

The OZTHERM Thyristor (SCR) 3 Phase Power Controller is a robust design housed in a series of standard assemblies and enclosures. They are a reliable replacement for Electromechanical contactors being virtually maintenance free. This controller is ideal for controlling complex loads, such as heating elements that change resistance over time or temperature, transformer-coupled loads and plating rectifiers. Australian designed and manufactured in our Melbourne factory enabling us to provide complete local support to customer applications, engineering and services.



Electrical Data

Control Mode	Phase angle (soft start as standard)	
Control Input		0 - 10V 4 - 20mA 10K Potentiometer
Adjustment		Ramp (soft start time) 1-20 seconds Zero (- 20% to +20%) Span (0-full scale)
V_{in}	Supply	110/240/415 volts A.C. 50 HZ. +/- 10%

Environment

T_A	Operating temperature Range	-10 to +50°C
H_A	Ambient Humidity	0 – 85%

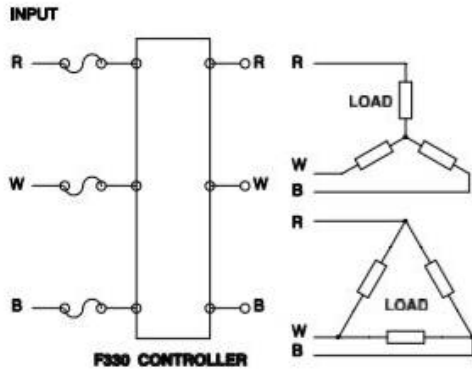
Features

- Wide 24 to 550V input voltage available
- Wide range of options
- Standard ratings 220-1100 Amps
- Robust design
- Australian designed and manufactured

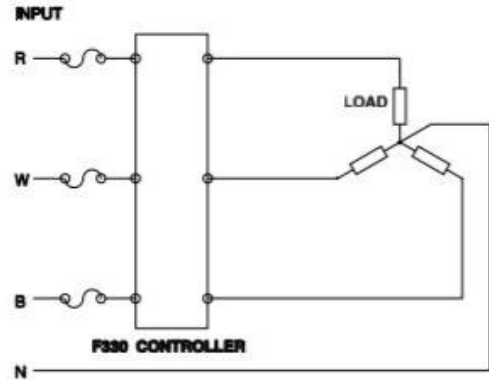
Applications

- Process Control
- Heating application
- Industrial

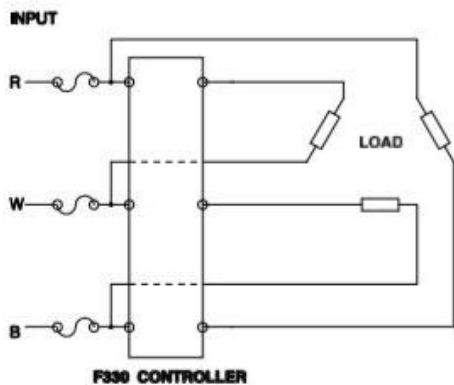
Circuit Configurations



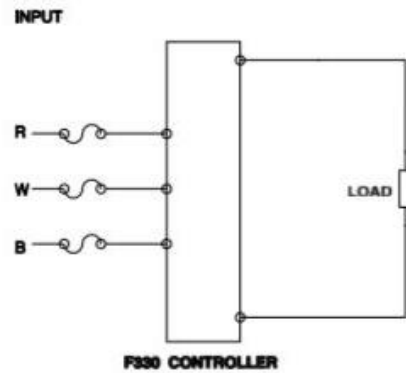
3 WIRE STAR OR DELTA



4 WIRE STAR



6 WIRE OPEN DELTA



3 PHASE D.C BRIDGE

Application Load / Option Selection

Series Name	Primary Control of Transformer	Number	Applicable Load	Option Selection
F330	YES	1	Load where resistance does not change. (Nichrome, Iron-chrome, Kanthal, etc.)	Standard type C option
		2	Load where resistance changes with temperature. (Tungsten, Molybdenum, Kanthal super and D.C plating rectifiers)	CC option
		3	Load where resistance changes over the elements lifetime. (Silicon Carbide, etc)	PW option
		4	Load which has peak in rush current. (Tungsten Halogen Lamp, Far infrared lamp etc.)	C option
		5	Battery Chargers and regulated D.C supplies.	C option

Option A. will add improved control to (1) and (4) (Refer Table 2 and 3 for Option Details)

Option D. will add improved control to (5)

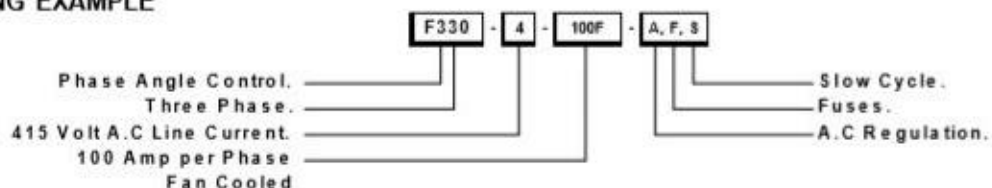
Ordering

F330	-	-	-	DESCRIPTION	Fuse Rating	Case Size	Weight KG	Cable Termination mm ²	Dissipation Watts	I ² t Thyristor Rating
Line Voltage	1			110 volt A.C line input						
	2			240 volt A.C line input						
	4			415 volt A.C line input						
Rated Current at 50 deg. Celcius.	20			20 amperes A.C line current	25	fig.5	10	2.5 - 6.	119	610
	30			30 amperes A.C line current	35	fig.5	10	2.5 - 6.	134	2,300
	40			40 amperes A.C line current	45	fig.5	10	10 - 16.	165	5,000
	50			50 amperes A.C line current	55	fig.5	10	10 - 16.	188	9,100
	70			70 amperes A.C line current	75	fig.5	10	10 - 25.	232	16,200
	80			80 amperes A.C line current	90	fig.5	10	10 - 25.	241	97,000
	100F			100 amperes A.C line current - fan	100	fig.6	12	M6 bolt	333	16,200
	120			120 amperes A.C line current	125	fig.7	26	M10 bolt	393	24,000
	130			130 amperes A.C line current	150	fig.7	26	M10 bolt	386	97,000
	150F			150 amperes A.C line current - fan	150	fig.7	28	M10 bolt	505	24,000
	150			150 amperes A.C line current	175	fig.7	26	M10 bolt	502	168,000
	175			175 amperes A.C line current	200	fig.7	26	M10 bolt	482	245,000
	200F			200 amperes A.C line current - fan	250	fig.7	28	M10 bolt	657	84,000
	240F			240 amperes A.C line current - fan	250	fig.7	28	M12 bolt	755	97,000
	280F			280 amperes A.C line current - fan	300	fig.7	28	M12 bolt	995	168,000
	340F			340 amperes A.C line current - fan	375	fig.7	28	M12 bolt	1016	245,000
	400F			400 amperes A.C line current - fan	400	fig.8	60	M10 bolt	1600	106,000
500F			500 amperes A.C line current - fan	500	fig.8	60	M10 bolt	1780	238,000	
650F			650 amperes A.C line current - fan	350x2	fig.8	60	M10 bolt	2384	781,000	
750F			750 amperes A.C line current - fan	400x2	fig.8	60	M10 bolt	2479	2x10 ⁶	
900F			900 amperes A.C line current - fan	500x2	fig.9	98	M10 bolt	3523	781,000	
1100F			1100 amperes A.C line current - fan	600x2	fig.9	98	M10 bolt	3810	2x10 ⁶	

Options.

A	A.C. Voltage regulation.	
C	Current limit and trip.	A.C. current measurement.
CC	Voltage limit and current trip. Current source	A.C. current measurement.
CCE	Voltage limit and current trip. Current source.	D.C. current measurement.
CE	Current limit and trip.	D.C. current measurement.
D	D.C. Voltage regulation.	
DE	D.C. Voltage regulation.	
DS	Demand sharing.	
F	High speed fuses.	
FW	4 wire load.	Three phase and neutral.
MD	Meter output of input control signal.	
MI	Meter output of average current.	Requires C, CC, CCE or CE option.
MP	Meter output of average power.	Requires PW option.
MV	Meter output of average voltage.	Requires A, D or DE option.
PH	Phase loss output.	
PW	Power limit.	Requires A and C option.
S	Slow cycle.	
T	Thermal cutout.	Standard on fan models.

ORDERING EXAMPLE

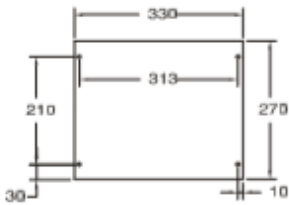


OPTION	DESCRIPTION	APPLICATION
F	Supplied loose with isolated stand-offs for external mounting.	
FW	This option must be specified when the load is a three phase plus neutral configuration.	
MD	0 -1 milliamp retransmission of input control signal.	Suitable for 1 milliamp moving coil meter.
MI	Single 0 -1 milliamp D.C output signal proportional to the average of the summation of the output current of each of the three phases.	Suitable for 1 milliamp moving coil meter.
MP	Similar to MI. option but indicating average red / white output power (VA).	Suitable for 1 milliamp moving coil meter.
MV	Similar to MI. option but indicating average red / white output voltage.	Suitable for 1 milliamp moving coil meter.
PH	For indication of loss of a phase including momentary loss. A latched volt free contact is provided which will stay latched until manually reset.	
PW	Red / White phase is monitored to maintain a preset average VA limit, common to all three phases. A balanced load and a unity power factor is assumed. (This function can be used on current source or D.C. systems. Consult factory.)	Designed for critical loads such as silicon carbide elements which require a watts density limit for maximizing element life.
S	A slow cycle form of control providing " bursts " of full power to the load on a time proportioning basis as set by the control signal. Phase angle ramp up and down is standard.	Suitable for applications where supply harmonics generated by phase angle switching needs to be minimized.
T	Thermal switches are mounted on the heatsink to ensure the controller is shut off, and automatically resets when an over temperature condition is reached within the unit. This option is standard on fan cooled units. It automatically resets when temperature falls below the trip level.	

Options

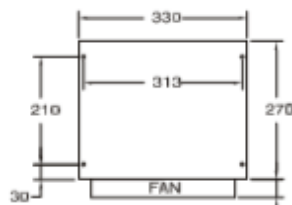
OPTION	DESCRIPTION	APPLICATION
A	Regulates output voltage when input voltage fluctuates. The red / white output voltage is monitored.	Used where significant supply fluctuations can cause;- nuisance current limit / trip operation; excessive power to the load and erratic control.
C	Maintains current output to a predetermined level for A.C systems. Current limit can be set by internal or external potentiometer. LED indicates current limit operation. Current trip is adjustable " on board " and volt free output contact is provided for external indication. The trip function inhibits operation until manually reset. (A.C. Current transformers supplied loose.)	Typically used with constant resistance and transformer loads. Reduces output to match and protect lower rated loads. (Control input controls output voltage)
CC	Current source operation. Voltage limit and current trip independently adjustable by internal potentiometer. Maintains constant current under variable resistance loads for A.C systems. (A.C. Current transformers supplied loose.)	Particularly suitable for plating rectifiers via primary A.C transformers. (Control input controls output current)
CCE	Similar to CC. option but for use with D.C systems. (D.C. Hall Effect Sensor not included.)	
CE	Similar to C. option but used with D.C systems. (D.C. Hall Effect Sensor not included)	
D	Regulates D.C output voltage when the input voltage fluctuates Effective for loads from 20% - 100% of rated output voltage.	Used for D.C supplies such as battery charger applications with constant output.
DE	Similar to D. option but effective for loads from 0% - 100% of rated output voltage, using a Hall Effect Voltage Sensor. (Not included)	
DS	An adjustable auxiliary current limit which operates when an external load monitored by a current transformer exceeds a preset level. (Current Transformer not included)	Especially useful for generator load sharing in remote area power supplies. See fig.4

Dimensions / Mounting Details



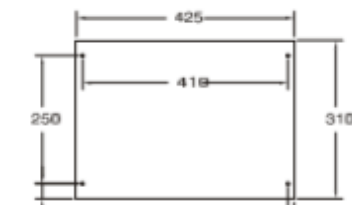
DEPTH 226mm
M8 MOUNT

Fig.5



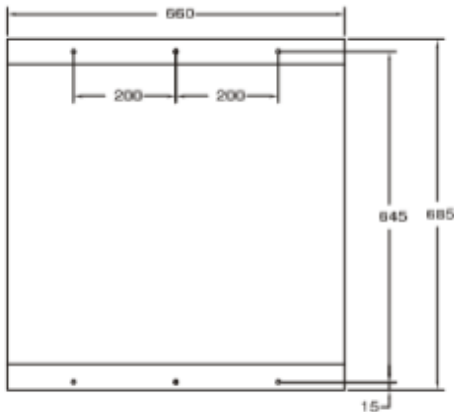
DEPTH 226mm
M8 MOUNT

Fig.6



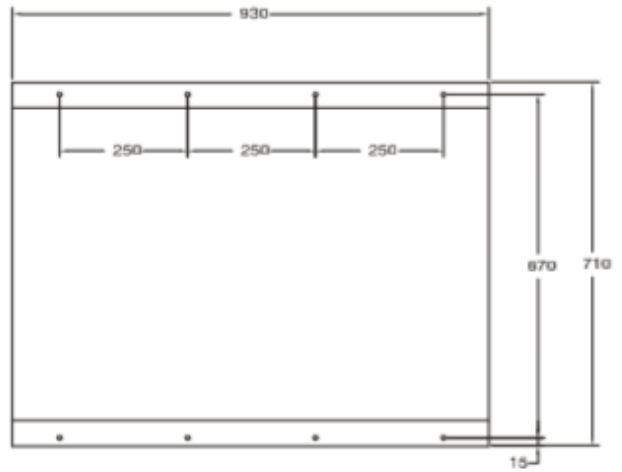
DEPTH 336mm
M8 MOUNT

Fig.7



DEPTH 400mm
M8 MOUNT

Fig.8



DEPTH 466mm
M8 MOUNT

Fig.9

If the function you require is not contained within this specification please contact Temtec Controls, other options are continually being developed and we specialise in supplying non-standard or custom solutions. We reserve the right to change the specification without notice.