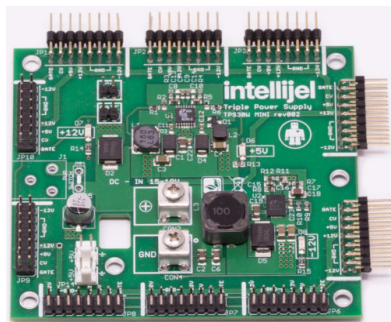
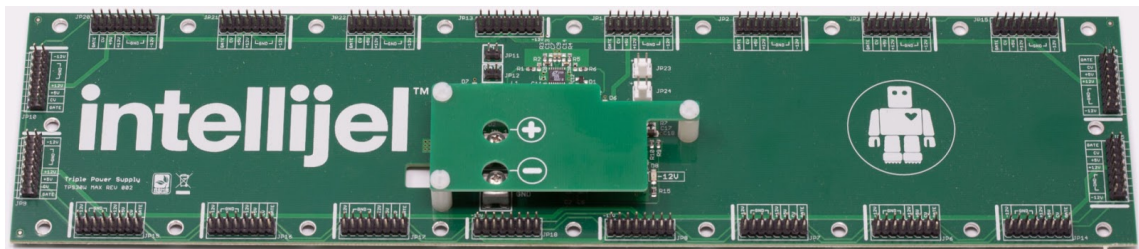
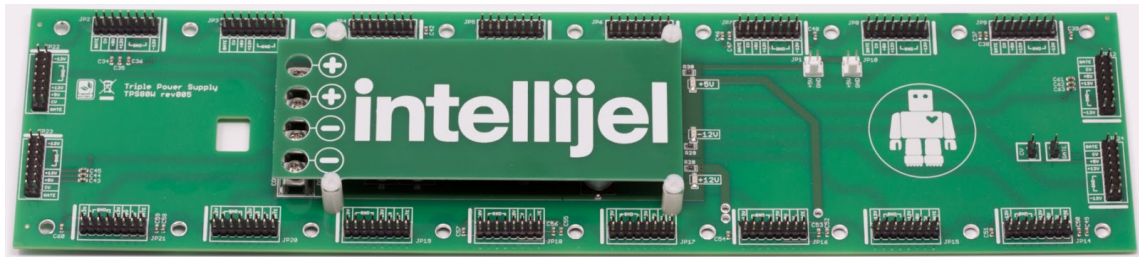


TPS Power Supplies

Triple Power Supply Product Range



Manual Revision: 2019.09.16

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Compliance



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Intellijel Designs, Inc. could void the user's authority to operate the equipment.

Any digital equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.



This device meets the requirements of the following standards and directives:

EMC: 2014/30/EU

EN55032:2015 ; EN55103-2:2009 (EN55024) ; EN61000-3-2 ; EN61000-3-3

Low Voltage: 2014/35/EU

EN 60065:2002+A1:2006+A11:2008+A2:2010+A12:2011









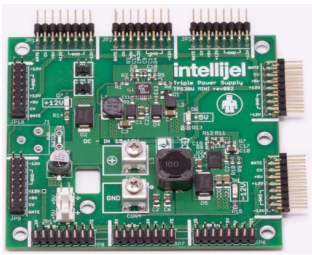



RoHS2: 2011/65/EU

WEEE: 2012/19/EU

Overview

The TPS series of busboards and power supplies provides high power, efficient and low noise studio-grade power to your Eurorack Modular case. It was designed to perform optimally with even the most demanding, noisy and power hungry modules available today.

Each TPS busboard requires the purchase of an external power brick, plus either a 1U or 3U power entry module (or DIY solution).

PRODUCT	+ POWER BRICK	+ A POWER ENTRY POINT		
<p>TPS80W</p> 	<p>Meanwell 90W</p> 	<p>Power Entry (2.5mm)</p> 	<p>Power Entry 1U (2.5mm)</p> 	<p>Intellijel case with integrated entry point</p> <p>or</p> <p>DIY solution</p>
<p>TPS30 MAX</p> 	<p>Meanwell 60W</p> 	<p>Power Entry (2.1mm)</p> 	<p>Power Entry 1U (2.1mm)</p> 	<p>Intellijel case with integrated entry point</p> <p>or</p> <p>DIY solution</p>
<p>TPS 30 MINI</p> 	<p>Meanwell 60W</p> 	<p>Power Entry (2.1mm)</p> 	<p>Power Entry 1U (2.1mm)</p> 	<p>Intellijel case with integrated entry point</p> <p>or</p> <p>DIY solution</p>

Common Features

All TPS models share the following features:

- Low impedance star distribution due to 4 layer PCB
- Triple 120° phased controller for low induced noise
- Output short circuit protection and foldback current limiting
- Output overvoltage protection from transient overshooting
- Soft start for controlled start up operation
- +/-1% output voltage accuracy
- Two 2-pin molex headers for access to +5V bus
- Mounting holes can be used with 0.157" / 4mm PEM snaps for quick install

TPS80W Triple Power Supply

In addition to the common features mentioned earlier, each TPW80W has the following additional attributes:

- 80 Watt integrated switching power supply
- +12V output at 3000 mA, -12V output at 3000 mA, +5V output at 1500 mA
- Includes 90W Meanwell power brick
- Connect up to 20 Eurorack modules
- 34cm wide x 8cm tall and max height of 20mm.
- Recommended for cases up to 7U x 104hp

TPS30 MAX Triple Power Supply

In addition to the common features mentioned earlier, each TPW30 MAX has the following additional attributes:

- 30 Watt integrated switching power supply
- +12V output at 1500 mA, -12V output at 1500 mA, +5V output at 1000 mA
- Includes 60W Meanwell power brick
- Connect up to 20 Eurorack modules
- 34cm wide x 8cm tall and max height of 20mm
- Recommended for cases ranging from up to 7U x 84hp

TPS30 Mini Triple Power Supply

In addition to the common features mentioned earlier, each TPS30 Mini has the following additional attributes:

- 30 Watt integrated switching power supply
- +12V output at 1200 mA, -12V output at 1200 mA, +5V output at 500 mA
- Includes 60W Meanwell power brick
- Connect up to 10 Eurorack modules
- 9cm wide x 8cm tall and max height of 20mm
- Fits comfortably in a tiny skiff but can power larger cases

Installation

Each model of TPS busboard features integrating mounting holes, so you can secure the busboard to the inside of your case. If you're mounting inside a wood case, you can use screws with standoffs to raise the board off the mounting surface, or you can use 0.157" / 4mm PEM snaps for quick installation.

Connecting to Power

You will need to connect the busboard to power. This can mean:

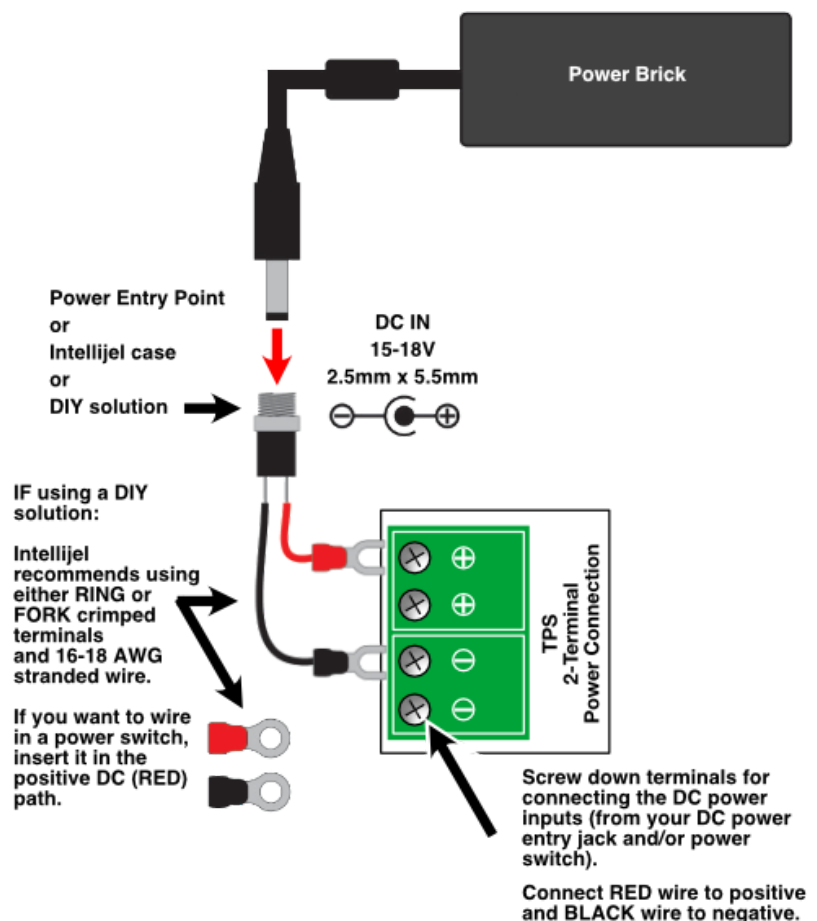
- 1) using an Intellijel Power Entry module (3U or 1U), or
- 2) using an Intellijel case with a built-in Power Entry, or
- 3) building your own DIY solution.

The illustration to the right shows how to supply power to your TPS busboard.

Specifically, connect the RED wire (center pin) to the POSITIVE screw terminal on the TPS board. Connect the BLACK wire (sleeve) to the NEGATIVE (or GND) screw terminal on the TPS board.

NOTE: Some TPS busboards (like the TPS80) have two pairs of screw terminals (as shown in the illustration to the right), and some (like the TPS30) have only a single pair of screw terminals.

IMPORTANT: Never exceed the maximum amperage rating of your TPS busboard. Look up the power specs for each module you connect, and sum their amperages to make sure they total less than the rating of the circuit board. Ideally, you should also use a Power Brick that exceeds this amperage, to give you plenty of overhead.



Connecting Eurorack Modules

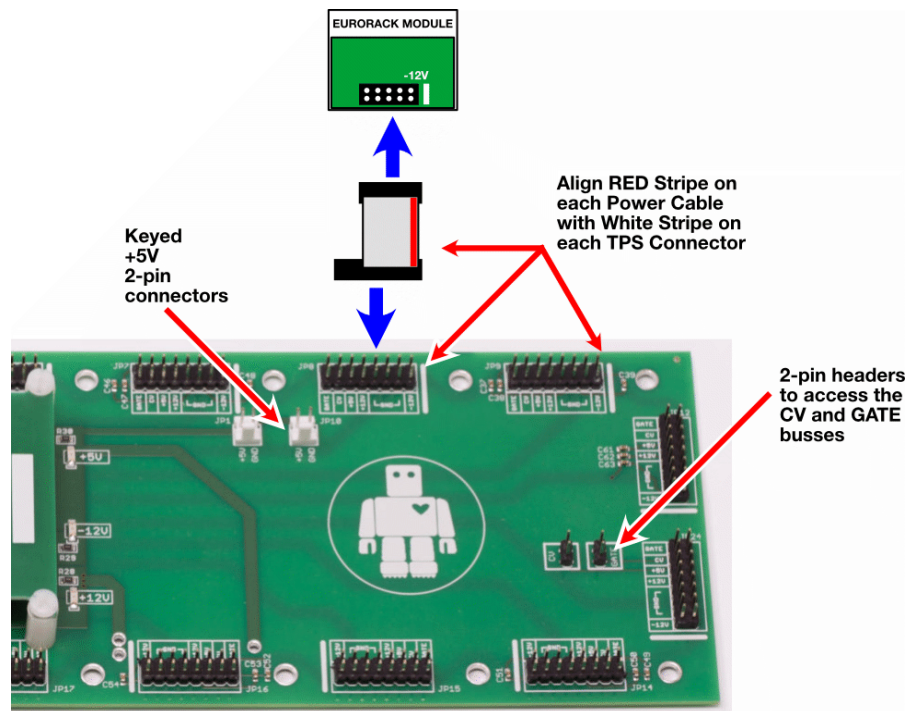
Running around the circumference of the three TPS busboards are the power headers.

These headers power your eurorack modules using the ribbon cables included with each of your modules.

Align each ribbon cable's RED stripe with the WHITE stripe printed on the TPS busboard. The white stripe indicates which pins are -12V.

Plug the other end of each ribbon cable into the Eurorack modules you wish to power — being careful to align the red stripe with the -12V pins on the module. These pins are indicated differently by different manufacturers, but often will say “-12V,” or “Red Stripe,” or have a visible white stripe next to the -12V side of the connector. See your Eurorack modules' manual for details concerning their -12V power nomenclature.

NOTE: The TPS80W and TPS30 MAX both contain 20 power headers. The TPS30 MINI contains 10 power headers.



Connecting 5V Devices

Connect these 5V connectors to any modules that require a 5V power source. You can also use this to power an Intellijel USB Power 1U module, which (for example) is useful for connecting a small USB gooseneck LED light.

Connecting CV & GATE

All TPS busboards have CV and GATE connections per the Eurorack standard.

Using Multiple TPS Boards

If you need more power headers than are on your TPS busboard, you have a few options:

- OPTION ONE: Multiple TPS Systems

You can simply install additional boards and power each from its own dedicated power brick.

- OPTION TWO: Flying Bus Cable

You can use a flying bus cable to gain additional headers. However, Intellijel does not recommend this option, since you may experience more noise than if you connect all your modules directly to TPS busboards.

- OPTION THREE: Daisy-Chain Busboards on a Single Power Brick

You can install multiple boards and daisy-chain them to a single power brick. This option is preferable to Option Two, and requires the following steps:

1. Do the math.

Decide which modules you want connected to each busboard, then add up their total amperage, and confirm it doesn't exceed the amperage rating of each TPS busboard.

Use a Power Brick that provides **at least** as much power as the sum total of all daisy-chained busboards. For example, the TPS30 MAX and TPS30 Mini are both 30W busboards, so you should use at least a 60W power brick when powering them both.

HINT: A busboard's power requirements are reflected in its name. The TPS30 boards require 30W of power; the TPS80 boards require 80W of power.

- As described previously, connect the RED wire from the Power Entry point to the first busboard's POSITIVE terminal, and connect the BLACK wire from the Power Entry point to the first busboard's NEGATIVE terminal.

Some boards have two pairs of DC connectors, so simply connect the RED wire to one of the two POSITIVE terminals, and the BLACK wire to the corresponding NEGATIVE terminal.

- Using 16-18 AWG stranded wire, connect the POSITIVE terminal on TPS 1's busboard to the POSITIVE terminal on TPS 2's busboard.
- Similarly, connect the NEGATIVE terminal on TPS 1's busboard to the NEGATIVE terminal on TPS 2's busboard.

If the first busboard has two pairs of DC connectors (like the TPS80), simply make the daisy-chain using the second pair of terminals, as shown here.

If the first busboard has a single pair of DC connectors (like the TPS30), you can stack the two terminal connections under a single screw to complete the daisy-chain (as shown here).

