finder
RELAYING INNOVATION

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



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2 Pole Changeover (DPDT)
30 A Power relay

Type 66.22-x00x
- PCB connections & mount

Type 66.82-x00x
- Faston 250 connections and Flange mount

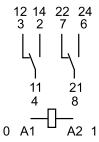
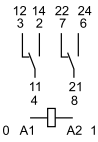
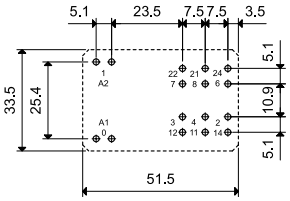
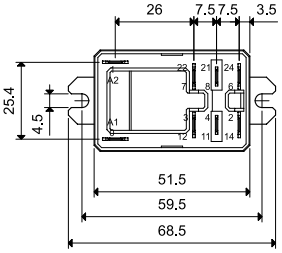
- Reinforced insulation between coil and contacts according to EN 60335-1; 8 mm creepage and clearance distances
- AC coils & DC coils
- Cadmium Free option available
- **ATEX** compliant (Ex ec nC) option available*
- **HazLoc** Class I Div. 2 Group A, B, C, D - T4 - T5 - T6 option available*

* Characteristics page 8, 9

** With the AgNi material the maximum peak current on normally open contact, is 50 A - 5 ms

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

For outline drawing see page 10

	66.22-x00x	66.82-x00x
		
	• 30 A rated contacts • PCB mount - bifurcated terminals	• 30 A rated contacts • Flange mount • Faston 250 connections
		
		
	Copper side view	
Contact specification		
Contact configuration	2 CO (DPDT)	2 CO (DPDT)
Rated current/Maximum peak current (5 ms) A	30/120** (NO) - 10/20 (NC)	30/120** (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	$AgSnO_2$	$AgSnO_2$
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	$10 \cdot 10^6$	$10 \cdot 10^6$
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 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)		

A

2 Pole NO (DPST-NO)
30 A Power relay

Type 66.22-x30x
- PCB mount

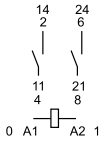
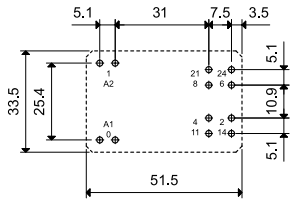
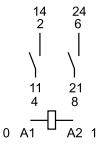
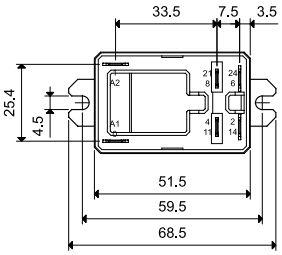
Type 66.82-x30x
- Faston 250 connections and Flange mount

- 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 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 IX

For outline drawing see page 10

	66.22-x30x	66.82-x30x
		
	• 30 A rated contacts • PCB mount - bifurcated terminals	• 30 A rated contacts • Flange mount • Faston 250 connections
	 	 
	Copper side view	
Contact specification		
Contact configuration	2 NO (DPST-NO)	2 NO (DPST-NO)
Rated current/Maximum peak current (5 ms) A	30/120	30/120
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	$AgSnO_2$	$AgSnO_2$
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	$10 \cdot 10^6$	$10 \cdot 10^6$
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 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)		

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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

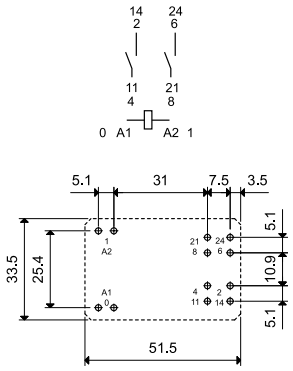
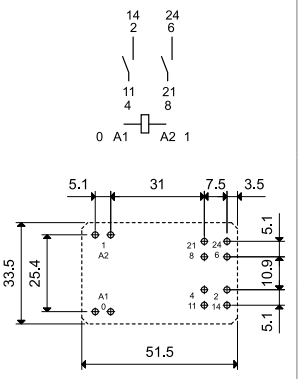
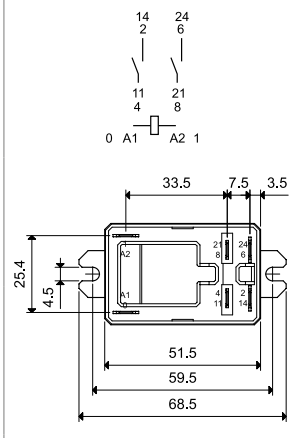
Type 66.82-x60x
- Faston 250 connections and Flange mount

- ≥ 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 IX

For outline drawing see page 10

	66.22-x60x	66.22-x60xS	66.82-x60x
			
	• PCB mount - bifurcated terminals	• PCB mount - bifurcated terminals • 5 mm gap between PCB and relay base	• Flange mount • Faston 250 connections
			
	Copper side view	Copper side view	
Contact specification			
Contact configuration	2 NO (DPST-NO)	2 NO (DPST-NO)	2 NO (DPST-NO)
Rated current/Maximum peak current (5 ms) A	30/120	30/120	30/120
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	$AgSnO_2$	$AgSnO_2$	$AgSnO_2$
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	(0.7…1.1)U_N	(0.8…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 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)			

Ordering information

Example: 66 series relay, Faston 250 (6.3 x 0.8 mm) with top flange mount, 2 CO (DPDT) 30 A contacts, 24 V DC coil.

6	6	.	8		2	.	9	.	0	2	4	.	4	0	0	0		
													A	B	C	D		

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 = $AgSnO_2$

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

C: Options
0 = None

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

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

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	**4** - 1	**0** - 3	**0**	0 - **1**
	DC	**4** - 1	**6**	**0**	0 - **1**
66.22…S	DC	**4** - 1	**6**	**0**	0 - **1**
66.82	AC - DC	**4** - 1	**0** - 3	**0**	**0** - 1
	DC	**4** - 1	**6**	**0**	**0** - 1

Options for ATEX/HAZLOC versions: only combinations in the same row are possible.

Type	Coil version	A	B	C	D
66.22…S	DC	0 - 1 - 4	0 - 3 - 6	0	**3**
66.82	AC - DC	0 - 1 - 4	0 - 3	0	**3**
	DC	0 - 1 - 4	6	0	**3**

Technical data

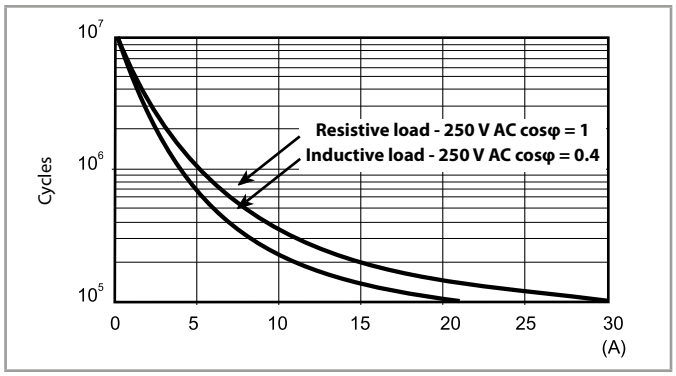
Insulation according to EN 61810-1				
Nominal voltage of supply system		V AC	230/400	
Rated insulation voltage		V AC	400	
Pollution degree			3	
Insulation between coil and contact set				
Type of insulation			Reinforced (8 mm)	
Overvoltage category			III	
Rated impulse voltage		kV (1.2/50 µs)	6	
Dielectric 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			**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	2500/2.5
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	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.

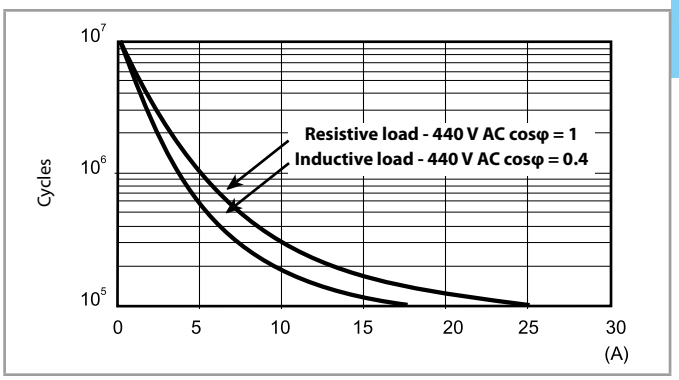
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Contact specification

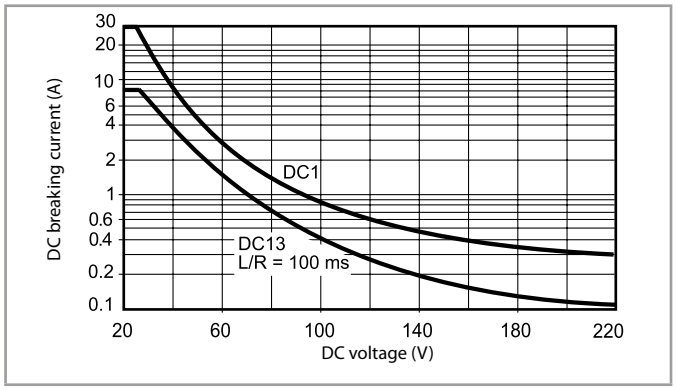
F 66 - Electrical life (AC) v contact current
250 V (normally open contact)



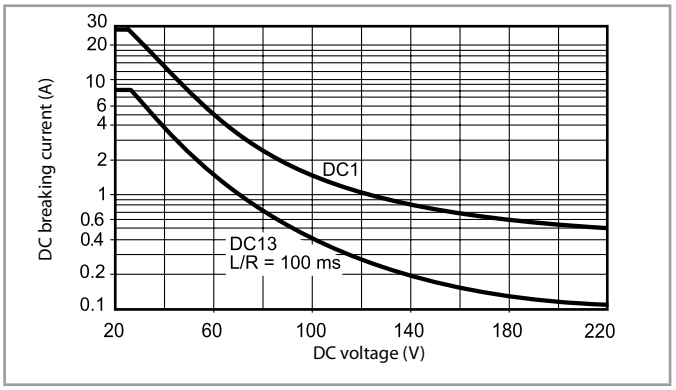
F 66 - Electrical life (AC) v contact current
440 V (normally open contact)



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 ≥ $100 \cdot 10^3$ 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

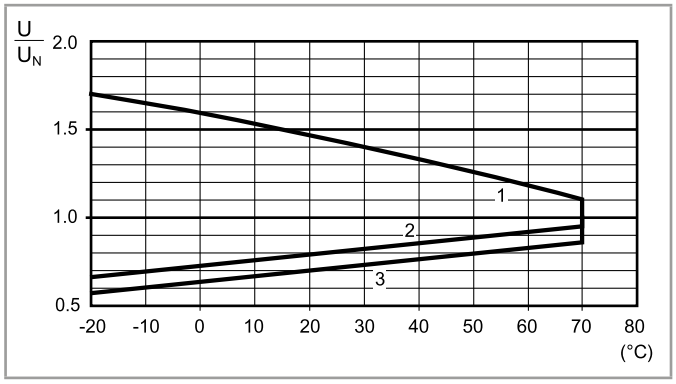
DC coil data

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

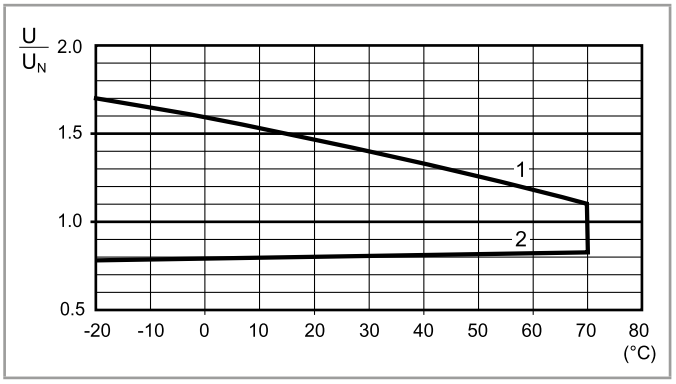
Nominal voltage	Coil code	Operating range		Resistance	Rated coil Consumption
U_N		U_{min}	U_{max}	R	I at U_N (50 Hz)
V		V	V	Ω	mA
6	**8**.006	4.8	6.6	3	600
12	**8**.012	9.6	13.2	11	300
24	**8**.024	19.2	26.4	50	150
110/115	**8**.110	88	126	930	32.6
120/125	**8**.120	96	137	1050	30
230	**8**.230	184	253	4000	15.7
240	**8**.240	192	264	5500	15

R 66 - DC coil operating range v ambient temperature



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-x60xS)

R 66 - AC coil operating range v ambient temperature



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

ATEX - Electrical characteristics

A

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)	
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 IP 54 (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).

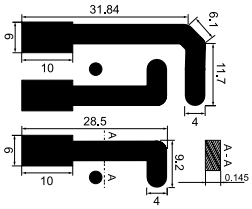
Wiring

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

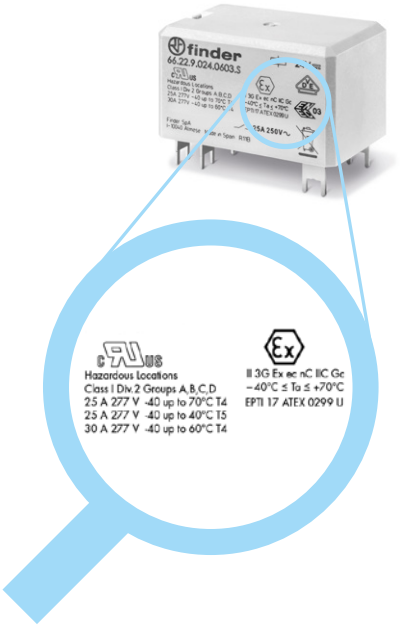
The minimum cross-section of the tracks of the printed circuit board must be 0.58 mm², while the width must be at least 4.01 mm for Type 66.22...S.





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

MARKING		
Ⓔx 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 (type of protection for category 3G)	
	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: 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)		



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Markings - Hazardous Location Class I Div. 2 Goups 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

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	12 FLA/69 LRA
		120 V	1 Hp	—	16 FLA/96 LRA
		120 V	1/2 Hp	—	9.8 FLA/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	12 FLA/69 LRA
		120 V	1 Hp		16 FLA/96 LRA
		120 V	1/2 Hp		9.8 FLA/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	12 FLA/69 LRA
		120 V	1 Hp		16 FLA/96 LRA
		120 V	1/2 Hp		9.8 FLA/58.8 LRA
	T6				
	Type of load	Voltage	Current	Temperature °C	—
	AC General Use	277 V	10 A (NC)	–40…+70	—

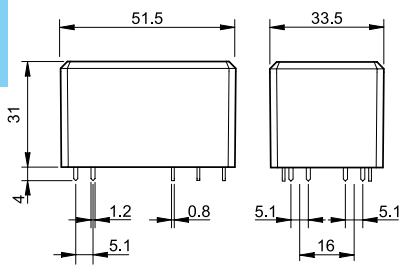
HazLoc - Electrical characteristics

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	

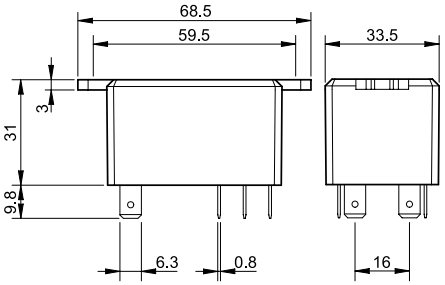
Outline drawings

A

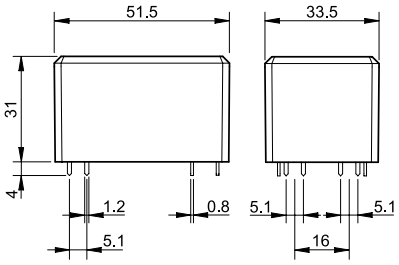
Type 66.22



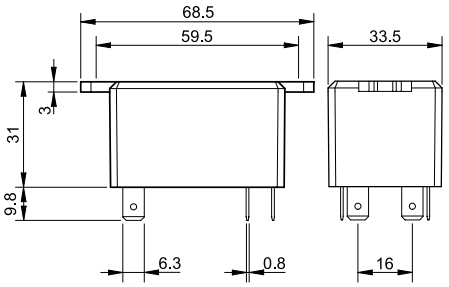
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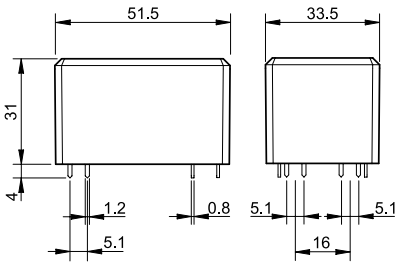
Type 66.22-x300



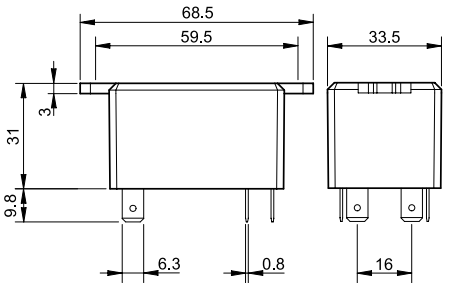
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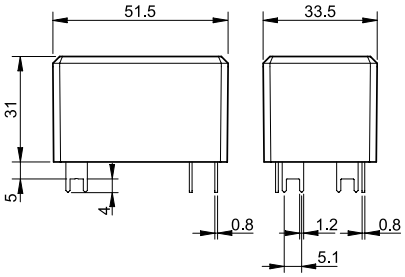
Type 66.22-x600



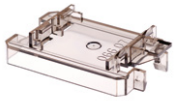
Type 66.82-x600



Type 66.22-x600S



Accessories

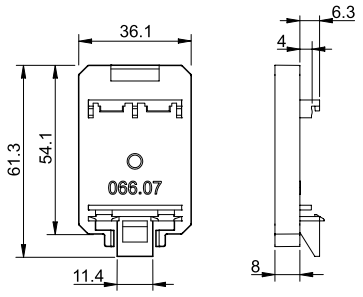


066.07

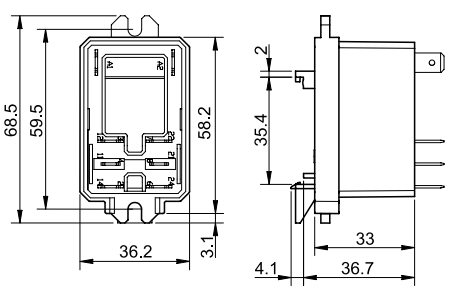


066.07 with relay

Top 35 mm rail (EN 60715) mount for types 66.82.x.xxx.xx00	066.07



066.07



066.07 with relay

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Please see general technical information