

Appendix A: Accessory Connector Pinouts and Functions

Pin #	Function	Description	Signal Type	Level when Asserted	Level when Deasserted	Notes	Applications
1	Amplifier Output (Fused)	Used for driving slave amplifiers in Series mode	AC or DC	Can be greater than $\pm 200V$ peak	0V	Used for driving slave amplifiers in multi-amp systems. Wired to amplifier output. Do not connect to any impedance of less than 10K ohm. NOTE: Output is fused.	Multi-amplifier Series Slave Output: Connect to the Series Slave In + (Pin 44) when used in Multi-amplifier Series Mode.
2	Amplifier Output (Fused)	Used for monitoring amplifier output voltage	AC or DC	Can be greater than $\pm 200V$ peak	0V	Used for monitoring amplifier output voltage. Do not connect to any impedance of less than 10K ohm. NOTE: Output is fused.	Voltage Monitoring: Connect a voltage meter to monitor the output voltage being produced by the amplifier. Connect across PIN 2 (Amp Out) and PIN 22, 23 or 24 (Analog Ground).
3	None	No Connection					
4	Parallel Master Out 1+	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
5	Parallel Master Out 1-	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
6	Parallel Master Out 2+	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
7	Parallel Master Out 2-	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
8	Parallel Master Out 3+	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
9	Parallel Master Out 3-	Differential Input from Parallel Master Output Signal	AC or DC	$\pm 15V$ peak	0V	Used in multiple amplifier configurations in Parallel Mode.	Multi-amplifier Parallel Mode: Parallel Systems Simultaneous Line Level Output from the Master Amplifier.
10	None	No Connection	DC				
11	None	No Connection					
12	Current Limit bit 0 (4A)	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Current Limit
13	Current Limit bit 1 (8A)	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Current Limit

Pin #	Function	Description	Signal Type	Level when Asserted	Level when Deasserted	Notes	Applications
14	Current Limit bit 2 (16A)	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Current Limit
15	Current Limit bit 3 (32A)	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Current Limit
16	None	No Connection					
17	None	No Connection					
18	Control Mode Volt/Current	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to switch between Control Voltage (Default) and Control Current modes (Asserted).
19	None	No Connection					
20	Interlock Ground	Interlock common	DC	0V	0V	The Slave Interlocks are referenced to the Master Interlock Ground.	Multi-amplifier: Used with Interlock (Pin 21) and Interlock 15V (pin 42). Connect all amplifier Interlock Grounds together.
21	Interlock	Amplifier Interlock Input	DC	0V (Interlock Ground)	Open	When "low" (tied to Interlock Ground, Pin 20), forces the amplifier to Standby; when allowed to float, allows Run (if amplifier is "Ready"). IMPORTANT: amplifiers must be configured for Run mode at startup (factory default) or the Run button must be pressed at the amplifier front panel at startup.	Remote to Standby: Short Pin 21 to Interlock Ground (Pin 20) using dry contact or optocoupler. When closed, places amplifier in Standby. Multi-amplifier: To simultaneous Enable or Disable amplifiers, daisy chain Interlock (Pin 21) across multiple amplifiers.
22	Analog Ground	Amp Analog Ground	DC	0V	0V	Amplifier Analog Ground.	Used in status reporting applications. See Voltage Monitor (PIN 2), Run (PIN 46), OverVoltage (PIN 47), OverLoad (PIN 48), OverTemp (PIN 49) and Amp Fault (PIN 50).
23	Analog Ground	Amp Analog Ground	DC	0V	0V	Amplifier Analog Ground.	Used in status reporting applications. See Voltage Monitor (PIN 2), Run (PIN 46), OverVoltage (PIN 47), OverLoad (PIN 48), OverTemp (PIN 49) and Amp Fault (PIN 50).
24	Analog Ground	Amp Analog Ground	DC	0V	0V	Amplifier Analog Ground.	Used in status reporting applications. See Voltage Monitor (PIN 2), Run (PIN 46), OverVoltage (PIN 47), OverLoad (PIN 48), OverTemp (PIN 49) and Amp Fault (PIN 50).
25	Parallel Slave In +	Differential Parallel Slave Input	AC or DC	±15V peak	0V	Only used in multi-amplifier configurations - Parallel Mode	Multi-amplifier: Connects to the Master amplifier Parallel Out 1+, 2+, or 3+.
26	Parallel Slave In -	Differential Parallel Slave Input	AC or DC	±15V peak	0V	Only used in multi-amplifier configurations - Parallel Mode	Multi-amplifier: Connects to the Master amplifier Parallel Out 1-, 2-, or 3-.
27	None	No Connection					

Pin #	Function	Description	Signal Type	Level when Asserted	Level when Deasserted	Notes	Applications
28	Gain 20:1/6:1	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Gain to 6:1. Default is 20:1. When Asserted, the Gain will be set to 6:1.
29	Unit ID Output	The amplifier model ID via voltage level.	DC	7228: 4V		The Unit ID is based on a voltage divider circuit between 0 to 15V.	Identifies which model the amplifier is.
30	+24V Output (Fused)	+24V DC Output	DC			+24 V DC, 30 mA max, referenced to Analog Ground (PINS 22, 23, and 24). Actual output is between 21V and 24V. Output is fused.	Used in status reporting applications. See Run (PIN 46), OverVoltage (PIN 47), OverLoad (PIN 48), Over-Temp (PIN 49) and Amp Fault (PIN 50).
31	-24V Output (Fused)	-24V DC Output	DC			-24V DC, 30 mA max, referenced to Analog Ground (PINS 22, 23, and 24). Actual output is between -21V and -24V. Output is fused.	Option for customer to power the negative rail for an op-amp.
32	None	No Connection					
33	None	No Connection					
34	DC Servo Off/ On	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the DC Servo. Default is Off. When Asserted, the DC Servo is On.
35	Temp Signal Out	Compares +TEMP to -TEMP and reports higher value	DC	2.93V to 3.73V (20°C to 100°C)		Voltage observed at Temp Signal Out reported in degrees Kelvin (1V = 100°K). Convert to Fahrenheit (°F = 1.8 x (°K - 273) + 32); Convert to Celsius (°C = °K - 273).	Remote Reporting of Temperature Level: Connect a voltage meter to monitor the output voltage being produced by the amplifier. Connect across PIN 35 (Temp Signal Out) and PIN 22, 23 or 24 (Analog Ground).
36	None	No Connection					
37	Power Supply Rail Mode - HV/HC	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Power Supply Rail Mode between High Voltage (Default) and High Current (Asserted).
38	Manual Bi-level Mode - Low/High	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Manual Bi-Level Mode between Low (Default) and High (Asserted). Pin 39 needs to be asserted for this function to operate.
39	Bi-level Mode - Auto/Manual	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Bi-Level Mode between Auto (Default) and Manual (Asserted).
40	Input Coupling DC/AC	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Input Coupling between DC (Default) and AC (Asserted).
41	None	No Connection					

Pin #	Function	Description	Signal Type	Level when Asserted	Level when Deasserted	Notes	Applications
42	Interlock +15V Power (Fused)	+15V DC supply for the Slave Interlocks.	DC	0V	0V	The Master Interlock supplies +15V DC to the Slave Interlock circuits. This supply is fused.	Multi-amplifier: Used with Interlock (Pin 21) and Interlock Ground (pin 20). Connect all amplifier Interlock +15V pins together.
43	Series Slave In -	Differential Slave Input	AC or DC	Can be greater than $\pm 200V$ peak	0V	Used in multiple amplifier configurations in Series Mode.	Multi-amplifier: Connect to Analog Ground (Pin 22, 23, or 24) when the amplifier is in Slave Mode.
44	Series Slave In +	Differential Slave Input	AC or DC	Can be greater than $\pm 200V$ peak	0V	Used in multiple amplifier configurations in Series Mode.	Multi-amplifier: Connect to Amplifier Output (Pin 1) when the amplifier is in Slave Mode.
45	None	No Connection					
46	Run Status	Amplifier Run Output	DC	15V	0V	When the amplifier is in a Run state, the level is asserted and the output is tied to 15V through a 2k ohm resistor. When the amplifier is in Standby, the output level is at 0V (Analog Ground). The output is limited to 7 mA. Reference is to the Analog Ground (Pin 22, 23, or 24).	Remote Signal of Run Condition: Output indicates a Run State.
47	OverVoltage Output	OverVoltage Output (High AC line voltage)	DC	15V	0V	When the amplifier is in an OverVoltage state, the level is asserted and the output is tied to 15V through a 2k ohm resistor. When the amplifier is in normal operation, the output level is at 0V (Analog Ground). The output is limited to 7 mA. Reference is to the Analog Ground (Pin 22, 23, or 24).	Remote Signal of OverVoltage Condition: Output indicates if an OverVoltage condition exists.
48	OverLoad Output	OverLoad Output (Amplifier is clipping)	DC	15V	0V	When the amplifier is in an OverLoad state, the level is asserted and the output is tied to 15V through a 2k ohm resistor. When the amplifier is in normal operation, the output level is at 0V (Analog Ground). The output is limited to 7 mA. Reference is to the Analog Ground (Pin 22, 23, or 24).	Remote Signal of OverLoad Condition: Output indicates if an OverLoad condition exists.
49	Over Temp Output	Over Temperature Output	DC	15V	0V	When the amplifier is in an Over Temperature state, the level is asserted and the output is tied to 15V through a 2k ohm resistor. When the amplifier is in normal operation, the output level is at 0V (Analog Ground). The output is limited to 7 mA. Reference is to the Analog Ground (Pin 22, 23, or 24).	Remote Signal of Over Temp Condition: Output indicates if an Over Temp condition exists.

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50	Amp Fault Output	Indicates a fault condition	DC	15V	0V	When the amplifier is in a Fault state, the level is asserted and the output is tied to 15V through a 2k ohm resistor. When the amplifier is in normal operation, the output level is at 0V (Analog Ground). The output is limited to 7 mA. Reference is to the Analog Ground (Pin 22, 23, or 24).	Remote Signal of Amplifier Fault Condition: Output indicates if a fault condition exists.
51	I MON - Output	Differential Current Monitor -	AC or DC	5A/V		Inverted I MON+ (Pin 52). Output current produced when voltage is detected.	Current Monitoring: Connect a voltage meter to monitor the output current being produced by the amplifier. For each 1V detected, current output is 5A when referenced to Analog Ground (Pin 22, 23, or 24). For each 1V detected, the current output is 2.5A when referenced differentially with I MON + (Pin 52).
52	I MON + Output	Differential Current Monitor +	AC or DC	5A/V		Output current produced when voltage is detected.	Current Monitoring: Connect a voltage meter to monitor the output current being produced by the amplifier. For each 1V detected, current output is 5A when referenced to Analog Ground (Pin 22, 23, or 24). For each 1V detected, the current output is 2.5A when referenced differentially with I MON - (Pin 51).
53	None	No Connection					
54	Input Signal Unbal/Bal	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Input Signal between Unbalanced (Default) or Balanced (Asserted).
55	Parallel Matching Off/On	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Parallel Matching between Off (Default) and On (Asserted).
56	Signal Ground Connected/Lifted (2.7 ohm)	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Signal Ground as connected (Default) or Lifted (Asserted).
57	Parallel Mode Master/Slave	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Parallel Matching between Master (Default) and Slave (Asserted). When in Slave Mode, the amplifier receives its input from Parallel Slave IN+ (Pin 25) and Parallel Slave IN- (Pin 26)
58	Series Mode Master/Slave	Same function as DIP Switch of same name	DC	5V to 15V	0V	The DIP switch needs to be in the UP position for this input to function. Reference Isolation Ground (Pin 62).	Remote Control: Remote control to set the Series Mode of the amplifier as Master (Default) or Slave (Asserted). When in Slave Mode, the amplifier receives its input from Series Slave In + (Pin 44) and Series Slave In - (Pin 43).
59	Blanking On/Off Input	Blanking Control	DC	5V to 15V	0V	Used for the Blanking Feature. Reference is to the Isolation Ground (Pin 62).	Blanking Control: Normal amplifier operation when deasserted. Amplifier output is muted when asserted.

Pin #	Function	Description	Signal Type	Level when Asserted	Level when Deasserted	Notes	Applications	
60	Amp Reset Input	Reset	DC	5V to 15V	0V	Used to Reset the amplifier.	Reset from Standby: When asserted for at least 100 milliseconds, will return the amplifier to Ready/Run condition after Overload.	
61	Amp Enable Input	Enable	DC	5V to 15V	0V	Used to Enable amplifier from standby.	Amplifier Enable: When asserted for at least 100 milliseconds, Enables the amplifier from standby.	
62	Isolated Ground	Isolated Ground	DC	0V	0V	Attach the ground from the power supply when used for Blanking, Amp Reset, Amp Enable, and/or DIP Switch Functions to this pin.	Ground reference for use with Blanking, Amp Reset, and Amp Enable signals and DIP Switch pins.	
Blue shaded areas indicate used only in multi-amplifier systems.				Green shaded areas indicate DIP switch equivalent.			Gray shaded areas indicate pin not used / feature not implemented.	