SIM : Interlock I/O Connector Pinouts and Functions

Pin #	Function	Description	Type	Level Asserted	Level Deasserted	Notes	Applications
1	Amplifier Output	Used for driving slave amplifiers, monitoring amplifier output voltage	AC or DC	Can be greater than ±200V peak	0V	Used for monitoring amplifier output voltage; driving slave amplifiers in multi-amp systems. Wired to amplifier output. Do not connect to any impedance of less than 10K ohm.	**Voltage Monitoring:** Connect a voltage meter to monitor the output voltage being produced by the amplifier. Connect across PIN 1 (Amp Out) and PIN 10 (Sampled Common).
2	Sampled Common	Load connected here for Current sense	AC or DC	Up to 5V peak	0V	Used for driving slave amplifiers in multi-amp systems, controlled voltage or controlled current mode.	**Driving Slave Amplifiers:** Amplifier External Reference, 5V peak maximum from PIN 14 (Common).
3	+1 IN	Differential Slave input	AC or DC	Can be greater than ±200V peak	0V	Only used in multiple amplifier configurations - Series mode.	Can accept output of PIN 1 (Amplifier Output) OR PIN 2 (Sampled Common) from Master device when in Slave mode.
4	Interlock	Amplifier Interlock input	DC	0V to 8V	10V to 15V	When asserted, forces to Standby; when deasserted, allows Run. IMPORTANT: amplifiers must be configured for Ready mode at startup (factory default) or the Run button must be pressed at the amplifier front panel at startup.	**Multi-amplifier Systems Simultaneous Remote to Standby:** Short PIN 4 of Master amplifier to Digital Ground (PIN 17) using dry contact switch or optocoupler. Switch can be used for multi-amps paralleled; must use optocoupler for multi-amps in series. Multiple amplifiers (sharing the same sampled common power connections) can be simultaneously forced to Standby by daisy-chaining Interlock (PIN 4) across amps. When closed, places amplifiers simultaneously in Standby.
5	Amp Ready	Ready output of amplifier	DC	0V	–14V	Normally reserved for OPTOC use; do not recommend for normal customer use. Line has series resistor and unloaded will go from 0V (not ready) to -15V (ready), with an OPTOC BNC card the siganl will go from 0V (not ready) to -1.2Vdc (ready)	**Not recommended for normal customer use.**
6	I MON +	Differential Current Monitor +	AC or DC	**7212/7224:** 5A/V **7548/7796:** 20A/V		Output current produced per voltage detect.	**Current Monitoring:** Connect a voltage meter to monitor the output current being produced by the amplifier. For unbalanced, for each 1V detected, current output is 5A (7212/7224) or 20A (7548/7796).
7	I SUM1+	Multiple Amplifier Summing, Amplifier 1	AC or DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode.	**Not currently used.**
8	I SUM2+	Multiple Amplifier Summing, Amplifier 2	AC or DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode.	**Not currently used.**
9	I SUM3+	Multiple Amplifier Summing, Amplifier 3	AC or DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode.	**Not currently used.**
10	Sampled Common	Amp Analog Ground				Amplifier External Reference.	Used in status reporting applications. See OverTemp (PIN 11), Run (PIN 12), Overload (PIN 23), and OverVoltage (PIN 24).

11	OverTemp Out	Over-temperature output	DC	–24V	0V	When amp is normal, this pin is pulled to –24V through a 47.5K-ohm resistor; when amp is in OverTemp state, transistor Q37 turns on and sources chassis ground as an output. Do not exceed 20 milliamps.	**Remote Signal of Over-Temperature Condition:** LED, when lit, signals Over Temperature condition. Use a 6 mA series resistor of 4.02K-ohm for LED or OPTO, tie to –24V source (PIN 16).
12	Run	Amplifier Run output	DC	–24V	0V	When amp is in Standby mode, this pin is pulled to –24V through a 10-ohm resistor in series with two solid-state relays; when amp is in Run mode, transistor Q34 turns on and sources chassis ground as an output, energizing Mains Relays. VOUT is typically –0.03V dc. Do not apply load to ground as this could enable Relays.	**Remote Signal of Run Condition:** LED, when lit, signals Run state. Use a 6mA series resistor of 4.02K-ohm for LED or OPTO, tie to –24V source (PIN 16).
13	–24V	–24V Power Output	DC			–24V dc, 30 mA	Internally tied for use in status reporting applications. See OverTemp (PIN 11), Run (PIN 12), Overload (PIN 23), and OverVoltage (PIN 24).
14	Common	Ground before Sense Resistors				This can be used as an amp internal reference but if a load is attached to this pin, current cannot be sensed on that amplifier.	Possibly series amplifiers will not need current reporting on the High side amp, since its current will be same as Master.
15	–1 IN	Differential Slave Input	AC or DC	Up to 200V peak	0V	Only used in multiple amplifier configurations, Series mode.	Can accept output of PIN 1 (Amplifier Output) OR PIN 2 (Sampled Common) from Master device when in Slave mode.
16	+24V	+24V Power Output	DC			+24V dc, 30 mA.	Used in status reporting applications. See OverTemp (PIN 11), Run (PIN 12), Overload (PIN 23), and OverVoltage (PIN 24).
17	Digital Ground	Digital circuitry ground - Interlock Common	DC	0V	0V	Used with PIN 25 (Reset) for Remote Reset from Standby or Stop after Error. Used with PIN 4 (Interlock) for simultaneous remote to Standby of all amps in a multi-amplifier system.	Used with PIN 25 for Remote Reset after error. Used with PIN 4 for Remote to Standby in multiple amplifier systems.
18	Spare	No function					Currently not used.
19	I MON –	Differential Current Monitor –	AC or DC	**7212/7224:** 5A/V **7548/7796:** 20A/V		Inverted I MON+ (PIN 6). Output current produced per voltage detect.	Current Monitoring: Connect a voltage meter to monitor the output current being produced by the amplifier. For each 1V detected, current output is 5A (7212/7224) or 20A (7548/7796).
20	I SUM1–	Multiple Amplifier Summing, Amplifier 1	DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode	Currently not used.
21	I SUM2–	Multiple Amplifier Summing, Amplifier 2	DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode	Currently not used.
22	I SUM3–	Multiple Amplifier Summing, Amplifier 3	DC			Planned for use in multiple amplifier configurations - paralleled and running Controlled Current Mode	Currently not used.

23	OverLoad Out	Overload output	DC	–24V	0V	When amp is normal, this pin is pulled to –24V through a 47.5K-ohm resistor; when amp is in Overload state, transistor Q36 turns on and sources chassis ground as an output. Do not exceed 20 milliamps.	**Remote Signal of Overload Condition:** LED, when lit, signals Overload condition. Use a 6mA series resistor of 4.02K-ohm for LED or OPTO, tie to –24V source (PIN 16).
24	OverVoltage Out	Overvoltage output	DC	–24V	0V	When amp is normal, this pin is pulled to –24V through a 47.5K-ohm resistor; when amp is in Overvoltage state, transistor Q29 turns on and sources chassis ground as an output. Do not exceed 20 milliamps.	**Remote Signal of Overvoltage Condition:** LED, when lit, signals Overvoltage condition. Use a 6mA series resistor of 4.02K-ohm for LED or OPTO, tie to –24V source (PIN 16).
25	Reset	Reset	DC	–15V	0V	Tie to PIN 13 (–24V dc) and create a –15V dc source; <2mA required for reset. Connect the –15V dc source to PIN 25 (Reset) through a 1K buffer resistor to reset.	**Reset from Standby or Stop:** Use a dry contact switch and voltage regulator to return amp to Ready/Run condition after Over-temperature or Overload conditions. Assert –15V for at least 100 ms to clear error condition. **NOTE: Do not hold low.**

Gray shaded areas indicate pin not used / feature not implemented.

Blue shaded areas indicate used only in multi-amplifier systems.