

PBA70.27 interface specification

History

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Rev.	Created By	Approved By	Date	Comment
0A	FRKIH		120610	First draft.

General

This document shall describe all interfaces that are used on the PBA70.27 module.

Note; the PBA70.27 module may also be named SP10A10D.

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1 Definitions

- **AMP I/F** is the interface that connects the input board to an output amplifier channel. This interface contains channel specific signals such as clip indication and temperature. The below describes the interface to one amplifier channel. If the system contains more than one channel, the interface below will have to be duplicated for all channels.
- **PSU I/F** is the interface that connects the input board to a power supply. The interface holds voltage supply lines to the input board and power supply enable/disable signals and similar.
- **PSU Audio power I/F** is an interface connecting power to additional channels in a system.

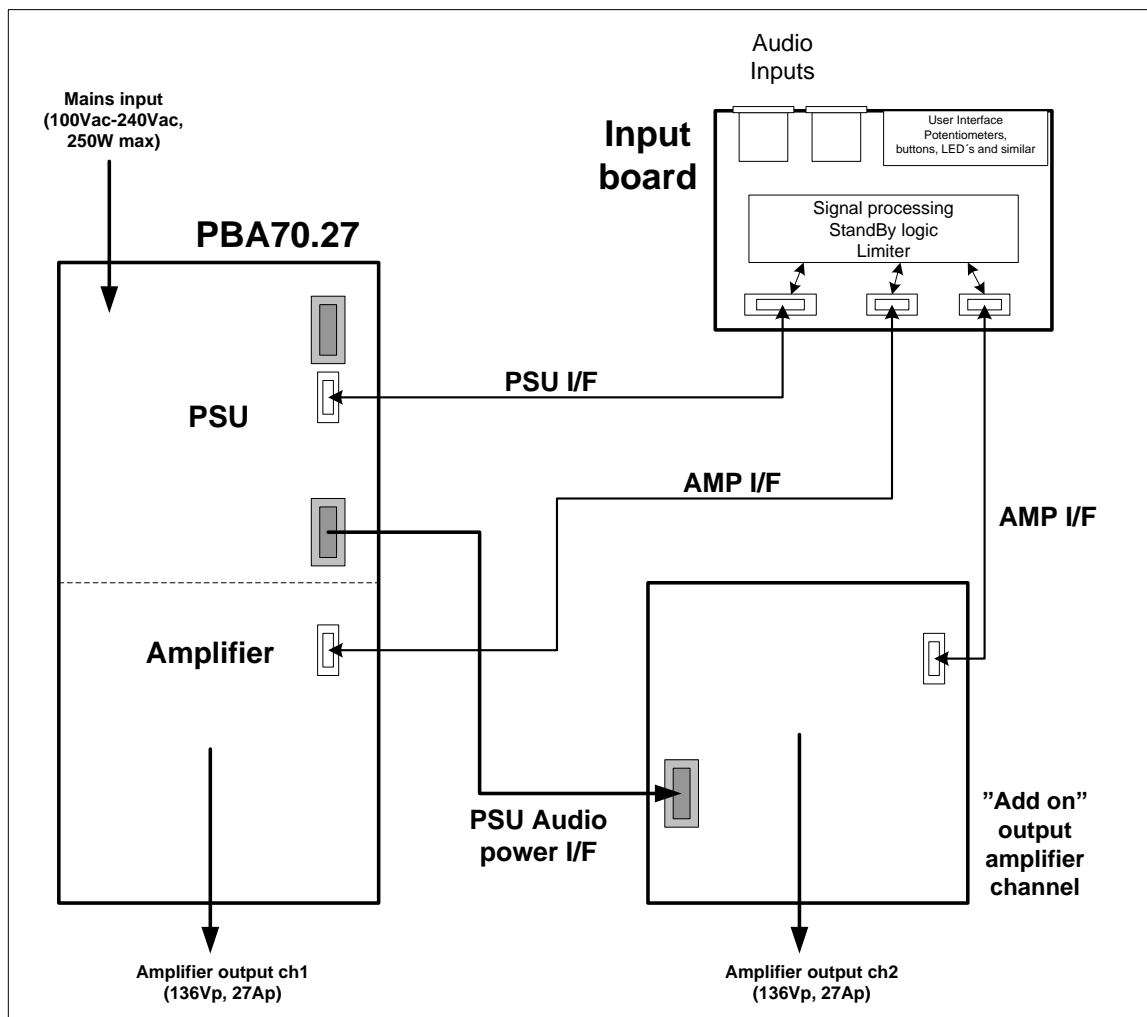


Figure 1, A typical system including PBA70.27

2 AMP I/F requirements

2.1 Pin description/ signal definition

2.1.1 Amplifier temperature interface

The channel temperature interface consists of an NTC resistor connected to GND locally on the amplifier.

All signal conditioning for this signal will have to be taken care of on the input board.

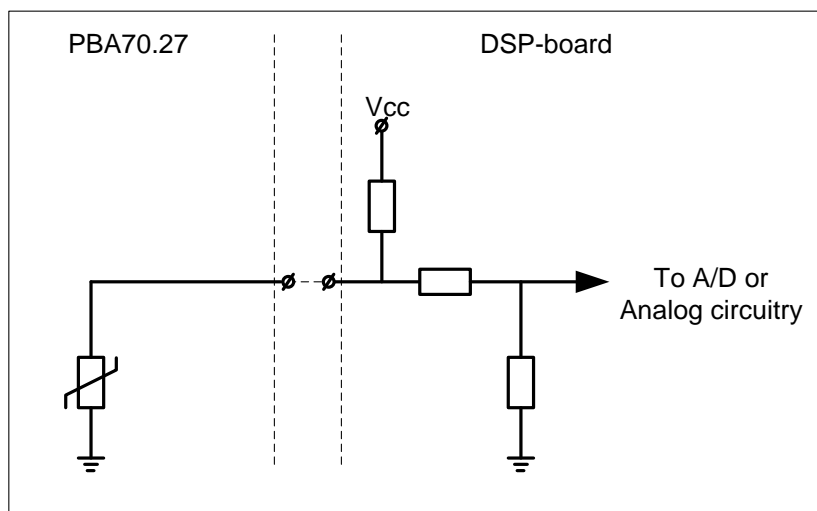


Figure 2, Temperature interface

2.1.2 Mute/enable

This signal will be driven by an open collector output and it is pulled up to maximum 20Vdc inside the amplifier module. The maximum sink current of the transmitter needs to be 10mA. Low equals disabled, high equals enabled.

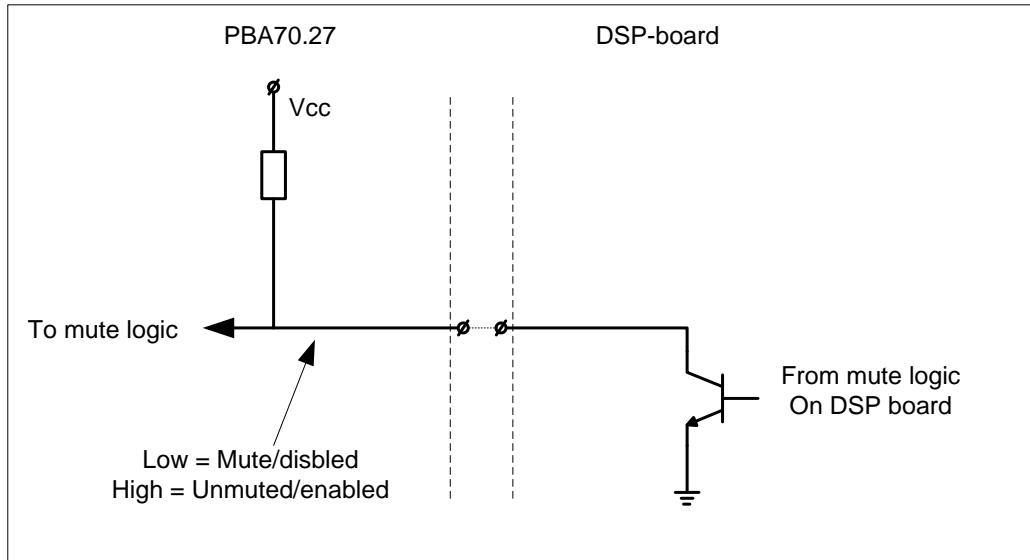


Figure 3, Mute/Enable logic

2.1.3 Uclip/Iclip

This signal indicates when the output voltage of the amplifier clips. The indication is instantaneous (not integrated nor filtered) and it is active during the entire clip event. The signal is driven by an open collector output connected to maximum 20Vdc being able to sink a current of minimum 10mA.

Low equals output voltage clip, high equals no output voltage clip.

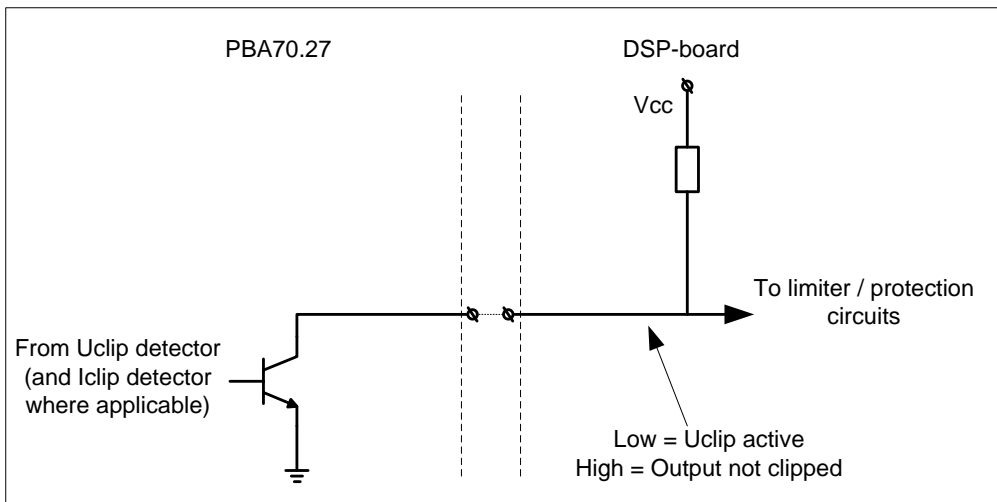


Figure 4, Uclip and Iclip

2.1.4 Fuse sense

This signal monitors the rail voltage fuses on the power module. This feature is not implemented on all power modules. The detector circuit shall be placed on the DSP board (or similar). When both fuses are functioning, the Fuse sense signal will be close to system ground. When one or both fuses are open circuit the signal will be connected to one of the rails via a high ohm resistor.

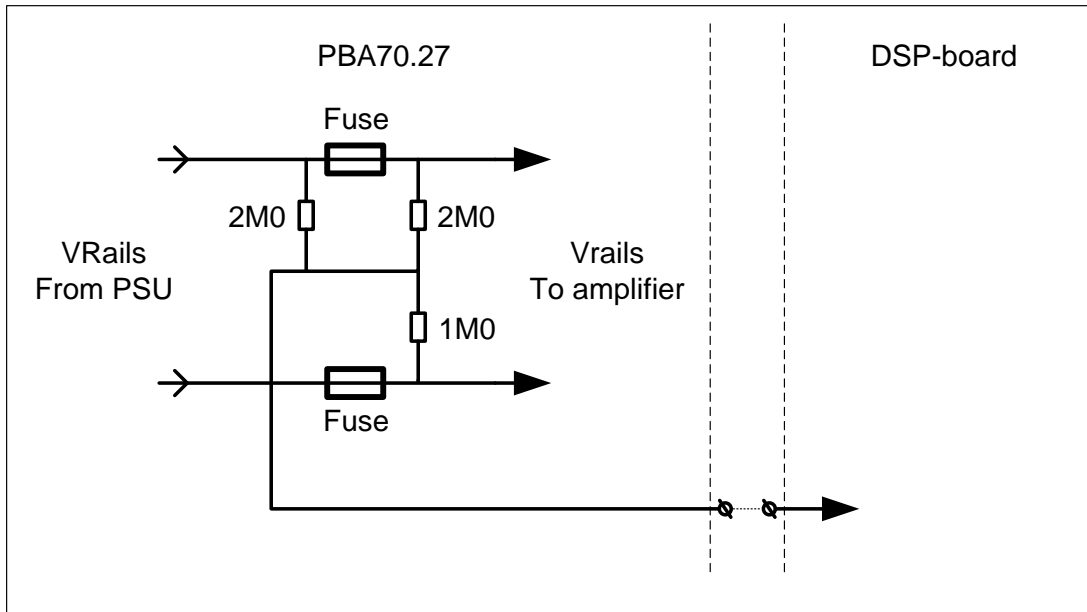


Figure 5, Fuse sense

2.1.5 Input signal

The amplifier module shall be driven with an electronically balanced output signal. The output amplifier has a voltage gain of 20dB. The amplifier is inherently bridged with a maximum differential output voltage of 136Vpp.

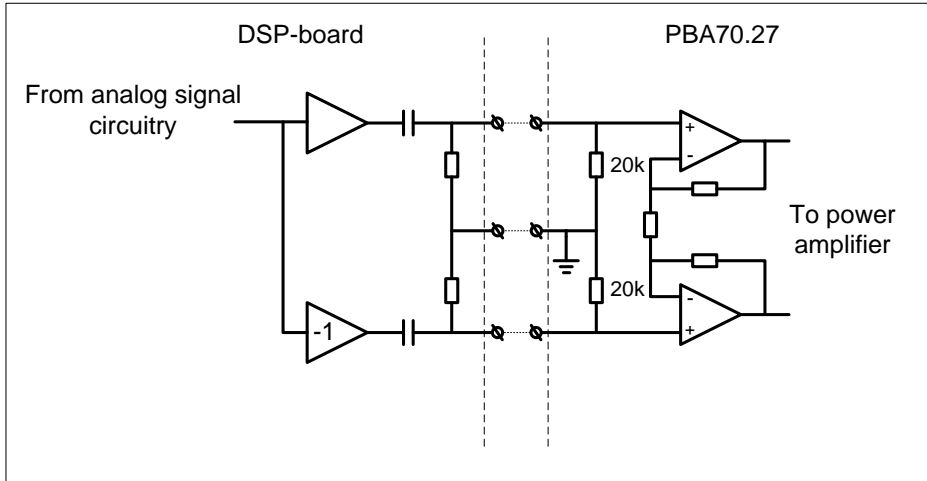


Figure 6, Audio interface

2.1.6 Amp I/F connector specification and pinout

The pin header used for this interface has 8 pins and is intended to connect to a 1,27mm pitch ribbon cable.

A suitable connector is "75869-132LF" from FCI.

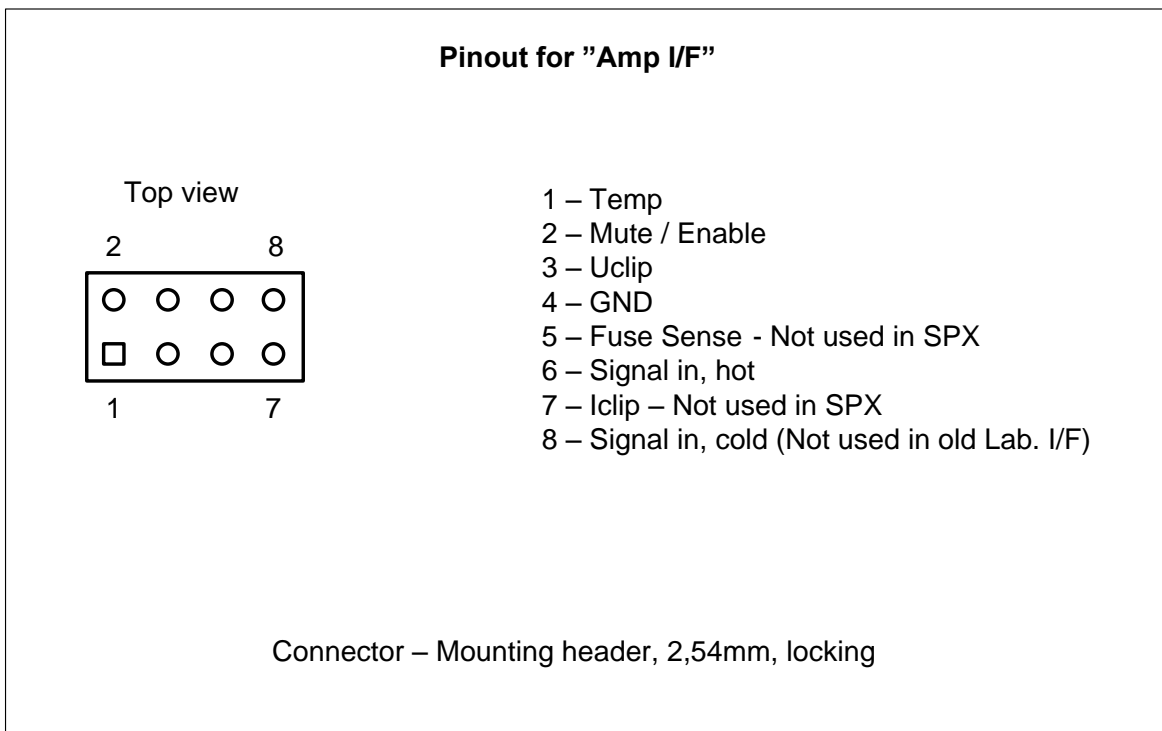


Figure 7, AMP I/F pinout

3 PSU I/F requirements

3.1 Pin description/ signal definition

3.1.1 Power supply pins

Pin 1 to 6 are intended as main power supply for an input board. The positive and negative supplies can deliver around 6.0 watts respectively.

These voltages will be switched off as long as the module is in standby mode.

3.1.2 Standby power

Pin 7 is the only pin delivering a voltage to an input board in standby mode. In standby, the load on this pin should be kept well below 0,4W in order to limit the mains input power to 1,0 watts.

If there is no requirement for total standby consumption, the standby pin can be loaded with as much as 5 watts. One thing to keep in mind is that the +16V originates from the same power supply output as the +16V_STDBY. The total output power of these two outputs may not exceed 8 watts.

3.1.3 PSU Enable

This input enables the main power supply on the module. (The standby power supply will be on as long as mains power is applied.)

A logic high signal (>5Vdc) in this interface will enable the main power supply. The signal should not be driven higher than 20Vdc.

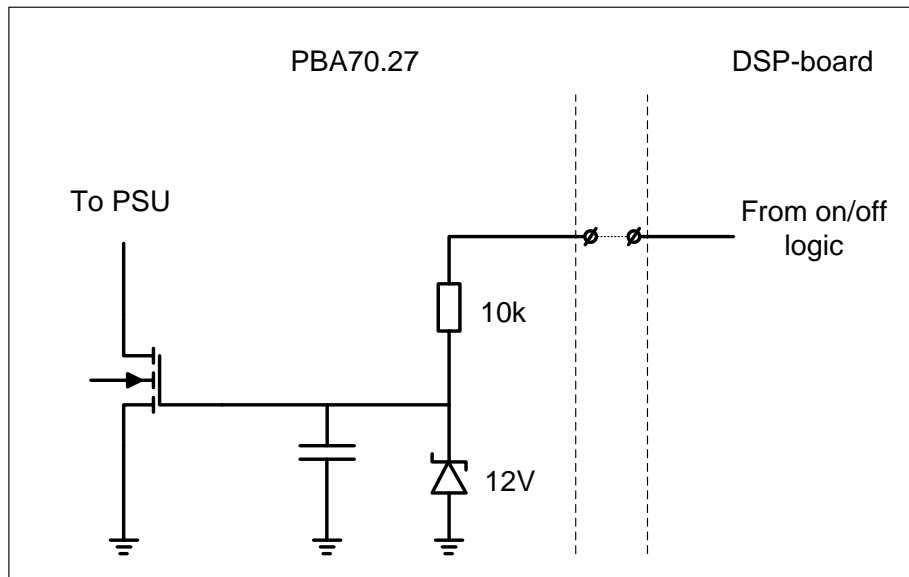


Figure 8, PSU enable

3.1.4 VS+ sense and VS- sense

The two sense signals are representing the voltage rails feeding the output amplifier. The rail voltages may be used as an input to a look-ahead limiter to avoid output voltage clip.

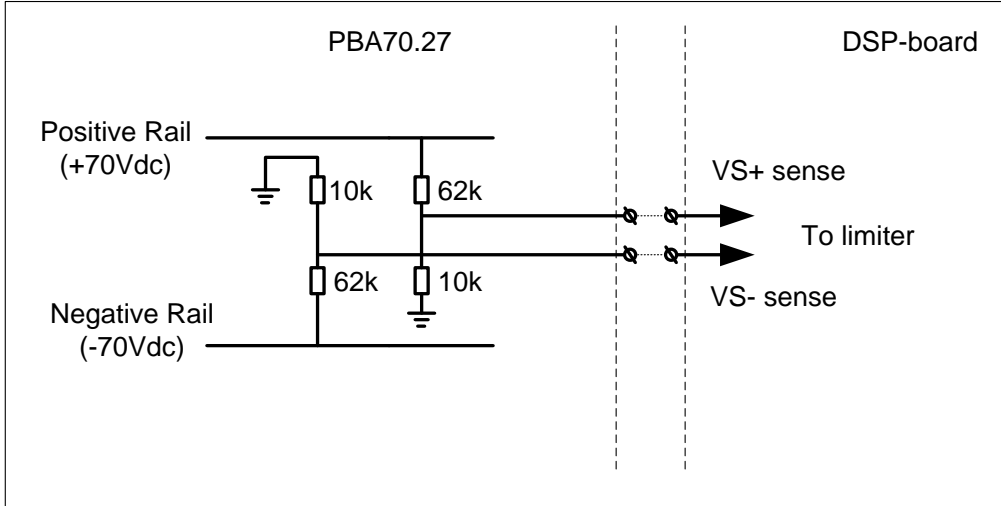


Figure 9, Rail sense

3.1.5 PSU Temperature interface

The power supply temperature interface is the exact same interface as the amplifier temperature interface.

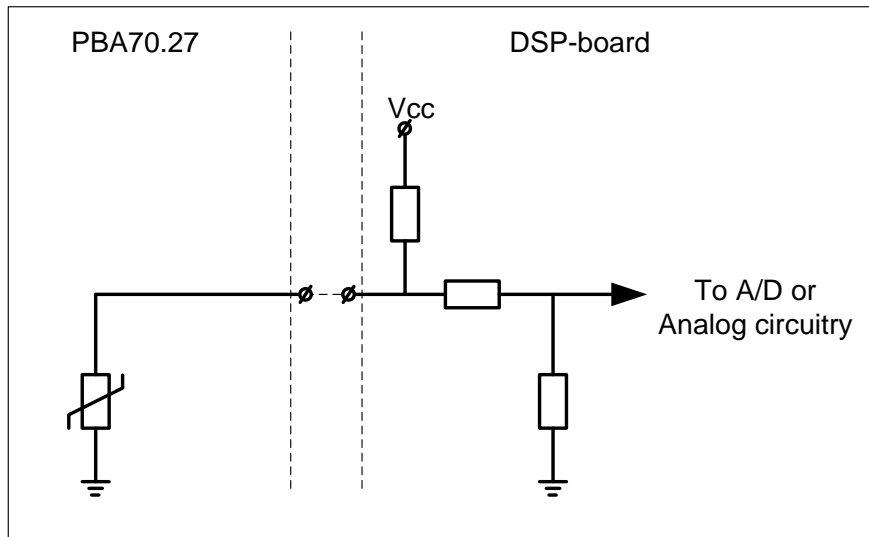


Figure 10, PSU temperature interface

3.1.6 PSU I/F connector specification and pinout

The pin header used for this interface has 14 pins and is intended to connect to a 1,27mm pitch ribbon cable.

A suitable connector is "75869-102LF" from FCI.

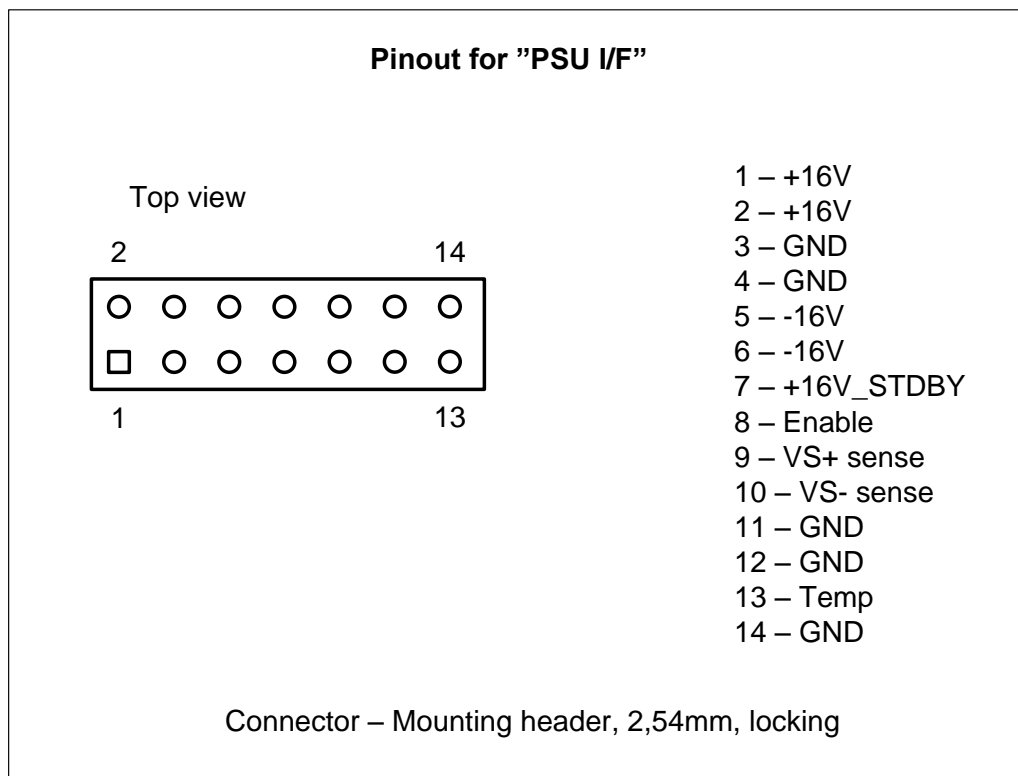


Figure 11, PSU I/F pinout

4 PSU Audio Power Interface

This interface supplies additional amplifier channels in a mutli-channel system.

4.1 Pin description/ signal definition

4.1.1 VS- and VS+

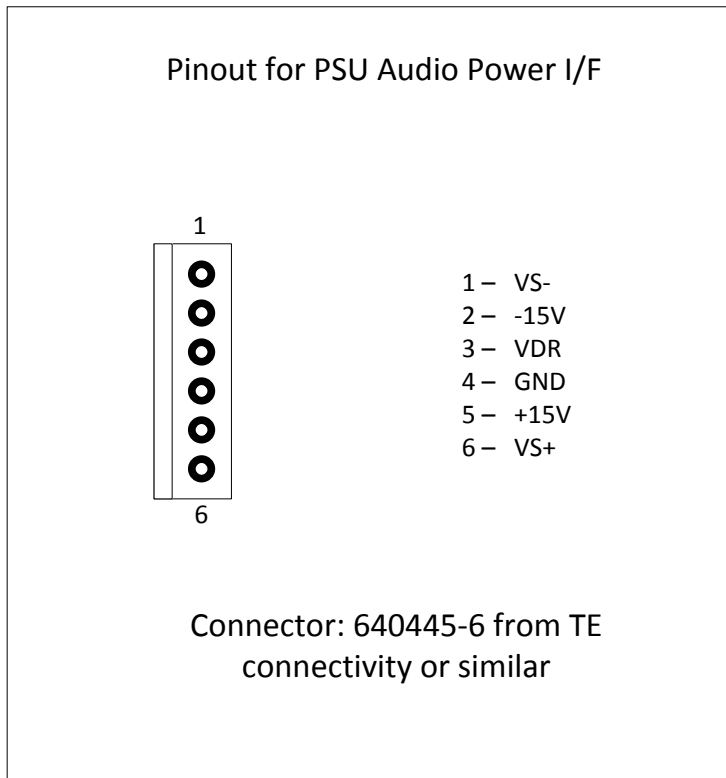
These power signals are the main amplifier voltages. They are nominal +/-70Vdc, but during output power bursts that are greater than what the power supply can deliver, they will drop downwards. When the main power rails reach approximately +/-30V, the power supply will reset.

4.1.2 -15V and +15V

These voltages will drive low power electronics on the added amplifier channels. See the PSU I/F description for system requirements.

4.1.3 VDR

This voltage is used to supply the negative gate drive voltage for the additional amplifier channels. Its nominal value is 13,5Vdc, and it is related to VS-.



5 Speaker output

The speaker level outputs are available on standard 6,3mm (1/4 inch) spade lugs. The output is configured as a bridge tied load and both terminals carry potentially high output voltages. Neither of the pins are to be grounded at any time.

The terminals on the PCB are clearly marked with “+” and “-“ to indicate phase.

6 Mains input

The mains input handle nominal voltages between 100Vac and 240Vac (+/-10%, 50-60Hz). The maximum needed input power is 250W.

Phase and Neutral are available on 4,8mm spade lugs.

The protective ground is available on a 6,3mm spade lug.