

Solid State Relays

The advantages Solid State Relays (SSR) have compared to Electro Mechanical Relays (EMR) are well-known. Fully electronics, there is no moving parts inside SSR ; they have no audible noise, withstand significant vibration without operating problems, have fast response time, but most of all they have higher life-time expectancy.

Used in appropriate operating conditions, SSRs have nearly unlimited life vs 100K cycles for EMRs. Thanks to their unlimited life-time SSRs don't require any maintenance and prevent manufacturers from unforeseen machines/ production stop, which is a great advantage nowadays with 24h/24 industrial activity.

celduc[®] relay the sole solid state relay technology made in France for more than 40 years !

MAIN APPLICATIONS

HEATING

Plastic injection molding
Furnaces
Power supply distribution systems
Air conditioning
Textile
Home heating
Infrared heating
Drying
Thermoforming
Etc.

MOTOR STARTING

Pumps
Compressors
Plastic injection molding
Conveyors
Fans
Etc.

LIGHTING

Public lighting
Cinema
Theatre lamps
Airport runway lamps
Road lighting
Etc.

CONTROL

PLC interface
Heating element control
Solenoid valves
Contactor Coils
Optocoupling of sensors

MISCELLANEOUS

Transformer starting
Power factor corrector
Uninterrupted power supplies
Energy source switching
Capacitors control



STANDARDS

The solid state relays and contactors made by celduc[®] relays are manufactured in compliance with major international standards:

- IEC/EN60947-4-2 for motor control
- IEC/EN60947-4-3 for the other loads
- American and Canadian (UL, cUL, CSA)
- IEC/EN 60950 – VDE0805
- IEC60335-1 – VDE0700-1
- IEC 62314

Our products also meet the major European directive regarding the CE marking.

- Some of our products fulfil the requirements according to EN 60601-1 (VDE 0750) for medical applications and also the requirements for KOSHA (S-MARK) or for explosive atmospheres ATEX "EX".
- All of our relays okpac[®] SO (as well as SC relays), celpac[®] 2G SU/SA (including the current sense module ESUC) but also the 2-phase SOB and 3-phase SGT comply with the European standard EN61373 for railways : shocks and vibrations tests on relay. Regarding the standards about Fire behavior and fumes NF F16-101, NF F16-102 and EN 45545 calling for the EN 60695-2-10/11/12 (Glow Wire tests (GWFI – GWIT), blue and black plastic covers and encapsulating resin of SO and SU/SA relays are classified (for more detailed information – please contact us).



SOLID STATE RELAYS

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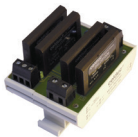
Heatsinks..... TBD



Accessories TBD

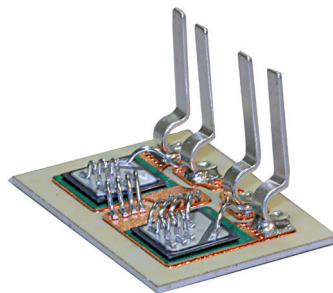


Interface Relays..... TBD



PCB Relays TBD





All our solid state relays fitted with back to back thyristors (power products : single phase, two phase, three phase) now use TMS² technology with a very high life expectancy compared to the majority of products on the market (application note on request).

OK Series

- Versatile, easy and quick connections
- Removable IP20
- Same screwdriver for outputs and inputs
- Tightening on metal baseplate not on plastic
- Removable control terminals
- SSR, mains and load status.
- Output voltage from 24 to 690 VAC (600V-1200V-1600V peak)
- Very low zero-crossing level
- Large and regulated AC and DC input voltage
- Control status LED
- EMC compatible for industrial environment
- UL/cUL, VDE (EN60950), IEC/EN60947-4-3, CE marking
- Itsm up to 2 000A and I²t>20 000A²s
- Protection against circuit breaker.

Versatile, easy and quick connections

POWER WIRING



Direct connection by wire or tip

2 x 6 mm² (AWG10) fine strand i.e. 32A
2 x 10 mm² (AWG8) solid i.e. 50A



With tips with contained palm

Up to 25mm² (AWG4) i.e. 85A
Up to 50mm² (AWG1) with or without special adaptations i.e. 150A



Screw with brake washers

Better behaviour with shocks and vibrations

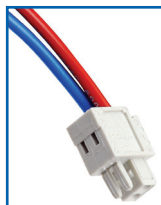
CONTROL WIRING



Screws connection (S07 / S08 / S09 / SOL)



Removable spring terminals (SOR)



S07 Type

Typical applications : Motors (AC-53), inductive loads and phase angle control applications.

- Random or instant switching
- Voltage protection on input (transil) and output (RC and VDR).

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SO745090	50A	12-275VAC	600V	3-32VDC	2 800A ² s	45 x 58,5 x 30
SO763090	35A	24-510VAC	1200V	3,5-32VDC	1 250A ² s	
SO765090	50A	24-510VAC	1200V	3,5-32VDC	2 800A ² s	
SO767090	75A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	
SO768090	95A	24-510VAC	1200V	3,5-32VDC	16 200A ² s	
SO769090	125A	24-510VAC	1200V	3,5-32VDC	24000A ² s	
SO785060	50A	24-690VAC	1600V	3,5-32VDC	2 800A ² s	
SO789060	125A	24-690VAC	1600V	3,5-32VDC	22 000A ² s	



These products should be mounted on heatsinks in order to reach nominal current.

S08 Type

Designed for most types of loads

- Zero cross with low zero-crossing level (<12V)
- Voltage protection on input (transil) with very high immunity according to IEC/EN61000-4-4
- IP20 protection
- Control current < 13mA for all the voltage range at any operating temperature
- Control status LED

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SO842074	25A	12-275VAC	600V	3-32VDC	600A ² s	45 x 58,5 x 30
SO842974	25A	12-275VAC	600V	20-265VAC/DC	600A ² s	
SO843070	35A	12-275VAC	600V	3-32VDC	1 250A ² s	
SO843970	35A	12-275VAC	600V	20-265VAC/DC	1 250A ² s	
SO845070	50A	12-275VAC	600V	3-32VDC	2 800A ² s	
SO845970	50A	12-275VAC	600V	20-265VAC/DC	2 800A ² s	
SO848070	95A	12-275VAC	600V	3-32VDC	16 200A ² s	
SO849070	125A	12-275VAC	600V	3-32VDC	22 000A ² s	
SO863070	35A	24-510VAC	1200V	3,5-32VDC	1 250A ² s	
SO863970	35A	24-510VAC	1200V	20-265VAC/DC	1 250A ² s	
SO865070	50A	24-510VAC	1200V	3,5-32VDC	2 800A ² s	
SO865970	50A	24-510VAC	1200V	20-265VAC/DC	2 800A ² s	
SO867070	75A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	
SO867970	75A	24-510VAC	1200V	20-265VAC/DC	7 200A ² s	
SO868070	95A	24-510VAC	1200V	3,5-32VDC	16 200A ² s	
SO868970	95A	24-510VAC	1200V	20-265VAC/DC	16 200A ² s	
SO869070	125A	24-510VAC	1200V	3,5-32VDC	22 000A ² s	
SO869970	125A	24-510VAC	1200V	20-265VAC/DC	22 000A ² s	
SO885060	50A	24-690VAC	1600V	3,5-32VDC	2 800A ² s	
SO885960	50A	24-690VAC	1600V	20-265VAC/DC	2 800A ² s	
SO887060	75A	24-690VAC	1600V	3,5-32VDC	7 200A ² s	
SO888060	95A	24-690VAC	1600V	3,5-32VDC	16 200A ² s	
SO889060	125A	24-690VAC	1600V	3,5-32VDC	22 000A ² s	

HIGH VOLTAGE RELAY



These products should be mounted on heatsinks in order to reach nominal current.

S09 Type

Typical applications : Resistive loads (AC-51)

- Zero cross
- Control status LED
- IP20 protection

S09 range with regulated control current – control current <13mA						
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SO941460	12A	12-280VAC	600V	3-32VDC	128A ² s	45 x 58,5 x 30
SO942460	25A	12-280VAC	600V	3-32VDC	600A ² s	
SO943460	40A	12-280VAC	600V	3-32VDC	1 250A ² s	
SO945460	50A	12-280VAC	600V	3-32VDC	2 800A ² s	
SO963460	40A	24-600VAC	1200V	3,5-32VDC	1 250A ² s	
SO965460	60A	24-600VAC	1200V	3,5-32VDC	2 800A ² s	
SO967460	90A	24-600VAC	1200V	3,5-32VDC	7 200A ² s	
SO96846T	95A	24-600VAC	1200V	3,5-32VDC	11 250A ² s	

These products should be mounted on heatsinks in order to reach nominal current.

S09 range with simplified input						
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SO942860	25A	12-280VAC	600V	15-32VAC/10-30VDC	600A ² s	45 x 58,5 x 30
SO942960	25A	12-280VAC	600V	185-265VAC/DC	600A ² s	

These products should be mounted on heatsinks in order to reach nominal current.



SOL Type

- low profile (h=16,3mm)

Flatpac® SSRs are mainly designed for applications where a PCB is used on the input, possibly on the output side. In fact the small size of this relay makes it easy to use when room is restricted. Wiring will be facilitated as this relay also allows input or output cables to go any direction.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SOL942460	25A	12-280VAC	600V	3-32VDC	600A ² s	56 x 58,5 x 16,3
SOL942960	25A	12-280VAC	600V	185-265VAC/DC	600A ² s	
SOL965460	50A	24-600VAC	1200V	3,5-32VDC	2 800A ² s	

These products should be mounted on heatsinks in order to reach nominal current.



SOR Type

With removable input connector - Spring terminals. Designed for most types of loads.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SOR842074	25A	12-275VAC	600V	3-32VDC	600A ² s	45 x 58,5 x 30
SOR865070	50A	24-510VAC	1200V	3,5-32VDC	2 800A ² s	
SOR867070	75A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	

These products should be mounted on heatsinks in order to reach nominal current.



SC Type

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SC741110	12A	12-280VAC	600V	3-30VDC	72A ² s	Random	44,5 x 58,2 x 27
SC744110	40A	12-280VAC	600V	3-30VDC	612A ² s		
SC762110	25A	24-520VAC	1200V	4-30VDC	265A ² s		
SC764110	50A	24-520VAC	1200V	4-30VDC	1500A ² s		
SC764910	50A	24-520VAC	1200V	90-240VAC/DC	1500A ² s		
SC769110	125A	24-520VAC	1200V	4-30VDC	20000A ² s		
SC841110	12A	12-280VAC	600V	4-30VDC	72A ² s	Zero-cross / most types of loads	
SC841910	12A	12-280VAC	600V	90-240VAC/DC	72A ² s		
SC842110	25A	12-280VAC	600V	4-30VDC	312A ² s		
SC844110	40A	12-280VAC	600V	4-30VDC	612A ² s		
SC862110	25A	24-520VAC	1200V	5-30VDC	265A ² s		
SC864110	50A	24-520VAC	1200V	5-30VDC	1500A ² s		
SC864810	50A	24-520VAC	1200V	17-80VAC/DC	1500A ² s		
SC864910	50A	24-520VAC	1200V	90-240VAC/DC	1500A ² s		
SC867110	75A	24-520VAC	1200V	5-30VDC	5000A ² s		
SC869110	125A	24-520VAC	1200V	5-30VDC	20000A ² s		
SC942110	25A	12-280VAC	600V	4-30VDC	312A ² s	Zero-cross / resistive loads AC-51	
SC942160	25A	12-280VAC	600V	4-30VDC	312A ² s		
SC947160	75A	12-280VAC	600V	4-30VDC	5000A ² s		
SC965160	50A	24-600VAC	1200V	5-30VDC	1500A ² s		
SC967100	75A	24-600VAC	1200V	5-30VDC	5000A ² s		

These products should be mounted on heatsinks in order to reach nominal current.



SCQ Type

- Four-Leg Solid State Relays

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm	Led
SCQ842000	4x25A	12-280VAC	600V	3-32VDC	288A ² s	44,5 x 58,2 x 274	no
SCQ842060	4x25A	12-280VAC	600V	3-32VDC	288A ² s		yes

These products should be mounted on heatsinks in order to reach nominal current.

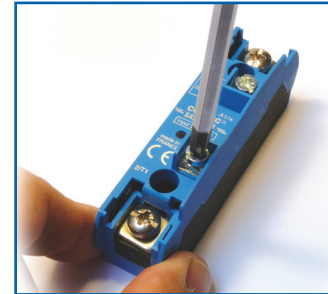


Performances & Reliability

- Fixing screws compatible with all hockey puck style relays (celduc SO and SC range)
- Maximum voltage up to 1600V (690VRMS), 600VAC and 1200VAC as standard
- Thyristor rating up to 75A
- Large input range : 3-32VDC with regulated current models
- AC input control available
- Input status yellow LED
- Over-voltage protection on input
- New generation of TMS² technology for thyristors for a longer life expectancy
- Quick and easy connections
- Designed according to European standards EN60947-4-3 (IEC947-4-3) and EN60950 (VDE0805 reinforced insulation) -IEC62314-UL-cUL
- IP20 protection with removable flaps (SU range) or cover (SA range)
Other protection devices available as an option : RC snubber, VDR, self turn-on

Compact Solution

The 22,5 mm pitch of our Solid State contactors reduces space to the minimum
 Reduced assembling time, easy cabling
 Reduced maintenance thanks to a very long life expectancy
 One single screw driver for input and output



SA range
with screw connection on inputs.

SA

- Transparent protective cover
- For mounting on your heatsink or panel mount
- SA8 : designed for most types of loads / integrated VDR protection
- SA9 : designed for resistive loads AC-51

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SA842070	25A	12-275VAC	600V	3-32VDC	600A ² s	22,5 x 90 x 42
SA941460	12A	12-280VAC	600V	3-32VDC	128A ² s	
SA942460	25A	12-280VAC	600V	3-32VDC	450A ² s	
SA945460	50A	12-280VAC	600V	3-32VDC	1 680A ² s	
SA963460	35A	24-600VAC	1200V	3,5-32VDC	882A ² s	
SA965460	50A	24-600VAC	1200V	3,5-32VDC	1 680A ² s	



These products should be mounted on heatsinks in order to reach nominal current.

SAL/SAM

- Transparent protective cover
- "Ready to use" on 22,5 and 45mm heatsinks
- SAx9 : designed for resistive loads AC-51.

Product reference	Thyristor rating	Max.switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SAL941460	12A	12A	12-280VAC	600V	3-32VDC	128A ² s	22,5 x 90 x 112
SAL942460	25A	23A	12-280VAC	600V	3-32VDC	450A ² s	
SAL963460	35A	30A	24-600VAC	1200V	3,5-32VDC	882A ² s	
SAL965460	50A	32A	24-600VAC	1200V	3,5-32VDC	1 680A ² s	
SAM943460	35A	32A	12-280VAC	600V	3-32VDC	882A ² s	45 x 90 x 112
SAL/SAM with low input current – control current <10mA							
SAL961360	15A	15A	24-600VAC	1200V	6-32VDC	882A ² s	22,5 x 90 x 112
SAL962360	25A	23A	24-600VAC	1200V	6-32VDC	882A ² s	
SAM963360	35A	32A	24-600VAC	1200V	6-32VDC	882A ² s	45 x 90 x 112
SAM965360	50A	45A	24-600VAC	1200V	6-32VDC	1 680A ² s	



The 22,5mm pitch SSR solution!
Smart Solid State Relays with optional modules



SU range
with pluggable connector on inputs.

SU

- Removable flaps for protection
- For mounting on your heatsink or panel mount.
- SU7 : designed for motors AC-53 and inductive loads.
Also use in phase angle control systems.
- SU8 : designed for most types of loads / integrated VDR protection
- SU9 : designed for resistive loads AC-51.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SU765070	50A	24-510VAC	1200V	3,5-32VDC	1 680A ² s	22,5 x 90 x 42
SU842070	25A	12-275VAC	600V	3-32VDC	600A ² s	
SU842970	25A	12-275VAC	600V	180-240VAC	600A ² s	
SU865070	50A	24-510VAC	1200V	3,5-32VDC	1 680A ² s	
SU865970	50A	24-510VAC	1200V	180-240VAC	1 680A ² s	
SU867070	75A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	
SU942460	25A	12-280VAC	600V	3-32VDC	600A ² s	
SU963460	35A	24-600VAC	1200V	3,5-32VDC	882A ² s	
SU965460	50A	24-600VAC	1200V	3,5-32VDC	1 680A ² s	
SU967460	75A	24-600VAC	1200V	3,5-32VDC	7 200A ² s	



These products should be mounted on heatsinks in order to reach nominal current.

SUL/SUM

- Removable flaps for protection
- "Ready to use" on 22,5 and 45mm heatsinks
- SUx7 : designed for motors AC-53 and inductive loads.
- SUx8 : designed for most types of loads / integrated VDR protection
- SUx9 : designed for resistive loads AC-51

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SUL765070	50A	32A	24-510VAC	1200V	3,5-32VDC	1 680A ² s	22,5 x 90 x 112
SUL842070	25A	23A	12-275VAC	600V	3-32VDC	600A ² s	
SUL842770	25A	23A	12-275VAC	600V	18-30VAC/DC	600A ² s	
SUL842970	25A	23A	12-275VAC	600V	160-240VAC	600A ² s	
SUL865070	50A	32A	24-510VAC	1200V	3,5-32VDC	1 680A ² s	
SUL865770	50A	32A	24-510VAC	1200V	18-30VAC/DC	1 680A ² s	
SUL865970	50A	32A	24-510VAC	1200V	160-240VAC	1 680A ² s	
SUL867070	75A	35A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	
SUL942460	25A	23A	12-280VAC	600V	3-32VDC	600A ² s	
SUL963460	35A	30A	24-600VAC	1200V	3,5-32VDC	882A ² s	
SUL965460	50A	32A	24-600VAC	1200V	3,5-32VDC	1 680A ² s	
SUL967460	75A	35A	24-600VAC	1200V	3,5-32VDC	7 200A ² s	
SUM865070	50A	45A	24-510VAC	1200V	3,5-32VDC	1 680A ² s	45 x 90 x 112
SUM867070	75A	45A	24-510VAC	1200V	3,5-32VDC	7 200A ² s	



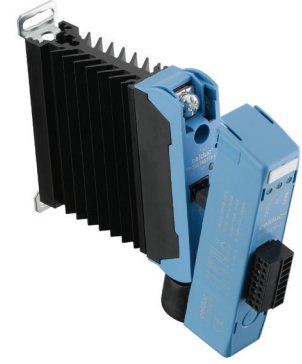
SUL



SUM

Two modules are available directly pluggable on our SSR type SU and SUL

Save room / Save costs / Add more functions



SU/SUL combined with our

ESUC

(Current monitoring module)

ADD to your SSR

Diagnostic information for up to 5 heaters in parallel with:

- Permanent load current monitoring,
- Current teaching function,
- 2 alarm thresholds (+/-16%)
- Partial load break detection,
- Open load detection,
- Detection of short-circuited SSR.

Product reference	Current range	Control
ESUC0450	2-40A	8-30VDC
ESUC0480	2-40A	24-45VDC

Why choosing this function?

- Quick fault detections (instantaneous alarm).
- Maintenance.
- To detect when a heater is broken which brings problems and is difficult to locate.
- To maintain good quality production for plastic/rubber machines (specially thermosetting machines).
- 22.5mm wide with integrated heatsink and DIN rail adaptor.

SU/SUL combined with our

ECOM0010

(Temperature controller PID, current monitor and communication interface in one unit)

ADD to your SSR

- Temperature controller with :
- PID with automatic or manual settings,
- Insulated inputs for J, K, T, E thermocouples, PT100 to come
- Auxiliary output for heating, cooling, alarm or to control a 3 phase Solid State Relay,
- Loop and heater break alarms.
- Current monitoring and alarms up to 50A.
- RS485 communication interface / Modbus RTU (others on request)
- Power supply : 24Vdc +/- 10%

Why choosing this function?

- The ECOM is the most compact solution available on the market that incorporates the latest measuring and control technology.
- This solution can answer the needs of cost reduction of electrical cabinets (smaller), PLC (less analogue and digital I/O's) and wiring (bus communication).

Power SSRs with Diagnostics

Status of the SSR and the load (resistive load) without external power supply. This range is patented. Status output can be chained. Fault condition alarms:

- Line or load open
- Short circuit output

CEL Series

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SILD845160	50A	32A	70-280VAC	600V	3-32VDC	1500A ² s	22,5 x 80 x 116
SILD865170	50A	32A	150-510VAC	1200V	3,5-32VDC	1500A ² s	
SILD867170	75A	35A	150-510VAC	1200V	3,5-32VDC	5000A ² s	



OK Series

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SOD843180	35A	50-265VAC	600V	7-30VDC	1 250A ² s	45 x 58,5 x 33,6
SOD845180	50A	50-265VAC	600V	7-30VDC	2 800A ² s	
SOD865180	50A	150-510VAC	1200V	7-30VDC	2 800A ² s	
SOD867180	75A	150-510VAC	1200V	7-30VDC	7 200A ² s	



The SOD products should be mounted on heatsinks in order to reach nominal current.

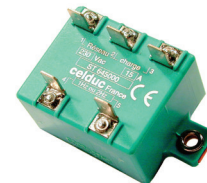
The SOD range is now available with a thermal switch for over-temperature protection. Please consult us.

Flashing Relays

The ST6 blinking relays are 12A 12-50VAC or 25A 180-280VAC solid state flashing devices with 6,3mm quick release type connectors. As soon as the unit is powered, it switches loads at a frequency of 1hz or 2hz. An external switch selects the required frequency (1 or 2hz).

ST6

Product reference	Switching current	Switching voltage	Peak voltage	Flashing frequency	Dimensions mm
ST600700	12A	12-50VAC	100V	1/2Hz	67 x 38 x 37,5
ST645000	10A	180-280VAC	600V	1/2Hz	
ST647000	25A	180-280VAC	600V	1/2Hz	



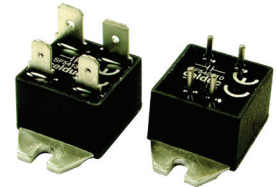
These products should be mounted on heatsinks in order to reach nominal current.

Solid State Relays with "FASTON" terminals are appropriate mainly for the food industry and for switching current < 20A. celduc® relays offers a wide range of "FASTON" solutions.

SF

Miniature relays available with "FASTON" or PCB terminals.

Product reference	Thyristor rating	Switching voltage	Control voltage	Specifications	Dimensions mm
SF541310	10A	12-280VAC	4-30VDC	Zero-cross, "FASTON" terminals	21 x 35,5 x 15
SF542310	10A	12-280VAC	4-30VDC	Zero-cross, PCB terminals	
SF546310	20A	12-280VAC	4-30VDC	Zero-cross, "FASTON" terminals	



These products should be mounted on heatsinks in order to reach nominal current.

SCF

To control resistive loads. "FASTON" terminals.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	LED	I ² t	Protec.	Dimensions mm
SCF42160	25A	12-280VAC	600V	4-30VDC	yes	312A ² s	-	44,5 x 58 x 33
SCF42324	25A	12-280VAC	600V	12-30VDC	no	312A ² s	VDR	
SCF62160	25A	24-600VAC	1200V	5-30VDC	yes	265A ² s	-	



Other references (corresponding to the SC9 range) are available : please contact us.
 These products should be mounted on heatsinks in order to reach nominal current.
 E option "large Entraxe" and L option "Faston" 4,8mm on request.

SCFL

- EMC optimized (low electromagnetic emission – low RFI)

These relays are designed for use in applications where low electromagnetic emission is essential: household and electrical appliances, information technology and medical equipments. In compliance with EN 50081-1 Generic Emission Standards for Residential and meets CISPR 22 requirements.

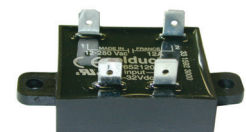
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Dimensions mm
SCFL42100	25A	12-280VAC	600V	4-30VDC	312A ² s	44,5 x 58,2 x 32
SCFL62100	25A	24-440VAC	1200V	5-30VDC	312A ² s	



These products should be mounted on heatsinks in order to reach nominal current.

SP7/SP8

This new range extends the products available with FASTON terminals. In a full plastic case, these relays can nevertheless switch up to 12 A AC51. These relays are appropriate for any type of loads (such as heating or single-phase random motor) thanks to high immunity components and an integrated overvoltage protection combined with 800 Upeak power components. This range is well adapted to the components and an integrated overvoltage protection combined with 800 Upeak power components. This range is well adapted to the food industry.



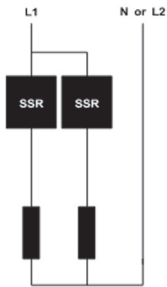
Product reference	Thyristor rating	Switching current AC-51	Switching current AC-51	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SP752120	25A	12A	12-280VAC	800V	3-32VDC	340A ² s	Random	38 x 66,8 x 22
SP852120	25A	12A	12-280VAC	800V	4-32VDC	340A ² s	Zero-cross	

These products should be mounted on heatsinks in order to reach nominal current.

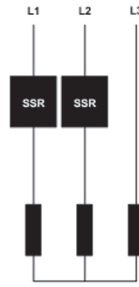
FASTON Terminals *for a quick connection!*

Our two-phase range provides two solid state relays in a compact standard 45 mm enclosure. They are perfectly adapted to three phase applications with breaking of two phases only.

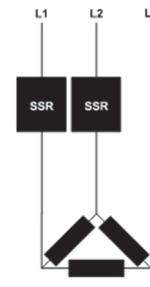
wiring examples



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)

SCB5 / SOB5

We offer various kinds of two-phase SSRs with Faston terminals.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm	Fig n°
SCB564310	2x40A	24-510VAC	1200V	5-30VDC	610A ² s	zero-cross / 2 controls	44,8 x 58,5 x 27	1
SOB542460	2x25A	12-280VAC	600V	3-32VDC	265A ² s	zero-cross / 2 controls	45 x 58,5 x 27	2
SOB562460	2x25A	24-600VAC	1200V	3,5-32VDC	265A ² s	zero-cross / 2 controls		2
SOB544330	2x40A	12-275VAC	600V	8-30VDC	882A ² s	zero-cross / 2 controls	45 x 58,5 x 27	3
SOB564330	2x40A	24-510VAC	1200V	8-30VDC	882A ² s	zero-cross / 2 controls		3

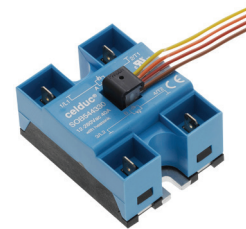
These products should be mounted on heatsinks in order to reach nominal current.



- Power connection by FASTON terminals
- Control connection by connector.



- Power and control connections by FASTON terminals

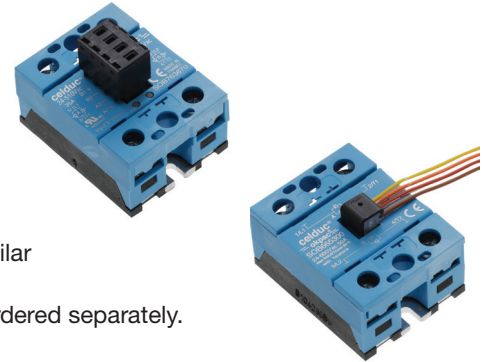


- Double input with connector CE100F ITWPANCON type or similar.
- Power connection by FASTON 6,3mm terminals with IP20 protection.

Two-phase Solid State Relays

SOB

Two-phase relays in okpac® IP20 housing.
Removable connector for control allowing many wiring possibilities eg. springs, screw and so on (please consult us).



SOB6 : zero-cross - double input with connector CE100F ITWPANCON type or similar

SOB7 : random

SOB8 : zero-cross – designed for most types of loads

• Connectors to be ordered separately.

SOB9 : zero-cross – resistive loads AC-51

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SOB665300	2x50A	24-600VAC	1200V	10-30VDC	1680A ² s	2 controls	45 x 58,5 x 27
SOB763670	2x35A	24-510VAC	1200V	8-30VDC	1250A ² s	2 controls	
SOB765670	2x50A	24-510VAC	1200V	8-30VDC	2500A ² s	2 controls	
SOB767670	2x75A	24-510VAC	1200V	8-30VDC	7200A ² s	2 controls	
SOB863860	2x35A	24-600VAC	1200V	17-30VAC/DC	882A ² s	2 controls	
SOB865660	2x50A	24-600VAC	1200V	8-30VDC	2500A ² s	2 controls	
SOB867640	2x75A	24-510VAC	1200V	8-30VDC	7200A ² s	2 controls / transil	
SOB942360	2x25A	24-280VAC	600V	10-30VDC	600A ² s	1 control	
SOB942660	2x25A	24-280VAC	600V	10-30VDC	600A ² s	2 controls	
SOB943360	2x35A	24-280VAC	600V	10-30VDC	1 250A ² s	1 control	
SOB945360	2x50A	24-280VAC	600V	10-30VDC	2 800A ² s	1 control	
SOB963660	2x35A	24-600VAC	1200V	10-30VDC	1250A ² s	2 controls	
SOB965160	2x50A	24-600VAC	1200V	6-16VDC	1 680A ² s	1 control	
SOB965660	2x50A	24-600VAC	1200V	10-30VDC	2500A ² s	2 controls	
SOB967660	2x75A	24-600VAC	1200V	10-30VDC	7200A ² s	2 controls	

On request : 1600V peak version, 75A version, overvoltage protection option available.

For SOB6 range : other rating on request, TVS (Transient Voltage Suppression) protection possible.

These products should be mounted on heatsinks in order to reach nominal current.

SCB

SCB6 : zero-cross – control connections with pins

SCB8 : zero-cross – designed for most types of loads

SCB9 : zero-cross – resistive loads AC-51



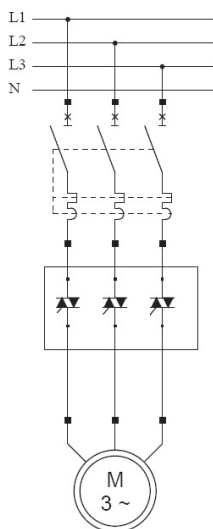
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SCB665300	2x50A	24-600VAC	1200V	8-35VDC	1500A ² s	1 control	44,8 x 58,5 x 27
SCB865300	2x50A	24-600VAC	1200V	10-30VDC	1500A ² s	1 control	
SCB865600	2x50A	24-600VAC	1200V	10-30VDC	1500A ² s	2 controls	
SCB941300	2x12A	12-280VAC	600V	8-30VDC	72A ² s	1 control	
SCB942600	2x25A	12-280VAC	600V	8-30VDC	288A ² s	2 controls	
SCB962600	2x25A	24-600VAC	1200V	8-30VDC	265A ² s	2 controls	
SCB965600	2x50A	24-600VAC	1200V	8-30VDC	1500A ² s	2 controls	

Protection cover : see accessories (1K470000).

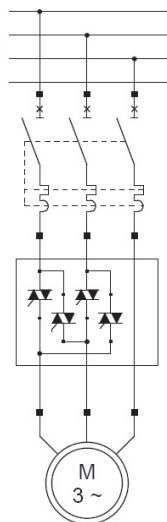
These products should be mounted on heatsinks in order to reach nominal current.

Our relays offer further ranges of solid-state relays for controlling three-phase loads. Various models are available, with ratings up to 125 amps per phase, with either AC or DC input, random or zero-cross output.

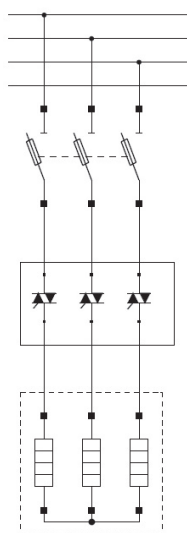
wiring examples



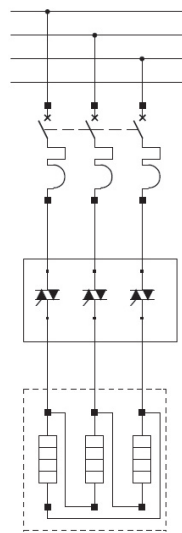
Three-phase SSR SVT8/SGT8 controlling a three-phase motor with a thermal - magnetic protection.



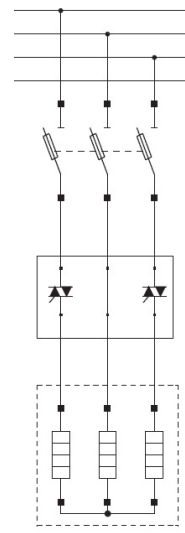
Motor reverser SV9 for three-phase asynchronous motor



Three-phase SSR SCT/SVT/SGT to control heaters connected in star with fuses protection.



Three-phase SSR SCT/SVT/SGT to control heaters connected in delta with circuit-breaker.



2 legs three-phase SSR SGB to control heaters connected in star with fuses protection.

SCT

- Three-phase solid state relays in a single phase relay enclosure (width 45mm).

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SCT32110	3x12A	12-440VAC	800V	4-30VDC	72A ² s	random	44,8 x 58 x 27
SCT62110	3x12A	12-440VAC	800V	4-30VDC	72A ² s	zero-cross	

These products also come with PCB terminals.

These product should be mounted with heatsink in order to reach nominal current.



SGB

- 2 legs three-phase solid state relays

Our SGB range is designed for controlling three phase loads connected in delta or, if balanced, connected in star without the neutral connection. Two of the three phases are switched by the SSR, the third being directly connected. This reliable solution can be easily integrated into a control system because of simplicity of wiring.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SGB963360E	3x35A	24-600VAC	1200V	10-30VDC	882A ² s	zero-cross	100 x 75,15 x 46
SGB965360E	3x50A	24-600VAC	1200V	10-30VDC	1 680A ² s		
SGB967360E	3x75A	24-600VAC	1200V	10-30VDC	7 250A ² s		

These product should be mounted with heatsink in order to reach nominal current.



Three-phase

SGT7 / SVT7 – Random

SGT8 / SVT8 – Zero-cross for most types of loads

SGT9 / SVT9 – Zero-cross for resistive loads AC-51

SGT

Standard three-phase range available in 40 or 47,6mm housing.

Product reference	Thyristor rating	Switching current AC-51	Switching current AC-53	Switching voltage	Control voltage	I ² t	Protec.	Dimensions mm
SGT range with 40mm housing								
SGT867350	75A	3x75A	3x24A	24-600VAC	8-30VDC	7200A ² s	RC-VDR	100 x 73,5 x 39,5
SGT962360	25A	3x25A	-	24-600VAC	8,5-30VDC	265A ² s	-	
SGT965360	50A	3x50A	-	24-600VAC	8,5-30VDC	2800A ² s	-	
SGT965960	50A	3x50A	-	24-600VAC	90-240VAC	2800A ² s	-	
SGT967360	75A	3x75A	-	24-600VAC	8,5-30VDC	7200A ² s	-	
SGT range with 47,6mm housing and square terminals								
SGT767470E	75A	3x75A	3x24A	24-520VAC	4-32VDC	7200A ² s	VDR	100 x 75,15 x 46
SGT769390E	125A	3x125A	3x32A	24-520VAC	8,5-30VDC	22000A ² s	RC-VDR	
SGT865470E	50A	3x50A	3x12A	24-520VAC	4-32VDC	1680A ² s	VDR	
SGT962360E	25A	3x25A	-	24-600VAC	10-30VDC	882A ² s	-	
SGT965360E	50A	3x50A	-	24-600VAC	10-30VDC	2800A ² s	-	
SGT967360E	75A	3x75A	-	24-600VAC	10-30VDC	7200A ² s	-	
SGT967760E	75A	3x75A	-	24-600VAC	10-24VAC	7200A ² s	-	
SGT967960E	75A	3x75A	-	24-600VAC	90-240VAC	7200A ² s	-	
SGT968360E	95A	3x95A	-	24-600VAC	10-30VDC	16200A ² s	-	



Protection cover : see accessories (1K199000).

These products should be mounted with heatsink in order to reach nominal current.

On request : 230Vac version.

SVT

Three-phase range with IP20 protection housing to control resistive loads (AC-51) or for motor control (AC-53).

These relays have LED as well as RC and VDR network protection. Available in 40 or 47,6mm housing.

Max.wire size = 10mm² terminals, which limits the switching current to 50A (see technical data-sheet).

Product reference	Thyristor rating	Switching current AC-51	Switching current AC-53	Switching voltage	Control voltage	I ² t	Protec.	Dimensions mm
SVT range with 40mm housing								
SVT764394	50A	3x50A	3x12A	24-520VAC	8,5-30VDC	2800A ² s	RC-VDR	100 x 76 x 56,5
SVT864374	50A	3x50A	3x12A	24-520VAC	10-32VDC	2800A ² s	VDR	
SVT867394	75A	3x75A	3x24A	24-520VAC	8,5-30VDC	7200A ² s	RC-VDR	
SVT867994	75A	3x75A	3x24A	24-520VAC	90-240VAC	7200A ² s	RC-VDR	
SVT869394	125A	3x125A	3x32A	24-520VAC	8,5-30VDC	22000A ² s	RC-VDR	
SVT869994	125A	3x125A	3x32A	24-520VAC	90-240VAC	22000A ² s	RC-VDR	
SVT965360	50A	3x50A	-	24-600VAC	8,5-30VDC	2800A ² s	-	
SVT965760	50A	3x50A	-	24-600VAC	10-30VAC/DC	2800A ² s	-	
SVT967360	75A	3x75A	-	24-600VAC	8,5-30VDC	7200A ² s	-	
SVT967960	75A	3x75A	-	24-600VAC	90-240VAC	7200A ² s	-	
SVT range with 47,6mm housing								
SVT864394E	50A	3x50A	3x12A	24-520VAC	8,5-30VDC	2800A ² s	RC-VDR	100 x 76 x 56,5
SVT868394E	95A	3x95A	3x24A	24-520VAC	8,5-30VDC	16200A ² s	RC-VDR	
SVT965460E	50A	3x50A	-	24-600VAC	4-32VDC	2800A ² s	-	
SVT965960E	50A	3x50A	-	24-600VAC	90-240VAC	2800A ² s	-	
SVT967360E	75A	3x75A	-	24-600VAC	8,5-30VDC	7200A ² s	-	



These products should be mounted with heatsink in order to reach nominal current.

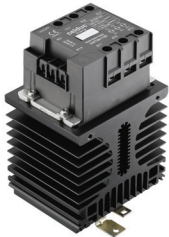
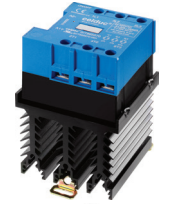
Three-phase / Motor Control

SWT / SIT

Three-phase contactors with heatsink and DIN rail mounting. Fitted with a LED indicators, and RC and VDR network protection this range is designed to control resistive loads (AC-51) or for motor control (AC-53).

- Three-phase solid state contactors

Product reference	Switching current AC-51	Switching current AC-53	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications	Dimensions mm
SIT865390	3x22A	3x12A	24-510VAC	1200V	10-30VAC/DC	2500A ² s	Zero-cross	90 x 98 x 122
SIT865570	3x22A	-	24-510VAC	1200V	10-30VDC	2500A ² s		
SIT865990	3x22A	3x12A	24-510VAC	1200V	90-240VAC	2500A ² s		
SIT867570	3x22A	-	24-510VAC	1200V	10-30VDC	7 200A ² s		
SWT860330	3x5A	3x5A	24-520VAC	1200V	10-30VAC/DC	265A ² s	Zero-cross	83 x 76 x 72
SWT861730	3x28A	3x16A	24-520VAC	1200V	10-30VAC/DC	5000A ² s		110 x 100 x 172
SWT861790	3x28A	3x16A	24-520VAC	1200V	90-240VAC	5000A ² s		110 x 145 x 172
SWT862030	3x32A	3x24A	24-520VAC	1200V	10-30VAC/DC	11000A ² s		
SWT862090	3x32A	3x24A	24-520VAC	1200V	90-240VAC	11000A ² s		
SWT865080	3x50A	-	24-520VAC	1200V	10-30VAC/DC	5000A ² s		



These products are defined with temperature rises of 50°C and permanent operation (operating cycle = 100%) of 8 hours in compliance with the European standards.

SG9, SV9 AND SW9

These relays are used to reverse the rotational direction of a motor.

The SV9 range is with IP20 housing.

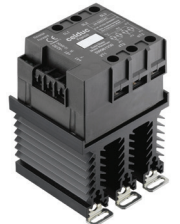
The SW9 range is ready to use with heatsink and DIN rail mounting integrated.

They are all supplied with LED indicators and protection against simultaneous controls (interlocking).

Available in 40 or 47,6mm housing.

- AC Reversing switches

Product reference	Switching current AC-53	Switching voltage	Control voltage	I ² t	Protec.	Specifications	Dimensions mm
SG969100	3x6,6A	24-520VAC	10-30VDC	612A ² s	reversing + time delay	3 phase switching	100 x 73,5 x 39,5
SG969300E	3x8,5A	24-550VAC	12-30VDC	1500A ² s		2 phase switching	
SG969500E	3x16A	24-550VAC	12-30VDC	5000A ² s		2 phase switching	
SV969300E	3x8,5A	24-520VAC	12-30VDC	1500A ² s		2 phase switching	100 x 76 x 56,5
SV969500E	3x16A	24-550VAC	12-30VDC	5000A ² s		2 phase switching	100 x 76 x 56,5
SW960330	3x4,5A	24-550VAC	12-30VDC	1500A ² s		2 phase switching	100 x 76 x 72
SW961230	3x8,5A	24-520VAC	12-30VDC	1500A ² s	2 phase switching	83 x 90 x 155	



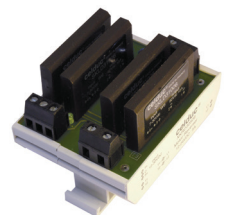
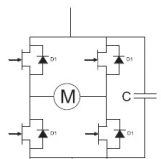
XKRD AND SGRD

Our SGRD reversing unit for DC motor control offers all the necessary built-in control protections including protection against wiring errors or short circuit on the input. This version includes the interlocking function to avoid control of the two directions at the same time.

The ready to use module XKRD30506 for Din-Rail mounting comprises 4 Solid State relays wired as a reverser to be used to change the direction of a DC motor (100W @ 24Vdc).

- DC Reversing switches

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protec.	Dimensions mm
SGRD01006	10A	8-36VDC	60V	8-36VDC	Voltage and current	100 x 73,5 x 50,9
XKRD30506	5A	7-36VDC	60V	7-30VDC	VDR	58,2 x 76,4 x 53



SOLID STATE RELAYS

Motor Control

SYMC *To limit peak energy demand!*

This new AC single phase softstarter is engineered to the highest quality and is designed especially for single phase motors 32A/230Vac with starting capacitor (e.g. compressor for heat pumps or refrigerating chambers). This device is designed in compliance with EN60947-4-2.

- Starting current limited to 45A (NFC15-100)
- Over-load motor protection
- Diagnostic information
- Starting and running capacitor: External and not supplied

Product reference	Pmax motors 230VAC	Max. Current	Specifications	Dimensions mm
SYMC0001	5500W	32A	Internal ByPass Ready to use	100 x 76 x 58,5



SO4 *Single phase softstarters*

This range of single-phase softstarters is designed for universal motors or lamps.

Product reference	Switching voltage	Switching current	Control voltage	Dimensions mm	Fig n°
SO400200	200-260VAC	35A	Soft-starter	45 x 58,2 x 27	1
SO400300	200-260VAC	40A*			2



with integrated heatsink

*Value given at 25°C ambient

For the softstart of other loads (transformers, single-phase motors, ...) please consult us.

SMCV AND SMCW *Three-phase AC softstarters*

Motor control:

- Efficient reduction of torque and starting current.

Incandescent or infrared lamp starting :

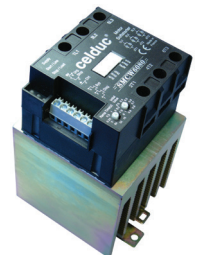
- Reduction of inrush current
- Increase in life expectancy.

Transformer control (loaded):

- Elimination of saturation current
- Improved control and protection.

Whatever your application:

- Diagnostic monitoring of line, load & supply as well as normal operational status
- Better balance of and less interference on starters (full control of the 3 phases!)
- Simple use easing implementation and adjustments
- As compact as an electronic contactor.

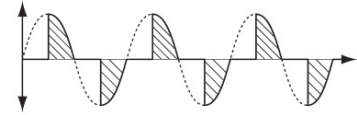


Product reference	Pmax motor 400VAC		Pmax motor 230VAC		Max. Current AC53a		Specifications	Dimensions mm
	Y*	D*	Y*	D*	Max. EN60947-4-2			
SMCV6080	7,5kW	13kW	4,3kW	7,5kW	16A	11,5A	Heatsink not provided	100 x 76 x 58,5
SMCV6110	11kW	19kW	6,4kW	11kW	25A	15,5A		
SMCV6150	15kW	26kW	8,6kW	15kW	30A	22,5A		
SMCW6020	2,5kW	4,3kW	1,4kW	2,5kW	5,6A	4A	Supplied with built-in heatsink	83 x 110 x 74
SMCW6080	7,5kW	13kW	4,3kW	7,5kW	16A	11,5A		83 x 110 x 155
SMCW6110	11kW	19kW	6,4kW	11kW	25A	15,5A		110 x 110 x 180
SMCW6150	15kW	26kW	8,6kW	15kW	30A	22,5A		110 x 141 x 180
SMCW6151	15kW	26kW	8,6kW	15kW	30A (AC53b)	22,5A (AC53b)		Ext. Bypass required

Common characteristics	Range of voltage and network frequency	Control	Diagnostic output	Operating temperature	Insulation
Values given at 40°C ambient	200-480VAC 40-65Hz	10-24VDC or contact	0-24V 1A AC/DC	-40°C +100°C	4kV

*The star assembly (Y) corresponds to in-line wired starter. The delta assembly (D) corresponds to the starter wired in the triangle coupling of the motor. Each channel is wired in series with a winding of the motor.

Single Phase Angle Controllers



Slx4 / S04

This range comes in celpac® housing (ready to use) and okpac® housing (to be mounted on a heatsink). This range is designed for resistive loads.

SO465620 is a SSR based phase angle controller with PWM control input (linear power law response).

Product reference	Switching current at 25°C	Switching voltage	Control voltage	External power supply required ?	Dimensions mm
SIL465000	22A	160-450VAC	0-10V	no	22,5x80x116
SIM465000	32A	160-450VAC	0-10V	no	45 x 80 x 116

Product reference	Thyristor rating	Switching voltage	Control voltage	External power supply required ?	Dimensions mm
SO445020	50A	100-280VAC	0-10V	yes	45 x 58,2 x 27
SO465020	50A	200-480VAC	0-10V	yes	
SO468020	95A	200-480VAC	0-10V	yes	
SO469020	125A	200-480VAC	0-10V	yes	
SO468120	95A	200-480VAC	0-5V	yes	
SO467501	75A	160-450VAC	1-5V	no	
SO445320	50A	100-280VAC	Potentiometer	yes	
SO465320	50A	200-480VAC	Potentiometer	yes	
SO445420	50A	90-265VAC	4-20mA	no	
SO465420	50A	200-480VAC	4-20mA	no	
SO467420	75A	200-480VAC	4-20mA	no	
SO468420	95A	200-480VAC	4-20mA	no	
SO469420	125A	200-480VAC	4-20mA	no	
SO465620	50A	200-480VAC	PWM	yes	



SO4 housing with different control connections.

Other functions possible : phase angle control, full wave pulse control, fast burst control Soft-Starters, timers and flashing relay, ... - please consult us.

SG4

This relay is designed to proportionally vary the switching point on a sinusoidal mains supply via an isolated analogue control signal thereby varying the RMS voltage at the terminals of the load. Applications: light dimmer, heating regulation, single phase variable speed control (vibrating feeders,etc).

Model with LED and RC and VDR network.

Product reference	Thyristor rating	Switching voltage	Control voltage	I ² t	Dimensions mm
SG441020	10A	115-265VAC	0-10VDC	72A ² s	100 x 73,5 x 39,5
SG444020	40A	115-265VAC	0-10VDC	1500A ² s	
SG464020	40A	200-460VAC	0-10VDC	1500A ² s	
SG468020	70A	200-460VAC	0-10VDC	5000A ² s	
SG469020	110A	200-460VAC	0-10VDC	20000A ² s	
SG444120	40A	115-265VAC	Potentiometer	1500A ² s	
SG464120	40A	200-460VAC	Potentiometer	1500A ² s	
SG469120	110A	200-460VAC	Potentiometer	20000A ² s	
SG444420	40A	115-265VAC	4-20mA	1500A ² s	
SG464420	40A	200-460VAC	4-20mA	1500A ² s	
SG468420	70A	200-460VAC	4-20mA	5000A ² s	
SG469420	110A	200-460VAC	4-20mA	20000A ² s	



No external power supply required.

These products should be mounted on heatsink in order to reach nominal current.

SOLID STATE RELAYS

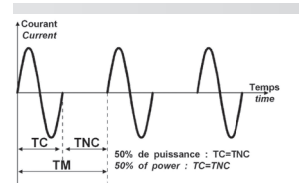
Analogue Control Relays

S03 Burst control mode (μP based unit)

This control mode is particularly suitable for resistive loads having a low thermal inertia like short wave Infra Red sources (IR lamps). It allows a very fine control of power according to the analogue input signal while reducing noise emission level (EMC conducted emissions). This control mode consists in switching streams of full sine waves equally distributed along a fixed modulation period (TM) function of the analogue input signal. The μP constantly computes the number of full sine waves to be switched along the TM period.

Product reference	Thyristor rating	Switching voltage	Control voltage	Dimensions mm
SO367001	75A	400VAC	0-10VDC	45 x 58,2 x 27

Other power rating and / or control on request.



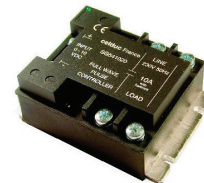
No external power supply required.

SG5 Full wave pulse controllers

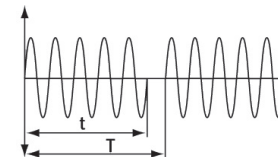
This relay has an analog input isolated from the mains to proportionally vary the cyclic operating ratio of a load (t/T). Control and mains are synchronous and output only has full periods. Models supplied with LED indicators together with RC & VDR network protection.

Product reference	Switching current	Switching voltage	Control voltage	I^2t	Dimensions mm
SG541020	10A	230VAC	0-10VDC	72A ² s	100 x 73,5 x 39,5
SG544020	40A	230VAC	0-10VDC	610A ² s	
SG564020	40A	400VAC	0-10VDC	610A ² s	
SG541120	10A	230VAC	Potentiometer	72A ² s	
SG564120	40A	400VAC	Potentiometer	610A ² s	
SG541420	10A	230VAC	4-20mA	72A ² s	
SG564420	40A	400VAC	4-20mA	610A ² s	

For higher power ratings and three phase applications, ask for our application notes. These products should be mounted on heatsink in order to reach nominal current.



No external power supply required.



SWG5 Single phase power controllers

This range is based on the SG5 controllers. The SWG5 are fitted with heatsinks and DIN rail adapters. Application : single phase heaters.

Product reference	Switching power	Switching voltage	Control voltage	Dimensions mm
SWG50210	2kW	230VAC	0-10VDC	100 x 74 x 56
SWG50810	8kW	230VAC	0-10VDC	100 x 110 x 96

Control voltage 0-5V or potentiometer on request.

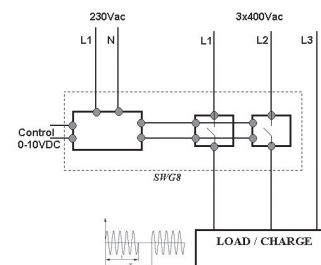


No external power supply required.

SWG8 Three-phase power controllers

The SWG8 controllers consist of a control unit (0 to 10 VDC input) and a power unit adapted to three phase load. The control unit has got an analogue input, isolated from the mains, that can proportionally alter the power to the load. Application : three-phase heaters

Product reference	Switching power	Switching voltage	Control voltage	Dimensions
SWG81510	20kW	400VAC	0-10VDC	(see technical data-sheet)
SWG82710	27kW			
SWG83610	36kW			
SWG84210	42kW			
SWG84810	48kW			
SWG86010	60kW			
SWG88010	80kW			



Three-phase Proportional Controllers

SVTA

Allows control of any type of loads (except capacitive)
3 or 4 wires (neutral), delta or star wiring:

- Resistive loads for temperature control (infrared lamps, kilns, resistors, ...)
- Resistive loads for light control (bulbs, halogen, UV, scenes, ...)
- Loads including a transformer, a coil or a rectifier for voltage control (power supplies, high voltage generators, ...)
- Motors for voltage speed control (Possibility to reduce the speed depending on the type of motor and machine, motor fans, ...)

- Six thyristor proportional phase angle controller (Three phase positive and negative cycle control): Balanced currents, less harmonics, ...
- Softstart and softstop ramps (increases the lifetime expectancy of the assembly)
- Diagnostic functions
- Compact housing.

Product reference	Max. current AC-51	Max. current AC-53a	Control	Dimensions mm
SVTA4650	50A	16A	0-10V	100x76x58,5
SVTA4651	50A	16A	Potentiometer	
SVTA4684	95A (*)	25A	4-20mA	
SVTA4690	125A (*)	30A	0-10V	
SVTA4691	125A (*)	30A	Potentiometer	
SVTA4694	125A (*)	30A	4-20mA	

* Max. wire size = 10mm² : double wires or use special adaptors for current > 50A.
Please refer to the mounting instructions.



No external power supply required.

SGTA

Our SGTA range is a complementary range to the three-phase proportional controllers SVTA.

- Small housing
- Wide mains frequency variation (40-65Hz)
- Built-in overvoltage protection
- High I²t power elements
- Fully optoisolated full cycle three phase phase angle controller (balanced currents, less harmonics, ...)
- The minimum voltage applied on the load is the lowest in the market (3% RMS on the nominal voltage against 40% RMS offered by our competitors !)
- Lots of possible options on request
- Manufactured in compliance with major international standards EMC, LVD, UL, VDE.

Typical applications :

Resistive loads for temperature control (infrared lamps, kilns, resistors, ...)
Resistive loads for light control (bulbs, halogen, scenes, ...)

Product reference	Max. current AC-51	Switching voltage	Control	Dimensions mm
SGTA4650	50A	300-510VAC	0-10V	75,15 x 100 x46
SGTA4651	50A	300-510VAC	0-5V	
SGTA4653	50A	300-510VAC	Potentiometer	
SGTA4654	50A	300-510VAC	4-20mA	

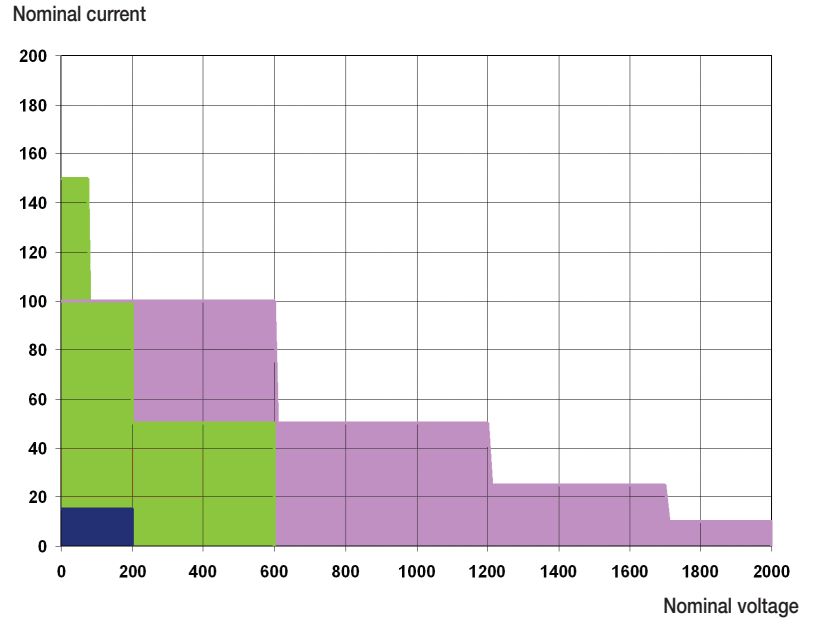
Other rating on request.



8-32V external power supply required.

These relays are designed to switch DC loads e.g solenoid valves, brakes, indicators, motors (possibly on AC mains under specific conditions). All possible technologies can be available :

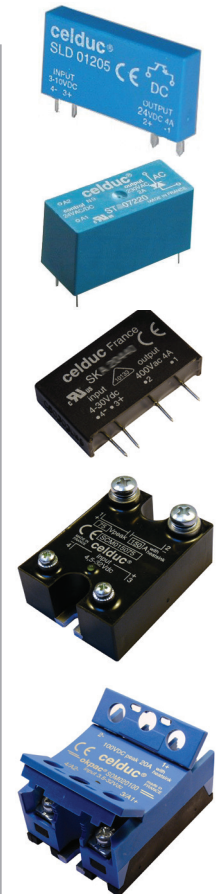
- **MOSFET**
for applications where overcurrent capability and low dissipated power are needed.
- **Bipolaire**
for applications where low control current is needed.
- **IGBT**
for high voltage applications (> 600 VDC)



For each application the corresponding technology!
Standard range up to 1200VDC, 150A.

MOSFET TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Integrated protection	Dimensions mm
SLD01210	2,5A	0-60VDC	60V	3-10VDC	Transil	28 x 5 x 15
SLD03210	2,5A	0-60VDC	60V	18-32VDC		
SLD01205	4A	0-32VDC	60V	3-10VDC		
SLD02205	4A	0-32VDC	60V	7-20VDC		
SLD03205	4A	0-32VDC	60V	18-32VDC		
STD03205	2,5A	0-30VDC	60V	12-30VDC	Transil	29 x 12,7 x 15,7
STD03505	5A	0-30VDC	60V	12-30VDC		
STD03510	5A	0-68VDC	60V	12-30VDC		
STD07205	2,5A	0-30VDC	60V	12-30VDC 15-30VAC		29 x 12,7 x 25,4
SPD03505	5A	0-30VDC	60V	12-30VDC		
SPD07505	5A	0-30VDC	60V	12-30VDC 15-30VAC		
SKLD11006	12A	7-36VDC	60V	3-10VDC	Transil	43,6 x 6,3 x 24,5
SKLD31006	12A	7-36VDC	60V	7-30VDC		
SCM030200	30A	0-200VDC	200V	4,5-32VDC	-	44,5 x 58,2 x 27
SCM040600	40A	0-600VDC	600V	4,5-32VDC		
SCM0100200	100A	0-200VDC	200V	4,5-32VDC		
SCM0150100	150A	0-100VDC	100V	4,5-32VDC		
SOM02060	20A	5-40VDC	60V	3,5-32VDC	Transil	45x58,5x30
SOM020100	20A	5-60VDC	100V	3,5-32VDC		
SOM020200	20A	5-110VDC	200V	3,5-32VDC		
SOM04060	40A	5-40VDC	50V	3,5-32VDC		
SOM040100	40A	5-60VDC	100V	3,5-32VDC		
SOM040200	40A	5-110VDC	200V	3,5-32VDC		
SOM06075	60A	5-40VDC	75V	3,5-32VDC		
ESO01000	0-80A	0-130VDC	200V	Protection against line inductance (C1, D2) : option for SOM range		



SOLID STATE RELAYS

DC Solid State Relays

BIPOLAR TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Integrated protection	Dimensions mm
SKD10306	3A	2-60VDC	60V	3-30VDC	Diode	43,2 x 10,2 x 25,4
XKD10120	1A	2-220VDC	220V	5-30VDC	Diode	12,2 x 76,4 x 53
XKD10306	3A	2-60VDC	60V	5-30VDC		
XKD11306D	3A	2-60VDC	60V	3-30VDC		
XKD70306	3A	2-60VDC	60V	10-30VAC/DC		
XKD90306	3A	2-60VDC	60V	90-240VAC/DC		
SCC10506	5A	2-60VDC	60V	3-16VDC	Diode	44,5 x 58,2 x 27
SCC20506	5A	2-60VDC	60V	10-32VDC		
SCC11506	15A	2-60VDC	60V	3-16VDC		
SCC21506	15A	2-60VDC	60V	10-32VDC		



IGBT TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Integrated protection	Dimensions mm
SCI0251700	25A	0-1700VDC	1700V	4,5-32VDC	Reverse diode	44,5 x 58,2 x 27
SCI0501200	50A	0-1200VDC	1200V	4,5-32VDC	Reverse diode	
SCI0100600	100A	0-600VDC	600V	4,5-32VDC	Reverse diode	
SDI0501700	50A	24-940VDC	1700V	24-110VDC	<ul style="list-style-type: none"> > over-voltage protection > load short circuit protection > over-load temperature protection 	157 x 68 x 83



Products without integrated over-voltage protection (transil or VDR) or having only a Freewheel diode, must be fitted with an external overvoltage protection. The maximum operating voltage is then often reduced to the half of the specified maximum operating voltage.

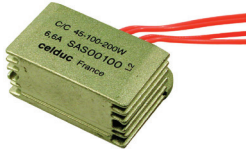


On request : « ready to use » products i.e. products including integrated voltage protection, proportional controllers, DC motor reversers and more.

Please contact us!

Applications

- DC power supplies** (converters like choppers, inverters, ...)
- Signal switching** (testing equipment, ...)
- Electro-magnets** (induction motor braking, ...)
- Heaters** (air conditioning in trains, tramways, ...)
- Batteries** (ships, solar systems, ...)
- DC Motors** (travelling cranes, cranes, vehicles, ...)



Shunting relays: SAS Relays

Airport beacon relay.
If a lamp fails, the relays short circuit this lamp.
Different configurations available.



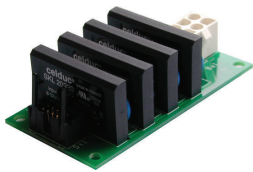
Softlife range: SVX963350

Get rid of your heatsinks!

Relays combining the assets of dual technology : solid state and electromechanical.
These relays are designed to switch current up to 30A without the need of heatsink.
These relays have LED indicators, RC and VDR protection.

SPECIAL CUSTOMER PRODUCTS

celduc[®] relais is a specialist in adapting designs to specific customer applications. In addition to the very large range of solid state relays, celduc[®] design specific products according to the customers specifications or adapt products to the customers needs if prices and volumes can justify such developments.



4 SKL
SSRs on PCB



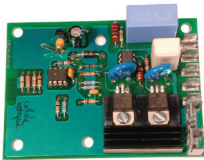
This device using SSRs controls AC motors in hazardous area.

Control by pushbutton with embedded magnet actuating Reed switches.



Solid state contactor for 3 phase motor.

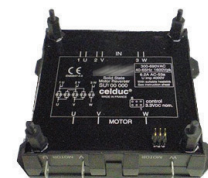
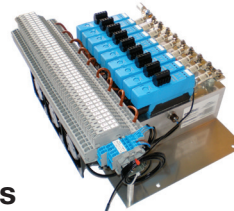
Dry contact control
Spring terminals.



PCB for single-phase motor softstart

Special development composed of SU SSRs and ESUC modules

to control 9 heating elements with partial load break detection. This system includes all protections.



Motor reverser with 2 electronic cards
includes 5 SSRs.

Applications Notes

Application notes on request: a certain number of application notes are available.

Principle of solid state relays.
Life expectancy of solid state relays: TMS² technology.
Short circuit protection of solid state relays :

Solid state relays on resistive loads (heating application).
Three phase motor.
Transformer control.
Incandescent lamp control.
Discharge lamp control / Application of three phase diagnostic.
Our products in equipment for the food industry.
Our products in equipment for the packing industry.
Our products in equipment for the textile industry.

Solid state relays in emergency power supplies (UPS).
Solid state relays on capacitive loads :

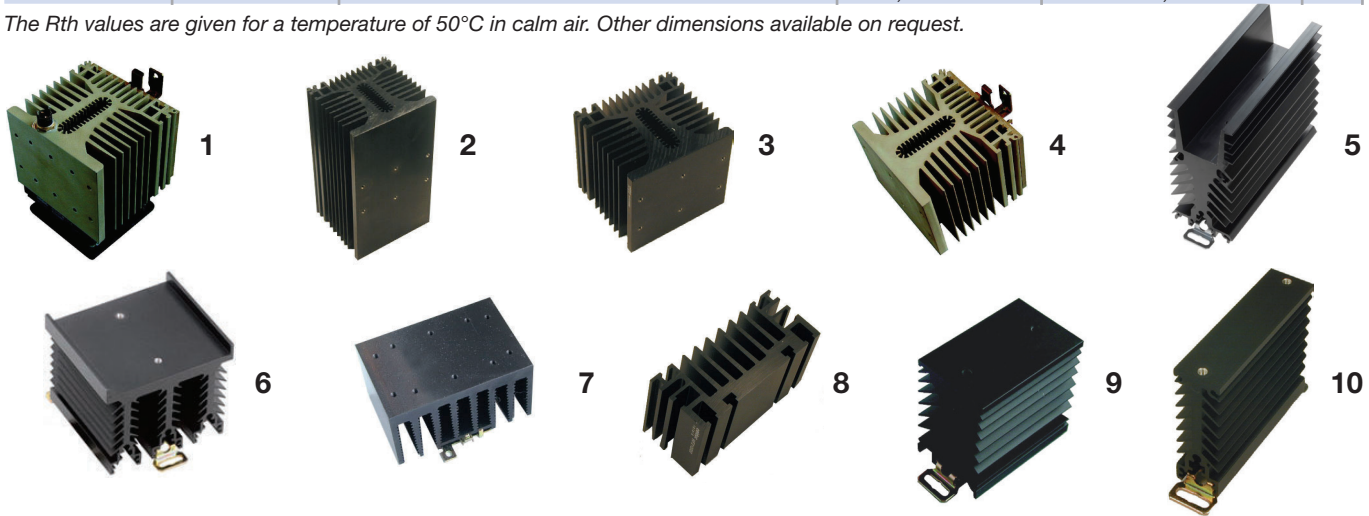
Application of SKL et SKH relays.
Softstart and reversing relays.
Softstart relays in transformer control.
Softstart relays in incandescent and infrared lamp control.
Our products in equipment for the electronic industry.
Our products in equipment for the train industry.
Our products in equipment for the renewable energy.

SOLID STATE RELAYS

Heatsinks & Accessories

Product reference	Thermal characteristics	Specifications	Dimensions mm	Relay type	Fig n°
WF031100	0,3K/W	ventilated for DIN rail or screw - fan supply 230Vac	110 x 120 x 145	SO, SC, SG, SGT, SVT	1
WF031200	0,3K/W	ventilated for DIN rail or screw - fan supply 24Vdc	110 x 120 x 145	SO, SC, SG, SGT, SVT	1
WF050000	0,55K/W	DIN rail adaptor as option	110 x 100 x 200	SO, SC, SG, SGT, SVT	2
WF070000	0,75K/W	DIN rail adaptor as option	110 x 100 x 100	SO, SC, SG, SGT, SVT	3
WF115100	0,9K/W	for DIN rail or screw	110 x 100 x 90	SO, SC, SG, SGT, SVT	4
WF112100	1K/W	for DIN rail or screw	49,5 x 117,5 x 120	SA, SU	5
WF108110	1,1K/W	for DIN rail or screw	89,8 x 81 x 98,02	SO, SC	6
WF121000	1,2K/W	for DIN rail or screw	100 x 40 x 100	SO, SC, SG, SGT, SVT	7
WF210000	2,1K/W	DIN rail adaptor as option	96 x 41 x 55	SO, SC	8
WF151200	2,2K/W	for DIN rail or screw	45 x 73 x 80	SO, SC, SA, SU	9
WF311100	3K/W	for DIN rail or screw	22,5 x 73 x 80	SA, SU	10

The Rth values are given for a temperature of 50°C in calm air. Other dimensions available on request.



ACCESSORIES



PROTECTION COVERS / FLAPS

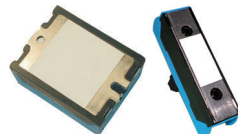
1K199000	Protection cover for SGT/SG9
1K460000	Protection cover for SC range (except SCB and 125A rating SC)
1K470000	Protection cover for all SC/SCB range
1K522000	Protection cover for SA-SAL
1K523000	Removable protection flaps for SU-SUL

MOUNTING KITS

1LK00100	mounting SC-SO-SF on heatsink or SC-SO on 1LD12020
1LK00200	mounting SG-SVT-SV9 on heatsink or 1LD00500
1LK00300	mounting heatsinks on 1LD00400 or SC-SO on 1LD00000
1LK00700	special kit for high current (okpac range)

THERMAL SEALS RELAY/HEATSINK

5TH15000	thermal grease for 30 relays SG/SVT ou 60 relays SC/SO
5TH21000	thermal precut film for SC/SO
5TH23000	adhesive thermal pads for SC/SO
5TH24000	adhesive thermal pads for SA/SU
1LWP2300	Assembling costs 5TH23000 on SC/SO + 5TH23000
1LWP2400	Assembling costs 5TH24000 on SA/SU + 5TH24000



MARKING LABELS

1MZ09000	marking labels to be mounted on protection flaps or covers for SA SU
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DIN RAIL ADAPTORS

1LD00400	DIN rail adaptor for WF21/07/05
1LD00500	DIN rail adaptor for SG/SVT/SV969300
1LD12020	DIN rail adaptor for SC/SV8/SO vertical mounting



MOUNTING + HEATSINK + DIN ADAPTOR OPTION

1LWD1202	mounting of SC/SV/SO sur 1LD12020 + 1LD12020
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MOUNTING OPTION (screw kit included)

ONLY IF QUANTITY > 10

1LW00000	mounting of relays on heatsink
1LWD0000	mounting of heatsink on DIN rail adaptor

SOLID STATE RELAYS

Interface Relays

100% Compatible with Electromechanical Relays

SLIM Miniature

The SLA / SLD solid state relays are 100% compatible with 5 mm pitch electromechanical relays. They can be soldered direct to PCBs or plugged into all din rail mountable bases. Every type of loads can be switched and those relays can withstand high current peaks that can be produced by loads such as electro valves, engines, coils, indicator, etc. The switching power is 2A/280VAC for SLA and 2.5A/60VDC or 4A/24VDC for SLD relays.

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Dimensions L x l x h in mm
AC	SLA01220	2A	12-280VAC	3-10VDC	RC	28x5x15
	SLA02220	2A	12-280VAC	7-20VDC		
	SLA03220	2A	12-280VAC	18-32VDC		
DC	SLD01205	4A	0-32VDC	3-10VDC	Transil	
	SLD01210	2,5A	0-60VDC	3-10VDC		
	SLD02205	4A	0-32VDC	7-20VDC		
	SLD03205	4A	0-32VDC	18-32VDC		
	SLD03210	2,5A	0-60VDC	18-32VDC		



Other miniature solid state relay options are available on request.

ACCESSORY

Product reference	Specifications
ESD01000	SLA/SLD base for PCB for one relay



SP-ST Standard

AC and DC from 1 to 5A, protection by VDR or built in Transil, available in 15,7 mm (ST Series) and 25,4 mm (SP Series).

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Dimensions L x l x h in mm
AC	SPA01420	4A	12-275VAC	4-16VDC	VDR	29x12,7x25,4
	SPA07420	4A	12-275VAC	12-30VDC / 15-30VAC		
	STA07220	2A	12-275VAC	12-30VDC / 15-30VAC		29x12,7x15,7
DC	SPD03505	5A	0-30VDC	12-30VDC	Transil	29x12,7x25,4
	SPD07505	5A	0-30VDC	12-30VDC / 15-30VAC		
	STD03205	2,5A	0-30VDC	12-30VDC		29x12,7x15,7
	STD03505	5A	0-30VDC	12-30VDC		
	STD03510	5A	0-68VDC	12-30VDC		
STD07205	2,5A	0-30VDC	12-30VDC / 15-30VAC			



Our STD and SPD modules can be modified, on request, with an output voltage of 100VDC. Other control voltages are available on request.

ACCESSORY

Product reference	Specifications
ESD05000	SP/ST base for DIN rail for one relay



XK

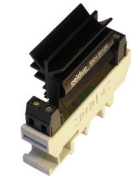
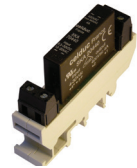
Interface relays to control loads such as resistors, indicators, solenoids, transformers, motors, power contactor coils. These DIN-rail mounted products are available with AC and DC output options. They can also be supplied as dedicated motor control variants such as 2 and 3 phase switching and motor rotation reversal. All are fitted with LED indicators.

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Specifications	Dimensions mm
AC	XKA20420	4A	12-275VAC	6-30VDC	VDR	1 pole AC zero-cross output	12,2x76,4x53
	XKA20420D	4A	12-275VAC	6-30VDC	VDR		17,2x76,4x53
	XKA20420R	4A	12-275VAC	6-30VDC	VDR		
	XKA70420	4A	12-275VAC	15-30VAC/DC	VDR		
	XKA70440	4A	12-440VAC	15-30VAC/DC	VDR	25x76,4x65	
	XKA90440	4A	12-440VAC	150-240VAC/DC	VDR		
	XKH20120	10A	12-280VAC	10-32VDC		1 pole AC random output	12,2x76,4x53
XKA20421	4A	12-275VAC	5-30VDC	VDR			
DC	XKD10120	3A	2-220VDC	5-30VDC	diode	1 pole DC output	12,2x76,4x53
	XKD10306	3A	2-60VDC	5-30VDC	diode		12,2x76,4x53
	XKD11306D	3A	2-60VDC	5-30VDC	diode		
	XKD70306	3A	2-60VDC	10-30VAC/DC	diode	DC output - MOSFET technology	12,2x76,4x53
	XKD90306	3A	2-60VDC	90-240VAC	diode		
	XKLD31006	10A	12-36VDC	10-30VDC	diode		

Suffix D : removable terminals.

Suffix R : removable spring terminals.

XKH - with integrated heatsink



XKLD0020 has all protections included and is designed for inductive loads with high switching frequency

- Diagnostic status output (potential free)
- Control visualization by green LED
- Output DC visualization by red LED
- Built-in clamping voltage
- Built-in free wheel diode
- This product also includes a fuse on board to protect the installation

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Specifications	Dimensions mm
DC	XKLD0020	4A	1-32VDC	18-32VDC	VDR+diode	1 pole DC output	36x78x61



Motor control

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Specifications	Dimensions mm
	XKM22440	4AC-51/2,5AC-53	24-460VAC	15-40VDC	VDR	2 poles motor switching control	25,2x76,4x53
	XKM23440	4AC-51/2,5AC-53	24-460VAC	12-35VDC	VDR	3 poles motor switching control	47,5x76,4x53
	XKR24440	4AC-51/2,5AC-53	24-460VAC	15-40VDC	VDR	AC motor change-over control	58,2x76,4x53
	XKRD30506	5A-DC	12-24VDC	7-30VDC	diode	DC motor change-over control	

The ready to use module XKRD30506 for Din-Rail mounting comprises 4 Solid State relays wired as a reverser to be used to change the direction of a DC motor (100W @ 24Vdc).



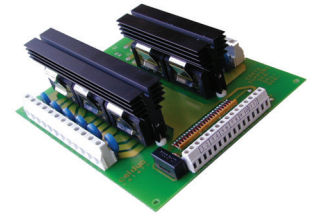
SOLID STATE RELAYS

PCB Relays

SKA / SKB

The SK range for PCB mounting is available in different models:
SKA/SKB (AC output) or SKD/SKLD (DC output – see pages 25-26)

- SKA up to 5A 230 or 400VAC with built-in voltage protection, ideal for solenoid or motor control.
- SKB up to 5A 230 or 400VAC for resistive loads.



Product reference	Current	Switching voltage	Control voltage	LED	I ² t	Protec.	Specifications	Dimensions mm
SK541101	2,5A	24-280VAC	3-30VDC	no	50A ² s	-	AC zero-cross output / normally closed	40x11x21
SKA10420	5A	12-275VAC	2,5-10VDC	no	50A ² s	VDR	AC zero-cross output / most types of loads	43,2x10,2x25,4
SKA20420	5A	12-275VAC	4-30VDC	no	50A ² s	VDR		
SKA10440	5A	12-460VAC	2,5-10VDC	no	50A ² s	VDR		
SKA11440	5A	12-460VAC	3-10VDC	yes	50A ² s	VDR		
SKA20440	5A	12-460VAC	4-30VDC	no	50A ² s	VDR		
SKA20460	5A	24-600VAC	5-30VDC	no	72A ² s	-		
SKA20421	5A	12-275VAC	4-30VDC	no	50A ² s	VDR	AC random output / most types of loads	
SKA20441	5A	12-460VAC	4-30VDC	no	50A ² s	VDR		
SKA21441	5A	12-460VAC	7-30VDC	yes	50A ² s	VDR		
SKB10420	5A	12-280VAC	3-10VDC	no	50A ² s	-	AC zero-cross output / resistive loads	
SKB10440	5A	24-600VAC	3,7-10VDC	no	72A ² s	-		
SKB20420	5A	12-280VAC	8-30VDC	no	50A ² s	-		



SKL

SKL for AC output with a ceramic substrate that can be mounted on a heatsink. The SKL is available with current ratings from 16A to 75A. For the power element, our SKL use TMS² technology reducing thermal stress and considerably improving life expectancy. Ideal for motor or lamps control (I²t up to 5000 A²s) with high inrush current as well as heating applications. Easy to protect against short circuit with micro circuit breakers.

Product reference	Max. current with WF032000	Thyristor rating	Switching voltage	Control voltage	I ² t	Specifications	Dimensions mm
SKL10120	16A	16A	12-280VAC	4-14VDC	128A ² s	AC zero-cross output	43,4x6,3x24,5
SKL10220	21A	25A	12-280VAC	4-14VDC	312A ² s		
SKL10240	22A	25A	24-600VAC	4-14VDC	450A ² s		
SKL10260	22A	25A	24-690VAC	4-14VDC	1150A ² s		
SKL10540	27A	50A	24-600VAC	4-14VDC	1800A ² s		
SKL10560	27A	50A	24-690VAC	4-14VDC	1800A ² s		
SKL20120	16A	16A	12-280VAC	8-32VDC	128A ² s		
SKL20220	21A	25A	12-280VAC	8-32VDC	312A ² s		
SKL20240	22A	25A	24-600VAC	8-32VDC	450A ² s		
SKL20520	27A	50A	12-280VAC	8-32VDC	1800A ² s		
SKL20740	30A	75A	24-600VAC	8-32VDC	5000A ² s		
SKL10521	27A	50A	12-280VAC	3-14VDC	2450A ² s	AC random output	
SKL20241	22A	25A	24-600VAC	8-32VDC	450A ² s		

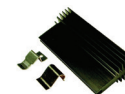


See DC output models pages 25-26.

ACCESSORIES FOR SKL

- WF032000 | Heatsink for SKL L=150mm 2,6-3 K/W
- WF042000 | Heatsink for SKL L=100mm 3,6-3 K/W

- 1L941000 | Clip for SKL on WF03/04
- 1L942000 | Clip for SKL with screw for other heatsinks



SOLID STATE RELAYS

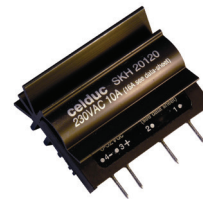
PCB Relays

SKH

The SKH range is a “ready to use” range with integrated heatsink.

Product reference	Output current	Output current with ventilation	Switching voltage	Control voltage	I ² t	Dimensions mm
SKH10120	10A @ 20°C	16A	12-280VAC	4-14VDC	128A ² s	43,6 x 22 x 35,7
SKH10240	10A @ 25°C	25A	24-600VAC	4-14VDC	450A ² s	
SKH20120	10A @ 20°C	16A	12-280VAC	8-32VDC	128A ² s	
SKH20240	10A @ 25°C	25A	24-600VAC	8-32VDC	450A ² s	

Other references available – please contact us.



SN8

This relay is designed for PCB applications and when fitted with suitable heatsink, can control heavy loads in an ultra-miniature, physically compact package.

Product reference	Current	Switching voltage	Control voltage	I ² t	Dimensions mm
SN842500	25A	24-280VAC	15-32VDC	260A ² s	35,05 x 12,70 x 28,32

Other references available : please contact us.



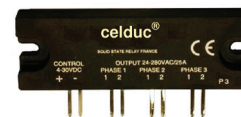
SHT

Three-phase solid state relay in a single low profile package.

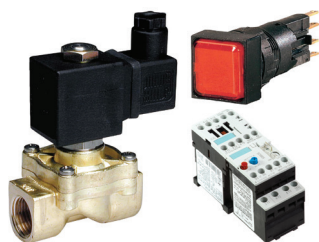
This relay is designed for PCB applications in order to provide control of medium power in three-phase environments.

Product reference	Current	Switching voltage	Control voltage	I ² t	Dimensions mm
SHT842300	3x25A	24-280VAC	10-30VDC	260A ² s	81,28 x 8,26 x 27,69

Other references available : please contact us.



Applications



Electromagnets , Lamps,
Contactors
Starting current I_d = 1,4xI_n

SKA



Heaters

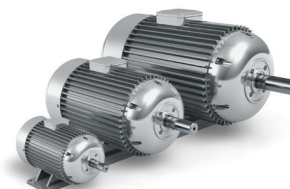
I_d = 1,4xI_n

SKB / SKL



Infrared lamps
or lighting lamps
I_d = 10xI_n

SKL / SKH



Motors

I_d = 8xI_n

SKL / SKH

SOLID STATE RELAYS
Single Phase