

Controls

CTF

Advanced Single Phase SCR Power Controller

- 25 A to 250 A
- 480 Vac, 600 Vac & 690 Vac
- **User Configurable Firing Modes:** Zero Cross (Fixed Cycle, Burst Firing (DOT) & Half Single Cycle) or Phase angle
- **Analog Control Inputs:** 0-5 Vdc, 0-10 Vdc, 0-20 mA, 4-20 mA & Potentiometer from 1kΩ to 10kΩ
- **Digital Input:** 5-30 V or PWM (Pulse Width Modulation)
- **Total or Partial Load Interrupt Alarm (Heater Break)**
- **Current Alarms - SCR Short Circuit, Full or Partial Interrupt & Load**
- **Modbus RTU/RS485 Communications**
- **Soft Start, Current limit, V, I, P feedback**
- **Master Controller for 2 or 3-Leg/3-phase loads (zero crossing)**
- **Powerful C-PWR Configuration Software**
- **UL, CUL, CE, TÜV Marking**



**CTF
25 A - 120 A**



**CTF
150 A - 250 A**



Description

The CTF microprocessor-based advanced SCR power controller is designed to control all types of industrial heater loads ranging from 25A to 250A and up to voltages of 480Vac, 600Vac and 690Vac in several different configurations. Powerful system parameter diagnostics, multiple firing mode options, control mode versatility and on-board Modbus communications make the CTF an ideal choice for almost any process power control application.

Whether you have traditional resistive heaters, elements with low thermal inertia, medium/short-wave IR lamps or transformer-coupled loads, the CTF offers several zero crossing (fixed cycle time, burst fire (DOT) and half single cycle) and phase angle firing modes to properly and precisely manage these types of loads.

The CTF runs complete diagnostics of temperature, current (including full or partial load interrupt), voltage, and power and offers programmable soft start-up and current limiting controls to keep your system safe and reliable while extending the heater life.

The configurable control input accepts analog and digital signals, including 0-10V, 0/4-20mA, potentiometer, logic, and PWM (pulse width modulation).

On its own, the CTF manages single phase loads. However, it is designed also be the master controller in 2- & 3-Leg, 3-phase load configurations with one or two CTFs or CS1s as the slave(s).

The CTF also features the powerful and detailed C-PWR configuration software, which allows you to run trends, save historical data and read or write device parameters quickly and easily. Configurations may be saved locally for later retrieval or sent across a network for cloning of other units. This significantly reduces mistakes and system setup time.

Applications

- Thermoforming
- Plastic extrusion lines
- Injection molding
- Heat treatment
- Industrial ovens / furnaces
- Mold & dye heating/cooling
- HVAC
- Packaging
- Chemical processing
- Textile production
- Rubber vulcanization equipment
- Driers, incubators and autoclaves
- Pharmaceutical processes
- Rapid resistive load switching



SCR COMPONENTS

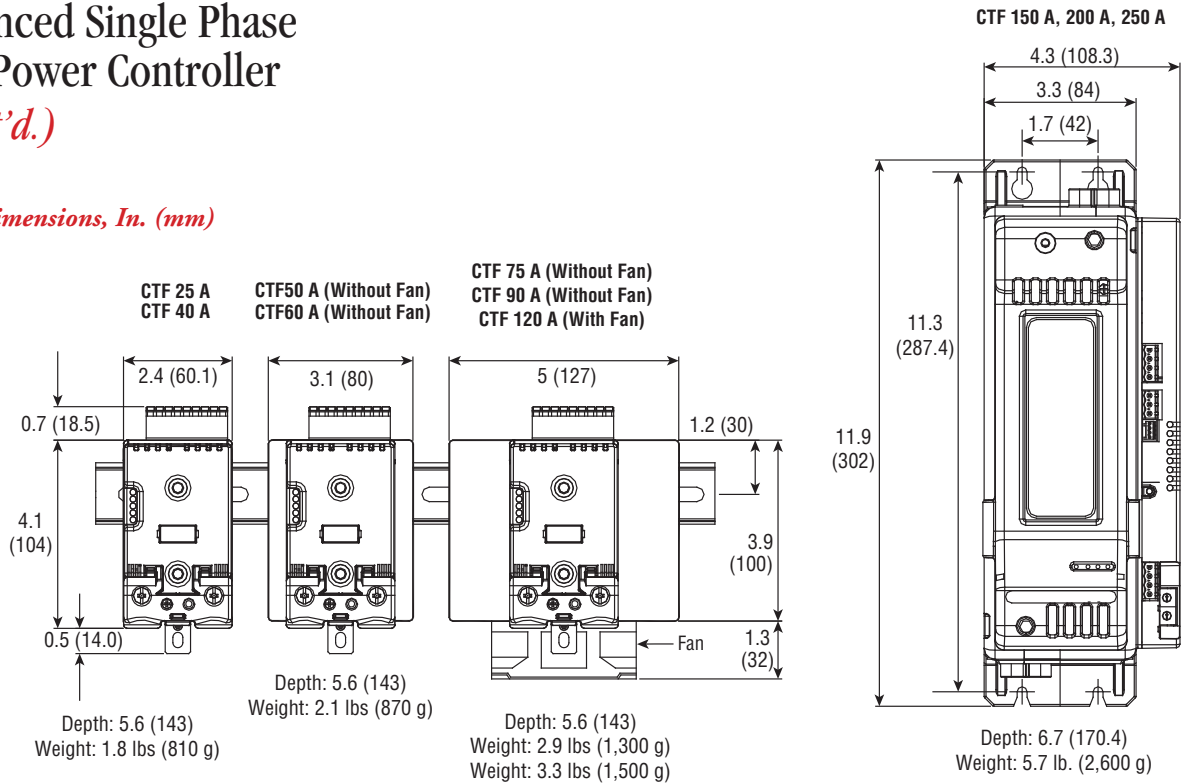
Controls

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CTF Dimensions, In. (mm)



General Ratings

Maximum Rated Voltage	480 Vac	600 Vac	690 Vac
Work Voltage Range	90 - 530 VAC	90 - 660 Vac	90 - 760 Vac
Non Repetitive Voltage	1200 Vp	1600 Vp	1600 Vp
Rated Frequency	50/60Hz auto-synchronization		

CTF Model	CTF-025	CTF-040	CTF-050	CTF-060	CTF-075	CTF-090	CTF-120	CTF-150	CTF-200	CTF-250
Rated Current, AC51 - AC55b Resistive Load (@ 40°C continuous service)	25 A	40 A	50 A	60 A	75 A	90 A	120 A	150 A	200 A	250 A
Rated current AC56A permitted trigger modes: ZC, BF/DOT with DT (Delay Trigger), PA with softstart (@ Tamb =40 °C)	20 A	32 A	40 A	50 A	60 A	75 A	100 A	125 A	160 A	200 A
Maximum Surge Current (t = 10 ms) A	400 A	520 A	520 A	1150 A	1150 A	1500 A	1500 A	5000 A	8000 A	8000 A
Maximum I ² t for fusing (blowout) A ² s	450	1,800	1,800	6,600	6,600	11,200	11,200	125,000	320,000	320,000
Critical dv/dt Off-state (minimum)	1,000 V/μs									
Nominal Impulse Voltage	4 KV									
Nominal SCCR	5 KA									

Controls

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Advanced Single Phase SCR Power Controller *(cont'd.)*

Ordering Information

To Order — Complete the Model Number using the Matrix provided.

Model CTF SCR Power Controller	
CTF	
Code	Current @ 104°F (40°C) Ambient, Continuous Service
025	25 Amps
040	40 Amps
050	50 Amps
060	60 Amps
075	75 Amps
090	90 Amps
120	120 Amps
150	150 Amps
200	200 Amps
250	250 Amps
Code	Voltage
48-	480 V
60-	600 V
69-	690 V (Only for Models ≥ 150 A)
Code	Control Options
0	None
1	Current Limit
2	Current Limit and Feedback V.I.P.
Code	Heater Break Alarm
0	None
1	Heater Break Alarm (Partial/Total Load)
Code	Fusing
0	None
1	Internal (for current sizes ≥ 150 A)
Code	Communications
0-	None
M-	Modbus RTU/RS485
Code	Signal Control
1	10 V (Default)
2	5 V/Potentiometer
3	0-20 mA
4	4-20 mA
5	PWM/Digital Input
Code	Trigger Modes
B	Burst Fire (DOT) (Default)
Z	Zero Cross
H	Half Single Cycle
P	Phase Angle
Code	Function Type
M	Master (Default)
2	Slave (2-Leg)
S	Slave (3-Leg)

The shaded settings are user selectable only with the C-PWR configuration Software

SCR COMPONENTS

CTF- 075 60- 2 1 0 0- 1 B M Typical Model Number

Accessories

Description	PCN
Communication Cable, USB to TTL	309171
Communication Cable, USB to RS485	309180