

Appendix A: SIM - Interlock I/O Connector Pinouts and Functions

| Pin # | Function | Description | Signal Type | Level when Asserted | Level when Deasserted | Notes | Applications |
|-------|------------------|---|-------------|--|----------------------------|---|---|
| 1 | Amplifier Output | Used for driving Follower amplifiers; monitoring amplifier output voltage | AC or DC | Can be greater than $\pm 200V$ peak | 0V | Used for monitoring amplifier output voltage; driving Follower 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 $\pm 2V$ peak relative to Common | 0V | Used for driving Follower amplifiers in multi-amp systems, controlled voltage or controlled current mode. | Driving Follower Amplifiers: Amplifier External Reference, 2V peak maximum from PIN 14 (Common). |
| 3 | +1 IN | Differential Follower input | AC or DC | Can be greater than $\pm 200V$ 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 Follower mode. |
| 4 | Interlock | Amplifier Interlock input | DC | 0V to 8V | 10V to 15V | When "low", forces 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 4 of amplifier to Digital Ground (PIN 17) using dry contact switch or optocoupler. When closed, places amplifier in Standby. Multi-amplifier Systems, Simultaneous Enable or Disable of amplifiers: Daisy-chain Interlock (PIN4) across amps (if sharing the same Sampled Common power connections). Optocoupler must be used for multi-amps in series. |
| 5 | Amp Ready | Ready output of amplifier | DC | 0V | -14V | Normally reserved for OPTOC use; not recommended 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 signal 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 | 7212/7224/7226: 5A/V 7548/7794/7796/7796HC: 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 (7212/7224/7226) or 20A (7548/7794/7796/7796HC). |
| 7 | None | No connection | | | | | Not currently used. |
| 8 | None | No connection | | | | | Not currently used. |
| 9 | Blanking input | Blanking control | DC | 0 - 1Vdc allows normal operation | 3.5 - 5Vdc output is muted | Used in amplifiers with blanking feature included for blanking control. | Blanking Control: Use an external isolated 5V power supply to mute the output of the amplifier. |

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|-------|-------------------------|--|-------------|--|-----------------------|--|---|
| 10 | Sampled Common | Amp Analog Ground; Blanking Ground | | | | Amplifier ground. | Can be used as Blanking return or as a reference of the amplifier for 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, this pin is grounded. Do not exceed 7 milliamps. | Remote Signal of Over-Temperature Condition: LED, when lit, signals Over Temperature condition. Use a 6 mA series resistor of 4.7K-ohm for LED or OPTO, tie to -24V source (PIN 13). |
| 12 | Run | Amplifier Run output | DC | -24V | 0V | When amp is in Standby mode, this pin is pulled to -24V; when amp is in Run mode, this pin is grounded, energizing Mains Relays and allowing drive for an external LED. DO NOT exceed 7mA; DO NOT ground this pin as this will enable Main Power Relays. | Remote Signal of Run Condition: LED, when lit, signals Run state. Use a 6mA series resistor of 4.7K-ohm for LED or OPTO, tie to -24V source (PIN 13). |
| 13 | -24V | -24V Power Output | DC | | | -24V dc, 30 mA max | 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 | | | | Current monitor reference. Voltage between Common and Sampled Common is voltage on the Current Sense resistor. | 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 Follower 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 Follower mode. |
| 16 | +24V | +24V Power Output | DC | | | +24V dc, 30 mA max. | 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. |
| 18 | OEM App | Input Monitor (OEM only) | | | | Used to monitor the input signal from an OEM DAC card; this is the actual input signal. | OEM modification only; normally no connection. |
| 19 | I MON - (alt.: OEM App) | Differential Current Monitor - ; (- Input Monitor, OEM only) | AC or DC | 7212/7224/7226: 5A/V 7548/7794/7796/7796HC: 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 (7212/7224/7226) or 20A (7548/7794/7796/7796HC). |

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|--|-----------------|---|-------------|---------------------|-----------------------|---|---|
| 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 (amplifier output is clipping). | 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, this pin is grounded. Do not exceed 6 milliamps. | Remote Signal of Overload Condition: LED, when lit, signals Overload condition. Use a 6mA series resistor of 4.7K-ohm for LED or OPTO, tie to -24V source (PIN 13). |
| 24 | OverVoltage Out | Overvoltage output (High AC line voltage). | 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, this pin is grounded. Do not exceed 6 milliamps. | Remote Signal of Overvoltage Condition: LED, when lit, signals Overvoltage condition. Use a 6mA series resistor of 4.7K-ohm for LED or OPTO, tie to -24V source (PIN 13). |
| 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: Use a dry contact switch and voltage regulator to return amp to Ready/Run condition after Overload conditions. Assert -15V for at least 100 ms to clear error condition. |
| Gray shaded areas indicate pin not used / feature not implemented. | | | | | | Blue shaded areas indicate used only in multi-amplifier systems. | |