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Thyristor Trigger Module for AC Resistive Loads

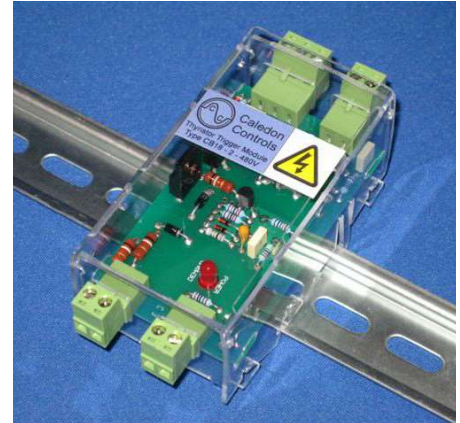
Type CB18-2-CN76

Description

These DIN rail mounted trigger modules are designed to fire back to back thyristor pairs for the control of resistive AC heating loads with zero voltage switch on. Each module controls 1 pair of thyristors, and 2 or 3 modules may be used for the control of 3-phase loads. The module accepts a standard 'logic' type firing signal.

Major features

- ◆ Available for use with supply voltages up to 690V RMS
- ◆ Fast response, suitable for use with single cycle controllers
- ◆ High immunity to conducted interference and spurious switch-on



Specifications

Dimensions

Height 115 mm x Width 52mm x Depth on DIN rail 52mm. Clear polycarbonate enclosure.

Electrical

Supply Voltage Range	480V units 300V to 530V; 690V units, 440V to 760V RMS
Supply Frequency	50 to 60 Hz
Peak gate trigger current	1A
Isolation; Power circuit to Input Signal Circuit	480V units 4000V RMS; 690V units 5,750V RMS
Creepage distance on PCB over isolation barrier	480V units 6.5 mm; 690V units 11.5mm
Input Signal Trigger Level	30V maximum. <2V off, >6V on. Input impedance 2kohm in series with a 3.5V threshold

The above isolation specifications meet the requirements for double insulation in an environment of pollution degree 2 and overvoltage category III (IEC 664)

Environmental

Ambient Operating Temperature	0-50°C
Storage Temperature	-25°C to +70°C
Relative Humidity	0-95% non condensing
Pollution (IEC 664)	Degree 2 (Only non conductive pollution is allowed. Temporary condensation may occur, but not normally while equipment is operating).

Installation

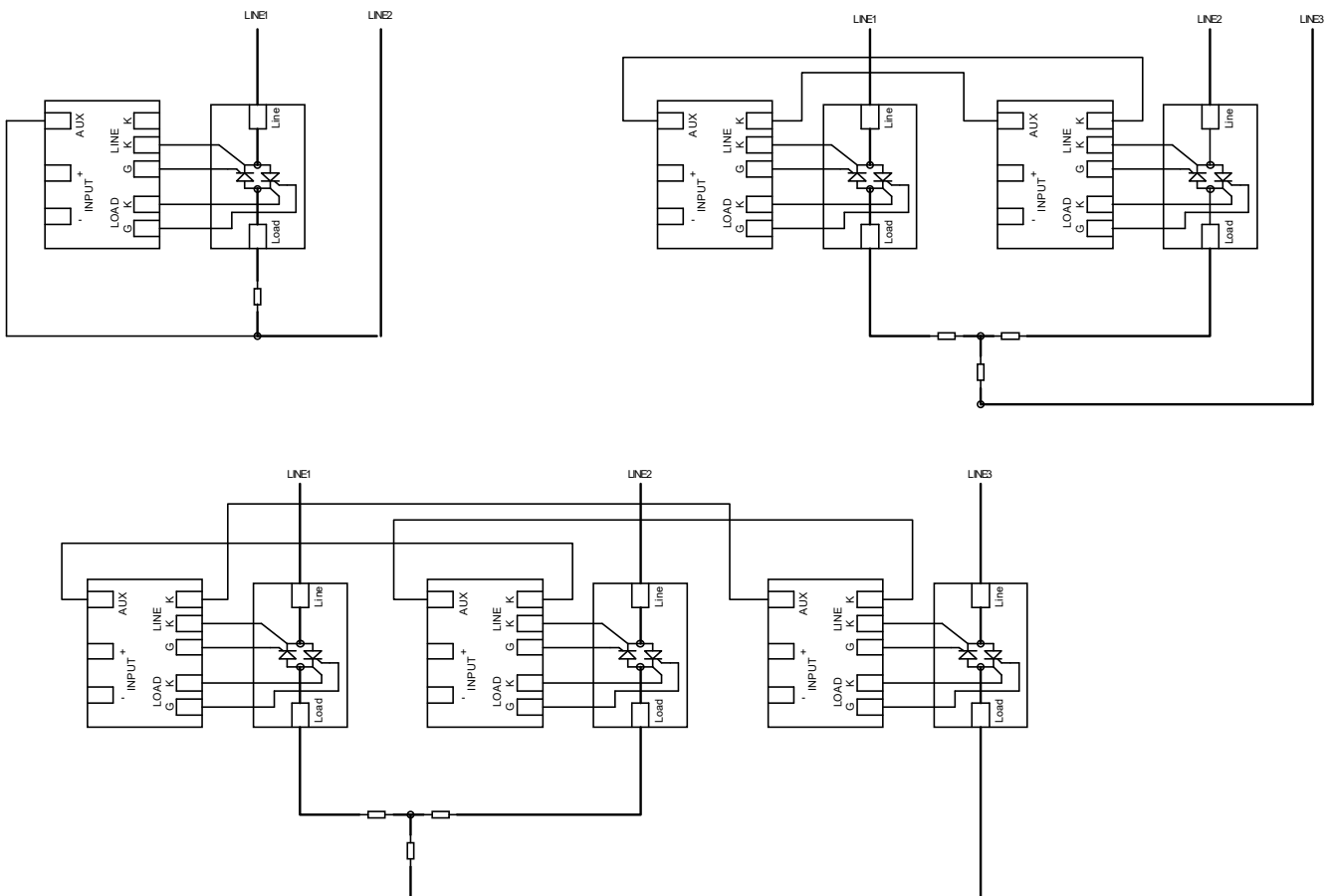
The modules are designed for mounting either way up on 35mm symmetrical DIN rail. Hold the module at an angle to the DIN rail and clip the 'hockey stick' arm under one side of the rail. Rotate the module to clip the hook under the other side of the rail. Adjust the module up / down so that it is hooked securely on both sides of the rail.

Connections

All connections are to plug and socket connectors which accept wires up to 1.5mm². Take care to ensure that connections are made correctly, as incorrect connections can result in a dangerous installation (eg a direct short between adjacent supply lines, or connection of a line voltage to the logic input circuits). The trigger modules should be mounted as close as possible to the associated thyristors.

Terminal Designator	Notes
Load G (Gate)	Connect to the gate of the thyristor whose cathode is connected to the load.
Load K (cathode)	Connect to the cathode of the thyristor whose cathode is connected to the load.
Line G (Gate)	Connect to the gate of the thyristor whose cathode is connected to the line.
Line K (Cathode)	These two terminals are internally linked. Connect one terminal to the cathode of the thyristor whose cathode is connected to the line. The other terminal may be used to feed auxiliary line voltage to the 'Aux' terminal of an adjacent module, but note that this wire is unused (see diagrams below).
Line K (Cathode)	
Aux (Auxiliary Line)	The 'Aux' connector plug is 2-way. The two ways are connected together on the printed circuit board. This terminal must be connected to a line other than that connected to the 'Line cathode' terminal on this module. Typical skeleton wiring diagrams are shown below. One of the Line Cathode terminals on an adjacent module is a convenient (unfused) point from which to pick up this supply.
Input +	Accepts a suitable 'logic' drive signal from a temperature controller or other source. The logic inputs to the triggers in 3 phase systems may be connected in either series or parallel to suit the driver. When using a Caledon driver the inputs should be connected in parallel. Observe correct polarity.
Input -	

The diagrams below illustrate the gate and cathode connections, and the auxiliary line connection for a single phase (line to line) load, and a 3-phase load with 2 controlled lines or 3 controlled lines. The 3-phase load may be star or delta connected. With 3-line control the load may be 4-wire star connected.



Manufactured by: Caledon Controls Ltd, Castlehill Industrial Estate, Carlisle, Lanarkshire, Scotland, ML8 5UF
www.caledoncontrols.co.uk Telephone +44 (0)1555 773355