

400/600 Watts

CCH400-600 Series



- Baseplate Cooled
- High Efficiency up to 90%
- -40 °C to +85 °C Operation
- Industrial & MIL-STD461E EMC Compliance
- Power Fail, Inhibit, Overtemp & Current Share
- 5V Standby Output
- 3 Year Warranty

Specification

Input

Input Voltage	• 90-264 VAC
Input Frequency	• 47-400 Hz ⁽¹⁾
Input Current	• CCH400: 4.3/2.1 A typ. at 115/230 VAC, CCH600: 6.3/3.1 A typ. at 115/230 VAC, full load
Inrush Current	• 60 A max at 230 VAC, 25 °C cold start
Power Factor	• >0.9
Earth Leakage Current	• 0.7/1.1 mA at 115/230 VAC at 60/50 Hz
Input Protection	• Internal F10 A/250 V fuse

Output

Output Voltage	• 12-48 VDC
Output Voltage Trim	• ±10%
Initial Set Accuracy	• ±1% V1, ±3% V2
Minimum Load	• No minimum load required
Start Up Delay	• Typically 1 s
Start Up Rise Time	• 50 ms typical
Hold Up Time	• 20 ms min
Drift	• ±0.2% after 20 min warm up
Line Regulation	• ±0.5% max
Load Regulation	• ±1% V1, ±5% V2 max
Over/Undershoot	• 1% typical
Transient Response	• 4% max. deviation, recovery to within 1% in 500 µs for a 50-75-50% load change
Ripple & Noise	• Typically 1% pk-pk V1, V2 2%, 20 MHz bandwidth
Overvoltage Protection	• 110-140% Vnom, recycle input to reset
Overload Protection	• 105-140% V1 only
Short Circuit Protection	• Continuous, approximately constant current
Temperature Coefficient	• 0.05%/°C
Overtemp. Protection	• Fitted
Remote Sense	• Compensates for 0.5 V total voltage drop
Remote On/Off	• Uncommitted isolated optocoupler diode, powered diode inhibits V1

General

Efficiency	• 89% typical
Isolation	• 3000 VAC Input to Output, 1500 VAC Input to Ground, 500 VDC Output to Ground
Switching Frequency	• 30-333 kHz PFC, 51.1 kHz main and 138 kHz standby converter
Signals	• Power Fail, Inhibit, Current Share, Overtemperature Warning and 5 V Standby
MTBF	• 300 kHrs to MIL-HDBK-217F at 25 °C, GB

Environmental

Operating Temperature	• -40 °C to +85 °C baseplate, see thermal considerations
Cooling	• Baseplate, conduction cooling
Operating Humidity	• 95% RH, non-condensing
Storage Temperature	• -40 °C to +85 °C
Operating Altitude	• 3000 m
Shock	• MIL-STD 810F Clause 516.5 proc 1
Vibration	• MIL-STD 810F figure 514.5C-17

EMC & Safety

Low Voltage PSU EMC Emissions	• EN61204-3, high severity level
	• EN55032 level B conducted, level A radiated, MIL-STD 461D-F, CE102
Harmonic Currents	• EN61000-3-2, class A
Voltage Flicker	• EN61000-3-3
Radiated Immunity	• EN61000-4-3, level 3 Perf Criteria A
EFT/Burst	• EN61000-4-4, level 3 Perf Criteria A
Surge	• EN61000-4-5, installation class 3 Perf Criteria A
Conducted Immunity	• EN61000-4-6, level 3 Perf Criteria A, MIL-STD 461 CS114
Dips & Interruptions	• EN61000-4-11, 30% 10 ms, 60% 100 ms, 100% 5000 ms, Perf Criteria A, B, B
Safety Approvals	• IEC60950-1 CB report, UL60950-1, TUV EN60950-1, IEC62368-1
Equipment Protection Class	• Class I

Notes

1. Safety approvals cover frequency 47-63 Hz.

Output Power	Output Voltage V1	Output Current V1	Standby Supply V2	Model Number
411 W	12.0 VDC	34.0 A	5.0 V/0.5 A	CCH400PS12
411 W	24.0 VDC	17.0 A	5.0 V/0.5 A	CCH400PS24
409 W	28.0 VDC	14.5 A	5.0 V/0.5 A	CCH400PS28
411 W	48.0 VDC	8.5 A	5.0 V/0.5 A	CCH400PS48
603 W	12.0 VDC	50.0 A	5.0 V/0.5 A	CCH600PS12
603 W	24.0 VDC	25.0 A	5.0 V/0.5 A	CCH600PS24
605 W	28.0 VDC	21.5 A	5.0 V/0.5 A	CCH600PS28
603 W	48.0 VDC	12.5 A	5.0 V/0.5 A	CCH600PS48

Mechanical Details



Signal Connector	
Pin	Function
1	+Standby
2	+Standby
3	-Standby
4	-Standby
5	+Sense
6	-Sense
7	Overtmp. Warning
8	Power Fail
9	Current Share
10	Inhibit

Connector: 10 WAY 2mm pitch p/n
MOLEX 87833-1031
Mating half: p/n MOLEX 51110-1056
Contact: p/n MOLEX 50394-8100

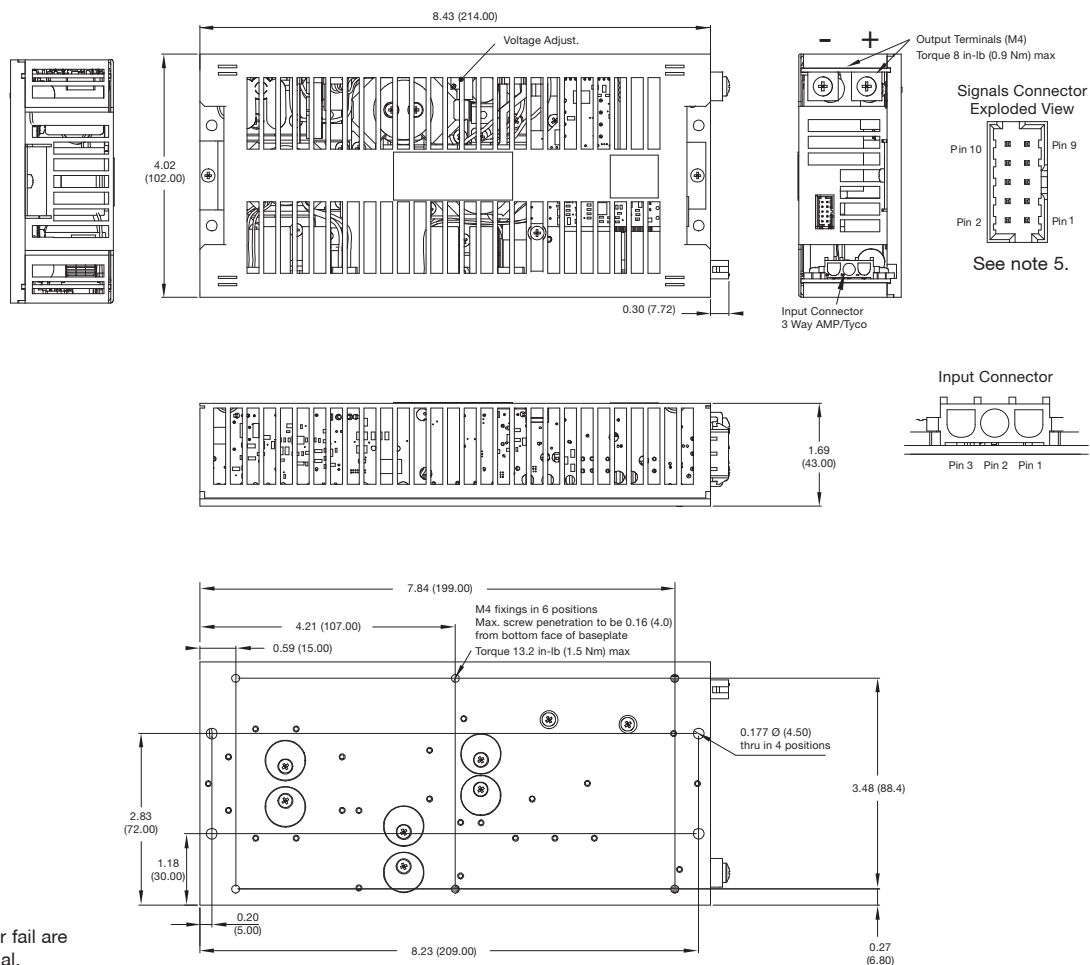
Input Connector	
Pin	Function
1	Earth
2	Neutral
3	Line

Connector: 3 way AMP/Tyco
type MATE-N-LOK 1-350943-0

Mates with MATE-N-LOK 350766-1

Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ± 0.02 (0.50);
.xxx = ± 0.01 (0.25)
3. Weight 3.3 lbs (1.5 kg)
4. Connector kit available,
order part no. 'CCH CONKIT'
5. Inhibit, overtemperature and power fail are
referenced to the OV power terminal.



Thermal Considerations

The baseplate must be maintained at or below 85 °C and therefore a suitable heatsink must be selected to remove the heat from the power supply. Details of the heatsink calculations and other considerations can be found in the longform datasheet.

