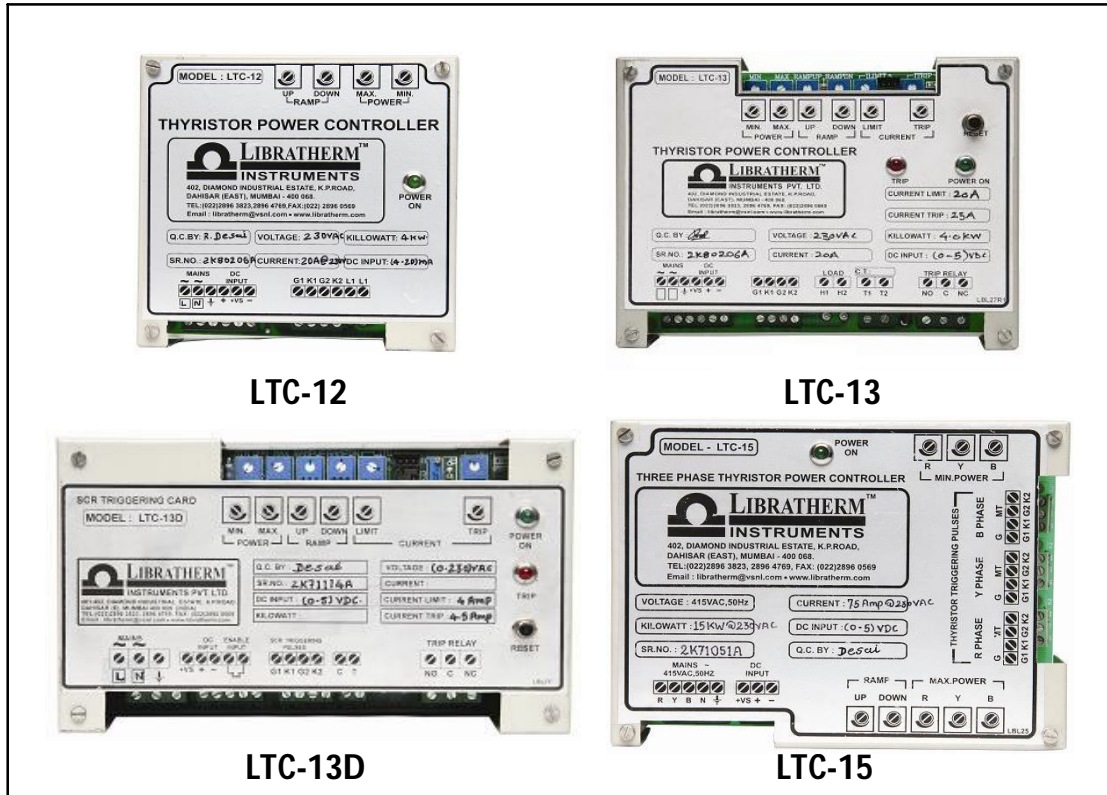


SCR Triggering Cards for Phase Angle Control

(Product Code 21.1)



Model Wise Description:

Sr.No	Model	Product Description	Size (mm.)
21.1.1	LTC-12	SCR triggering card (single or two phase load)	115 x 115 x 70
21.1.2	LTC-13	SCR triggering card with Current Limit and Current Trip feature (single or two phase load)	125 x 165 x 70
21.1.3	LTC-13D	Same as LTC-13 but in DIN rail mounting frame	110 x 180 x 80
21.1.4	LTC-15	3 Phase SCR Triggering Card (for star and 6 wire delta load)	125 x 160 x 70

Features:

- ❖ Can easily fire 15 Amps to 500 Amps SCR-SCR or SCR-DIODE modules.
- ❖ Single phase / 2 phase / 3 phase versions.
- ❖ Suitable for 4 wire star with neutral and open delta 6 wire configuration.
- ❖ **Suitable for single phase or three phase DC rectifiers.**
- ❖ Auto / Manual operation.
- ❖ Accepts (4-20)mA / (0-5)VDC / (0-10)VDC control input.
- ❖ Soft start for smooth control.
- ❖ Adjustable power and current limit.
- ❖ Ideally suitable for resistive, transformer, inductive or heating loads like Silicone Carbide and Molybdenum which exhibits significant changes of resistance with increase in temperature.

Description of SCR Triggering Cards:

Libratherm offers SCR triggering cards model **LTC-12, LTC-13 and LTC-15**, which are designed to fire or trigger back to back connected SCRs using synchronized phase angle control technique. The card accepts analogue control signals of (0-5) VDC or (4-20)mA and provides proportional gate/cathode triggering pulses G1K1 + G2K2. These pulses can be used to trigger back-to-back connected SCRs of as high as 500Amperes. The card also provides built in regulated 5VDC supply to connect external potentiometer to manually control the SCR firing. The on card ramp up and ramp down settings allows gradual rise and fall of the voltage output across the load.

LTC-12 and LTC-13 are same in all respect, except the card LTC-13 accepts the feed back signal from the external current transformer for the current limit and trip features. This feature is useful for transformer load or inductive loads or heating elements like Silicone Carbide and Molybdenum, which exhibits significant change of resistance with increase in temperature. This feature will restrict the maximum load current to the value set using the on card current limit (CL) potentiometer. On sudden increase in the current the current trip feature will over ride over the current trip feature and the firing of the thyristor will stop instantly. The trip contacts are available on the terminals.

These cards are designed to be used for heating control applications to control the single phase, two phase and three phase AC power to the heating coils or to the star or delta connected transformer loads.

These cards can also be used for half wave, full wave or bridge rectifiers using SCR-DIODE or SCR-SCR Bridge, where the rectified DC output can be gradually varied to the desired level using the control signal or the potentiometer.

Technical Specifications:

Available Configuration	Single phase, Two phase, Three phase (4 wire star and 6 wire delta)
Control Action	Phase angle control (self synchronized)
Control Signal	(4-20)mA / (0-5)VDC / External potentiometer (any one)
Output	Suitable Triggering Gate – Cathode pulses to fire back-to-back connected SCRs. 4 pulses (G1K1+ G2K2) for single or two phase control and 12 pulses for 3 phase control.
Smooth Control	Adjustable Ramp Up and Ramp Down Time for soft increase and decrease of output voltage
Current Control	Current Limit and Current Trip settings using on card presets. Feedback is taken from external CT (LTC-13 and LTC-13D)
Settings	For adjusting maximum and minimum voltage per phase.
Load Type	Suitable for both resistive and inductive loads (15A to 500A @ 230/415 VAC)
Supply Voltage	230 / 380 / 415 VAC, 50/60 Hz. (As required)
Sizes in mm. / Mounting	115 x 115 x 70 (LTC-12) - On Flat plate mountable using 4 screws. 125 x 165 x 70 (LTC-13) - On Flat plate mountable using 4 screws. 110 x 180 x 80 (LTC-13D) - 35 mm. DIN rail mountable. 125 x 160 x 70 (LTC-15) - On Flat plate mountable using 4 screws.

Ordering Information:

MODEL	A- INPUT CONTROL SIGNAL	B- CONFIGURATION	C- SUPPLY
LTC-12	A1- (0-5 VDC)	B1- Single Phase	C1- (120 VAC)
LTC-13	A2- (0-10 VDC)	B2- Two Phase	C2- (240 VAC)
LTC-13D	A3- (4-20 mA)	B3- Three phase 4 wire star	C3- (415 VAC)
LTC-15	A4- (0-20 mA)	B4- Three phase 6 wire delta	

Examples:

MODEL	A- INPUT CONTROL SIGNAL	B- CONFIGURATION	C- SUPPLY
LTC-12	A1	B1	C2
LTC-13	A3	B2	C3
LTC-15	A2	B3	C3
LTC-15	A3	B4	C3

Example	Ordering Code	Description
1	LTC-12-A1-B1-C2	This is single phase LTC-12 triggering card with 0-5V control signal for single phase load working on 230VAC
2	LTC-13-A3-B2-C3	This is two phase LTC-13 triggering card with 4-20mA control signal for two phase load working on 415VAC
3	LTC-15-A2-B3-C3	This is three phase LTC-15 triggering card with 0-10V control signal for three phase star with neutral load working on 415VAC
4	LTC-15-A2-B3-C3	This is three phase LTC-15 triggering card with 4-20mA control signal for three phase six wire delta load working on 415VAC

REMARK :