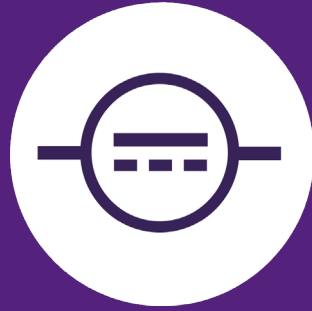




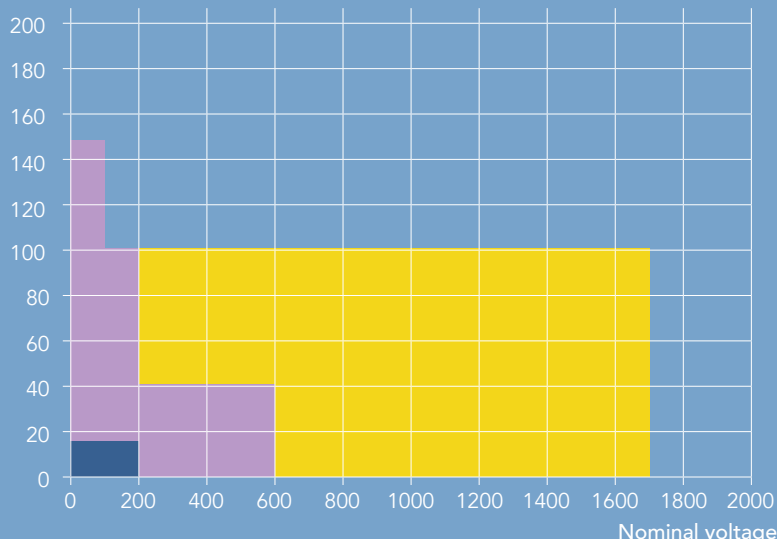
DC Solid State Relays

MOSFET, Bipolar, and IGBT technologies



These relays are designed to switch DC loads, e.g solenoid valves, brakes, LEDs, motors (possibly on AC mains under specific conditions). The following technologies are available:

Nominal current



BIPOLAR

For applications where a low control current is required.

MOSFET

For applications requiring transient overcurrent withstand (motors).

IGBT

For high voltage applications (> 600VDC)

A technology for every application!
Currently up to 1700Vdc and 150A.

MOSFET technology

DC MOSFET Solid State Relays are ideal for applications requiring high transient overcurrent withstand capability, such as motor control applications.

DC output SSRs based on MOSFET technology provide fast, reliable switching at high current levels. They are available with a wide range of options and accessories, including screw terminals, protective covers, LED input indicators, thermal interface pads, heat sinks, and more.

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection
SLD01205	4A	0-32VDC	60V	3-10VDC	TVS
SLD02205	4A	0-32VDC	60V	7-20VDC	TVS
SLD03205	4A	0-32VDC	60V	18-32VDC	TVS
SLD03210	2.5A	0-60VDC	60V	18-32VDC	TVS
STD03205	2.5A	0-30VDC	60V	10-30VDC	TVS
STD03505	5A	0-30VDC	60V	10-30VDC	TVS
STD03510	5A	0-68VDC	60V	10-30VDC	TVS
STD07205	2.5A	0-30VDC	60V	12-30VDC 15-30VAC	TVS
SPD03505	5A	0-30VDC	60V	10-30VDC	TVS
SPD07505	5A	0-30VDC	60V	12-30VDC 15-30VAC	TVS
SKLD11006	10A	7-36VDC	60V	3-10VDC	TVS
SKLD30520	8A	12-100VDC	200V	18-32VDC	TVS
SKLD31006	10A	7-36VDC	60V	7-30VDC	TVS
SCM0100200	100A	2-200VDC	200V	4.5-32VDC	Backward diode
SCM0150100	150A	2-100VDC	100V	4.5-32VDC	Backward diode
SCM030200	30A	2-200VDC	200V	4.5-32VDC	Backward diode
SCM040600	40A	2-600VDC	600V	4.5-32VDC	Backward diode
SOM020100	20A	5-60VDC	100V	3.5-32VDC	TVS
SOM020200	20A	5-110VDC	200V	3.5-32VDC	TVS
SOM02060	20A	5-40VDC	60V	3.5-32VDC	TVS
SOM040100	40A	5-60VDC	100V	3.5-32VDC	TVS
SOM040200	40A	5-110VDC	200V	3.5-32VDC	TVS
SOM04060	40A	5-40VDC	50V	3.5-32VDC	TVS
SOM06075	60A	5-40VDC	75V	3.5-32VDC	TVS
ES001000	0-80A	0-130VDC	200V	Voltage protection option (C1, D2) for the SOM range	Diode + capacitor
XKLD0020	4A	10-100VDC	200V	18-32VDC	TVS + diode + fuse
XKLD31006	10A	10-40VDC	60V	10-30VDC	VDR



● SLD

Dim. 28 x 5 x 15 mm



● STD

Dim. 29 x 12.7 x 15.7 mm



● SPD

Dim. 29 x 12.7 x 25.4 mm



● SKLD

Dim. 43.6 x 6.3 x 24.5 mm



● SCM

Dim. 44.5 x 58.2 x 27 mm



● SOM/ESO

Dim. 45 x 58.5 x 30 mm



● XKLD0020

Dim. 36 x 78 x 61 mm



● XKLD31006

Dim 12.2 x 76.4 x 53mm



BIPOLAR Technology

BJT (Bipolar Junction Transistor) technology is used in DC Solid State Relays designed for applications requiring high current handling capability.

Compared to MOSFET and IGBT technologies, BJTs generally offer slower switching speeds and higher switching losses, making them better suited to applications where switching frequency is not a critical parameter. However, they remain a reliable solution for systems prioritizing high current capacity and robustness. Typical applications include battery chargers, power supply circuits, power amplifiers, and motor control systems.

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection
SKD10306	3A	2-60VDC	60V	3-30VDC	Backward diode
XKD10120	1A	2-220VDC	220V	5-30VDC	Backward diode
XKD10306	3A	2-60VDC	60V	5-30VDC	Backward diode
XKD11306D	3A	2-60VDC	60V	3-30VDC	Backward diode
XKD70306	3A	2-60VDC	60V	10-30VAC/DC	Backward diode
XKD90306	3A	2-60VDC	60V	90-240VAC/DC	Backward diode
SCC10506	5A	2-60VDC	60V	3-16VDC	Backward diode
SCC20506	5A	2-60VDC	60V	10-32VDC	Backward diode
SCC21506	15A	2-60VDC	60V	10-32VDC	Backward diode



IGBT Technology

IGBTs combine the advantages of both MOSFET and bipolar transistor technologies. While their switching speed is lower than that of MOSFETs, they are capable of handling significantly higher voltages and currents. This makes them particularly well suited for demanding applications such as industrial motor control, inverters, electric vehicles, and renewable energy systems.

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection
SCI0100600	100A	0-350VDC	600V	4.5-32VDC	Backward diode
SCI0251700	25A	0-820VDC	1700V	4.5-32VDC	Backward diode
SCI0501200	50A	0-750VDC	1200V	4.5-32VDC	Backward diode
SMI00201600	20A	500-940VDC	1600V	16.8-36VDC	▶ Short-circuit protection with fault feedback ▶ Undervoltage lock-out protection for primary side and secondary side (UVLO) ▶ Overvoltage and rapid transient protection
SDI0501700	50A	12-940VDC	1700V	24-48VDC	Depending on models :
SDI0501710	50A	12-940VDC	1700V	72-110VDC	▶ Overvoltage and rapid transient protection ▶ Load overvoltage and short circuit protection ▶ Temperature protection
SDI1001700	100A	12-940VDC	1700V	24-48VDC	

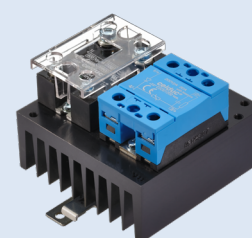


REMINDER

Products without protection (Transil or varistor (VDR)) or only protected by a diode must be equipped with an external overvoltage protection. The maximum operating voltage is usually equal to half the specified maximum switchable voltage.

ON REQUEST:
"ready to use" products,
current protected with
built-in voltage protection,
proportional control and
DC motor inverters.

Please contact us!



Applications

DC Solid State Relays are designed for reliable switching of DC loads.

High-voltage DC SSRs are widely used in demanding applications such as electric vehicles, DC charging stations, photovoltaic and wind energy systems, battery charge and discharge systems, and DC power supplies including converters, choppers, and inverters. They are also suitable for signal switching applications such as testing equipment, as well as for controlling electromagnets used in induction motor braking systems. Additional applications include heating systems for trains and tramways, battery management systems for marine and solar installations, and DC motor control for cranes, travelling cranes, and electric vehicles.



Protection

When using DC Solid State Relays, **special precautions must be taken, particularly with regard to overvoltage protection.** It is strongly recommended to contact **celduc® relais** to properly define the appropriate protective components for each application.

DC switching is inherently more complex than AC switching. With AC (thyristor-based technology), the current naturally crosses zero, which helps limit inductive overvoltage effects. In most cases, voltage protection is therefore optional.

In contrast, switching off DC current **requires careful consideration of the inductive elements in the circuit** (load and wiring), which can generate significant voltage spikes. Appropriate suppression components must be selected accordingly.

The presence and sizing of these protective components **depend entirely on the specific application conditions.** For this reason, no standard values are provided in our datasheets, and **we recommend contacting us to determine the most suitable protection for your system.**

To define the correct protective components for your application, we require the following minimum information:

- Type of DC power supply (generator)
- Maximum continuous DC voltage
- Cable length between the DC power supply and the SSR
- Cable length between the SSR and the load
- Type of load
- Maximum continuous load current
- Number of SSRs and loads connected to the same DC power supply
- Ambient temperature
- Switching frequency

Thank you for your attention
and interest



www.celduc-relais.com