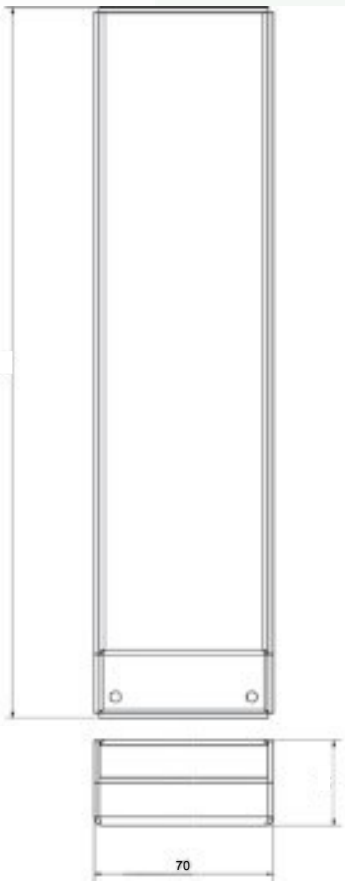


The avanta baseplate cooled ACDC is a mil-spec, low profile, fully compliant, isolated, base plate cooled ACDC power supply with a fully regulated output of up to 300W.

Designed for harsh military applications, the AVMIL-AB-300-12 is available with a wide 85V to 264VAC input for global mains powered systems, for both platform and terminal connected equipment.

Integrated EMC filtering to MIL-STD 461 and surge protection to MIL-STD 704/ 1275/ DEF-STAN 61-5-part 4 allows for direct connection to the supply voltage.

Benefit	Feature
No need for additional filters	EMC to MIL-STD 461G Surge & Transient Protection to: DEF-STAN 61-5 Part 4 Reverse Polarity Protection
Simple to cool	Base plate cooled
Fits anywhere	Small form factor Aerospace compliant Land compliant Marine compliant
Easy to integrate	Stocked connectors
Available off the shelf	Distributor stocked



TECHNICAL DETAILS

Input Specifications	
Input Voltage	85V to 264V AC
Max Input Current	3.6A
Input Frequency	47 to 400Hz
Output Specifications	
Output Voltage	12V
Load Regulation	+/- 2%
Line regulation	+/- 2%
Output Ripple	<240mV
Maximum Output Current	22A
Protection	
Over Current Protection	105% Typical
Over Voltage Protection	135% Typical
Short Circuit Protection	Continuous, Auto Recovery, Hiccup Mode
Over Temperature Protection	105C at the Centre of the Baseplate
Efficiency	
100% Load	86% at Nominal Input Voltage
Turn On Time	160ms
Isolation	
Input to Output	1,500VDC
Input to Case	1,500VDC
Output to Case	1,500VDC
Isolation Resistance Input to Output	100MOhm
Switching Frequency	300kHz Typical
MTBF	>150 KHrs
EMC	
Mil Standards	
Mil-Std 461G	CE101, CE102, CS101, CS103,
MIL-Std 810F	Shock/Vibration
DEF-Standards	
DEF-STAN 59-411	DCE01, DCE02, DCS01, DCS02
DEF-STAN 00-35	
CE / UKCA	

CN1 main input connector

mating half; anderson power pole connector x3

1327G5 (green housing - earth)
1327G8 (blue housing - neutral)
1327G21 (brown housing - live)
1335G1 (high power (45A) vertical mount contact)

CN2 main output connector

pair of m4 studs for connecting + and – output.

CN3 input signals connector

PCB (B10B-PHDSS) mating half; PHDR-10VS housing, crimps SPHD-001T-P0.5

1 ac ok - (emitter of an opto isolator 20mA max) short = ac ok
2 remote sense negative (trim 0.5V max)
3 ac ok + (collector of an opto isolator 20mA max) short = ac ok
4 remote sense positive (trim 0.5V max)
5 dc ok - (emitter of an opto isolator 20mA max) short = dc ok
6 dc ok + (collector of an opto isolator 20mA max) short = dc ok
7 n/c
8 base plate temperature signal (23°C = 580mV), referenced to the output 0V VO = (+6.25mV/°C×T°C)+424mV

temperature (t) typical	VO
+125°C	+1205mV
+100°C	+1049mV
+25°C	+580mV
0°C	+424mV
-25°C	+268mV
-40°C	+174mV

9 output disable (+) (5V applied across this pin and pin 10 disables the regulated output)
10 output disable (–) (used in conjunction with pin 9)

-25°C	+268mV
-40°C	+174mV

Environmental

option m operating temperature -46°C to +90°C (storage -55°C to +105°C)

over temperature shut down 110°C (automatic re-start at 95°C)

conduction cooled through baseplate
operating humidity DO-160E section 6 category B operating altitude 51,000 ft

operating below sea level 1,500 ft
shock & vibration DO-160E Shock +-6g 11ms any direction

BS EN60068-2-27 15g shocks 11ms ½ sine
vibration DO-160E section 8 procedure 8.7.2 test level C1

WEEE directive 2002-96-EC RoHS directive 2002-95-EC

REACH regulations EU-1907-2006 HAZMAT compliant

unit is conformal coated with non-fungus growth compliant coating (option)

EMC and safety

safety approvals EN60950-1:2006
emissions MIL-STD-461E/F,
DEF STAN 59-411 with additional input filter
ESD immunity EN61000-4-2, Level 3
radiated immunity EN61000-4-3, 10V/m, level 3 performance criteria a surge EN61000-4-5, installation class 3, perf criteria a

conducted immunity EN61000-4-6, 10V RMS, perf criteria a

Standard signals and indicators

36V clamped output for auxiliary equipment (max 3A)
global disable: turns off the main output and the auxiliary output, input 0V referenced signal

regulated output disable: turns off the main regulated output(s), output 0V referenced signal

remote sense to compensate for output voltage drops in cables (compensation up to 0.5V across the leads)

global PSU OK: floating open collector: closed = PSU OK, open = PSU FAIL

base plate temperature signal: provides an accurate voltage proportional to the internal PSU temperature. This signal can be used to warn of a potential over temperature situation that may be the result of a system cooling failure, vastly improving the up time of a system