



PRODUCT GUIDE

www.celduc-relais.com

SOLID STATE RELAYS



MAGNETIC SENSORS



REED RELAYS & SWITCHES



MADE IN
FRANCE

DEAR CUSTOMERS AND READERS,

With a great feeling of honor I am proud to introduce the first celduc® American catalog celebrating the creation of our marketing and sales office in Chicago during the summer of 2020.

A milestone in celduc® 60 years history

From the first solid state relay in the early 80's, celduc® has been constantly bringing new solid state power switching solutions to the customers and has become a global expert in solid state relays and contactors. Our iconic "okpac®" relays beautifies industrial enclosures with its famous blue color all over the world and has created a new standard of quality and reliability for Solid State Relays with more than 1,000,000 pieces being manufactured in our factory in France every year. With a strategy based on products quality recognition and technical cooperation with our customers, we have convinced the most reputed names in the market to join the celduc® adventure, have gone through a fantastic growth all these recent years and have established our brand as the unquestioned SSR leader in Europe. Now it is time for the biggest challenge: Americas!

Always the same ambition: bringing excellence in the solid state relays world

How? It is simple: our solid state relays are based on a unique design of thyristor chips mounted on substrate, connected together and soldered on an aluminum base in a 100% automated and oxygen free process. The result: our relays withstand more current than the others, have a better thermal derating, and last 50 % longer (at least). Just try them: you will not get rid of our relays easily!

New ideas and proven technologies

This is the good thing when the engineers and the manufacturing are in the same location: from concept to technology, from design to product, from optimization to new machines, there are only a few doors to cross. Like everyone in our market, we have to choose every year between new machines and new low cost production overseas, unlike everyone in our market, we always choose new machines. At the end, celduc® has definitely the highest automation level in our industry, our unrivaled quality scores demonstrate it.

So, ready to make your switch to celduc®? Enjoy our catalog, and get in touch with our team!

Jean PERROT
CEO celduc® Inc.



OUR STRENGTHS



**MORE THAN 50 YEARS OF
HIGH QUALITY LEVEL OF
PRODUCTION IN FRANCE.**



ANALYSIS OF OUR CUSTOMERS' REQUIREMENTS

celduc® relais is the leading global expert and preferred choice for companies all over the world.



CONSTANT PRODUCT DEVELOPMENT

our experienced R&D engineers are constantly working on developing new products; these represent 10 to 15% of our total production output.



CONTROL OF THE COMPLETE CHAIN

design, development, production, testing and marketing.



WITH A GLOBAL PRESENCE IN OVER 60 COUNTRIES

we have a local presence for our customers. We can therefore better understand their needs and provide them with the best solutions.



WE COMPLY WITH THE MAIN INTERNATIONAL STANDARDS

our products are designed, tested and manufactured in accordance with the strictest international standards.





celduc® relais' PRODUCTS

SOLID STATE RELAYS



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Commonly known as SSRs, Solid State Relays represent 70% of celduc® relais' turnover. These innovative and very efficient devices are used to control all types of loads used across many industries, such as industrial heating, temperature control, motor control, automation interfaces, etc. The advantages of Solid State Relays (SSR) compared to ElectroMechanical Relays (EMR) are well known (see page 6). celduc® relais is the only solid state relay technology in France, where their products have been made for more than 50 years!

MAGNETIC PROXIMITY SENSORS



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Used for monitoring or controlling levels, motion, movement, position and rpm recording. The sky's the limit for these versatile sensors. These sensors are used both by the general public and in major industries, such as automotive, aircraft, telecommunication and automation.

"REED" RELAYS & SWITCHES



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Our Reed switches are used in our own magnetic proximity sensors, Reed relays and Reed switches. Tried and tested, they can last for over 60 years. The range meets the demands of an increasing number of new applications, thanks to their ease of use, compact size and reliability.

SOLID STATE RELAYS

APPLICATIONS

EVERY DAY, MORE AND MORE NEW APPLICATIONS THAT REQUIRE RELIABILITY, SILENT OPERATION AND A LONG SERVICE LIFE USE OUR INNOVATIVE SOLID STATE RELAYS. HERE ARE SOME EXAMPLES:

HEATING

Plastics processes, Furnaces, Food distribution, Air conditioning, Textiles, Domestic heating, Infrared heating, Drying, Thermoforming, etc.



MOTOR STARTING

Pumps, Compressors, Plastics processes, Conveyors, Fans, etc.



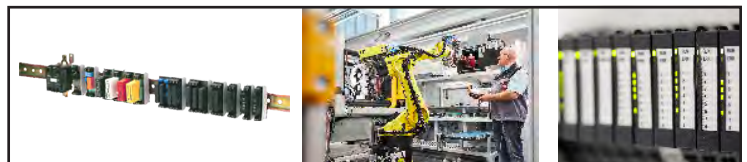
LIGHTING

Public lighting, Cinema, Theater, Airport runway lights, Road lighting, etc.



AUTOMATION

Automation interfaces, Heating element control, Electrovalves, Contactor Coils, Sensor optical isolation.



MISCELLANEOUS

Transformer starting, Power factor correction, Uninterruptible power supplies, Energy source switching, Capacitor banks.



COMPLIANCE WITH STANDARDS SPECIFIC TO EACH INDUSTRY

IN MANY SECTORS, EQUIPMENT COMPONENTS HAVE TO MEET VERY STRICT REQUIREMENTS THAT ARE SPECIFIC TO EACH INDUSTRY.



All of our okpac® SO (as well as SC relays), celpac® 2G SU/SA (including the ESUC current monitoring module) and 2-phase SOB and 3-phase SGT ranges comply with the **EN61373** European standard for railway applications and rolling stock equipment: shock and vibration tests.

The following standards relating to fire behavior and fumes are classified: NF F16-101, NF F16-102, **EN 45545** and 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. Our products are also compliant with the **EN 50155** standard which applies to all electronic equipment for control, regulation, protection, diagnostic, power supply, etc. installed on rail vehicles.



Several of our products comply with the requirements for medical applications in accordance with **EN 60601-1** (VDE 0750).

SOLID STATE RELAYS

STANDARDS

CELDUC® RELAIS HAS DEVELOPED ALL OF ITS OWN EQUIPMENT TESTS. OUR PRODUCTS ARE MANUFACTURED IN ACCORDANCE WITH THE MOST STRINGENT INTERNATIONAL STANDARDS.

- The solid state relays and contactors made by celduc® relais are manufactured in compliance with major international standards :
 - IEC/EN60947-4-3 for the other loads
 - IEC/EN60947-4-2 for motor control
 - IEC 62314
 - American and Canadian (UL, cUL, CSA)
 - IEC/EN 60950 – VDE0805
 - IEC60335-1 – VDE0700-1
 Our products also comply with the main European CE marking directives.
- In the UL508A standard, the estimated short circuit current rating is known as the SCCR: Short Circuit Current Rating. On April 1, 2015, our solid state relays successfully attained 100kA UL SCCR certification. In fact, some of our customers request additional certification with an SCCR greater than 5KA in accordance with supplement SB, an appendix to UL 508A.
- Several of our products fulfill the requirements for KOSHA (S-MARK) and EAC (Russia-CIE) certification.
- Our relay manufacturing process complies with ISO9001, version 2008. Our products contain extremely reliable components with a very high level of electromagnetic interference. They therefore have the longest product lifetime on the market.



celduc® relais **MANUFACTURES CUSTOMISED PRODUCTS**

CELDUC® RELAIS DESIGNS SPECIFIC PRODUCTS IN LINE WITH OUR CUSTOMERS' SPECIFICATIONS AND ADAPTS PRODUCTS FOR OUR CUSTOMERS' APPLICATIONS.



A specific development consisting of SU relays and ESUC modules to control 9 resistive loads with partial load failure detection. This system includes all protections.



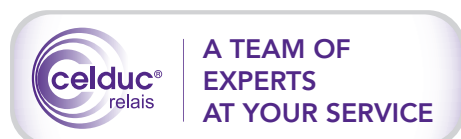
Motor inverter with 5 solid state relays.



Solid state contactor + changeover relay for 3-phase motors. Dry contact control. Spring connector.



Solid state relays with IO-Link communication system. Today, it is clear that communication and safety are our two biggest concerns; these issues will challenge us further as we head into the future...



SELECTION CRITERIA

Function	ON/OFF RELAY										DIAGNOSIS / TEMP. REGULATOR	
No. of poles	1 pole - Single Phase			1 pole EMC optimised	2 poles Two Phase		3 poles - Three Phase			4 poles	1 pole - Single Phase	
Assembly type	Printed circuit board	DIN rail	Screw-in	Screw-in	DIN rail	Screw-in	Printed circuit board	DIN rail	Screw-in	Screw-in	DIN rail	Screw-in
HEATING ELEMENTS: No inrush current												
AC-51	SLA/SPA/STA SKA/SKB SKL/SKH	XKA SAL9/SAM9 SUL9/SUM9	SO9/SOL9 SA9/SU9	SCFL SON	XKM	SOB9	SHT	SMT SGT	SMT SGT	SCQ	SILD SUL+ESUC SUL+ ECOM	SU+ ESUC SU+ ECOM
DC-1			SOM/SCM/ SCI/SDI									
INCANDESCENT LAMPS - INFRARED LIGHTS - INDICATOR LIGHTS: strong inrush currents												
AC-55b	SKA SKL/SKH	XKA SAL8/SAM8 SUL8/SUM8	SO8 SA8/SU8	SCFL SON		SOB8		SMT SGT	SMT SGT			
DC-6	SLD/SPD/STD SKD	SLD/SPD/STD XKD	SCM/SCI/SDI SOM									
DISCHARGE LAMPS: strong inrush currents, overvoltages at the turn off												
AC-55a	SKA/SKL/SKH	XKA/SAx8/ SUx8	SO8/SA8/SU8			SOB8						
MOTORS: strong start currents												
AC-53	SLA/SPA/STA SKL/SKH	XKL/XKH SAx8/SUx8/ SUx7	SO8/SA8/SU8 SO7/SU7	SCFL SON		SOB7 SOB8		SMT8 SGT8	SMT8 SGT8			
DC-3/ DC-5												
CONTACTORS - SOLENOID VALVES - ELECTROMAGNETS: high inductive loads												
AC-14 <72VA	SLA/SPA/STA SKA	SLA/SPA/STA XKA	SO8/SA8/SU8 SO7/SU7 ; SF									
AC-15 >72VA	SLA/SPA/STA SKA/SKL	SLA/SPA/STA XKA/XKL	SO8/SA8/SU8 SO7/SU7 ; SF									
DC-13	SLD/SPD/STD SKD	SLD/SPD/STD XKD	SCC SCM/SOM									
DC-14	SLD/SPD/STD SKD	SLD/SPD/STD XKD	SCC SCM/SOM									
PLC INPUTS/OUTPUTS: interfaces, low current												
AC input												
DC input												
AC output	SLA/SPA/STA SKA	SLA/SPA/STA XKA	SF		XKM			XKM				
DC output	SLD/SPD/STD SKD	SLD/SPD/STD XKD										
TRANSFORMERS: very strong magnetising currents, overvoltages												
AC-56a	SKL/SKH	XKL/XKH	SO7/SOP									
CAPACITY (Power factor corrections, Power supplies): strong inrush current												
AC-56b	SKL/SKH	XKL/XKH	SO8 ; SA8/ SU8						SMT8 SGT8			

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CONTROLLER			REVERSING SWITCH		SOFT STARTERS		
1 pole		3 poles	2 poles Three Phase		1 pole	3 poles Three Phase	
DIN rail	Screw-in	Screw-in	DIN rail	Screw-in	Screw-in	DIN rail	Screw-in
SIL4	SO4/SO3 SG4/SG5	SGTA					
SIL4	SG4 SO4	SGTA SVTA			SO4	SMCW	SMCV
	SG4	SVTA	XKR	SMR SG9/SV9	SO4	SMCW	SMCV
			XKRD	SGRD			
			XKR				
	SG4	SVTA				SMCW	SMCV

Do not hesitate to consult us on the choice of relay

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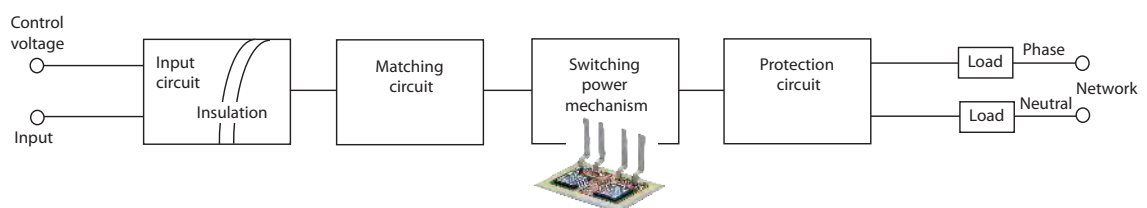
SOLID STATE RELAYS

WHAT IS A SOLID STATE RELAY / CONTACTOR?

Solid state relays are switching devices made using electronic components. We use the word "relays" as an analogy. An electromechanical relay is an electrical switch that is typically operated by using electromagnetism to operate a mechanical switching mechanism. "Solid state" refers to the fact that these devices do not have any moving parts.

A solid state relay switches power (AC or DC) to the load circuitry and provides electrical insulation between the control circuit and the load circuit. This technology competes with or is an addition to electromechanical relays and other switching technologies such as relays and mercury switches.

A solid state relay consists of:



ADVANTAGES OF SOLID STATE SWITCHING



LONG SERVICE LIFE: SSRs do not have any moving mechanical parts so they are not subject to wear and tear or deformation. When used correctly, a solid state relay has a service life that is 200 times longer than that of an electromechanical relay (EMR).



VERY LOW ENERGY CONSUMPTION: a low drive power makes it possible for the solid state contactors and relays to switch strong power loads.



SILENT OPERATION: this technology does not generate acoustic noise while the outputs are changing state. This is a very important advantage when it comes to domestic and medical uses.



SHOCK AND VIBRATION RESISTANCE: No risk of accidental switching with solid state technology.

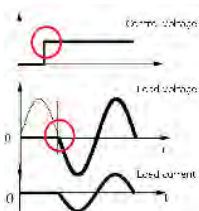


VERY HIGH SWITCHING FREQUENCY.
for very accurate adjustment
(temperature, etc.)



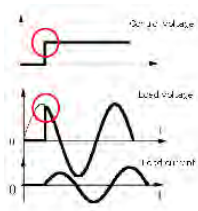
OTHER TYPES OF CONTROLS (specific choice of switching time) and possible diagnostic features.

ZERO-CROSS RELAY OR RANDOM RELAY?



For **ZERO VOLTAGE CONTROL (OR ZERO CROSS RELAY)**, power switching only takes place at the beginning of the alternation after the control has been applied. In fact, switching the power component only takes place at close to zero volts.

For resistive or capacitive loads, it is preferable to use zero cross relays which can limit the di/dt , disturbances on the network and increase the service life of the load and the relay.



For **INSTANTANEOUS CONTROL (OR RANDOM RELAYS)**, power switching takes place as soon as the control voltage has been applied (turn-on time less than $100\mu s$). This type of control is used for all **INDUCTIVE** loads where the phase shift between voltage and current can cause problems with zero-crossing relays.

It is also used in applications where precise control of power to the load is required (phase-control applications).

REMINDERS : Zero-cross for all loads / heavy duty loads: SO8, SA8, SMT8, ...
Zero-cross for standard industrial loads / resistive loads: SO9, SUL9, SGT9, ...
Random: SO7, SUL7, SGT7, ...

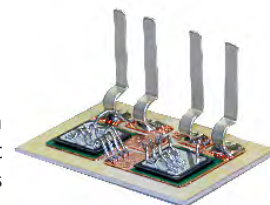
SOLID STATE RELAYS

THYRISTOR RATING VS SWITCHING CURRENT

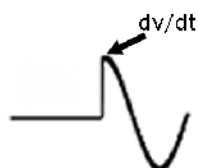
Thyristors are used as the switching components in solid state relays for alternating currents. The ratings of our power components are specified in this catalog. These products must be mounted on heatsinks in order to reach nominal performance. "Thyristor rating", which is an indication of the size of the power component, must not be confused with "switchable current" which depends on how the relay or contactor has been built and how it is used. To correlate the switchable current with the relay and your application, refer

to the tables and thermal curves in our data sheets for products that are not equipped with heatsinks as standard.

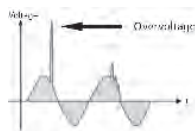
Our solid state relays are fitted with back-to-back thyristors and use 4th generation TMS² technology with a very long service life compared to the majority of products on the market (application note available on request).



VOLTAGE PROTECTION



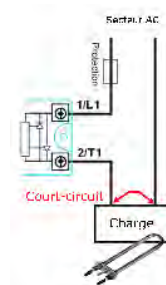
Strong dv/dt s may appear on the solid state relay terminals. These can also be generated by mains interference and by the zero cross current turn-off on inductive load. In relays adapted to most loads, celduc® relais uses components with a high level of immunity and sometimes an RC protection network.



Overvoltages can also occur in the power supply and may cause the solid state relay to turn on, even without control. To solve this problem, celduc® uses 1200V or even 1600V components. In some ranges, it includes a surge arrester, also known as a varistor or a VDR (Voltage Dependent Resistor), placed on the solid state relay terminals on the socket side. For resistive load relays, celduc® relais can also supply a surge protector (TVS (transient-voltage-suppression) diodes on triggers) which closes the relay in the event of an overvoltage to protect it.

CURRENT PROTECTION

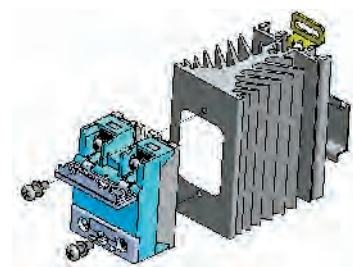
→ **USING A FUSE:** to protect the solid state relays against load short circuits, fuses must be used, particularly fast-acting fuses for small ratings. The I^2t value of the fuse must be less than half of the I^2t value of the relay.
 → **USING A CIRCUIT BREAKER:** this method of protection can be adapted to solid state relays with a I^2t value > 5000 A²s.
 (technical note on request).



RELAY OVERHEATING/HEATSINK

Solid state relays must cool down sufficiently so that the junction temperature (at the core of the power element) does not exceed the specified values: typically 125°C or 150°C (this value depends on the power components).

Cooling will prevent it from reaching heatsink temperatures (parts that can be touched) that are too high (90 or 100°C). To select the appropriate heatsink for your needs, use a calculation or refer to the graphs provided by celduc® relais in the technical data sheets available on this website www.e-catalogue.celduc-relais.com



INTERFACE RELAYS

100% compatible with
electromechanical
relays

SLIM

→ Miniature size

SLA/SLD solid state relays are 100% compatible with 5 mm wide electromechanical relays. They can be soldered directly on to PCBs or plugged into all types of DIN rail standard bases. These relays can switch all types of loads and they can withstand significant current surges from loads in electrovalves, motors, contactor coils, LEDs, etc. The switching power for SLA relays is 2A/280VAC and 2.5A/60VDC or 4A/24VDC for SLD relays.

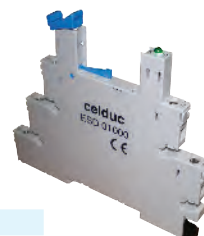
	Product reference	Switching current	Switching voltage	Control voltage	Protec. / Specifications
AC	SLA03220	2A	12-280VAC	18-32VDC	RC
	SLA03220L	2A	12-280VAC	18-32VDC	RC - Very low leakage current model
DC	SLD01205	4A	0-32VDC	3-10VDC	Transil
	SLD01210	2.5A	0-60VDC	3-10VDC	
	SLD02205	4A	0-32VDC	7-20VDC	
	SLD03205	4A	0-32VDC	18-32VDC	
	SLD03210	2.5A	0-60VDC	18-32VDC	

Other miniature solid state relay options are available on request.

SLA / SLD



• Dim. 28 x 5 x 15 mm
(1.10 x 0.20 x 0.59 in)



ACCESSORY

Product reference	Specifications
ESD01000	base for an SLA/SLD relay/module

SP-ST

→ Standard size

AC and DC range from 1 to 5A, with built-in protection (VDR or Transil), available in heights of 15.7 mm (ST Series) and 25.4 mm (SP Series).

	Product reference	Switching current	Switching voltage	Control voltage	Protec.
AC	SPA01420	4A	12-275VAC	4-16VDC	VDR
	SPA07420	4A	12-275VAC	12-30VDC / 15-30VAC	
	STA07220	2A	12-275VAC	12-30VDC / 15-30VAC	
DC	SPD03505	5A	0-30VDC	12-30VDC	Transil
	SPD07505	5A	0-30VDC	12-30VDC / 15-30VAC	
	STD03205	2.5A	0-30VDC	12-30VDC	
	STD03505	5A	0-30VDC	12-30VDC	
	STD07205	2.5A	0-30VDC	12-30VDC / 15-30VAC	

On request, our STD and SPD modules can be modified with a higher output voltage (100VDC). Other control voltages are available on request.

SPA / SPD



• Dim. 29 x 12.7 x 25.4 mm
(1.14 x 0.5 x 0.94 in)

STA / STD



• Dim. 29 x 12.7 x 15.7 mm
(1.14 x 0.47 x 0.59 in)

ACCESSORY

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



INTERFACE RELAYS

XK

→DIN-rail mounting

Interface relays to control loads such as resistors, LEDs, electrovalves, transformers and power contactor coils. They can also be supplied as dedicated motor control variants with 2 and 3-phase switching and motor rotation reversal. They are DIN-rail mounted and fitted with LEDs.

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Specifications
AC	XKA20420	5A	12-275VAC	6-30VDC	VDR	1 pole AC zero-cross output
	XKA20420D	5A	12-275VAC	6-30VDC	VDR	
	XKA20420R	5A	12-275VAC	6-30VDC	VDR	
	XKA70420	5A	12-275VAC	15-30VAC/DC	VDR	
	XKA70440	5A	12-440VAC	12-30VAC/8.5-30VDC	VDR	
	XKA90440	5A	12-440VAC	150-240VAC/DC	VDR	1 pole AC random output
	XKH20120	10A	12-280VAC	10-32VDC	VDR	
DC	XKA20421	5A	12-275VAC	5-30VDC	VDR	
	XKD10120	1A	2-220VDC	5-30VDC	diode	1 pole DC output
	XKD10306	3A	2-60VDC	5-30VDC	diode	
	XKD11306D	3A	2-60VDC	5-30VDC	diode	
	XKD70306	3A	2-60VDC	10-30VAC/DC	diode	
	XKD90306	3A	2-60VDC	90-240VAC	diode	DC output - MOSFET technology
	XKLD31006	10A	12-36VDC	10-30VDC	diode	

▲
Suffix D: removable terminals.
Suffix R: removable spring terminals.

XKLD0020 includes all the built-in protective devices and is designed for inductive loads with high switching frequencies :

- Diagnostic status output (volt-free)
- Control visualization via a green LED
- Output DC visualization via a 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
DC	XKLD0020	4A	24-96VDC	18-32VDC	VDR+diode	1 pole DC output Diag. Output 1-32VDC 100mA

MOTOR CONTROL

	Product reference	Switching current	Switching voltage	Control voltage	Protec.	Specifications
	XKM22440	5AC-51 / 2.5AC-53	24-460VAC	15-40VDC	VDR	2 poles motor switching control
	XKR24440	5AC-51 / 2.5AC-53	24-460VAC	15-40VDC	VDR	AC motor change-over control
	XKRD30506	5A-DC	7-36VDC	7-30VDC	diode	DC motor change-over control

▲
This ready-to-use, DIN-rail mounted XKRD30506 module consists of four solid state relays. It is wired as an inverter which can be used to change the direction of a DC motor (100W @ 24Vdc).



XKA/XKD

• Dim. 12.2 x 76.4 x 53 mm
(0.47 x 2.99 x 2.09 in)

or
• Dim. 17.2 x 76.4 x 53 mm
(0.67 x 2.99 x 2.09 in)
depends on models



XKH

• Dim. 25 x 76.4 x 65 mm
(0.98 x 2.99 x 2.56 in)
with built-in heatsink



• Dim. 36 x 78 x 61 mm
(1.42 x 3.07 x 2.40 in)



XKM

• Dim. 25.2 x 76.4 x 53 mm
(0.98 x 2.99 x 2.09 in)



XKR/XKRD

• Dim. 58.2 x 76.4 x 53 mm
(2.28 x 2.99 x 2.09 in)

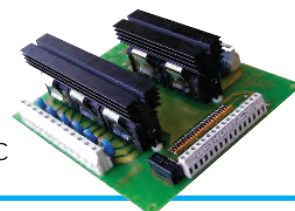
RELAYS FOR PRINTED CIRCUITS

SKA SKB

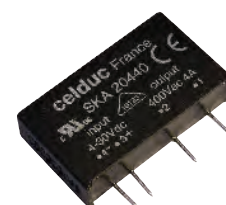
The printed circuit SK range is available in different models: SKA/SKB (AC output) or SKD/SKLD (DC output).

→ SKA can switch currents up to 5A, switch voltages of 230 or 400VAC and it has built-in voltage protection. This range is ideal for motor control applications, electrovalves and resistive loads.

→ SKB can switch currents up to 5A, switch voltages of 230 or 400VAC and is only used for controlling resistive loads.



Product reference	Current	Switching voltage	Control voltage	LED	I ² t	Protec.	Specifications
SK541101	2.5A	24-280VAC	3-30VDC	no	50A ² s	-	AC zero-cross output / normally closed
SKA10420	5A	12-275VAC	2.5-10VDC	no	50A ² s	VDR	AC zero-cross output / most types of loads
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	-	AC random output / most types of loads
SKA20421	5A	12-275VAC	3-30VDC	no	50A ² s	VDR	
SKA20441	5A	12-460VAC	3-30VDC	no	50A ² s	VDR	
SKA21441	5A	12-460VAC	7-30VDC	yes	50A ² s	VDR	AC zero-cross output / resistive loads
SKB10420	5A	12-280VAC	3-10VDC	no	50A ² s	-	
SKB10440	5A	24-600VAC	3.7-10VDC	no	72A ² s	-	
SKB20420	5A	12-280VAC	8-30VDC	no	50A ² s	-	



• Dim. 43.2 x 10.2 x 25.4 mm
(1.69 x 0.39 x 0.98 in)

SKL

The SKL range use TMS² technology which reduces thermal stress and improves product service life. The power components range from 16A to 75A. Ideal for motor or lighting control, this range can withstand significant inrush currents (I²t up to 5000 A²s). It can also be used for controlling heating elements. Option of short circuit protection using circuit breakers.

Product reference	Max. current with heatsink	Thyristor rating	Switching voltage	Control voltage	I ² t	Specifications
SKL10120	16A	16A	12-280VAC	4-14VDC	128A ² s	AC zero-cross output
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	1 150A ² s	
SKL10540	27A	50A	24-600VAC	4-14VDC	1 800A ² s	
SKL10560	27A	50A	24-690VAC	4-14VDC	1 800A 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	
SKL20740	30A	75A	24-600VAC	8-32VDC	5 000A ² s	AC random output
SKL10521	27A	50A	12-280VAC	3-14VDC	2 450A ² s	
SKL20241	22A	25A	24-600VAC	8-32VDC	450A ² s	

See DC output models on pages 36-37



• Dim. 43,4 x 6,3 x 24,5 mm
(1.69 x 0.24 x 0.94 in)

RELAYS FOR PRINTED CIRCUITS

SKH

SKH is a "ready to use" range of solid state relays for printed circuits. Each relay has a built-in heatsink.

Product reference	Output current	Output current with ventilation	Switching voltage	Control voltage	I ² t
SKH10120	10A @ 20°C	16A	12-280VAC	4-14VDC	128A ² s
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 models are available on request



• Dim. 43.6 x 22 x 35.7 mm
(1.69 x 0.87 x 1.38 in)

SN8

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

Product reference	Current	Switching voltage	Control voltage	I ² t
SN842100	25A	24-280VAC	3.5-15VDC	260A ² s

Other models are available on request (voltages, currents and types of controls).



• Dim. 35.05 x 12.7 x 28.32 mm
(1.38 x 0.47 x 1.10 in)

SHT

Three-phase solid state relay in a single low profile package for printed circuits. This relay is designed for PCB applications. Complete with a heatsink, it provides control of medium power in three-phase networks.

Product reference	Current	Switching voltage	Control voltage	I ² t
SHT842300	3x25A	24-280VAC	10-30VDC	260A ² s

Other models are available on request



• Dim. 81.28 x 8.26 x 27.69 mm
(3.19 x 0.31 x 1.06 in)

APPLICATIONS



Electrovalves, LEDs,
contactors
 $I_d = 1.4 \times I_n$

SKA



Heating elements

$I_d = 1.4 \times I_n$

SKB / SKL



Infrared lamps
or lighting
 $I_d = 10 \times I_n$

SKL / SKH



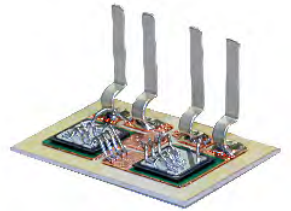
Motors

$I_d = 8 \times I_n$

SKL / SKH

SINGLE PHASE SOLID STATE RELAYS

All our solid state relays are fitted with back-to-back thyristors and use fourth generation TMS² technology with a very long service life compared to the majority of products on the market (application note available on request).



okpac[®] Innovation Performance and Design !

- Multiple, simple and fast connections
- Removable IP20
- A single screwdriver for both the output and input
- Attached to a metal baseplate, not plastic
- Removable control terminals
- SSR, mains and load status diagnostics.
- Output voltage from 24 to 690 VAC (600V-1200V-1600V peak)
- Very low zero-crossing level
- Large range of regulated AC and DC input voltage
- LEDs
- EMC compliant for the industrial environment
- UL/cUL, VDE (EN60950), IEC/EN60947-4-3, CE marking
- I_{tsm} up to 2 000A and I²t > 20 000A²s
- Can be associated with wircurit breaker for protection.

MULTIPLE, SIMPLE AND FAST CONNECTIONS

CONNECTION
on the power side



Direct connection by wire or end fitting
2 x 6 mm² (AWG10) fine strand i.e. 32A
2 x 10 mm² (AWG8) solid i.e. 50A



With tubular cable lugs
Up to 50mm² (AWG1) with or without adjustment i.e. 150A

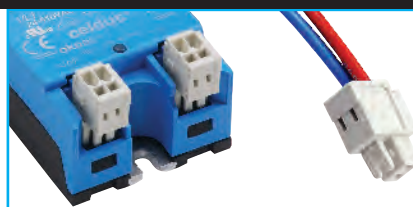


Screw with lock washers
Improved shock and vibration resistance

CONNECTION
on the control side



Using screws
(SO7 / SO8 / SO9 / SOL)



Using pluggable spring connector technology (SOR)

REMINDER

SO7 RANDOM

SO8 ZERO-CROSS FOR ALL KINDS OF LOADS / HEAVY DUTY LOADS

SO9 ZERO-CROSS FOR STANDARD INDUSTRIAL LOADS / RESISTIVE LOADS

SINGLE PHASE SOLID STATE RELAYS

okpac®



celduc® supplies
"ready to use"
solutions with built-in
heatsinks.

SO7

→Random

Typical applications: AC-53 motor loads and strong inductive loads.
The SO7 range provides instant switching (asynchronous/random) with voltage protection on input (Transil) and output (RC and VDR) depending on the model in question.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SO745090	50A	12-275VAC	600V	3-32VDC	2 800A ² s	RC-VDR
SO763090	35A	24-510VAC	1200V	3.5-32VDC	1 250A ² s	RC-VDR
SO765090	50A	24-510VAC	1200V	3.5-32VDC	2 800A ² s	RC-VDR
SO767090	75A	24-510VAC	1200V	3.5-32VDC	7 200A ² s	RC-VDR
SO768090	95A	24-510VAC	1200V	3.5-32VDC	16 200A ² s	RC-VDR
SO769090	125A	24-510VAC	1200V	3.5-32VDC	24 000A ² s	RC-VDR
SO789060	125A	24-690VAC	1600V	3.5-32VDC	22 000A ² s	-

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

SO8

→Zero-cross for
all loads

The SO8 range is designed for most types of loads / heavy duty loads

→Zero cross with low zero crossing level (<12V)

→Voltage protection on input (Transil) and output (VDR) with very high immunity in accordance with standards IEC/EN61000-4-4 and IEC/EN610004-5, depending on the model in question

→Control current < 13 mA for the entire voltage range at any operating temperature.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SO842074	25A	12-275VAC	600V	3-32VDC	600A ² s	VDR
SO842974	25A	12-275VAC	600V	20-265VAC/DC	600A ² s	VDR
SO843070	35A	12-275VAC	600V	3-32VDC	1 250A ² s	VDR
SO843970	35A	12-275VAC	600V	20-265VAC/DC	1 250A ² s	VDR
SO845070	50A	12-275VAC	600V	3-32VDC	2 800A ² s	VDR
SO845970	50A	12-275VAC	600V	20-265VAC/DC	2 800A ² s	VDR
SO848070	95A	12-275VAC	600V	3-32VDC	16 200A ² s	VDR
SO849070	125A	12-275VAC	600V	3-32VDC	22 000A ² s	VDR
SO863070	35A	24-510VAC	1200V	3.5-32VDC	1 250A ² s	VDR
SO863970	35A	24-510VAC	1200V	20-265VAC/DC	1 250A ² s	VDR
SO865070	50A	24-510VAC	1200V	3.5-32VDC	2 800A ² s	VDR
SO865970	50A	24-510VAC	1200V	20-265VAC/DC	2 800A ² s	VDR
SO867070	75A	24-510VAC	1200V	3.5-32VDC	7 200A ² s	VDR
SO867970	75A	24-510VAC	1200V	20-265VAC/DC	7 200A ² s	VDR
SO868070	95A	24-510VAC	1200V	3.5-32VDC	16 200A ² s	VDR
SO868970	95A	24-510VAC	1200V	20-265VAC/DC	16 200A ² s	VDR
SO869070	125A	24-510VAC	1200V	3.5-32VDC	22 000A ² s	VDR
SO869970	125A	24-510VAC	1200V	20-265VAC/DC	22 000A ² s	VDR



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

HIGH VOLTAGE RELAY	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	-

All these products must be mounted on heatsinks in order to reach nominal performance.

SINGLE PHASE SOLID STATE RELAYS

SO9

→Zero-cross for standard industrial loads Resistive loads (AC-51)



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Regulated control current	Specifications
SO941460	12A	12-280VAC	600V	3-32VDC	128A ² s	yes	Control current <13mA
SO942460	25A	12-280VAC	600V	3-32VDC	600A ² s	yes	Control current <13mA
SO942470	25A	12-280VAC	600V	3-32VDC	600A ² s	yes	VDR
SO942860	25A	12-280VAC	600V	15-32VAC/10-30VDC	600A ² s	no	with simplified input
SO942960	25A	12-280VAC	600V	185-265VAC/DC	600A ² s	no	with simplified input
SO943460	40A	12-280VAC	600V	3-32VDC	1 250A ² s	yes	Control current <13mA
SO945460	60A	12-280VAC	600V	3-32VDC	2 800A ² s	yes	Control current <13mA
SO96346H	35A	24-600VAC	1200V	3.5-32VDC	882A ² s	yes	Control current <13mA
SO96386H	35A	24-600VAC	1200V	15-32VAC	882A ² s	yes	Control current <13mA
SO963460	40A	24-600VAC	1200V	3.5-32VDC	1 250A ² s	yes	Control current <13mA
SO96546H	50A	24-600VAC	1200V	3.5-32VDC	1 680A ² s	yes	Control current <13mA
SO96546T	50A	24-600VAC	1200V	3.5-32VDC	2 800A ² s	yes	Thermal Pad mounted
SO965460	60A	24-600VAC	1200V	3.5-32VDC	2 800A ² s	yes	Control current <13mA
SO967460	90A	24-600VAC	1200V	3.5-32VDC	7 200A ² s	yes	Control current <13mA
SO967860	90A	24-600VAC	1200V	15-32VAC	7 200A ² s	no	with simplified input
SO967960	90A	24-600VAC	1200V	20-265VAC/DC	7 200A ² s	yes	Control current <13mA
SO968470	95A	24-510VAC	950V	3.5-32VDC	11 250A ² s	yes	Control current <13mA
SO96846T	95A	24-600VAC	1200V	3.5-32VDC	11 250A ² s	yes	Thermal Pad mounted

All these products must be mounted on heatsinks in order to reach nominal performance.

SOL flatpac®

→Low profile (h=16,3mm)

These flatpac® relays are mainly designed for applications where a PCB is usually installed on the relay's control side. This product can also be used for applications where the wires are on the power side.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t
SOL942460	25A	12-280VAC	600V	3-32VDC	600A ² s
SOL942960	25A	12-280VAC	600V	185-265VAC/DC	600A ² s
SOL965460	50A	24-600VAC	1200V	3.5-32VDC	2 800A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 16.3 mm
(1.77 x 2.28 x 0.63 in)

SON

NEW

→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 equipment. The range complies with the EN 50081-1 standard (Electromagnetic compatibility. Generic emission standard. Residential, commercial and light industry).

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t
SON845040	50A	40-260VAC	600V	6-32VDC	2 800A ² s
SON865040	50A	50-480VAC	1200V	6-32VDC	2 800A ² s
SON867040	75A	50-480VAC	1200V	6-32VDC	7 200A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

SINGLE PHASE SOLID STATE RELAYS

SOP

NEW

SOP relays are used for primary transformer inrush currents and all saturable inductive loads in order to avoid magnetizing current peaks (application note available on request).

→Starting transformer

Product reference	Thyristor rating	Switching current AC-56a	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications
SOP65070	50A	9A	100-480VAC	1200V	5-32VDC	2 800A ² s	peak starting
SOP69070	125A	32A	100-480VAC	1200V	5-32VDC	20 000A ² s	

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 30 mm

SOR

Model with pluggable input connectors (spring connectors).
Designed for most types of loads.

→Pluggable connectors

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t
SOR842074	25A	12-275VAC	600V	3-32VDC	600A ² s
SOR863070	35A	24-510VAC	1200V	3.5-32VDC	1 250A ² s
SOR865070	50A	24-510VAC	1200V	3.5-32VDC	2 800A ² s
SOR867070	75A	24-510VAC	1200V	3.5-32VDC	7 200A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

SC

Also check out our okpac® range (pages 12 to 14)

→Previous generation

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Specifications
SC741110	12A	12-280VAC	600V	3-30VDC	72A ² s	Random
SC762110	25A	24-520VAC	1200V	4-30VDC	2 65A ² s	
SC764110	50A	24-520VAC	1200V	4-30VDC	1 500A ² s	
SC769110	125A	24-520VAC	1200V	4-30VDC	20 000A 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	1 500A ² s	
SC864810	50A	24-520VAC	1200V	17-80VAC/DC	1 500A ² s	
SC864910	50A	24-520VAC	1200V	90-240VAC/DC	1 500A ² s	
SC867110	75A	24-520VAC	1200V	5-30VDC	5 000A ² s	
SC869110	125A	24-520VAC	1200V	5-30VDC	20 000A ² s	
SC942110	25A	12-280VAC	600V	4-30VDC	312A ² s	Zero-cross / resistive loads AC-51
SC965160	50A	24-600VAC	1200V	5-30VDC	1 500A ² s	
SC967100	75A	24-600VAC	1200V	5-30VDC	5 000A ² s	

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 44.5 x 58.2 x 27 mm
(1.73 x 2.28 x 1.06 in)

SINGLE PHASE SOLID STATE RELAYS

celpac[®] 2G

The 22.5 mm wide SSR solution!

Reliability & performance

- It has the same center-to-center fastening as the celduc SO and SC ranges,
- 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,
- Models available with AC,
- Yellow input status LED,
- Over-voltage protection on the 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.

A cost-effective and compact solution

- With an installation width of only 22.5 mm, our celpac[®] solid state relays and contacts take up the least possible space,
- Reduced assembly time, simple wiring,
- Reduced maintenance thanks to a very long service life,
- A single screwdriver for both the output and input.



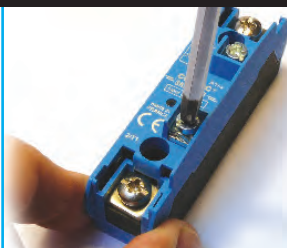

REMINDER

SA/SU 8	ZERO-CROSS FOR HEAVY DUTY LOADS
SA/SU 9	ZERO-CROSS FOR RESISTIVE LOADS
SA/SU 7	RANDOM

"READY TO USE" VERSIONS

SA/SU L	22,5MM HEATSINK- 3K/W
SA/SU M	45MM HEATSINK - 2,2K/W

MULTIPLE, SIMPLE AND FAST CONNECTIONS

	SA range	SU range
CONNECTION on the power side		
		Direct connection by wire or end fitting
CONNECTION on the control side		
	with screw connection on inputs	with pluggable connector on inputs

AS AN OPTION

celduc[®] relais offers 2 options that can be clipped directly on to the SU/SUL range

**SAVE SPACE
REDUCE COSTS
WITH MORE FUNCTIONS**

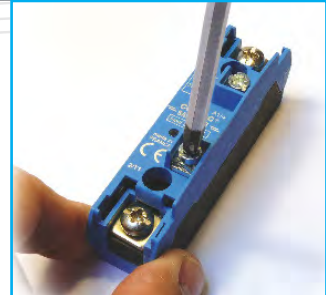
- Diagnostic and current measurement module
- Temperature controller PID, current monitor and communication interface in one unit

SINGLE PHASE SOLID STATE RELAYS

celpac[®] 2G

The 22.5 mm wide SSR solution!

Our SA range has a screw-mounted connection on the power side and the control side. Our products include a transparent protective cover and some models are "ready to use" with built-in heatsinks (SAL and SAM versions).



SA range with screw connection on inputs

SA

→ For mounting on the heatsink of your choice

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ^t
SA842070	25A	12-275VAC	600V	3-32VDC	600A ² s
SA941460	12A	12-280VAC	600V	3-32VDC	128A ² s
SA942460	25A	12-280VAC	600V	3-32VDC	450A 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

All these products must be mounted on heatsinks in order to reach nominal performance.

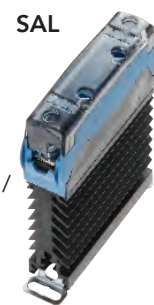


• Dim. 22.5 x 90 x 42 mm
(0.87 x 3.54 x 1.65 in)

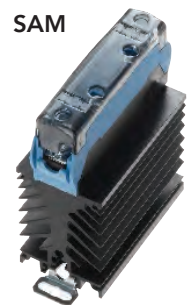
SAL/SAM

→ "Ready to use" version

SAX9 : designed for standard industrial loads / AC-51 resistive loads



• Dim. 22.5 x 90 x 112 mm
(0.87 x 3.54 x 4.41 in)



• Dim. 45 x 90 x 112 mm
(1.77 x 3.54 x 4.41 in)

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I ^t	Regulated control current	Specifications
SAL941460	12A	12A	12-280VAC	600V	3-32VDC	128A ² s	no	with simplified input
SAL942460	25A	23A	12-280VAC	600V	3-32VDC	450A ² s	no	with simplified input
SAL961360	15A	15A	24-600VAC	1200V	6-32VDC	882A ² s	yes	Control current <10mA
SAL962360	25A	23A	24-600VAC	1200V	6-32VDC	882A ² s	yes	Control current <10mA
SAL963460	35A	30A	24-600VAC	1200V	3.5-32VDC	882A ² s	no	with simplified input
SAL965460	50A	32A	24-600VAC	1200V	3.5-32VDC	1 680A ² s	no	with simplified input
SAM943460	35A	32A	12-280VAC	600V	3-32VDC	882A ² s	no	with simplified input
SAM963360	35A	32A	24-600VAC	1200V	6-32VDC	882A ² s	yes	Control current <10mA
SAM965360	50A	45A	24-600VAC	1200V	6-32VDC	1 680A ² s	yes	Control current <10mA

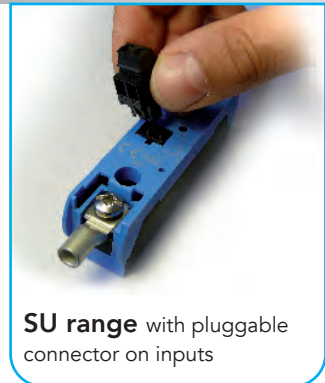
SINGLE PHASE SOLID STATE RELAYS

celpac® 2G

The 22.5 mm wide SSR solution!

Our entire SU range have pluggable connectors.

Our products also include removable protective shutters and some models are "ready to use" with built-in heatsinks (SUL and SUM versions).



SU range with pluggable connector on inputs

SU

→ For mounting on the heatsink of your choice

SU7 : AC-53 motor loads and strong inductive loads.

Used in phase angle control systems

SU8 : designed for heavy duty loads / VDR protection included

SU9 : designed for standard industrial loads / AC-51 resistive loads

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I _t
SU765070	50A	24-510VAC	1 200V	3.5-32VDC	1 680A ² s
SU842070	25A	12-275VAC	600V	3-32VDC	600A ² s
SU842770	25A	12-275VAC	600V	18-30VAC/DC	600A ² s
SU842970	25A	12-275VAC	600V	160-240VAC	600A ² s
SU865070	50A	24-510VAC	1 200V	3.5-32VDC	1 680A ² s
SU865770	50A	24-510VAC	1 200V	18-30VAC/DC	1 680A ² s
SU865970	50A	24-510VAC	1 200V	160-240VAC	1 680A ² s
SU867070	75A	24-510VAC	1 200V	3.5-32VDC	7 200A ² s
SU942460	25A	12-280VAC	600V	3-32VDC	600A ² s
SU963460	35A	24-600VAC	1 200V	3.5-32VDC	882A ² s
SU965460	50A	24-600VAC	1 200V	3.5-32VDC	1 680A ² s
SU967460	75A	24-600VAC	1 200V	3.5-32VDC	7 200A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 22.5 x 90 x 42 mm
(0.87 x 3.54 x 1.65 in)

SUL/SUM

→ "Ready to use" version

SUx7 : AC-53 motor loads and strong inductive loads.

Used in phase angle control systems

SUx8 : designed for heavy duty loads / VDR protection included

SUx9 : designed for standard industrial loads / AC-51 resistive loads

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I _t
SUL765070	50A	32A	24-510VAC	1 200V	3.5-32VDC	1 680A ² s
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	1 200V	3.5-32VDC	1 680A ² s
SUL865770	50A	32A	24-510VAC	1 200V	18-30VAC/DC	1 680A ² s
SUL865970	50A	32A	24-510VAC	1 200V	160-240VAC	1 680A ² s
SUL867070	75A	35A	24-510VAC	1 200V	3.5-32VDC	7 200A ² s
SUL942460	25A	23A	12-280VAC	600V	3-32VDC	600A ² s
SUL963460	35A	30A	24-600VAC	1 200V	3.5-32VDC	882A ² s
SUL965460	50A	32A	24-600VAC	1 200V	3.5-32VDC	1 680A ² s
SUL967460	75A	35A	24-600VAC	1 200V	3.5-32VDC	7 200A ² s
SUM865070	50A	45A	24-510VAC	1 200V	3.5-32VDC	1 680A ² s
SUM867070	75A	45A	24-510VAC	1 200V	3.5-32VDC	7 200A ² s



SUL

• Dim. 22.5 x 90 x 112 mm
(0.87 x 3.54 x 4.41 in)

SUM



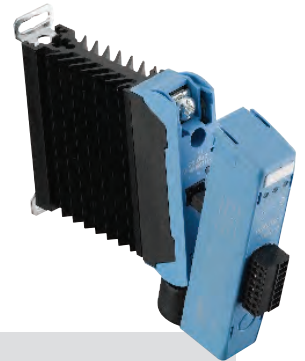
• Dim. 45 x 90 x 112 mm
(1.77 x 3.54 x 4.41 in)

SINGLE PHASE SOLID STATE RELAYS

celpac[®] 2G

The 22.5 mm wide SSR solution!

celduc[®] relais offers 2 options that can be clipped directly on to the SU/SUL/SUM range



SAVE SPACE / REDUCE COSTS / WITH MORE FUNCTIONS

CURRENT MONITORING MODULE

ESUC

To combine with our SU/SUL/SUM

MAKE THE MOST OF YOUR SSR

Diagnostics and control of up to 5 heater loads:

- Continuous current monitoring,
- Current set point training function via a push-button or external binary input,
- 2 alarm thresholds (+/-16%),
- Partial load break detection,
- Open load detection,
- SSR short circuit detection.

Product reference	Current range	Control
ESUC0450	2-40A	8-30VDC
ESUC0480	2-40A	24-45VDC
ESUC0150	1-10A	8-30VDC



WHY CHOOSE THIS OPTION?

- Rapid fault detection (instantaneous alarm)
- Maintenance
- Fast-acting checks to ensure that all heating elements are operating correctly
- Product quality and reliability (for example, in plastics processes, a faulty heating element can have a significant impact on the appearance of a finished product)
- With an installation width of only 22.5 mm, it takes up minimal space,
- Less wiring costs

TEMPERATURE CONTROLLER PID, CURRENT MONITOR AND COMMUNICATION INTERFACE IN ONE UNIT

ECOM0010

To combine with our SU/SUL/SUM



MAKE THE MOST OF YOUR SSR

- Temperature controller with :
 - PID controller with automatic or manual tuning,
 - 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 up to 50A with current transformer
- RS485/Modbus RTU serial link (others available on request)
- Power supply : 24Vdc +/- 10%

WHY CHOOSE THIS OPTION?

- ECOM is the most compact solution available on the market, incorporating the latest measuring and control technology.
- By reducing wiring costs and minimizing the size of electrical cabinets, this solution is the answer to your needs.

POWER SSRs WITH DIAGNOSTICS

celduc® relais offers a variety of relay diagnostic solutions.
These relays let the user know the status of the load (resistive load), the relay output and the network.

WHICH SOLUTION TO CHOOSE?

Here are a few examples of our customers' requirements:

REQUIREMENT

- 1 RELAY for 1 heating element
+ 1 sensing element
- 1 RELAY for 1 heating element
+ 1 rapid sensing element
+ compact and ready to use solution

SOLUTIONS

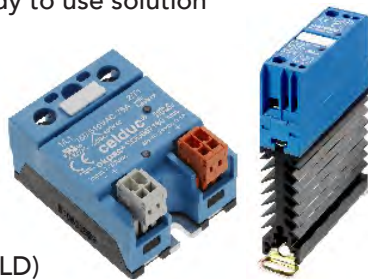
→ SOD

→ SILD

ADVANTAGES

(for both SOD and SILD)

- These relays let the user know the status of the load (connected or not), the relay output (closed or not) and the network (fuse or circuit breaker status) in the power circuit, via an NC (Normally Closed) diagnostic contact.
- Volt-free
- A single input PLC that can be placed in a series
- Easy to use
- The diagnostic function does not require an external power supply
- Quick reaction time < 100 ms



REQUIREMENT

1 relay for several loads + need for a compact and ready to use solution

SOLUTIONS

→ ESUC current detection module combined with our SU/SUL solid state relays

ADVANTAGES

- Detection of partial load break or current surge (operates with up to 5 identical loads)
- Three-phase or possible multizone use
- Minimal dimensions: only 22.5 mm wide



REQUIREMENT

Connect/disconnect areas with heating :

This solution is ideal for thermoforming machines where the heating surface needs to be adapted to the size of the plastic sheets intended for preheating. Standard diagnostic solid state relays display an error when a heated area is disconnected. This requires a specific and sometimes complex management of the diagnostic signals.

SOLUTIONS

→ SOI

AVANTAGES

- The main function of the SOI range is to switch the load current. It also provides information about the presence (or lack thereof) of the output current which must then be interpreted by the user or the system.



REQUIREMENT

Reading the current and alarms via a communication interface

SOLUTIONS

→ Combined ECOM module with our SU / SUL solid state relays

ADVANTAGES

- This product, which has been designed for temperature control (with built-in PID), can also be used to:
 - Measure the load current
 - Measure the ambient temperature, the process or even the relay or its heatsink (built-in J, K, T, E thermocouple input)
 - Create alarms (current, temperature, relay status)
 - Adjust the power on the load via a chrono-proportional control
- It communicates via an RS485 link and a MODBUS RTU protocol.
- In order to view the status locally, it has 3 LEDs and a configurable output.



POWER SSRs WITH DIAGNOSTICS

DIAGNOSTIC RELAY

Our power SSRs with diagnostics are housed in celpac units, these include our SILD and okpac® ranges (to mount on heatsinks) and our SOD and SOI ranges.

These relays let the user know the status of the load (resistive load), the relay output and the network via an NC (Normally Closed) diagnostic contact.

The diagnostic function does not require an external power supply (celduc® patent). The contacts of different relays can

also be placed in a series. It is possible to use these relays for diagnostics in a three-phase system, star connection wiring without neutral.

Our SOI range includes a current transformer (CT) and a contact for signaling. This makes it possible to switch the load current by providing information about the presence (or lack thereof) of the output current which must then be interpreted by the user or the system.

SILD

The SILD power SSR with diagnostics range is housed in a celpac (ready to use) unit.

Product reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I ² t
SILD845160	50A	32A	70-280VAC	600V	3-32VDC	1 500A ² s
SILD865170	50A	32A	150-510VAC	1 200V	3.5-32VDC	1 500A ² s
SILD867170	75A	35A	150-510VAC	1 200V	3.5-32VDC	5 000A ² s



• Dim. 22.5 x 80 x 116 mm
(0.87 x 3.15 x 4.57 in)

SOD

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t
SOD843180	35A	50-265VAC	600V	7-30VDC	1 250A ² s
SOD845180	50A	50-265VAC	600V	7-30VDC	2 800A ² s
SOD849180	125A	50-265VAC	600V	7-30VDC	22 000A ² s
SOD865180	50A	150-510VAC	1 200V	7-30VDC	2 800A ² s
SOD867180	75A	150-510VAC	1 200V	7-30VDC	7 200A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 58.5 x 33.6 mm
(1.77 x 2.28 x 1.30 in)

SOI

NEW

OPERATION: By applying or removing a voltage on the control input, the SOI relay switches or disconnects the current in the load. If the value of the load current is greater than the factory setting threshold, the current transformer included in the SOI will close the contact for signaling. It therefore indicates that a current is flowing in the load, then the user or the system interprets this status.

ADVANTAGES

- Reduction of quantity, cost and time of wiring
- Elimination of the need to pass the power cables through a current transformer
- Elimination of costly analogue inputs on the PLC

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t
SOI885070	50A	24-625VAC	1 600V	3.5-32VDC	2 800A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



SINGLE PHASE SOLID STATE RELAYS

SSR with "FASTON" terminals

Solid State Relays with "FASTON" terminals are ideal for the food and beverage industry for currents less than 20A.

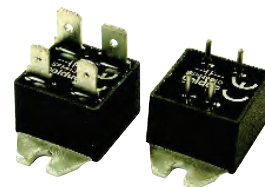
celduc® relais offers a wide range of single phase products with "FASTON" terminals, and also two-phase (see page 24) and four-leg power SSRs (see SCQ range page 23).

SF

Miniature relays available with "FASTON" terminals or with pins for printed circuits.

Product reference	Thyristor rating	Switching voltage	Control voltage	Specifications
SF541310	10A	12-280VAC	4-30VDC	Zero-cross, "FASTON" terminals
SF542310	10A	12-280VAC	4-30VDC	Zero-cross, PCB terminals
SF546310	25A	12-280VAC	4-30VDC	Zero-cross, "FASTON" terminals

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 21 x 35.5 x 15 mm
(0.83 x 1.38 x 0.59 in)

SCF

These relays are designed to control resistive loads.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	LED	I _t	Protec.
SCF42160	25A	12-280VAC	600V	4-30VDC	yes	312A ² s	-
SCF42324	25A	12-280VAC	600V	12-30VDC	no	312A ² s	VDR
SCF62160	25A	24-600VAC	1 200V	5-30VDC	yes	265A ² s	-

All these products must be mounted on heatsinks in order to reach nominal performance.
Options E "large Entraxe" and L "FASTON 4.8 mm" are available on request.



• Dim. 44.5 x 58 x 33 mm
(1.73 x 2.28 x 1.30 in)

SCFL

→ EMC optimized
(low electromagnetic emission)

These relays are designed for use in applications where low electromagnetic emission is essential: household and electrical appliances, information technology and medical equipment. The range complies with the EN 50081-1 standard (Electromagnetic compatibility. Generic emission standard. Residential, commercial and light industry).

Also check out our SON range on page 14.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I _t
SCFL42100	25A	12-280VAC	600V	4-30VDC	312A ² s
SCFL62100	25A	24-440VAC	1 200V	5-30VDC	312A ² s

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 44.5 x 58.2 x 32 mm
(1.73 x 2.28 x 1.26 in)

SINGLE PHASE SOLID STATE RELAYS

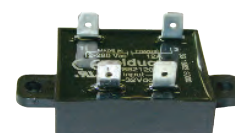
- for fast connections!

SP7/SP8

With its high immunity components, built-in overvoltage protection combined with 800 V_{pic} power elements, these relays can be used with any type of load, such as heating or controlling single phase asynchronous motors. This range is ideal for the food and beverage industry.

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

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 38 x 66.8 x 22 mm
(1.50 x 2.60 x 0.87 in)

SCQ

→ Four-leg power solid state relays

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ² t	Led	Specifications
SCQ842060	4x25A	12-280VAC	600V	3-32VDC	288A ² s	yes	Common +VDC
SCQ842160	4x25A	12-280VAC	600V	3-32VDC	288A ² s	yes	Common 0VDC + polarizing key

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 44.5 x 58.2 x 27 mm
(1.73 x 2.28 x 1.06 in)

FLASHING RELAYS

The ST6 power flashing solid state relay range is designed for alternating current. With FASTON outputs, they can switch loads up to 12A below 12-50VAC or loads up to 25A under 180-280VAC.

When voltage is applied, the output flashes at a frequency of 1 to 2 Hz in accordance with the position of the external switch.

ST6

Product reference	Switching current	Switching voltage	Peak voltage	Flashing frequency
ST645000	10A	180-280VAC	600V	1/2Hz
ST647000	25A	180-280VAC	600V	1/2Hz

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 67 x 38 x 37.5 mm
(2.64 x 1.50 x 1.46 in)

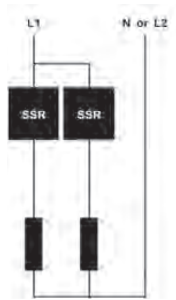
TWO-PHASE SOLID STATE RELAYS

Our two-phase range provides two solid state relays in a standard compact 45 mm enclosure. They are ideal for three-phase applications with two-phase disconnection only.

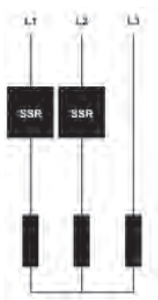


(Connectors to be ordered separately.)

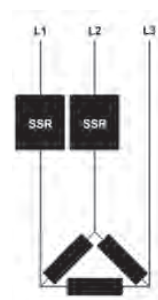
WIRING EXAMPLES



Control of 2 single-phase wired heating elements.



Two-phase SOB SSR to control heating elements wired in a star connection. Specifically designed for balanced low voltage loads without neutral.



Two-phase SOB SSR to control heating elements wired in a delta connection. Specifically designed for high voltage loads, balanced or not.

SOB5

→ zero-cross

- Power and control connections by FASTON terminals (Fig.1)
- Double input with connector CE100F ITWPANCON type or similar + Power connection by FASTON 6.3mm terminals with IP20 protection (Fig.2)

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I _t	Specifications	Fig.
SOB542460	2x25A	12-280VAC	600V	3-32VDC	265A ² s	zero-cross / 2 controls	1
SOB562460	2x25A	24-600VAC	1 200V	3.5-32VDC	265A ² s	zero-cross / 2 controls	1
SOB544330	2x40A	12-275VAC	600V	8-30VDC	882A ² s	zero-cross / 2 controls	2
SOB564330	2x40A	24-510VAC	1 200V	10-30VDC	882A ² s	zero-cross / 2 controls	2

All these products must be mounted on heatsinks in order to reach nominal performance.

SOB6

→ zero-cross

Double input with CE100F ITWPANCON type connector or equivalent.

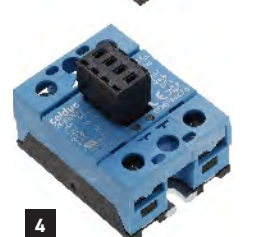
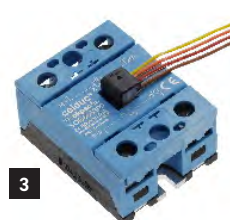
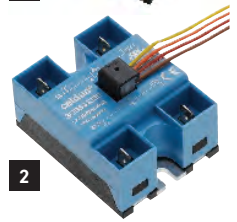
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I _t	Specifications	Fig.
SOB665300	2x50A	24-600VAC	1 200V	10-30VDC	1 680A ² s	2 controls	3

All these products must be mounted on heatsinks in order to reach nominal performance.

SOB7

→ Random or instant switching

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I _t	Specifications	Fig.
SOB763670	2x35A	24-510VAC	1 200V	8-30VDC	1 250A ² s	2 controls	4
SOB765670	2x50A	24-510VAC	1 200V	8-30VDC	2 500A ² s	2 controls	
SOB767670	2x75A	24-510VAC	1 200V	8-30VDC	7 200A ² s	2 controls	



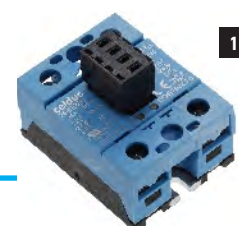
• Dim. 45 x 58,5 x 27 mm
(1.77 x 2.28 x 1.06 in)

TWO-PHASE SOLID STATE RELAYS

SOB8

The zero cross SOB8 range, designed for most types of loads.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ^t	Specifications	Fig.
SOB863860	2x35A	24-600VAC	1200V	17-30VAC/DC	882A ² s	2 controls	1
SOB865660	2x50A	24-600VAC	1200V	8-30VDC	2 500A ² s	2 controls	1
SOB867640	2x75A	24-510VAC	1200V	8-30VDC	7 200A ² s	2 controls / Transil	1



1

SOB9

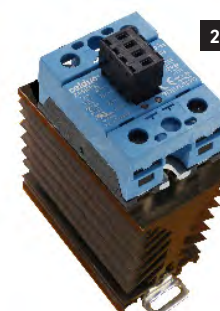
The zero cross SOB9 range, specifically designed for AC-51 resistive loads.

Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ^t	Specifications	Fig.
SOB942360	2x25A	12-280VAC	600V	10-30VDC	600A ² s	1 control	1
SOB942660	2x25A	12-280VAC	600V	10-30VDC	600A ² s	2 controls	1
SOB943360	2x35A	12-280VAC	600V	10-30VDC	1 250A ² s	1 control	1
SOB945360	2x50A	12-280VAC	600V	10-30VDC	2 800A ² s	1 control	1
SOB962060	2x25A	24-600VAC	600V	3,5-32VDC	380A ² s	2 controls	1
SOB963660	2x35A	24-600VAC	1200V	10-30VDC	1 250A ² s	2 controls	1
SOB965060	2x50A	24-600VAC	1200V	4-32VDC	1 680A ² s	2 controls	1
SOB965160	2x50A	24-600VAC	1200V	6-16VDC	1 680A ² s	2 controls	1
SOB965660	2x50A	24-600VAC	1200V	10-30VDC	2 500A ² s	2 controls	1
SOB967660	2x75A	24-600VAC	1200V	10-30VDC	7 200A ² s	2 controls	1

Product reference	Switching current AC-51 (40°C)	Switching voltage	Peak voltage	Control voltage	I ^t	Specifications	Fig.
SOB96366WF	2x15A	24-600VAC	1200V	10-30VDC	1250A ² s	2 controls Ready to use product mounted on heatsink	2

• Dim. 45 x 58,5 x 27 mm
(1.77 x 2.28 x 1.06 in)

(Connectors not included)



2

SOBR

NEW

The SOBR range with "push-in" spring type power connectors

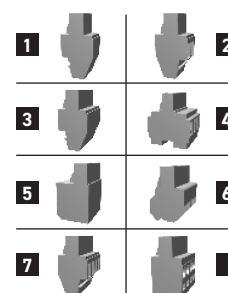
Product reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I ^t	Specifications
SOBR965560	2x24A	24-600VAC	1200V	10-30VDC	1 680A ² s	2 controls + 1 commun internal connection on input
SOBR965660	2x24A	24-600VAC	1200V	10-30VDC	1 680A ² s	2 controls



• Dim. 45 x 58,5 x 27 mm
(1.77 x 2.28 x 1.06 in)

ACCESSORIES FOR SOB → Connectors

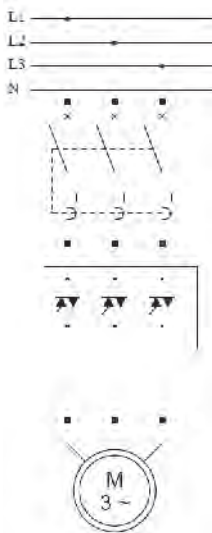
Product reference	Specifications	Relay type	Fig.
1Y020915	2 pole screw connector	SOB7 / SOB8 / SOB9 - 1 control	1
1Y022715	2 pole screw connector 270°	SOB7 / SOB8 / SOB9 - 1 control	2
1Y040915	4 pole screw connector 90° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	3
1Y041660	4 pole screw connector 90° & 270° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	4
1Y041817	4 pole spring connector 180° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	5
1Y042217	4 pole screw connector 45° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	6
1Y042715	4 pole screw connector 270° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	7
1Y042716	4 pole spring connector 270° for SOB	SOB7 / SOB8 / SOB9 - 2 controls	8
1Y044604	4 pole spring connector 180°+ locking	SOB7 / SOB8 / SOB9 - 2 controls	



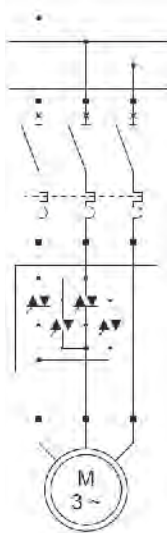
THREE-PHASE SOLID STATE RELAYS

celduc® relais has several ranges of solid-state relays for three-phase applications. Various models are available with ratings up to 125A max. per phase, with either AC or DC input and with instant (asynchronous) or zero cross (synchronous) switching.

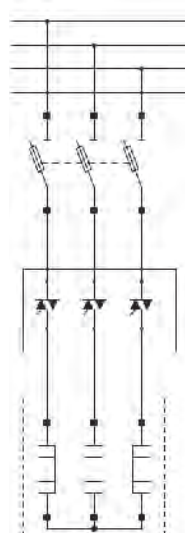
WIRING EXAMPLES



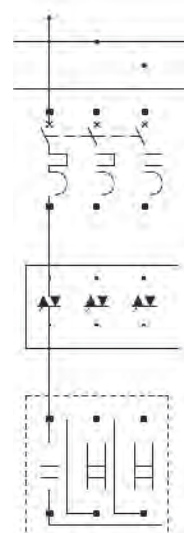
A three-phase SMT8/SGT8 type SSR controlling an AC-53 three-phase motor with thermal magnetic protection.



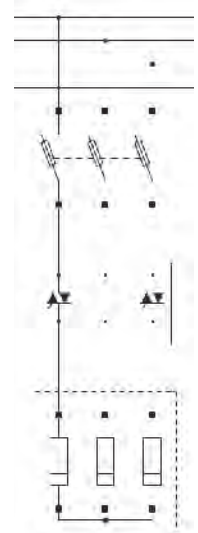
An SV9 inverter type three-phase SSR reversing the rotation direction of a three-phase asynchronous motor.



An SMT/SGT type three-phase SSR to control heating elements wired in a star connection with fuse protection.



An SMT/SGT type three-phase SSR to control heating elements wired in a delta connection with modular circuit breaker protection.



An SMB/SGB type SSR to control heating elements wired in a star connection with fuse protection.

EASY AND FAST CONNECTIONS

cel3pac®

- Version with 100 mm installation width,
- Small footprint: 34.7 mm height,
- Improved connections to increase switching current limits,
- Increase in the size of terminals on the power side: up to 50 mm²

sightpac®

- Compact 45 mm version,
- Same fixing distance as our okpac® and celpac® ranges,
- An innovative and scalable range (optional future modules).

Connection
on the
POWER SIDE



Standard with screws



With spring connectors

Standard
with screws



With spring
connectors

Connection
on the
CONTROL SIDE



Standard with screws or
4-pole pluggable
spring connector
(others available
on request)



With pluggable
connector

THREE-PHASE SOLID STATE RELAYS

sightpac®

NEW

REMINDER

SMB7/SMT7 RANDOM OR INSTANT SWITCHING.

SMB8/SMT8 ZERO CROSS FOR HEAVY DUTY LOADS.

SMB9/SMT9 ZERO CROSS FOR AC-51 RESISTIVE LOADS

SMB

→ 2 leg three-phase SSRs

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SMB8650510	3x50A	3x30A	3x12A	24-520VAC	1600V	4-30VDC	2 800A²s	RC - VDR
SMB8850210	3x50A	3x30A	3x12A	24-640VAC	1600V	4-30VDC	2 800A²s	VDR
SMB8670910	3x75A	3x35A	3x16A	150-520VAC	1600V	4-30VDC	7 200A²s	RC - VDR + auxiliary contact

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 100 x 48 mm
(1.77 x 3.94 x 1.89 in)

SMT

→ Three-phase SSRs with pluggable connectors

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SMT8620520	3x25A	3x20A	3x5A	24-520VAC	1200V	4-30VDC	380A²s	RC - VDR
SMT8628520	3x25A	3x20A	3x5A	24-520VAC	1200V	24-255VAC/DC	380A²s	RC - VDR

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 100 x 48 mm
(1.77 x 3.94 x 1.89 in)

→ "Ready to use" version with built-in heatsink

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SMT8628521	3x25A	3x17A	3x5A	24-520VAC	1200V	24-255VAC/DC	380A²s	RC - VDR



SGB 2G

→ 2 leg three-phase SSRs

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.
SGB8850200	3x50A	3x50A	3x12A	24-640VAC	1600V	4-30VDC	2 800A²s	VDR
SGB8890200	3x125A	3x85A	3x32A	24-640VAC	1600V	4-30VDC	22 000A²s	VDR

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 100 x 76.5 x 35.5 mm
(3.94 x 2.99 x 1.38 in)

THREE PHASE SOLID STATE RELAYS

cel3pac®

NEW
REMINDER
SGB7 / SGT7 RANDOM OR INSTANT SWITCHING

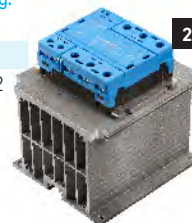
SGB8 / SGT8 ZERO CROSS FOR HEAVY DUTY LOADS

SGB9 / SGT9 ZERO CROSS FOR AC-51 RESISTIVE LOADS

SGB 2G

→ 2 leg three-phase SSRs

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.	Fig.
SGB8630305	3x35A	3x23,5A	3x7A	24-600VAC	1600V	4-32VDC	1 250A²s	TVS	1
SGB8650306	3x50A	3x41A	3x12A	24-600VAC	1600V	4-32VDC	2 800A²s	TVS	2



SGT 2G

→ Three-phase SSRs

Product reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	Peak voltage	Control voltage	I ² t	Protec.	Fig.
SGT7650500	3x50A	3x42A	3x12A	24-520VAC	1600V	4-30VDC	2 800A²s	RC - VDR	1
SGT7690500	3x125A	3x64A	3x32A	24-520VAC	1600V	4-30VDC	22 000A²s	RC - VDR	1
SGT8638500	3x35A	3x35A	3x7A	24-520VAC	1600V	24-255VAC/DC	1 250A²s	RC - VDR	1
SGT8650810	3x50A	3x42A	3x12A	24-520VAC	1600V	4-30VDC	2 800A²s	RC - VDR + Temperature alarm	3
SGT8658500	3x50A	3x42A	3x12A	24-520VAC	1600V	24-255VAC/DC	2 800A²s	RC - VDR	1
SGT8670500	3x75A	3x54A	3x16A	24-520VAC	1600V	4-30VDC	7 200A²s	RC - VDR	1
SGT8678500	3x75A	3x54A	3x16A	24-520VAC	1600V	24-255VAC/DC	7 200A²s	RC - VDR	1
SGT8690500	3x125A	3x64A	3x32A	24-520VAC	1600V	4-30VDC	22 000A²s	RC - VDR	1
SGT8698500	3x125A	3x64A	3x32A	24-520VAC	1600V	24-255VAC/DC	22 000A²s	RC - VDR	1
SGT8850200	3x50A	3x42A	3x12A	24-640VAC	1600V	4-30VDC	2 800A²s	VDR	1
SGT8858200	3x50A	3x42A	3x12A	24-640VAC	1600V	24-255VAC/DC	2 800A²s	VDR	1
SGT8859200	3x50A	3x42A	3x12A	24-640VAC	1600V	90-280VAC/DC	2 800A²s	VDR	1
SGT8879200	3x75A	3x54A	3x16A	24-640VAC	1600V	90-280VAC/DC	7 200A²s	VDR	1
SGT9834300	3x35A	3x30A	-	24-660VAC	1600V	4-30VDC	1 250A²s	TVS	1
SGT9854300	3x50A	3x42A	-	24-660VAC	1600V	4-30VDC	2 800A²s	TVS	1
SGT9854320	3x50A	3x42A	-	24-660VAC	1600V	4-30VDC	2 800A²s	TVS	2
SGT9874300	3x75A	3x54A	-	24-660VAC	1600V	4-30VDC	7 200A²s	TVS	1

All these products must be mounted on heatsinks in order to reach nominal performance.

→ "Ready to use" version with integrated heatsink

SGT8658502	3x50A	3x24A	3x12A	24-520VAC	1600V	24-255VAC/DC	2 800A²s	RC - VDR	4
SGT8698503	3x125A	3x48A	3x32A	24-520VAC	1600V	24-255VAC/DC	22 000A²s	RC - VDR	5
SGT8698504	3x125A	3x64A	3x32A	24-520VAC	1600V	24-255VAC/DC	22 000A²s	RC - VDR	6



• Dim. 100 x 76,5 x 35,5 mm
(3.94 x 2.99 x 1.38 in)

• For dimensions, please see technical data-sheet.

MOTOR CONTROL

SMR

→AC inverter

Product reference	Switching current AC-53 (40°C)	Switching voltage	Control voltage	I ² t	Protec.	Specifications
SMR8621520	3x5A	24-520VAC	10-30VDC	380A ² s	RC - VDR reversing + time delay	2 phase switching

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 45 x 100 x 48 mm
(1.77 x 3.94 x 1.89 in)

SG9 SV9 SW9

→AC inverter

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

The SV9 range is housed in an IP20 enclosure.

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

They are all supplied with LED indicators and are protected from being gang-operated (interlocking).

Available with a 40 or 47.6 mm fixing distance ("E" suffix).

Product reference	Switching current AC-53 (40°C)	Switching voltage	Control voltage	I ² t	Protec.	Specifications	Fig.
SG969100	3x6.6A	24-520VAC	10-30VDC	612A ² s	reversing + time delay	3 phase switching	1
SG969300E	3x8.5A	24-520VAC	12-30VDC	1 500A ² s		2 phase switching	1
SV969300E	3x8.5A	24-520VAC	12-30VDC	1 500A ² s		2 phase switching	2
SV969500E	3x16A	24-550VAC	12-30VDC	5 000A ² s		2 phase switching	2
SW960330	3x4.5A	24-550VAC	12-30VDC	1 500A ² s		2 phase switching	3
SW961230	3x8.5A	24-520VAC	12-30VDC	1 500A ² s		2 phase switching	4



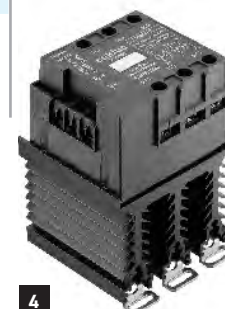
• Dim. 100 x 73.5 x 39.5 mm
(3.94 x 2.87 x 1.54 in)



• Dim. 100 x 76 x 56.5 mm
(3.94 x 2.99 x 2.20 in)



• Dim. 100 x 76 x 72 mm
(3.94 x 2.99 x 2.83 in)



• Dim. 83 x 90 x 155.5 mm
(3.27 x 3.54 x 6.12 in)

XKRD SGRD

→DC inverter

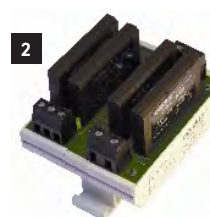
The SGRD inverter includes all the control electronics as well as short circuit protection and lockout to prevent the two rotation directions from being gang-operated.

Ready to use and mounted on a DIN rail, the XKRD30506 module consists of four static switches pre-wired in the inverter's rotation direction for a DC motor (100W @ 24VDC).

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protec.	Fig.
SGRD01006	10A	8-36VDC	60V	8-36VDC	Voltage and current VDR	1
XKRD30506	5A	7-36VDC	60V	7-30VDC		2



• Dim. 100 x 73.5 x 50.9 mm
(3.94 x 2.87 x 1.97 in)



• Dim. 58.2 x 76.4 x 53 mm
(2.28 x 2.99 x 2.09 in)

MOTOR CONTROL

SO4

→ Single phase starters

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

Product reference	Switching voltage	Switching current	Control voltage	Fig n°
SO400200	200-260VAC	35A	Soft-starter	1
SO400300	200-260VAC	40A*		2

*Value given for an ambient temperature of 20°C



2 = **1** with built-in heatsink

• Dim. 45 x 58.2 x 27 mm
(1.77 x 2.28 x 1.06 in)

SMCV SMCW

→ Three-phase AC soft starters

MOTOR CONTROL:

→ Effective reduction of torque and starting current.

STARTING INCANDESCENT OR INFRARED LAMPS:

→ Inrush current reduction

→ Increase in service life

TRANSFORMER CONTROL (LOADED) :

→ Saturation current removed

→ Improved control and protection

WHATEVER YOUR APPLICATION :

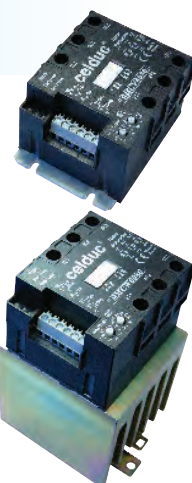
→ Network, load and product status diagnostics

→ Better balance of and less interference on starters (full control of the 3 phases!)

→ Easy to use and make adjustments

→ As compact as an electromechanical contactor.

Product reference	Pmax motor 400VAC		Pmax motor 230VAC		Max. Current AC53a		Specifications	Dimensions (in)
	Y*	D*	Y*	D*	Max.	EN60947-4-2		
SMCV6080	7,5kW	13kW	4,3kW	7,5kW	16A	11.5A	Heatsink not provided	3.94 x 2.99 x 2.28
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	3.27 x 4.33 x 2.91
SMCW6080	7,5kW	13kW	4,3kW	7,5kW	16A	11.5A		3.27 x 4.33 x 6.10
SMCW6110	11kW	19kW	6,4kW	11kW	25A	15.5A		4.33 x 4.33 x 7.09
SMCW6150	15kW	26kW	8,6kW	15kW	30A	22.5A	Ext. Bypass required	4.33 x 5.55 x 7.09
SMCW6151	15kW	26kW	8,6kW	15kW	30A (AC53b)	22.5A (AC53b)		3.27 x 4.33 x 2.91



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 an on-line wired starter. The delta assembly (D) corresponds to the starter wired in the motor's delta connection. Each channel is wired in series with motor winding.

ANALOGUE CONTROL RELAYS

celduc® relais offers a wide range of controllers with various control modes and input types.

Types of input control:

0-10VDC, 4-20mA , potentiometer or PWM (Pulse Width Modulation).



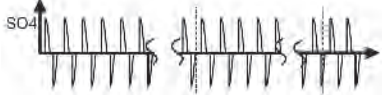
3 control modes are available:

- Burst control mode controllers
- Full wave pulse controllers
- Phase angle controllers

A technology for every application!

WHICH MODE TO CHOOSE?

→ Comparison of the 3 control modes - setting to 50%

	Working principles	Advantages	Typical applications
BURST CONTROL MODE SO3 RANGE (page 33) 	In a given cycle time (in this case, 1 or 2 seconds), the variation of the load power is achieved by eliminating whole alternations. Eliminations are distributed in accordance with a complex rule. Thus, in this example, the load is only powered to 50% because of the elimination of one alternation out of two.	This type of control makes it possible for the power to be finely modulated in accordance with the analog control, while limiting disturbances.	For controlling resistive loads at low thermal inertia, such as short wave infrared emitters (infrared heater bulbs)
FULL WAVE PULSE CONTROLLERS SG5 RANGE (page 34) 	In a given cycle time (variable depending on the models), the variation of the load power is achieved by eliminating whole alternations. The elimination is performed linearly in accordance with the Ton/Tcycle duty cycle requested by the control input. Thus, in this example, the load is only powered for 50% of the cycle time (Ton/Tcycle=0.5).	This type of control has the advantage of not generating interference since trigger takes place at around 0 voltage.	Suitable for high inertia loads (industrial furnaces, etc.).
PHASE ANGLE CONTROLLERS SINGLE PHASE SG4 - SO4 - SIL4 - SIM4 RANGES (pages 32-33) THREE-PHASE SGTA AND SVTA RANGE (page 35) 	In terms of the principle of the light dimmer, this control mode makes it possible to finely vary the load power by removing a part of the supply voltage sinusoid in accordance with the control input. The proportional response between the control input and the power output depends on the controller model and can be linear in angle, U^2 or in U_{rms} . Thus, in this example, the load is only powered to 50% because of the elimination of half of the supply voltage's half cycles.	This control mode makes it possible to finely adjust the load power, for example, when the accuracy of the temperature regulation is prioritized over the electromagnetic disturbances generated by this type of solution (a filter is recommended).	Mainly for loads that rapidly react when faced with voltage variations (lamps, motors, etc.). Also for DC loads behind a rectifier bridge (heater wires, Peltier effect modules, etc.).

ANALOGUE CONTROL RELAYS

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. Typical applications: light dimmers, single phase motor variable speed drives (vibrating bowl feeders, etc.), heating element regulation.

Model equipped with an LED and protection via RC and VDR network. Built-in power supply.

Product reference	Thyristor rating	Switching voltage	Control voltage	I _t	External power supply required ?
SG444020	40A	115-265VAC	0-10VDC	1 500A ² s	no
SG464020	40A	200-460VAC	0-10VDC	1 500A ² s	
SG468020	70A	200-460VAC	0-10VDC	5 000A ² s	
SG469020	110A	200-460VAC	0-10VDC	20 000A ² s	
SG444120	40A	115-265VAC	Potentiometer	1 500A ² s	
SG464120	40A	200-460VAC	Potentiometer	1 500A ² s	
SG469120	110A	200-460VAC	Potentiometer	20 000A ² s	
SG444420	40A	115-265VAC	4-20mA	1 500A ² s	
SG464420	40A	200-460VAC	4-20mA	1 500A ² s	
SG468420	70A	200-460VAC	4-20mA	5 000A ² s	
SG469420	110A	200-460VAC	4-20mA	20 000A ² s	

All these products must be mounted on heatsinks in order to reach nominal performance.



• Dim. 100 x 73,5 x 39,5 mm
3.94 x 2.87 x 1.54 in)

SO4

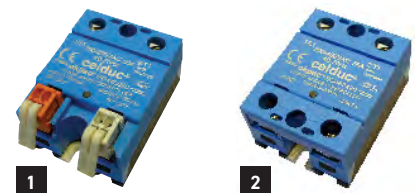
→ Single phase angle controllers

SO4s are our angle phase controllers in okpac® housing (to mount on heatsinks). The microcontroller managing these controllers can adapt the function to your application.

This range is mainly designed for resistive loads.

Product reference	Thyristor rating	Switching voltage	Control voltage	External power supply required ?	Fig.
SO445020	50A	100-280VAC	0-10V	yes	1
SO465020	50A	200-480VAC	0-10V	yes	1
SO468020	95A	200-480VAC	0-10V	yes	1
SO469020	125A	200-480VAC	0-10V	yes	1
SO468120	95A	200-480VAC	0-5V	yes	1
SO467501	75A	160-450VAC	1-5V	no	3
SO445320	50A	100-280VAC	Potentiometer	yes	1
SO465320	50A	200-480VAC	Potentiometer	yes	1
SO445420	50A	90-265VAC	4-20mA	no	2
SO465420	50A	200-480VAC	4-20mA	no	2
SO467420	75A	200-480VAC	4-20mA	no	2
SO468420	95A	200-480VAC	4-20mA	no	2
SO469420	125A	200-480VAC	4-20mA	no	2
SO465620	50A	200-480VAC	PWM	yes	1

Other functions are available: phase angle controllers, full wave pulse controllers, burst control mode controllers, soft starting controllers, flashing timers, etc. Please contact us.



• Dim. 45 x 58,2 x 27 mm
(1.77 x 2.28 x 1.06 in)



ANALOGUE CONTROL RELAYS

SIL4 / SIM4

→ Single phase angle controllers

Our Slx4 range is housed in a celpac® unit (ready to use). The microcontroller managing these controllers can adapt the function to your application. This range is mainly designed for resistive loads.

Product reference	Switching current at 25°C	Switching voltage	Control voltage	External power supply required ?	Fig.
SIL465000	32A	160-450VAC	0-10V	no	1
SIM465000	40A	160-450VAC	0-10V	no	2

• Dim. 22,5 x 80 x 116 mm
(0.87 x 3.15 x 4.57 in)



• Dim. 45 x 80 x 116 mm
(1.77 x 3.15 x 4.57 in)

SO3

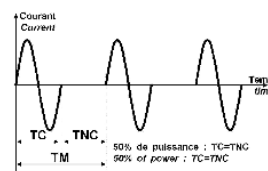
→ Burst control mode controllers (μP based unit)

This control mode is ideal for resistive loads that have a low thermal inertia, such as short wave infrared emitters (infrared heater bulbs). It also makes it possible for the power to be finely modulated in accordance with the analog control, while limiting disturbances.

This control mode consists of switching the streams of full sine waves equally distributed along a fixed modulation period (TM) in accordance with the analog 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	External power supply required ?
SO367001	75A	400VAC	0-10VDC	no

Other ratings and controls are available on request.



• Dim. 45 x 58,2 x 27 mm
(1.77 x 2.28 x 1.06 in)

MULTIZONES POWER CONTROLLER

NEW

Taking into account the identified market needs, celduc® relais has developed infrared lamp temperature control units. The technology used, based on solid state relays for power associated with complex electronics, makes it possible to provide precise and efficient power control of up to 12 lamps.

A program is used to inform the PLC of the operating state and possible faults in the manufacturing process.

Characteristics of the control boxes:

- Heating unit for a maximum of 12 IR channels (4 kW max. per channel and 36 kW max. per unit)
- U² type mains power variation correction (syncopated)
- Detections: broken lamp < 250 ms; overvoltage/undervoltage; overheating; broken fuse
- Built-in protection
- Control using Profibus DP



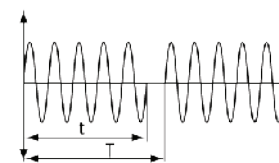
ANALOGUE CONTROL RELAYS

SG5

→ Full wave pulse controllers

This relay has an analog input isolated from the mains to proportionally vary the operating duty cycle of a load (t/T) in relation to the input voltage. This control mode consists of switching the streams of full sine waves equally distributed along a fixed modulation period (TM) in accordance with the analog input signal. Models equipped with an LED and protection via RC and VDR network.
Application: temperature control.

Product reference	Thyristor rating	Switching voltage	Control voltage	I ² t	External power supply required ?
SG541020	10A	230VAC	0-10VDC	72A ² s	no
SG544020	40A	230VAC	0-10VDC	610A ² s	
SG564020	40A	400VAC	0-10VDC	610A ² s	
SG544120	40A	230VAC	Potentiometer	610A 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	



• Dim. 100 x 73,5 x 39,5 mm
(3.94 x 2.87 x 1.54 in)

For higher power ratings and three-phase applications, please request a copy of our application notes. All these products must be mounted on heatsinks in order to reach nominal performance.

SWG5

→ Single phase power controllers

These controllers have an analog input isolated from the mains to proportionally vary the operating duty cycle of a heating element (heating element batteries).

This control mode consists of switching the streams of full sine waves equally distributed along a fixed modulation period (TM) in accordance with the analog input signal.

Application: Single phase battery.

Product reference	Switching power	Switching voltage	Control voltage	External power supply required ?	Fig.
SWG50210	2kW	230VAC	0-10VDC	no	1
SWG50810	8kW	230VAC	0-10VDC		2

0-5V control voltage or potentiometer available on request.



• Dim. 100 x 74 x 56 mm
(3.94 x 2.91 x 2.20 in)



• Dim. 100 x 110 x 96 mm
(3.94 x 4.33 x 3.78 in)

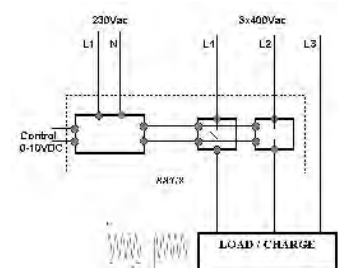
SWG8

→ Three-phase power controllers

The SWG8 three-phase controllers consist of a 0-10VDC control module and a power module customized for the load to switch. The control module has an analog input isolated from the mains to proportionally vary the operating duty cycle of a heating element (heating element batteries) connected to the power module.

Product reference	Switching power	Switching voltage	Control voltage
SWG81510	20kW	400VAC	0-10VDC
SWG82710	27kW		
SWG83610	36kW		
SWG84210	42kW		
SWG84810	48kW		
SWG86010	60kW		
SWG88010	80kW		

• For dimensions, please refer to the data sheet



THREE-PHASE PROPORTIONAL CONTROLLERS

SVTA

→ Controls any type of load (except capacitive loads), 3 or 4-wire (neutral), delta or star assembly:

- Resistive loads for temperature control (infrared lamps, furnaces, heating elements, etc.)
- Resistive loads for lighting control (filament and halogen lamps, UV, stage lighting, etc.)
- Loads including a transformer, an induction coil or a rectifier for voltage control (rectified power supplies, high voltage generators, etc.)
- Motor loads for speed control (depending on the type of motor and machine).

→ Three-phase phase angle controllers with six proportional control thyristors (balanced currents, less harmonics, etc.)

- Start and stop ramps (increases the unit's service life)
- Diagnostic functions
- Compact housing.

Product reference	Max. current AC-51	Max. current AC-53a	Control	External power supply required ?
SVTA4650E	50A	16A	0-10V	no
SVTA4651E	50A	16A	Potentiometer	
SVTA4684E	95A (*)	25A	4-20mA	
SVTA4690E	125A (*)	30A	0-10V	
SVTA4691E	125A (*)	30A	Potentiometer	
SVTA4694E	125A (*)	30A	4-20mA	

* Maximum current, max. cross sectional area = 10 mm², use double wires or special adaptors for currents > 50A. Please refer to the heatsink installation instructions.



• Dim. 100 x 76 x 58.5 mm
(3.94 x 2.99 x 2.28 in)

SGTA

• MAIN CHARACTERISTICS •

- Minimal dimensions
- Extensive network frequency (40-65Hz)
- Built-in overvoltage protection
- High I²t power elements
- Control of isolated thyristors using optical couplers during the entire cycle and the 3 phases (balanced currents, less harmonics, etc.)
- The minimum voltage applied on the load is the lowest in the market (3% RMS compared to 40% RMS offered by our competitors!)
- A wide range of options are available on request
- Manufactured in compliance with the major international standards: EMC, LVD, UL, VDE.

• TYPICAL APPLICATIONS •

- Resistive loads for temperature control (infrared lamps, furnaces, heating elements, etc.)
- Resistive loads for lighting control (filament and halogen lamps, stage lighting, etc.)

Product reference	Max. current AC-51	Switching voltage	Control	External power supply required ?
SGTA4650	50A	300-510VAC	0-10V	An 8-32V external power supply is required
SGTA4651	50A	300-510VAC	0-5V	
SGTA4653	50A	300-510VAC	Potentiometer	
SGTA4654	50A	300-510VAC	4-20mA	

Other ratings are available on request.



• Dim. 75.15 x 100 x 46 mm
(2.95 x 3.94 x 1.81 in)

DC SOLID STATE RELAYS

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

MOSFET

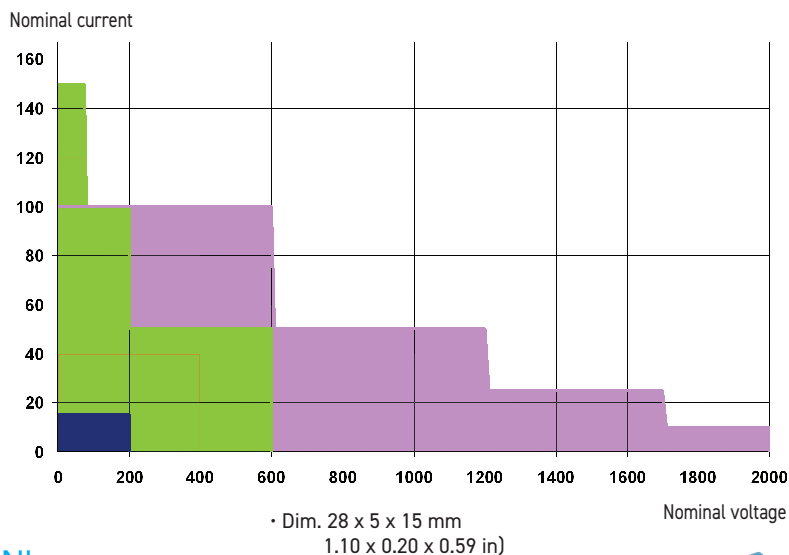
For applications requiring transient overcurrent withstand (motors).

BIPOLARE

For applications where a low control current is required.

IGBT

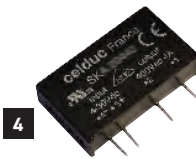
For high voltage applications (> 600VDC)



• Dim. 29 x 12.7 x 15.7 mm
(1.14 x 0.47 x 0.59 in)



• Dim. 29 x 12.7 x 25.4 mm
(1.14 x 0.47 x 0.98 in)



• Dim. 43.6 x 6.3 x 24.5 mm
(1.69 x 0.24 x 0.94 in)



• Dim. 44.5 x 58.2 x 27 mm
(1.73 x 2.28 x 1.06 in)



• Dim. 45 x 58.5 x 30 mm
(1.77 x 2.28 x 1.18 in)

A TECHNOLOGY FOR EVERY APPLICATION!
CURRENTLY UP TO 1200VDC AND 150A

MOSFET TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection	Fig.
SLD01210	2,5A	0-60VDC	60V	3-10VDC	Transil	1
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	2
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		
SPD07505	5A	0-30VDC	60V	12-30VDC 15-30VAC	Transil	3
SKLD11006	10A	7-36VDC	60V	3-10VDC		
SKLD31006	10A	7-36VDC	60V	7-30VDC		
SCM030200	30A	0-200VDC	200V	4.5-32VDC		
SCM040600	40A	0-600VDC	600V	4.5-32VDC		
SCM0100200	100A	0-200VDC	200V	4.5-32VDC	-	5
SCM0150100	150A	0-100VDC	100V	4.5-32VDC		
SOM02060	20A	5-40VDC	60V	3.5-32VDC		
SOM020100	20A	5-60VDC	100V	3.5-32VDC		
SOM020200	20A	5-110VDC	200V	3.5-32VDC		
SOM04060	40A	5-40VDC	60V	3.5-32VDC	Transil	6
SOM040100	40A	5-60VDC	100V	3.5-32VDC		
SOM040200	40A	5-110VDC	200V	3.5-32VDC		
SOM06075	60A	5-40VDC	75V	3.5-32VDC		
ES001000	0-80A	0-130VDC	200V	Voltage protection option (C1, D2) for the SOM range	Diode + capacitor	6

DC SOLID STATE RELAYS

BIPOLAR TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection
SKD10306	3A	2-60VDC	60V	3-30VDC	Diode
XKD10120	1A	2-220VDC	220V	5-30VDC	Diode
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
SCC20506	5A	2-60VDC	60V	10-32VDC	
SCC21506	15A	2-60VDC	60V	10-32VDC	



• Dim. 43.2 x 10.2 x 25.4 mm
(1.69 x 0.39 x 0.98 in)



• Dim. 44.5 x 58.2 x 27 mm
(1.73 x 2.28 x 1.06 in)



• Dim. 12.2 x 76.4 x 53 mm
(0.47 x 2.99 x 2.09 in)

IGBT TECHNOLOGY

Product reference	Switching current	Switching voltage	Peak voltage	Control voltage	Protection
SCI0251700	25A	0-1700VDC	1700V	4.5-32VDC	Backward diode
SCI0501200	50A	0-1200VDC	1200V	4.5-32VDC	Backward diode
SCI0100600	100A	0-600VDC	600V	4.5-32VDC	Backward diode
SDI0501700	50A	24-940VDC	1700V	24-48VDC	Depending on models : > Over-voltage protection > Load short circuit protection > Over-load temperature protection
SDI0501710	50A	24-940VDC	1700V	72-110VDC	
SDI1001700	100A	24-940VDC	1700V	24-48VDC	



• Dim. 44.5 x 58.2 x 27 mm
(1.73 x 2.28 x 1.06 in)

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

With celduc® relais,
your switches on continuous
networks are under control!



• Dim. 157 x 68 x 83 mm
(6.18 x 2.68 x 3.27 in)



On request: "ready to use" products, currents protected with built-in voltage protection, proportional control and DC motor inverters. Please contact us!

APPLICATIONS

DC power supplies (converters like choppers, inverters, ...)

Signal switching (testing equipment, ...)

Electromagnets (induction motor braking, ...)

Heating elements (air conditioning in trains, tramways, ...)

Batteries (ships, solar systems, ...)

DC Motors (travelling cranes, cranes, vehicles, ...)

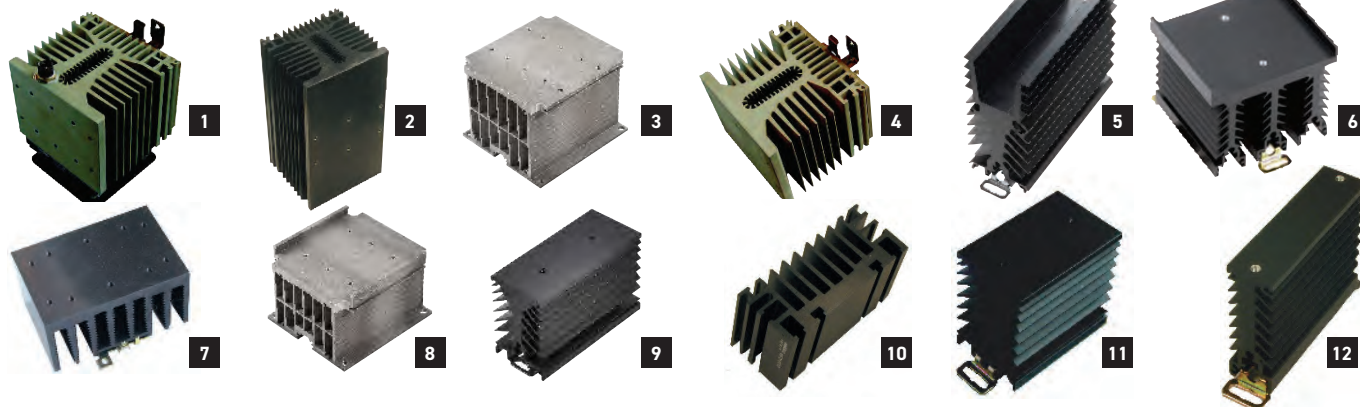


ACCESSORIES

HEATSINKS

Product reference	Thermal characteristics	Specifications	Dimensions (in)	Relay type	Fig n°
WF031100	0.3K/W	ventilated for DIN rail or screw - fan supply 230Vac	4.33 x 4.72 x 5.71	SO, SC, SG, SV	1
WF031200	0.3K/W	ventilated for DIN rail or screw - fan supply 24Vdc	4.33 x 4.72 x 5.71	SO, SC, SG, SV	1
WF050000	0.55K/W	DIN rail adaptor as option	4.33 x 3.94 x 7.87	SO, SC, SG, SV	2
WF071000	0.7K/W	DIN rail adaptor as option	4.33 x 3.50 x 4.72	SO, SC, SA, SU, SM, SG	3
WF115100	0.9K/W	for DIN rail or screw	4.33 x 3.94 x 3.54	SO, SC, SG, SV	4
WF112100	1K/W	for DIN rail or screw	1.93 x 4.61 x 4.72	SA, SU	5
WF108110	1.1K/W	for DIN rail or screw	3.50 x 3.19 x 3.86	SO, SC	6
WF121000	1.2K/W	for DIN rail or screw	3.94 x 1.57 x 3.94	SO, SC, SG, SV	7
WF124000	1.2K/W	DIN rail adaptor as option	3.54 x 3.94 x 2.72	SO, SC, SA, SU, SM	8
WF114200	1.75K/W	for DIN rail or screw	1.77 x 2.87 x 3.94	SO, SA, SU, SM	9
WF210000	2.1K/W	DIN rail adaptor as option	3.78 x 1.61 x 2.17	SO, SC	10
WF151200	2.2K/W	for DIN rail or screw	1.77 x 2.87 x 3.15	SO, SC, SA, SU	11
WF311100	3K/W	for DIN rail or screw	0.87 x 2.87 x 3.15	SA, SU	12

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

1L386100	6.3 mm angled Faston 45° for SO
1L382300	4.8mm angled Faston 45° for SO
1LK00100	mounting SC-SO-SF-SM-SU 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 ADAPTORS

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

1LDW1202	mounting of SC/SO sur 1LD12020 + 1LD12020
----------	-------------------------------------------

MOUNTING OPTION ONLY

IF QUANTITY > 10 (screw kit included)

1LW00000	mounting of relays on heatsink
1LDW0000	mounting of heatsink on DIN rail adaptor

MAGNETIC SENSORS

MAGNETIC PROXIMITY SENSORS

We are the experts

If you are looking for position, motion, presence, level or speed detection, then check out our range of magnetic proximity sensors.

We can even design a specific product for your applications! 70% of our magnetic proximity sensors are developed in accordance with our customers' specifications.

At celduc®, we are constantly evolving in line with new applications and market developments. With our customers, we want to share our 45 years of experience and two detection technologies:

- The reed switch, a dry contact hermetically sealed within a tubular glass envelope. It remains a simple, reliable and low cost solution.
- Silicon, with two types of electronic cells, magnetoresistance or Hall effect which have different characteristics that can be used in a wide range of applications.

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TELL US ABOUT YOUR PROJECT AND WE'LL PROVIDE THE SOLUTIONS.

APPLICATIONS

INDUSTRY

Counting
Cylinder positions
Machine safety
Advertising panel
Actuator position
Liquide level
Speed control

HOME AUTOMATION

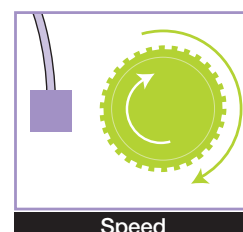
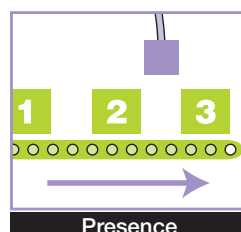
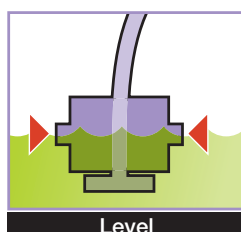
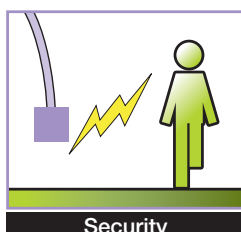
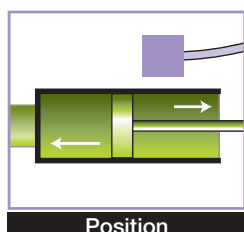
Burglar alarms
Window position
Lifts
Blind control
Small and large appliances
Centralized Building Management
Swimming-pools

AVIATION, SPACE AND MILITARY

Fuel and petroleum product levels
Oil and water levels
Sensors and actuators for Airbus
Camera shutter control

SPECIFIC APPLICATIONS

ATEX
(explosive atmospheres)



MAGNETIC SENSORS

WHAT IS A MAGNETIC PROXIMITY SENSOR?

The sensing element of a magnetic sensor can be a Hall cell, a magnetoresistive cell or a Reed switch which detect the presence of a magnetic field, in general this is a permanent magnet. It detects the position of a magnet without contact and transmits an electrical go-no-go or analog signal, depending on the model in question.

REED SWITCH SENSORS

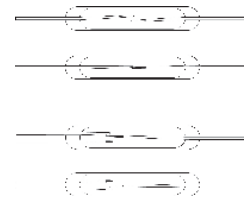
A REED switch consists of a pair of ferromagnetic flexible metal contacts in a hermetically sealed glass envelope, filled with an inert gas. The contacts are usually normally open, closing when a magnetic field is present, or they may be normally closed and open when a magnetic field is applied.

THERE ARE DIFFERENT CONTACT TYPES

- NO / A Form > Normally Open
- NC / B Form > Normally Closed
- BISTABLE NO / L Form
- CHANGE-OVER / C Form

THE MAIN ADVANTAGES ARE:

- No power supply required,
- Can operate in harsh environments,
- Extensive sensing range (depending on the magnetic sensitivity of the switch, the power of the magnet as well as the magnetic environment),
- Economic solution.



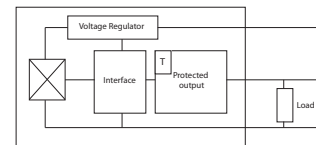
REMINDER : Reed switches and detectors using reed switches can switch both AC and DC currents. The values provided in our data sheets for current and voltage are maximum values. It means that in DC applications it represents the maximum switching current and voltage. In AC applications these values are peak values. To calculate the nominal value you should divide this by 1.414.

ELECTRONIC SENSORS

Electronic sensor detection is based on the occurrence of a voltage proportional to the magnetic field on the Hall sensors and on a change in resistance also proportional to the magnetic field on sensors fitted with magneto resistors. The variations of these signals are processed by the sensor which emits an go-no-go or analog signal to the user in accordance with the customer's needs. These sensors require a power supply.

THE MAIN ADVANTAGES ARE:

- They operate at high a frequency: > 20 kHz
- Shock and vibration resistant
- Long service life



CONTROL MAGNETS

To control REED switch or HALL effect magnetic sensors, a magnet must be used. Please go to page 54 to view our complete range of coated and uncoated magnets.

THE SENSOR/MAGNET COMBINATION MUST BE SELECTED IN ACCORDANCE WITH THE TERMS OF USE

- Researched activation distance (action and release),
- Operating temperature,
- Operating mode (perpendicular or parallel movement? Face-to-face activation?),
- Geometry,
- Required corrosion resistance, etc.

REMINDER: The guaranteed activation distance depends on the sensor's sensitivity and the magnet's power. In this selection guide, we provide an example of a guaranteed activation distance for a given magnet. However, celduc® is always here to help you choose the best magnet/sensor combination for your needs.

MAGNETIC SENSORS

CUSTOMER SPECIFIC PRODUCTS

MORE THAN 50% OF OUR SENSORS ARE MANUFACTURED IN ACCORDANCE WITH CUSTOMER SPECIFICATIONS. HERE ARE A FEW EXAMPLES:

AIRCRAFT



Supplying this industry is proof of our reliability. celduc® relais has developed special sensors to detect the opening/closing of doors, for example, push-buttons used to detect open/closed doors in the Airbus A380; sensors to detect tank refueling in the Dassault Rafale and Saab JAS 39 Gripen fighters; level sensors for AIRBUS humidifiers, etc.



NUCLEAR



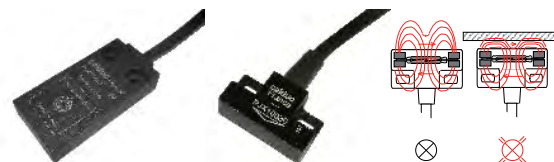
celduc® relais has designed and manufactured sensors for controlling nuclear reactors. These sensors are used in a system with the highest safety level. Our sensors have therefore undergone rigorous performance testing in extreme conditions. Developing sensors for nuclear reactors once again demonstrates the ability of celduc® relais to create customized solutions in industries where reliability is critical.



AGRICULTURE



In agriculture, there are many ways in which our magnetic sensors can be applied. celduc® has developed a magnetic proximity sensor for metal detection. No more need for magnets!

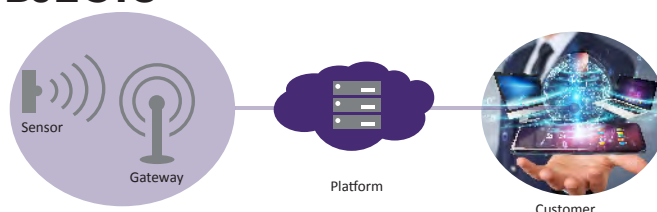


**A TEAM OF
EXPERTS
AT YOUR SERVICE**

SENSORS AND CONNECTED OBJECTS

Connect our sensors thanks to our energy efficient mobile communication solutions! Using networks made for the internet of things, our energy efficient wireless connection modules can connect all types of detection needs. Thanks to our professional expertise in the field of magnetic detection and the combination of reed technology and LPWAN networks (low-power wide-area network), our sensors are:

- **autonomous:** up to 10 years of uninterrupted use without changing or recharging the batteries,
- **connected:** directly access the status of your position and level sensor from your mobile or computer and be alerted of any changes,



→ **simple to use:** no SIM card or complex parameters, manage your sensors directly from our web platform and connect anywhere in the world with the same model,

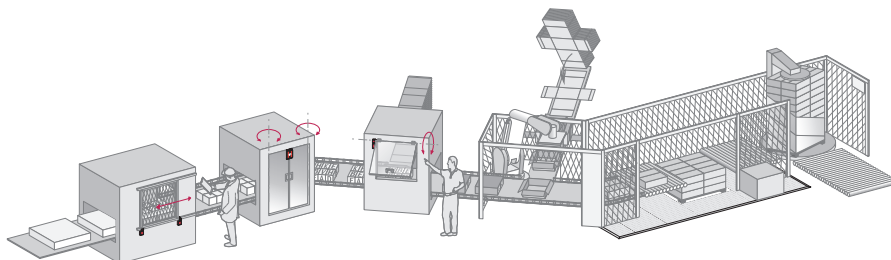
→ **economical:** much more affordable than traditional mobile networks, LPWAN solutions are particularly well suited to connected sensors and now cover more than 90% of world territory.

SAFETY MAGNETIC SENSORS

By preventing any dangerous machine movements, they protect machine operators when opening protective guards, doors or covers.



A SOLUTION FOR ALL REQUIRED SAFETY LEVELS!



3 SAFETY LEVELS COMPLIANT WITH STANDARDS EN ISO 13849-1 AND EN ISO 62061:

The latest safety standards are based on concepts such as the security level (SIL) or the performance level (PL).

**SIL 1
PL = C**



**SIL 1 / 2 / 3
PL = C / D / E**



+SAFETY MODULE ADAPTED

**SIL 2 / 3
PL = D / E**



**ADVANTAGE:
Autonomous system,
no safety module
required**

P3S / P4S

- These compact products are very easy to incorporate onto the machines
- Fully electronic with a high level of encryption (inviolability),
- High resistance to shocks and vibrations
- Self-protected solid state outputs (short-circuit of the load and temperature)
- Virtually unlimited sensor life (very high MTTFd)
- For industrial machines with one or several doors or imprecise guidance casings.

Product reference	P3S79119	P3S79129	P3S79159	P3S791M9	P4S80119	P4S80129	P4S80159	P4S801M9
Contact status	2 PNP solid state outputs				2 PNP solid state outputs EDM (External Devices Monitoring) function + 1 alarm output			
Max. switching voltage	2 x 24VDC solid state outputs							
Max. switching current	1,5A							
Alarm output	No output				0.5A 24VDC PNP solid state output			
Cable length	Cable 32.81ft	Cable 6.56ft	Cable 16.40ft	Connector M12	Cable 32.81ft	Cable 6.56ft	Cable 16.40ft	Connector M12
Activation distance	0.39in							
Associated magnet	Magnet provided (ref.: P5000309)							
LED option	Yes							
Working temperature	-25 to +70°C							

SAFETY MAGNETIC SENSORS



PXS / PSS / PSA

PXS, PSS or PSA products are designed to control the opening of protective devices, machine casings and access doors of machines considered to be dangerous.



Product reference	PXS79150	PXS59150	PXS10350	PXS70150	PSS79050	PSS79150	PSS59050	PSS59150	PSA60010	PSA60020
Contact status	20	0+F	20 + 1F	20 + 1F	20	20	0+F	0+F	10 solid state	10 solid state
Current limiting resistor	10Ω	10Ω	-	10Ω	10Ω	10Ω	10Ω	10Ω	-	-
Max. switching power	3VA	3VA	3VA	3VA	3VA	3VA	3VA	3VA	500VA	500VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	24-440VAC	6-440VAC
Max. switching current	100mA	100mA	100mA	100mA	100mA	100mA	100mA	100mA	3A	3A
Cable length	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	Cable 16.40 ft	2 wires 1.15 ft	2 wires 9.84 ft
Activation distance	0.31in	0.31in	0.31in	0.31in	0.20in	0.20in	0.20in	0.20in	0.47in	0.47in
Associated magnet	P2000100	P2000100	P2000100	P2000100	P3000100	P3000100	P3000100	P3000100	P6250000	P6250000
LED option	yes	yes	no	yes	no	yes	no	yes	no	no
Working temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C	-40 to +85°C	-40 to +85°C



UL PRODUCTS

ASSOCIATED CODED MAGNETS



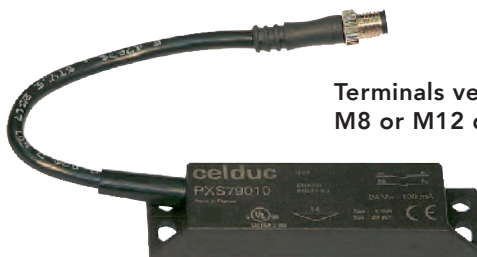
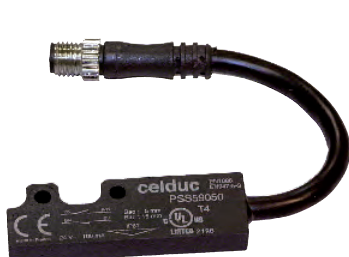
P2000100



P3000100



P6250000



Terminals version on request
M8 or M12 depends on the model : see data sheet

REED MAGNETIC SENSORS

SCREW POSITION SENSORS

General purpose sensors (screw-mounted), for industrial and domestic uses:

- Window sensors
- Presence of protective covers
- Door opening
- White goods.

IoT Solutions

Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)



Product reference	PAA10060	PAA11202	PAB10020	PLA10100	PLA10160	PLA11208	PLA12430
Contact status	NO	NO	NC	NO	NO	NO	NO
Connection type	2 wires / FASTON	2 wires	2 wires + HE14 connector	cable	2 wires	cable	cable
Cable length	2.28 ft	0.90 ft	0.52 ft	32.81 ft	1.18 ft	2.62 ft	9.84 ft
Max. switching power	12VA	12VA	3VA	12VA	12VA	12VA	12VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	110VAC 200VDC	48VAC 100VDC	110VAC 250VDC	110VAC 250VDC
Max. switching current	0.4A	0.4A	0.25A	0.5A	0.4A	0.4A	0.4A
Activation distance	0.59in with P6250000	0.59in with P6250000	0.71in with P6250000	0.39in with P6250000	0.59in with P6250000	0.63in with P6250000	0.47in with P6250000
Working temperature	-40 to +85°C	-40 to +100°C	-40 to +100°C	-40 to +85°C	-40 to +85°C	-40 to +100°C	-40 to +100°C
Dimensions in inches	0.91x0.55x0.24	0.91x0.55x0.24	0.91x0.55x0.24	1.26x0.59x0.24	1.26x0.59x0.24	1.26x0.59x0.24	1.26x0.59x0.24
Fixing screws distance	0.55in	0.55in	0.55in	0.67in	0.67in	0.67in	0.67in



Product reference	PLA13701	PLA13730	PLA13750	PLA43403	PLB10060	PLB16701	PLC10040	PLC13701
Contact status	NO	NO	NO	NO	NC	NC	Change-over	Change-over
Connection type	cable	cable	cable	cable	cable	cable	cable	3 wires
Cable length	0.33 ft	9.84 ft	16.40 ft	0.98 ft	9.84 ft	0.33 ft	4.92 ft	0.33 ft
Max. switching power	12VA	12VA	12VA	100VA	12VA	12VA	NF : 3VA NO : 8VA	NF : 3VA NO : 8VA
Max. switching voltage	110VAC 200VDC	110VAC 200VDC	110VAC 200VDC	230VAC 350VDC	110VAC 200VDC	110VAC 200VDC	48VAC 100VDC	48VAC 100VDC
Max. switching current	0.4A	0.4A	0.4A	1A	0.4A	0.4A	0.25A	0.25A
Activation distance	0.39in with P6250000	0.39in with P6250000	0.39in with P6250000	0.47in with P6250000	0.16<d<0.47in (magnet provided)	0.16in (magnet provided)	0.55in with P6250000	0.39in with P6250000
Working temperature	-40 to +100°C	-40 to +100°C	-40 to +100°C	-40 to +100°C	-40 to +100°C	-40 to +100°C	-40 to +100°C	-40 to +100°C
Dimensions in mm	32x15x6.8	32x15x6.8	32x15x6.8	32x15x6.8	32x15x6.8	32x15x6.8	32x15x6.8	32x15x6.8
Fixing screws distance	0.67in	0.67in	0.67in	0.67in	0.67in	0.67in	0.67in	0.67in



UL PRODUCTS AVAILABLE, see page 45

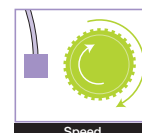
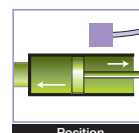
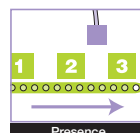


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REED MAGNETIC SENSORS

IoT Solutions

Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)



Product reference	PB195T00	PB367G00	PB390G00	PBA13725	PBA13780	PSL40010	PS2A0020	PSC41000	PSC42000
Contact status	NO	NC	NO	NO	NO	NO	2NO	Change-over	Change-over
Connection type	2 wires	2 wires	2 wires	Cable	Cable	2 wires	Cable	Cable	Cable
Cable length	0.26 ft	0.26 ft	0.26 ft	8.20 ft	26.25 ft	1.80 ft	6.56 ft	1.31 ft	16.40 ft
Max. switching power	50VA	16VA	16VA	12VA	12VA	10VA	100VA	100VA	100VA
Max. switching voltage	250VAC	110VAC 250VDC	110VAC 250VDC	110VAC 250VDC	110VAC 250VDC	230VAC 350VDC	48VAC 100VDC	230VAC 350VDC	230VAC 350VDC
Max. switching current	1A	0,5A	0,5A	0,4A	0,4A	0,5A	1A	3A	3A
Activation distance	0.28in with P4160000	0.16in with P4159000	0.51in with P4160000	0.51in with P4160000	0.51in with P4160000	0.47in with P6250000	0.59in with P6250000	0.31in with UR608000	0.31in with UR608000
Working temperature	-40 to +100°C					-40 to 85°C		-25 to +85°C	
Dimensions in inches	3.39x0.31x0.47	2x0.31x0.43				2x0.63x0.28			
Fixing screws distance	2.95in	1.57in	1.57in	1.57in	1.57in	0.63in	0.63in	0.63in	0.63in

Sensor with metal housing



Product reference	PLMA0100
Contact status	NO
Connection type	1 shielded cable
Cable length	2.92 ft
Max. switching power	10W
Max. switching voltage	110VAC 200VDC
Max. switching current	0.5A
Activation distance	1.18in (magnet provided)
Working temperature	-40 to +85°C
Dimensions in inches	3.46x1.50x0.47
Fixing screws distance	2.72in

Screw sensors with safety loop (Alarms)



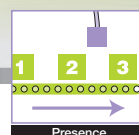
Product reference	PBA10010	PMG12482
Contact status	NO	NO
Connection type	cable + safety loop	cable + safety loop
Cable length	26.25 ft	26.25 ft
Max. switching power	12VA	12VA
Max. switching voltage	110VAC 200VDC	110VAC 200VDC
Max. switching current	0.4A	0.5A
Activation distance	0.63in with P4160000	0.55in with P6250000
Working temperature	-40 to +100°C	-25 to +85°C
Dimensions in inches	2x0.31x0.43	1.30x0.59x0.24
Fixing screws distance	1.57in	0.67in

UL approved sensors

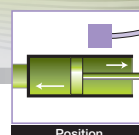


Product reference	PLA10101U	PLA12435U	PLC12425U
Contact status	NO	NO	Change-over
Connection type	2 wires	2 wires	Cable
Cable length	1.31 ft	1.15 ft	0.35 ft
Max. switching power	10VA	10VA	NC : 3VA NO : 8VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC
Max. switching current	0.5A	0.4A	0.5A
Activation distance	0.39in with P6250000	0.47in with P6250000	0.39in with P6250000
Working temperature	-40 to + 85°C	-40 to +100°C	-25 to +85°C
Dimensions in inches	1.26x0.59x0.24		
Fixing screws distance	0.67in		

REED MAGNETIC SENSORS



Presence



Position



Speed

TUBULAR POSITION SENSORS

IoT Solutions

Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)

General purpose sensors (screw-mounted), for industrial and domestic uses:

- Window sensors
- Presence of protective covers
- Door opening
- White goods.

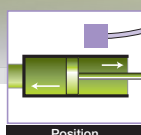
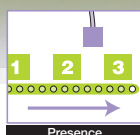


Product reference	PTA10440	PTA11235	PTA12401	PTA13730	PTA50010	PTB13702	PTC13730
Contact status	NO	NO	NO	NO	NO	NC	Change-over
Max. switching power	12VA	12VA	12VA	12VA	12VA	3VA	NC : 3VA NO : 8VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC
Max. switching current	0.4A	0.4A	0.4A	0.4A	0.4A	0.25A	0.25A
Connection type	2 wires 1.64 ft	Cable 8.20 ft	2 wires 0.33 ft	2 wires 9.84 ft	2 wires 0.33 ft	2 wires 0.66 ft	Cable 9.84 ft
Activation distance with P6250000	0.28in	0.59in	0.55in	0.39in	0.71in	0.55	0.28in
Working temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Dimensions in inches	Ø0.24x1.18 Plastic	Ø0.24x1.18 Plastic	Ø0.24x1.18 Plastic	Ø0.24x1.18 Plastic	Ø0.24x0.98 Plastic	Ø0.24x1.18 Plastic	Ø0.24x1.18 Plastic



Product reference	PTA10490	PTPA0030	PTPA0100	PTPA0110	PTPA0230	PTPB0011
Contact status	NO	1NO	1NO	1NO	1NO	1NC
Max. switching power	10VA	12VA	12VA	12VA	12VA	12VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC
Max. switching current	0.4A	0.5A	0.5A	0.5A	0.5A	0.5A
Connection type	2 wires 2.62 ft	2 wires 9.84 ft	Connectors	Connectors	2 wires 9.84 ft	2 wires 0.26 ft + FASTON
Activation distance	0.63in with P6250000	0.47in (magnet provided)	0.47in (magnet provided)	consult us	1.18in (magnet provided)	0.39 (magnet provided)
Working temperature	-40 to +120°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Dimensions in inches	Ø0.24x1.61 Raw brass	Ø0.43x1.10 Plastic	Ø0.43x1.10 Plastic	Ø0.43x1.10 Plastic	Ø0.91x1.06 Plastic	Ø0.91x1.10 Plastic

REED MAGNETIC SENSORS



PTI M8 HOUSING

Typical applications :

- Speed sensors,
- Presence/position/motion sensors.



Product reference	PTI40003	PTI40020	PTI40030	PTI50020	PTIC0030	PTI10122	PTI60020	PTI70020
Contact status	1NO / A form	1NO / A form	1NO / A form	1NC / B form	Change-over / C form	1NO / A form	1NO / A form	1NC / B form
Max. switching power	12VA	12VA	12VA	5W	5W	10VA	12VA	5W
Max. switching voltage	110VAC 200VDC	110VAC 200VDC	110VAC 200VDC	110VAC 175VDC	175VDC	48VAC 100VDC	110VAC 200VDC	110VAC 175VDC
Max. switching current	0.5A	0.5A	0.5A	0.25A	0.25A	0.10A	0.5A	0.25A
Connection type	Cable 0.98 ft	Cable 6.56 ft	Cable 9.84 ft	Cable 6.56 ft	Cable 9.84 ft	Cable 72.18 ft	Cable 6.56 ft	Cable 6.56 ft
Activation distance	0.47in with magnet PT505000	0.47in with magnet PT505000	0.47in with magnet PT505000	0.28in with magnet PT505000	0.59in with magnet UR801000	0.47in with magnet PT505000	0.47in with magnet UR801000	0.28in with magnet UR801000
Working temperature	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C	-40 to +85°C
Dimensions in inches	M8 - Lg 1.22 Plastic	M8 - Lg 1.22 Plastic	M8 - Lg 1.22 Plastic	M8 - Lg 1.22 Plastic	M8 - Lg 1.22 Plastic	M8 - Lg 1.57 Stainless Steel	M8 - Lg 1.57 Stainless Steel	M8 - Lg 1.57 Stainless Steel

PTA / PDC M10 HOUSING

Typical applications :

- Speed sensors,
- Presence/position/motion sensors.

→ Sensors with M12 housing page 48



Product reference	PTA80020	PTA90160	PDC20030	PDLA2030	PTC10091
Contact status	1NO / A form	1NO / A form	Change-over / C form	Bistable / L form	Change-over / C form
Max. switching power	12VA	12VA	60VA	100VA	NC : 3W, NO : 8 W
Max. switching voltage	110VAC 200VDC	48VAC 100VDC	250VAC	250VAC	48VAC 100VDC
Max. switching current	0.5A	0.4A	1A	1A	0.25A
Connection type	Cable 6.56 ft	Cable 4.92 ft	Cable 9.84 ft	Cable 9.84 ft	Cable 0.33 ft
Activation distance	0.98in with magnet PT810000	0.47in with magnet P6250000	0.79in with magnet UR144360	1.18in with magnet UP802008	0.79in with magnet UR124540
Working temperature	-25 to +70°C	-40 to +125°C	-40 to +75°C	-40 to +75°C	-25 to +85°C
Dimensions in inches	M10x0.04 - Lg 1.73 Stainless Steel	M10 - Lg 1.57 Raw brass	M10x0.04 - Lg 3.35 Plastic	M10x0.04 - Lg 3.35 Plastic	M8x0.04 - Lg 1.61 Raw brass

SENSORS FOR LIFTS

AND OTHER INDUSTRIAL APPLICATIONS

PC – M12 HOUSING



Typical applications :

- Lifts: sensors with 2 or 3 normally open contacts are used to detect the position of the cabin and are also used as an automatic level reset according to the weight in question.
- Position/motion sensors.

Product reference	PCA22330	PCA36720	PCC12320	PCC26720	PCLA3030	PC2A2330	PC3A2330
Contact status	1NO / A form	1NO / A form	Change-over / C form	Change-over / C form	Bistable / L form	2NO / A form	3NO / A form
Max. switching power	70VA	100VA	3VA	60VA	100VA	70VA	70VA
Max. switching voltage	300VAC	250VAC	100VAC	400VAC	250VAC	300VAC	300VAC
Max. switching current	0.5A	3A	0.25A	1A	3A	0.5A	0.5A
Connection type	Cable 9.84 ft	Cable 6.56 ft	Cable 6.56 ft	Cable 6.56 ft	Cable 9.84 ft	Cable 9.84 ft	Cable 9.84 ft
Activation distance	0.79in with UR144361	0.59in with UR144361	0.98in with UR144361	0.71in with UR144361	1.18 with UP081508	0.79in with UR144361	0.79in with UR144361
Working temperature	-25 to +75°C	-25 to +75°C	-25 to +75°C	-25 to +75°C	-25 to +75°C	-40 to +75°C	-40 to +75°C
Dimensions inches	M12 L 3.15 Plastic housing						

SENSORS FOR LIFTS

- Lift position detection
- Door opening control

celduc® relais range includes Reed switch or "all Electronic" magnetic sensors which use Hall effect sensors or magneto resistors. It is important to clearly define the "sensor + magnet" combination in the terms of use.

celduc® relais is here to help you choose the right product for your application. We can supply you with sensors as well as magnets/laminated plastic magnets.

Advantages of celduc® relais sensors:

- resistant to heat, cold air, humidity, dust, etc. in their operating environment
- exceptional reliability
- extensive sensing range
- good withstand capacity to impacts
- IP67



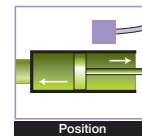
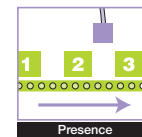
Product reference	PMG12921	PMG12924	PMG12930S	PMG13051
Contact status	NO	NO	NO bistable	NC
Max. switching power	100VA	120VA	60VA	30VA
Max. switching voltage	230VAC	250VAC	110VAC 230VDC	110VAC 230VDC
Max. switching current	3A	3A	1A	0.5A
Connection type	22.97 ft	22.97 ft	23.95 ft	21.33 ft
Activation distance	1.06in with UP302010	1.06in with UP302010	0.28<D<1.57mm with UP302010	1.06in with UP302010
Working temperature	-25 to +85°C	-25 to +85°C	-25 to +85°C	-25 to +85°C
Dimensions in inches	M14 x 2.95	M14 x 2.95	3.15x1.18x1.18	M14 x 2.95

REED MAGNETIC SENSORS / HALL EFFECT

SENSORS FOR LAYOUT ON PCB

Overmolded reed switch sensors for mounting on PCBs in complete safety (no switch embrittlement).

Product reference	PHA01200	PHA11200	PHC13700
Contact status	NO	NO	Change-over
Max. switching power	12VA	12VA	NC : 3VA / NO : 8VA
Max. switching voltage	48VAC 100VDC	48VAC 100VDC	48VAC 100VDC
Max. switching current	0.4A	0.4A	0.4A
Activation distance with U6250000	0.71in	0.67in	0.43in
Working temperature	-40 to +100°C	-40 to +100°C	-40 to +100°C
Dimensions in inches	0.91x0.16x0.12	0.91x0.16x0.12	0.91x0.16x0.12



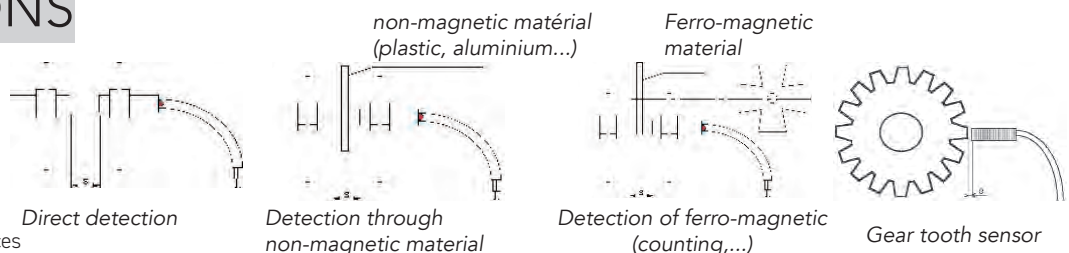
HALL EFFECT SENSORS

celduc® relais has two ranges of electronic sensors:
→ Hall effect sensors that require an external magnet
→ Steel gear tooth magnetic sensors.

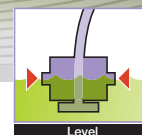
Product reference	PTE11320	PTE11321	PTE21320	PTE21321	PTE31320	PTE31321	PTE41320	PTE41321
Contact status	Hall effect PNP	Hall effect NPN	Gear tooth PNP	Gear tooth NPN	Hall effect PNP	Hall effect NPN	Gear tooth PNP	Gear tooth NPN
Cable length	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft	cable 6.56 ft
Activation distance	0.75in	0.75in	0.04in	0.04in	0.67	0.67	0.04in	0.04in
Max. switching voltage	6-48VAC	6-48VAC	6-48VAC	6-48VAC	6-48VAC	6-48VAC	6-48VAC	6-48VAC
Max. switching current	0.4A	0.4A	0.4A	0.4A	0.4A	0.4A	0.4A	0.4A
Working temperature	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Dimensions in inches	Plastic housing M12 x 1.30				Raw brass housing M12 x 1.30			
Associated coded magnet	PT810000	PT810000			PT810000	PT810000		

APPLICATIONS

- Counting
- Industry
- Lifts
- Speed sensors
- Electrical household appliances
- Tractors...



REED MAGNETIC SENSORS



LEVEL & FLOW SENSORS

IoT Solutions







Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)

celduc relais® has a wide range of standard or specific level and flow sensors with Reed switches.

Since our sensors are available in various plastic and stainless steel housings, we can accommodate a wide range of applications, depending on the chemicals and operating temperatures used.

For specific applications, (e.g.: potentiometric scale, special level sensors) please contact us: we can develop products to meet your needs.

- (1) Possible to invert the functions by reversing the float
(2) Available in an approved version for ATEX zones (see page 53)

VERTICAL LEVEL SENSORS								
	Product reference		PTF01070	PTFA1015	PTFA1103 (1) PTFA1104 (1)	PTFA5001 (1)	PTFA1210	PTFA2115(1)(2) PTFA2115R
	Mounting		Vertically	Vertically	Vertically	Vertically	Vertically High and low level	Vertically
	Contact status (float down)		1NO	1NO	1NC (PTFA1103) 1NO (PTFA1104)	1NC	1NO+NC	1NO
	Connection type		2 wires 2.76in	2 wires 4.92ft	2 wires 0.98ft	Cable 6.56ft	Cable (3 wires) 0.98ft	2 wires 4.92ft
	Material	Housing	Polyamide 6/6 resin with glass fiber content	Polyamide 6/6 resin with glass fiber content	Polypropylene	Polypropylene	Polyamide	Stainless steel
		Float	Polypropylene	Polypropylene			Polyurethane	
	Liquid compatibility		Water	Water	1	1	2	3
	Float travel		0.39in	0.67	0.35	0.39in	1.89in	0.31in
	Max. switching power		10VA	10VA	10VA	50VA	Top : 10VA Bottom : 3VA	50VA
	Max. switching voltage		48VAC 100VDC	48VAC 100VDC	230VAC 350VDC	230VAC 350VDC	Top : 200Vdc Bottom : 100Vdc	230VAC 350VDC
	Max. switching current		0.5A	0.5A	0.5A	0.5A	Top : 0.5A Bottom : 0.25A	0.5A
	Density mini		0.8	0.75	0.7	0.9	0.6	0.75
	Working temperature		0 / 70°C	0 / 70°C	-10 / 80°C	-10 / 80°C	-10 / 85°C	0 / 100°C
	Thread		M8 x 0.04in	3/8" threading UNC 16 per inch	1/8" GAS 28 per inch	M8 x 0.04in	3/8" threading UNC 16 per inch	M10 x 1

LIQUIDS COMPATIBILITY

- 1 → Compatible with acid : acetic, citric, formic, lactic, nitric diluted, phosphoric, sulphuric diluted ; soda ; alcohols : ethanol, methanol, propanol ; glycol ; mineral oil ; water
→ Not compatible with the following solvents : chloroforme, methylene chloride, trichloroethylene, toluene ; hard acids.
- 2 → Compatible with fuels, engine oil, kerosene, lubricating oil, mineral oil, vegetal oil,
→ Not compatible with almost all acids, methylene chloride
→ Acceptable resistance to water.
- 3 → Compatible with almost all the liquids except hard acids.

REED MAGNETIC SENSORS

OPERATION

Thanks to its magnetic field, a float fitted with one or more magnets moves with the fluid and activates a hermetically sealed REED contact.

ADVANTAGES

The following advantages ensure user safety, repeatability, accuracy and operational reliability combined with low maintenance.

- A single moving part: the float.
- Since Reed switches are only activated by a magnetic field, there is no wear and tear.
- Because Reed switches are hermetically sealed, there are no ingress protection issues.



HORIZONTAL LEVEL SENSORS

Product reference	PTFA0100	PTFA3115	PTFA3315 (2)	PTFA3415
Mounting	Horizontally External mounting	Horizontally	Horizontally	Horizontally External mounting
Contact status	1NO	1NO	1NO	1NO
Connection type	2 wires 6.89in + Molex connector	2 wires 4.92ft	2 wires 4.92ft	Cable 4.92ft
Material	Polyamide 30% glass fiber	Polyamide 30% glass fiber	Polypropylene	Polypropylene
Liquid compatibility	2	2	1	1
Float travel	50°	50°	50°	50°
Max. switching power	10VA	50VA	50VA	50VA
Max. switching voltage	110VAC 200VDC	230VAC 350VDC	230VAC 350VDC	230VAC 350VDC
Max. switching current	0.5A	0.5A	0.5A	0.5A
Density mini	0.6	0.6	0.6	0.6
Working temperature	0 / 85°C	0 / 85°C	-10 / 100°C (wires/85°C)	-10 / 100°C (wires/85°C)
Thread	Specific	Specific	M16 x 2	M16 x 2

(2) Available in an approved version for ATEX zones (see page 53)

FLOW SENSORS

PTA10535	PTA10595
Horizontally Short paddle (Lg2= 57mm)	Horizontally Long paddle (Lg2= 77mm)
1NO	1NO
Cable 6.56ft	Cable 6.56ft
PPO (NORYL)	PPO (NORYL)
Water	Water
-	-
100VA	100VA
230VAC 350VDC	230VAC 350VDC
1A	1A
-	-
0 / 80°C	0 / 80°C
Specific	Specific

APPLICATIONS

HEATING (air-conditioning, heaters, humidifiers)

→ To detect the tank's water level.

DOMESTIC EQUIPMENT (electronic toilet flush system, solar energy)

→ To detect the water level.

FOOD INDUSTRY (coffee machines, vending machines)

→ The sensor provides information which activates a pump to maintain the water level.

MEDICAL EQUIPMENT (sterilizers)

→ Water level

WATER TREATMENT (water purifiers, water makers)

→ The sensor is used to detect the required supply level.

SWIMMING POOLS (water treatment, water heating)

→ Water level and flow.

AUTOMOBILE (to check water levels, ABS brake fluid, presence of water in fuel, washer fluid)

→ To detect the various liquid levels.

VARIOUS INDUSTRIES (self-service photo booths, electric car wash, etc.)



REED MAGNETIC SENSORS

SENSORS FOR WINDOW FRAMES

IoT Solutions

Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)

This new range has been developed to detect the position of a window: open or closed (monitoring opening).

Typical applications are centralized building management systems, air conditioning and heating. Main advantages are:

→ Installation and connection time reduced by half: locking pluggable connectors, clip-mounted (no fixing screws)

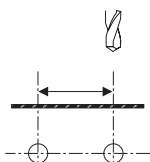
→ Open, closed contact, inverter, safety loop

→ Dust and damp proof contact.

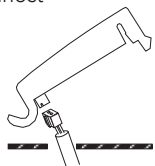


QUICK AND EASY TO INSTALL!

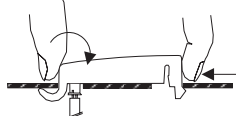
1 Drill



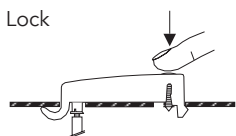
2 Connect




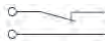








3 Install



4 Lock



Product reference		PWA01501	PWB01501	PWA11500	PWB11500	PWC01500
Type of contact		NO	NC	NO + safety loop	NC + safety loop	Change-over
Contact status	Window open					
	Window open					
Connection type		Cable + PHR2 connector (not included)		Cable + PHR4 connector (not included)		
Cable length		Ref. 2YB20031 : 9.84 ft Ref. 2YB20051 : 16.40 ft Ref. 2YB20111 : 32.80 ft Ref. 2YB20131 : 42.65 ft Ref. 2YB20151 : 49.21 ft Ref. 2YB20251 : 82.02 ft		Ref. 2YB40080 : 26.25 ft		
Max. switching power		10VA				
Max. switching voltage		48VAC 100VDC				
Max. switching current		Depends on magnet used - see our technical data-sheet				
Activation distance		Depend on the magnet - see technical data-sheet				
Working temperature		-40 to +70°C				
Dimensions (inches)		1.85 x 0.35 x 0.35				



Magnet PW520000
to be clipped



Magnet UR124540
to be screwed



Magnet UZ189538
to be glued





ATEX SENSORS

celduc® relais is a certified ATEX product manufacturer under number INERIS 04ATEXQ406.

celduc® relais also has an EC type examination certificate, number INERIS 04ATEX0105.

Group II for surface industries.

IoT Solutions

Connect our Reed sensors to a communication system so that they are autonomous and networked. (see page 41)

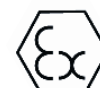
Marking example : for part number PL.1...Ex (for other part numbers, please refer to the respective data sheet)

CE0080 II 2 GD

**Ex mb IIC T6 Gb
Ex tb IIIC IP67 T85°C Db**

II 1 GD

**Ex ia IIB T6 Ga
Ex ia IIIB T85°C Da**



Type of devices :

1 in zone 0 (continuous risk)
2 in zone 1 (intermittent risk)

Gaz : G or Dust : D

Protection "m" for zone 1 and "i" for zone 0

Temperature class : T6 (85°C) T4 (135°C) or T3 (200°C)

Cables length 5m or 10m.



Product reference	PLA1125Ex	PLB1179Ex	PLC1125Ex	PTA1125Ex
Contact status	1NO	1NC	Change-over	1NO
Temperature group	T6	T6	T6	T6
Max. switching power	10W 12VA	10W 12VA	3VA	10W 12VA
Max. switching voltage	60VDC	60VDC	60VDC	60VDC
Max. switching current	0.4A	0.4A	0.25A	0.4A
Cable length	cable 16.40ft	cable 16.40ft	cable 16.40ft	cable 16.40ft
Working temperature	-40 to +80°C	-40 to +80°C	-40 to +80°C	-40 to +80°C
Housing material	Plastic	Plastic	Plastic	Plastic
Dimensions in inches	1.26x0.59x0.24	1.26x0.59x0.24	1.26x0.59x0.24	Ø0.24x1.18

Coded magnet P3000100 to be ordered separately



Product reference	PFA2125Ex	PFA3125Ex	PSS1905Ex	PSS5905Ex	PSS7905Ex	PTA6125Ex	PTA9125Ex
Contact status	1NO	1NO	1NO	1NO + 1NC	2NO	1NO	1NO
Temperature group	T6	T6	T4	T4	T4	T4/T6 or T3/T6*	T4/T6 or T3/T6*
Max. switching power	10W 12VA	10W 12VA	10W 12VA	3VA	3VA	10W 12VA	10W 12VA
Max. switching voltage	60VDC						
Max. switching current	0.4A	0.4A	0.1A	0.1A	0.1A	0.4A	0.4A
Cable length	cable 16.40ft	cable 16.40ft	cable 16.40ft	cable 16.40ft	cable 16.40ft	cable 16.40ft	cable 16.40ft
Working temperature	-40 to +80°C		-25 to +85°C			-40 to +200°C	-20 to +200°C
Housing material	Stainless steel	Polypropylene	Plastic			Brass	
Dimensions in inches	Ø1.10x2.36	Ø1.10x3.54	2x0.63			Ø0.24x1.61	M10

*Refer to the data sheets

CONTROL MAGNETS

Range of standard permanent magnets required to activate our magnetic sensors.

To control Reed switch or Hall effect magnetic sensors, a magnet must be used.

Choose from one of celduc® relais' 3 different ranges of magnets, these are differentiated as follows: operating temperature, geometry and corrosion resistance.

Material		Max. operating temperature	Temperature drift coefficient (reversible)	Corrosion resistance	
Alnico		500°C	very low (-0.025% per °C)	Good resistance	generally supplied in bars whose length must be at least 4 times the diameter
Ferrite		250°C	high (-0.20% per °C)	Very good resistance	generally supplied as block rectangular type, discs or rings
Rare earth	Samarium Cobalt (SmCo)	250°C	low (- 0.04% per °C)	Very good resistance	generally supplied in blocks or pieces
	Neodymium Iron Bore (NdFeBo)	80 to 160°C (see data-sheets)	low (- 0.10% per °C)	Bad resistance (must have tin or nickel coating)	generally supplied in blocks or pieces

We at **celduc® relais** are always here to help you choose the best magnet/sensor combination for your needs.

COATED MAGNETS

Product reference	For sensors	Bare magnet dimensions in inches	Dimensions in inches	Fig n°
P0540000	PSC	Ø 0.20 x 0.79	2 x 0.63 x 0.28	1
PA320000	PA	Ø 0.12 x 0.79	0.91 x 0.59 x 0.24	2
P2000100	PXS	Ø 0.39 x 0.39	2 x 0.63 x 0.28	3
P3000100	PSS	Ø 0.12 x 0.16	2 x 0.63 x 0.28	1
P3150000	PA, PH, PL, PT	Ø 0.12 x 0.59	1.26 x 0.59 x 0.24	4
P4200000	PA, PH, PL, PT	Ø 0.16 x 0.79	1.26 x 0.59 x 0.24	4
P6250000	PA, PH, PL, PT	Ø 0.24 x 0.98	1.26 x 0.59 x 0.24	4
P4159000	PB or PLA	Ø 0.12 x 0.59	2 x 0.31 x 0.43	5
P4160000	PB or PLA	Ø 0.20 x 0.98	2 x 0.31 x 0.43	5
PT505000	PTI5 plastic	Ø 0.20 x 0.20	M8x1 Lg 1.22	6
PT810000	PTE	Ø 0.31 x 0.39	M12x1 Lg 1.22	7
PW520000	PWA, PWB, PWC	Ø 0.20 x 0.79	1.85 x 0.35 x 0.35	8



UNCOATED MAGNETS

Product reference	Material	Dimensions in inches	Fig n°
U315P003	Alnico5	Ø 0.12 x 0.59	1
U4200000	Alnico5	Ø 0.16 x 0.79	1
U6250000	Alnico5	Ø 0.24 x 0.98	1
U8300000	Alnico5	Ø 0.31 x 1.18	1
UB105000	Alnico5	Ø 0.39 x 1.97	1
UF207760	Ferrite	0.79 x 0.28 x 0.24	2
UF221105	Ferrite	Ø 0.87 x 0.43 x 0.20	3
UF341605	Ferrite	Ø 1.34 x 0.63 x 0.20	3
UZ189538	Ferrite	0.71 x 0.35 x 0.12	2
UP051508	Plastoferrite	1.97 x 0.59 x 0.32	4
UP071508	Plastoferrite	2.76 x 0.59 x 0.32	4
UP102008	Plastoferrite	3.94 x 0.79 x 0.32	4
UP301508	Plastoferrite	11.81 x 0.59 x 0.32	4
UP302008	Plastoferrite	11.81 x 0.79 x 0.32	4
UR101000	NdFeBo	Ø 0.39x0.39	6
UR102540	NdFeBo	Ø 0.39x0.16x0.08	5
UR124540	NdFeBo	Ø 0.47x0.16x0.08	5
UR144361	NdFeBo	Ø 0.55x0.24x0.16	5
UR120500	NdFeBo	Ø 0.47x0.20	6
UR122000	NdFeBo	Ø 0.47x0.79	6
UR304000	NdFeBo	Ø 0.12x0.16	6
UR315000	NdFeBo	Ø 0.12x0.59	6
UR503000	NdFeBo	Ø 0.20x0.12	6
UR604010	NdFeBo	Ø 0.24x0.12	6
UR801000	NdFeBo	Ø 0.31x0.39	6



REED RELAYS & SWITCHES

Detection : Clearance, position, level, presence
Switching : Telecom, tester, measurement

REED SWITCHES

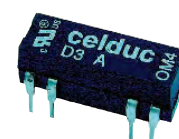
Detecting motion, positions and levels in harsh environments without any mechanical links between the moving parts, maintenance-free and subject to a magnetic field. This is the Reed contact's daily challenge.

These contacts are used in a wide range of sectors, such as electronic banking, space, automation, telecoms, etc.

Product reference	Contact status	Max. switching voltage	Max. switching current	Max. switching power	Standard sensitivity range	Glass length
AB21	1NO	350VDC	1A	100VA	20-35ATf	21mm
AC01		30VDC	0.01A	0.25VA	5-20ATf	6mm
AC03		100VDC	0.5A	12VA	10-35ATf	10mm
AC05		100VDC	0.5A	12VA	10-35ATf	14mm
AJ21		100VDC	0.4A	10VA	10-35ATf	14mm
AV10		7500VDC	0.2A	50VA	80-130ATf	53.4mm
AD22		250VAC	1.3A	80VA	40-105ATf	52mm
AD28		250VAC	3A	120W	70-100ATf	50mm
AI44		200VDC	0.75A	30W	15-35ATf	20.5mm
CD30	Change-over switch	500VAC	3A	100VA	60-100ATf	34.3mm
CG21		100VDC	0.25A	NC 3W / NO 8W	15-35ATf	14.5mm
CG21V		100VDC	0.25A	NC 3W / NO 8W	15-35ATf	14.5mm "bent"
CS26		400VAC	1A	60W	55-100ATf	34.3mm



• Sensitivity to be specified in the order.



REED RELAYS IN DIP ENCLOSURE

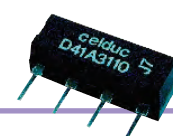
The most popular and the most industrious in our range. It has all contact combinations. It is designed to switch PLC inputs, signals from sensors or safety devices.

Internal scheme (top view)	Product reference	Contact status	Characteristics of the switch			Characteristics of the coil		Specifications	Dimensions in mm
			Max. switching voltage	Max. switching current	Max. switching power	Nominal voltage	R. coil at 20°C		
	D31A3100	1NO	100VDC	0.5A	10VA	5VDC	500 Ω	-	19.1x6.6x6.4
	D31A3110		100VDC	0.5A	10VA	5VDC	500 Ω	diode	
	D31A5100		100VDC	0.5A	10VA	12VDC	1 kΩ	-	
	D31A7100		100VDC	0.5A	10VA	24VDC	2150 Ω	-	
	D31A7110	1NC	100VDC	0.5A	10VA	24VDC	2150 Ω	diode	19.1x6.6x6.4
	D31B3100		100VDC	0.5A	10VA	5VDC	500 Ω	diode	
	D31B5100		100VDC	0.5A	10VA	12VDC	500 Ω	diode	
	D31C2100		100VDC	0.25A	3VA	5VDC	200 Ω	-	
	D31C2110	Change-over	100VDC	0.25A	3VA	5VDC	200 Ω	diode	19.1x6.6x6.4
	D31C5100		100VDC	0.25A	3VA	12VDC	500 Ω	-	
	D31C5110		100VDC	0.25A	3VA	12VDC	500 Ω	diode	
	D31C7100		100VDC	0.25A	3VA	24VDC	2150 Ω	-	
	D31C7110	2NO	100VDC	0.25A	3VA	24VDC	2150 Ω	diode	19.1x6.6x6.4
	D32A3100		100VDC	0.5A	10VA	5VDC	200 Ω	-	
	D32A3110		100VDC	0.5A	10VA	5VDC	200 Ω	diode	
	D32A5100		100VDC	0.5A	10VA	12VDC	500 Ω	-	
	D32A7100A	1NO	100VDC	0.5A	10VA	24VDC	2150 Ω	-	19.1x6.6x5.5
	D71A2100		100VDC	0.5A	10VA	5VDC	380 Ω	-	
	D71A2110		100VDC	0.5A	10VA	5VDC	380 Ω	diode	
	D71A5100		100VDC	0.5A	10VA	12VDC	530 Ω	-	

REED RELAYS IN SIP ENCLOSURE

Relays for high density component circuits : alarms, testers, industrial control.

Internal scheme (top view)	Product reference	Contact status	Characteristics of the switch			Characteristics of the coil		Specifications	Dimensions in mm
			Max. switching voltage	Max. switching current	Max. switching power	Nominal voltage	R. coil at 20°C		
	D41A5100L	1 NO	100VDC	0.5A	10VA	12VDC	1 kΩ	diode	19x(5 ou 6)x7.5

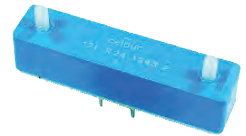


REED RELAYS & SWITCHES

The products on this page do not represent all of our range and corresponding options. If you cannot find a product that meets your needs, please contact us.

HIGH VOLTAGE RELAY

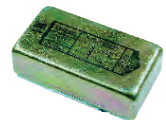
The withstand voltage between the contacts is greater than 10KVDC. The withstand voltage between the coil and the contacts is greater than 14VDC.



Product reference	Contact status	Max. switching voltage	Max. switching current	Max. switching power	Nominal voltage	R. coil at 20°C	Specifications	Dimensions in mm
R1329L00	1NO	7500VDC	0.2A	50VA	12VDC	300 Ω	without fixing screw	65x15.2x16.9
R1329L87		7500VDC	0.2A	50VA	12VDC	300 Ω		
R1343L00		7500VDC	0.2A	50VA	24VDC	1200 Ω		
R1343L13		5000VDC	0.2A	50VA	24VDC	1200 Ω		

REED F & R RELAY RANGE

Relays with ferro-magnetic shield in for telecom type applications.



Internal scheme (top view)		Characteristics of the switch					Characteristics of the coil		Specifications	Dimensions in mm
Product reference	Contact status	Max. switching voltage	Max. switching current	Max. switching power	Nominal voltage	R. coil at 20°C				
F51A5100	1NO	250VDC	0.4A	14VA	12VDC	2145 Ω	comes in coated version réf. F81Ax100	Position vertically	Coil/contact insulation 4KV	30x9.5x10
F81A5500		500VDC	1A	50VA	12VDC	1000 kΩ				30x9.5x10
F81A7500		500VDC	1A	50VA	24VDC	2300 Ω				30x9.5x11
F61A2100		250VDC	0.4A	14VA	5VDC	345 Ω				30x9.5x11
F61A7100	2 mercury wetted change-over switch	250VDC	0.4A	14VA	24VDC	7845 Ω	Position vertically			30x16.5x11
F72C2500		500VDC	1A	50VA	5VDC	75 Ω				
F72C5500		500VDC	1A	50VA	12VDC	350 Ω				
F72C7500		500VDC	1A	50VA	24VDC	1350 Ω				



		Characteristics of the switch					Characteristics of the coil		Specifications	Dimensions in mm
Product reference	Contact status	Max. switching voltage	Max. switching current	Max. switching power	Nominal voltage	R. coil at 20°C				
R0292B00	1NO	100VDC	0.4A	12VA	4VDC	250 Ω	-			23x7.5x6.7
R0293B08		100VDC	0.4A	12VA	5VDC	450 Ω				
R0294B08		100VDC	0.4A	12VA	12VDC	1600 Ω				
R0550B08	1NO	100VDC	0.4A	12VA	4VDC	500 Ω	DIL layout			20.2x10.1x7.2
R0251W00	change-over	100VDC	0.25A	3VA	6VDC	150 Ω				
R0252W00		100VDC	0.25A	3VA	12VDC	500 Ω				
R0253W00		100VDC	0.25A	3VA	24VDC	1800 Ω	-			23x7.5x6.7
R0115S06	1NO	250Veff	3A	100VA	6VDC	250 Ω				
R0116S06		250Veff	3A	100VA	12VDC	1000 kΩ				
R0117S06		250Veff	3A	100VA	24VDC	4 kΩ	step 5,08			65x15.5x16
R0542B08	1NC	100VDC	0.4A	12VA	4VDC	200 Ω				
R0543B08		100VDC	0.4A	12VA	5VDC	200 Ω				
R0861P12	mercury wetted change-over switch	500VDC	2A	100VA	5VDC	335 Ω	DIL layout			20.2x10.1x7.2
R0761P00		500VDC	2A	100VA	24VDC	2650 Ω	position vertically			40.8x14.2x10.4
R0866P00	2 mercury wetted change-over switch	500VDC	2A	100VA	5VDC	125 Ω				

CATALOGUES AND LEAFLETS AVAILABLE ON REQUEST

CATALOGUES AND GENERAL INFORMATION LEAFLETS



Product Guide



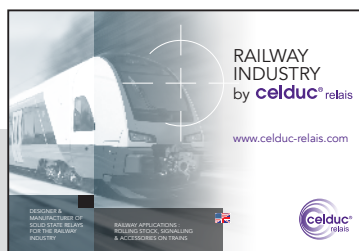
Single-phase solid state relays & contactors celpac range



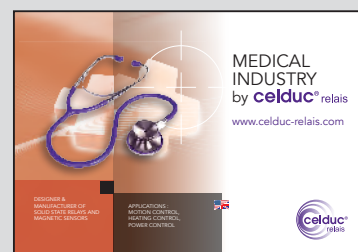
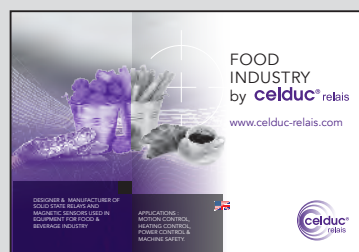
Three-phase solid state relays & contactors celpac & sightpac ranges



APPLICATIONS BROCHURES



- RAILWAY
- PLASTICS PROCESSES
- PACKAGING
- FOOD
- MEDICAL



WOULD YOU LIKE TO KNOW MORE?

All our technical datasheets are available on our website:

www.e-catalogue.celduc-relais.com

celduc® relais is represented in more than 60 countries



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