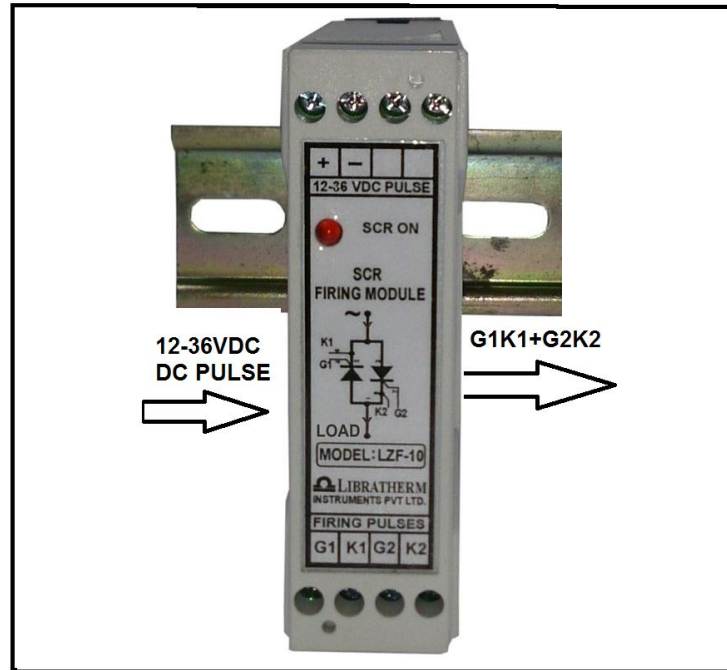


Single Phase Zero Cross Over - SCR Firing Module



SCR FIRING MODULE (LZF-10)

Model Wise Description:

Sr.No	Model	Product Description	Size (w X h X d) mm.
21.4.3	LZF-10	Single phase zero cross over SCR firing Module	22.5 x 75 x 100

Description:

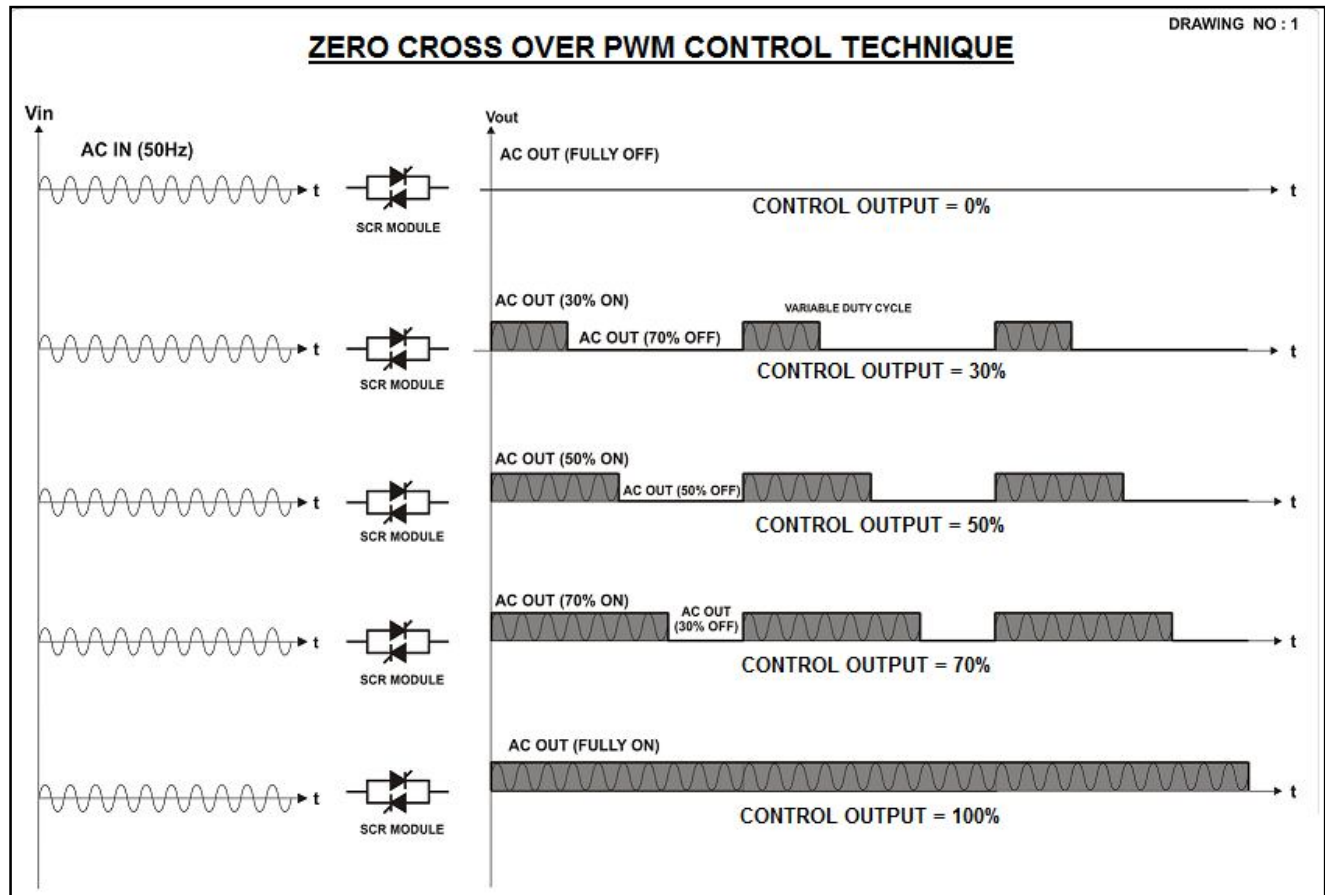
Libratherm offers single phase zero cross over SCR firing module model **LZF-10** for AC single phase operated electrical resistive or inductive loads. This module is developed to replace the electro-mechanical contactor with the solid state switch using silicon controlled rectifiers (SCRs). When the electrical load is operated through contactors – the AC cycle is switched ON or OFF at any point of 0 to 180 degree phase angle of single sinusoidal AC cycle, this leads to generation of arcing on the contacts and may generate harmonics, which can cause electromagnetic disturbance in the power lines and can also cause EMI to other electronic instruments on the panel. The module featured here eliminates generation of voltage transients because of zero cross over switching technique, also no arcing will be observed during switching operation – since no mechanical contact movement is involved in the solid state device.

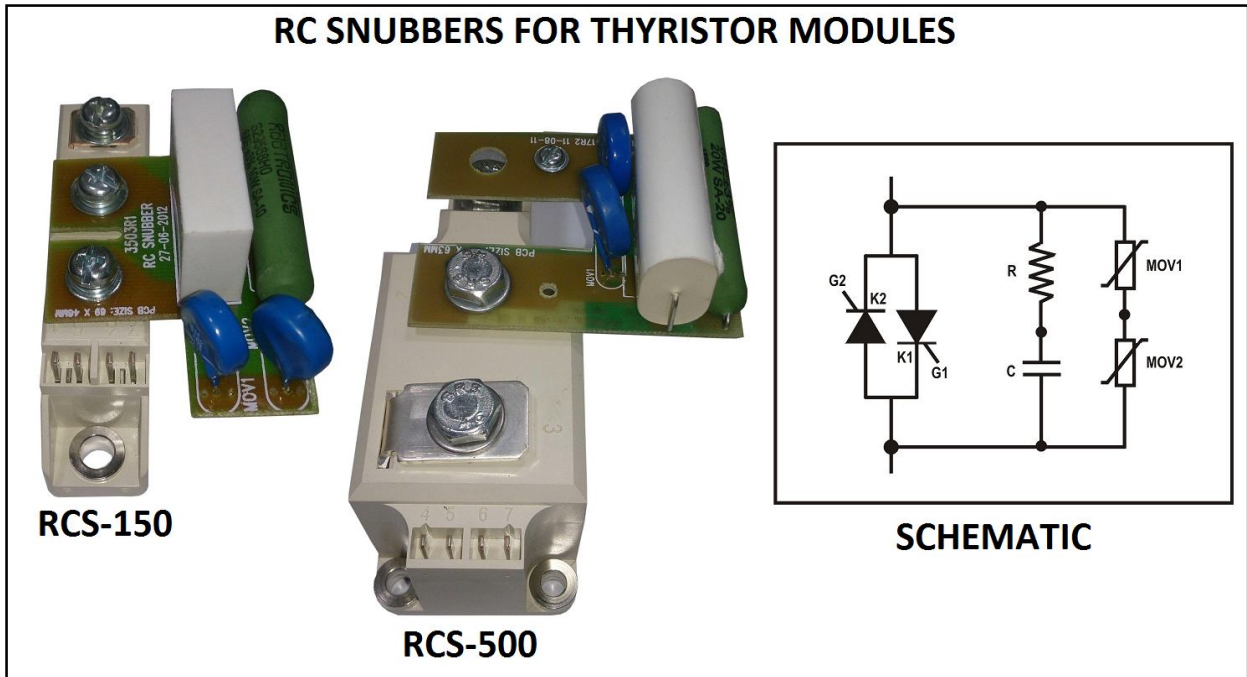
This **LZF-10 module** accepts logic pulse of 12 to 36VDC from temperature controller or from PLC and generates single phase gate cathode triggering pulses for a pairs of back to back connected SCRs.

Using LZF-10 module and external back to back connected SCR modules (such as Semikron make SKKT27, SKKT57, SKKT106, SKKT162, SKKT 273, SKKT 573) one can build solid state relays rated for 25A to 500A @ 40 to 250VAC. We also offer required RC snubber as per the details given below.

Technical Specification:

Item	Single phase zero cross over SCR firing Module
Models	LZF-10
Control Input	12 to 36VDC
Triggering Pulses	Gate/ Cathode pulses - Optically isolated from the Input – suitable to fire 25A to 500A back to back connected SCRs. G1K1+G2K2 = 4pulses.
No. Of Outputs	Single for Back to Back connected SCR.
Load Configuration	Single phase with respect to Neutral
Supply Voltage	230VAC +/-10%, 50/60Hz.
Output Line Voltage	40 to 250VAC
Mounting	On standard 35 mm DIN rail
Size (w x h x d)	22.5 x 75 x 100 mm.





Description:

Libratherm offers ready to use RC snubber circuits, which are essential to put across the thyristor device to protect it against the voltage transients, which is generated during on/off operations of these devices. In the event, such protection snubber are not used across the thyristors, it may lead to false triggering and cause unwanted conduction and short circuiting or permanent damage of the module.

We are offering two sizes of RC snubber PCBs duly fitted with standard value of Resistor, Capacitor and Metal Oxide Varistor(MOV). The PCBs are designed to be directly fitted on the module as shown in the above picture and hence no external wiring is required for connection. We have considered Semikron make as the standard, but the PCB sizes applies to all other equivalent make of thyristor modules. This PCB can be mounted above the power cables or Bus bars.

SNUBBER MODEL	SUITABLE FOR SEMIKRON MODELS	STD.COMPONENTS
RCS-150	SKKT27, SKKT57, SKKT106, SKKT162	R=68Ohm/10watt,C=0.1mfd/2.0KV, MOV= 680V+680V/14mm
RCS-500	SKKT273, SKKT330, SKKT573	R=68Ohm/20watt,C=0.22mfd/2.5KV, MOV= 680V+680V/20mm