



ULTRAVOLT® -I5 AND -I10 OPTIONS
ENHANCED INTERFACE OPTIONS





Simplifying
the interface
to an UltraVolt[®]
high voltage
power supply



The -I5 and -I10 enhanced interface options further standardize and simplify the process of interfacing control electronics, both analog and digital, to an UltraVolt® high voltage power supply. The interface features fixed ranges of calibrated control voltages and buffered monitor signals, eliminating the need for external scaling resistors or op-amps to achieve standard control ranges. Therefore, output control is always 0 to +5 VDC (-I5) or 0 to +10 VDC (-I10) for 0 to full scale output of positive or negative models. Likewise, output monitors are always 0 to +5 VDC (-I5) or 0 to +10 VDC (-I10) for 0 to full scale output. The current monitor is nulled to eliminate currents related to HV regulation and monitoring circuits. In conjunction with features such as constant current programming and constant voltage/constant current auto crossover (CV/CC), critical applications can be supported without additional circuitry.



Features

- › Buffered, low-output impedance and nulled current monitor
- › Buffered, low-output impedance voltage monitor
- › Programming and monitoring accuracy of $\pm 1\%$ full scale
- › 0 to +5 V or 0 to +10 V remote programming for all polarities
- › 0 to +5 V or 0 to +10 V remote programming for all modes
- › +5 V or +10 V reference, $\pm 0.1\%$, 5 ppm/ $^{\circ}\text{C}$
- › Constant voltage/constant current (CVCC) auto crossover
- › Current and voltage mode indicators

Typical Applications

- › Bias supplies
- › Detectors
- › Piezos
- › Amplifiers
- › Photo multiplier tubes (PMT)
- › Laser
- › Cap-charging
- › Pulsed power
- › Pulse generators
- › Test equipment
- › High pot testers
- › Automated test equipment (ATE)
- › Electrostatic precipitators

Digital-ready analog is a higher-performance, fully featured analog interface for precision-power applications that directly connects to DACs and ADCs.

The -I5 option and -I10 option are available on AA Series, A Series, 10A Series modules, and F option. Either option fits within the standard package size of the modules. On the AA Series and 10A Series models, a double row header replaces the single row of pins.

For additional information on interfacing with the -I5 option and -I10 option, please review the -I5/-I10 Options Technical Note.

PARAMETER	CONDITIONS	MODELS		UNITS
Output		-I5	-I10 (24 Vin ONLY)	
Voltage Monitor Scale Factor	0 to output voltage	0 to +5 ±1% full scale	0 to +10 ±1% full scale	VDC
Current Monitor Scale Factor	0 to output current	0 to +5 ±1% full scale	0 to +10 ±1% full scale	VDC
Programming and Controls		All Types		
Input Impedance	Nominal input	10 MΩ to ground	10 MΩ to ground	-
Adjust Resistance	Typical potentiometer values	10 to 100 K (potentiometer across Vref. and signal ground, wiper to adjust)		Ω
Adjust Logic	0 to 100% of output	0 to +5 ±1% full scale	0 to +10 ±1% full scale	VDC
Reference Voltage	T = +25°C	+5 ±0.1%	+10 ±0.1%	VDC
Enable/Disable (ON/OFF)		0 to +0.5 disable, +2.4 to 32 enable (default open circuit = disabled)		VDC
Current Mode Indicator		Open drain indicator, active (pulled low) when unit is in current regulation, 100 mA max current sink		-
Voltage Mode Indicator		Open drain indicator, active (pulled low) when unit is in voltage regulation, 100 mA max current sink		-
Output Voltage Offset		±0.2% of max Vout		-

Note: All other specifications are in accordance with the specific model base datasheet. Specifications are subject to change without notice.

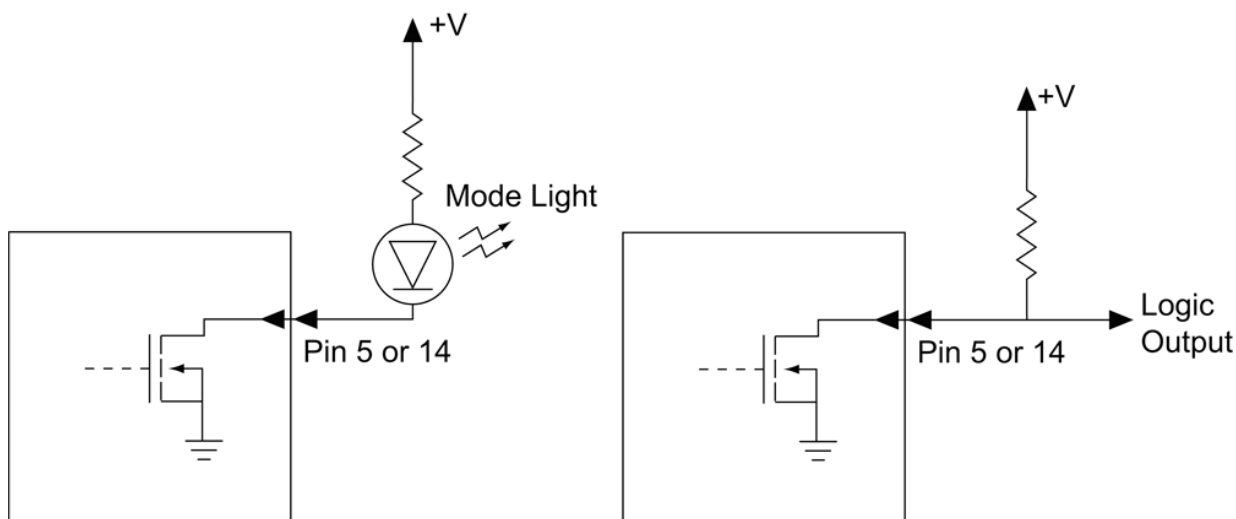
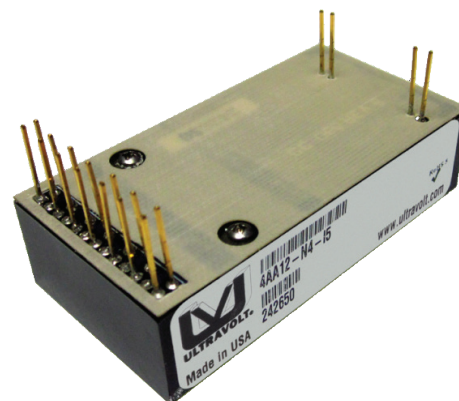
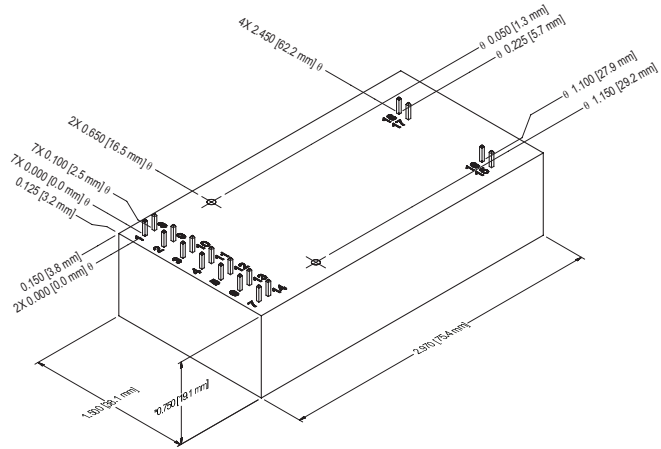


Figure 1: Typical mode indicator on the -I5 option and -I10 option



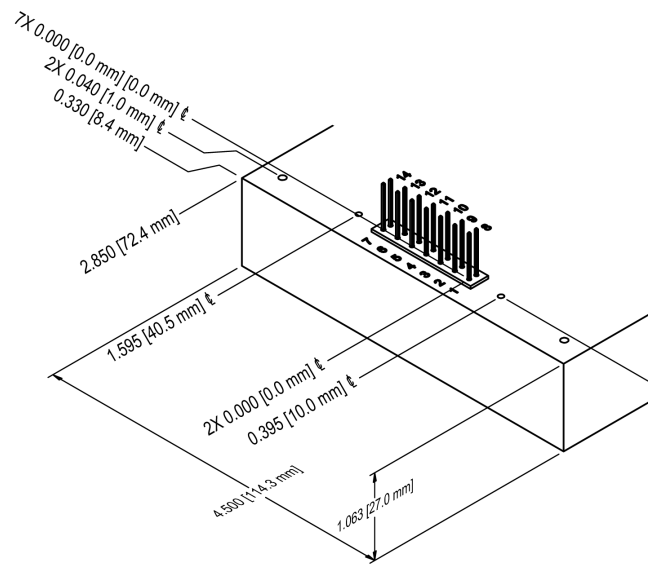


15/I10 ON AA SERIES AND 10A SERIES

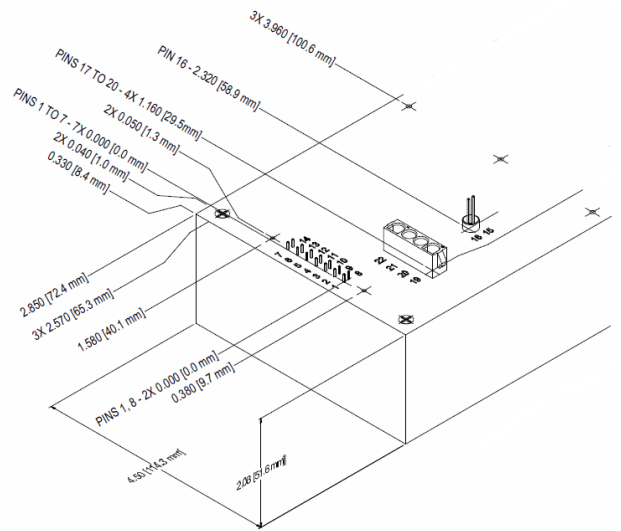


Downloadable drawings (complete with mounting and pin information) and 3D models are available online.

15/I10 ON HIGH-POWER C SERIES



15/I10 ON 250 W 8 C-30 C SERIES



CONNECTIONS

Pin	Function
1	POWER GROUND
2	INPUT POWER
3	BUFFERED CURRENT MONITOR (5 mA max)
4	ENABLE (ON/OFF)
5	SIGNAL GROUND
6	VOLTAGE PROGRAMMING
7	REFERENCE VOLTAGE (5 mA max sourcing)
8	POWER GROUND
9	INPUT POWER
10	N/C
11	CURRENT MODE INDICATOR
12	VOLTAGE MODE INDICATOR
13	CURRENT PROGRAMMING
14	BUFFERED VOLTAGE MONITOR (5 mA max)
15 and 16	HV GROUND RETURN
17 and 18	HV OUTPUT

Note: Pins 17 and 18 are used only in units with $V_{out\ max} < 6\ kV$. In units with $V_{out} > 6\ kV$, the HV output is via flying lead or LGH connectors. For units with 250 W output power (all voltages) and 40 kV to 60 kV units 60 W and 125 W, pins 1, 2 and pins 8, 9 are not used for the input power connections.

These units use a separate input power connector, input power pins 19, 20, and power ground pins 20, 21.

ORDERING INFORMATION

5 V Control and Monitors	-15
10 V Control and Monitors (24 Vin only)	-110

The -15 option and -110 option are compatible with all standard module options.

Example: **1AA24-P20-110**

└ Option (enhanced interface)



RoHS COMPLIANT Non-RoHS compliant units are available. Please contact the factory for more information.



For international contact information, visit
advanced-energy.com.