



# PLASTIC INDUSTRY by **celduc**<sup>®</sup> relais

[www.celduc-relais.com](http://www.celduc-relais.com)

DESIGNER &  
MANUFACTURER OF  
SOLID STATE RELAYS AND  
MAGNETIC SENSORS

APPLICATIONS :  
TEMPERATURE CONTROL,  
MOTOR CONTROL AND  
MACHINE SAFETY IN PLASTIC  
PROCESSING EQUIPMENT





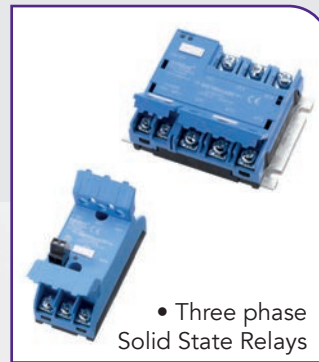
• Interface & PCB relays



• Single phase SSR, modules for diag. function and temperature controller PID



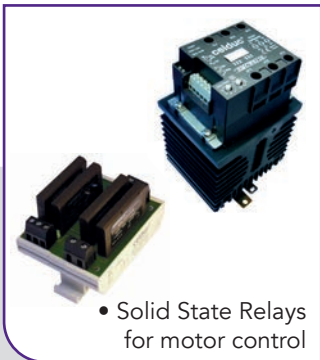
• Two phase Solid State Relays



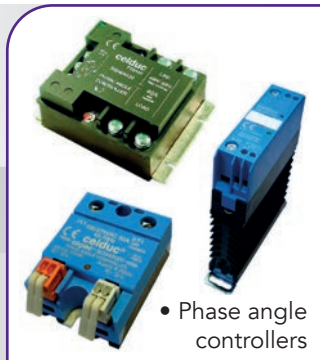
• Three phase Solid State Relays



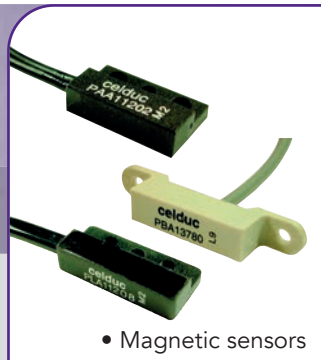
PRODUCTS MADE IN FRANCE  
FOR MORE THAN 60 YEARS !



• Solid State Relays for motor control



• Phase angle controllers



• Magnetic sensors



• Safety sensors

# CONTENTS

## WHO ARE WE ?

2-5

## MAIN PLASTIC PROCESSES AND SPECIFICATIONS

6-12

Extrusion

6

Injection molding

7

Blow molding

8

Thermoforming

9

Auxiliary equipments & Accessories

10-11

Recycling

12

## celduc® relais' SOLUTIONS - SOLID STATE RELAYS

13-27

Single phase Solid State Relays

14-19

celpac® range

14-15

okpac® range and SSRs with push-in spring terminals

16-17

okpac® range and SSRs with diagnostics

18-19

Phase angle controllers

20-21

Two-phase Solid State Relays

22-23

Two Legs three-phase Solid State Relays

24-25

Three-phase Solid State Relays & Contactors

26-27

EMR vs SSR

28

Why choosing celduc®'s Solid State Relays ?

29

## CELDUC® RELAIS' SOLUTIONS REED MAGNETIC SENSORS

30-32

Safety magnetic sensors - PSS/PXS range

30-31

Other Magnetic Proximity Sensors

32



# WHO ARE WE ?

**celduc® group** specializes in electrical engineering and electronics.

With many years of experience **celduc®** is fully focused on serving its market and customers all over the world.

The company was founded in 1964 by Michel Guichard.

Set up near Saint-Etienne, the **celduc® group** is the only French company producing and selling solid state relays.

Today **celduc® group** group has:

- 200 employees
- Two production centers totaling 10 000 square meters
- A worldwide presence

A strong innovation to challenge the future

**celduc® relais** constant product development and commitment to work with customers to develop bespoke solutions has increased our production capacity production capacity by around 10 to 15 % per year.

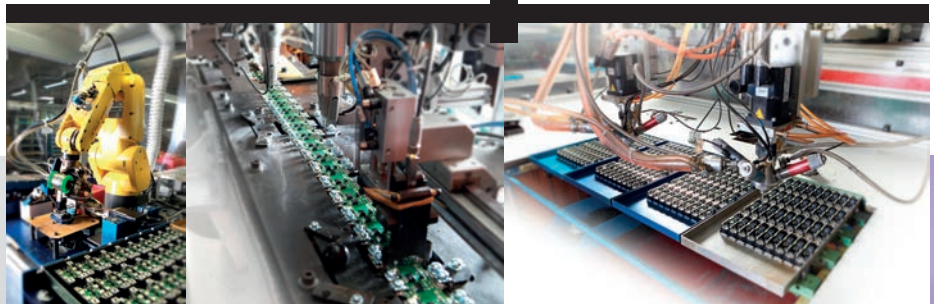
Innovation is the challenge that **celduc® relais** has to take up every day by anticipating the market trends and implementing specific knowledge and skills in partnership with industry and research.

From design to manufacturing

**celduc® relais** controls the complete chain : design, development, production, testing and marketing.

**celduc® relais** manufactures the most comprehensive range of Solid State Relays but has also developed its own production equipment to ensure the most efficient manufacturing methods.

Thanks to this high-capacity and unique tooling, **celduc®** products can be found all over the world and have been recognized by the most renowned industrial companies.



# HIGH QUALITY PRODUCTS

Quality is of paramount importance and is maintained at all times, aided by our own specially developed in house testing equipment.

**celduc® relais** solid state relays and magnetic sensors are manufactured in accordance with the major international standards (UL, CSA, EN, VDE, CE, ATEX, ...)...



All products are designed, tested and manufactured in compliance with the strictest international standards and always with reliability and safety in front of our mind

The solutions displayed in this brochure should be considered as non-exhaustive examples.

celduc® is now considered a specialist  
in its field, and we collaborate with the  
biggest industrial groups worldwide

4

5





# OUR STRENGTHS



**MORE THAN 60 YEARS OF EXPERIENCE ON THE MARKET AND A HIGH QUALITY LEVEL OF PRODUCTION IN FRANCE.**

---



**CONTROL OF THE COMPLETE CHAIN**  
design, development, production, testing and marketing.

---



**ANALYSIS OF CUSTOMERS' REQUIREMENTS**  
celduc® relais is the indisputable global expert and preferred choice of companies all over the world.

---



**A WORLDWIDE PRESENCE IN MORE THAN 60 COUNTRIES**  
for a better understanding of customer's needs and offering of solutions which fully meet their requirements.

---



**CONSTANT PRODUCT DEVELOPMENT**  
our experienced R & D engineers constantly work on developing 10 to 15% of new products each year.

---



**IN COMPLIANCE WITH THE MAJOR INTERNATIONAL STANDARDS**  
our products are designed, tested and manufactured in accordance with the strictest international standards.

# EXTRUSION

- Pre-heating control
- Barrel heating control
- Motor control of the rollers & automation

CELDUC RELAIS' SSRS ARE THE RIGHT CHOICE  
FOR ACCURATE AND LONG LIFE TIME  
TEMPERATURE CONTROL

6

7

## KEY PRODUCTS

### SOLID STATE RELAYS

#### SINGLE PHASE



SUL with ECOM  
module  
pages 14-15

#### THREE-PHASE



cel3pac®  
page 25





# INJECTION MOLDING

- Pre-heating time process of the plastic material control
- Mold heating system control
- For aircraft and automotive industries, the use of composite materials with carbon fibers requires high power solutions.

USE DUAL RELAYS FOR SPACE SAVING  
IN YOUR CONTROL PANELS !

## KEY PRODUCTS

### SOLID STATE RELAYS

#### SINGLE PHASE



celpac® SAL-SUL  
page 15

#### TWO-PHASE



SOB  
pages 22-23



# BLOW MOLDING

1



**Preform injection**

2



Cooling and preform temperature stabilization

3



**Re-heat station by infra red heating lamps**

4



Preform temperature stabilization

5



**Stretch Blow Molding with hot air**

6



Container Eject

8

9

## KEY PRODUCTS

### SINGLE PHASE SSRs



**okpac® & celpac® + diagnostics**  
pages 18-19



**Phase angle controllers**  
pages 20-21

### POWER CONTROLLER



**Heating control unit**  
pages 20-21



# THERMOFORMING

- Pre-heating time process control
- Mold heating system control
- Machines safety during manual change process of thermoplastics foils

CHOOSING THE RIGHT SSRS HELPS MAXIMIZE  
PLANT UP-TIME AND MINIMIZE MAINTENANCE  
COSTS AND LOSS OF PRODUCTION

## KEY PRODUCTS

SINGLE PHASE SSR  
"DIAGNOSTIC"



okpac® & celpac®  
pages 18-19

SAFETY  
SENSORS



Safety sensors  
pages 30-31



# AUXILIARY EQUIPMENT & ACCESSORIES

- Temperature controllers
- Resin / Granulate dryers
- Hot air dehumidifying dryers
- Robotic systems

FOR EACH APPLICATION,  
THE CORRESPONDING



Temperature controllers

## KEY PRODUCTS

### SOLID STATE RELAYS

#### SINGLE PHASE



celpac®  
page 14-15

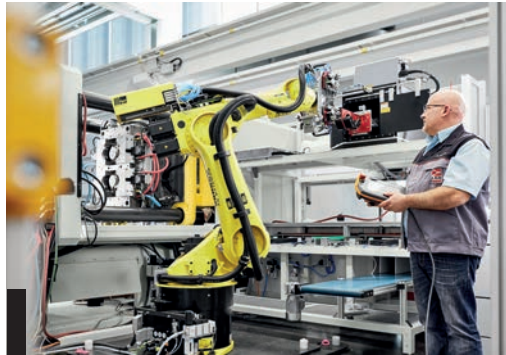
#### THREE-PHASE



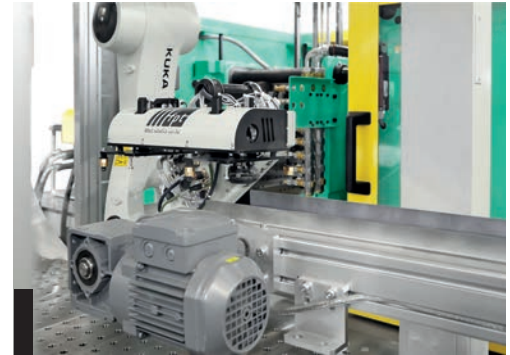
sightpac®  
pages 26-27

# SOLUTION !

System design and electrical specifications depend on each manufacturer and may vary:  
**"Contact us for expert advice!"**



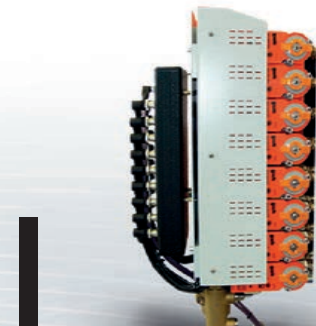
Robotic systems



Conveying system



Air / water cooled chillers up to 380 kW nominal cooling capacity



Modular flow control with water up to 120°C

# RECYCLING MACHINES

- Pre-heating and heating system control
- Granulates Sanitization system control

CELDUC® RELAIS IS A RELIABLE AND EXPERIENCED PARTNER IN THE PLASTIC INDUSTRY

► You can rely on our solutions !

12

13

## KEY PRODUCTS

### SOLID STATE RELAYS

#### SINGLE PHASE



okpac  
page 19

#### THREE-PHASE



cel3pac® - sightpac  
pages 26-27



# celduc<sup>®</sup> relais'<sup>1</sup>

## SOLUTIONS

In plastic processing, accurate temperature control is essential in determining the quality of the final outcome. SSRs offer a greater degree of control over the process than electromechanical relays or contactors, as they don't have moving parts and allow frequent switching of loads (low switching frequency limits the accuracy).

With our integrated back to back thyristors and TMS<sup>2</sup> technology (direct copper bonded ceramic), celduc relais' SSRs provide an extremely robust switching solution for plastic processing equipment manufacturers.

## Energy saving & reliability

### AC AND DC SOLID STATE RELAYS FOR LOAD SWITCHING IN THE PLASTIC INDUSTRY

- ▶ AC switching up to 125A / 690VAC
- ▶ DC switching up to 50A / 1700V<sub>p</sub>  
or 150A / 100V<sub>p</sub>
- ▶ Diagnostics and protection available

The solutions displayed in this brochure should be considered as non-exhaustive examples,  
please visit: [www.celduc-relais.com](http://www.celduc-relais.com)

BENEFIT FROM OUR INNOVATIVE,  
HIGH QUALITY SSRs

## SOLID STATE RELAYS SU/SUL COMBINED WITH

Current monitoring module



SUL+ESUC

**SAVE ROOM**  
**SAVE COSTS**  
**ADD FUNCTIONS**

➤ ADD TO YOUR SOLID STATE RELAYS ◀

Temperature controller PID



SUL+ECOM

14

15

- Diagnostic information for up to 5 heaters in parallel with:
  - Permanent load current monitoring,
  - Current teaching function,
  - Two alarm thresholds : +/-16% of Iteach,
  - Partial load break detection,
  - Open load detection,
  - Detection of short-circuited SSR.

- Temperature controller with:
  - PID with automatic or manual settings,
  - Insulated inputs for J, K, T, E thermocouples,
  - Auxiliary output for heating, cooling, alarm or to control a 3-phase Solid State Relay,
  - Loop and heater break alarms.
- Current monitoring and alarms up to 50A
- RS485 communication interface (Modbus RTU)



## 22,5mm pitch Single phase Solid State Relays

- Thyristor rating up to 75A
- Output voltage from 24 to 690VAC (600C – 1200V peak)
- TMS<sup>2</sup> technology 4th generation with very long life time



**SA range**  
screw connection  
on inputs



**SU range**  
pluggable  
connector on inputs

Reference	Thyristor rating	Max. switching current at 25°C	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Specifications
SAL942460	25A	23A	12-280VAC	600V	3-32VDC	450A <sup>2</sup> s	Pluggable connector - 22.5mm heatsink
SAL965460	50A	32A	24-600VAC	1200V	3.5-32VDC	1680A <sup>2</sup> s	
SUL963460	35A	30A	24-600VAC	1200V	3.5-32VDC	882A <sup>2</sup> s	Screw connection - 22.5mm heatsink
SUL967460	75A	35A	24-600VAC	1200V	3.5-32VDC	7200A <sup>2</sup> s	

celduc<sup>®</sup> relais offers **2 optional plug-in modules for use on our SU / SUL / SUM:**

- **ESUC:** Current monitoring module
- **ECOM:** Temperature controller, current monitor and communication Interface in one unit.

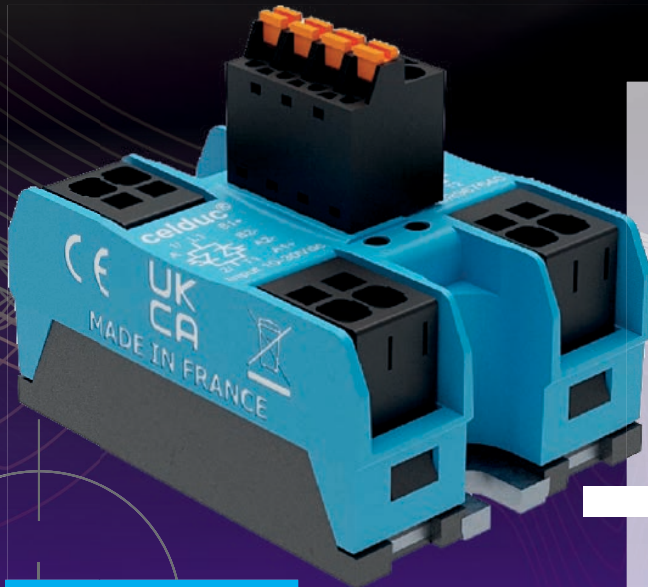
Reference	Specifications	Current range	Control
ESUC0450	Current monitoring module (plug-in option for use on SU/SUL/SUM)	2-40A	8-30VDC
ESUC0480	Current monitoring module (plug-in option for use on SU/SUL/SUM)	2-40A	24-45VDC
ECOM0010	Temperature controller PID, current monitor and communication interface (plug-in option for use on SU/SUL/SUM)		

Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)

# okpac<sup>®</sup>

## SINGLE-PHASE SOLID STATE RELAYS WITH PUSH-IN SPRING TERMINALS

FAST WIRING, EVEN IN TIGHT SPACES !



Easy to use and requiring no special tools, this connection technology is perfect for compact installations where you need fast and safe wiring.



**STRONG** : Push-in connections are strong and reliable.



**FLEXIBLE** : Push-in connections are suitable for various types of conductors.



**FAST** : Quick and tool-free conductor connection using direct plug-in technology.



**SAFE** : Push-in connections avoid downtime, reduce maintenance, and lower installation costs.

**NEW**

16

17

# okpac<sup>®</sup>

## Single-phase Solid State Relays with push-in spring terminals

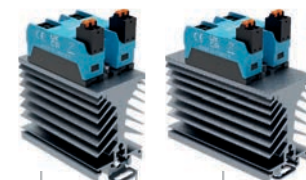
The SOR range of single-phase solid state relays with spring terminal connection is available in several versions dedicated to AC-1 resistive loads.

- Current limiter
- Green control status LED
- Voltage protection on input (transil)
- Connection on the power side : 2 x doubled 6mm<sup>2</sup> or AWG10
- Connection on the control side : 2 x doubled 2.5mm<sup>2</sup> or AWG14



Reference	Thyristor rating	Max. switching current at 40°C	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Protec.
<b>SOR943440-HE</b>	35A	35A	12-280VAC	600V	3-32VDC	882A <sup>2</sup> s	TVS
<b>SOR965440-HE</b>	50A	41A	24-660VAC	1200V	3,5-32VDC	1680A <sup>2</sup> s	TVS
<b>SOR967440</b>	90A	41A	24-660VAC	1200V	3,5-32VDC	7200A <sup>2</sup> s	TVS

## "Ready to use" models with integrated heatsink



Reference	Thyristor rating	Max. switching current at 40°C	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Protec.
<b>SOR943440-HE-WF151</b>	35A	28A	12-280VAC	600V	3-32VDC	882A <sup>2</sup> s	TVS
<b>SOR965440-HE-WF114</b>	50A	34A	24-660VAC	1200V	3,5-32VDC	1680A <sup>2</sup> s	TVS

## USE OUR POWER SSRs WITH DIAGNOSTICS TO SIGNAL SSR AND LOAD STATUS

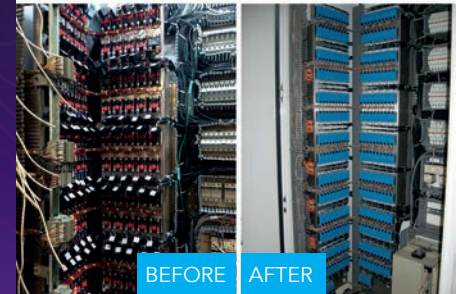
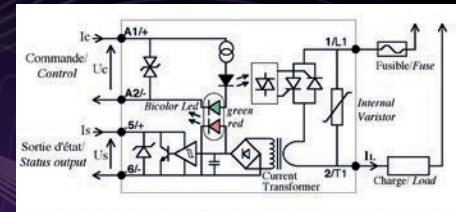
### SOI RANGE

with a current transformer (CT) built-in on the load side controlling a feedback status switch

Heating control used in thermoforming machines requires occasional connection or disconnection of the heating zones depending on the pre-heating area (foil size). Standard diagnostic relays or systems using external CTs would display an error with these zone disconnections. The SOI range power ON/OFF the load and simply gives the information about the load current flow, leaving the status interpretation to the user or the system.

#### Advantages :

- Less wiring : saving cost and time
- Elimination of pass through CT wires
- Elimination of costly analog PLC inputs



# okpac<sup>®</sup>

## Standard Single Phase Solid State Relays

- Thyristor rating up to 125A
- Output voltage from 24 to 690VAC (600V – 1200V – 1600V peak)

Reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t
<b>SO842974</b>	25A	12-275VAC	600V	20-265VAC/DC	600A <sup>2</sup> s
<b>SO867070</b>	75A	24-510VAC	1200V	3.5-32VDC	7200A <sup>2</sup> s
<b>SO869970</b>	125A	24-510VAC	1200V	20-265VAC/DC	7200A <sup>2</sup> s
<b>SO945460</b>	50A	12-280VAC	600V	3-32VDC	2800A <sup>2</sup> s
<b>SO963460</b>	35A	24-600VAC	1200V	3.5-32VDC	1250A <sup>2</sup> s
<b>SO965460</b>	60A	24-600VAC	1200V	3.5-32VDC	2800A <sup>2</sup> s
<b>SO967460</b>	90A	24-600VAC	1200V	3.5-32VDC	7200A <sup>2</sup> s



- SO8 – Zero-cross  
designed for most types of loads
- SO9 – Zero-cross  
designed for resistive loads AC-51

# okpac<sup>®</sup>

## Power SSRs with diagnostics

- Our SOD range gives the status of the SSR and the load without external power supply
- Our SOI range has a current transformer (CT) built-in on the load side controlling a feedback status switch

Reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t
<b>SOD845180</b>	50A	50-265VAC	600V	7-30VDC	2800A <sup>2</sup> s
<b>SOD867180</b>	75A	150-510VAC	1200V	7-30VDC	7200A <sup>2</sup> s
<b>SOI885070</b>	50A	24-625VAC	1600V	20-265VAC/DC	2800A <sup>2</sup> s



Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)

# celduc®

## OUR RANGE OF CONTROLLERS FOR ACCURATE TEMPERATURE CONTROL



Control box for temperature control of infrared lamps

**NEW**

Anticipating market trends and needs, celduc® relais has developed a control box for fine temperature control of infrared lamps. These control boxes are equipped with 12 solid state relays and a built-in microcontroller based regulation card.

This gives very accurate regulation and also includes a communication interface that can be directly connected to a supervisory system to give load status and other parameters.

20

21

# Single Phase angle controllers

Suitable for infra Red lamps control

Processes such as blow moulding require very accurate temperature control in the re-heat station in order to reduce the thickness of the product and in turn a reduction of the cost of the packaging material used. Infra red heating by halogen lamps allows precise control and consistency of the product wall thickness. The lamps on each side of the process preform track are driven by phase angle controllers such as celduc's SO4. Our range of phase angle controllers allow very accurate temperature control.

Reference	Thyristor rating	Switching voltage	Control voltage	Specifications
SO465020	50A	200-480VAC	0-10V	Phase angle controller
SO465320	50A	200-480VAC	Potentiometer	
SO467501	75A	160-450VAC	1-5V	
SO468420	95A	200-480VAC	4-20mA	
SO367001	75A	400VAC	0-10V	Burst control mode



# Power controllers

Key features:

- > Controls a maximum of 12 IR channels (4kW max. per channel and 36kW max. per box)
- > U<sup>2</sup> type mains variations compensation (syncopated)

- > Fault Detections:
  - broken lamp < 250 ms
  - over/undervoltage
  - overheating
  - fuse failure
  - thyristor short-circuit
  - fan issues

- > Built-in Protections : short circuit, dv/dt transients and overvoltage
- > Control and Diagnostics using Profibus DP

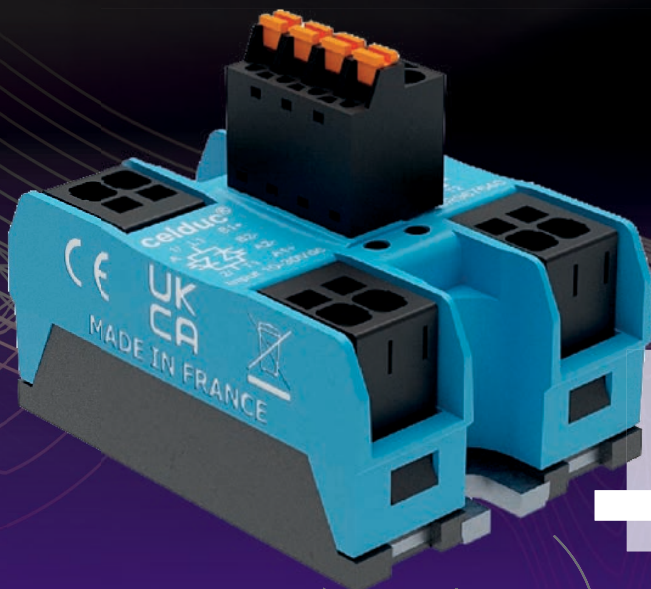
# okpac<sup>®</sup>

■ USE DUAL RELAYS FOR SPACE SAVING !

**NEW**

SOBR RANGE: **"PUSH-IN" SIMPLE CONNECTION**  
WITH NO TOOLS REQUIRED

Always ahead in solid-state control innovation, celduc<sup>®</sup> relais has launched a new range of two phase Solid State Relays in okpac<sup>®</sup> housing with push-in spring power terminals.



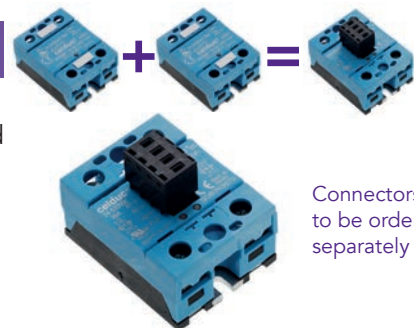
22

23



# okpac<sup>®</sup>

## Two-phase Solid State Relays



Connectors  
to be ordered  
separately

Our two-phase range provides two solid state relays in a compact standard 45mm enclosure.

Advantages of using our two-phase SSRs :

- Cost reduction of the complete solution
- Simple wiring
- Compact standard 45mm housing

Reference	Thyristor rating	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Specifications
<b>SOB942660</b>	2x25A	12-280VAC	600V	10-30VDC	600A <sup>2</sup> s	2 controls
<b>SOB943360</b>	2x35A	12-280VAC	600V	10-30VDC	1250A <sup>2</sup> s	1 control
<b>SOB965660</b>	2x50A	24-600VAC	1200V	10-30VDC	2500A <sup>2</sup> s	2 controls
<b>SOB967660</b>	2x75A	24-600VAC	1200V	10-30VDC	7200A <sup>2</sup> s	2 controls

The new SOBR range of two-phase solid state relays has expanded and now offers new models with push-in spring terminals. This product range is designed to be used with AC-1 resistive loads.



Reference	Thyristor rating	Max. switching current at 40°C	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Protec.
<b>SOBR943640-HE</b>	2x35A	2x35A	12-280VAC	600V	10-30VDC	882A <sup>2</sup> s	TVS
<b>SOBR965640-HE</b>	2x50A	2x41A	24-600VAC	1200V	10-30VDC	1680A <sup>2</sup> s	TVS
<b>SOBR967640</b>	2x75A	2x41A	24-600VAC	1200V	10-30VDC	7200A <sup>2</sup> s	TVS

Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)

# sightpac

## 2 LEGS THREE-PHASE SOLID STATE RELAYS



24

25

**NEW**

SMB RANGE : COMPACT 45MM VERSION

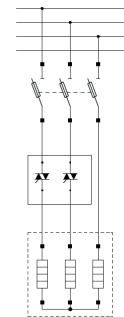
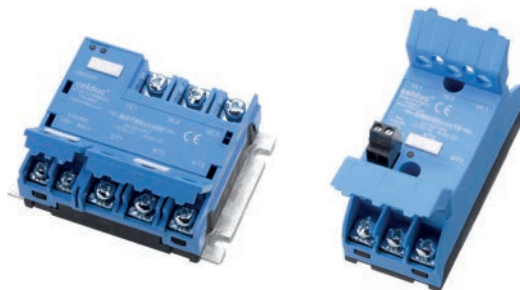
This range is designed for controlling three phase loads connected in delta or, if balanced, connected in star without the neutral connection. Two of the three phases are switched by the SSR, the third being directly connected.

Simplicity of wiring ensures this reliable solution can be easily integrated into control systems.

# cel3pac sightpac

## 2 legs three-phase solid state relays

Our SMB and SGB ranges are designed for controlling three phase loads connected in delta or, if balanced, connected in star without the neutral connection. Two of the three phases are switched by the SSR, the third being directly connected. Simplicity of wiring ensures this reliable solution can be easily integrated into control systems.



Reference	Thyristor rating	Switching current AC-51 (at 40°C)	Switching current AC-53 (at 40°C)	Switching voltage	Peak voltage	Control voltage	I <sup>2</sup> t	Protections
<b>cel3pac range</b>								
SGB8850200	2x50A	3x50A	3x12A	24-640VAC	1600V	4-30VDC	2800A <sup>2</sup> s	VDR
SGB8890200	2x125A	3x85A	3x32A	24-640VAC	1600V	4-30VDC	22000A <sup>2</sup> s	VDR
<b>sightpac range</b>								
SMB8650510	2x50A	3x30A	3x12A	24-640VAC	1600V	4-30VDC	2800A <sup>2</sup> s	RC - VDR
SMB8670910	2x75A	3x35A	3x16A	150-520VAC	1600V	4-30VDC	7200A <sup>2</sup> s	RC - VDR Aux. contact

Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)

cel3pac  
sightpac

THREE-PHASE SOLID STATE RELAYS &  
CONTACTORS : NEW VISIONARY RANGES



SMT RANGE (45MM VERSION)  
SGT RANGE (100MM VERSION)

**NEW**

Superior design, easy installation, optimum lifespan and price effectiveness are delivered with the new generation of three-phase Solid State Relays.

26

27

# cel3pac sightpac

## Three-phase Solid State Relays & Contactors

- Maximum peak voltage up to 1600V,
- Thyristor rating up to 125A,
- AC or DC Input control available,
- Using TMS<sup>2</sup> technology thyristors and RVF process (RoHs Void Free Process) for a longer lifespan (+40%),
- IP20 protection on terminals with removable flaps,
- Protections available : RC snubber, VDR, TVS.

Reference	Thyristor rating	Switching current AC-51 (40°C)	Switching current AC-53 (40°C)	Switching voltage	V peak	Control voltage	I <sup>2</sup> t	Protections
<b>cel3pac range</b>								
<b>SGT8678500</b>	3x75A	3x54A	3x16A	24-520VAC	1600V	24-255VAC/DC	7 200A <sup>2</sup> s	RC – VDR
<b>SGT8690500</b>	3x125A	3x64A	3x32A	24-520VAC	1600V	4-30VDC	22 000A <sup>2</sup> s	RC – VDR
<b>SGT8850200</b>	3x50A	3x42A	3x12A	24-640VAC	1600V	4-30VDC	2800A <sup>2</sup> s	VDR
<b>SGT8858200</b>	3x50A	3x42A	3x12A	24-640VAC	1600V	24-255VAC/DC	2 800A <sup>2</sup> s	VDR
<b>SGT9834300</b>	3x35A	3x30A	-	24-660VAC	1600V	4-30VDC	1250A <sup>2</sup> s	TVS
<b>SGT9854300</b>	3x50A	3x42A	-	24-660VAC	1600V	4-30VDC	2800A <sup>2</sup> s	TVS
<b>SGT9874300</b>	3x75A	3x54A	-	24-660VAC	1600V	4-30VDC	7200A <sup>2</sup> s	TVS
<b>sightpac range</b>								
<b>SMT8620520</b>	3x25A	3x20A	3x5A	24-520VAC	1200V	4-30VDC	380A <sup>2</sup> s	RC – VDR
<b>SMT8628520</b>	3x25A	3x20A	3x5A	24-520VAC	1200V	24-255VAC/DC	380A <sup>2</sup> s	RC - VDR

Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)

# SSRs GIVES YOU THE FOLLOWING **ADVANTAGES** COMPARED TO **EMRs**

- > Very high number of switching cycles > 10 million
- > Very low consumption for control
- > Not sensitive to shocks and vibrations
- > Very High frequency switching (in temperature control, low switching frequency limits the accuracy)
- > Availability of special controls and diagnostics"

28

29

## CONCLUSION

- SSRs can be used to control loads (temperature, motors, accessories) for reducing maintenance periods, reducing energy consumption.
- Additional features to the SSR, such as diagnostics, bus communication, local temperature controller, can save space, wiring and system information.

# WHY CHOOSE **celduc®'s** SOLID STATE RELAYS?

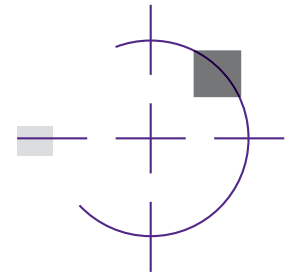
The sole solid state relay technology made in France for more than 50 years !



For many years, **celduc® relais** as a company has continued to evolve while the personal has remained the same. We have a dedicated team close to its customers and partners, ready to take on any challenge, in the midst of tough global competition.

At **celduc® relais**, we have succeeded in achieving and maintaining efficiency and a high quality level of production.

- TMS<sup>2</sup> SCR in AC
- Life time
- Quality
- Customization
- High voltage in DC
- High insulation
- A worldwide presence



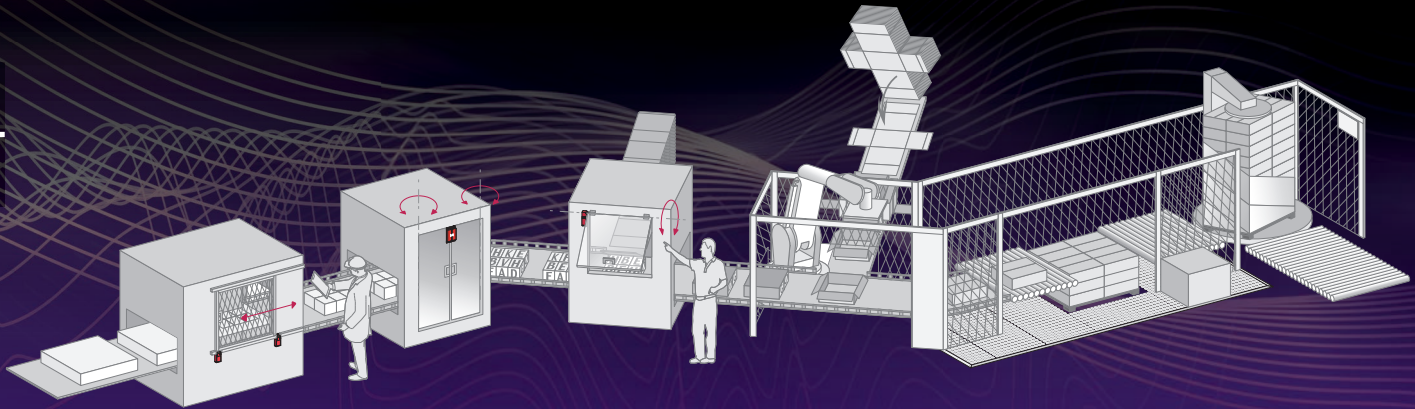


# SAFETY SENSORS

ENSURE THE SAFETY OF MACHINE OPERATORS AND  
MACHINE OPERATING RELIABILITY !

30

31





# PSS / PXS range

Reed coded safety Sensors

## with associated coded magnets

These products are designed for monitoring the doors, covers and guards of industrial machines with gates having imprecise guidance and or subject to frequent washing. They protect the operator by immediately stopping any dangerous movement as soon as the distance between the switch and its magnet is greater than 5 or 8mm. Correctly installed with their associated coded magnets and connected to adapted safety modules, they can reach the following safety level:

SIL 2/category 3/ PL=d or SIL 3/category 4/ PL=e

### PXS model with associated magnet P2000100

- Compact rectangular plastic body
- Pre-cabled, length 5m
- Contact status 2O ; O+C or 2O + 1C depending of the safety level required.

Contacts change state as soon as the magnet is at a distance from the sensor of approximately 8 mm

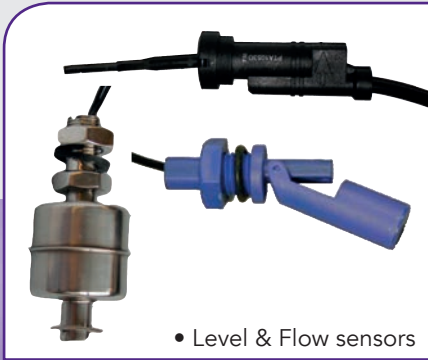
### PSS model with associated magnet P3000100

- Standard rectangular plastic body
- Pre-cabled, length 5m
- Contact status 2O ; O+C or 2O + 1C depending of the safety level required

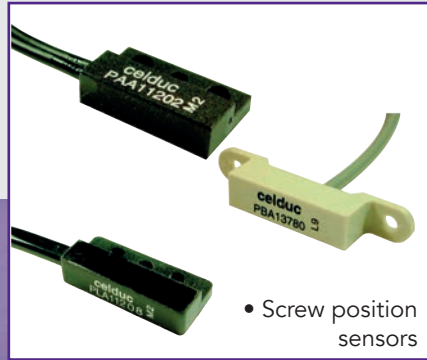
Contacts change state as soon as the magnet is at a distance from the sensor of approximately 5 mm



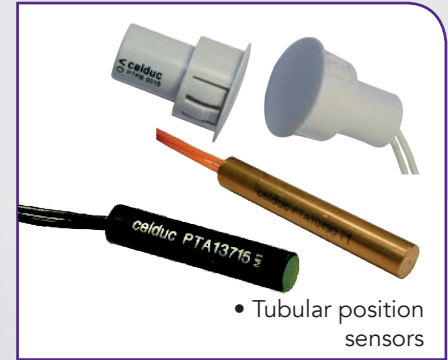
Other models available please visit our website [www.celduc-relais.com](http://www.celduc-relais.com)



• Level & Flow sensors



• Screw position sensors



• Tubular position sensors



If you are looking for position, presence, level or speed detection, then we can offer a solution from our extensive range of magnetic sensors.



• Hall-Effect sensors



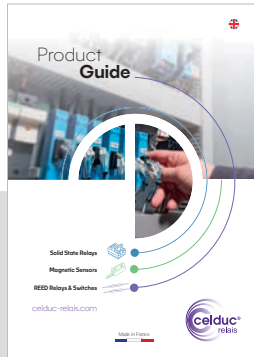
• ATEX sensors



• Control magnets

# MORE INFORMATION NEEDED ? [www.celduc-relais.com](http://www.celduc-relais.com)

## Catalogues and leaflets available on request



Product Guide



Single Phase SSRs & Contactors celpac range



Three-Phase SSRs & Contactors cel3pac & sightpac ranges



# celduc® relais'

## worldwide presence in more than 60 countries

ALGERIA	MALAYSIA
ARGENTINA	MEXICO
AUSTRALIA	MOROCCO
AUSTRIA	THE NETHERLANDS
BELGIUM	NEW ZEALAND
BRAZIL	NORWAY
BULGARIA	PARAGUAY
CANADA	PHILIPPINES
CHILE	POLAND
CHINA	PORTUGAL
COLOMBIA	ROMANIA
CZECH REP.	RUSSIA
DENMARK	SINGAPORE
EGYPT	SLOVAKIA
ESTONIA	SLOVENIA
FINLAND	SOUTH AFRICA
FRANCE	SOUTH KOREA
GERMANY	SPAIN
GREECE	SWEDEN
HONG KONG	SWITZERLAND
HUNGARY	SYRIA
INDIA	TAIWAN
INDONESIA	THAILAND
IRELANDE	TURKEY
ISRAËL	UNITED KINGDOM
ITALY	UNITED STATES
JAPAN	UKRAINE
LATVIA	VENEZUELA
LITHUANIA	VIETNAM



[www.celduc-relais.com](http://www.celduc-relais.com)

Sales department France : Tél. +33 (0)4 77 53 90 20  
Sales department for Asia : Tél. +33 (0)4 77 53 90 19  
Sales department for Europe : Tél. +33 (0)4 77 53 90 21  
Sales department for America : Tél. +33 (0)4 77 53 90 19

5 rue Ampère - BP 30004 - 42290 Sorbiers - France  
Fax : +33 (0)4 77 53 85 51