

Single Output 350W/420W Medical & ITE Power Supplies

Features

- ◆ High Efficiency, up to 94%
- ◆ 1.6" high
- ◆ 350W Convection Cooled, 420W Forced Air Rating
- ◆ BF Rated
- ◆ 5V Standby & 12V Fan Output



Key Market Segments & Applications



Specifications

Model		CUS350M/F
AC Input Voltage	VAC	85 - 265VAC(1)
Input Frequency	Hz	47 - 63Hz
DC Input Voltage	VDC	120 - 370VDC (No safety certification)
Inrush Current (cold start)	A	20A at 115VAC, 40A at 230VAC
Power Factor	-	Meets EN61000-3-2 (Typical PF 0.99/0.95)(2)
Input Current (115/230VAC)	A	4.5 / 2.3A (350W output)
Off-load Power Draw	W	<0.5W at 230VAC (In standby mode using remote on/off)
Temperature Coefficient	%/°C	<0.02%/°C
Overcurrent Protection	-	12V: >38A, 18V: > 26A, 24V: > 20A, 36V: >13A, 48V: > 10A
Overvoltage Protection (3)	V	12V: 13.8-16.2V, 18V: 20.7-24.3V, 24V: 27.6-32.4V, 36V: 41.4-48.6V, 48V: 55.2-64.8V
Hold Up Time (115 / 230V input)	ms	20ms typical at 350W output
Leakage Current	mA	<0.3mA at 265VAC, 60Hz
Ripple and Noise	%	1%
Line Regulation	%	0.5%
Load Regulation	%	1%
Remote Sense	-	Yes, compensates for 0.5V total cable drop
Remote On/Off	-	Apply voltage to isolated terminals to shut unit down
Power Good (/F or /PG option)	-	Isolated transistor, On = Good. Gives >5ms warning of AC power loss
Standby Voltage	-	5V 0.5A
Fan Supply (/F or /FN options)	-	12V 0.3A
Operating Temperature	°C	-20 to +70°C. See derating curves
Storage Temperature	°C	-40 to +85°C
Humidity (non condensing)	%RH	10 - 95%RH (Operating & Storage)
Cooling	-	Convection or Forced Air Cooled (1.5m/s across terminals)
Withstand Voltage	-	Input to Ground 2kVAC (1xMOPP), Input to Output 4kVAC (2xMOPPs), Output to Ground 1.5kVAC (1xMOPP) BF Rated
Isolation Resistance	-	>100MΩ at 25°C & 70%RH, Output to Ground 500VDC
Vibration (non operating)	-	10 - 55Hz: 19.6m/s ² constant sweep 1 min X, Y, Z for 1 hour
Shock	-	< 196.1 m/s ² (20G)
Immunity	-	IEC61000-4-2 (lv 2, 3), -3 (lv3), -4 (lv 3), -5 (lv3, 4), -6 (lv 3), -8 (lv 4), -11
Safety Agency Certifications	-	EN/IEC/UL/ES/CSA 60601-1, EN/IEC/UL/CSA60950-1, CE Mark
Conducted & Radiated EMI	-	EN55011-B, EN55022-B, FCC Class B (Radiated Class A) 350W output
Weight (Typ)	g	850
Size (LxWxH)	mm(in)	190 x 87 x 40mm (7.5 x 3.4 x 1.6")
Warranty	yrs	Three Years

Notes:

See specification for conditions and test methods

- (1) Derate linearly to 80% load from 115 to 85VAC input (convection); derate linearly to 90% load from 95 to 85VAC (forced air cooling)
- (2) 115 / 230VAC input
- (3) Cycle AC to reset

Model	Voltage	Adjust Range (V)	Max Current (A) Convection	Max Power (W) Convection	Forced Air	Max Power (W) Forced Air	Ripple Noise (mV)	Efficiency (typ) % ⁽⁴⁾
CUS350M-12/F	12V	11.4 - 12.6	29.0	348.0	34.5	414.0	120	91 / 93
CUS350M-18/F	18V	17.1 - 18.9	19.4	349.2	23.0	414.0	180	91 / 94
CUS350M-24/F	24V	22.8 - 25.2	14.7	352.8	17.5	420.0	240	91 / 94
CUS350M-36/F	36V	34.2- 37.8	9.7	349.2	11.5	414.0	240	91 / 94
CUS350M-48/F	48V	45.6 - 50.4	7.3	350.4	8.7	417.6	480	91 / 94

(4) 115 / 230VAC input. Convection and forced air ratings

FRONT VIEW: Shows the front of the unit with a "FRONT SEAL" on the left. The width is 190±1 mm and the height is 87±1 mm. The distance from the seal to the first fan is 15.4±0.5 mm, and the distance between fans is 40±1 mm. The distance from the seal to the last fan is 39.5 mm. The distance from the seal to the first fan is 8.5 mm.

SIDE VIEW: Shows the side of the unit with a height of 47±0.5 mm. The distance from the front to the first fan is 25±0.5 mm, and the distance from the first fan to the last fan is 140±0.5 mm. The distance from the front to the last fan is 20±0.5 mm. The distance from the front to the first fan is 8.5 mm, and the distance from the first fan to the last fan is 24 mm. The distance from the front to the last fan is 4.8±0.5 mm. The distance from the front to the last fan is 4.9±0.5 mm. The distance from the front to the last fan is 4.9±0.5 mm.

TOP VIEW: Shows the top of the unit with a width of 190±1 mm and a height of 87±1 mm. The distance from the front to the first fan is 25±0.5 mm, and the distance from the first fan to the last fan is 140±0.5 mm. The distance from the front to the last fan is 20±0.5 mm. The distance from the front to the first fan is 8.5 mm, and the distance from the first fan to the last fan is 24 mm. The distance from the front to the last fan is 4.8±0.5 mm. The distance from the front to the last fan is 4.9±0.5 mm. The distance from the front to the last fan is 4.9±0.5 mm.

PIN CONFIGURATION AND FUNCTION:

CN1:

PIN No.	FUNCTION
1	FAN POWER +
2	FAN POWER -

CN52:

PIN No.	FUNCTION
1	STANDBY POWER +
2	STANDBY POWER -
3	NO CONNECTION
4	NO CONNECTION
5	ON/OFF CONTROL-
6	ON/OFF CONTROL+
7	POWER GOOD-
8	POWER GOOD+
9	NO CONNECTION
10	NO CONNECTION
11	REMOTE SENSE-
12	REMOTE SENSE+

CONNECTORS USED:

PART DESCRIPTION	PART NAME	MANUFACT.	QTY
CN51	B2B-XH-A(F)(SN)	J.S.T	1
CN52	S12B-PHDS(LF)(SN)	J.S.T	1
TB1	B825-01-03P-K	TIANLI	1
TB51	B825-01-04P-K	TIANLI	1

NOTES:

A : M4 TAPPED HOLES (4) FOR CUSTOMER CHASSIS MOUNTING.
 SCREW PENETRATION DEPTH 4mm MAX, RECOMMENDED TORQUE : 1.27N·m(13kgf·cm)
 B : M3 SCREWS(7) FOR I/P & O/P TB, RECOMMENDED TORQUE: 0.49N·m(5.0kgf·cm)

Figure 10 consists of two side-by-side line graphs. Both graphs have 'LOAD(%)' on the y-axis (ranging from 0 to 100 in increments of 20) and 'Ta (°C)' on the x-axis (ranging from -20 to 80 in increments of 10). The left graph is titled 'Convection Cooling Condition' and shows data points at Ta = -20, 40, 50, 60, and 70. The right graph is titled 'Forced air cooling Condition' and shows data points at Ta = -20, 40, 50, 60, and 70. In both graphs, the load is 100% at Ta = -20°C. In the convection cooling condition, the load drops to 0% at Ta = 70°C. In the forced air cooling condition, the load drops to 0% at Ta = 70°C, but it remains higher than the convection condition for temperatures between 40°C and 60°C.

Ta (°C)	Load (%) - Convection Cooling	Load (%) - Forced air cooling
-20	100	100
40	100	100
50	82	100
60	68	75
70	50	50

