

THYRISTOR CONTROLS

THYRISTOR CONTROLS SINGLE PHASE 0-10VDC

EY1..

These thyristor controls accept 0-10vdc input signals from temperature controllers to regulate the current flow to electric heaters or other resistive loads in order to achieve accurate proportional control. The unit operates on the burst fire zero voltage switched principle. Zero voltage switching for minimum RFI. Burst firing for minimum harmonic distortion. The full load is switched on & off in timed bursts and is proportional to the input signal.



For other voltages DO NOT exceed the fuse rating.

The EY1-1.5 does not have an internal fuse. A high speed semi-conductor fuse should be fitted externally.

All other units have fast semi-conductor fuses to protect against short circuit & overload.

Max. ambient is 40°C - derate 20% at 50°C.

Aluminium body with cooling fins.

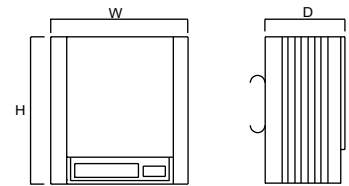
Metal cover

Type	Phase	Max Heater Duty kW	Supply VAC	Supply Hz	Internal Fuse	Dissipated Heat (Watts)	Load	Mounting	Protection
EY1-1.5	1	1.5	230	50/60	-	1.5 x load current	>100KΩ	Din Rail	IP00
EY1-3	1	3.5	230	50/60	20A	1.5 x load current	>100KΩ	Din Rail	IP00
EY1-7	1	7.0	230	50/60	35A	1.5 x load current	>100KΩ	Din Rail	IP00
EY1-12	1	12.5	230	50/60	100A	1.5 x load current	>100KΩ	Bracket	IP00

Ensure unit is adequately ventilated to dissipate internally generated heat.
For use with 0-10vdc temperature controllers - see separate data sheet.

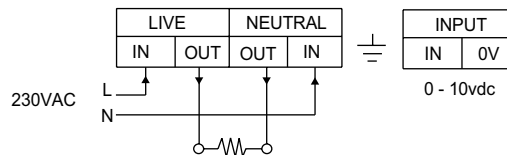
DIMENSIONS

Type	H	W	D	Weight (Kg)
EY1-1.5	82	90	50	0.14
EY1-3	150	90	65	0.64
EY1-7	150	102	102	1.15
EY1-12	200	112	146	2.19



WIRING:

EY1..



For Normal use the MAN/AUTO link should be on AUTO

On 0-10vdc input, both the ground (0V) & signal wires must be connected. If the input signal is cut the thyristor output will be zero. During long 'off' periods the power supply to the thyristor should be turned off. Heaters should be protected with a high temp cut-out. Select a thyristor allowing for heater battery & supply voltage tolerances which may cause the current to increase by approx 20%. Note the fuse ratings. One internal fuse is fitted to protect the thyristor only. All cables & external fuses must be fitted according to local regulations & safety requirements.

Load terminal size: EY1-1.5 / EY1-3 1.5mm² EY1-7 2.5mm² EY1-12 10mm² Input signal terminal size 0.5-2.5mm²

Min sensor / control signal cable size 7/0.2mm Max length 100m. The screen should be earthed at controller end only.
Keep sensor/control signal wires away from power cables/units which may cause interference. Screened cable is recommended.

INSTALLATION: Allow 25mm clearance on horizontal axis & 100mm on vertical axis between units. Air must be allowed to flow freely through the unit.
Fit grilles or louvres to the top & bottom of any enclosures.
Install with the cooling fins vertically - Forced ventilation may be necessary. Do not exceed the maximum ambient temperature.

FAULT FINDING: Check the 0-10Vdc input ground & signal wires are in the correct terminals.
If the internal fuse is blowing : Check the fuse rating & ensure the fuse is screwed down tightly.
Check all terminals & wiring connections are TIGHT. Loose connections can cause bad contact/arcing or the terminal to overheat.
Check electric heater or load rating. Check other units which may cause excessive current to be drawn.
Check for short circuit on wiring or heater. Check supply voltage variations.

THYRISTOR CONTROLS 3 PHASE 0-10VDC

EY3..

These thyristor controls accept 0-10vdc input signals from temperature controllers to regulate the current flow to electric heaters or other resistive loads in order to achieve accurate proportional control. The unit operates on burst fire zero voltage switched principle. Zero voltage switching for minimum RFI. Burst firing for minimum harmonic distortion. The FULL load is switched on & off in timed bursts and is proportional to the input signal.



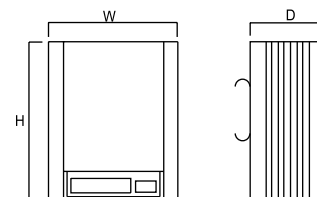
For other voltages DO NOT exceed the fuse rating.
 Fitted with fast semi-conductor fuses to protect against short circuit & overload.
 Max. ambient is 40°C - derate 20% at 50°C.
 Aluminium body with cooling fins.
 Metal cover
 Ensure unit is adequately ventilated to dissipate internally generated heat.
 Load > 100KΩ.

Type	Phase	Max Heater Duty kW	Supply VAC	Hz	Internal Fuse	Dissipated Heat (Watts)	Thermal Cut-Out	Mounting	Protection
EY3-10	3	10	415	50/60	20A	3 x load current	-	Din Rail	IP20
EY3-20	3	20	415	50/60	50A	3 x load current	-	Din Rail	IP20
EY3-28	3	28	415	50/60	100A	3 x load current	-	Din Rail	IP20
EY3-36	3	36	415	50/60	100A	3 x load current	-	Din Rail	IP20
EY3-54	3	54	415	50/60	100A	3 x load current	In built	Bracket	IP20
EY3-86	3	86	415	50/60	2x100A	3 x load current	In built	Bracket	IP20
EY3-105	3	105	415	50/60	315A	3 x load current	In built	Bracket	IP20
EY3-150	3	150	415	50/60	315A	3 x load current	In built	Bracket	IP20

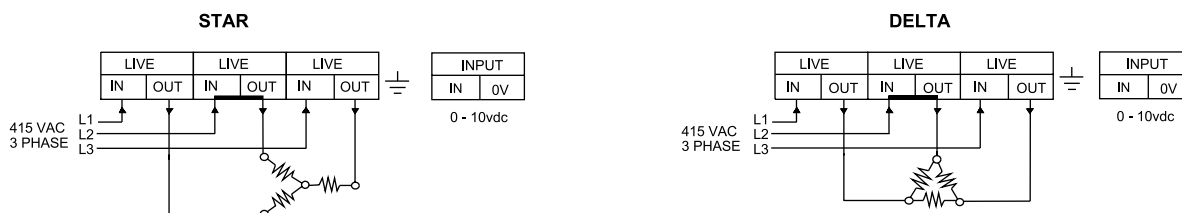
For use with 0-10vdc temperature controllers - see separate data sheet. Replacement fuses available on request.

DIMENSIONS

Type	H	W	D	Weight (Kg)	Type	H	W	D	Weight (Kg)
EY3-10	150	150	63.5	1.0	EY3-54	200	265	160	6.39
EY3-20	150	150	88	1.49	EY3-86	200	265	160	6.99
EY3-28	150	153	126	2.29	EY3-105	250	265	160	8.69
EY3-36	200	265	160	6.39	EY3-150	230	345	242	16.00



WIRING:



For Normal use the MAN/AUTO link should be on AUTO. In MANUAL the potentiometer is used to regulate the output.
 No mains neutral connection should be made to the heater. L1 & L3 switch the current to the heater. L2 is permanently connected. The load must be split EQUALLY on all phases. During long 'off' periods the power supply to the thyristor should be turned off. Heater batteries should be protected with a high temperature cut-out.
 On 0-10vdc input both the ground (OV) & signal wires must be connected. If the input signal is cut the thyristor output will be zero.
 Select a thyristor **allowing** for heater battery & supply voltage tolerances which may cause the current to increase by approx 20%. Note the fuse ratings. Two internal fuses are fitted to protect the thyristor only.
 Min sensor / control signal cable size 7/0.2mm. Max length 100m. Two screen should be earthed at controller end only.
 Keep sensor/control signal wires away from power cables/units which may cause interference. Screened cable is recommended.
 All cables & external fuses must be fitted according to local regulations & safety requirements. Input signal terminals 0.5-150mm²
 Load terminal sizes :
 EY3-10 – 1.5mm² EY3-20 – 2.5mm² EY3-28 – 4mm² EY3-36 – 10mm²
 EY3-54 – 16mm² EY3-86 – 25mm² EY3-105 – 35mm² EY3-150 – 70mm²

INSTALLATION: Allow 25mm clearance on horizontal axis & 100mm on vertical axis between units. Air must be allowed to flow freely through the unit. Fit grilles or louvres to the top or bottom of any enclosures. Do not exceed the maximum ambient temperature. Install with cooling fins vertically - Forced ventilation may be necessary.

FAULT FINDING: Check the 0-10Vdc input ground & signal wires are in the correct terminals. If the internal fuse is blowing : Check the fuse rating & ensure the fuse is screwed down tightly. Check all terminals & wiring connections are TIGHT. Loose connections can cause bad contact/arcing or the terminal to overheat. Check electric heater or load rating. Check other units which may cause excessive current to be drawn. Check for short circuit on wiring or heater. Check supply voltage variations.