



CH-M2000 Series

Conduction Cooled AC/DC Power Supply



FEATURES

- Conduction cooled, 2000 Watt (2,180W offered on selected models)
- 85~264 VAC input; 50/60/400Hz
- In-Rush Current limited
- D38999 Connectors
- Conformal Coated
- >20 msec holdup time at 115 VACin/60 Hz
- Aluminum Enclosure-Conductive Chromate treated
- Mil-Std 461, 704, 810, 1275, 1399 Compliant
- Meets Mil Std 1399 §300A Type I, 60Hz Systems

INPUT			
Voltage/ Freq	Vrms	AC 85~264/ 47~440Hz,	
Current	A(rms)	22A (typical at maximum output power, 110VAC in)	
Inrush Current	A	46 A peak at cold start (Full Load)	
Power Factor	-	> 0.99 @ full load (115VAC & 220 VAC) Meets Mil-Std 1399 Sec 300 @ 10% load @115 VACin 40% load and higher for 220VACin (50/60 Hz)	
Leakage Current	mArms	< 1.3 mArms @ 115 VAC in	

		CH-M2000-12	CH-M2000-24	CH-M2000-28	CH-M2000-48	CH-M2000-54	
OUTPUT	Voltage	VDC	12	24	28	48	54
	Efficiency	%	85	88	89	90	90
			110 VAC	86	89	90	92
	Current	A	167	83.5	71.6	42	38
	Max Power	W	2001	2001	2004.8	2016	2052
	Regulation	%	+/-1.00	+/-0.5	+/-0.5	+/-0.5	+/- 1.5
	Ripple/ Noise	% Pk-Pk	1.00	1.00	1.00	1.00	1.50
	Hold-up Time	mS	>20mS @ full load, 115 VAC				
Insulation And Dielectric*	Primary-Secondary	4242 VDC (3000 VAC)					
	Primary to Ground (chassis)	>1500 VDC for 30 seconds					
	Output to Ground	>100MΩ at 25°C, 40%RH & 500VDC					



Protection	Overvoltage	Shutdown and latch off; AC recycle or remote on/off toggle to restart
	Overload	Constant Current (CC) to Hiccup, Auto recovery. CC Setpoint 102~104% of rated output power
	Over temperature	Output shutoff until base plate temp reaches 75°C, AC recycle/remote on/off to restart
	Short Circuit	Auto Recovery
Environment	Operating Temp	-40~75°C Ambient
	Storage Temp	-55 to +105° C
	Operating Humidity	10~95% , non-condensing
	Operating Altitude	15,000 ft max (40,000 ft in pressurized cabin 8kPA minimum)
	Vibration	MIL-STD810G, Method 514.7, Category 4, Test Procedure 1 (Annex C 2.1.3)
	Shock	MIL-STD-810H, Procedure 1, 20G 11ms MIL-STD-810G, method 516.7, procedure VI.
	MTBF Telecordia SR-22	>205,000 hrs.@ 40C ambient temp.
Standards	Conducted Emissions ² Susceptibility Radiated Emissions Immunity ³ Transient Electrical Systems in Vehicles	MIL-STD-461F/G: CE101, CE 102 MIL-STD-461F/G: CS101, CS114, CS115, MIL-STD-461F/G: RE102, 8 kV (contact discharge) or 15 kV (air discharge) electrostatic discharge MIL-STD 704 (Voltage Surge, Brown out at 80% load) MIL-STD-1275D: Imported voltage surge 40 V & 100 V; ripple 14 V
	Size	Inches/lbs 14" x 8" x 2.85" / 9.5 lbs (Standard)

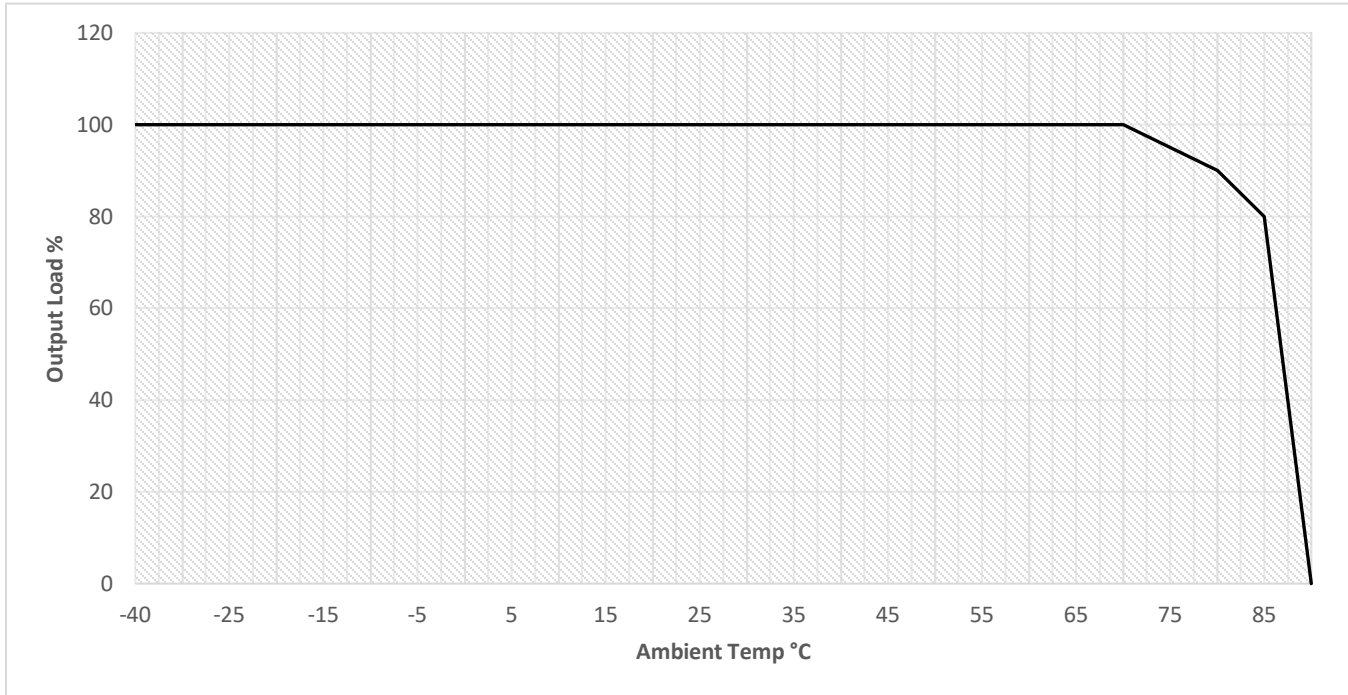
1. Ripple and noise are measured at oscilloscope 20MHz bandwidth by a 10uF electrolytic capacitor and a 0.1uF ceramic capacitor in parallel at output connector.
2. Standards: Unit has been designed to meet the standards listed. It is the responsibility of the customer to test in system. Conducted emissions (CE101, C102) using shielded 3 conductor cable (L,N,G) with unit mounted to chassis ground.
3. Contact factory for test conditions.

OPTIONS

Connectors	
Customer may request connector change with MOQ	
•D38999 or equivalent	•MIL/SAE 5015 or equivalent
Additional Options	
Non-Standard Voltages (Factory Set 22~55VDC, 110V)	
MIL-DTL-901(E) Grade B shock enclosure	
Anodized or Power Coat Enclosure	
External potentiometer (Voltage Trim 20%, Not Available at Non-Standard Voltage setting)	
Remote On/Off	
Status Reporting (I2C: Vout, Iout, Internal Temp)	



DERATING



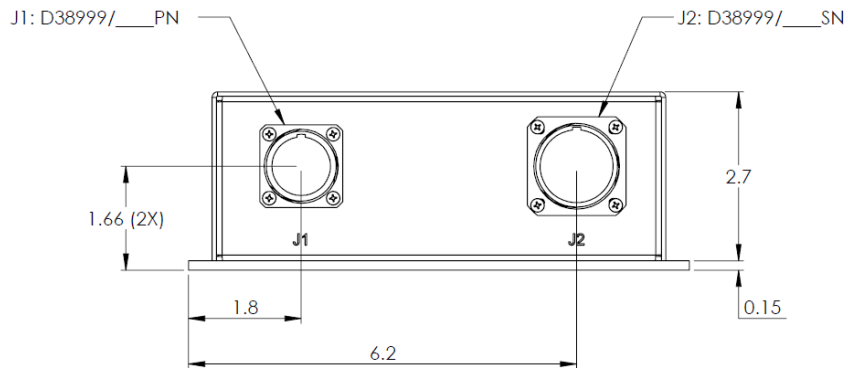
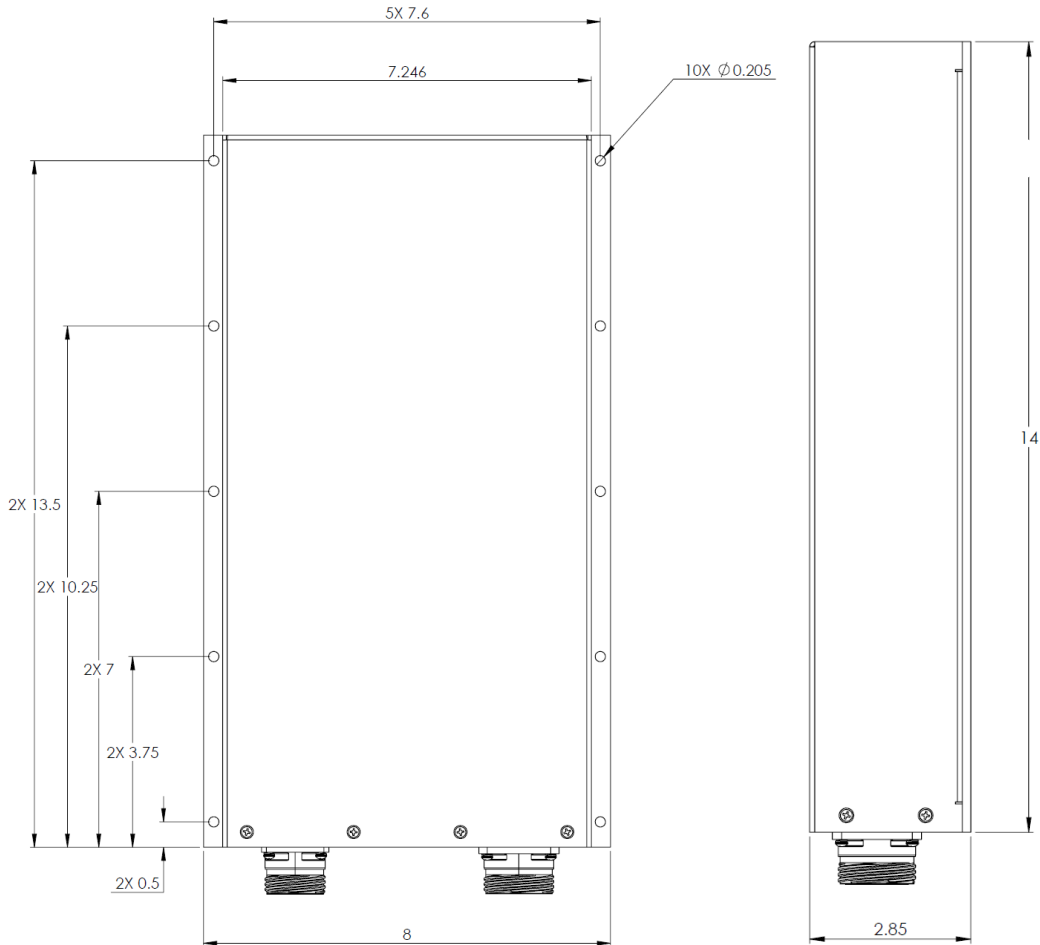
How to Order

CH-M2000-vv-(xxx)-(yyy)-(zzzz)

How to Order		
Designation	Description	Options
CH-M2000	Base Model	
vv	Output Voltage	Standard: 12, 24, 28, 48, 110 Non Standard: 9~14 at 165A; 15~33 at 71A; 32~46 at 42A; 50~55 at 38.5A
xxx	Output Connectors	-611, -750, -752, -758 (see pages 6-9) Additional connector options available upon request
yyy	Enclosure Options	Blank= Standard; -6L, -6L9, -6W, -6W9 (See pages 5-6)
zzzz	Additional Options	<ul style="list-style-type: none"> Chromate Finish: Gold= blank, Clear=F1 (Enclosure will be silver) Anodized Enclosure: Anodize: Gold =F10; Clear =F11; Black=F12; Blue=F13 Powder Coat Paint= Light Gray=F20 Sand= F21 NATO Green=F22 External Potentiometer (P10: +/- 10%, P20: +/- 20%, not available for 110V) Remote on/off (two contact, R1=short-on; open-off, R2= short-off, open-on) I2C Status – (Option 2C: Up to 3 selectable addresses, Vout, Iout, Temp, & Humidity reporting. 5V bus=2C5; 3.3V Bus=2C3 M218: Rated 2,180 W output, Available for 24V models and higher



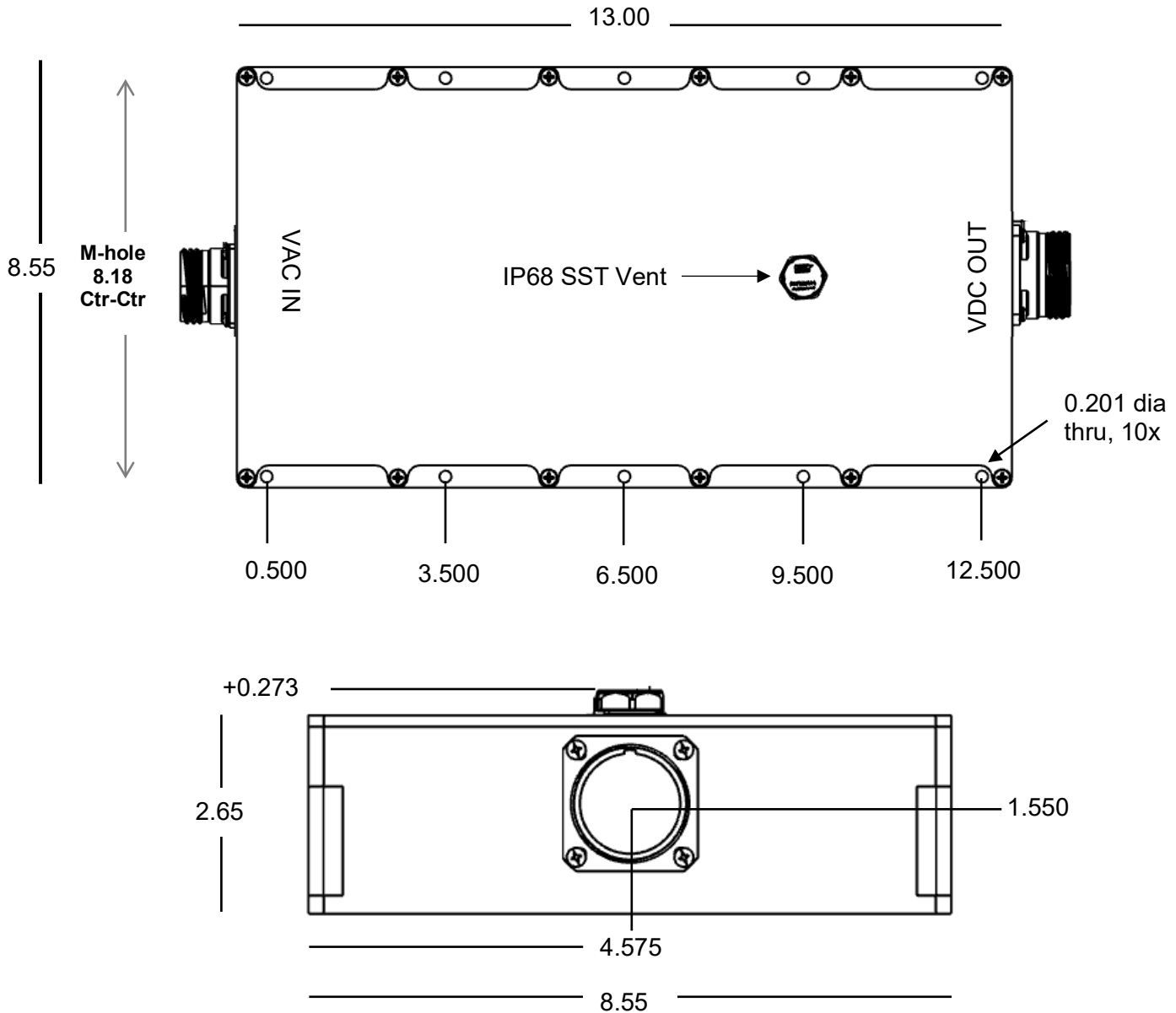
DIMENSIONAL DRAWING (STANDARD)



* Dimensions shown in inches



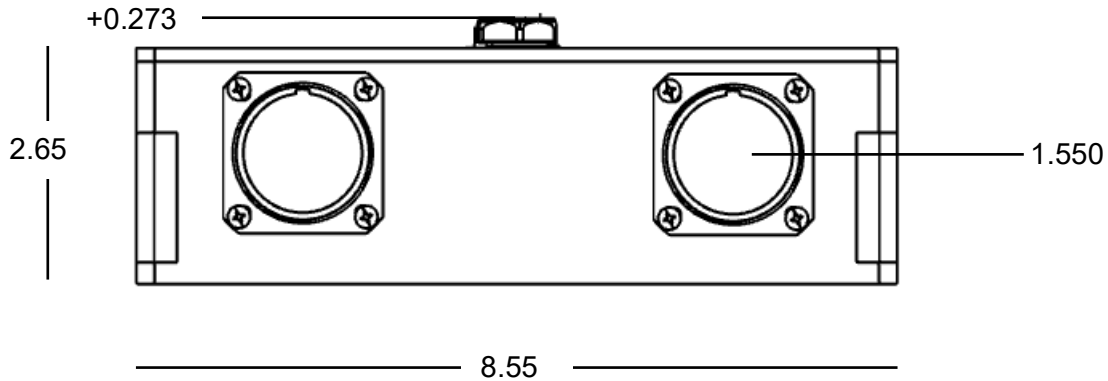
DIMENSIONAL DRAWING (IP66 Option -6L; -6L9 for MIL-S-901 Option) *Input and Output Interface on Opposing Sides*





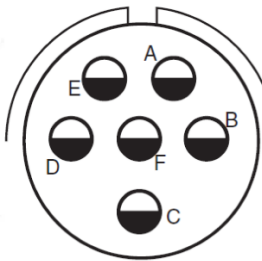
DIMENSIONAL DRAWING (IP66 Option -6W; -6W9 for MIL-S-901 Option)

Input and Output Interface on Same Side



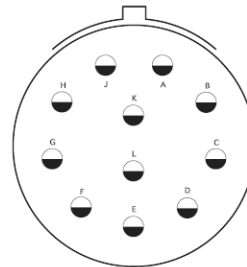
DIMENSIONAL DRAWING-INTERFACE CONNECTORS

-611 Option
(Best if Needing Mil-Qualified Connectors)



J1: D38999/20WE6PN

- J1-A: Line
- J1-B: Neutral
- J1-C: Line
- J1-D: Neutral
- J1-F: Ground
- J1-E: N/C
- (-6118 option F,E=N/C,
Shell tied to chassis Ground)



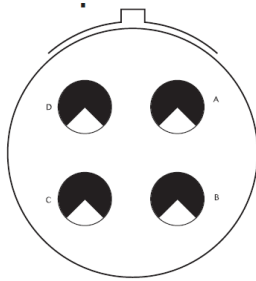
J2: D38999/20WG11SN

- J2-A: +Vout
- J2-B: +Vout
- J2-C: +Vout
- J2-D: +Vout
- J2-E: +Vout
- J2-F: Vout RTN
- J2-G: Vout RTN
- J2-H: Vout RTN
- J2-I: Vout RTN
- J2-K: Vout RTN
- J2-L: N/C

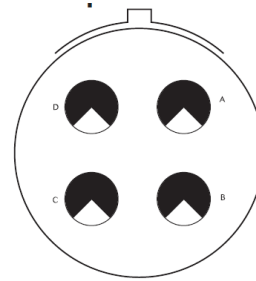


-750 Option

For CH-M2000-24, -28, -48, -110



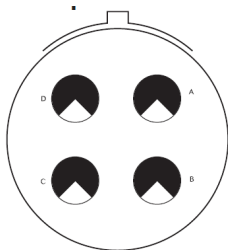
J1: D38999/20WG75PN
J1-A: Line
J1-B: Neutral
J1-C: Ground
J1-D: N/C



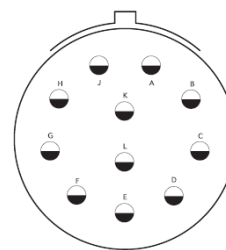
J2: D38999/20WG75SN
J2-A: Vout RTN
J2-B: Vout RTN
J2-C: +Vout
J2-D: +Vout

-752 Option

Recommended for CH-M2000-24, -28, -48, -110



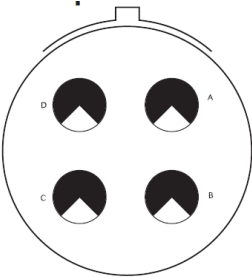
J1: D38999/20WG75PN
J1-A: Line
J1-B: Neutral
J1-C: Ground
J1-D: N/C



J2: D38999/20WF11SN
J2-A: +Vout
J2-B: +Vout
J2-C: +Vout
J2-D: +Vout
J2-E: +Vout
J2-F: Vout RTN
J2-G: Vout RTN
J2-H: Vout RTN
J2-I: Vout RTN
J2-K: Vout RTN
J2-L: N/C

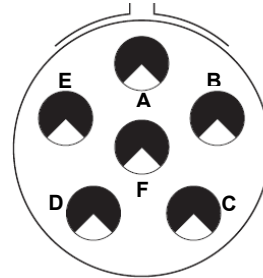


-758 Option Recommended for CH-M2000-12



J1: D38999/20WG75PN

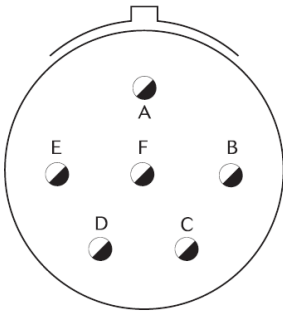
J1-A: Line
J1-B: Neutral
J1-C: Ground
J1-D: N/C



J2: 8D0-23W06SNL (MFR Souriau)

J2-A: +Vout
J2-B: +Vout
J2-C: +Vout
J2-D: Vout RTN
J2-E: Vout RTN
J2-F: Vout RTN

Remote On/Off and I2C Reporting



J3: D38999/20WB98PN

J3-A: I2C Ground/RTN
J3-B: I2C Address Select Return
J3-C: Remote Control
J3-D: Remote Control Ground
J3-E: I2C Address Select 1
J3-F: I2C Address Select 2

J3 Control Functions

R1	C & D short= Output On; C & D open = Off
R2	C & D short= Output Off; C & D open = On

I2C Reporting

I2C signal is delivered via an isolated bus (3.3 or 5V). Vout, Iout, Temp and Humidity Data. Reporting is to be queried from customer equipment, sample code provided upon request upon purchase.

Connection	Address
Open	10 Hex
B+E Short	16 Hex
B+F Short	17 Hex

Specification subject to change without notification