The new IRC relays

Button and lockable lever push-to-test, lift-to-lock

Mechanical and LED indication as standard

Coil voltage marked on the top of the relay

Marking label

Optional in-built suppressors circuits and bridge rectifier for AC/DC relays

Part number and technical information clearly visible on the side of relay

Isolation between contacts and coil, 5 KV

Coil input polarity protected (no polarity)

3 independents isolated zones: Coil, contacts and electronic circuits

Colour coded identification
AC: red
DC: blue
AC/DC: grey

Industrial terminal FASTON .

The new IRC sockets

Wire inlets, all in line

In-built retaining clip

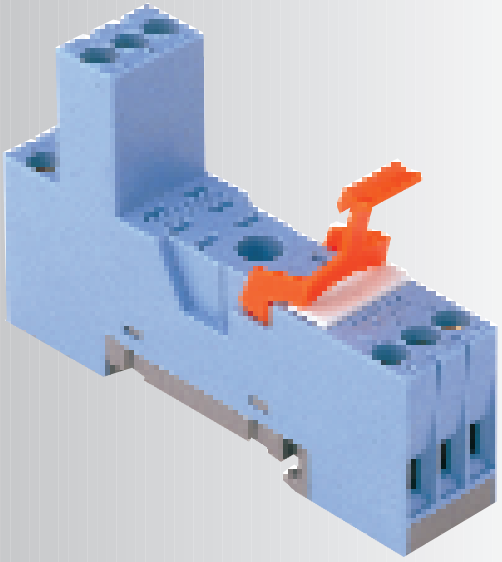
DIN rail or panel mounting

Socket marking label

Industrial size screws and wire inlets to connect solid wire or ferrule tips up to 4 sq. mm.

Bridge bars for the coil lines

Bridge bars for the power lines



Depósito Legal M-40251-2004

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THE NEW IRC FAMILY

10A 1 change-over contact

C10-A10X PAGE 8

10A 1 open contact

C10-G10X PAGE 9

6A 1 change-over contact

C10-T13X PAGE 10

6A 1 open contact

C10-GT13X PAGE 11

5A 2 change-over contacts

C12-A21X PAGE 12

5A 2 open contacts

C12-G21X PAGE 13

10A 1 change-over contact

C14-A10 PAGE 14

10A 1 open contact

C14-G10 PAGE 15

6A 1 change-over contact

C14-T13 PAGE 16

6A 1 open contact

C14-GT13 PAGE 17

5A 2 change-over contacts

C15-A21 PAGE 18

5A 2 open contacts

C15-G21 PAGE 19

2A 1 open contact

CSS-DCP PAGE 20

2A 1 open contact

CSS-DCN PAGE 21

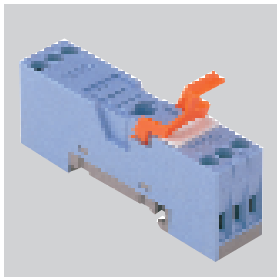
3A 1 open contact

CSS-AC PAGE 22

3A 1 open contact

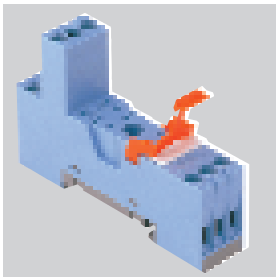
CSS-AZ PAGE 23

16A 1 change-over contact



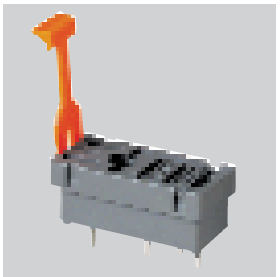
S10M PAGE 24

5A 2 change-over contacts



S12 PAGE 25

10A 1 change-over contact

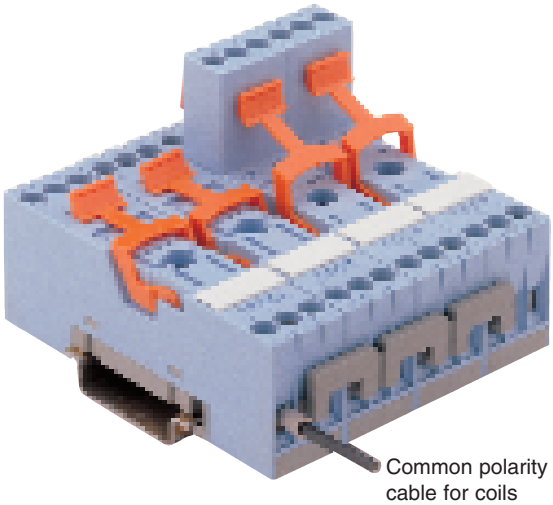


S10-P PAGE 26

5A 2 change-over contacts

S12-P PAGE 26

New I/O sockets, new IRC relays and new bridge bars allow more flexible, more economical and more aesthetic mounting, in interface and general application.



Common polarity cable for coils

S10-M and **S12** sockets of 1 and 2 contacts, with inlets in line and identical disposition of contacts set.

Identical sequence of coil and contacts on both sockets.
Coil terminal on level 1: (A2, A2, A1)
Contact terminals on level 1: (12, 11, 14)
Contact terminals on level 2: (22, 21, 24)

Bridge bars between A2 coil terminals with 2 free inlets to connect a commom polarity cable. Those bridges bars are isolated and divisible by hand, in single units.

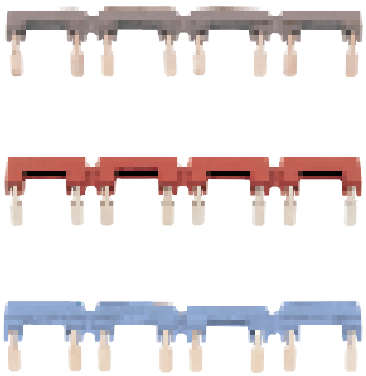
Power bridges with current capacity of 40 A to be connected bewteen contacts 11 or 21 in any combination: Groups or battery of relays, to supply the power current to the loads.

Inlet terminals admit ferrule tips up to 4 mm^2.

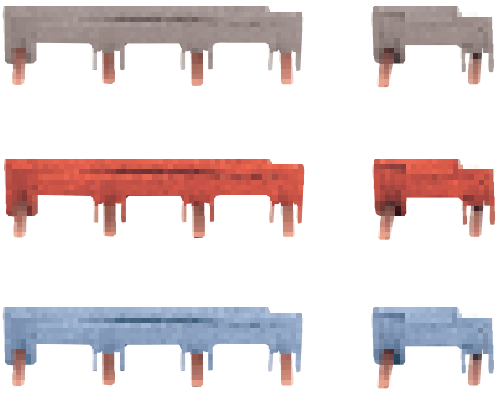
Bridges in grey colour as standard.

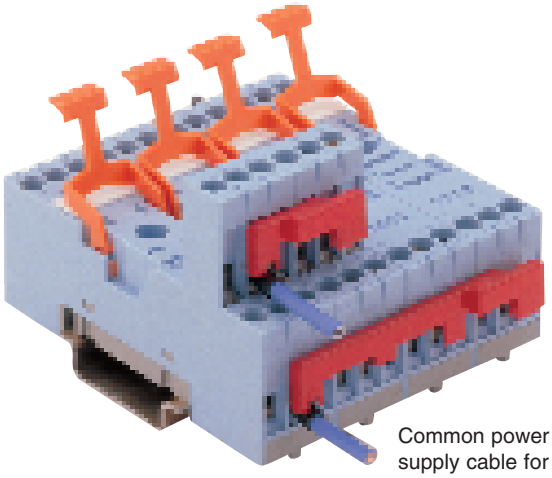
Options:
Adopted colours by Releco used in the testing buttons of relays:
Blue, to identify DC circuits
Red, to identify AC circuits

B20 bridge bars for coils line



V40 and V10 bridge bars for power line





Common power supply cable for loads

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Bridge bars connection on S10-M and S12 sockets

Examples of mounting. Not at scale

New S10-M and S12 sockets and new connection bridges B20, V10 and V40 permit an easy and quick wiring of relays in battery, in groups or in any other combination of voltages, coils or contacts.
Every bridge allows mounting with an hybrid configuration of S10-M and S12 sockets.
The immediate identification of the different circuits, means a lower mounting cost, inspection or maintenance.
Available in grey colour (standard), red (AC) and blue (DC), following the same colour coding adopted by Releco in testing buttons to identify its relays.

V40 bridge bars for power lines

These bridges allow joining common points in the power connection, usually the change-over contacts 11 or 21 on relays. They can be also used to bridge NC or NO terminals.
V40 bridges join four similar points in four aside adjacent sockets. They can join up either among themselves or to **V10** units, to bridge an unlimited number of sockets in any combination.
Made of copper with a current capacity of 40 A.

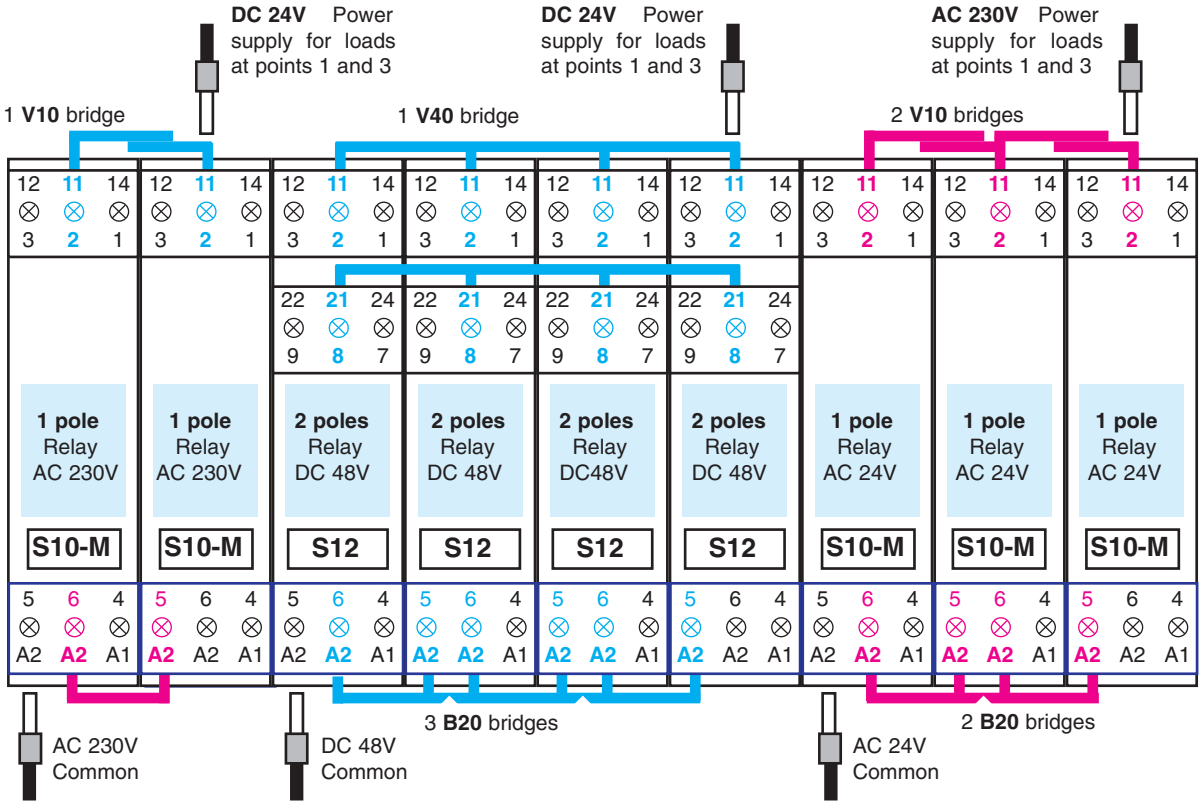
V10 bridge bars for power lines

V10 bridges are units to connect a single socket to the next one, so you bridge less or more than 4 socket, not being the final number a multiple of 4.

They can join up between themselves or to V40 units. Then, if you need to bridge five sockets, you can either use a V40 + 1 V10 or four V10 bridges.

Made of copper with a current capacity of 40 A.

It is necessary that the total sum of loads in a relay group, will not exceed the **maximum intensity of 40 A.,** permitted by the power bridges. If exceeded, the essential power cables must be added, to share the current and avoid overheating in the bridges. Every inlet terminal admit ferrule tips up to 4 sq. mm.



B20 bridge bars for coil lines

Both sockets are accessible to point A2 from terminals 5 and 6, internally connected. Each element connects point 6 of the first socket to point 5 of the next one, always leaving free the point 5 of the first socket and the point 6 of the last one, to connect the common polarity cable. Coils control voltage connect to points A1.
Bridge **B20** is composed by four units which can be divided in 1, 2 or 3 elements.

Solid state relays. How to mount as interface on PLC

Input
In every CSS relay, the input on terminals A1 and A2 is 5 ... 32 VDC, with no polarity.
If bridges to joint points A2 are used, a single voltage can be applied on terminals A1, for every relay, or different voltages within the range 5 .. 32 VDC.

Output DC or AC (independent relays)
When using "a single relay" of any model, load can be connected either on terminal 1 or terminal 2.

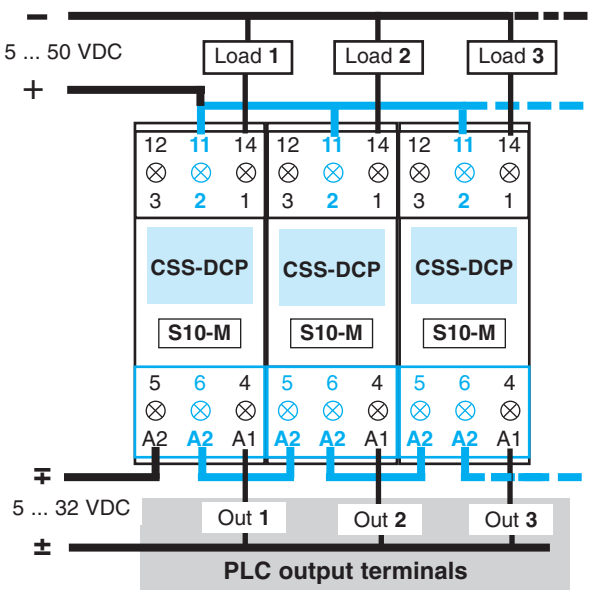
Relays with output on DC (CSS-DCP or CSS-DCN).
Range of voltage applied to the load will be 5 .. 50VDC.

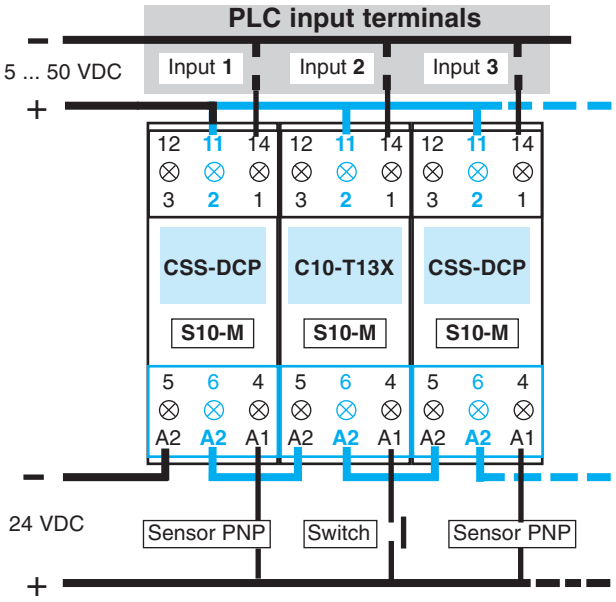
Relays with output on AC, (CSS-AC, inductive loads, or CSS-AZ, resistive loads).
Range of voltage applied to the load will be 24 ... 250 VAC, 50/60 Hz.

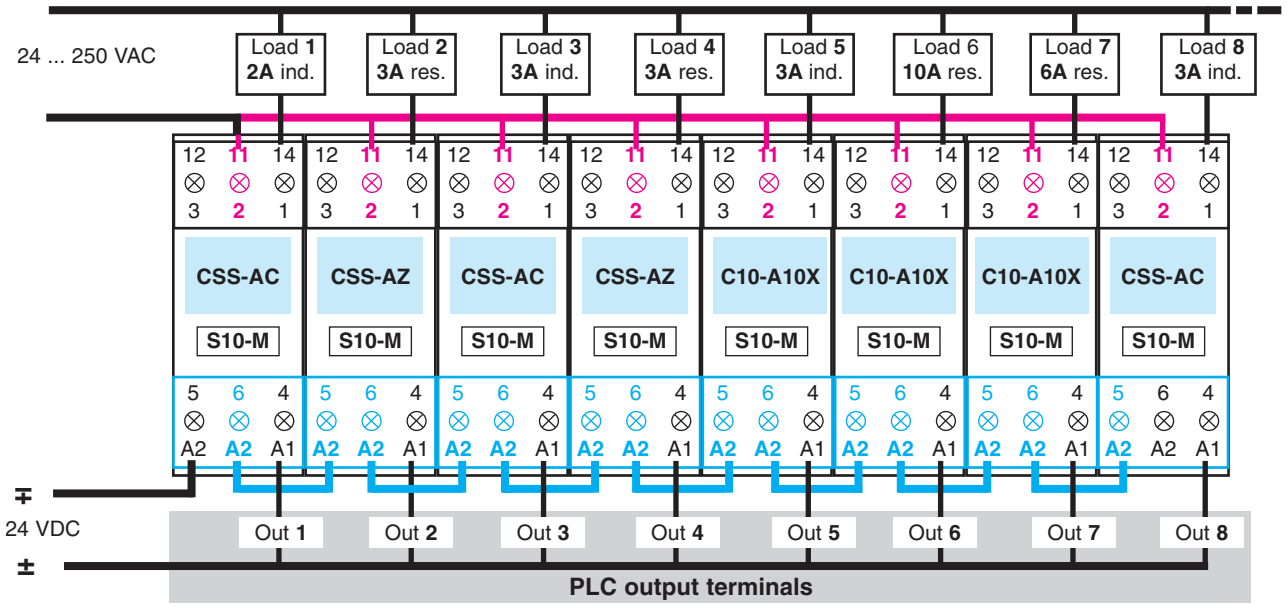
Output on DC (relays in battery)
If power bridges are used with S10-M sockets in series of relays in line, it is necessary to attend the common polarity chosen to the loads connection.
Usually the point 2 (11 DIN) is the common point of the socket where positive tension is applied to the loads.
Then CSS-DCP relays must be connected where terminal 2 is common positive.
Said disposition complies Norm EN-60204-1-5,3,3 where "cutting every active element of its feeding" is suggested, that means to switch from the positive.

If point 2 of the socket is taken as negative, relays type CSS-DCN, where terminal 2 is negative must be connected

In what relays CSS-AC or CSS-AZ concerns, only whether load is inductive or resistive has to be considered, as they have no polarity.







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General information

A **Change-over contacts**
General application

0,5A @ 110VCC 0,2A @ 220VCC
Gap: 0,5 mm. Isolation between contacts: 1.000 V

G **Open contacts**
DC applications

0,8A @ 110VCC 0,4A @ 220VCC
Gap: 1 mm. Isolation between contacts: 2.000 V

T **Bifurcated contacts. Gold-plated 3µ Au**
Low level applications PLC´s input

.1mA @ 5VCC 0,5A @ 110VCC 0,2A @ 220VCC
Gap: 0,5 mm, Isolation between contacts: 1.000 V

Contacts

Either a long stock or polluted ambient may cause some surface oxidation of siver contacts or its alloys, by creating a thin surface film which may produce switching malfunction in low current and voltages.
To prevent that oxidation, using gold-plated contacts is recommended.

T relays standard contacts are gold-plated with 3µ Au and appropiate for weak current and signal input to PLC's.

Standard versions

Available standard types and all possible options are shown in pages reading technical specification of each model.

Types **C14-..** and **C15-..** do not allow any option for coil protection circuits.

Other types made according to customer specifications can be supplied, as special, and marked as RF Nº.....

Protection against pulses

When a relay coil is disconnected, reverse voltage peaks may arise and reach very high values. Said peaks can transmit to the coil associated line and other relays or semiconductors can be affected.

If triac, transistor, etc. controls a relay, appropiate steps must be taken to avoid or decrease peaks down to a non risky level.

Both Polarity and Free-Wheeling diodes (**FX**), must protect coils, to avoid malfunctions, provided DC relays in battery are installed.

Making or breaking engines, transformers or contactors in an industrial environmental, may generate high voltage pulses, either isolated or burst, through the main line. The voltage level of those pulse may be high enough to affect the isolation of the coil.

Specifications

Each relay specific data, refer to typical values measured at 20º C and new relays.

Electrical Life and Max. Load on DC tables show the tipical performance reached at an ambient temperature of 20º C and a frequency of 1.200 ops/hour.

Ambient temperature

Max. ambient temperature is -40º C ...+70º C, without ice, for a single relay. On close cabinets with several relays in battery inside, ambient temperature may exceed 70º C.
Sockets S10-M and S12, mounted aside, assures a free space between relays for heat dissipation.
But it could be necessary an adequate ventilation inside the cabinet.

Min. pull-in voltage

It is the minimum voltage that has to be applied to the coil, so the NO contacts close and the relay acts without vibration.
Given value of 0,8 x U_N ensures the relay works at a temperature of 20º C.

AC and DC relays pull-in voltage $\leq 0{,}8 \times U_N$
Pull-in voltage increases with coil temperature

Max. drop-out voltage

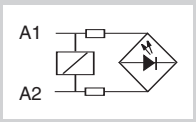
It is the voltage, higher that 0, at which the relay opens and the NC contacts close

DC relays drop-out voltage $\geq 0{,}10 \times U_N$
AC relays drop-out voltage $\geq 0{,}35 \times U_N$

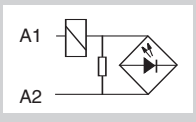
Drop-out time on DC increases if diodes in antiparallel with the coil are connected

LED and protection circuits connected to coil

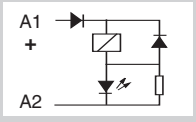
X LED with no polarity, (standard)
Coils $\leq$ 12 V CC y CA
LED rectifier bridge in parallel



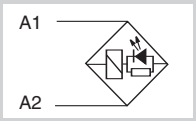
X LED with no polarity, (standard)
Coils $\geq$ 24V ... CC y CA
LED rectifier bridge in series



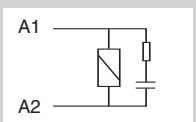
FX LED with polarity **A1+** (option)
Every DC coil voltage
Polarity and Free-wheeling diodes



BX LED with no polarity, (option)
Only 24V and 48V ADC coils
Rectifier bridge for AC/DC relays



R LED not available (option)
Every AC coil voltage
RC protection against pulses on AC



C10-A10X

One pole, changeover contact

10A 250V AC1 **0,5A 110V DC1**
10A 30V DC1 **0,2A 220V DC1**

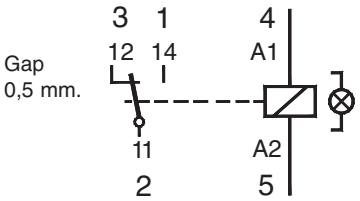


Table 1 Electrical life, ops x 10^6

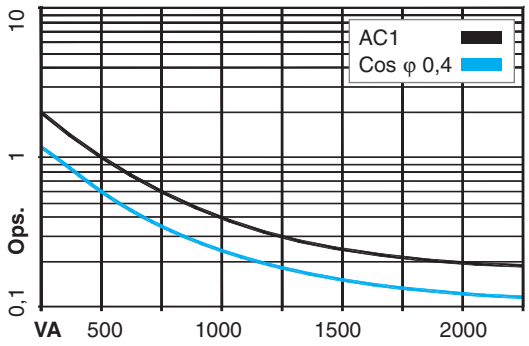
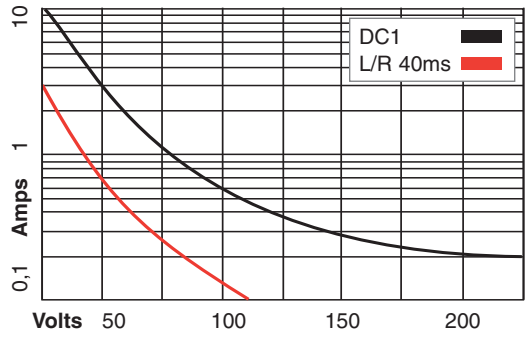
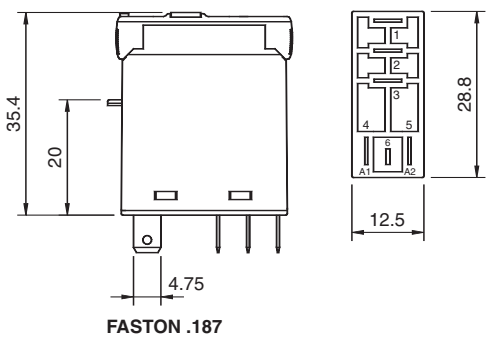


Table 2 Max. DC load



Dimensions mm.



Contacts

Materials :	Standard, code **0**	AgNi
	Optional , code **8**	AgNi + 10µ Au
Max. switching current		10A
Max. peak inrush current (20 ms.)		30A
Max. switching voltage		250 V
Max. AC load (Table 1)		2,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	1.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C10-A10X ..... Vac**
RC supressor	**C10-A10R ..... Vac**
DC 12, 24, 48, 110	
X=**LED**, no polarity (standard)	**C10-A10X ..... Vdc**
Options (DC coils)	
Polarity and free wheeling diodes	**C10-A10FX ..... Vdc**
AC/DC bridge rectifier (24 or 48V)	**C10-A10BX ..... Vdc**

IEC 61810 EN 60947

C10-G10X

CE

One pole, open contact

10A 250V AC1 **0,8A 110V DC1**
10A 30V DC1 **0,4A 220V DC1**

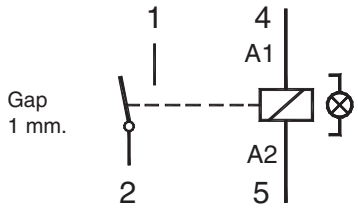


Table 1 Electrical life, ops x 10^6

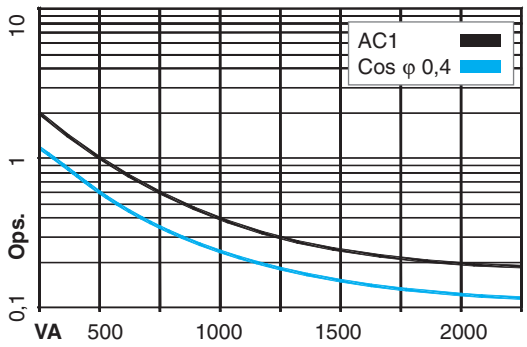
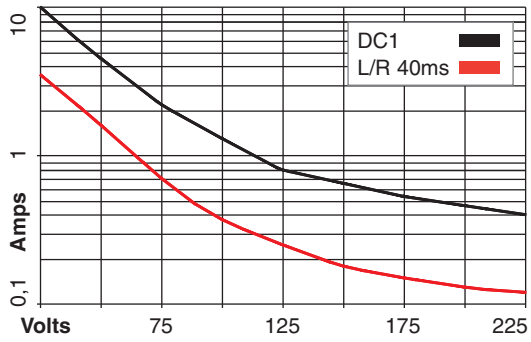
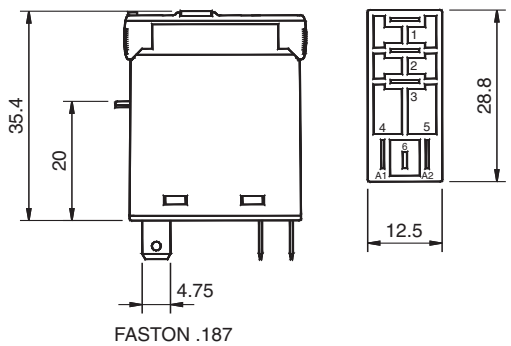


Table 2 Max. DC load



Dimensions mm.



Contacts

Materials :	Standard, code **0**	AgNi
	Optional , code **8**	AgNi + 10µ Au
Max. switching current		10A
Max. peak inrush current (20 ms.)		30A
Max. switching voltage		250 V
Max. AC load (Table 1)		2,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	2.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	> 3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

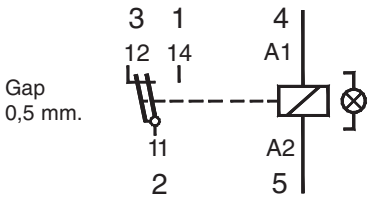
AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C10-G10X ..... Vac**
RC supressor	**C10-G10R .... Vac**

DC 12, 24, 48, 110

X=LED, no polarity (standard)	**C10-G10X ..... Vdc**
Opciones (DC coils)	
Polarity and free wheeling diodes	**C10-G10FX ..... Vdc**
AC/DC bridge rectifier (24 or 48V)	**C10-G10BX .....Vdc**

cULus IEC 61810 EN 60947



C10-T13X

One change-over twin contact

6A 250V AC1 **0,5A 110V DC1**
6A 30V DC1 **0,2A 220V DC1**

Contacts

Materials : Standard, code 3	AgNi + 3µ Au
Optional , code 2	AgNi + 10µ Au
Max. switching current	6 A
Max. peak inrush current (20 ms.)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1,5 KVA
Max. DC load	See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	1.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	> 3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC relays, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C10-T13X ..... Vac**
RC supressor	**C10-T13R ..... Vac**
DC 12, 24, 48, 110	
X=LED, no polarity (standard)	**C10-T13X ..... Vdc**
Opciones (DC coils)	
Polarity and free wheeling diodes	**C10-T13FX ..... Vdc**
AC/DC bridge rectifier (24 y 48V)	**C10-T13BX ..... Vdc**

IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

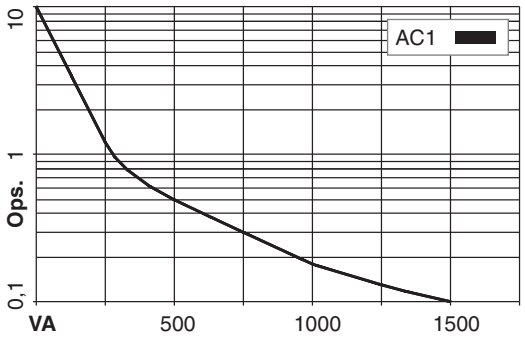
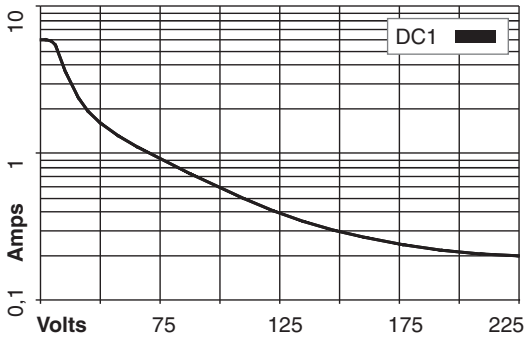
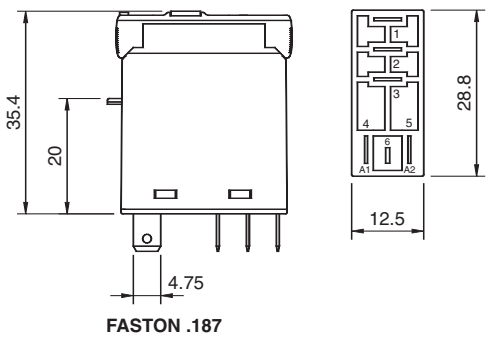


Table 2 Max. DC load



Dimensions mm



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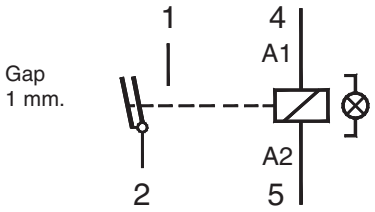


C10-GT13X

CE

One pole, twin open contact

6A 250V AC1 **0,8A 110V DC1**
6A 30V DC1 **0,4A 220V DC1**

Contacts

Materials :	Standard, code **3**	AgNi + 3µ Au
	Optional , code **2**	AgNi + 10µ Au
Max. switching current		6 A
Max. peak inrush current (20 ms.)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	2.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC relays, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C10-GT13X ..... Vac**
RC supressor	**C10-GT13R ..... Vac**

T

DC 12, 24, 48, 110

X=LED, no polarity (standard)	**C10-GT13X ..... Vdc**

Opciones (DC coils)

Polarity and free wheeling diodes	**C10-GT13FX ..... Vdc**
AC/DC bridge rectifier (24 or 48V)	**C10-GT13BX ..... Vdc**

cULus IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

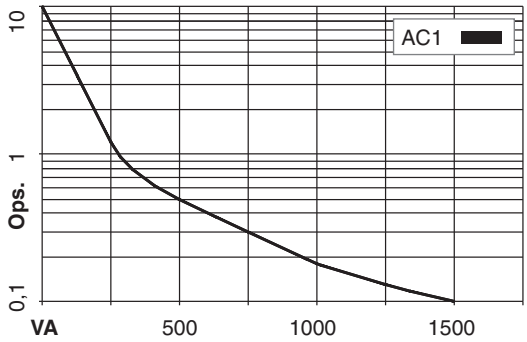
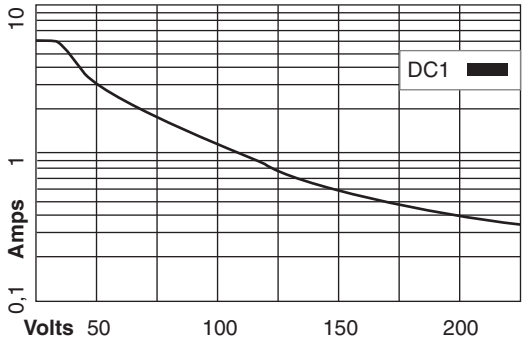
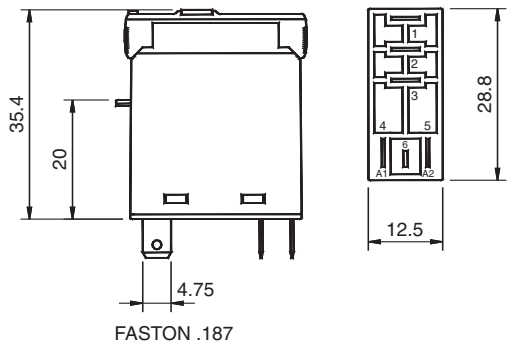
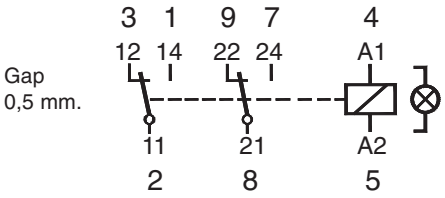


Table 2 Max. DC load



Dimensions mm.





C12-A21X

Two poles, change-over contacts

5A 250V AC1 **0,5A 110V DC1**
5A 30V DC1 **0,2A 220V DC1**

Contacts

Materials : Standard, code **1**	AgNi + 0,3µ Au
Optional , code **2**	AgNi + 10µ Au
Max. switching current	5 A
Max. peak inrush current (20 ms.)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1,2 KVA
Max. DC load	See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute): Open contacts	1.000 V
Between adjacents poles	3.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC relays, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection degree	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C12-A21X ..... Vac**
RC supressor	**C12-A21R ..... Vac**

DC 12, 24, 48, 110

X=LED, no polarity (standard)	**C12-A21X ..... Vdc**
Options (DC coils)	
Polarity and free wheeling diodes	**C12-A21FX ..... Vdc**
AC/DC bridge rectifier (24 or 48V)	**C12-A21BX ..... Vdc**

IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

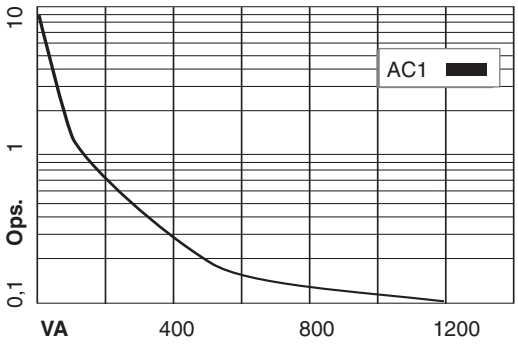
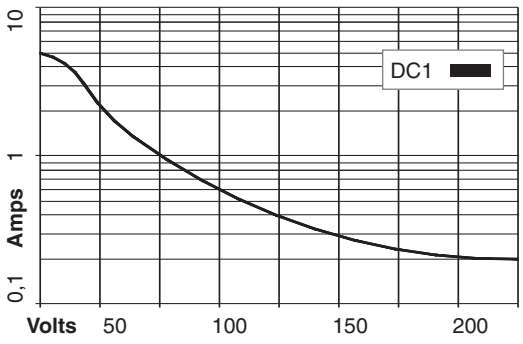
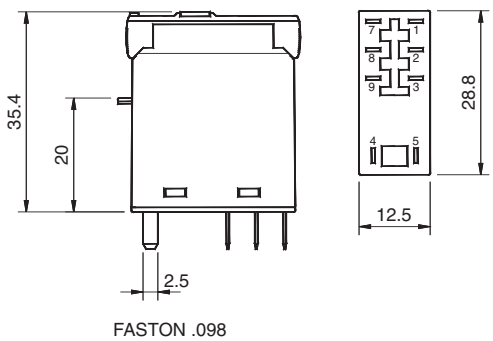


Table 2 Max. DC load



Dimensions mm.



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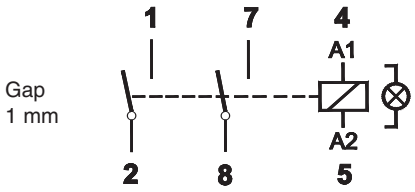


C12-G21X

CE

Two poles, open contacts

5A 250V AC1 **0,8A 110V DC1**
5A 30V DC1 **0,4A 220V DC1**

Contacts

Materials :	Standard, code **1**	AgNi + 0,3µ Au
	Optional , code **2**	AgNi + 10µ Au
Max. switching current		5 A
Max. peak inrush current (20 ms.)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,2 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Table 1 Electrical life, ops x 10^6

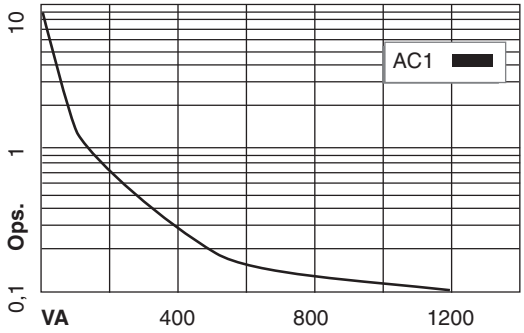
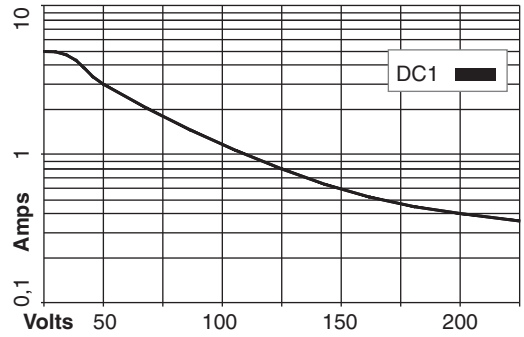


Table 2 Max. DC load



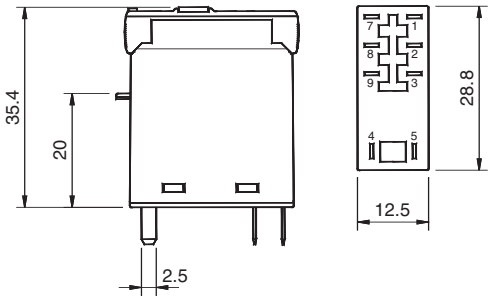
Insulation

Dielectric strength (1 minute): Open contacts	2.000 V
Between adjacents poles	3.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Dimensions mm.



Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

X = **LED** (standard)	**C12-G21X ..... Vac**
RC supressor	**C12-G21R ..... Vac**

DC 12, 24, 48, 110

X=LED, no polarity (standard)	**C12-G21X ..... Vdc**
Options (DC coils)	
Polarity and free wheeling diodes	**C12-G21FX ..... Vdc**
AC/DC bridge rectifier (24 or 48V)	**C12-G21BX .... Vdc**

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C14-A10

One pole, changeover contact

10A 250V AC1 **0,5A 110V DC1**
10A 30V DC1 **0,2A 220V DC1**

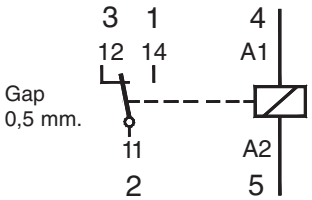


Table 1 Electrical life, ops x 10^6

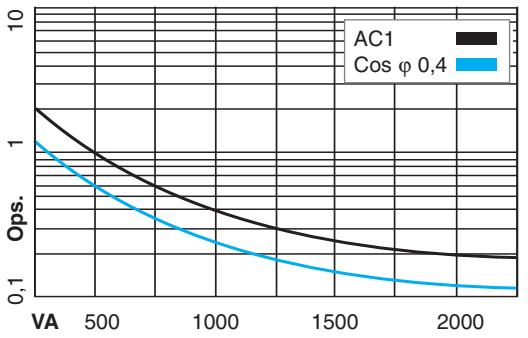
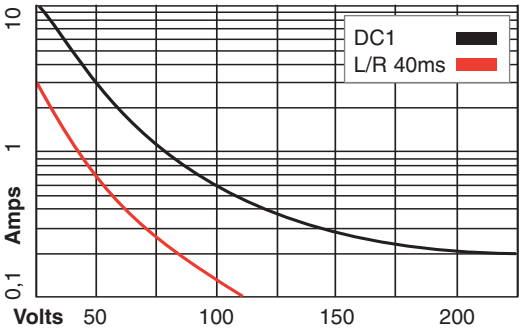
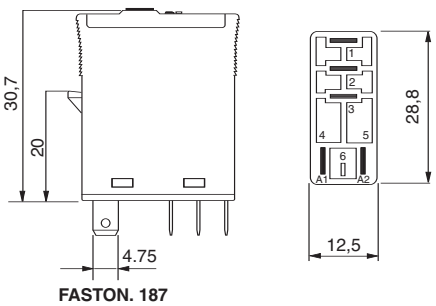


Table 2 Max. DC load



Dimensions mm.



Contacts

Materials :	Standard, code **0**	AgNi
	Optional , code **8**	AgNi + 10µ Au
Max. switching current		10A
Max. peak inrush current (20 ms.)		30A
Max. switching voltage		250 V
Max. AC load (Table 1)		2,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	1.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

DC 12, 24, 48, 110

C14-A10 ..... Vac

C14-A10 ..... Vdc

The small size of type C14 ... does not allow to carry LED nor mechanical indication, nor testing button.

IEC 61810 EN 60947

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C14-G10

CE

One open contact

10A 250V AC1 **0,8A 110V DC1**
10A 30V DC1 **0,4A 220V DC1**

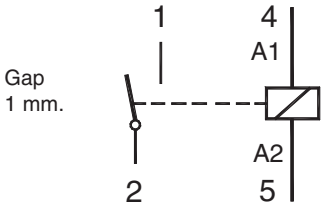


Table 1 Electrical life, ops x 10^6

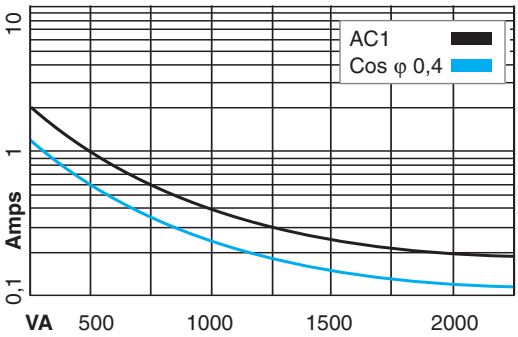
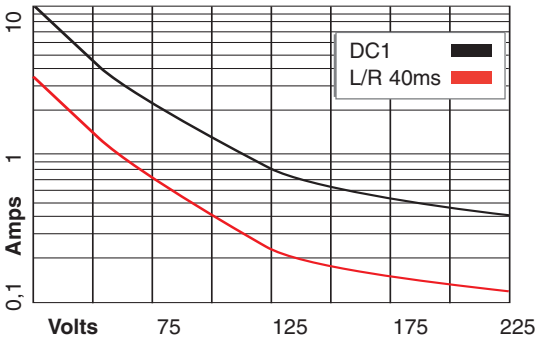
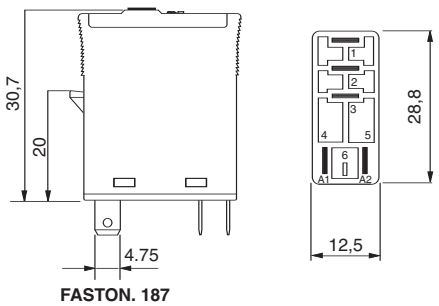


Table 2 Max. DC load



Dimensions mm.



Contacts

Materials : Standard, code **0**	AgNi
Optional , code **8**	AgNi + 10µ Au
Max. switching current	10A
Max. peak inrush current (20 ms.)	30A
Max. switching voltage	250 V
Max. AC load (Table 1)	2,5 KVA
Max. DC load	See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	2.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection degree	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

DC 12, 24, 48, 110

C14-G10 ..... Vac

C14-G10 ..... Vdc

The small size of type C14 ... does not allow to carry LED nor mechanical indication, nor testing button.

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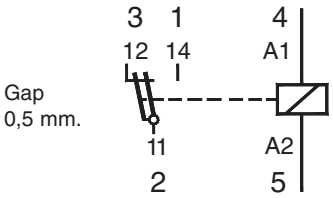


C14-T13

One change-over twin contact

6A 250V AC1 **0,5A 110V DC1**
6A 30V DC1 **0,2A 220V DC1**

Contacts

Materials :	Standard, code **3**	AgNi + 3µ Au
	Optional , code **2**	AgNi + 10µ Au
Max. switching current		6 A
Max. peak inrush current (20 ms.)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	1.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	> 3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Table 1 Electrical life, ops x 10^6

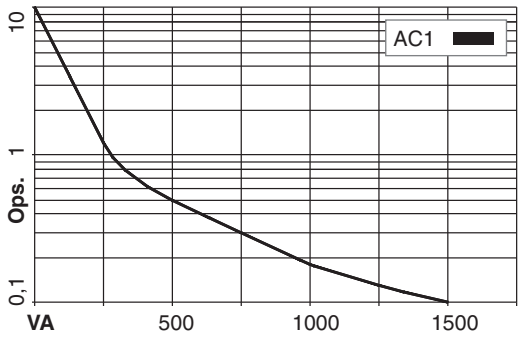
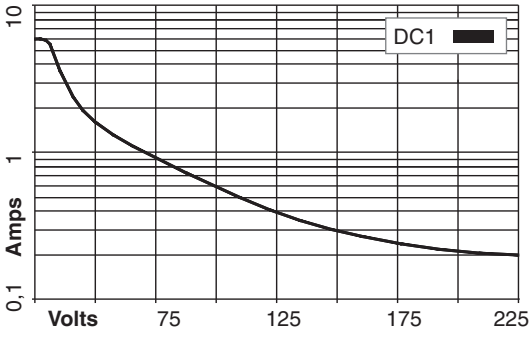
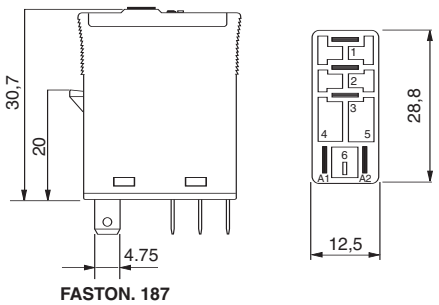


Table 2 Max. DC load



Dimensions mm.



Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

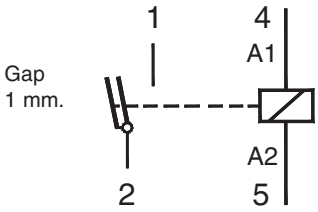
DC 12, 24, 48, 110

C14-T13 ..... Vac

C14-T13 ..... Vdc

The small size of type C14 ... does not allow to carry LED nor mechanical indication, nor testing button.

IEC 61810 EN 60947



C14-GT13

One pole, twin open contact

6A 250V AC1 **0,8A 110V DC1**
6A 30V DC1 **0,4A 220V DC1**

Contacts

Materials :	Standard, code **3**	AgNi + 3µ Au
	Optional , code **2**	AgNi + 10µ Au
Max. switching current		6 A
Max. peak inrush current (20 ms.)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,5 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute):	
Open contacts	2.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection grade	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

C14-GT13 ..... Vac

DC 12, 24, 48, 110

C14-GT13..... Vdc

The small size of type C14 ... does not allow to carry LED nor mechanical indication, nor testing button.

cULus IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

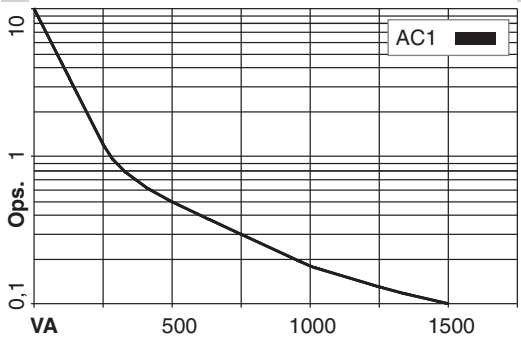
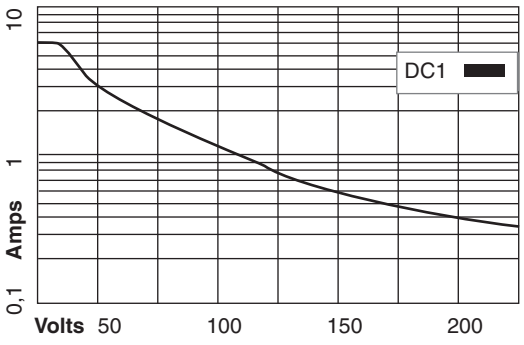
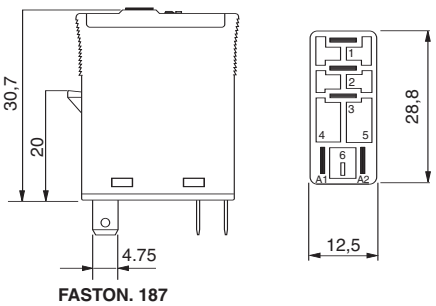


Table 2 Max. DC load



Dimensions mm.



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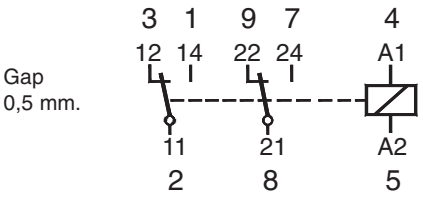


C15-A21

CE

Two poles, change-over contacts

5A 250V AC1 **0,5A 110V DC1**
5A 30V DC1 **0,2A 220V DC1**

Contacts

Materials : Standard, code **1**	AgNi + 0,3µ Au
Optional , code **2**	AgNi + 10µ Au
Max. switching current	5 A
Max. peak inrush current (20 ms.)	15 A
Max. switching voltage	250 V
Max. AC load (Table 1)	1,2 KVA
Max. DC load	See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute): Open contacts	1.000 V
Between adjacents poles	3.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection degree	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

C15-A21 ..... Vac

DC 12, 24, 48, 110

C15-A21 ..... Vdc

The small size of type C15 ... does not allow to carry LED nor mechanical indication, nor testing button.

cULus IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

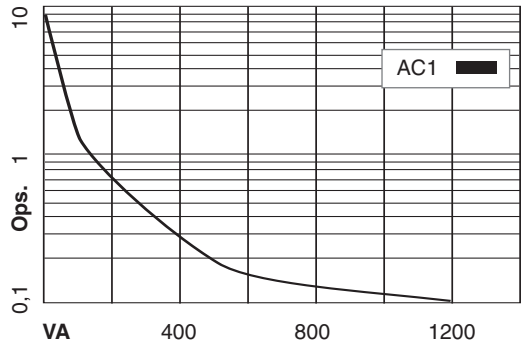
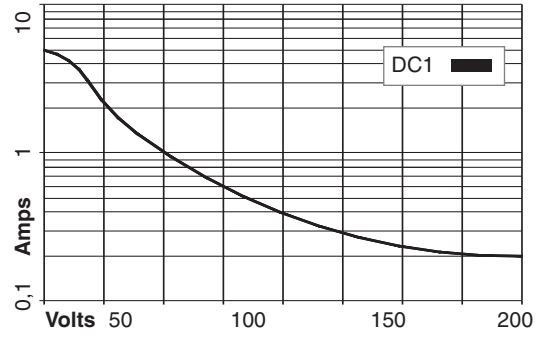
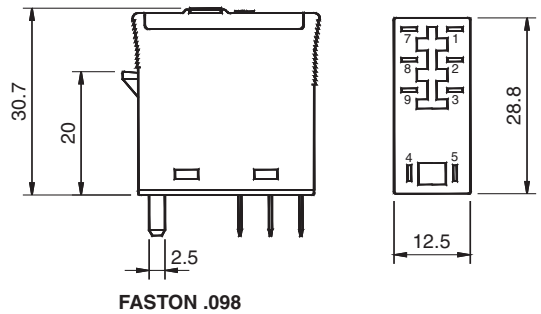
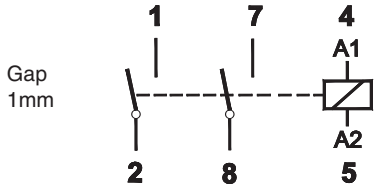


Table 2 Max. DC load



Dimensions mm.





C15-G21

CE

Two poles, open contacts

5A 250V AC1 **0,8A 110V DC1**
5A 30V DC1 **0,4A 220V DC1**

Contacts

Materials :	Standard, code **1**	AgNi + 0,3µ Au
	Optional , code **2**	AgNi + 10µ Au
Max. switching current		5 A
Max. peak inrush current (20 ms.)		15 A
Max. switching voltage		250 V
Max. AC load (Table 1)		1,2 KVA
Max. DC load		See Table 2

Coils (Ohms ± 10% @ 20ºC)

Pull-in voltage	≤ 0,8 x **Un**
Drop-out voltage	≥ 0,1 x **Un**
Nominal coil power	1,1 VA (AC) / 0,7 W (DC)

Vac	Ω	mA	Vdc	Ω	mA
24	290	45	12	224	53
48	1.200	23	24	742	32
115	7.300	9,5	48	3.500	13,7
230	28.800	4,7	110	19.900	5,5

Insulation

Dielectric strength (1 minute): Open contacts	2.000 V
Between adjacents poles	3.000 V
Between contacts and coil	5 KV
Isolation resistance at 500V	>3GΩ
Isolation, IEC 61810-5:	4 KV / 3

Specifications

Operate time + bounce time	10 ms.
Release time + bounce time	8 ms.
Ambient temperature	-40ºC (no ice) ... +70ºC
Mechanical life ops.	10 Mio. AC, 20 Mio. DC relays
Electrical life at nominal load	>100.000 ops.
Operating frequency at nominal load	1.200 / hour
Protection degree	IP40 / RT1
Weight avg.	21 gr.

Standard types

AC 50 Hz, (60 Hz): **24, 48, 115,** (120)**, 230,** (240)

C15-G21 ..... Vac

DC 12, 24, 48, 110

C15-G21 ..... Vdc

The small size of type C15 ... does not allow to carry LED nor mechanical indication, nor testing button.

cULus IEC 61810 EN 60947

Table 1 Electrical life, ops x 10^6

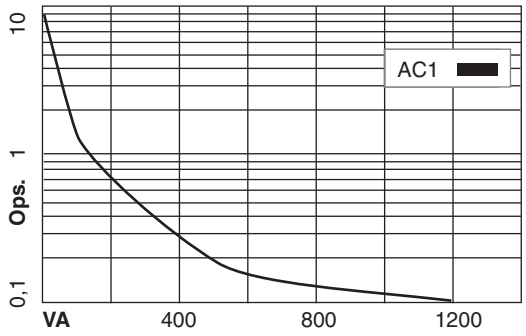
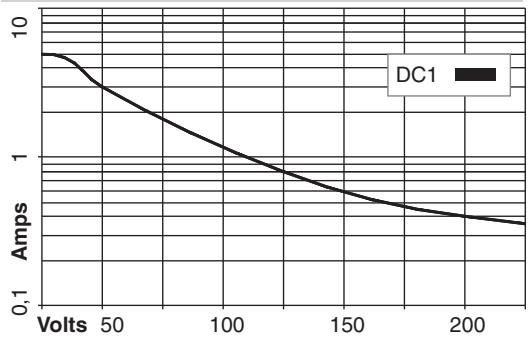
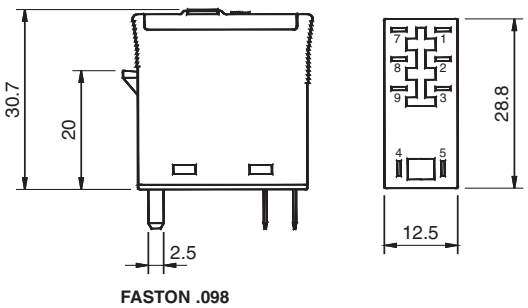


Table 2 Max. DC load



Dimensions mm.



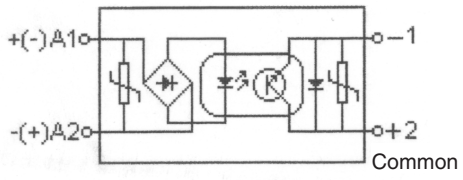
CSS-DCP

Solid state relay

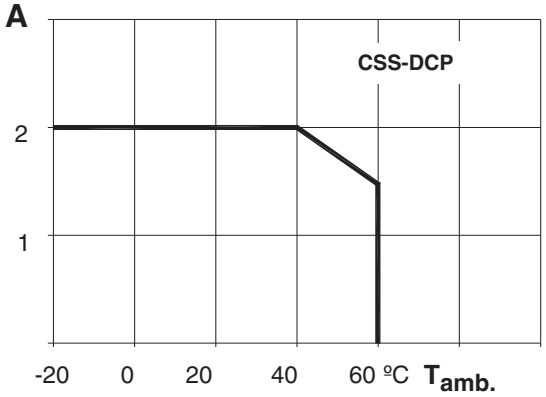
DC inductive or resistive load switching.
Positive common output

One open contact
2A @ 5 ... 50VDC

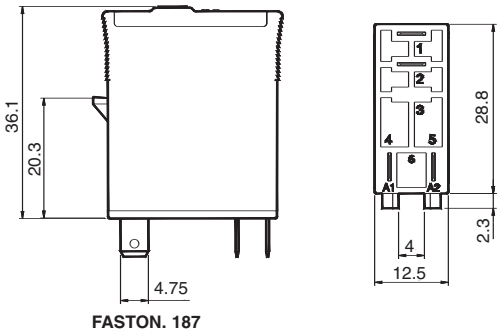
CSS-DCP Positive common



Max. DC load vs. Ambient temperature



Dimensions mm.



Input Polarity protected

Range of input voltage	5 ... 32 Vdc
Drop-out voltage	< 2,5 Vdc
Input current	3 ± 1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output, positive common

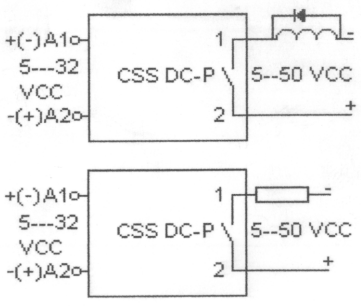
Max. output current	2 A
Max. output voltage	50 Vdc
Minimum output voltage	5 Vdc
Max. drop voltage	1,3 Vdc
Max. leakage current at 48 Vdc	< 100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 level 1
Max. current at inverse voltage	1 A

Specifications

Dielectric strengh input / output	4 KV/1 min.
Operate time	1 ms
Release time	max. 2 ms
Working temperature, max.	60ºC
Storage temperature	100ºC
Weigth avg.	28 gr·

Applications

It is to swich, up to 50VDC, heating elements electro-valves, motors, input/output signals on PLC's, solenoids incandescent and fluorescent lamps, etc.
Inductive loads must be shunted with an antiparallel diode.



RELECO, SA ■ La Laguna, 30 ■ E-28923 Alcorcón ■ Madrid ■ Phone: +34-91-641 60 12 ■ Fax: +34-91-641 21 93 ■ www.releco.com

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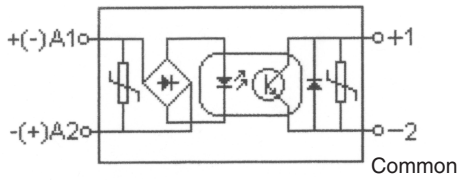
CSS-DCN

Solid state relay

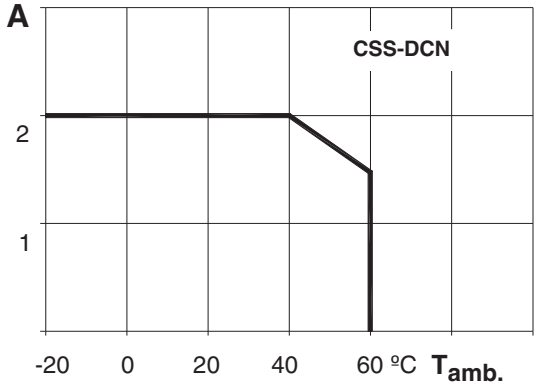
DC inductive or resistive load switching.
Negative common output

One open contact
2A @ 5 ... 50V

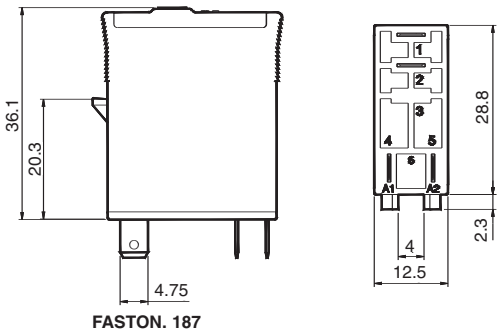
CSS-DCN Negative common



Max. DC load vs. Ambient temperature



Dimensions mm.



Input Polarity protected

Range of input voltage	5 ... 32 Vdc
Drop-out voltage	< 2,5 Vdc
Input current	3 ± 1 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output, negative common

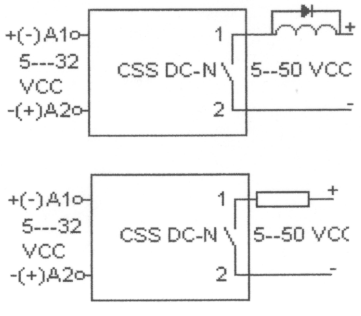
Max. output current	2 A
Max. output voltage	50 Vdc
Minimum output voltage	5 Vdc
Max. drop voltage	1,3 Vdc
Max. leakage current at 48 Vdc	< 100 µA
Max. overcurrent pulse	5 A, 350 µs
Pulse protection	IEC-1000-4-5 level 1
Max. current at inverse voltage	1 A

Specifications

Dielectric strengh input / output	4 KV/1 min.
Operate time	1 ms
Release time	max. 2 ms
Working temperature, max.	60ºC
Storage temperature	100ºC
Weigth avg.	28 gr.

Applications

It is to swich, up to 50VDC, heating elements electro-valves, motors, input/output signals on PLC's, solenoids incandescent and fluorescent lamps, etc.
Inductive loads must be shunted with an antiparallel diode.



CSS-AC

Solid state relay

AC inductive loads switching.

One open contact

3A @ 24 ... 250V AC, 50/60 Hz

Input — Polarity protected

Range of input voltage	5 ... 32 Vdc
Drop-out voltage	< 2,5 Vdc
Input current	5 ... 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output — Instantaneous

Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 Vac
Minimum output voltage	24 Vac
Max. drop voltage	< 1,5 Vac
Max. leakage current	0,55 mA
Max. Dv/dt	500 V/µs
I^2t for 10 ms. fuse	50 A^2/s

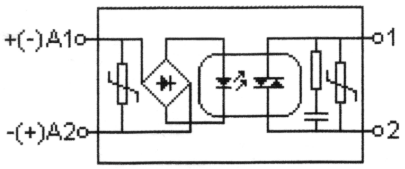
Specifications

Dielectric strength input/output	4KV / 1min.
Operate time	**1/2** cycle
Release time	2ms + **1/2** cycle
Working temperature, max.	60ºC
Storage temperature, max.	100ºC
Weight avg.	28 gr.

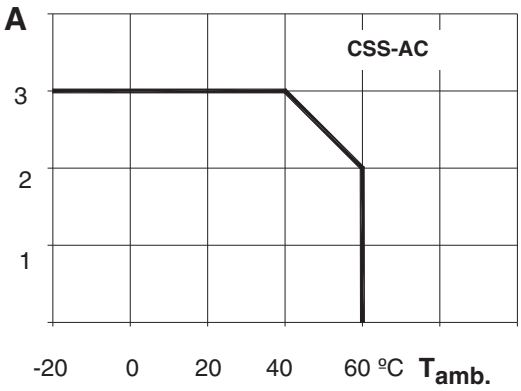
Applications

It is specially suitable to switch inductive loads up to 3 A / 250 VAC.
In switching loads with a high inrush or overcurrent (max. Di/dt 50A/µs) as transformers, motors or fluorescents, the maximun output current will limit to 2 A.

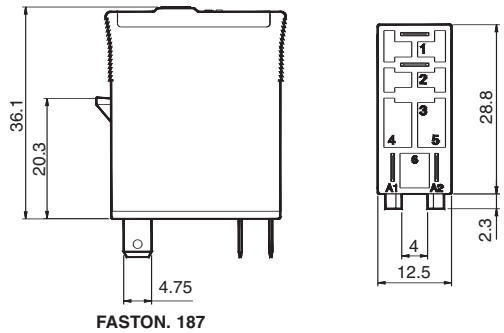
CSS-AC AC instantaneous output

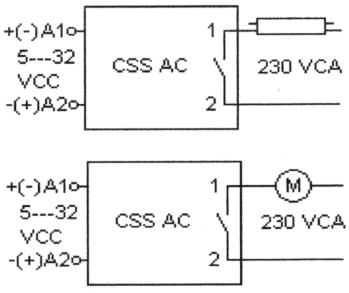


CSS-AC Max. AC load vs. Tamb.



Dimensions mm.





CSS-AZ

Solid state relay

AC resistive loads switching

One open contact

3A @ 24 ... 250V AC, 50/60 Hz

Input	**Polarity protected**
Range of input voltage	5 ... 32 Vdc
Drop-out voltage	< 2,5 Vdc
Input current	5 ... 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output	**Syncronized to zero**
Max. output current	3 A
Minimum output current	50 mA
Max. output voltage	250 Vac
Minimum output voltage	24 Vac
Max. drop voltage	< 1,5 Vac
Max. leakage current	0,55 mA
Max. Dv/dt	500 V/µs
I^2t for 10 ms. fuse	50 A^2/s

Specifications

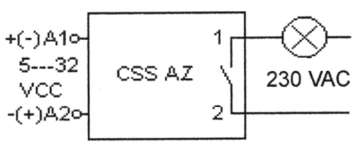
Dielectric strength input/output	4KV / 1min.
Operate time	**1/2** cycle
Release time	2ms + **1/2** cycle
Working temperature, max.	60ºC
Storage temperature, max.	100ºC
Weight avg.	28 gr.

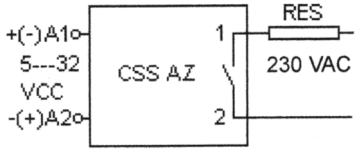
Applications

It switches AC resistive loads up to 3 A / 250 VAC in the zero point of the tension and avoids any overcurrent peak in the connection.

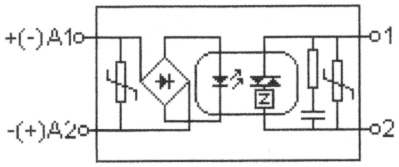
Suitable to switch resistors, incandescent lamps, signalling, etc.

Not suitable for inductive loads

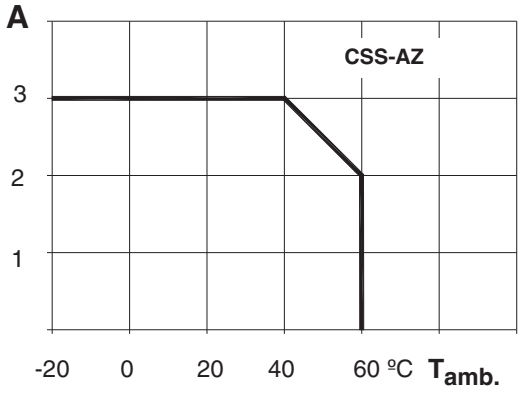




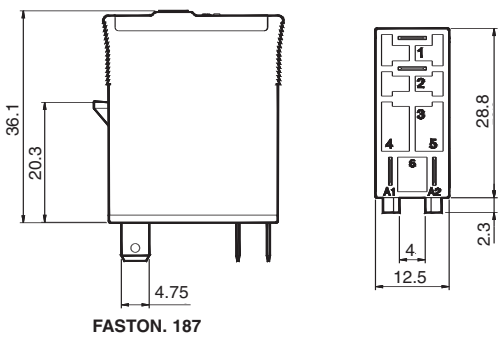
CSS-AZ AC, syncronized to zero

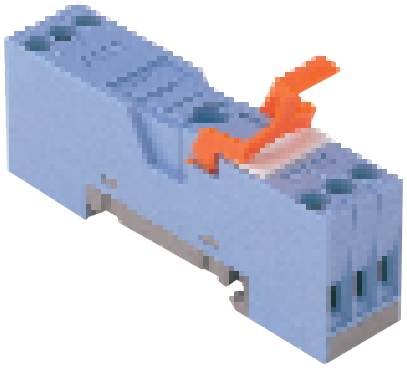


Max. DC load vs. Ambient temperature



Dimensions mm.





S10-M

New I/O socket for IRC relays one change-over contact, 16A

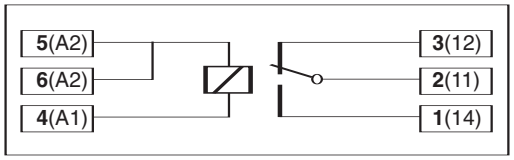
New I/O socket, with terminals in-line for relays C10A, C10G, C10T, C14A, C14G, C16A, C16G and CSS

Both this socket and the S12 are designed to get a homogeneous set, with identical terminals disposition, which allows the easy identification of the contacts set in each level and a simpler wiring.

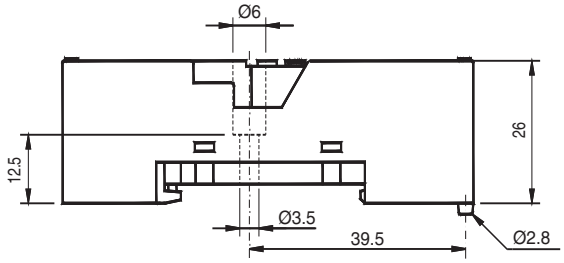
Both A2 terminals allow a secure interconnection through external bridges, among an unlimited number of these sockets or a mixture of S10-M and the new **S12**.

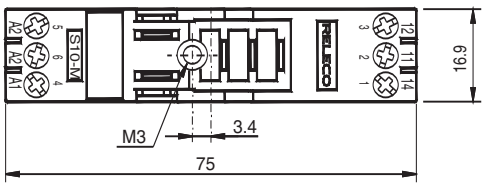
The A2 terminal, free on both first and last sockets is used to connect the cable of common polarity.

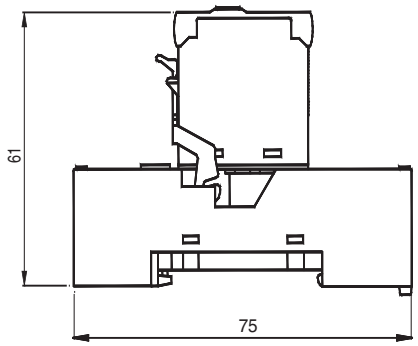
Wiring diagram



Dimensions mm.



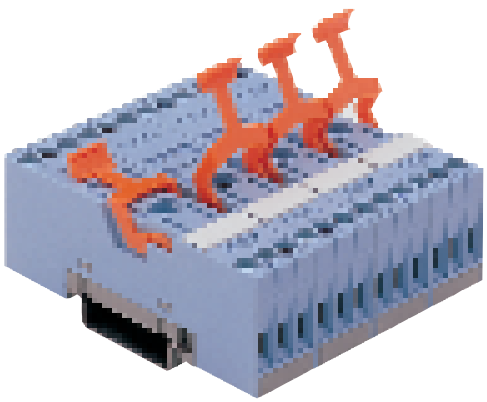




Specifications

Nominal load	16A / 250V
Insulation: Dielectric strength, 1 minute	
Between coil and contacts	5 KV
Between all terminals and rail DIN	5 KV
Max. screw torque	1,2 Nm
Screw dimensions	M3, Pozi
Wire in-lets capacity:	
Solid wire	4 mm^2 or 2 x 2,25 mm^2
Multi - core	22 - 14 AWG
Ferrule tip terminals	4 mm^2

Integrated hold-down clip
Removable marking label



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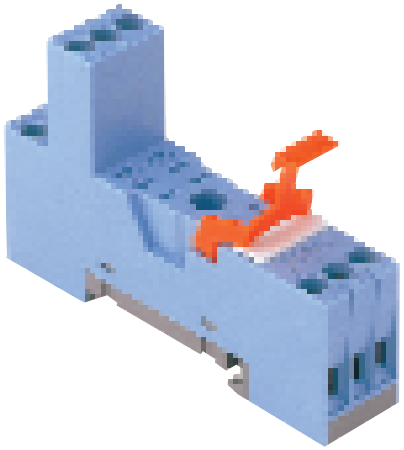


S12

New I/O socket for IRC relays two change-over contacts, 5A

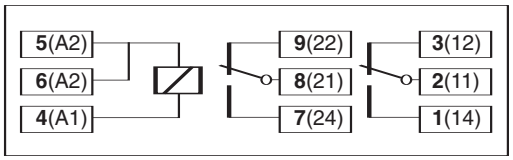
New I/O socket with terminals in-line, for relays C12, C12G, C15 and C15G

Both this socket and the S10-M are designed to get a homogeneous set, with identical terminals disposition, which allows the easy identification of the contacts set in each level and a simpler wiring.

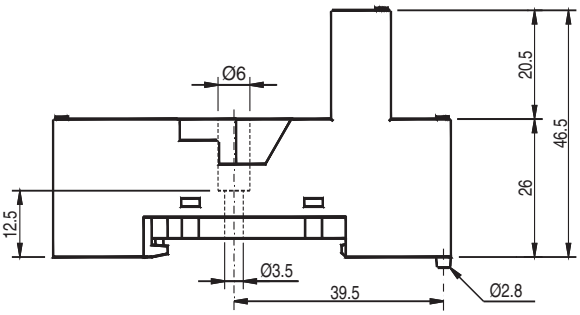
Both A2 terminals allow a secure interconnection through external bridges, among an unlimited number of these sockets or a mixture of S12 and the new **S10-M**.

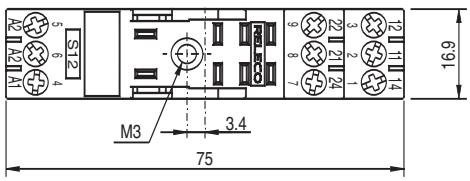
The A2 terminal, free on both first and last sockets is used to connect the cable of common polarity.

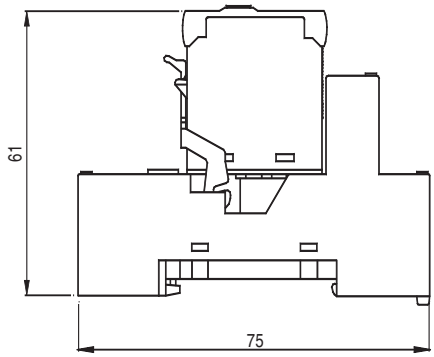
Wiring diagram



Dimensions mm.



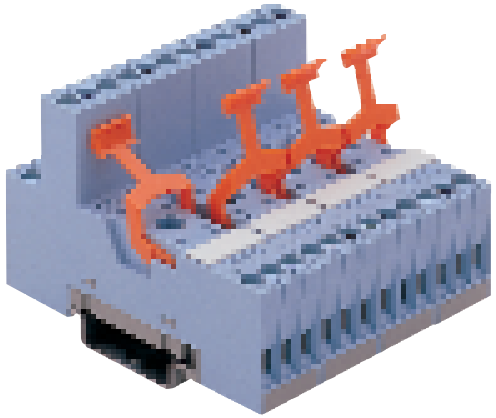




Specifications

Poles	Two change-over contacts
Nominal load	5 A / 250V
Insulation:	
Between coil and contacts	5 KV
Between every terminal and DIN rail	5 KV
Between adjacent contacts	3 KV
Max. screw torque	1,2 Nm
Wire in-lets multi-core capacity	22-14 AWG
Solid wire or ferrule tips capacity	4 mm^2

Solid terminals of zinc-plated brass.
Integrated hold-down clip.
Removable marking label.



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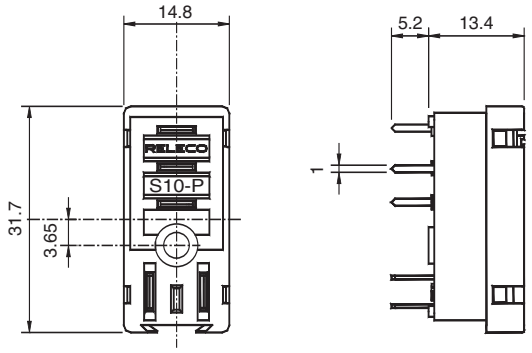
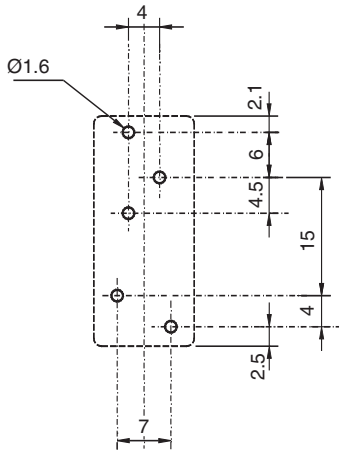
S10-P

Printed circuit socket for 1 pole IRC Relays

Specifications

Nominal load	10A 250V
Dielectric strength 1 min.	
Coil terminals to contacts	5KV
Hard brass tin-plated terminals	0,5 x 1 mm
Integrated hold-down clip	



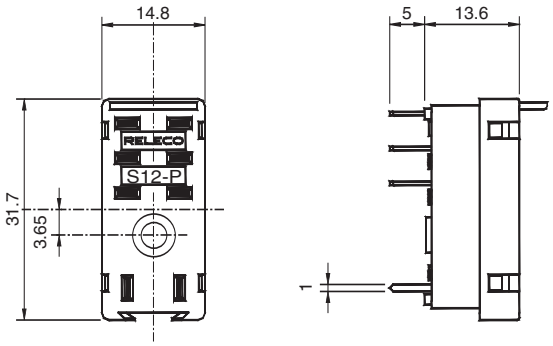


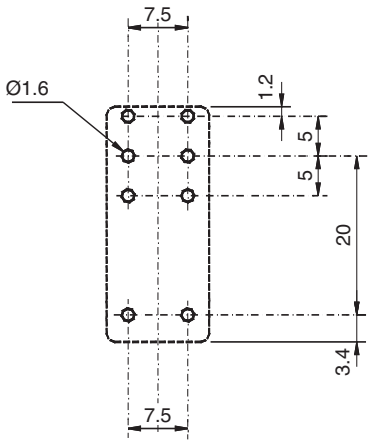
S12-P

Printed circuit socket for 2-pole IRC Relays

Specifications

Nominal load	5A 250V
Dielectric strength 1 min.	
Coil terminals to contacts	5KV
Hard brass tin-plated terminals	0,5 x 1 mm
Integrated hold-down clip	





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V40 V10

Power bridge bars for sockets S10-M and S12

V40 bridges join four similar points in four aside adjacent sockets. They can join up either among themselves or to **V10** units, to bridge an unlimited number of sockets S10-M and S12 in any combination.

V10 bridges are units to connect a single socket to the next one, so you bridge less or more than 4 sockets. Made of copper with a current capacity of 40 A.

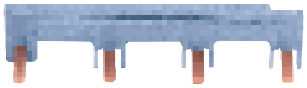
Please, see more information on page 5.

V40-G

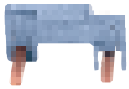
V10-G

V40-R

V10-R



V40-A



V10-A

B20

Coil bridge bars for sockets S10-M and S12

B20 bridges points A2, internally connected, of every aside adjacent socket S10-M or S12.

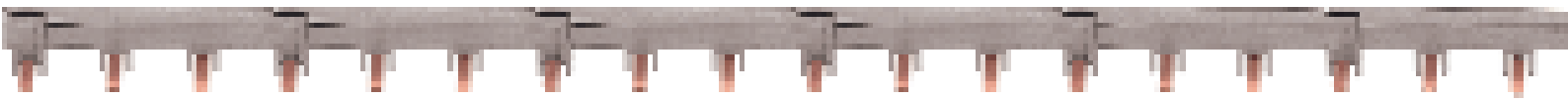
Each element connects point 6 of the first socket to point 5 of the next one, always leaving free the point 5 of the first socket and the point 6 of the last one, to connect the common polarity cable.

Please, see more information on page 5.

B20-G

B20-R

B20-A



cULus IEC 61810 EN 60947

IRC relays, versión E

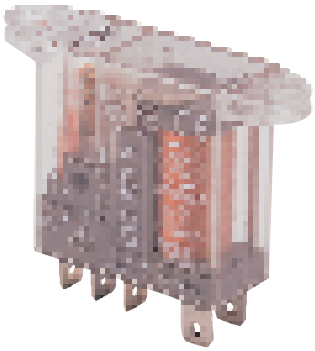
Types C14... and C15...

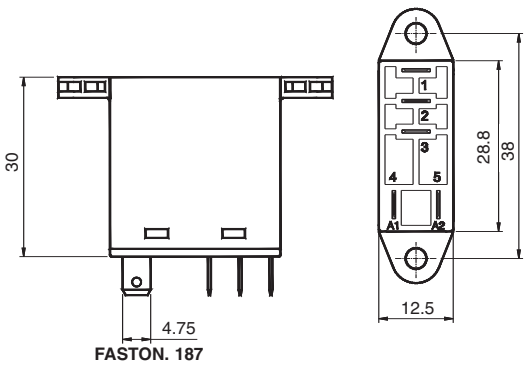
Cover for flange panel mounting

Ordering code:

Add “E” to the standard type code.

Example: C14-A10**E** or C15-A21**E**





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