

# ARTESYN DS1200DC

1200 Watt Distributed Power System



Advanced Energy's Artesyn DS1200DC series bulk front end power supplies is the DC-input version of its DS1200 AC-input counterpart. Mechanically identical to the AC-input version, this product allows system operation from a Telco style 48 Vdc input. Rated at 1,200 watts, the power supply provides a main 12 V output and a 3.3 V or optional 5.5 V standby output. Active current sharing allows this power supply to be paralleled with the AC-input version, for use in battery back-up systems where both AC and DC input capabilities are required.

# SPECIAL FEATURES Internal fan

- GR-1089-CORE Issue 4 compliant
- 1U X 2U form factor
- 21.71 W / in<sup>3</sup>
- +12 Vdc Output
- +3.3 Vdc standby (5 V standby option)
- No minimum load required
- Hot plug operation
- N + 1 redundant
- Internal OR'ing fets
- Active current sharing shares with DS1200 AC unit (10 - 100% load)
- Built-in cooling fan (40 mm x 28 mm)
- I<sup>2</sup>C communication interface bus
- PMBus compliant
- EERPOM for FRU data
- Red/green bi-color LED status

- Internal fan speed control
- Fan Fail Tach Output Signal
- INTEL, SSI Std. logic timing
- INTEL, SSI Std. FRU data format
- Full digital control
- Two year warranty
- NEBS compliant

#### **SAFETY**

- UL/cUL 60950 (UL Recognized)
- NEMKO+ CB Report EN60950
- EN60950
- CE Mark
- China CCC

#### **DATA SHEET**

#### **Front-end Bulk Power**

#### **Total Output Power:**

180 to 264 Vac: 1200 W 3.3 Vdc or 5.0 Vdc Standby Output

#### **Telco Input Range:**

-40 to -72 Vdc



### **ELECTRICAL SPECIFICATIONS**

Input	
Input range	-40 Vdc to -72 Vdc
Inrush current	ETSI EN300 132-2 part 4.7 compliant
Efficiency	> 85% typical at high line 50% load
Conducted EMI	Per GR-1089-CORE Issue 4
Radiated EMI	Per GR-1089-CORE Issue 4
Leakage current	1.40 mA @ 240 Vac
Hold-up time	1.1 ms
Output	
Main DC voltage	+12 V @ 100 A
Standby	+3.3 Vsb @ 6 A (5 V @ 4 A available)
Adjustment range	±5% on +12 V only using I <sup>2</sup> C
Regulation	+12 Vdc; ±5% +3.3 or 5.0 Vsb ±5%
Overcurrent	+12 Vdc; latches off if overcurrent lasts over 1 second, otherwise it is auto recovery (See Table 1 next page) +3.3 Vsb, 9 A max (hiccup mode)
Overvoltage	+12 Vdc; 13.2 - 14.4 Vdc +3.3 Vsb; 3.76 - 4.30 Vdc
Undervoltage	+12 Vdc; 9 - 10.8 V (latch off)
Turn-on delay	2 second max, 5 - 50 mS, monotonic rise
Main output rise time	5 - 50 mS, monotonic rise

# LOGIC CONTROL

PS_SEATED (A4)	TTL logic LOW if power supply is seated into system connector. This is a short pin. A logic HIGH if the PSU is removed
PWR GOOD (C3)	Active TTL high when output is within regulation limits.
AC OK (B1)	A low logic level if the input voltage is within allowable limits. A TTL logic HIGH level, and a 5 mS early warning signal before 12.0 V DC output loss of regulation.
PS_INHIBIT/PS_KILL (B4)	When left open power supply operation will be inhibited. When the power supply is inserted into the system, this pin will be pull low by the system and turn the power supply on only after all other power supply pins have seated.
PS ON (A1)	The output will be enabled when this signal is pulled low, below 0.8 V outputs disabled when pin is driven high or left open.



### **ENVIRONMENTAL SPECIFICATIONS**

Operating temperature	-10 to 55 °C
Storage temperature	-40 to +85 °C
Altitude, operating	13,000 feet
Electromagnetic susceptibility / Input transients	GR-1089-CORE Issue 4
RoHS & lead free	Compliant
Humidity	20 - 90% RH, non condensing
Shock and vibration specifications	Complies with Artesyn standard specifications plus additional NEBS requirement
MTBF (demonstrated)	500 K Hrs at full load, 40 °C

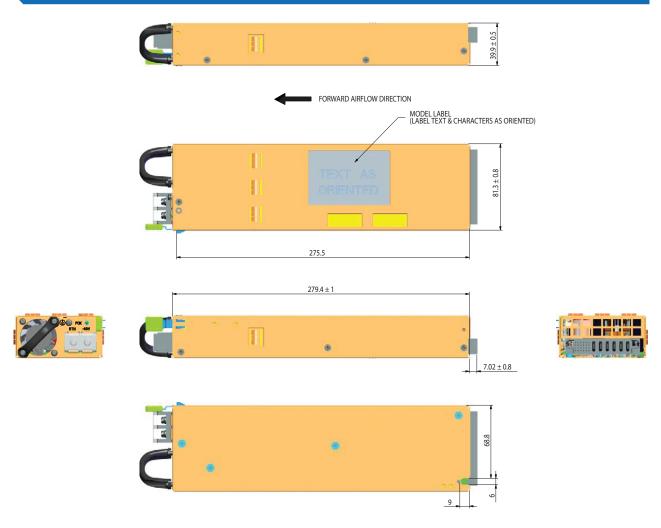
### **ORDERING INFORMATION**

Madal Noveleast	Nominal Output	Set Point	Total	Current		Output		01	Ala Elassa
Model Number*	Voltage Set Point	Tolerance	Regulation	Min	Max	Ripple P/P	Overcurrent	Standby	Air Flow
DS1200DC-3	12.0 V	±0.2%	±0.5%	0 A	100 A	120 mV	118 A - 147.6 A*	3.3 V @ 6 A	STD
DS1200DC-3-001	12.0 V	±0.2%	±0.5%	0 A	100 A	120 mV	118 A - 147.6 A*	3.3 V @ 6 A	REV**
DS1200DC-3-002	12.0 V	±0.2%	±0.5%	0 A	100 A	120 mV	118 A - 147.6 A*	5.0 V @ 4 A	STD
DS1200DC-3-004	12.0 V	±0.2%	±0.5%	0 A	100 A	120 mV	118 A - 147.6 A*	5.0 V @ 4 A	REV**

<sup>\*</sup> Over current latches off if overcurrent lasts over 1 seconds, otherwise it is auto recovery.
\*\* Derating may apply.



### **MECHANICAL DRAWING**



Conditon	LED Status
Stand-by - ON; Main output - OFF; AC PRESENT	Blinking green
Stand-by - ON; Main output - ON	Solid green
Main output OCP, UVP, OVP	Blinking Amber
FAN_FAULT; OTP; Stand-by OCP/UVP	Amber

#### **MECHANICAL SPECIFICATIONS**

#### DC Output Connector Pinout Assignment

Male connector as viewed from the rear of the supply:

D1	D2	D3	D4	D5	D6						
C1	C2	C3	C4	C5	C6	DD1	DDO	DDO	DD4	DDE	DDe
B1	B2	В3	B4	B5	В6	PB1	PB2	PB3	PB4	PB5	PB6
A1	A2	А3	A4	A5	A6						

#### Power Supply Side

- 1. FCI Power Blade 51721 series 51721-10002406AA
- 2. Molex Power Connector SD-87667 series 87667-7002

### Mating Connector (System Side)

- 1. FCI Power Blade 51741-10002406CC Straight Pins
- 2. FCI Power Blade 51761-10002406AALF Right Angle



# MECHANICAL SPECIFICATIONS (CONTINUED)

PB1         Main output return           PB2         Main output return           PB3         Main output return           PB4         + Main output           PB5         + Main output           PB8         + Main output           A1         PS_ON_           A2         Main output remote sense return           A3         Spare           A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output temote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY           B7         STANDBY           B8         STANDBY           B9         STANDBY Return           C1         ADC (I'C Data Signal)           C2         SC (I'C Clock Signal)           C3         STANDBY           C4         Spare           C5         STANDBY           C6         STANDBY           C7         SC Address BIT O Signal)           D2	Pin	Signal Name
PB3         Main output return           PB4         + Main output           PB6         + Main output           PB6         + Main output           A1         PS_ON           A2         Main output remote sense return           A3         Spare           A4         PS_SEATED (Power supply sested)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_CK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (I'C Data Signal)           C2         SCL (I'C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         AD (I'C Address BIT 1 Signal)           D2         A1 (I'C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY SENTSE	PB1	Main output return
PB4         + Main output           PB6         + Main output           A1         PS_ON_           A2         Main output remote sense return           A3         Spare           A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (PC Data Signal)           C2         SCL (PC Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY           C7         STANDBY           C8         STANDBY           C9         STANDBY           C	PB2	Main output return
PB5         + Main output           A1         PS_ON_           A2         Main output remote sense return           A3         Spare           A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (°C Data Signal)           C2         SCL (°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY RETURN           D1         AO (°C Address BIT O Signal)           D2         A1 (°C Address BIT O Signal)           D2         A1 (°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY RT SENSE           D5         STANDBY	PB3	Main output return
PB6         + Main output           A1         PS_ON_           A2         Main output remote sense return           A3         Spare           A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (PC Data Signal)           C2         SCL (PC Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (PC Address BIT 0 Signal)           D2         A1 (PC Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY RMT SENSE           D5         STANDBY	PB4	+ Main output
A1       PS_ON_         A2       Main output remote sense return         A3       Spare         A4       PS_SEATED (Power supply seated)         A5       STANDBY         A6       STANDBY RETURN         B1       AC_OK (AC Input Present)         B2       Main output remote sense         B3       Main output current share         B4       PS_INHIBIT / PS_KIII         B5       STANDBY         B6       STANDBY Return         C1       ADC (IPC Data Signal)         C2       SCL (IPC Clock Signal)         C3       POWER GOOD         C4       Spare         C5       STANDBY         C6       STANDBY RETURN         D1       A0 (IPC Address BIT 0 Signal)         D2       A1 (IPC Address BIT 1 Signal)         D3       S_INT (Alarm)         D4       STANDBY RMT SENSE         D5       STANDBY	PB5	+ Main output
A2       Main output remote sense return         A3       Spare         A4       PS_SEATED (Power supply seated)         A5       STANDBY         A6       STANDBY RETURN         B1       AC_OK (AC Input Present)         B2       Main output remote sense         B3       Main output current share         B4       PS_INHIBIT / PS_KIII         B5       STANDBY         B6       STANDBY Return         C1       ADC (IPC Data Signal)         C2       SCL (IPC Clock Signal)         C3       POWER GOOD         C4       Spare         C5       STANDBY         C6       STANDBY RETURN         D1       A0 (IPC Address BIT 0 Signal)         D2       A1 (IPC Address BIT 1 Signal)         D3       S_INT (Alarm)         D4       STANDBY RMT SENSE         D5       STANDBY	PB6	+ Main output
A3         Spare           A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_Kill           B5         STANDBY           B6         STANDBY Return           C1         ADC (I°C Data Signal)           C2         SCL (I°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY RTT SENSE           D5         STANDBY	A1	PS_ON_
A4         PS_SEATED (Power supply seated)           A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (I°C Data Signal)           C2         SCL (I°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY	A2	Main output remote sense return
A5         STANDBY           A6         STANDBY RETURN           B1         AC_OK (AC Input Present)           B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_Kill           B5         STANDBY           B6         STANDBY Return           C1         ADC (I°C Data Signal)           C2         SCL (I°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDBY RMT SENSE           D5         STANDBY	A3	Spare
A6       STANDBY RETURN         B1       AC_OK (AC Input Present)         B2       Main output remote sense         B3       Main output current share         B4       PS_INHIBIT / PS_Kill         B5       STANDBY         B6       STANDBY Return         C1       ADC (i²C Data Signal)         C2       SCL (i²C Clock Signal)         C3       POWER GOOD         C4       Spare         C5       STANDBY         C6       STANDBY RETURN         D1       A0 (i²C Address BIT 0 Signal)         D2       A1 (i²C Address BIT 1 Signal)         D3       S_INT (Alarm)         D4       STANDBY RMT SENSE         D5       STANDBY	A4	PS_SEATED (Power supply seated)
B1	A5	STANDBY
B2         Main output remote sense           B3         Main output current share           B4         PS_INHIBIT / PS_KIII           B5         STANDBY           B6         STANDBY Return           C1         ADC (I°C Data Signal)           C2         SCL (I°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	A6	STANDBY RETURN
B3       Main ouput current share         B4       PS_INHIBIT / PS_KIII         B5       STANDBY         B6       STANDBY Return         C1       ADC (I°C Data Signal)         C2       SCL (I°C Clock Signal)         C3       POWER GOOD         C4       Spare         C5       STANDBY         C6       STANDBY RETURN         D1       A0 (I°C Address BIT 0 Signal)         D2       A1 (I°C Address BIT 1 Signal)         D3       S_INT (Alarm)         D4       STANDBY RMT SENSE         D5       STANDBY	B1	AC_OK (AC Input Present)
B4         PS_INHIBIT / PS_Kill           B5         STANDBY           B6         STANDBY Return           C1         ADC (I°C Data Signal)           C2         SCL (I°C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	B2	Main output remote sense
B5         STANDBY           B6         STANDBY Return           C1         ADC (I²C Data Signal)           C2         SCL (I²C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I²C Address BIT 0 Signal)           D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	В3	Main ouput current share
STANDBY Return	B4	PS_INHIBIT / PS_Kill
C1         ADC (I²C Data Signal)           C2         SCL (I²C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I²C Address BIT 0 Signal)           D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	B5	STANDBY
C2         SCL (I²C Clock Signal)           C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I²C Address BIT 0 Signal)           D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	B6	STANDBY Return
C3         POWER GOOD           C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I²C Address BIT 0 Signal)           D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C1	ADC (I <sup>2</sup> C Data Signal)
C4         Spare           C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I°C Address BIT 0 Signal)           D2         A1 (I°C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C2	SCL (I <sup>2</sup> C Clock Signal)
C5         STANDBY           C6         STANDBY RETURN           D1         A0 (I²C Address BIT 0 Signal)           D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C3	POWER GOOD
C6         STANDBY RETURN           D1         A0 (I <sup>2</sup> C Address BIT 0 Signal)           D2         A1 (I <sup>2</sup> C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C4	Spare
D1         A0 (I <sup>2</sup> C Address BIT 0 Signal)           D2         A1 (I <sup>2</sup> C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C5	STANDBY
D2         A1 (I²C Address BIT 1 Signal)           D3         S_INT (Alarm)           D4         STANDYBY RMT SENSE           D5         STANDBY	C6	STANDBY RETURN
D3 S_INT (Alarm) D4 STANDYBY RMT SENSE D5 STANDBY	D1	A0 (I <sup>2</sup> C Address BIT 0 Signal)
D4 STANDYBY RMT SENSE D5 STANDBY	D2	A1 (I <sup>2</sup> C Address BIT 1 Signal)
D5 STANDBY	D3	S_INT (Alarm)
	D4	STANDYBY RMT SENSE
D6 STANDRY PETLIPN	D5	STANDBY
STANDET RETORIT	D6	STANDBY RETURN





## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

#### PRECISION | POWER | PERFORMANCE

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