

# CS30/CF30



## Power Relays



### Benefits

- **Wide product range.** CF/CS are available for PCB or Fast-on terminal, with 2 normally open contact (DPST) or 2 change over contact (DPDT) versions.
- **Wide coil voltage range.** Coil voltage range from 6 VDC up to 277 VAC.
- **High performance.** CF/CS30 series offers capacity 30 A, with reinforced insulation 4 kV / 8 mm (0.31").
- **Wide applications range.** General purpose, power loads, compressor control, hazard of explosive atmospheres and flammable refrigerants applications. Can be also used in applications using A2L and A3 refrigerants.
- **Complete approvals.** CF30/CS30 series meets CE, UL508, ATEX TUV and NWFR UL.

### Description

High output power relay. It is sealed and designed for power loads, compressor control, vending machines and hazardous applications.

### Applications

The CS30/CF30 relays can be used for a wide range of industrial applications. The markets of interest are all Building and industrial automation, including applications with risks due to explosive atmospheres and flammable refrigerants.

### Main functions

- Switching with 30A capacity of power loads, for compressor control, and management of applications with risks of explosive atmospheres and flammable refrigerants
- Wide voltage coil range, DC coils 6 to 48 VDC and AC coils 24 to 277 VAC
- Wide applications range with PCB or Fast-on terminal, and with 2 normally open contacts or 2 change over contacts
- Robustness and reliability due to standard sealing, reinforced insulation 4 kV / 8 mm (0.31"), CE, UL, ATEX approvals, class F construction

## References

### Order code

 C ☐ 30 ☐ ☐ ☐ ☐ AX

Enter the code entering the corresponding option instead of ☐

| Code                     | Option | Description                    | Notes                                                                 |
|--------------------------|--------|--------------------------------|-----------------------------------------------------------------------|
| C                        | -      | Relay family                   |                                                                       |
| <input type="checkbox"/> | S      | Soldering                      | Terminal version                                                      |
|                          | F      | Fast-on                        |                                                                       |
| 30                       | -      | 30A                            | Contact rating                                                        |
| <input type="checkbox"/> | A      | AC                             | Coil version                                                          |
|                          | D      | DC                             |                                                                       |
| <input type="checkbox"/> | 002    | 2 change over contact (DPDT)   | Contact form                                                          |
|                          | 200    | 2 normally open contact (DPST) |                                                                       |
| <input type="checkbox"/> | 6      | 6 VDC                          | Rated coil voltage<br>(DC coil)                                       |
|                          | 12     | 12 VDC                         |                                                                       |
|                          | 24     | 24 VDC                         |                                                                       |
|                          | 48     | 48 VDC                         |                                                                       |
| <input type="checkbox"/> | 24     | 24 VAC                         | Rated coil voltage<br>(AC coil)                                       |
|                          | 120    | 120 VAC                        |                                                                       |
|                          | 220    | 220 VAC (only for 50Hz)        |                                                                       |
|                          | 240    | 240 VAC                        |                                                                       |
|                          | 277    | 277 VAC                        |                                                                       |
| AX                       | -      | ATEX and NWFR                  | Hazard of explosive atmospheres and flammable refrigerants approvals. |

## Selection guide

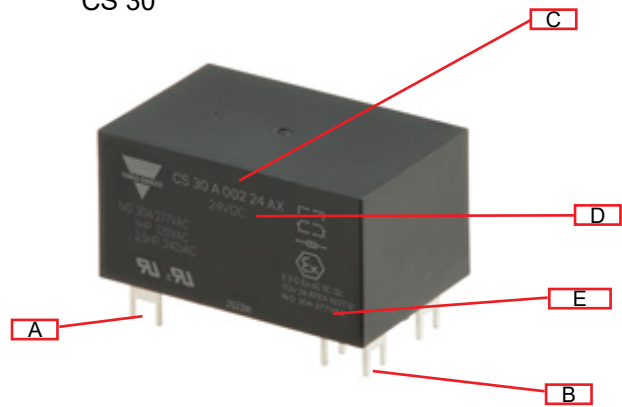
| Relay Coil Voltage | AC                             |                                | DC                           |                              |
|--------------------|--------------------------------|--------------------------------|------------------------------|------------------------------|
|                    | 002                            | 200                            | 002                          | 200                          |
| 6                  | -                              | -                              | CF30D0026AX                  | CF30D2006AX                  |
| 12                 | -                              | -                              | CF30D00212AX<br>CS30D00212AX | CF30D20012AX<br>CS30D20012AX |
| 24                 | CF30A00224AX<br>CS30A00224AX   | CF30A20024AX<br>CS30A20024AX   | CF30D00224AX<br>CS30D00224AX | CF30D20024AX<br>CS30D20024AX |
| 48                 | -                              | -                              | CF30D00248AX<br>CS30D00248AX | CF30D20048AX<br>CS30D20048AX |
| 120                | CF30A002120AX<br>CS30A002120AX | CF30A200120AX<br>CS30A200120AX | -                            | -                            |
| 220                | CF30A002220AX                  | -                              | -                            | -                            |
| 240                | CF30A002240AX<br>CS30A002240AX | CF30A200240AX<br>CS30A200240AX | -                            | -                            |
| 277                | CF30A002277AX                  | CF30A200277AX                  | -                            | -                            |

## Further reading

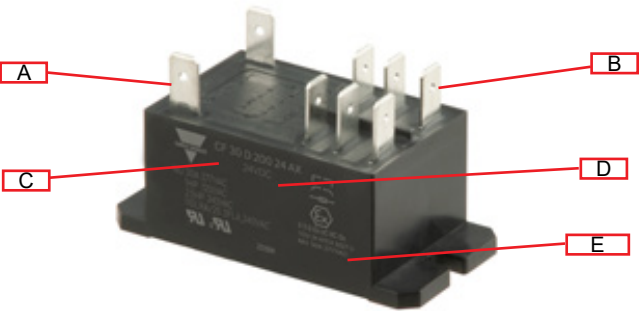
| Information | Where to find it                                                                                                                                                                                | QR                                                                                    |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Datasheet   | <a href="https://www.gavazziautomation.com/fileadmin/images/PIM/DATASHEET/ENG/CS30/CS30_DS_EN.pdf">https://www.gavazziautomation.com/fileadmin/images/PIM/DATASHEET/ENG/CS30/CS30_DS_EN.pdf</a> |  |

Structure

CS 30



CF 30



| Element |                        |
|---------|------------------------|
| A       | Terminals for coil     |
| B       | Terminals for contacts |
| C       | Part number            |
| D       | Coil version           |
| E       | Approval logos         |

## Features

### Coil data, DC @ +20°C (+68°F)

|                                   | CF/CS 30..6AX | CF/CS 30..12AX | CF/CS 30..24AX | CF/CS 30..48AX |
|-----------------------------------|---------------|----------------|----------------|----------------|
| Coil voltage                      | 6 VDC         | 12 VDC         | 24 VDC         | 48 VDC         |
| Pick-up voltage                   | 4.5 VDC       | 9.0 VDC        | 18.0 VDC       | 36 VDC         |
| Drop-out voltage                  | 0.6 VDC       | 1.2 VDC        | 2.4 VDC        | 4.8 VDC        |
| Maximum Voltage                   | 9.6 VDC       | 19.2 VDC       | 38.4 VDC       | 76.8 VDC       |
| Coil resistance $\Omega \pm 10\%$ | 22            | 86             | 350            | 1390           |

### Coil data, AC @ +20°C (+68°F) 50 / 60Hz

|                                   | CF/CS 30..24AX | CF/CS 30..120AX | CF/CS 30..220AX      | CF/CS 30..240AX | CF/CS 30..277AX |
|-----------------------------------|----------------|-----------------|----------------------|-----------------|-----------------|
| Coil voltage                      | 24 VAC         | 120 VAC         | 220 <sup>2</sup> VAC | 240 VAC         | 277 VAC         |
| Pick-up voltage                   | 19.2 VAC       | 96 VAC          | 175 VAC              | 192 VAC         | 211.6 VAC       |
| Drop-out voltage                  | 4.8 VAC        | 24 VAC          | 44 VAC               | 48 VAC          | 55.4 VAC        |
| Maximum Voltage                   | 26.4 VAC       | 132 VAC         | 242 VAC              | 264 VAC         | 304.7 VAC       |
| Coil resistance $\Omega \pm 10\%$ | 37.5           | 950             | 3800                 | 3800            | 5485            |

1. Only 60 Hz
2. Only 50 Hz

### Environmental specifications

|                                                | AC                                                         | DC                                                         |
|------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| Ambient temperature                            | -40 °C to 65 °C (-40° to 149 °F)                           | -40 °C to 85 °C (-40° to 185 °F)                           |
| Temperature rise                               | AC type: 90K max.                                          | DC type: 70K max.                                          |
| Humidity                                       | 5 to 85%RH                                                 |                                                            |
| Shock resistance:<br>Functional<br>Destructive | 98 m/s <sup>2</sup> - 10 G<br>980 m/s <sup>2</sup> - 100 G | 98 m/s <sup>2</sup> - 10 G<br>980 m/s <sup>2</sup> - 100 G |
| Vibration resistance                           | 10HZ~55HZ 1.65mm DA                                        |                                                            |
| Weight                                         | ~ 86 g (~3.03 oz)                                          | ~ 86 g (~3.03 oz)                                          |
| Nominal coil power                             | Approx. 4.0 VA                                             | Approx. 1.7 W                                              |

## Contacts data

|                                                                             | CF/CS30x200xx / CF/CS30x002xx                                                                                                                                         |                      |
|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|                                                                             | (NO)                                                                                                                                                                  | (NC)                 |
| Maximum switching current                                                   | 30 A                                                                                                                                                                  | 3 A                  |
| Maximum switching power                                                     | 8310 VA                                                                                                                                                               | 831 VA               |
| Maximum switching voltage                                                   | 277 VAC                                                                                                                                                               | 277 VAC              |
| Initial contact resistance                                                  | 50 mΩ at 1A - 24 VDC)                                                                                                                                                 | 50 mΩ at 1A - 24 VDC |
| Material                                                                    | AgSnO <sub>2</sub>                                                                                                                                                    | AgSnO <sub>2</sub>   |
| Electrical durability                                                       | 1 x 10 <sup>5</sup> Ops (NO: 30A 277VAC, Resistive load, Room temp, 1s on 9s off)<br>1 x 10 <sup>5</sup> Ops (NC: 3A 277VAC, Resistive load, Room temp, 1s on 9s off) |                      |
| Mechanical durability                                                       | 5 x 10 <sup>6</sup> Ops                                                                                                                                               |                      |
| Operate time                                                                | 25ms (DC type)                                                                                                                                                        |                      |
| Release time                                                                | 25ms (DC type)                                                                                                                                                        |                      |
| Contact Rating                                                              | 30 A - 277 VAC                                                                                                                                                        | 3 A - 277V AC        |
| UL rating                                                                   | 30 A - 277 VAC<br>2.5 HP - 240 VAC<br>1 HP - 120 VAC<br>110 LRA / 25.3 FLA DC type                                                                                    | 3 A - 277 VAC        |
| Vibration resistance                                                        | 1.65 mm (0.06") p.p 10 to 55 Hz                                                                                                                                       |                      |
| Enclosure                                                                   | IP 67 Sealed                                                                                                                                                          | IP 67 Sealed         |
| Test voltage (1 min)<br>Open contacts<br>Contacts / coil<br>Contact / poles | 1500VAC<br>4000VAC<br>2000VAC                                                                                                                                         |                      |
| Surge voltage Contact / coil                                                | 10000 VAC                                                                                                                                                             | 10000 VAC            |
| Initial insulation resistance @ 500 VDC                                     | 1000 MΩ                                                                                                                                                               | 1000 MΩ              |

## Compatibility and conformity

|                  |                             |
|------------------|-----------------------------|
| CE (RoHS, LVD)   | IEC 61810                   |
| UL certification | UL508, ATEX TUV and NWFR UL |

## Installation

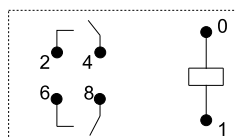
|          |                         |
|----------|-------------------------|
| Mounting | PCB or Fast-on terminal |
|----------|-------------------------|

## Connection diagram

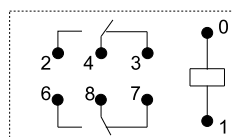
### Contacts layout

#### Solder side

CF/CS30 . 200 .

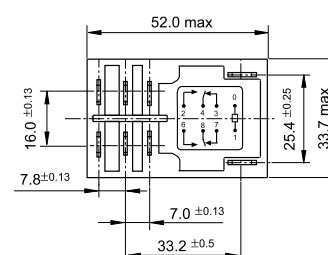
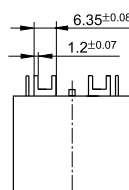
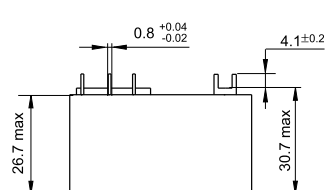


CF/CS30 . 002 .

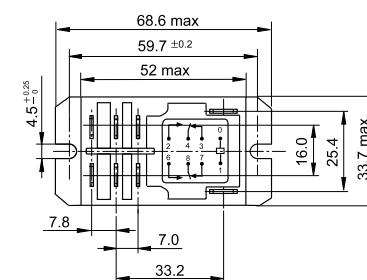
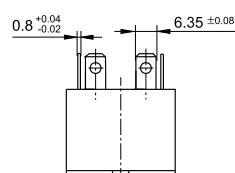
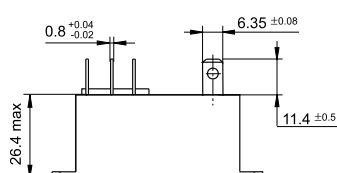


### Dimensions and Pin view

#### PCB



#### FAST-ON



Unit: mm

## Diagram

