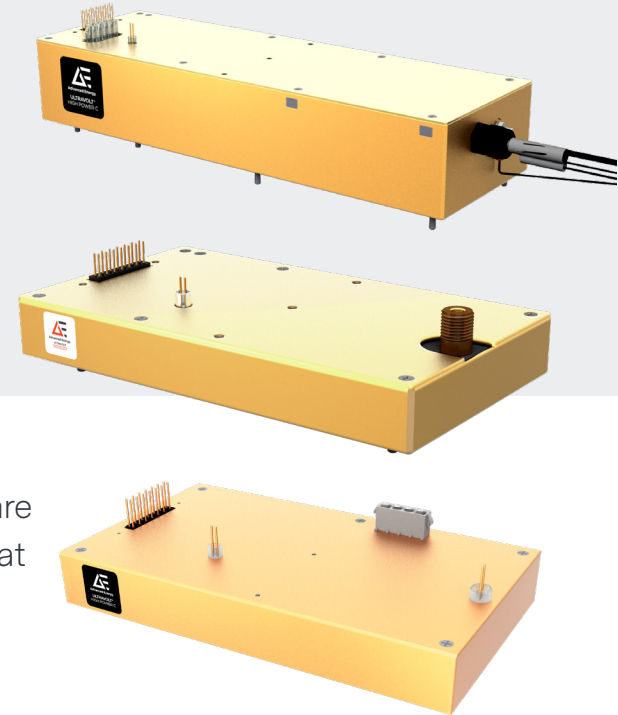


HIGH POWER C SERIES

SINGLE OUTPUT 60, 125, OR 250 W
CAPACITOR CHARGING SUPPLY



The High Power C Series of regulated DC-to-DC converters are designed for high voltage capacitor charging applications that demand fast rise times with controlled voltage overshoot.

PRODUCT HIGHLIGHTS

- Regulated high voltage outputs ranging from 125 to 60,000 VDC maximum
- Single output: positive or negative polarity models
- Choice of 60, 125, or 250 W maximum power
- 24 VDC input
- Output ripple performance < 1.0%
- Controlled high voltage overshoot enhances longevity of external load components
- Temperature coefficient 50 ppm/°C
- Simplified integration with available 0 to 5 VDC or 0 to 10 VDC interface
- Reliable modular design
- Factory-configured performance, control and integration options
- UL/cUL recognized, IEC-60950-1, CE Mark (LVD and RoHS)

TYPICAL APPLICATIONS

- Capacitive charging and pulsed power applications
- High potential testing and Electrostatic Discharge (ESD)
- Automated Test Equipment (ATE)
- Lasers and opto-electronics
- Ultrasonic pulse generators

AT A GLANCE

Maximum Output Voltage

125 V, 250 V, 500 V, 1 kV, 2 kV,
4 kV, 6 kV, 8 kV, 10 kV, 12 kV,
15 kV, 20 kV, 25 kV, 30 kV, 40 kV,
50 kV or 60 kV DC

Maximum Output Power

60, 125, or 250 W

Type

Single Output

Ripple

< 1.0%

Control

Analog

Temperature Coefficient

50 ppm/°C

HIGH POWER C SERIES

ELECTRICAL SPECIFICATIONS

Model ¹		1/8C Series			1/4C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 125 VDC			0 to 250 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24 VDC			24 VDC		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% LOAD	< 3.3	< 6.9	< 13.5	< 3.3	< 6.9	< 13.5
	A @ 100% HVout, 0% LOAD	< 0.5		< 0.8	< 0.5		< 0.8
	A @ disable/standby state	< .075			< .075		
DC Output							
HVout (Output Voltage)	VDC	0 to 125 VDC			0 to 250 VDC		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	480	1000	2000	240	500	1000
Current Scale Factor	mA/V	400	833	1667	200	417	833
Voltage Monitor Scaling	-	100:1 ± 2% into 1.1 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (μF)	0.66		1.32	0.20		0.33
Ripple ²	%	< 1.0			< 1.0		

Model ¹		1/2C Series			1C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 500 VDC			0 to 1000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24 VDC			24 VDC		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% LOAD	<3.3	< 6.9	< 13.5	<3.3	< 6.9	< 13.5
	A @ 100% HVout, 0% LOAD	< 0.5		< 0.8	< 0.5		< 0.8
	A @ disable/standby state	< .075			< .075		
DC Output							
HVout (Output Voltage)	VDC	0 to 500			0 to 1000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	120	250	500	60	125	250
Current Scale Factor	mA/V	109	208	417	50	114	227
Voltage Monitor Scaling	-	100:1 ± 2% into 1.1 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (μF)	0.094		0.328	0.034		0.072
Ripple ²	%	< 1.0			< 1.0		

¹ Standard product specifications shown unless noted. Custom configurations are available.

² Nominal ripple measured @ 100% HVout, 100% LOAD. Valid for 10 to 100% HVout range.

ELECTRICAL SPECIFICATIONS (CONTINUED)

Model ¹		2C Series			4C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 2000 VDC			0 to 4000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24 VDC			24 VDC		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% LOAD	< 3.3	< 6.9	< 13.5	< 3.3	< 6.9	< 13.5
	A @ 100% HVout, 0% LOAD	< 0.5		< 0.8	< 0.5		< 0.8
	A @ disable/standby state	< .075			< .075		
DC Output							
HVout (Output Voltage)	VDC	0 to 2000			0 to 4000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	30	62	125	15	31	62
Current Scale Factor	mA/V	26	52	104	11.5	26	52
Voltage Monitor Scaling	-	100:1 ± 2% into 1.1 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (μF)	0.0168		0.0224	0.0084		0.0112
Ripple ²	%	< 1.0			< 1.0		

Model ¹		6C Series			8C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 6000 VDC			0 to 8000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24 VDC			24 VDC		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% LOAD	< 3.3	< 6.9	< 13.5	< 3.25	< 6.5	< 13
	A @ 100% HVout, 0% LOAD	< 0.5		< 0.8	< 0.5		
	A @ disable/standby state	< .075			< .04		
DC Output							
HVout (Output Voltage)	VDC	0 to 6000			0 to 8000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	10	21	42	7.5	15.5	31.2
Current Scale Factor	mA/V	6.2	17.7	35	4.7	14.2	6.25
Voltage Monitor Scaling	-	100:1 ± 2% into 1.1 MΩ			1000:1 ± 2% into 10 MΩ		
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (μF)	0.0100		0.0075	4400	2200	3000
Ripple ²	%	< 1.0			< 1.0		

¹ Standard product specifications shown unless noted. Custom configurations are available.

² Nominal ripple measured @ 100% HVout, 100% LOAD. Valid for 10 to 100% HVout range.

HIGH POWER C SERIES

ELECTRICAL SPECIFICATIONS (CONTINUED)

Model ¹		10C Series			12C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 10,000 VDC			0 to 12,000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24			24		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% load	< 3.25	< 6.5	< 13	< 3.25	< 6.5	< 13
	A @ 100% HVout, 0% load	< 0.5			< 0.5		
	A @ disable/standby state	< .04			< .04		
DC Output							
HVout (Output Voltage)	VDC	0 to 10,000			0 to 12,000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	6	12.5	25	5	10.5	20.8
Current Scale Factor	mA/V	4.1	10.9	5	4.0	7.4	4.17
Voltage Monitor Scaling	-	1000:1 ± 2% into 10 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (pF)	2900	1500	3000	2900	1500	2250
Ripple ²	%	< 1.0			< 1.0		

Model ¹		15C Series			20C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 15,000 VDC			0 to 20,000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24			24		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% load	< 3.25	< 6.5	< 13	< 3.25	< 6.5	< 13
	A @ 100% HVout, 0% load	< 0.5			< 0.6		
	A @ disable/standby state	< .04			< .04		
DC Output							
HVout (Output Voltage)	VDC	0 to 15,000			0 to 20,000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	4	8.3	16.7	3	6.25	12.5
Current Scale Factor	mA/V	4.0	7.5	3.33	0.65	0.653	2.5
Voltage Monitor Scaling	-	1000:1 ± 2% into 10 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (pF)	1700	1100	750	1300	800	750
Ripple ²	%	< 1.0			< 1.0		

¹ Standard product specifications shown unless noted. Custom configurations are available.

² Nominal ripple measured @ 100% HVout, 100% load. Valid for 10 to 100% HVout range.

ELECTRICAL SPECIFICATIONS (CONTINUED)

Model ¹		25C Series			30C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 25,000 VDC			0 to 30,000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24			24		
Power Output (Watts, Nominal)		60	125	250	60	125	250
DC Input							
Vin (Input Voltage) Range	VDC	23 to 30			23 to 30		
Vin (Nominal)	VDC	24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% load	< 3.25	< 6.5	< 13	< 3.25	< 6.5	< 13
	A @ 100% HVout, 0% load	< 0.6			< 0.6		
	A @ disable/standby state	< .04			< .04		
DC Output							
HVout (Output Voltage)	VDC	0 to 25,000			0 to 30,000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	2.4	5	10	2	4.17	8.33
Current Scale Factor	mA/V	0.65	0.650	2	0.65	0.642	1.67
Voltage Monitor Scaling	-	1000:1 ± 2% into 10 MΩ					
Pout (Output Power)	W (max)	60	125	250	60	125	250
Capacitance	Internal storage capacitance (pF)	940	630	500	830	550	500
Ripple ²	%	< 1.0			< 1.0		

Model ¹		40C Series			50C Series			60C Series		
High Voltage Output Range (Adjustable Regulated, Positive or Negative Output)		0 to 40,000 VDC			0 to 50,000 VDC			0 to 60,000 VDC		
High Voltage Outputs		Single Unipolar			Single Unipolar			Single Unipolar		
Input Voltage (VDC, Nominal)		24			24			24		
Power Output (Watts, Nominal)		60	125	250	60	125	250	60	125	250
DC Input										
Vin (Input Voltage) Range	VDC (positive polarity only)	23 to 30			23 to 30			23 to 30		23 to 28
Vin (Nominal)	VDC	24			24			24		
Iin (Input Current, Nominal)	A @ 100% HVout, 100% LOAD	< 3.3	< 6.6	< 13.5	< 3.3	< 6.6	< 13.5	< 3.3	< 6.6	< 13.5
	A @ 100% HVout, 0% LOAD	< 1.3			< 1.3			< 1.3		
	A @ disable/standby state	< 0.15			< 0.15			< 0.15		
DC Output										
HVout (Output Voltage)	VDC	0 to 40,000			0 to 50,000			0 to 60,000		
Iout (Output Current)	mA (max) @ 0 to 100% HVout, Vin (nominal)	1.5	3.13	6.25	1.2	2.5	5	1	2.08	4.17
Current Scale Factor	mA/V	0.30	0.63	1.25	0.24	0.50	1.00	0.20	0.42	0.83
Pout (Output Power)	W (max)	60	125	250	60	125	250	60	125	250
Capactiance	Internal storage capactiance (pF)	750	750	375	600	600	300	500	500	250
Ripple ²	%	< 1.0			< 1.0			< 1.0		

¹ Standard product specifications shown unless noted. Custom configurations are available.

² Nominal ripple measured @ 100% HVout, 100% LOAD into Cx > 0.5 μ F. Valid for 10 to 100% HVout range.

ELECTRICAL SPECIFICATIONS (CONTINUED)

Programming and Controls	Standard	I5/I10 Interface
Control Input Impedance	+Output Models: 1.1 M Ω to GND	10 M Ω
	-Output Models: 1.1 M Ω to +5 Vref	
Adjust Resistance	10 to 100 k Ω (Potentiometer across Vref. and signal GND, wiper to adjust)	Same as Standard
Adjust Logic	0 to 4.64 for +Output, +5 to 0.36 V for -Output, +4.64 VDC for +output or +0.36 VDC for -output = nominal	0 to +5 V (I5), 0 to +10 V (I10)
Reference Voltage and Impedance	+5.00 VDC $\pm$ 1%, Zout = 464 Ω $\pm$ 1%	+5 V/3 mA $\pm$ 0.1% (I5), +10 V/3 mA $\pm$ 0.1% (I10), 10 M Ω $\pm$ 1%
Enable/Disable	0 to +0.8 V disable, +2.0 to 30 V enable (default = enable)	0 to +0.8 V disable, +2.0 to 30 V enable (default = disable)

Stability and Regulation	
Stability	0.01% (100 ppm) @ 100% HVout (after 30 min warmup interval)
	0.02% (200 ppm) @ 100% HVout (per 8 h interval)
Line Regulation	0.01% (100 ppm) @ 100% HVout, 100% Pout, Vin (nominal)
Static Load Regulation	0.01% (100 ppm) @ 100% HVout, 0 to 100% LOAD
Temperature Coefficient	50 ppm/ $^{\circ}$ C (Standard configuration over operating temperature range)
Power-On Rise Time	Application dependent (See Rise Time / Capacitor Charging Equations)

Environmental	
Operating Temperature Range	-40 to 65 $^{\circ}$ C (-40 to 149 $^{\circ}$ F) bottom case temperature
Storage	-55 to 105 $^{\circ}$ C (-67 to 222 $^{\circ}$ F) case temperature
Humidity	0 to 95% RH, non-condensing
Altitude	Sea level to 3000 m (10,000 ft)

Regulatory	
Certifications	UL/cUL recognized, IEC-60950-1, CE mark (LVD and RoHS)

MECHANICAL SPECIFICATIONS

Construction	
Standard Case	Aluminum (Anodized per MIL-A-8625 Type II)
Heatsink	Aluminum (Anodized, -H Option)
PCB Standoffs	Zinc-plated steel (-Z11 Option)
Labels	Static-dissipative polyester
Cooling	Natural convection and conduction
Encapsulation	Silicone-based RTV (contact factory for other options)
Pins	Gold-plated bronze
Bottom Mounting Studs ¹	Eight #8-32 steel threaded standoffs (For 40C to 60C only)

¹ For 40C to 60C only

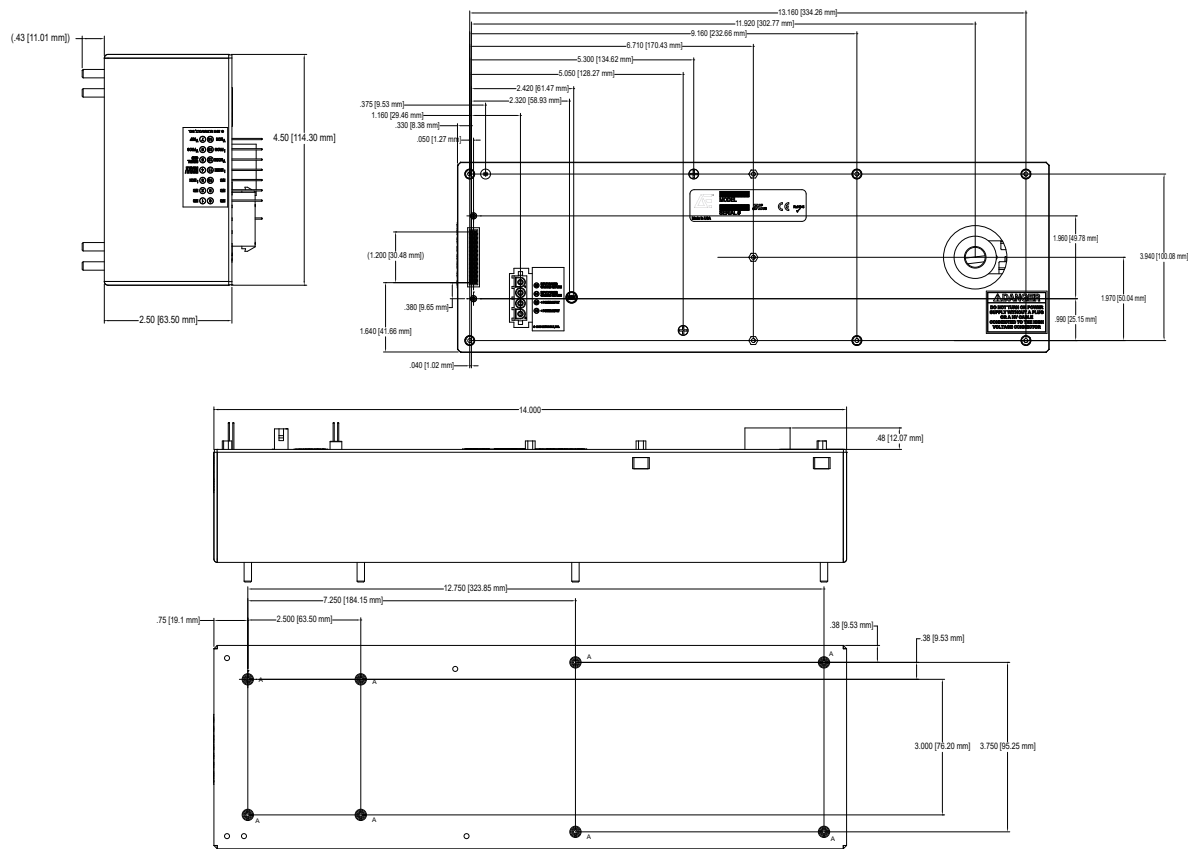
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MECHANICAL SPECIFICATIONS - 8C TO 30C

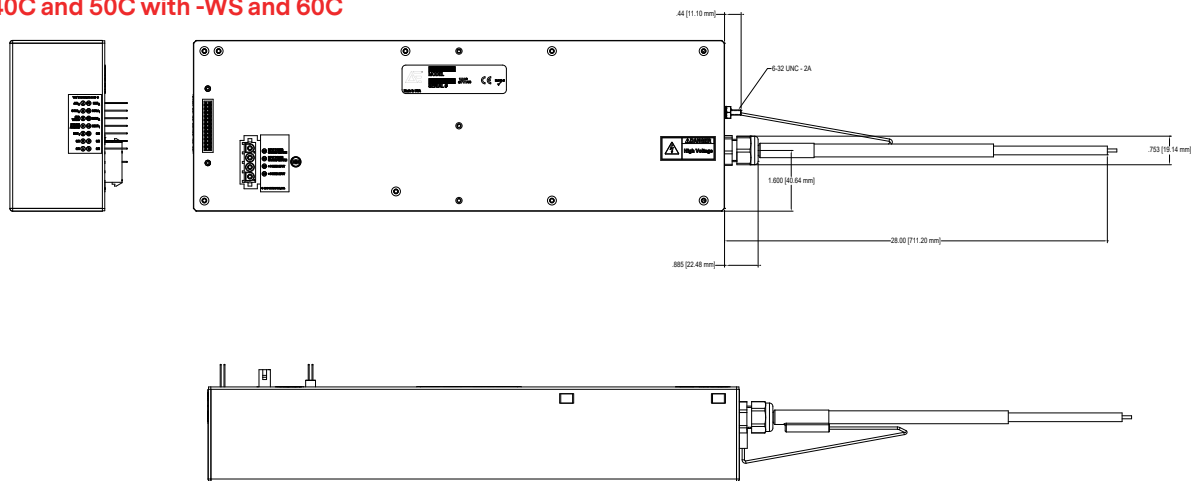
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MECHANICAL SPECIFICATIONS - 40C TO 60C

40C and 50C



40C and 50C with -WS and 60C



Volumes and Weights	All Models	
Volume (Module body only)	cm ³	in ³
	2621.9	160.0
Weight (Standard Configuration)	g	oz
	4536	160.0

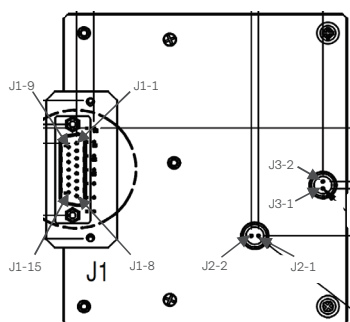
INTERFACE - 1/8C TO 6C

Connections — 60 W and 125 W Units		
Pin	Function: Standard	Function: I5 or I10 option
1 and 8	Input Power Ground Return	Input Power Ground Return
2 and 9	Positive DC power input	Positive DC power input
3	Iout Monitor	Buffered Current Monitor (3mA max)
4	Enable/Disable	Enable/Disable
5	Signal Ground	Signal Ground
6	Voltage Programming	Voltage Programming
7	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	N/C
11	N/C	Current Mode Indicator
12	N/C	Voltage Mode Indicator
13	N/C	Current Programming
14	Output Voltage Monitor	Buffered Voltage Monitor (3mA max)
15 and 16	HV Ground Return	HV Ground Return
17 and 18	HV Output	HV Output

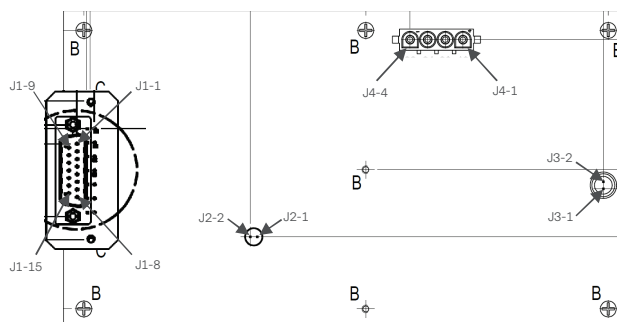
Connections — 250 W Units		
Pin	Function: Standard	Function: I5 or I10 option
1 and 8	N/C	N/C
2 and 9	N/C	N/C
3	Iout Monitor	Buffered Current Monitor (3 mA max)
4	Enable/Disable	Enable/Disable
5	Signal Ground	Signal Ground
6	Voltage Programming	Voltage Programming
7	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	N/C
11	N/C	Current Mode Indicator
12	N/C	Voltage Mode Indicator
13	N/C	Current Programming
14	Output Voltage Monitor	Buffered Voltage Monitor (3 mA max)
15 and 16	HV Ground Return	HV Ground Return
17 and 18	HV Output	HV Output
19 and 20	Positive DC Power Input	Positive DC Power Input
21 and 22	Input Power Ground Return	Input Power Ground Return

INTERFACE - 1/8C TO 6C (CONTINUED)

Connections — For -DA or -DAR Suffix		
Pin	Function: Standard	Function: I5 or I10 option
J1 - 1 and 2	Input Positive for 60 W & 125 W model (N/C for 250 W model)	Input Positive for 60 W & 125 W model (N/C for 250 W model)
J1 - 3 and 9	Signal Ground for 250 W model	Signal Ground for 250 W model
J1 - 4	N/C	Voltage Mode Indicator
J1 - 5	Output Voltage Monitor	Output Voltage Monitor
J1 - 6	Output Voltage Programming	Output Voltage Programming
J1 - 7	N/C	N/C
J1 - 8	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
J1 - 10	N/C	Current Mode Indicator
J1 - 11	N/C	Output Current Programming
J1 - 12	Output Current Monitor	Output Current Monitor
J1 - 13	Enable/Disable	Enable/Disable
J1 - 14 and 15	Input Return for 60 W & 125 W model (N/C for 250 W model)	Input Return for 60 W & 125 W model (N/C for 250 W model)
J2 - 1 and 2	HV Return	HV Return
J3 - 1 and 2	HV Output	HV Output
J4 - 1 and 2	Input Return for 250 W model (N/C for 60 W & 125 W model)	Input Return for 250 W model (N/C for 60 W & 125 W model)
J4 - 3 and 4	Input Positive for 250 W model (N/C for 60 W & 125 W model)	Input Positive for 250 W model (N/C for 60 W & 125 W model)



60W & 125W model -DA suffix



250W model -DA suffix

HIGH POWER C SERIES

INTERFACE - 8C TO 30C

Connections — 60 W and 125 W Units

Pin	Function: Standard	Function: I5 or I10 option
1 and 8	Input Power Ground Return	Input Power Ground Return
2 and 9	Positive DC power input	Positive DC power input
3	Iout Monitor	Buffered Current Monitor (3mA max)
4	Enable/Disable	Enable/Disable
5	Signal Ground	Signal Ground
6	Voltage Programming	Voltage Programming
7	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	N/C
11	N/C	Current Mode Indicator
12	N/C	Voltage Mode Indicator
13	N/C	Current Programming
14	Output Voltage Monitor	Buffered Voltage Monitor (3mA max)
15 and 16	HV Ground Return	HV Ground Return
LGH1 (8C to 15C); LGH3 (20C to 30C) ^{1,2}	HV Output	HV Output

¹ LGH1 type connector requires cable CA-20KV-1000 to operate. (Sold Separately)

² LGH3 type connector requires cable CA-40KV-1007 to operate. (Sold Separately)

Connections — 250 W Units

Pin	Function: Standard	Function: I5 or I10 option
1 and 8	N/C	N/C
2 and 9	N/C	N/C
3	Iout Monitor	Buffered Current Monitor (3 mA max)
4	Enable/Disable	Enable/Disable
5	Signal Ground	Signal Ground
6	Voltage Programming	Voltage Programming
7	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	N/C
11	N/C	Current Mode Indicator
12	N/C	Voltage Mode Indicator
13	N/C	Current Programming
14	Output Voltage Monitor	Buffered Voltage Monitor (3 mA max)
15 and 16	HV Ground Return	HV Ground Return
19 and 20	Positive DC Power Input	Positive DC Power Input
21 and 22	Input Power Ground Return	Input Power Ground Return
LGH3 (8C to 30C) ¹	HV Output	HV Output

¹ LGH3 type connector requires cable CA-40KV-1007 to operate. (Sold Separately)

INTERFACE - 8C TO 30C (CONTINUED)

Connections — For -DA or -DAR Suffix		
Pin	Function: Standard	Function: I5 or I10 option
J1 - 1 and 2	Input Positive for 60 W & 125 W model (N/C for 250 W model)	Input Positive for 60 W & 125 W model (N/C for 250 W model)
J1 - 3 and 9	Signal Ground for 250 W model	Signal Ground for 250 W model
J1 - 4	N/C	Voltage Mode Indicator
J1 - 5	Output Voltage Monitor	Output Voltage Monitor
J1 - 6	Output Voltage Programming	Output Voltage Programming
J1 - 7	N/C	N/C
J1 - 8	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
J1 - 10	N/C	Current Mode Indicator
J1 - 11	N/C	Output Current Programming
J1 - 12	Output Current Monitor	Output Current Monitor
J1 - 13	Enable/Disable	Enable/Disable
J1 - 14 and 15	Input Return for 60 W & 125 W model (N/C for 250 W model)	Input Return for 60 W & 125 W model (N/C for 250 W model)
J2 - 1 and 2	HV Return	HV Return
J3 - 1 and 2	HV Output	HV Output
J4 - 1 and 2	Input Return for 250 W model (N/C for 60 W & 125 W model)	Input Return for 250 W model (N/C for 60 W & 125 W model)
J4 - 3 and 4	Input Positive for 250 W model (N/C for 60 W & 125 W model)	Input Positive for 250 W model (N/C for 60 W & 125 W model)

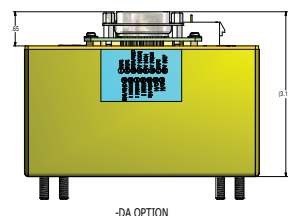
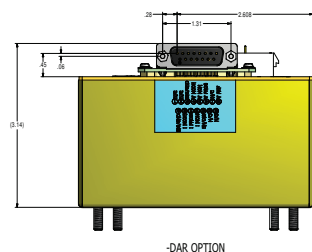
HIGH POWER C SERIES

INTERFACE - 40C TO 60C

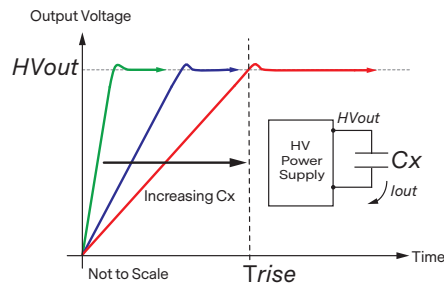
Connections		
Pin	Function: Standard	Function: I5 or I10 option
1 and 8	N/C	N/C
2 and 9	N/C	N/C
3	Iout Monitor	Buffered Current Monitor (5 mA max)
4	Enable/Disable	Enable/Disable
5	Signal Ground	Signal Ground
6	Voltage Programming	Voltage Programming
7	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	N/C or Arc Detection Option
11	N/C	Current Mode Indicator
12	N/C	Voltage Mode Indicator
13	N/C	Current Programming
14	Output Voltage Monitor	Buffered Voltage Monitor (5 mA max)
15 and 16	HV Ground Return	HV Ground Return
19 and 20	Positive DC Power Input	Positive DC Power Input
21 and 22	Input Power Ground Return	Input Power Ground Return
LGH3 (40, 50 kV) ¹	HV Output	HV Output
28" Coaxial Flying Lead (60 kV)	HV Output	HV Output

¹ 40 and 50 kV units require mating cable CA-50kV-1000

D Sub Connections — For -DA or -DAR Suffix		
Pin	Function: Standard	Function: I5 or I10 option
1 and 2	N/C	N/C
3 and 9	Signal Ground	Signal Ground
4	N/C	Voltage Mode Indicator
5	Output Voltage Monitor	Output Voltage Monitor
6	Output Voltage Programming	Output Voltage Programming
7	N/C	N/C
8	+5 VDC Reference Output	+5 VDC (-I5) or +10 VDC (I10) Reference Output
10	N/C	Current Mode Indicator
11	N/C	Output Current Programming
12	Output Current Monitor	Output Current Monitor
13	Enable/Disable	Enable/Disable
14 and 15	N/C	N/C



RISE TIME / CAPACITOR CHARGING



$$Trise = \frac{(Co + Cx) \times HVout}{Iout}$$

$$Iout = (Co + Cx) \times HVout \times freq$$

$$Pout = \frac{(Co + Cx) \times (HVout)^2}{2 \times Trise}$$

Trise = Rise time (Seconds)

Co = Internal storage capacitance (Farads)

Cx = External capacitive load (Farads)

freq = Switching frequency (Hz)

HVout = Output voltage (VDC)

Iout = Output current (Amps)

Pout = Output power (Watts)

STANDARD OPTIONS

The High Power C series can be configured with options that adapt its performance and packaging to many application requirements. Customized models to meet specialized voltage ranges, packaging and environmental needs are also available. For a complete list of available options, contact factory.

Option	Description
-I5	Upgrades analog interface to provide more precise control and monitoring of both HVout and Iout using 0 to 5 VDC (full scale) signals. Also adds Iout control and voltage/current mode indication capability not available on the Standard Interface. Not available with -I10 option.
-I10	Upgrades analog interface to provide more precise control and monitoring of both HVout and Iout using 0 to 10 VDC (full scale) signals. Also adds Iout control and voltage/current mode indication capability not available on the Standard Interface. Not available with -I5 option.
-H	Mounts a heatsink onto the case bottom to assist in convective heat dissipation.
-DA	Replaces header with D-sub connector (Type DA-15, Male). Not available with -DAR or -Z11 option.
-DAR	Replaces header with right-angle D-sub connector (Type DA-15, Male). Not available with -DA or -Z11 option.
-Y11	Replaces Amp 4 pin power connector with Molex 4 pin connector (.045" Sq pins, .156" spacing).
-Z11	Permits PCB mounting by adding seven 4.8 mm (0.188 in) x #4-40 threaded standoffs to the case top. Not available with -DA or -DAR option.
-AD*	Arc detection option (Only available with -I5 or -I10 interface)
-AQ*	Arc quench option (Only available with -I5 or -I10 interface) (includes -AD)

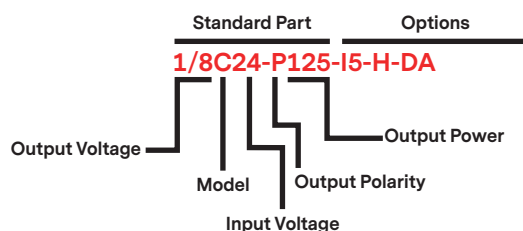
* Available only for the models 40C to 60C.

ORDERING INFORMATION

Type	0 to 125 VDC Output	1/8C
	0 to 250 VDC Output	1/4C
	0 to 500VDC Output	1/2C
	0 to 1000 VDC Output	1C
	0 to 2000 VDC Output	2C
	0 to 4000 VDC Output	4C
	0 to 6000 VDC Output	6C
	0 to 8000 VDC Output	8C
	0 to 10,000 VDC Output	10C
	0 to 12,000 VDC Output	12C
	0 to 15,000 VDC Output	15C
	0 to 20,000 VDC Output	20C
	0 to 25,000 VDC Output	25C
	0 to 30,000 VDC Output	30C
	0 to 40,000 VDC Output	40C
	0 to 50,000 VDC Output	50C
	0 to 60,000 VDC Output	60C
Input	24 VDC Nominal	24
Polarity	Positive Output	-P
	Negative Output	-N
Power	60 W Output	60
	125 W Output	125
	250 W Output	250
Heatsink	1.02 cm (0.400") high (sized to fit case)	-H
PCB Support	(6) 0.47 cm (0.187") standoffs on top of cover	-Z11
Enhanced Interface	5 V Control and Monitors	-I5
	10 V Control and Monitors	-I10
Performance Options	Arc Detect*	-AD
	Arc Quench*	-AQ
Connection Options	Straight 15-Pin D-sub connector (Type DA-15Male)	-DA
	Right-angle 15-Pin D-sub connector (Type DA-15Male)	-DAR

* Available only with I5 or I10 options. Available only for the models 40C to 60C.

* -DA and -DAR not available with a -Z11 option





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ABOUT ADVANCED ENERGY

Since 1981, Advanced Energy (AE) has perfected how power performs for its customers. For both end users and OEMs, AE's comprehensive portfolio of standard and custom high-voltage components precisely match system specifications to deliver unparalleled energy, quality, and performance. Through close customer collaboration, design expertise, application insight, and world-class support, AE creates successful partnerships and enables customers to push the boundaries of innovation and stay ahead of evolving market needs.

PRECISION | POWER | PERFORMANCE | TRUST



CAUTION:
High Voltage

Read and understand all documentation before you install, operate, or maintain Advanced Energy high voltage power supplies. Follow all safety instructions and precautions to protect against property damage and serious or possibly fatal bodily injury. Never defeat safety interlocks or grounds.

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