## Giltern Corp.

Serving the Automation \& Control Industry since 1984


Solid State Relays

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest y products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - to ensure that we solve


## Quality

## Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality
Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.


# Single Phase Solid State Relays .4-8 

Two Phase Solid State Relays ..... 9-10
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Other Models ..... 12-13

Solid State Relays (SCR's) have many advantages over Electro Mechanical Relays (EMR's). Since they offer fully electronic switching, they operate without mechanical movement, so they are not subject to wear and have a much higher life time expectancy. They also provide a very fast response time with no audiable noise and can withstand significant vibration.

Under the appropriate conditions the lifespan of Solid State Relays in virtually unlimited, as opposed to the typical 100 K cycle life of Electro Mechanical Relays. Solid State Relays are maintenance free and can eliminate machine down time due to relay failures.

## STANDARDS

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

- Some of our products fulfi I the requirements according to EN 60601-1 (VDE 0750) for medical applications and also the requirements for KOSHA (S-MARK) or for explosive atmospheres ATEX "EX". - All of our relays okpac ${ }^{\circledR}$ SO (as well as SC relays), celpac ${ }^{\circledR} 2 \mathrm{G} \mathrm{SU} / \mathrm{SA}$ (including the current sense module ESUC) but also the 2-phase SOB and 3-phase SGT comply with the European standard EN61373 for railways : shocks and vibrations tests on relay. Regarding the standards about Fire behavior and fumes NF F16-101, NF F16-102 and EN 45545 calling for the EN 60695-2-10/11/12 (Glow Wire tests (GWFI - GWIT), blue and black plastic covers and encapsulating resin of SO and SU/SA relays are classifi ed (for more detailed information - please contact us).
- The manufacturing process of our relays complies with the ISO9001 requirements version 2008. We incorporate highly reliable components with a very high electromagnetic interference level which give to our products the highest life-time one can find one the market.


## MAIN APPLICATIONS

## HEATING

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

## MOTOR <br> STARTING

Pumps
Compressors
Plastic injection
molding
Conveyors
Fans

## LIGHTING

Public lighting
Cinema Theatre lamps Airport runway lamps Road lighting

## CONTROL

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

## MISCELLANEOUS

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


All our solid state relays are fitted with back to back thyristors (power products: single phase, two phase, three phase) now use TMS ${ }^{2}$ technology with a very high life expectancy compared to other products on the market (application note on request).

## OKPAC Series

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


## Versatile, easy \& quick connections



Direct connection by wire or tip
$2 \times 10$ AWG ( 6 mm 2 ) fine strand i.e. 32A $2 \times 8$ AWG ( 10 mm 2 ) solid i.e. 50A


With tips with contained palm
Up to 4 AWG (25mm2) i.e. 85A
Up to 1 AWG (50mm2)
with or without special adaptations i.e. 150A


Screw with brake washers
Better behavior with shocks and vibrations


Screws connection


Removable spring terminals


## S09 Type

Typical applications : Resistive loads (AC-51)

- Same footprint as standard industrial flatpack relays
- Zero cross
- Control status LED (SO7 / SO8 / SO9 / SOL)
(SOR)
- IP20 protection

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SO941460 | 12A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $128 A^{2 s}$ | $45 \times 58,5 \times 30$ |
| SO942460 | 25A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $600 A^{2} \mathrm{~s}$ |  |
| SO943460 | 40A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $1250 A^{2} \mathrm{~s}$ |  |
| SO945460 | 50A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $2800 A^{2} \mathrm{~s}$ |  |
| SO963460 | 40A | 24-600VAC | 1200V | 3,5-32VDC | $1250 A^{2} \mathrm{~s}$ |  |
| SO965460 | 60A | 24-600VAC | 1200V | 3,5-32VDC | $2800 A^{2} \mathrm{~s}$ |  |
| SO967460 | 90A | 24-600VAC | 1200V | 3,5-32VDC | 7 200A ${ }^{2}$ s |  |
| SO96846T | 95A | 24-600VAC | 1200V | 3,5-32VDC | 11 250A ${ }^{\text {s }}$ |  |

These products should be mounted on heatsinks in order to reach nominal current.
$>$ Frequently stocked item.

| SO9 range with AC input |  |  |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Product <br> reference | Thyristor <br> rating | Switching <br> voltage | Peak <br> voltage | Control voltage | $\mathrm{I}^{2 \mathrm{t}}$ | Dimensions <br> mm |
| SO942860 | 25 A | $12-280 \mathrm{VAC}$ | 600 V | $15-32 \mathrm{VAC} / 10-30 \mathrm{VDC}$ | $600 \mathrm{~A}^{2 \mathrm{~s}}$ | $45 \times 58,5 \times 30$ |
| SO942960 | 25 A | $12-280 \mathrm{VAC}$ | 600 V | $185-265 \mathrm{VAC} / D C$ | $600 \mathrm{~A}^{2} \mathrm{~s}$ | $45 \times 5$, |

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

## S07 Type

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

- Same footprint as standard industrial flatpack relays
- Random or instant switching
- Voltage protection on input (transil) and output (RC and VDR).


| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SO745090 | 50A | 12-275VAC | 600 V | $3-32 \mathrm{VDC}$ | $2800 A^{2} \mathrm{~s}$ | $45 \times 58,5 \times 30$ |
| SO763090 | 35A | 24-510VAC | 1200V | 3,5-32VDC | $1250 A^{2} \mathrm{~s}$ |  |
| SO765090 | 50A | 24-510VAC | 1200V | $3,5-32 \mathrm{VDC}$ | $2800 A^{2} \mathrm{~s}$ |  |
| SO767090 | 75A | 24-510VAC | 1200V | 3,5-32VDC | 7 200A ${ }^{2}$ s |  |
| SO768090 | 95A | 24-510VAC | 1200V | 3,5-32VDC | 16 200A ${ }^{2}$ s |  |
| SO769090 | 125A | 24-510VAC | 1200V | 3,5-32VDC | 24000A ${ }^{2}$ s |  |
| SO785060 | 50A | 24-690VAC | 1600V | 3,5-32VDC | $2800 A^{2} \mathrm{~s}$ |  |
| SO789060 | 125A | 24-690VAC | 1600V | 3,5-32VDC | 22 000A ${ }^{2}$ s |  |

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

Blterh Corp. ${ }^{\circ}$

## S08 Type

Designed for most types of loads

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

|  | Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | SO842074 | 25A | 12-275VAC | 600 V | 3-32VDC | $600 A^{2} \mathrm{~s}$ | 4 $45 \times 58,5 \times 30$ |
|  | SO842974 | 25A | 12-275VAC | 600 V | 20-265VAC/DC | $600 A^{2} \mathrm{~s}$ |  |
|  | SO843070 | 35A | 12-275VAC | 600 V | 3-32VDC | $1250 \mathrm{~A}^{2} \mathrm{~s}$ |  |
|  | SO843970 | 35A | 12-275VAC | 600 V | 20-265VAC/DC | $1250 A^{2} \mathrm{~s}$ |  |
|  | SO845070 | 50A | 12-275VAC | 600 V | 3-32VDC | $2800 A^{2} \mathrm{~s}$ |  |
|  | SO845970 | 50A | 12-275VAC | 600 V | 20-265VAC/DC | $2800 A^{2} \mathrm{~s}$ |  |
|  | SO848070 | 95A | 12-275VAC | 600 V | 3-32VDC | $16200 \mathrm{~A}^{2} \mathrm{~s}$ |  |
|  | SO849070 | 125A | 12-275VAC | 600 V | $3-32 \mathrm{VDC}$ | $22000 A^{2} \mathrm{~s}$ |  |
|  | SO863070 | 35A | 24-510VAC | 1200V | 3,5-32VDC | $1250 A^{2} \mathrm{~s}$ |  |
|  | SO863970 | 35A | 24-510VAC | 1200V | 20-265VAC/DC | $1250 A^{2}$ s |  |
|  | SO865070 | 50A | 24-510VAC | 1200V | 3,5-32VDC | $2800 A^{2}$ s |  |
|  | SO865970 | 50A | 24-510VAC | 1200V | 20-265VAC/DC | $2800 A^{2} \mathrm{~s}$ |  |
|  | SO867070 | 75A | 24-510VAC | 1200V | 3,5-32VDC | 7 200A ${ }^{2}$ s |  |
|  | SO867970 | 75A | 24-510VAC | 1200V | 20-265VAC/DC | 7 200A ${ }^{\text {s }}$ |  |
|  | SO868070 | 95A | 24-510VAC | 1200 V | 3,5-32VDC | $16200 A^{2} \mathrm{~s}$ |  |
|  | SO868970 | 95A | 24-510VAC | 1200V | 20-265VAC/DC | 16 200A ${ }^{2} \mathrm{~s}$ |  |
|  | SO869070 | 125A | 24-510VAC | 1200V | 3,5-32VDC | $22000 A^{2}$ s |  |
|  | SO869970 | 125A | 24-510VAC | 1200V | 20-265VAC/DC | $22000 \mathrm{~A}^{2} \mathrm{~s}$ |  |
| 苧 | SO885060 | 50A | 24-690VAC | 1600V | 3,5-32VDC | $2800 A^{2} \mathrm{~s}$ |  |
| ¢ | SO885960 | 50A | 24-690VAC | 1600V | 20-265VAC/DC | $2800 A^{2} \mathrm{~s}$ |  |
| S | S0887060 | 75A | 24-690VAC | 1600V | 3,5-32VDC | $7200 A^{2} \mathrm{~s}$ |  |
| 공 | S0888060 | 95A | 24-690VAC | 1600V | 3,5-32VDC | 16 200A ${ }^{2}$ s |  |
| 조 | S0889060 | 125A | 24-690VAC | 1600V | 3,5-32VDC | $22000 A^{2} \mathrm{~s}$ |  |



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

## SOL Type

- low profile (h=16,3mm)
- Same footprint as standard industrial flatpack relays

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

| Product <br> reference | Thyristor <br> rating | Switching <br> voltage | Peak <br> voltage | Control voltage | $1^{2 t}$ | Dimensions <br> mm |
| ---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOL942460 | 25 A | $12-280 \mathrm{VAC}$ | 600 V | $3-32 \mathrm{VDC}$ | $600 \mathrm{~A}^{2} \mathrm{~s}$ |  |
| SOL942960 | 25 A | $12-280 \mathrm{VAC}$ | 600 V | $185-265 \mathrm{VAC} / \mathrm{DC}$ | $600 \mathrm{~A}^{2} \mathrm{~s}$ | $56 \times 58,5 \times 16,3$ |
| SOL965460 | 50 A | $24-600 \mathrm{VAC}$ | 1200 V | $3,5-32 \mathrm{VDC}$ | $2800 \mathrm{~A}^{2} \mathrm{~s}$ |  |



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

## SOR Type

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

| Product <br> reference | Thyristor <br> rating | Switching <br> voltage | Peak <br> voltage | Control voltage | 12 t | Dimensions <br> mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOR842074 | 25 A | $12-275 \mathrm{VAC}$ | 600 V | $3-32 \mathrm{VDC}$ | $600 \mathrm{~A}^{2} \mathrm{~s}$ |  |
| SOR865070 | 50 A | $24-510 \mathrm{VAC}$ | 1200 V | $3,5-32 \mathrm{VDC}$ | $2800 \mathrm{~A}^{2} \mathrm{~s}$ | $45 \times 58,5 \times 30$ |
| SOR867070 | 75 A | $24-510 \mathrm{VAC}$ | 1200 V | $3,5-32 \mathrm{VDC}$ | 7200 A $^{2} \mathrm{~s}$ |  |

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


## Performances \& Reliability

- Maximum voltage up to 1600 V (690VRMS), 600VAC and 1200VAC as standard.
- Thyristor rating up to 75A.
- Large input range : 3-32VDC with regulated current models.
- AC input control available.
- Input status yellow LED.
- Over-voltage protection on input.
- New generation of TMS² technology for thyristors for a longer life expectancy.
- Mounting screws compatible with all hockey puck style relays (SO and SC type).
- 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 fl aps (SU range) or cover (SA range) Other devices available as an option : RC snubber, VDR, self activation.


## SA

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


## Compact Solution

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


SA range with screw connection on inputs.

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SA842070 | 25A | 12-275VAC | 600V | $3-32 \mathrm{VDC}$ | $600 A^{2} \mathrm{~s}$ |  |
| SA941460 | 12A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $128 A^{2} \mathrm{~s}$ |  |
| SA942460 | 25A | 12-280VAC | 600V | $3-32 \mathrm{VDC}$ | 450A ${ }^{\text {s }}$ | $22,5 \times 90 \times 42$ |
| SA945460 | 50A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $1680 A^{2} \mathrm{~s}$ |  |
| SA963460 | 35A | 24-600VAC | 1200V | 3,5-32VDC | 882A ${ }^{2}$ S |  |
| SA965460 | 50A | 24-600VAC | 1200V | 3,5-32VDC | $1680 \mathrm{~A}^{2} \mathrm{~s}$ |  |

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

## SAL/SAM

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

| Product reference | Thyristor rating | Max.switching current at $25^{\circ} \mathrm{C}$ | Switching voltage | Peak voltage | Control voltage | ${ }^{12} \mathrm{t}$ | $\underset{\mathrm{mm}}{\text { Dimensions }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SAL941460 | 12A | 12A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $128 A^{2} \mathrm{~s}$ |  |
| SAL942460 | 25A | 23A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $450 A^{2} \mathrm{~s}$ |  |
| SAL963460 | 35A | 30A | 24-600VAC | 1200V | 3,5-32VDC | $882 A^{2}$ S | $22,5 \times 90 \times 112$ |
| SAL965460 | 50A | 32A | 24-600VAC | 1200V | 3,5-32VDC | $1680 \mathrm{~A}^{2} \mathrm{~S}$ |  |
| SAM943460 | 35A | 32A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $882 A^{2}$ s | $45 \times 90 \times 112$ |
| SAL/SAM with low input current - control current <10mA |  |  |  |  |  |  |  |
| SAL961360 | 15A | 15A | 24-600VAC | 1200V | 6-32VDC | $882 A^{2}{ }^{\text {S }}$ |  |
| SAL962360 | 25A | 23A | 24-600VAC | 1200V | 6-32VDC | $882 A^{2} \mathrm{~s}$ | $22,5 \times 90 \times 112$ |
| SAM963360 | 35A | 32A | 24-600VAC | 1200V | $6-32 \mathrm{VDC}$ | $882 A^{2}{ }^{\text {S }}$ |  |
| SAM965360 | 50A | 45A | 24-600VAC | 1200V | $6-32 \mathrm{VDC}$ | $1680 \mathrm{~A}^{2} \mathrm{~S}$ | $45 \times 90 \times 112$ |

## The $22,5 \mathrm{~mm}$ pitch SSR solution! Smart Solid State Relays with optional modules

## SU

- Removable fl aps for protection
- For mounting on your heatsink or panel mount.
- SU7 : designed for motors AC-53 and inductive loads. Also use in phase angle control systems.



## SU range

with pluggable connector on inputs.

- SU8 : designed for most types of loads / integrated VDR protection
- SU9 : designed for resistive loads AC-51.

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SU765070 | 50A | 24-510VAC | 1200V | 3,5-32VDC | $1680 A^{2} \mathrm{~s}$ | $22,5 \times 90 \times 42$ |
| SU842070 | 25A | 12-275VAC | 600 V | $3-32 \mathrm{VDC}$ | $600 A^{2} \mathrm{~s}$ |  |
| SU842970 | 25A | 12-275VAC | 600 V | 180-240VAC | $600 A^{2} \mathrm{~s}$ |  |
| SU865070 | 50A | 24-510VAC | 1200V | 3,5-32VDC | $1680 A^{2} \mathrm{~s}$ |  |
| SU865970 | 50A | 24-510VAC | 1200V | 180-240VAC | $1680 A^{2} \mathrm{~s}$ |  |
| SU867070 | 75A | 24-510VAC | 1200V | 3,5-32VDC | $7200 A^{2} \mathrm{~s}$ |  |
| SU942460 | 25A | 12-280VAC | 600 V | $3-32 \mathrm{VDC}$ | $600 A^{2} \mathrm{~s}$ |  |
| SU963460 | 35A | 24-600VAC | 1200V | 3,5-32VDC | 882A ${ }^{2}$ S |  |
| SU965460 | 50A | 24-600VAC | 1200V | 3,5-32VDC | $1680 A^{2} \mathrm{~s}$ |  |
| SU967460 | 75A | 24-600VAC | 1200V | 3,5-32VDC | $7200 A^{2} \mathrm{~s}$ |  |



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

## SUL/SUM

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

| Product reference | Thyristor rating | Max.switching current at $25^{\circ} \mathrm{C}$ | Switching voltage | Peak voltage | Control voltage | ${ }^{12} \mathrm{t}$ | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SUL765070 | 50A | 32A | 24-510VAC | 1200V | 3,5-32VDC | $1680 A^{2}{ }^{\text {s }}$ | $22,5 \times 90 \times 112$ |
| SUL842070 | 25A | 23A | 12-275VAC | 600 V | 3-32VDC | $600 A^{2} \mathrm{~s}$ |  |
| SUL842770 | 25A | 23A | 12-275VAC | 600 V | 18-30VAC/DC | $600 A^{2} \mathrm{~s}$ |  |
| SUL842970 | 25A | 23A | 12-275VAC | 600 V | 160-240VAC | $600 A^{2} \mathrm{~s}$ |  |
| SUL865070 | 50A | 32A | 24-510VAC | 1200V | 3,5-32VDC | $1680 A^{2} \mathrm{~s}$ |  |
| SUL865770 | 50A | 32A | 24-510VAC | 1200V | 18-30VAC/DC | $1680 A^{2} \mathrm{~s}$ |  |
| SUL865970 | 50A | 32A | 24-510VAC | 1200V | 160-240VAC | $1680 A^{2} \mathrm{~s}$ |  |
| SUL867070 | 75A | 35A | 24-510VAC | 1200V | 3,5-32VDC | 7 200A ${ }^{\text {s }}$ |  |
| SUL942460 | 25A | 23A | 12-280VAC | 600V | 3-32VDC | 600A ${ }^{2}$ s |  |
| SUL963460 | 35A | 30A | 24-600VAC | 1200V | 3,5-32VDC | 882A ${ }^{2}$ S |  |
| SUL965460 | 50A | 32A | 24-600VAC | 1200V | 3,5-32VDC | $1680 A^{2} \mathrm{~s}$ |  |
| SUL967460 | 75A | 35A | 24-600VAC | 1200V | 3,5-32VDC | 7 200A $^{2}$ s |  |
| SUM865070 | 50A | 45A | 24-510VAC | 1200V | 3,5-32VDC | $1680 A^{\text {a }}$ S | × $90 \times 112$ |
| SUM867070 | 75A | 45A | 24-510VAC | 1200V | 3,5-32VDC | 7 200A $^{\text {s }}$ S | ¢ $90 \times 112$ |

## Three Phase units are available upon request.

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



2 load control wiring Single phase


Two-phase SSR SOB to control heaters connected in star
(for balanced low voltage loads without neutral connection)


Two-phase SSR SOB to control heaters connected in delta
(for high voltage, balanced or unbalanced loads)

## SCB5 / SOB5

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

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Specifications | Dimensions mm | Fig $\mathrm{n}^{\circ}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SCB564310 | $2 \times 40 \mathrm{~A}$ | 24-510VAC | 1200V | 5-30VDC | $610 A^{2} \mathrm{~s}$ | zero-cross / 2 controls | $44,8 \times 58,5 \times 27$ | 1 |
| SOB542460 | $2 \times 25$ A | 12-280VAC | 600 V | 3-32VDC | 265A ${ }^{2}$ s | zero-cross / 2 controls | $45 \times 58,5 \times 27$ | 2 |
| SOB562460 | 2x25A | 24-600VAC | 1200V | 3,5-32VDC | 265A ${ }^{2}$ S | zero-cross / 2 controls |  | 2 |
| SOB544330 | $2 \times 40 \mathrm{~A}$ | 12-275VAC | 600 V | 8-30VDC | $882 A^{2}$ S | zero-cross / 2 controls | $45 \times 58,5 \times 27$ | 3 |
| SOB564330 | $2 \times 40 \mathrm{~A}$ | 24-510VAC | 1200V | 8-30VDC | $882 A^{2}$ S | zero-cross / 2 controls |  | 3 |

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


- Power and control connections by FASTON terminals

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


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

## Three Phase units are available upon request.

SOB6 : zero-cross - double input with connector CE100F ITWPANCON type or similar SOB7 : random
SOB8 : zero-cross - designed for most types of loads

- Connectors to be ordered separately.


SOB9 : zero-cross - resistive loads AC-51

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | 12 t | Specifi cations | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SOB665300 | 2x50A | 24-600VAC | 1200V | 10-30VDC | 1680A ${ }^{2}$ S | 2 controls | $45 \times 58,5 \times 27$ |
| SOB763670 | 2x35A | 24-510VAC | 1200 V | 8-30VDC | $1250 A^{2}$ s | 2 controls |  |
| SOB765670 | 2x50A | 24-510VAC | 1200V | 8-30VDC | 2500A ${ }^{\text {s }}$ S | 2 controls |  |
| SOB767670 | 2x75A | 24-510VAC | 1200V | 8-30VDC | $7200 A^{2}$ s | 2 controls |  |
| SOB863860 | 2x35A | 24-600VAC | 1200V | 17-30VAC/DC | $882 A^{2}$ S | 2 controls |  |
| SOB865660 | $2 \times 50 \mathrm{~A}$ | 24-600VAC | 1200V | 8-30VDC | 2500A ${ }^{2} \mathrm{~s}$ | 2 controls |  |
| SOB867640 | $2 \times 75$ A | 24-510VAC | 1200V | 8-30VDC | 7200A ${ }^{2}$ S | 2 controls / transil |  |
| SOB942360 | 2x25A | 24-280VAC | 600V | 10-30VDC | $600 A^{2 s}$ | 1 control |  |
| SOB942660 | $2 \times 25$ A | 24-280VAC | 600 V | 10-30VDC | $600 A^{2} \mathrm{~s}$ | 2 controls |  |
| SOB943360 | 2x35A | 24-280VAC | 600V | 10-30VDC | $1250 A^{2} \mathrm{~s}$ | 1 control |  |
| SOB945360 | $2 \times 50 \mathrm{~A}$ | 24-280VAC | 600 V | 10-30VDC | $2800 A^{2} \mathrm{~s}$ | 1 control |  |
| SOB963660 | $2 \times 35$ A | 24-600VAC | 1200V | 10-30VDC | $1250 A^{2} \mathrm{~s}$ | 2 controls |  |
| SOB965160 | 2x50A | 24-600VAC | 1200V | 6-16VDC | $1680 A^{2} \mathrm{~s}$ | 1 control |  |
| SOB965660 | $2 \times 50 \mathrm{~A}$ | 24-600VAC | 1200V | 10-30VDC | $2500 A^{2} \mathrm{~s}$ | 2 controls |  |
| SOB967660 | 2x75A | 24-600VAC | 1200V | 10-30VDC | 7200A ${ }^{2}$ s | 2 controls |  |

On request : 1600V peak version, 75A version, overvoltage protection option available.
For SOB6 range : other rating on request, TVS (Transient Voltage Suppression) protection possible.
These products should be mounted on heatsinks in order to reach nominal current.

## SCB



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

| Product reference | Thyristor rating | Switching voltage | Peak voltage | Control voltage | $1^{2} \mathrm{t}$ | Specifi cations | Dimensions mm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SCB665300 | $2 \times 50 \mathrm{~A}$ | 24-600VAC | 1200V | 8-35VDC | 1500A ${ }^{2}$ s | 1 control | $44,8 \times 58,5 \times 27$ |
| SCB865300 | $2 \times 50 \mathrm{~A}$ | 24-600VAC | 1200V | 10-30VDC | $1500 \mathrm{~A}^{2} \mathrm{~s}$ | 1 control |  |
| SCB865600 | $2 \times 50 \mathrm{~A}$ | 24-600VAC | 1200V | 10-30VDC | $1500 \mathrm{~A}^{2} \mathrm{~s}$ | 2 controls |  |
| SCB941300 | $2 \times 12 \mathrm{~A}$ | 12-280VAC | 600 V | 8-30VDC | $72 A^{2}$ S | 1 control |  |
| SCB942600 | 2x25A | 12-280VAC | 600V | 8-30VDC | 288A ${ }^{2}$ S | 2 controls |  |
| SCB962600 | 2x25A | 24-600VAC | 1200V | 8-30VDC | 265A ${ }^{\text {s }}$ | 2 controls |  |
| SCB965600 | 2x50A | 24-600VAC | 1200V | 8-30VDC | $1500 \mathrm{~A}^{2} \mathrm{~s}$ | 2 controls |  |

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

| Product reference | Thermal characteristics | Specifi cations | Dimensions mm | Relay type | $\begin{gathered} \text { Fig } \\ n^{\circ} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| WF031100 | 0,3K/W | ventiled for DIN rail or screw - fan supply 230Vac | $110 \times 120 \times 145$ | SO, SC, SG, SGT, SVT | 1 |
| WF031200 | 0,3K/W | ventiled for DIN rail or screw - fan supply 24 Vdc | $110 \times 120 \times 145$ | SO, SC, SG, SGT, SVT | 1 |
| WF050000 | 0,55K/W | DIN rail adaptor as option | $110 \times 100 \times 200$ | SO, SC, SG, SGT, SVT | 2 |
| WF070000 | 0,75K/W | DIN rail adaptor as option | $110 \times 100 \times 100$ | SO, SC, SG, SGT, SVT | 3 |
| WF115100 | 0,9K/W | for DIN rail or screw | $110 \times 100 \times 90$ | SO, SC, SG, SGT, SVT | 4 |
| WF112100 | 1K/W | for DIN rail or screw | $49,5 \times 117,5 \times 120$ | SA, SU | 5 |
| WF108110 | 1,1K/W | for DIN rail or screw | $89,8 \times 81 \times 98,02$ | SO, SC | 6 |
| WF121000 | 1,2K/W | for DIN rail or screw | $100 \times 40 \times 100$ | SO, SC, SG, SGT, SVT | 7 |
| WF210000 | 2,1K/W | DIN rail adaptor as option | $96 \times 41 \times 55$ | SO, SC | 8 |
| WF151200 | 2,2K/W | for DIN rail or screw | $45 \times 73 \times 80$ | SO, SC, SA, SU | 9 |
| WF311100 | 3K/W | for DIN rail or screw | $22,5 \times 73 \times 80$ | SA, SU | 10 |

The Rth values are given for a temperature of $50^{\circ} \mathrm{C}$ in calm air. Other dimensions available on request.


5


10

## ACCESSORIES



PROTECTION COVERS / FLAPS

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

MOUNTING KITS

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


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

MARKING LABELS
 flaps or covers for SA SU


DIN RAIL ADAPTORS

1 LD00400
1 LD00500
1LD12020

DIN rail adaptator for WF21/07/05 DIN rail adaptator for SG/SVT/SV969300 DIN rail adaptator for SC/SV8/SO vertical mounting

MOUNTING + HEATSINK + DIN ADAPTOR OPTION
1LWD1202 mounting of SC/SV/SO sur 1LD12020 + 1LD12020

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

| 1LW00000 | mounting of relays on heatsink |
| :--- | :--- |
| 1LWD0000 | mounting of heatsink on DIN rail adaptator |

## Other Great Altech Products

## Smart Relays and Digital Timers



Supports up to 48 I/Os (32 digital inputs \& 16 digital outputs). DST Feature Available. Backlit LCD Screen for display \& modification of pre-selected parameters of functional blocks, viewing I/O status and programming on the device. PC software for programming, online \& offline simulation, documentation \& printing. Designed for use in automation for commercial \& Industrial sectors. Modbus Communication. UL 508 (UL File No. E352868), IEC 61000-3-2 and IEC 61000-4-2-1~11. 250 lines of ladder programming. 16 soft text messages, Time Switches, Compare Counters, Timers, Counters \& 12 analog functions.

## Current Limiting Circuit Breakers



Altech Current Limiting Circuit Breakers Current limiting circuit breakers minimizes the short circuit current to a relatively small amount in an extremely short time. This minimizes the harmful short circuit potential energy. Features include:

- DIN Rail Mounted
- 17.5 mm width
- Thermal Magnetic
- AC: $240 \mathrm{~V}, 480 \mathrm{Y} / 277 \mathrm{~V}$ AC, $50 / 60 \mathrm{~Hz}$
- DC: 125V DC (1 pole); 250V DC (2pole)
- 10kA Short Circuit
- Interrupting Capacity
- HACR Type $40^{\circ} \mathrm{C}$
- Line/Load reversible


## Industrial Enclosures



Altech offers a broad selection of nonmetallic and aluminum Industrial Enclosures to meet your diverse design requirements. Sizes range from $1.97 \times 2.05$ x 1.38 to $35.43 \times 11.81 \times 5.59$ inches. Materials include polycarbonate, polystyrene, polypropylene, ABS or aluminum. Polycarbonate and aluminum series have been recently expanded. Protection up to IP67 (NEMA 4, 4X). Smooth sidewalls or sidewalls with knockouts. Enclosures can be mounted directly onto a panel, frame or other mounting surfaces. EMI / RFI Coating is available. Competitive cover printing is available. Hinge Kits. Customization available.

## DIN Rail Power Supplies



Altech DIN RAIL mountable power supplies have Universal AC input. They are suitable for industrial and automation applications. UL508 Listed or UL Recognized. Single and Three phases up to 960 W . Outputs of $5 \mathrm{~V}, 12 \mathrm{~V}, 15 \mathrm{~V}, 24 \mathrm{~V}$ and 48V. Class 2 devices are available. Installed on DIN rail TS35/ 7.5 or 15. Protections of Short circuit / Overload / Overvoltage / Over temperature. Cooling by free air convection. All-In-One DCUPS, battery based. Ultra Capacitor DCUPS, no battery required. Worldwide approvals. 3 year warranty.

## Interface Modules and Power Supplies



Altech offers a wide range of DIN Rail or panel mount cable interface modules, relay interface modules, power supplies, carrier modules, and custom designed modules. Cable to connector models include: D-Sub connectors, ribbon cable connectors, and Dip socket connectors to terminals. Standard relay modules from 1 to 16 channels, and safety relay modules from 1 to 16 channels and up to 10 poles are included. The catalog also contains switching power supplies, linear power supplies, and custom designed interface modules.

## Terminal Blocks



Altech offers a NEW Terminal Block catalog with the most competitively priced blocks in the industry. We feature screw and spring clamp models for DIN rail and panel mount applications. This advanced line of wire termination products will increase your design options and help to get the job done more efficiently. Our line of blocks include feedthrough (single, double or triple level), distribution, ground, fuse, disconnect, thermocouple, surge suppressor and indicator. A wide variety of accessories, tools and ferrules are available.

## Liquid Tight Strain Reliefs



This 64-page catalog introduces Altech's full line Liquid Tight Strain Reliefs (Cord Grips) which are used to seal cable entries, keep contaminant's from entering enclosures, provide strain relief and thus reduce stress on components and termination points inside enclosures. Available in standard, highperformance, and economy versions, functions include Straight-Through, Increased Strain Relief, Bend Protection, Pull/Bend Protection, Multi-conductor, Flat Cable and EMI/RFI. They can be used with almost any type of cable, cord or conductor - solid, stranded, flat, shielded, high temperature, etc.

## Motor Disconnect Switches



Altech's line of Motor Disconnect Switches are UL 508 listed as Manual Motor Controllers for AC Motor Starting Across-the-line and AC General use. This new 16 page catalog includes the 3 different handle designs, which are all available in gray/black or yellow/red housings. Electrical ratings are 25-150A / 600 V . The switches are non-fused DIN Rail mountable. Neat features include: snap-on auxiliary switches, door mounting kit and a retrofit 30A fuse holder. Also featured are Enclosed Motor Disconnect Switches \& Fused Enclosed Motor Disconnect Switch (30A) in plastic or stainless housings.

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## Solid State Relays Three Phase Proportional Controllers

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

8-32V external power supply required.

## Solid State Relays DC Relays

These relays are designed to switch DC loads e.g solenoid valves, brakes, indicators, motors.


## MOSFET

for applications where overcurrent capability and low dissipated power are needed.

## Bipolaire

for applications where low control current is needed.

## IGBT Technologies

for high voltage applications (> 600 VDC)
Nominal current


## Solid State Relays PCB Relays

For PCB mounting in 2.5 and 5 Amp versions.


## Solid State Relays <br> FASTON Terminals for a quick connection!

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


## Solid State Relays

Three-phase
Relays for controlling three-phase loads. Models are available, with ratings up to 125 amps per phase, with either AC or DC input, random or zero-cross output.

## Solid State Relays



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


## Solid State Relays

Analogue Control Relays
Have an analog input isolated from the mains to proportionally vary the cyclic operating ratio of a load $(\mathrm{t} / \mathrm{T})$.
No external power supply required.

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