Product Guide

celduc® relais

MADE IN FRANCE

1964-2014
50 YEARS

SOLID STATE RELAYS

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® relais 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".

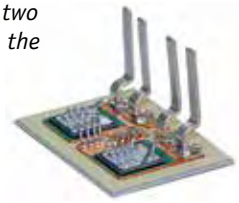
• All of our relays okpac® SO (as well as SC relays), celpac® 2G SU/ SA (including the current sense module ESUC) but also the 2-phase SOB and 3-phase SGT comply with the European standard EN61373 for railways : shocks and vibrations tests on relay.
Regarding the standards about Fire behavior and fumes 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).

• The manufacturing process of our relays complies with the ISO9001 requirements version 2008. We incorporate highly reliable components with a very high electromagnetic interference level which give to our products the highest life-time one can find one the market.

Quert

Single Phase Solid State Relays

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).



okpac® Innovation Performances and Design !

- 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 / S0L)

Removable spring terminals
(S0R)

S07

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	I²t	Dimensions mm
SO745090	50A	12-275VAC	600V	3-32VDC	2 800A²s	45 x 58,5 x 30
SO763090	35A	24-510VAC	1200V	3,5-32VDC	1 250A²s	
SO765090	50A	24-510VAC	1200V	3,5-32VDC	2 800A²s	
SO767090	75A	24-510VAC	1200V	3,5-32VDC	7 200A²s	
SO768090	95A	24-510VAC	1200V	3,5-32VDC	16 200A²s	
SO769090	125A	24-510VAC	1200V	3,5-32VDC	24000A²s	
SO789060	125A	24-690VAC	1600V	3,5-32VDC	22 000A²s	

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

Quert

Single Phase Solid State Relays

okpac®

SO8

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	I²t	Dimensions mm
	SO842074	25A	12-275VAC	600V	3-32VDC	600A²s	45 x 58,5 x 30
	SO842974	25A	12-275VAC	600V	20-265VAC/DC	600A²s	
	SO843070	35A	12-275VAC	600V	3-32VDC	1 250A²s	
	SO843970	35A	12-275VAC	600V	20-265VAC/DC	1 250A²s	
	SO845070	50A	12-275VAC	600V	3-32VDC	2 800A²s	
	SO845970	50A	12-275VAC	600V	20-265VAC/DC	2 800A²s	
	SO848070	95A	12-275VAC	600V	3-32VDC	16 200A²s	
	SO849070	125A	12-275VAC	600V	3-32VDC	22 000A²s	
	SO863070	35A	24-510VAC	1200V	3,5-32VDC	1 250A²s	
	SO863970	35A	24-510VAC	1200V	20-265VAC/DC	1 250A²s	
	SO865070	50A	24-510VAC	1200V	3,5-32VDC	2 800A²s	
	SO865970	50A	24-510VAC	1200V	20-265VAC/DC	2 800A²s	
	SO867070	75A	24-510VAC	1200V	3,5-32VDC	7 200A²s	
	SO867970	75A	24-510VAC	1200V	20-265VAC/DC	7 200A²s	
	SO868070	95A	24-510VAC	1200V	3,5-32VDC	16 200A²s	
	SO868970	95A	24-510VAC	1200V	20-265VAC/DC	16 200A²s	
	SO869070	125A	24-510VAC	1200V	3,5-32VDC	22 000A²s	
	SO869970	125A	24-510VAC	1200V	20-265VAC/DC	22 000A²s	
HIGH VOLTAGE RELAY	**SO885060**	50A	24-690VAC	1600V	3,5-32VDC	2 800A²s	
HIGH VOLTAGE RELAY	**SO885960**	50A	24-690VAC	1600V	20-265VAC/DC	2 800A²s	
HIGH VOLTAGE RELAY	**SO887060**	75A	24-690VAC	1600V	3,5-32VDC	7 200A²s	
HIGH VOLTAGE RELAY	**SO888060**	95A	24-690VAC	1600V	3,5-32VDC	16 200A²s	
HIGH VOLTAGE RELAY	**SO889060**	125A	24-690VAC	1600V	3,5-32VDC	22 000A²s	

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

SO9

Typical applications : Resistive loads (AC-51)
→ Zero cross
→ Control status LED
→ IP20 protection

SO9 range with regulated control current – control current <13mA

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm
SO941460	12A	12-280VAC	600V	3-32VDC	128A²s	45 x 58,5 x 30
SO942460	25A	12-280VAC	600V	3-32VDC	600A²s	
SO943460	40A	12-280VAC	600V	3-32VDC	1 250A²s	
SO945460	50A	12-280VAC	600V	3-32VDC	2 800A²s	
SO963460	40A	24-600VAC	1200V	3,5-32VDC	1 250A²s	
SO965460	60A	24-600VAC	1200V	3,5-32VDC	2 800A²s	
SO967460	90A	24-600VAC	1200V	3,5-32VDC	7 200A²s	
SO96846T	95A	24-600VAC	1200V	3,5-32VDC	11 250A²s	

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

SO9 range with simplified input

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm
SO942860	25A	12-280VAC	600V	15-32VAC/10-30VDC	600A²s	45 x 58,5 x 30
SO942960	25A	12-280VAC	600V	185-265VAC/DC	600A²s	

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

Single Phase Solid State Relays

SOL flatpac®

→ 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	I²t	Dimensions mm
SOL942460	25A	12-280VAC	600V	3-32VDC	600A²s	56 x 58,5 x 16,3
SOL942960	25A	12-280VAC	600V	185-265VAC/DC	600A²s	
SOL965460	50A	24-600VAC	1200V	3,5-32VDC	2 800A²s	

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

SOR

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

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm
SOR842074	25A	12-275VAC	600V	3-32VDC	600A²s	45 x 58,5 x 30
SOR865070	50A	24-510VAC	1200V	3,5-32VDC	2 800A²s	
SOR867070	75A	24-510VAC	1200V	3,5-32VDC	7 200A²s	

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

SC

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Specifications	Dimensions mm
SC741110	12A	12-280VAC	600V	3-30VDC	72A²s	Random	44,5 x 58,2 x 27
SC744110	40A	12-280VAC	600V	3-30VDC	612A²s		
SC762110	25A	24-520VAC	1200V	4-30VDC	265A²s		
SC764110	50A	24-520VAC	1200V	4-30VDC	1500A²s		
SC764910	50A	24-520VAC	1200V	90-240VAC/DC	1500A²s		
SC769110	125A	24-520VAC	1200V	4-30VDC	20000A²s		
SC841110	12A	12-280VAC	600V	4-30VDC	72A²s	Zero-cross / most types of loads	
SC841910	12A	12-280VAC	600V	90-240VAC/DC	72A²s		
SC842110	25A	12-280VAC	600V	4-30VDC	312A²s		
SC844110	40A	12-280VAC	600V	4-30VDC	612A²s		
SC862110	25A	24-520VAC	1200V	5-30VDC	265A²s		
SC864110	50A	24-520VAC	1200V	5-30VDC	1500A²s		
SC864810	50A	24-520VAC	1200V	17-80VAC/DC	1500A²s		
SC864910	50A	24-520VAC	1200V	90-240VAC/DC	1500A²s		
SC867110	75A	24-520VAC	1200V	5-30VDC	5000A²s		
SC869110	125A	24-520VAC	1200V	5-30VDC	20000A²s		
SC942110	25A	12-280VAC	600V	4-30VDC	312A²s	Zero-cross / resistive loads AC-51	
SC942160	25A	12-280VAC	600V	4-30VDC	312A²s		
SC947160	75A	12-280VAC	600V	4-30VDC	5000A²s		
SC965160	50A	24-600VAC	1200V	5-30VDC	1500A²s		
SC967100	75A	24-600VAC	1200V	5-30VDC	5000A²s		

• See also our okpac® range (pages 8 and 9)

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

SCQ

→ Four-Leg Solid State Relays

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm	Led
SCQ842060	4x25A	12-280VAC	600V	3-32VDC	288A²s	44,5 x 58,2 x 274	yes

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

Single Phase Solid State Relays

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*

celpac®

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm
SILD845160	50A	32A	70-280VAC	600V	3-32VDC	1500A²s	22,5 x 80 x 116
SILD865170	50A	32A	150-510VAC	1200V	3,5-32VDC	1500A²s	
SILD867170	75A	35A	150-510VAC	1200V	3,5-32VDC	5000A²s	

okpac®

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Dimensions mm
SOD843180	35A	50-265VAC	600V	7-30VDC	1 250A²s	45 x 58,5 x 33,6
SOD845180	50A	50-265VAC	600V	7-30VDC	2 800A²s	
SOD865180	50A	150-510VAC	1200V	7-30VDC	2 800A²s	
SOD867180	75A	150-510VAC	1200V	7-30VDC	7 200A²s	

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

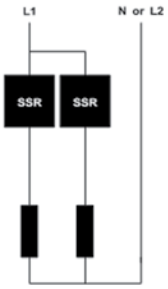
Product reference	Switching current	Switching voltage	Peak voltage	Flashing frequency	Dimensions mm
ST600700	12A	12-50VAC	100V	1/2Hz	67 x 38 x 37,5
ST645000	10A	180-280VAC	600V	1/2Hz	
ST647000	25A	180-280VAC	600V	1/2Hz	

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

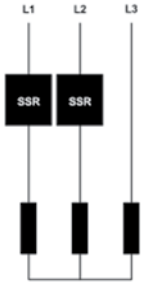
Two-phase Solid State Relays

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.

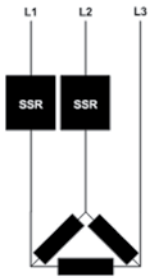
wiring examples



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

→ **with "FASTON" terminals**

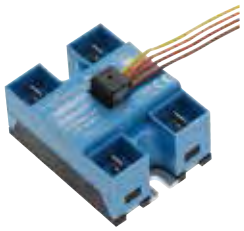
We offer various kinds of two-phase SSRs with Faston terminals.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Specifications	Dimensions mm	Fig n°
SCB564310	2x40A	24-510VAC	1200V	5-30VDC	610A²s	zero-cross / 2 controls	44,8 x 58,5 x 27	1
SOB542460	2x25A	12-280VAC	600V	3-32VDC	265A²s	zero-cross / 2 controls	45 x 58,5 x 27	2
SOB562460	2x25A	24-600VAC	1200V	3,5-32VDC	265A²s	zero-cross / 2 controls		2
SOB544330	2x40A	12-275VAC	600V	8-30VDC	882A²s	zero-cross / 2 controls	45 x 58,5 x 27	3
SOB564330	2x40A	24-510VAC	1200V	8-30VDC	882A²s	zero-cross / 2 controls		3

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

1 • Power connection by FASTON terminals
• Control connection by connector.

2 • Power and control connections by FASTON terminals



3 • 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
→ SOB9 : zero-cross – resistive loads AC-51

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Specifications	Dimensions mm
SOB665300	2x50A	24-600VAC	1200V	10-30VDC	1680A²s	2 controls	45 x 58,5 x 27
SOB763670	2x35A	24-510VAC	1200V	8-30VDC	1250A²s	2 controls	
SOB765670	2x50A	24-510VAC	1200V	8-30VDC	2500A²s	2 controls	
SOB767670	2x75A	24-510VAC	1200V	8-30VDC	7200A²s	2 controls	
SOB863860	2x35A	24-600VAC	1200V	17-30VAC/DC	882A²s	2 controls	
SOB865660	2x50A	24-600VAC	1200V	8-30VDC	2500A²s	2 controls	
SOB867640	2x75A	24-510VAC	1200V	8-30VDC	7200A²s	2 controls / transil	
SOB942360	2x25A	12-280VAC	600V	10-30VDC	600A²s	1 control	
SOB942660	2x25A	12-280VAC	600V	10-30VDC	600A²s	2 controls	
SOB943360	2x35A	12-280VAC	600V	10-30VDC	1 250A²s	1 control	
SOB945360	2x50A	12-280VAC	600V	10-30VDC	2 800A²s	1 control	
SOB963660	2x35A	24-600VAC	1200V	10-30VDC	1250A²s	2 controls	
SOB965160	2x50A	24-600VAC	1200V	6-16VDC	1 680A²s	1 control	
SOB965660	2x50A	24-600VAC	1200V	10-30VDC	2500A²s	2 controls	
SOB967660	2x75A	24-600VAC	1200V	10-30VDC	7200A²s	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.

- Connectors to be ordered separately.

SCB

→ SCB6 : zero-cross – control connections with pins
→ SCB8 : zero-cross – designed for most types of loads
→ SCB9 : zero-cross – resistive loads AC-51

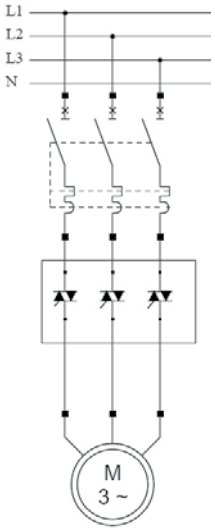
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I²t	Specifications	Dimensions mm
SCB865300	2x50A	24-600VAC	1200V	10-30VDC	1500A²s	1 control	44,8 x 58,5 x 27
SCB865600	2x50A	24-600VAC	1200V	10-30VDC	1500A²s	2 controls	
SCB942600	2x25A	12-280VAC	600V	8-30VDC	288A²s	2 controls	
SCB962600	2x25A	24-600VAC	1200V	8-30VDC	265A²s	2 controls	
SCB965600	2x50A	24-600VAC	1200V	8-30VDC	1500A²s	2 controls	

Protection cover : see accessories (1K470000).
These products should be mounted on heatsinks in order to reach nominal current.

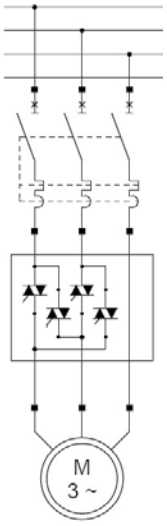
Three-phase Solid State Relays

celduc® relais offers 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.

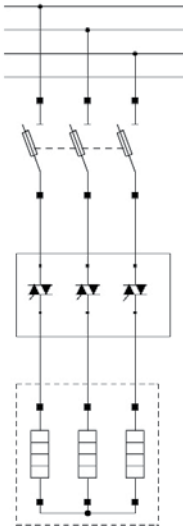
wiring examples



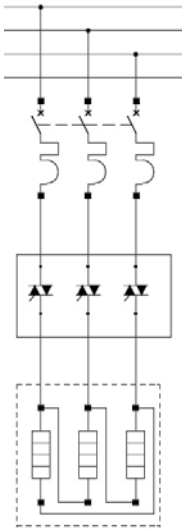
Three-phase SSR SVT8/SGT8 controlling a three-phase motor with a thermal - magnetic protection.



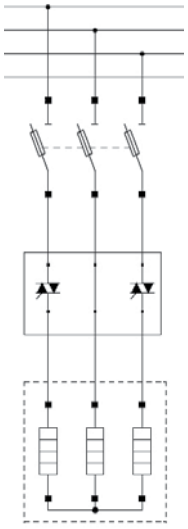
Motor reverser SV9 for three-phase asynchronous motor



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	I²t	Specifications	Dimensions mm
SCT32110	3x12A	12-440VAC	800V	4-30VDC	72A²s	random	44,8 x 58 x 27
SCT62110	3x12A	12-440VAC	800V	4-30VDC	72A²s	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	I²t	Specifications	Dimensions mm
SGB963360E	3x35A	24-600VAC	1200V	10-30VDC	882A²s	zero-cross	100 x 75,15 x 46
SGB965360E	3x50A	24-600VAC	1200V	10-30VDC	1 680A²s		
SGB967360E	3x75A	24-600VAC	1200V	10-30VDC	7 250A²s		

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

Three-phase Solid State Relays

→ 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	I²t	Protec.	Dimensions mm
SGT range with 40mm housing								
SGT867350	75A	3x75A	3x24A	24-600VAC	8-30VDC	7200A²s	RC-VDR	100 x 73,5 x 39,5
SGT962360	25A	3x25A	-	24-600VAC	8,5-30VDC	265A²s	-	
SGT965360	50A	3x50A	-	24-600VAC	8,5-30VDC	2800A²s	-	
SGT965960	50A	3x50A	-	24-600VAC	90-240VAC	2800A²s	-	
SGT967360	75A	3x75A	-	24-600VAC	8,5-30VDC	7200A²s	-	
SGT range with 47,6mm housing and square terminals								
SGT767470E	75A	3x75A	3x24A	24-520VAC	4-32VDC	7200A²s	VDR	100 x 75,15 x 46
SGT769390E	125A	3x125A	3x32A	24-520VAC	8,5-30VDC	22000A²s	RC-VDR	
SGT865470E	50A	3x50A	3x12A	24-520VAC	4-32VDC	1680A²s	VDR	
SGT962360E	25A	3x25A	-	24-600VAC	10-30VDC	882A²s	-	
SGT965360E	50A	3x50A	-	24-600VAC	10-30VDC	2800A²s	-	
SGT967360E	75A	3x75A	-	24-600VAC	10-30VDC	7200A²s	-	
SGT967760E	75A	3x75A	-	24-600VAC	10-24VAC	7200A²s	-	
SGT967960E	75A	3x75A	-	24-600VAC	90-240VAC	7200A²s	-	
SGT968360E	95A	3x95A	-	24-600VAC	10-30VDC	16200A²s	-	

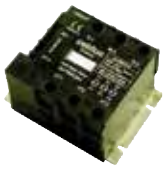
• To be prefered

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	I²t	Protec.	Dimensions mm
SVT range with 40mm housing								
SVT764394	50A	3x50A	3x12A	24-520VAC	8,5-30VDC	2800A²s	RC-VDR	100 x 76 x 56,5
SVT864374	50A	3x50A	3x12A	24-520VAC	10-32VDC	2800A²s	VDR	
SVT867394	75A	3x75A	3x24A	24-520VAC	8,5-30VDC	7200A²s	RC-VDR	
SVT867994	75A	3x75A	3x24A	24-520VAC	90-240VAC	7200A²s	RC-VDR	
SVT869394	125A	3x125A	3x32A	24-520VAC	8,5-30VDC	22000A²s	RC-VDR	
SVT869994	125A	3x125A	3x32A	24-520VAC	90-240VAC	22000A²s	RC-VDR	
SVT965360	50A	3x50A	–	24-600VAC	8,5-30VDC	2800A²s	–	
SVT965760	50A	3x50A	–	24-600VAC	10-30VAC/DC	2800A²s	–	
SVT967360	75A	3x75A	–	24-600VAC	8,5-30VDC	7200A²s	–	
SVT967960	75A	3x75A	–	24-600VAC	90-240VAC	7200A²s		
SVT range with 47,6mm housing								
SVT864394E	50A	3x50A	3x12A	24-520VAC	8,5-30VDC	2800A²s	RC-VDR	100 x 76 x 56,5
SVT868394E	95A	3x95A	3x24A	24-520VAC	8,5-30VDC	16200A²s	RC-VDR	
SVT965460E	50A	3x50A	–	24-600VAC	4-32VDC	2800A²s	–	
SVT965960E	50A	3x50A	–	24-600VAC	90-240VAC	2800A²s	–	
SVT967360E	75A	3x75A	–	24-600VAC	8,5-30VDC	7200A²s	–	



• To be prefered

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

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

**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 in rush current
- → Increase in life expectancy.

Transformer control (loaded) :
- → Elimination of saturation current
- → Improved control and protection.

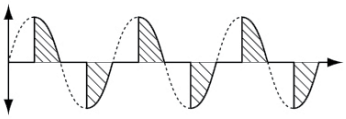
Whatever your application :
- → Diagnostic monitoring of line, load & supply as well as normal operational status
- → Better balance of and less interference on starters (full control of the 3 phases!)
- → Simple use easing implementation and adjustments
- → As compact as an electronic contactor.

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	83 x 110 x 74

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.*

Analogue control relays



SIx4 /S04

→ Single phase angle controllers

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.
S0465620 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	
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	45 x 58,2 x 27
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	

- S04 housing with different control connections.

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

SG4

→ Single phase angle controllers

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^2t	Dimensions mm
SG441020	10A	115-265VAC	0-10VDC	72A²s	
SG444020	40A	115-265VAC	0-10VDC	1500A²s	
SG464020	40A	200-460VAC	0-10VDC	1500A²s	
SG468020	70A	200-460VAC	0-10VDC	5000A²s	
SG469020	110A	200-460VAC	0-10VDC	20000A²s	
SG444120	40A	115-265VAC	Potentiometer	1500A²s	
SG464120	40A	200-460VAC	Potentiometer	1500A²s	100 x 73,5 x 39,5
SG469120	110A	200-460VAC	Potentiometer	20000A²s	
SG444420	40A	115-265VAC	4-20mA	1500A²s	
SG464420	40A	200-460VAC	4-20mA	1500A²s	
SG468420	70A	200-460VAC	4-20mA	5000A²s	
SG469420	110A	200-460VAC	4-20mA	20000A²s	

- No external power supply required.

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

Analogue control relays

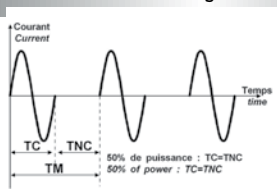
SO3

→ 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.

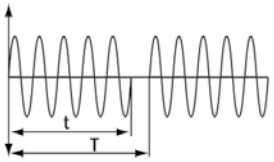
SG5

→ 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	Thyristor rating	Switching voltage	Control voltage	I^2t	Dimensions mm
SG541020	10A	230VAC	0-10VDC	72A²s	100 x 73,5 x 39,5
SG544020	40A	230VAC	0-10VDC	610A²s	
SG564020	40A	400VAC	0-10VDC	610A²s	
SG541120	10A	230VAC	Potentiometer	72A²s	
SG564120	40A	400VAC	Potentiometer	610A²s	
SG541420	10A	230VAC	4-20mA	72A²s	
SG564420	40A	400VAC	4-20mA	610A²s	

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.

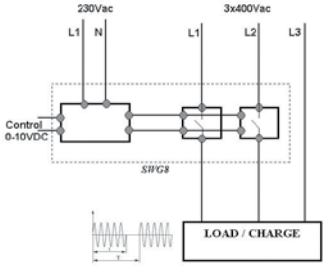
- No external power supply required.

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			



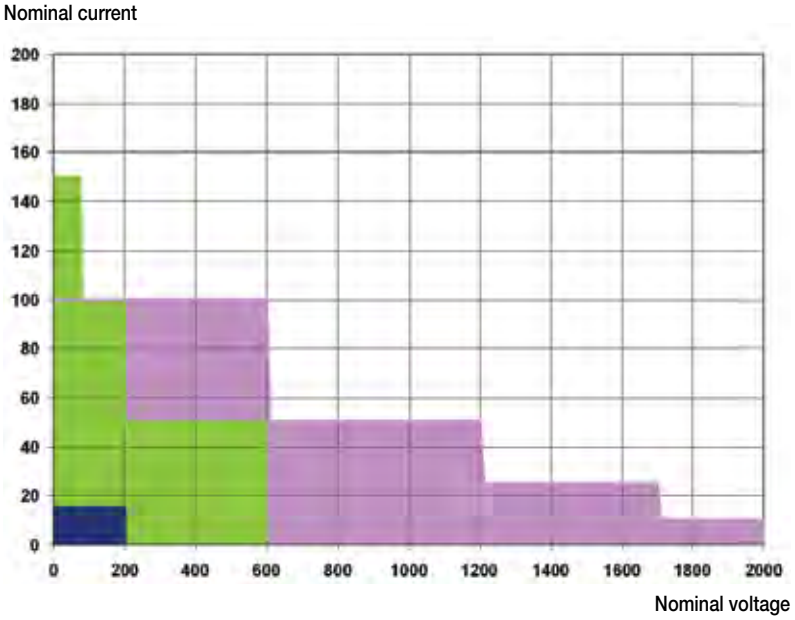
DC Solid State Relays

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.

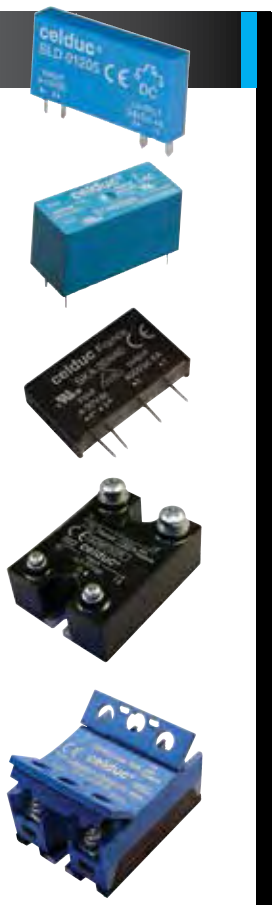
IGBT
for high voltage applications (> 600 VDC)



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		
SPD03505	5A	0-30VDC	60V	12-30VDC		29 x 12,7 x 25,4
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	Diode + capacitor	45 x 58,5 x 30



Quert

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		
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	24-48VDC	→ over-voltage protection → load short circuit protection → over-load temperature protection	157 x 68 x 83
SDI0501710				72-110VDC		

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.

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, ...)

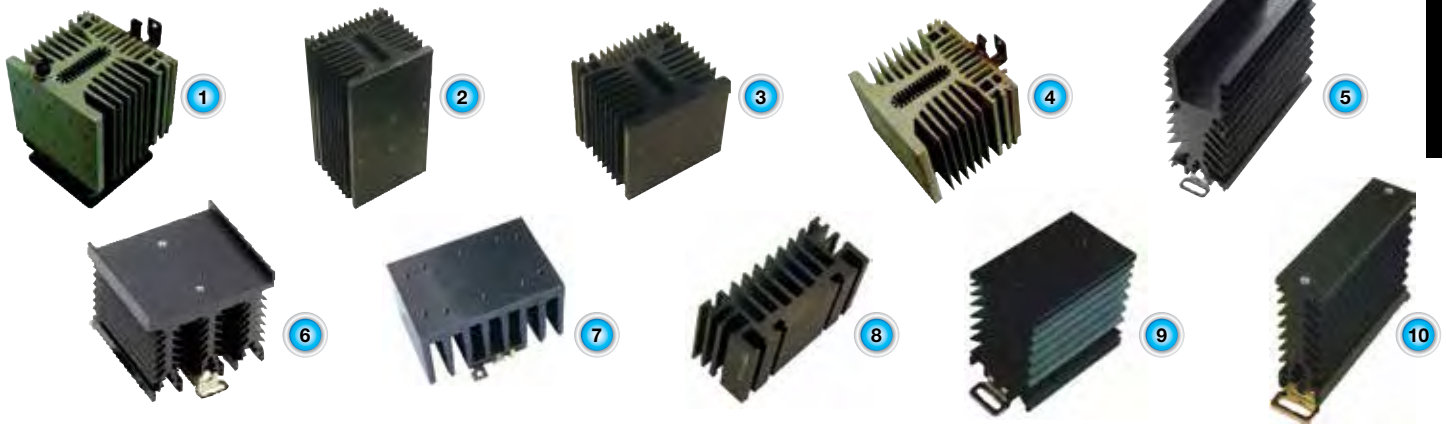
On request : « ready to use » products i.e. products including integrated voltage protection, proportional controllers, DC motor reversers ...
Please consult us !

Heatsinks & Accessories

HEATSINKS

Product reference	Thermal characteristics	Specifications	Dimensions mm	Relay type	Fig n°
WF031100	0,3K/W	ventiled for DIN rail or screw - fan supply 230Vac	110 x 120 x 145	SO, SC, SG, SGT, SVT	1
WF031200	0,3K/W	ventiled 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

MARKING LABELS

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

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
1LK00700	special kit for high current (okpac range)

DIN RAIL ADAPTERS

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

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

MOUNTING + HEATSINK + DIN ADAPTOR OPTION

1LWD1202	mounting of SC/SV/SO sur 1LD12020 + 1LD12020

MOUNTING OPTION (screw kit included) ONLY IF QUANTITY > 10

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