OUR SOLUTIONS

SIB and SOB ranges

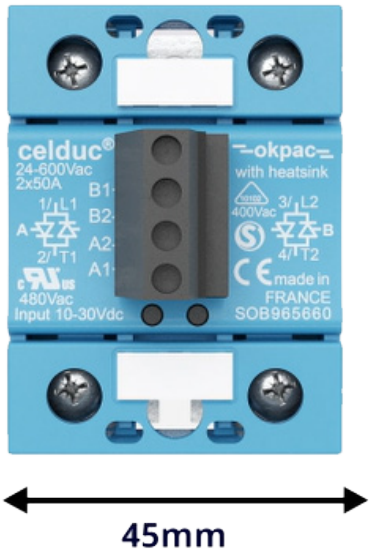
Two-phase
Solid State Relays

12-2021

Dual SSR by celduc allows the control of two loads with a unique or separated input, in a single package 22.5 or 45mm.

Many options are available:
-vertical or horizontal output connections,
-different input terminals
-several output protections.

Dual SSR can cover all the market needs!



Up to 2 x 75A* / 12-600 Vrms (with high I²t values)

**Limited to 50A continuous current. Higher current values available on request.*

1- Why use a two-phase Solid State Relay ?

Smaller footprint (saves space)

In applications that use multiple SSRs, you could potentially replace two single phase SSRs with one dual SSR.

Shorter wiring time

A Dual SSR dissipates 33% less power than a three-phase SSR

This allows the use of a smaller heatsink

MEANS LESS COST PER CHANNEL

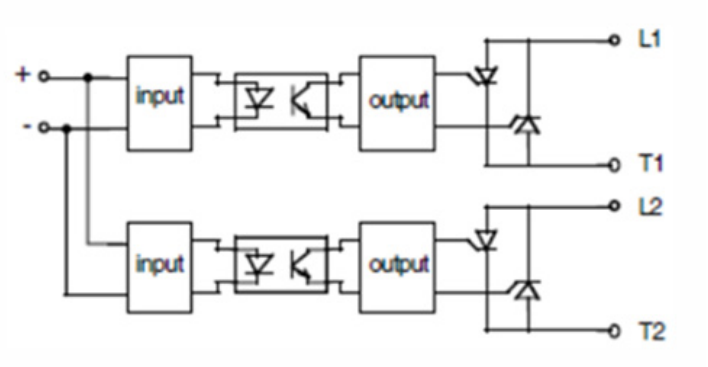
2- Operation

A two-phase solid-state relay operates exactly the same as a single-phase solid-state relay.

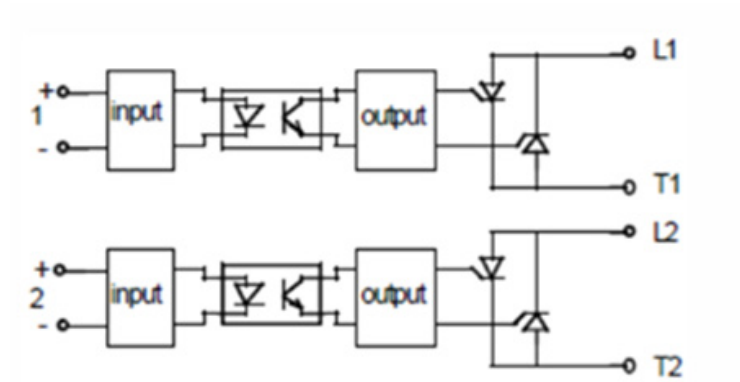
Do you need common inputs or individual inputs ?

celduc relais offers :

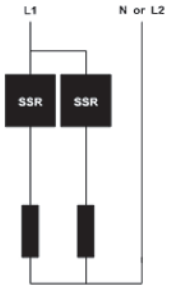
→ « 1 control » two-phase SSR with common inputs



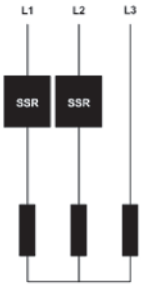
→ « 2 controls » two-phase SSR with two individual inputs, with each control having its own individual output.



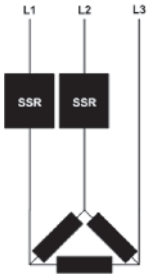
Wiring examples :



2 load control wiring
Single phase



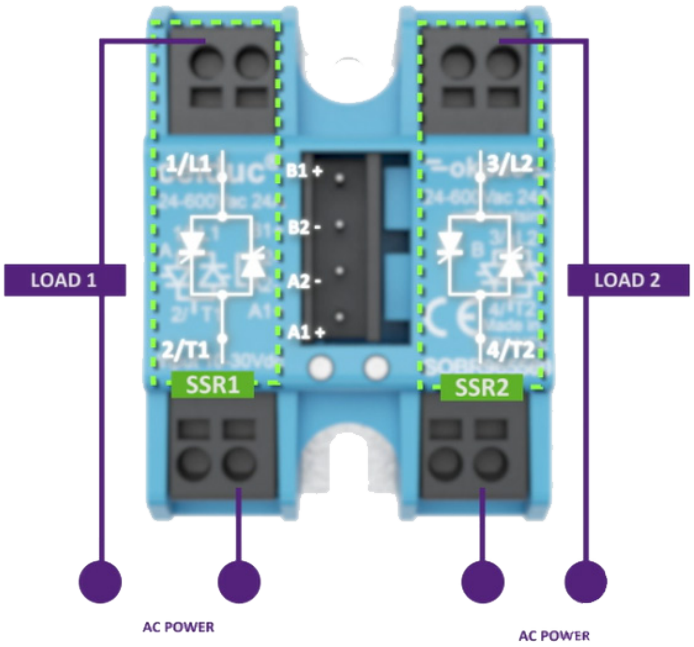
Two-phase SSR SOB to control heaters connected in star
(for balanced low voltage loads without neutral connection)



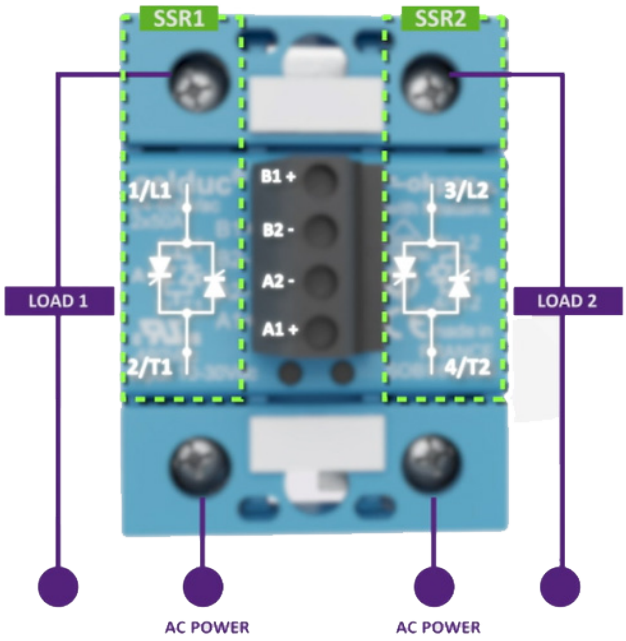
Two-phase SSR SOB to control heaters connected in delta
(for high voltage, balanced or unbalanced loads)

Do you need «vertical» or «horizontal» output connections ?

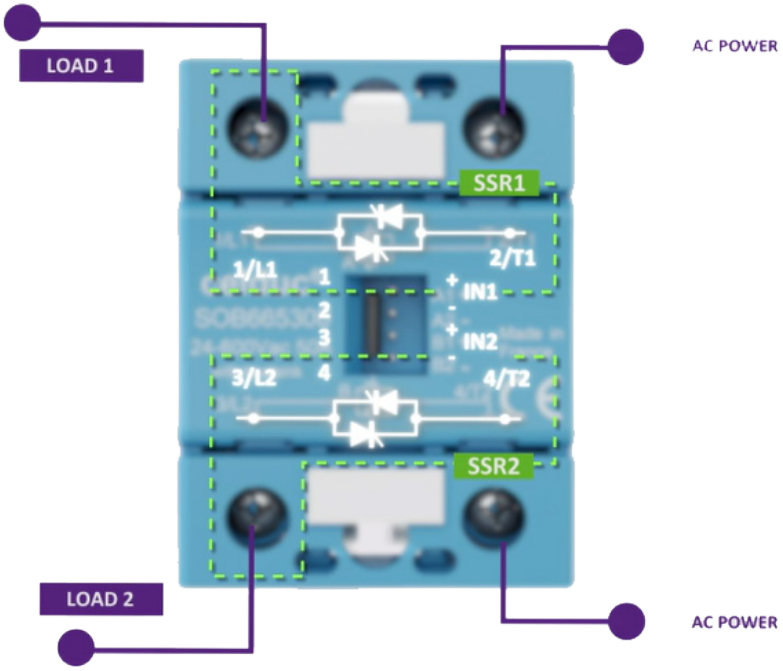
Vertical connection
(SOBR range)



Vertical connection
(SOB7, SOB8, SOB9 ranges)



Horizontal connection
(SOB6 range)

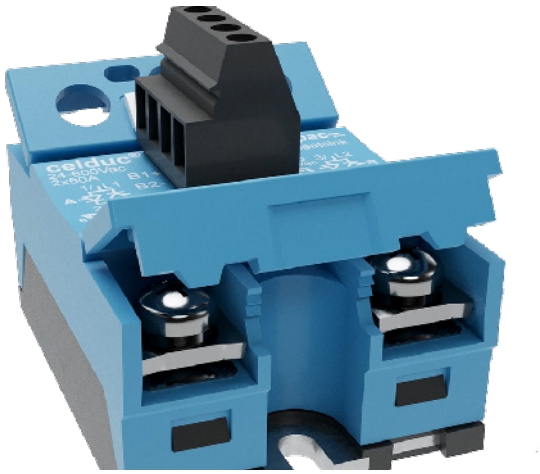


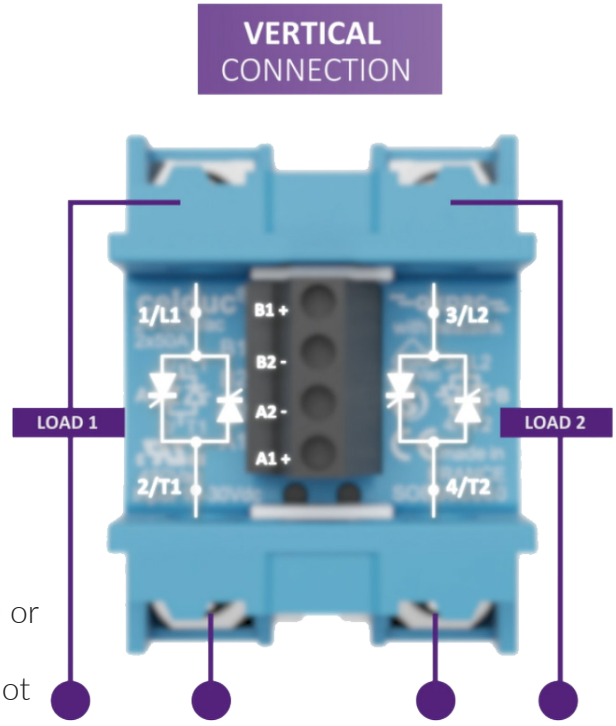
Horizontal connection
(SIB range)

3- Available products

celduc offers a wide range of two-phase Solid State Relays :

SOB7-SOB8-SOB9



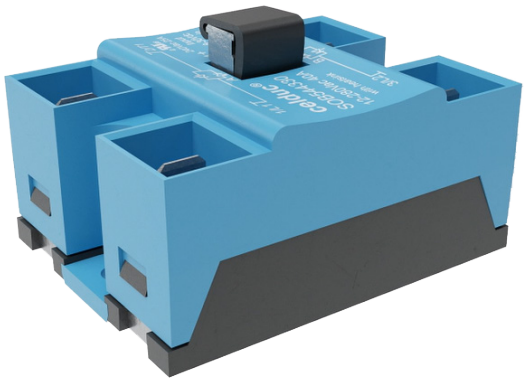


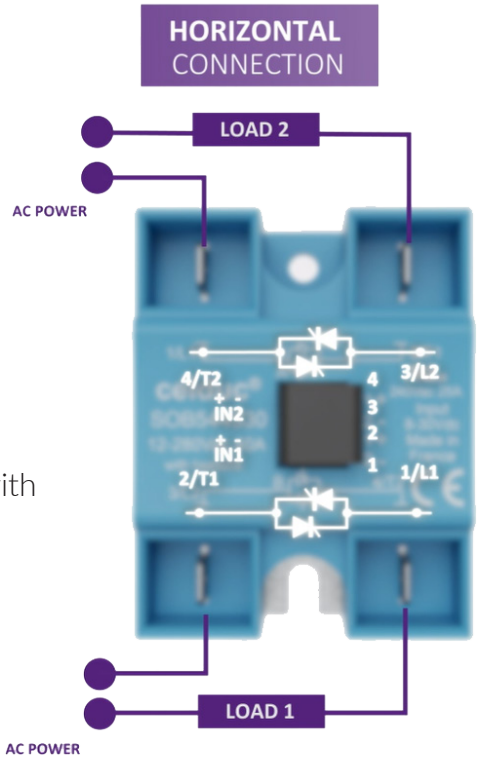
→ Screw power connections
→ 2 pole input connector (for «1 control» versions) or 4 pole input connector (for «2 control» versions)
→ Screw or spring input connectors (Connectors not included, should be ordered separately)
→ Vertical connection

REMINDER

SOB **8**	ZERO-CROSS ALL KINDS OF LOADS
SOB **9**	ZERO-CROSS RESISTIVE LOADS
SOB **7**	RANDOM

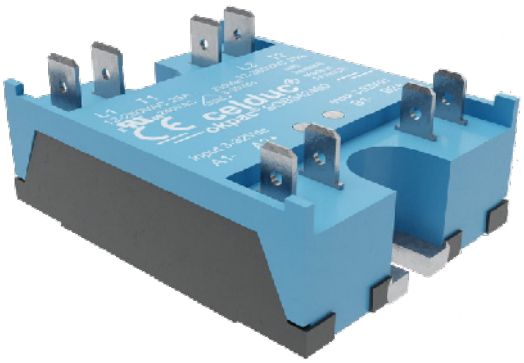
SOB544330 - SOB564330

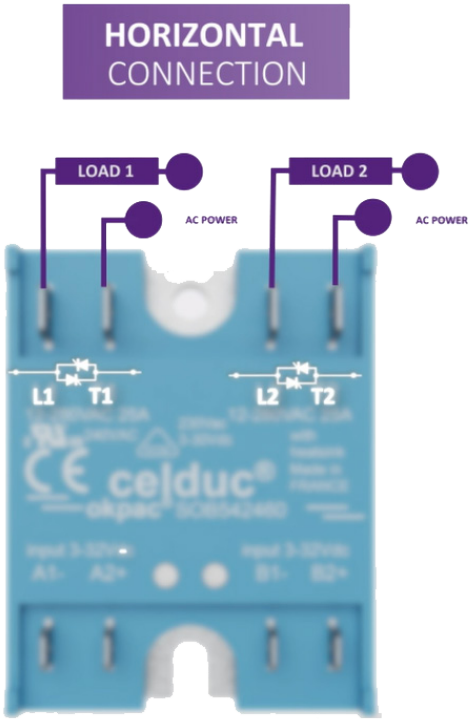




→ Power connection by 6.3mm FASTON terminals with IP20 protection
→ Double input with connector for ribbon wire cable
→ Current-limited versions (FASTON terminal connections): 25A max, 40A short duration
→ Horizontal connection

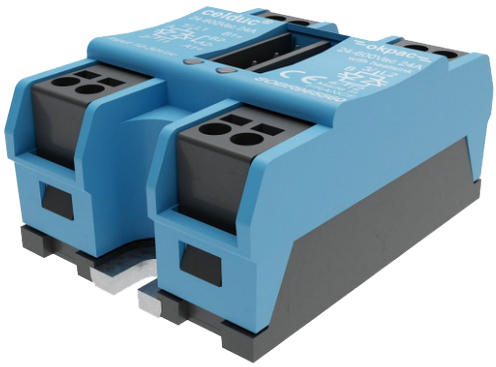
SOB542460-SOB562460

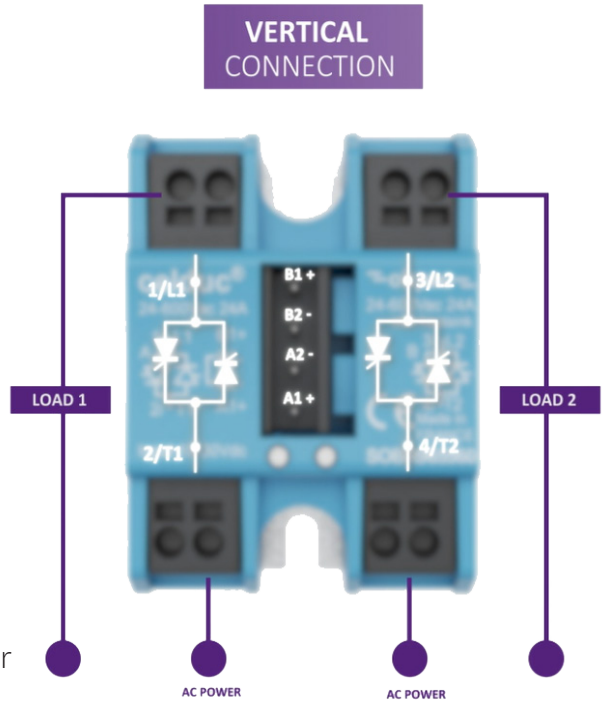




→ Power and control connections by FASTON terminals
→ Horizontal connection

SOBR

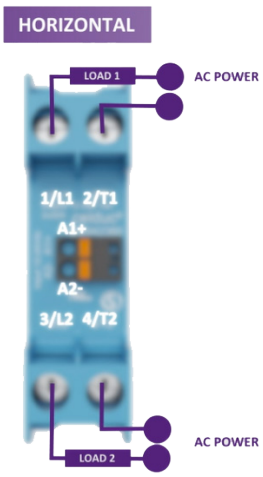


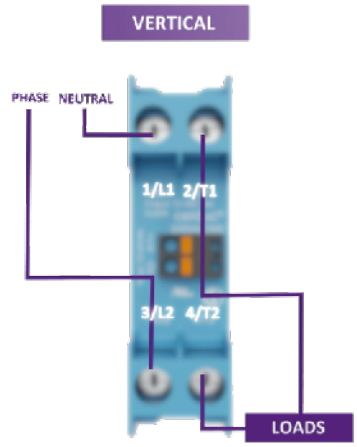


- With «push-in» spring type power connectors
  - Simple connection without physical constraints and no tools needed
  - Fast wiring, even in tight spaces
  - Wiring is 100% secure, 70% faster : Saves time
- Output protection through TVS
- Double connections for twice the current or power
- Version limited to 24A per channel
- Vertical connection

SIB

- Compact 22.5 housing
- Push-in style input connector
- Max. 25A / phase with 1K/W heatsink
- Both « Vertical » and « Horizontal » output connections are possible





4- Typical applications

Dual solid-state relays are found in a wide variety of applications, including professional cooking ovens, Plastics and Packaging Machinery, Lighting Systems, Medical Equipment, ...

Resistive Loads (AC-51) is the most common application. « Dual » SSRs are used for controlling the temperature inside an oven or injection molding machine. Each output can control an individual heating element.

However, **lighting/Infrared heating control** are also a popular applications for Dual SSRs, where random turn-on versions are used. This is the case with our SOB7 range (Instantaneous switching SSR with Integrated over-voltage protection (VDR). Typical Application is IR heating control using phase angle control for paint dryers.

Dual solid-state relays are also perfectly adapted to three-phase applications with breaking of two phases only. It could be in a delta configuration, or in a star configuration without a neutral connection (for balanced low voltage loads). In such applications, two of the three phases are switched by the SSR, the third phase is wired directly to the load. This is common in many resistive heating and motor control applications. One advantage is (again) space savings, as a two-phase SSR is smaller than a standard three-phase SSR. But the biggest advantage of using a two-phase SSR to switch a three-phase load is reduced power dissipation. A Dual SSR dissipates 33% less power than a three-phase SSR in a given application since only two outputs are conducting load current. This helps to reduce the size of the heatsink, which reduces total cost and, once again, panel space.

To summarize, Dual SSRs can be used in lots of applications and are possible solutions to three-phase load control when switching two of the three phases is acceptable.

Thanks for reading

www.celduc-relais.com