

SOLID STATE RELAYS WITH DIN RAIL & PCB MOUNTABLE SOCKETS

CSS AC

For AC Industrial Loads
One Open Contact
Output : 3A @ 24-250VAC
Input : 5-32 VDC

CSS DCP

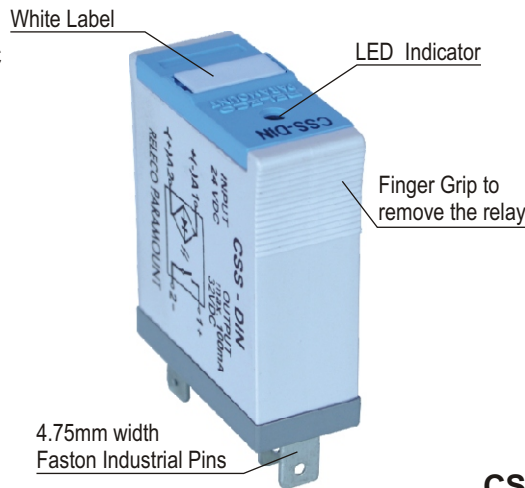
DC Inductive or Resistive Load
Common Positive Output
One Open Contact
Output : 2A @ 5-50 VDC
Input : 5-32 VDC

CSS AZ

For AC Resistive Loads
One Open Contact
Output : 3A @ 24-250VAC
Input : 5-32 VDC

CSS DCN

DC Inductive or Resistive Load
Common Negative Output
One Open Contact
Output : 2A @ 5-50 VDC
Input : 5-32 VDC

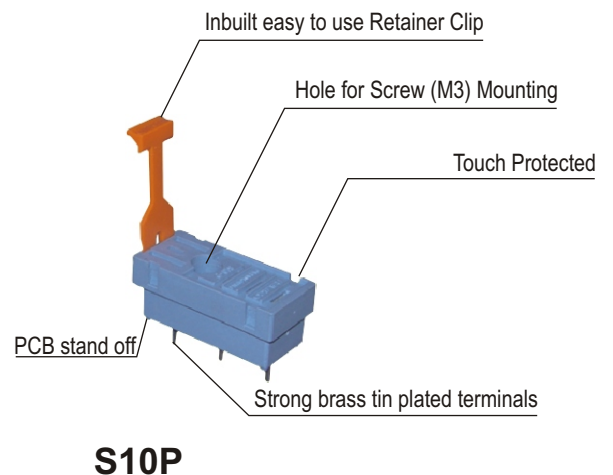
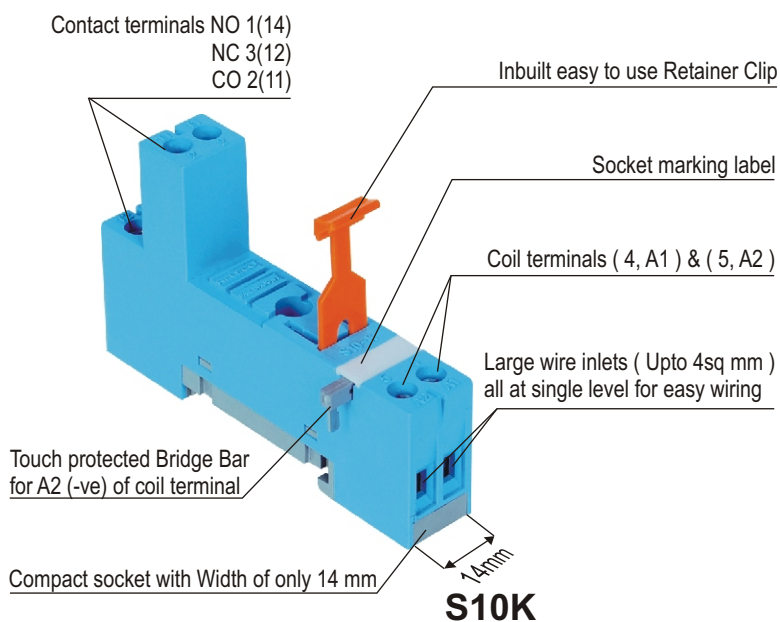


CSS DIP

Solid State Relay for Low Current
Input Application
DC Resistive Load
Common Positive Output
One Open Contact
Output : 100mA @ 32VDC Max
Input : 24 VDC / 110 VAC / 220 VDC
115 VAC / 230 VAC

CSS DIN

Solid State Relay for Low Current
Input Application
DC Resistive Load
Common Negative Output
One Open Contact
Output : 100mA @ 32VDC Max
Input : 24 VDC / 110 VAC / 220 VDC
115 VAC / 230 VAC



S10K

S10P



CSS-AC

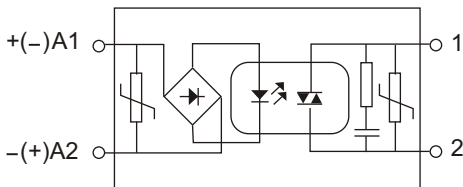
Solid state relay

AC inductive load switching.

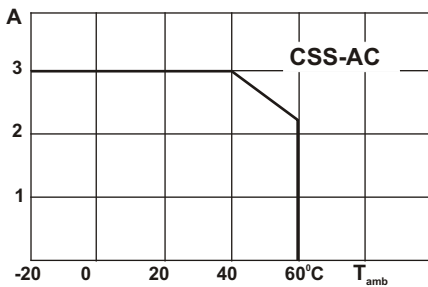
One open contact

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

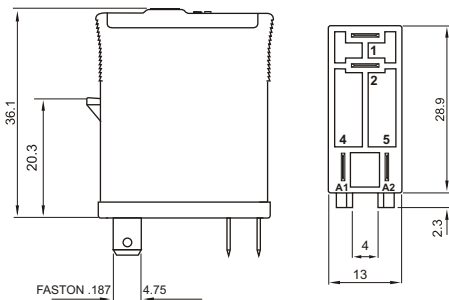
CSS-AC AC instantaneous output



CSS-AC Max. AC load vs. T_{amb}



Dimensions in mm.



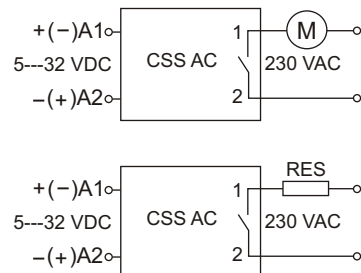
Input	Polarity protected
Range of input voltage	5 ... 32 VDC
Drop-out voltage	< 2.5 VDC
Input current	5 ... 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output, Instantaneous	
Max. Output current	3 A
Minimum output current	50 mA
Max. output voltage	250 VAC
Minimum output voltage	24 VAC
Max. drop out voltage	< 1.5 VAC
Max. leakage current at 48 Vdc	0.55 mA
Max. Dv/dt	500 V/μs
I ² t for 10 ms. fuse	50 A ² /s

Specifications	
Di-electric Strength Input / Output	4 KV / 1 min.
Operate Time	1/2 cycle
Release Time	2 ms + 1/2 cycle
Working Temperature max.	60° C
Storage Temperature	100° C
Weight	28 gr. Max.

Applications

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





CSS-AZ

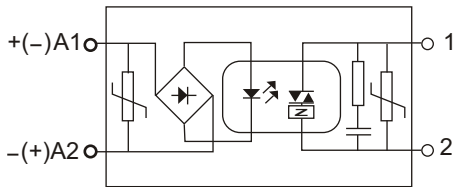
Solid state relay

AC resistive loads switching

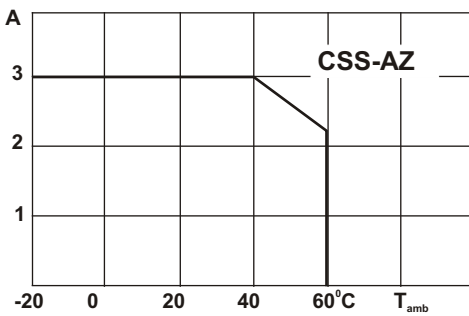
One open contact

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

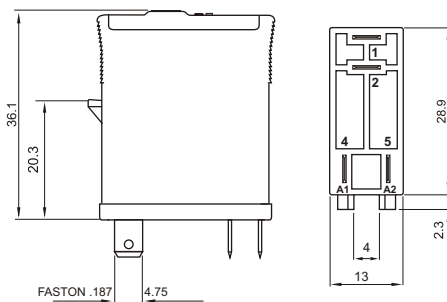
CSS-AZ AC, synchronized to zero



Max. DC load vs. Ambient Temperature



Dimensions in mm.



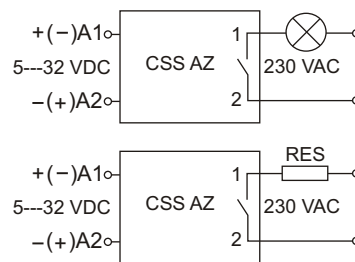
Input	Polarity protected
Range of input voltage	5 ... 32 VDC
Drop-out voltage	< 2.5 VDC
Input current	5 ... 15 mA
Current stabilizer	Yes
Peak inrush voltage protection	EC-1000-4-5 level 1

Output,	Synchronized to zero
Max. Output Current	3 A
Minimum Output Current	50 mA
Max. Output Voltage	250 VAC
Minimum Output Voltage	24 VAC
Max. Drop Out Voltage	< 1.5 VAC
Max. Leakage Current at 48 VDC	0.55 mA
Max. Dv/dt	500 V/μs
I ² t for 10 ms. Fuse	50 A ² /s

Specifications	
Di-electric Strength Input / Output	4 KV / 1 min.
Operate Time	1/2 cycle
Release Time	2 ms + 1/2 cycle
Working Temperature Max.	60° C
Storage Temperature	100° C
Weight	28 gr. Max.

Applications
 It switches AC resistive loads up to 3A / 250V AC in the zero point of the tension and avoids any over current peak in the connection.
 Suitable to switch resistors, incandescent lamp, signaling etc.

Not suitable for inductive loads





CSS-DCN

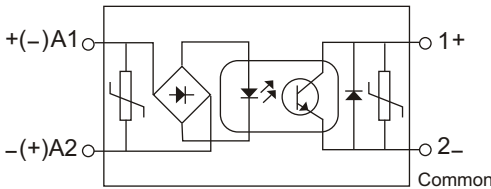
Solid state relay

**DC Inductive or Resistive Load Switching.
Negative Common Output**

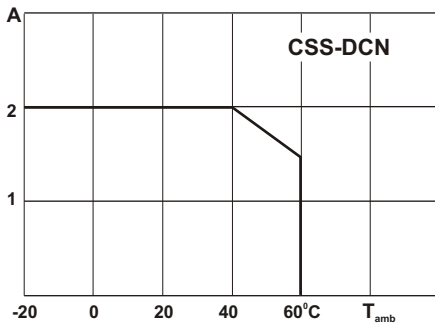
One open contact

2A @ 5 50V DC

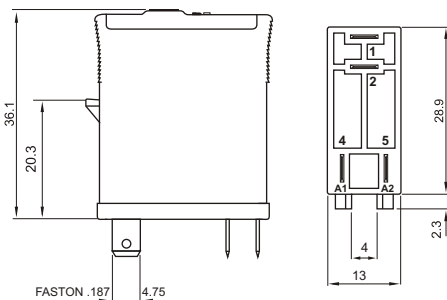
CSS-DCN Common Negative



Max. DC load vs. Ambient Temperature



Dimensions in mm.



Input

Range of Input Voltage
 Drop-out Voltage
 Input Current
 Current Stabilizer
 Peak Inrush Voltage Protection

Polarity protected

5 32 VDC
 < 2.5 VDC
 3 ± 1 mA
 Yes
 IEC-1000-4-5 level 1

Output, Common Negative

Max. Output Current
 Max. Output Voltage
 Minimum Output Voltage
 Max. Drop Out Voltage
 Max. Leakage Current at 48 VDC
 Max. Over Current Pulse
 Pulse Protection
 Max. Current at Inverse Voltage

2 A
 50 VDC
 5 VDC
 1.3 VDC
 < 100 µA
 5 A, 350 µs
 IEC-1000-4-5 level 1
 1 A

Specifications

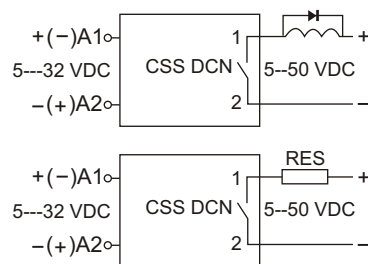
Di-Electric Strength Input / Output
 Operate Time
 Release Time
 Working Temperature max.
 Storage Temperature
 Weight

4 KV / 1 min.
 1 ms
 max. 2ms
 60° C
 100° C
 28 gr. Max.

Applications

It is to switch, upto 50V DC, heating elements electro valves, motors, input / output signals on PLC's solenoids incandescent and fluorescent lamps etc.

Inductive loads must be connected with a free wheeling diode in parallel.





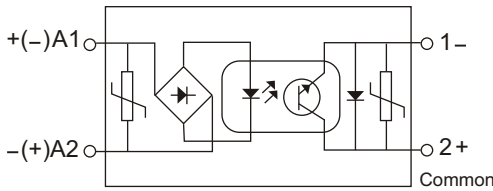
CSS-DCP

Solid state relay

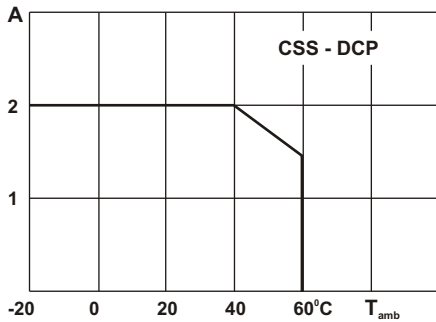
**DC Inductive or Resistive Load Switching.
Positive Common Output**

One Open Contact
2A @ 5 50V DC

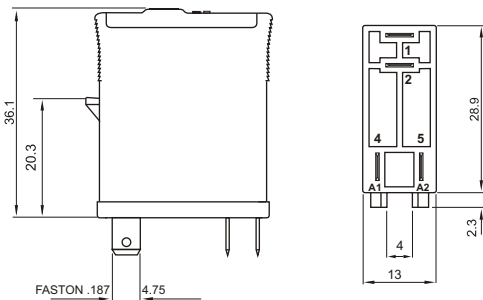
CSS-DCP Common Positive



Max. DC load vs. Ambient Temperature



Dimensions in mm.

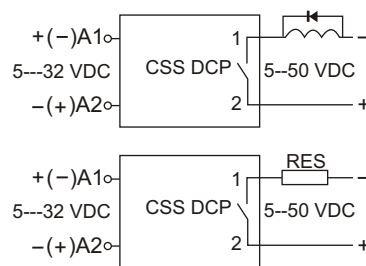


Input	Polarity protected
Range of Input Voltage	5 32 VDC
Drop-out Voltage	< 2.5 VDC
Input Current	3 ± 1 mA
Current Stabilizer	Yes
Peak Inrush Voltage Protection	EC-1000-4-5 level 1

Output, Common Positive	
Max. Output Current	2 A
Max. Output Voltage	50 VDC
Minimum Output Voltage	5 VDC
Max. Voltage Drop	1.3 VDC
Max. Leakage Current at 48 VDC	< 100 µA
Max. Over Current Pulse	5 A, 350 µs
Pulse Protection	IEC-1000-4-5 level 1
Max. Current at Inverse Voltage	1 A

Specifications	
Di-Electric Strength Input / Output	4 KV / 1 min.
Operate Time	1 ms
Release Time	max. 2ms
Working Temperature Max.	60° C
Storage Temperature	100° C
Weight	28 gr. Max.

Applications
 It is to switch, upto 50V DC, Heating Elements Electro Valves, motors, input / output signals on PLC's, Solenoids Incandescent and Fluorescent Lamps etc.
Inductive loads must be connected with a free wheeling diode in parallel.



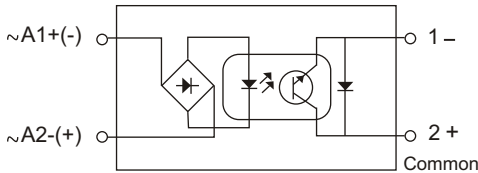


CSS-DIP

Solid State Relay for Input Application

DC Resistive load
Common Positive Output
One open contact
100mAmps @ 32VDC Max

CSS-DIP



Input Parameters

Nominal Input Voltage	Operating Voltage Range
5 VDC	4V - 6V
12 VDC	9.6V - 14.4V
24 VDC	19.2V - 28.8V
48 VDC	38.4V - 57.6V
110 VDC	88V - 132V
220 VDC	176V - 240V
115 VAC	92V - 138V
230 VAC	184V - 240V
100 -240 VAC	90V - 250V

Input Current

5 / 12 / 24 / 48 / 110 / 220 VDC 115 / 230 / 100-240 VAC	} 4mA max
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Output Parameters

Max Output Current	100mA DC
Max Output Voltage	32VDC
Max. Voltage Drop	1.5VDC
Max. Leakage Current	100micro Amps
Must Drop Out Voltage	10% of Rated Voltage

Specification

Isolation between Input / Output	4 KV / 1min.
Operate Time @ Rated Voltage	5 msecs Max.
Release Time @ Rated Voltage	6 msecs Max.
Working Temperature Max.	60° C.
Storage Temperature	-40° C. to +85° C.
Weight	28gr. Max.

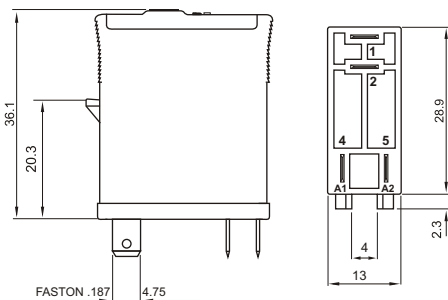
Application

For input applications, for PLC controller,
 for low current / low voltage DC signaling application

Standard Types

DC : 5V, 12V, 24V, 48V, 110V, 220V.	CSS - DI Input Voltage
AC 50 Hz. : 115V, 230V	CSS - DIVDC
AC 50 Hz.: 100V - 240V	CSS - DIVAC
	CSS - DIPW

Dimensions in mm.



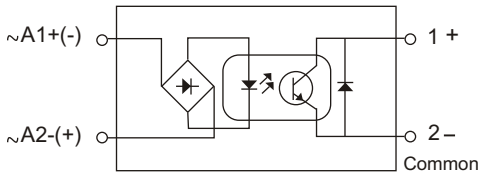


CSS-DIN

Solid State Relay for Input Application

DC Resistive load
Common Negative Output
One open contact
100mAmps @ 32VDC Max

CSS-DIN



Input Parameters

Nominal Input Voltage	Operating Voltage Range
5 VDC	4V - 6V
12 VDC	9.6V - 14.4V
24 VDC	19.2V - 28.8V
48 VDC	38.4V - 57.6V
110 VDC	88V - 132V
220 VDC	176V - 240V
115 VAC	92V - 138V
230 VAC	184V - 240V
100 -240 VAC	90V - 250V

Input Current

5 / 12 / 24 / 48 / 110 / 220 VDC } 4mA max
 115 / 230 / 100-240 VAC

Output Parameters

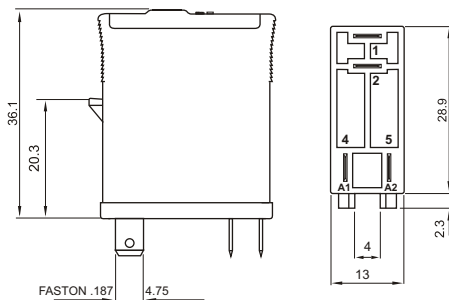
Max Output Current 100mA DC
 Max Output Voltage 32VDC
 Max. Leakage current 100micro Amps
 Must Drop Out voltage 10% of Rated Voltage

Specification

Isolation between Input / Output 4 KV / 1min
 Operate Time @ Rated Voltage 5 msecs Max
 Release Time @ Rated Voltage 6 msecs Max
 Working Temperature Max. 60° C
 Storage Temperature -40° C to +85° C
 Weight 28gr Max

Dimensions

in mm.

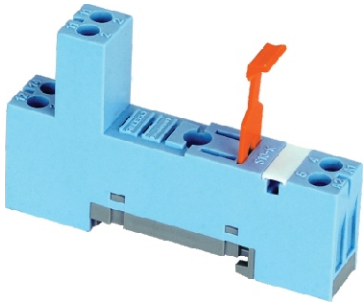


Application

For input applications, for PLC controller,
 for low current / low voltage DC signaling application

Standard Types

DC : 5V, 12V, 24V, 48V, 110V, 220V. CSS - DI Input Voltage
 AC 50 Hz. : 115V, 230V CSS - DIVDC
 AC 50 Hz.: 100V - 240V CSS - DIVAC
 CSS - DINW

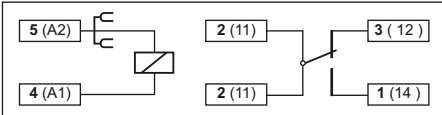


S10 K

only 14mm wide

**Input / Output Socket (10A)
for C10 relays
DIN Rail or Panel Mountable**

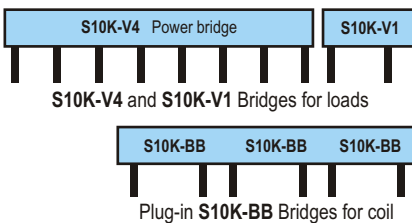
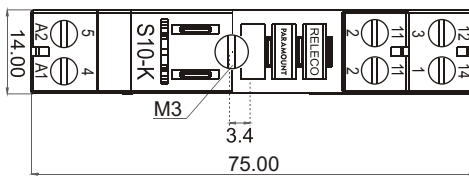
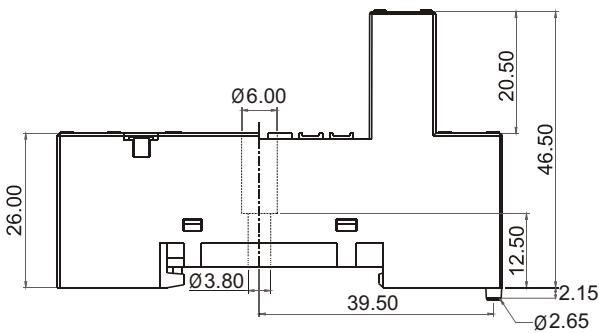
Wiring diagram



This socket has been designed to permit mounting upto 64 relays on 1meter Standard DIN rail.
Sockets can be interconnected through bridge bars in the coil line at the points A2 & to the power line at the points 11

Specifications

Poles	1 Change Over Contact	
Nominal load :	10A / 250V	
Insulation: Di-electric strength, 1minute	Between contact and coil	5 KV
	Between all terminals and rail DIN	5 KV
	Between adjacent terminals	3 KV
Max. screw torque	1.2 Nm	
Screw dimensions	M3, Pozi	
Wire in-lets capacity:	Solid Wire	4sq mm or 2 x 2.25 mm
	Multi core	22 14 AWG
	Ferrule tip terminals	4sq mm
Weight Approx.	28 gr.	



Other Aspects

- DIN Rail / Panel Mountable
- EN / DIN Sequential Numbering according to EN 60947 & IEC 61810
- Integrated Hold Down Clip
- Removable White Marking Label
- Hard Brass Tin Plated Terminals
- Brass Tin Plated Screw

Accessories

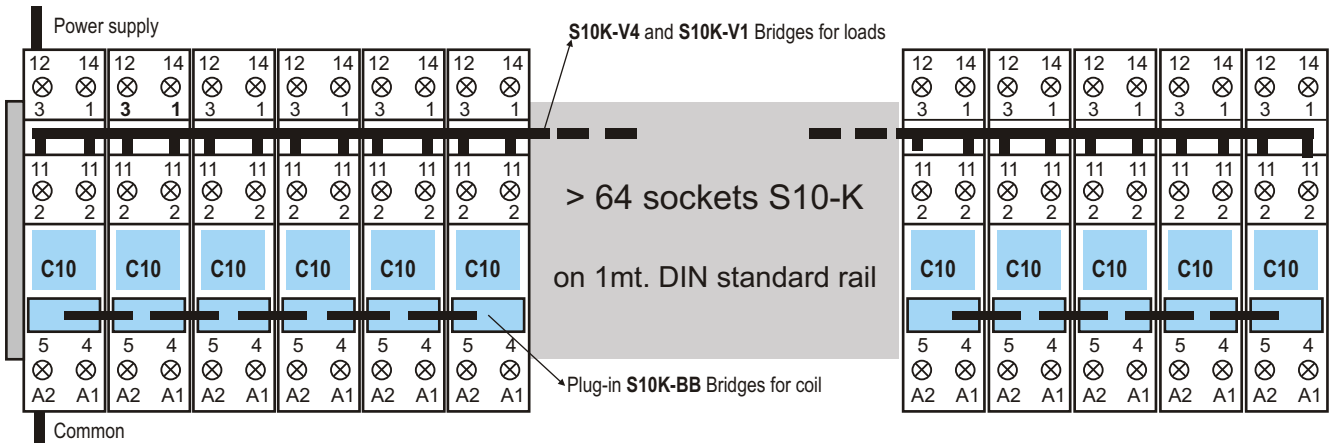
- Bridge Bar S10BB for Coil Terminal (A2 / 5) &
- Bridge Bar S10K-V4, S10K-V1 for change over terminal (11/2)

The drawing shows an example of mounting and two possible interconnection systems of the common coil terminals by plug-in S10K-BB bridges.

The power line of points 11 can be connected by the S10K-V4 bus and S10K-V1 bridges. The 11 points are duplicated to decrease the temperature inside the socket.

Accessories

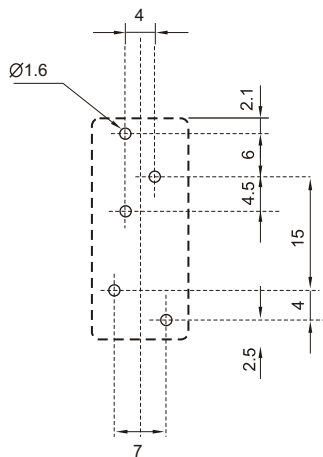
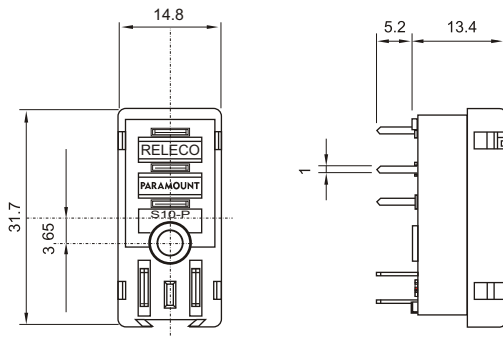
- Bridge Bar S10BB for Coil Terminal (A2 / 5) &
- Bridge Bar S10K-V4, S10K-V1 for change over terminal (11/2)





Dimensions

in mm.



S10-P

Printed Circuit Socket for 1 Pole
C10 relays

Specifications

Nominal load	10A / 250 V
Dielectric strength 1 min.	
Coil terminals to contacts	5 KV
Hard brass tin-plated terminals	0.5 x 1mm
Integrated hold-down clip	

How to mount Solid State Relays as interface on PLC

Input

In every CSS relay, the input is on terminals A1 and A2. Bridges are available to join A2 terminals of adjacent sockets. A single voltage can be applied on terminals A1.

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 taking care of the polarity for DC output relays

Relays with DC output (CSS-DCP or CSS-DCN)

Range of voltage applied to the load will be 5... 50VDC

Relays with AC output (CSS-AC, inductive loads, or CSS-AZ, resistive load)

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

