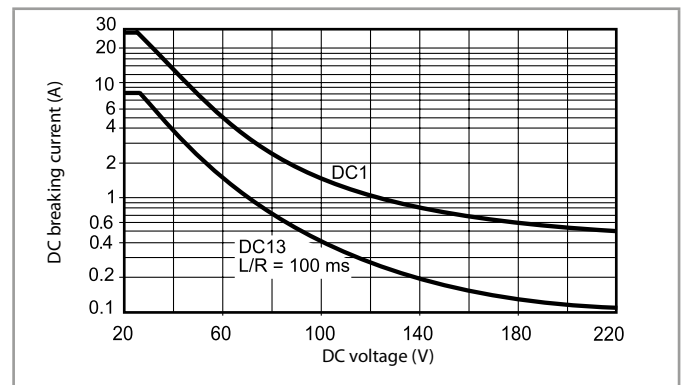
F 66 - Electrical life (AC) v contact current
440 V (normally open contact)



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

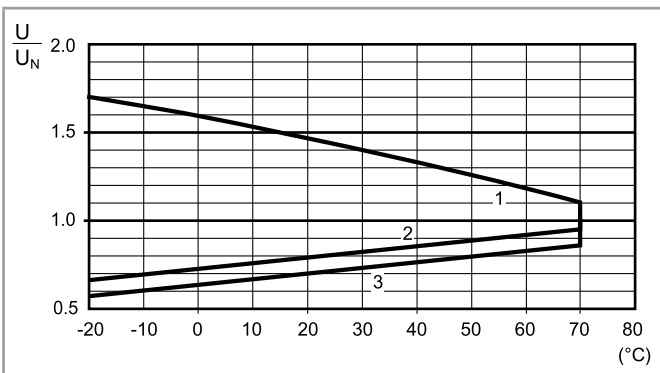
DC coil data

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

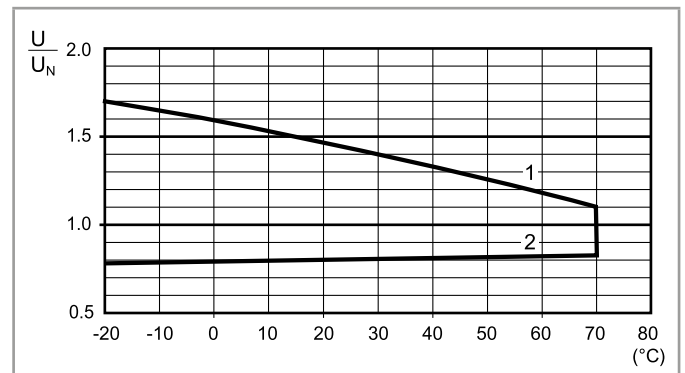
AC coil data

| Nominal voltage U_N V | Coil code | Operating range | | Resistance R Ω | Rated coil Consumption I at U_N (50 Hz) mA |
|-------------------------------|-----------|-----------------|----------------|-----------------------------|--|
| | | U_{min} V | U_{max} V | | |
| 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 | 250/400 |
| 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) |
| 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...1.1)U _N |
| General characteristics | | |
| 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).

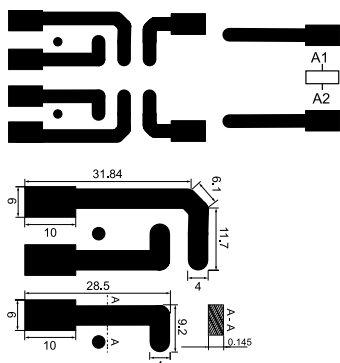
Wiring

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

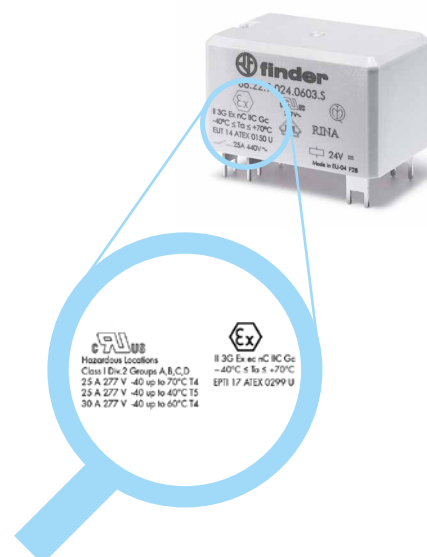
Layout pcb

The minimum cross-section of the tracks of the printed circuit board must be 0.58 mm², 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 | G Explosive atmosphere due to presence of combustible gas vapour or mist |
| | Ex ec Increased safety |
| | Ex nC Sealed device (type of protection for category 3G) |
| | IIC Gas group |
| | Gc Equipment Protection Level |
| -40 °C ≤ Ta ≤ +70 °C Ambient temperature | |
| EPTI 17 ATEX 0299 U EPTI 17 ATEX 0299: number of CE type certificate and laboratory which issues the CE type certificate | |
| U: ATEX component | |



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 | — |

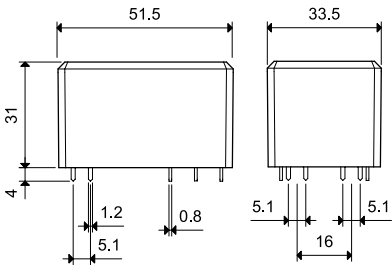
HazLoc - Electrical characteristics

| 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 _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...1.1)U _N | |
| General characteristics | | | |
| Ambient temperature | °C | -40...+70 | |

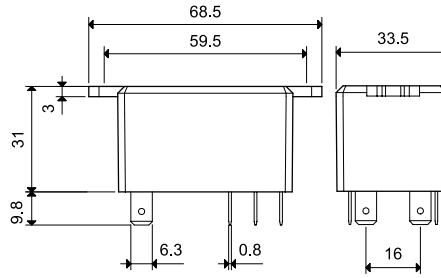
Outline drawings

A

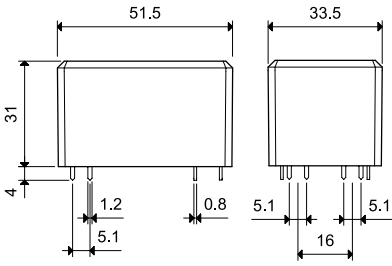
Type 66.22



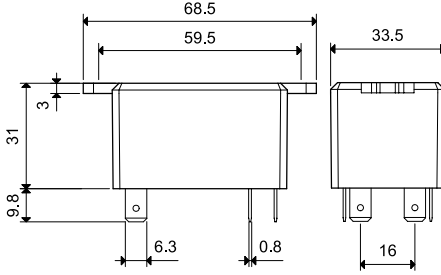
Type 66.82



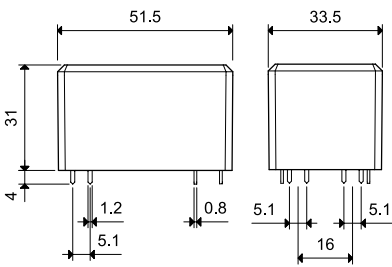
Type 66.22-0300



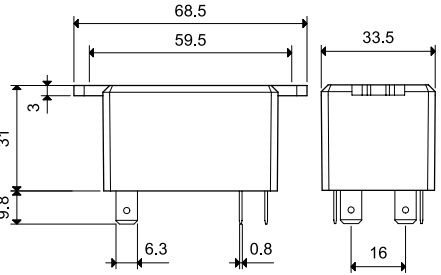
Type 66.82-0300



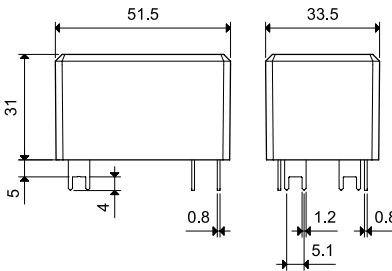
Type 66.22-0600



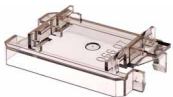
Type 66.82-0600



Type 66.22-0600S



Accessories



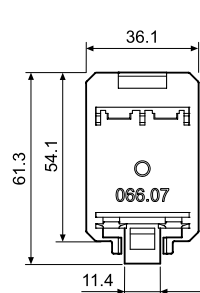
066.07



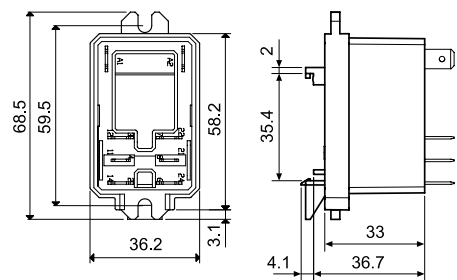
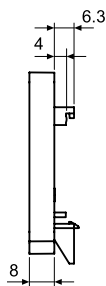
066.07 with relay

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

066.07



066.07



066.07 with relay