

DSR850-2

850 Watts Multi-Output

This is a 2U Power Supply Assembly (PSA) primarily for an ATX type product, comprising of one or two AC to 12V Power Supplies (PSU), and a Power Distribution Unit (PDU), mechanical housing and output wiring harness with connectors. Where only one PSU is required, a blank module will be installed in the remaining slot.

Preliminary



Available upon request

Special Features

PSU = 12vdc/70A 5vsb/2.5A

- Wide Range AC Input; 90-264vac
- Active Power Factor Correction
- Active AC Inrush Current Control
- Active Current Share +12v main
- Droop Current Share 5v Stand-By
- Hot Plug Operation
- N+1 Redundant (w/two PSU's)
- Internal OR'ing main 12v and stand-by
- Internal Cooling fans 40mm
- Red/Green Bi-Color LED Status
- I²C Communication Interface Bus
- INTEL, SSI Std. Logic Timing
- INTEL, SSI Std. FRU Data Format
- Intel PSMI Protocol
- Internal Fan Speed Control
- EN61000-3-2 Harmonic Compliance
- EMI Level "B" Conducted & Radiated

PDU

- Six +12v/16A Rails with 240VA protection
- +5V 44A
- +3V3 24A
- -12V 0.5A
- +5VSB 2.5A
- Output Harness and Connectors
- One Year Warranty

Safety

UL/cUL 60950 (UL Recognized)
IEC60950-1/EN60950-1
Compliance
CB test report and CB Certificate to
IEC60950-1
CE Mark
China CCC

Electrical Specifications

Input	
Input range	90-264 Vac (wide range)
Frequency	47-63 Hz, single phase ac
AC Inrush current	55 A AC maximum inrush current (any condition)
Efficiency	>82% AC to +12 V > 70% all outputs at full load
Power factor	0.99 typical
AC input leakage current	1.50 mA @ 240 Vac
Hold up time	20 mS minimum
Conducted EMI	EN55022 Class B, CFR47 FCC Pt15B, Class B ETS300-132-1, EN61000-3-2, EN61000-3-3, GR-1089
Radiated EMI	EN55022 Class B, CFR47 FCC Pt15A, Class B limit
AC input connector	IEC320-C14 with all safety approvals
Output PSU	
Main DC voltage	+12v @ 70 A
Stand-By Voltage	5.0v @ 2.5A
Minimum Load	No Minimum load required
Regulation	+12 Vdc; +/-5% 5.0 Vsb +/-5%
Overcurrent	77-105A latches off if Overcurrent state exceeds 1 second
Overvoltage	+12 V; 13.2 – 14.4 V, 5.0vsb; 5.7 – 6.5 V
Undervoltage	See table page 2



Output PDU

240VA IEC60950-1	+12v1@16A, +12v2@16A, +12v3@16A, +12v4@16A, +12v5@16A, +12v6@16A
+5.00v	44 A
+3.30v	24 A
-12.0v	0.5 A
+5.0v Stand-by	2.5 A
Regulation	See table page 2
Overcurrent	See table page 2

Communications

Intel standard	PSMI V2.12 compatible FRU Data, Intel compatible SMBus Alert, Intel compatible PMBus available upon request
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Environmental Specifications

Operating temperature	-10 - +50, (10,000 feet) 50% derating at 70°C
Humidity	20% – 90% RH non-condensing
Electromagnetic Susceptibility	EN61000-2-3, 3-3, EN55024L1998)
Electromagnetic susceptibility / Input transients:	EN61000-2-3, 3-3, EN55024L1998)
Shock and vibration	Astec Standard Specifications Q3205
RoHS compliant	RoHS 6/6 lead free
MTBF	500 K hours at full load, 40°C

Mechanical

Size (see outline drawing)	
83.4mm high (3.28")	2U x 2U Rack Cage, with N+1 redundant hot plug
84.0mm wide (3.31")	ac to 12 V PSU modules, w/ stand-by output. 5 V, 3.3 V
371.8mm long (14.64")	& -12 V are non-redundant outputs

Output	+12v1	+12v2	+12v3	+12v4	+12v5	+12v6	+5.0v	+3.3v	-12.0v	5.0vSB
Regulation %	± 5%	± 5%	± 5%	± 5%	± 5%	± 5%	± 5%	± 5%	± 10%	± 5%
Maximum (all conditions)	12.60	12.60	12.60	12.60	12.60	12.60	5.25	3.47	13.20	5.25
Nominal	12.00	12.00	12.00	12.00	12.00	12.00	5.00	3.30	12.00	5.00
Minimum (all conditions)	11.40	11.40	11.40	11.40	11.40	11.40	4.75	3.14	10.80	4.75
Over Voltage MinMax	13.20 14.40	13.20 14.40	13.20 14.40	13.20 14.40	13.20 14.40	13.20 14.40	13.20 14.40	3.90 4.50	13.30 14.50	5.70 6.50
Under Voltage Min (Latch Of if less than)	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<4.20	<2.70	<10.0	<4.0
Max PK-PK Ripple (mV)	120	120	120	120	120	120	50	50	120	50
Nominal Output Current	16.0A	16.0A	16.0A	16.0A	16.0A	16.0	44.0A	24.0A	0.5A	2.5A
Minimum Current	0A	0A	0A	0A	0A	0A	0A	0A	0A	0A
Maximum Current	20.0A	20.0A	20.0A	20.0A	20.0A	20.0A	48.0A	36.0A	2.00A	3.5A
Output Rise Time (mS)	1-70	1-70	1-70	1-70	1-70	1-70	1-70	1-70	1-70	1-25
External Capacitance MinMax (uF)	400 11000	400 11000	400 11000	400 11000	400 11000	400 11000	400 12000	250 6800	1.0 350	1.0 350

Ordering Information

DSR850-2	Complete Power Supply Assembly, Two PSU Redundant N+1 hot plug modules and PDU Cage
DSR850-1	Complete Power Supply Assembly, one PSU module one Blank Panel and PDU Cage
DSR850-0	Partial Power Supply Assembly, PDU Cage, with no PSU modules or Blank Panels
DSR850-FLR	Blank Filter Panel (Needed to fill the space of a missing PSU to block the air flow)
DS850-3-005	PSU Power Module +12v@70A, 5.0v/2.5A Stand-By

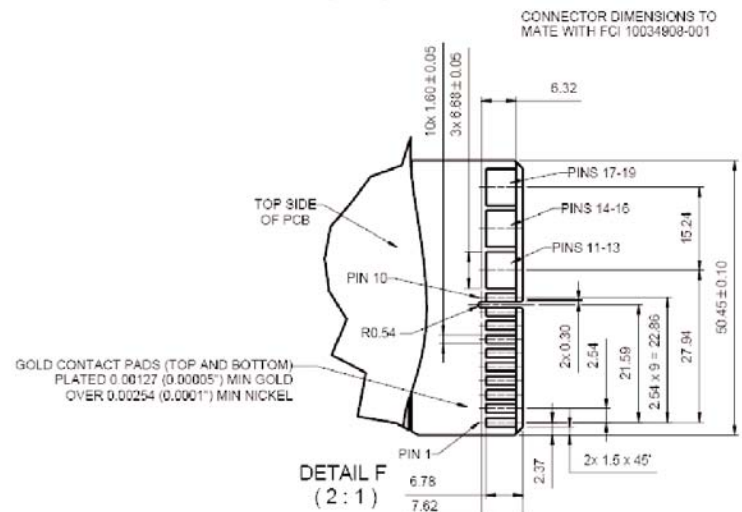
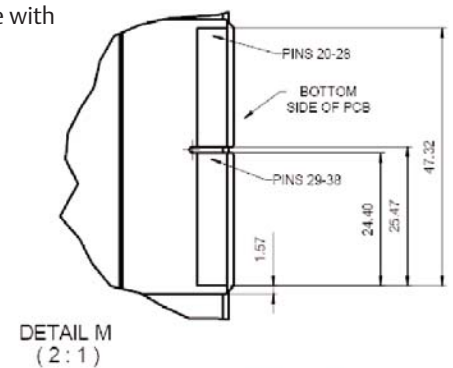
Output Harness Pin-outs

Connector Dimensions to mate with
FCI 10034908-001 (Back of PDU)

Pin	Signal Name	Pin	Signal Name
1	SMBAlert#	20	GND
2	COOLING_FAULT#	21	GND
3	PSU_FAULT#	22	GND
4	PDB_FAULT#	23	GND
5	+5VSB	24	GND
6	+3.3V	25	GND
7	+5V	26	GND
8	+5V	27	GND
9	+5V	28	GND
Key		Key	
10	+5V	29	GND
11	+12V4	30	GND
12	+12V4	31	GND
13	+12V4	32	GND
14	+12V5	33	GND
15	+12V5	34	GND
16	+12V5	35	GND
17	+12V6	36	GND
18	+12V6	37	GND
19	+12V6	38	GND

PDU Direct Docking Connector

Connector Dimensions to mate with
FCI 10034908-001



Cable Harness Lengths

Table Cable Lengths		
Length mm	Number of pins	Description
400mm	2x12	P1 Main Power Connector
300mm	2x4	P2 CPU Power Connector
550mm	2x2	P3 Super Micro Power Connector
450mm	1x4	P4 Peripheral Power Connector (x 2)
450mm	1x5	P5 PSMI Connector

P1 Main Power Connector

Connector housing: 24-Pin CVILUX p/n CP-01124030 or equivalent
Contacts: CVILUX p/n CP-01100104 or equivalent

P1 Main Power Connector

Pin	Signals	18 AWG Color	Pin	Signals	18 AWG Color
1	+3.3 VDC3.3RS *	Orange/Orange/White (24AWG)	13	+3.3 VDC	Orange
2	+3.3 VDC#	Orange	14	-12 VDC	Blue
3	COM (GND)	Black	15	COM	Black
4	5 VDC	Red	16	PSON#	Green
5	COM	Black	17	COM	Black
6	+5 VDC	Red	18	COM	Black
7	COM	Black	19	COM	Black
8	PWR OK	Gray	20	Reserved	N.C.
9	5VSB	Purple	21	+5 VDC	Red
10	+12V3	Yellow/Blue	22	+5 VDC	Red
11	+12V3	Yellow/Blue	23	+5 VDC	Red
12	+3.3 VDC	Orange	24	COM	Black

* Remote Sense wire double crimped (24AWG)

P2 CPU Power Connector

Connector housing: 8- Pin CVILUX p/n CP-01108030 or equivalent
Contacts: CVILUX p/n CP-01100104 or equivalent

P2 CPU Power Connector

Pin	Signal	18 AWG Color	Pin	Signal	18 AWG Color
1	COM	Black	5	+12 V1	Yellow
2	COM	Black	6	+12 V1	Yellow
3	COM	Black	7	+12 V2	Yellow/Black
4	COM	Black	8	+12 V2	Yellow/Black

P3 Super Micro Power Connector

Connector Housing: 4-Pin CVILUX p/n CP-01104030 or equivalent
Contacts: CVILUX p/n CP-01100104 or equivalent

P3 Supermicro Power Connector

Pin	Signal	18 AWG Color	Pin	Signal	18 AWG Color
1	COM	Black	3	+12 V3	Yellow/Black
2	COM	Black	4	+12 V3	Yellow/Black

P4 Peripheral Power Connector (2x)

Connector housing: 4-Pin CVILUX p/n CP320450000 or equivalent
Contacts: CVILUX p/n CP32T031BES or equivalent

P4 Peripheral Power Connector

Pin	Signal	18 AWG Color
1	+12 V3	Yellow/Black
2	COM	Black
3	COM	Black
4	+5 VDC	Red

P5 PSMI Connector

Connector housing: 5-pin Molex 50-57-9405 or equivalent
Contacts: Molex 16-02-0088 or equivalent

P5 PSMI Connector

Pin	Signal	18 AWG Color
1	SMBus Clock	White/Green
2	SMBus Data	White/Yellow
3	SMBAlert#	White
4	ReturnS	Black
5	3.3RS	Orange/White

PSU+ PDU Configuration LED Status

Condition	LED Status
+Stand-by – ON; + Main VOUT – OFF; AC PRESENT	BLINKING GREEN
+Stand-by – ON, + Main VOUT – ON	SOLID GREEN
+MainV_OCP, +MainV_UVP, +Main_VOVP PDU FAN_FAULT	BLINKING GREEN
5VSB OCP/UVP	SOLID AMBER

Astec

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

13-15, Shing Wan Road
Tai Wai, Shatin, N. T.
Hong Kong
Telephone: +852 2699 2868
Facsimile: +852 2699 1770

For global contact, visit:

www.astecpower.com

technicalsupport@astec.com

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