

# We are always looking at your need. Discover our solution!

## Need

### 1 compact SSR

For this need the solution is the SSR170H/SSR270H or SSR370H if you want a SSR with integrated heatsink or SSR19/SSR29 or SSR39 if you want an HOCKEY PUCK relay.

## Need

### 1 SSR with control load

For this need the solution is the SSR170H with ELC40. If you want RS485, you can use ELC40-S instead of ELC40.

## Need

### Read temperature with SSR

For this need the solution is the SSR170H with ELCT40-S. With ELCT40-S you can manage temperature over a SSR with 22,5mm width.

## Need

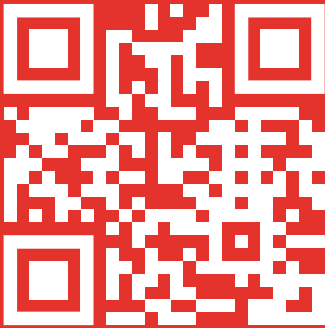
### Solid state relay and temperature controller

For this need the cheap solution is SSR with integrated heatsink or HOCKEY PUCK with ELK4C. If you want a more expensive solution that has more features you can change the ELK4C with ELKM4.

## Need

### Motor control

For this need the solution is the EMS24 series. If you choose EMS243-RC or EMS249-RC you also have load monitoring.  
You have RS485 modbus on the bus.



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AUTOMATION UNDER CONTROL

SSR RANGE

## EL.CO. Approvals

All our products are manufactured in compliance with the main international standards. This ensures safety, reliability and a high level of electromagnetic interference which gives our products the maximum duration that can be found on the market.



UL, TUV and UKCA certifications are not present on all products

## How to choose a heatsink

A heat sink is used to lower the temperature of electronic components that release heat. It is important to know that the biggest difference between an SSR and a mechanical relay is that the SSR has a voltage drop which causes a loss of power and consequently of the heat that needs to be dissipated.

### The heatsink comes into play. But which heatsink do we choose?

Let's take an example.

#### Duty cycle: 100%

We consider some data as established to avoid damaging the product. Let's assume a maximum of 100 °C on the heatsink to avoid ruining the SSR and 40 °C of the environment.

Output Current Relay (CR): 25A (This information we must to have)  
Voltage drop (VD): 1.2V (Every SSR has a voltage drop)  
Maximum of 100°C on the heatsink (We assume this data to avoid damaging)  
Ambient temperature of 40°C (Standard temperature of environment)

I have to dissipate  $25A(CR) \cdot 1,2(VD) = 30W$  and we have a delta temperature of 60°C (100°C – 40°C)

Thermal Characteristics (TC) = 60°C / 30W = 2°C/W

We have to choose an heatsink with TC = 2°C/W or lower than 2°C/W

What if we don't use the SSR at 100%?

#### Duty cycle: 50%

We have to repeat the calculation but we don't have to use CR as is, but we have to use the CR multiplied by the percentage of use. If we use the SSR at 50%, we have  $NewCR = CR \cdot (50/100)$ . The other calculation are the same as described above.

SLIM

The SSR series SSR01/02/05, SSR20/21 and SSR91 are **100% compatible with electromechanical relays.** They can be soldered on PCB or mounted on the standard sockets. For DIN rail mounting. Up to 8A.

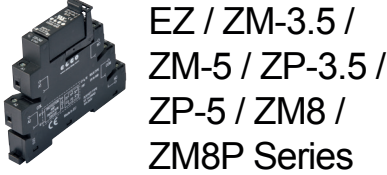
Extreme Force

Each slim product has a «silver leg» which allow an extreme force with the PCB and interfaces.

More than the others

Each slim product has a silver leg» which allow an extreme force with the PCB and interfaces.

Accesories



ECLR / EZD / ECLRM / ELCRP Series

Summary	28x5x15(h)mm	28x5x15(h)mm	12,7x29x 15,7(h)mm	112,5x29x 27(h)mm	Up to 20.6x 27.8x44(h) mm	6,2x100x 78(h)mm	6,2x100x 78(h)mm	6,2x100x 78(h)mm
Maximum output current	Up to 2A	Up to 8A	Up to 12A	Up to 2A	Up tp 10A	Up to 15A	Up to 10A	Up to 4A
Maximum output voltage	Up to 45V DC or 275V AC	Up to 24V DC	Up to 35V DC or 275V AC	Up to 60V DC	0 - 35V DC	Up to 0 - 35V DC or 12 - 275V AC	Up to 5 - 35V DC or 12 - 275V AC	Up to 0 - 35V DC or 12 - 275V AC
Control voltage	3 - 12V DC 15 - 30V DC 35 - 72V DC	3 - 12V DC 15 - 30V DC 35 - 72V DC	5 - 10V DC 10 - 32V DC	5 - 10V DC 10 - 30V DC	4 - 9V DC 3 - 32V DC 9 - 18V DC 18 - 28.8V DC	5 - 10V DC 9 - 18V DC 10 - 30V AC/DC	5 - 30V DC 8 - 30V AC/DC	10 - 30V DC 10 - 24V AC
Features	Zero crossing for AC models	-	Zero crossing for AC models	-	Zero crossing for AC models	Zero crossing for AC models	Zero crossing for AC models	Zero crossing for AC models
	Random for DC models	Random for DC models	Random for DC models	Random for DC models	Random for DC models	Random for DC models	Random for DC models	Random for DC models
	-	-	-	-	-	-	Short circuit protection, overload protection, over current, over temperature protection	4 function on timing
Certifications								

HOCKEY PUCK

The solid state relays of the SSR19/29/39 has an innovative design with elevate performances and compactness.

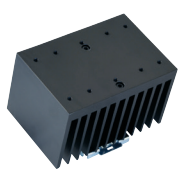
Aluminium Surface

Each products is developed with the new PCB technology.This allows more dissipation, more compactness, more power.

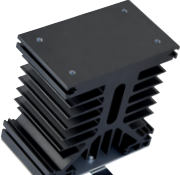
More products

Output current up to 125A

Accesories



Heatsinks



Summary	21,5x35,6x 22(h)mm	28,5x38,5x 25,5(h)mm	45,7x58,6x 33,5(h)mm	45,7x58,6x 33,5(h)mm	45,7x58,6x 33,5(h)mm	105x78x 38(h)mm	105x78x 38(h)mm
Maximum output current	Up to 25A	Up to 25A	Up to 60A	Up to 80A	Up to 2x75A	Up to 3x60A	Up to 3x80A
Maximum output voltage	Up to 280V AC	Up to 440V AC	Up to 660V AC	Up to 530V AC	Up to 660V AC	Up to 530V AC	Up to 530V AC
Control voltage	4 - 9V DC 9 - 18V DC 18 - 28,8V DC	4 - 32V DC	4 - 32V DC or 90 - 280V AC	4 - 20mA 0 - 10V DC	10-32V DC	4 - 32V DC or 90 - 280V AC	4 - 20mA 0 - 10V DC
Features	-	-	-	Phase angle	-	-	Phase angle
	TVS protection	TVS protection	-	-	-	-	-
	Peak voltage up to 600V	Peak voltage up to 800V	Peak voltage up to 1600V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V
	Compliance with EN 60335-1	Compliance with EN 60335-1	Compliance with EN 60335-1	-	Compliance with EN 60335-1	Compliance with EN 60335-1	-
Certifications							

70 Series

The SSR solution is smaller than the others. 17,8mm for single phase models. There are SSR's without integrated heatsink, but those with integrated heatsink are unique.

Smart SSR

The better SSR in only 17,8mm.

From 15A to 30A in small space. You can't love it.

H1 Fusion / H1 Fusion Pro

The compact chip integrated with the last generation of TVS. These chip gives ELCO SSRs more performance and more security than the others.

Summary	Up to 17,8x90x 63(h)mm	Up to 54x105x 70(h)mm	17,8x90x 108(h)mm	17,8x90x XXX(h)mm	Up to 65x90x 166,5(h)mm	Up to 100x119x 193,5(h)mm	Up to 100x119x 193,5(h)mm
Maximum output current	Up to 50A	Up to 50A	Up to 25A	30A	Up to 60A	Up to 2x60A	Up to 3x40A
Maximum output voltage	Up to 600V AC	Up to 600V AC	Up to 600V ACC	Up to 600V AC	Up to 600V AC	Up to 600V AC	Up to 600V AC
Control voltage	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC	4 - 32V DC or 90 - 280V AC
Features	Varistor protection	Varistor protection 2x (or 3x)	Varistor protection	Varistor protection	Varistor protection	Varistor protection	Varistor protection
	H1 Fusion Pro	H1 Fusion Pro	H1 Fusion (H1 Fusion Pro x 25A)	H1 Fusion Pro	H1 Fusion Pro	2xH1 Fusion Pro	3x H1 Fusion Pro
	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V	Peak voltage up to 1200V
Certifications							

Load Monitoring

Plug-in System

Modules directly plugged into 70 Series. Add more function to a simple SSR.

E-teach

New system to learn the instant current.

With this system you can capture the error +/- 10% of saved current.

Summary	22x80x110(h)mm	22x80x110(h)mm	22x80x110(h)mm	22x80x110(h)mm
Current range	-	2 - 40A	2 - 40A	2 - 40A
Control	-	8 - 30V DC	8 - 30V DC	24V DC
Features	Burst firing - - - 0...10V, 4...20mA input	Load monitoring E-teach Detect 5 type of errors - -	Load monitoring E-teach Detect 5 type of errors RS485 -	Load monitoring E-teach Detect 5 type of errors RS485 Probes TC/JK, PT100 -
Certifications				

Motor Control

Born to be cold

Up to 9A without heatsink.

Hybrid Technology

Start-stop with internal by-pass.

Summary	22,5x100x114(h)mm	22,5x100x114(h)mm	22,5x100x114(h)mm	22,5x100x114(h)mm	22,5x100x114(h)mm
Control voltage	24V DC	24V DC	24V DC	24V DC	24V DC
Features	Clockwise - - -	Clockwise Counterclockwise - -	Clockwise - Load control, phase loss, overcurrent -	Clockwise Counterclockwise Load control, phase loss, overcurrent -	Clockwise Counterclockwise Load control, phase loss, overcurrent Safe stop
Certifications					