1RK-xRU-PSU-2-HSWP
ONErack_{patent pending} dual-redundant PSU
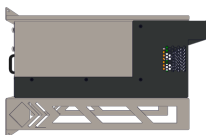
Installation Guide V1.00

In this guide

Thanks for buying this ONErack dual-redundant power supply unit. The dual-redundant PSU comes with two removable power units that you can replace during operation, with no need to power off.

Features

- 450 watts, supplied across two power units, allows you to power more devices and more than one ONErack chassis

- Dual redundancy, if one power unit fails, the other can supply up to 450 watts alone

- Hot-swappable power units

- Replacement power units sold separately

- Surge and fuse protection protects your devices

- Indicator lights to show if a power unit has failed

- Load indicator shows you how much power you're using, and how much is available

- Fault relay can alert you if the dual-redundant PSU fails

- Power up to four fan covers: three rear-mounted covers and one front-mounted cover

In the box

1 dual-redundant PSU, including two replaceable power units
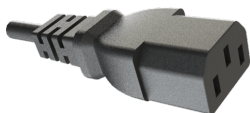
2 daisy-chain cables

6 guide rails, including 2 spare guide rails

4 M3 screws

2 power leads, AC, appropriate for your region

1 service cable

1 safety guide
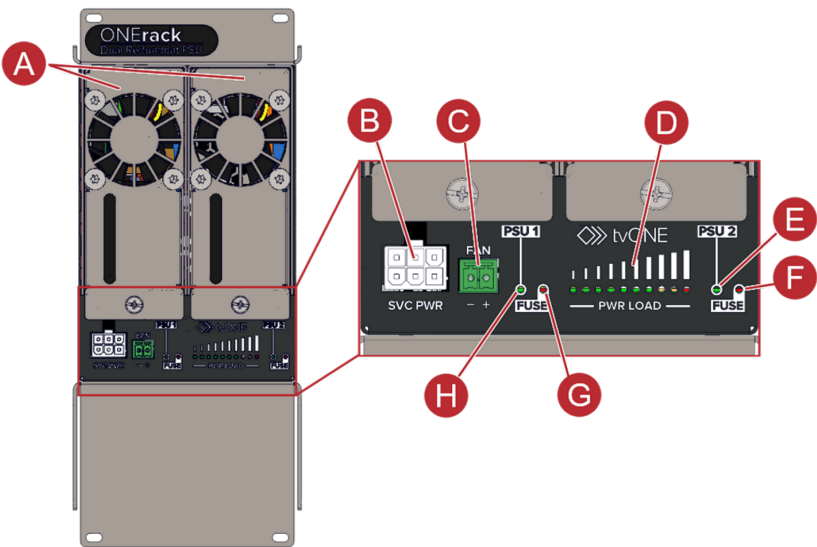
1 installation guide

1 A3 template

> ❗ In the unlikely event that a component is missing or damaged, please contact tech.usa@tvone.com or tech.europe@tvone.com.

Tools

Pozidriv® PZ1 crosshead screwdriver

About the ONErack dual-redundant PSU

Front panel

|			
A	Replaceable power units	**E**	Shows you the status of power unit 2
B	Connect the service cable	**F**	Shows you the status of the fuse of power unit 2
C	Connect a fan cover	**G**	Shows you the status of the fuse of power unit 1
D	Shows you the power load Read more on page 8.	**H**	Shows you the status of power unit 1

Status LEDs of the front panel
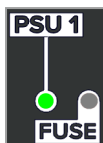
The power unit is working correctly.
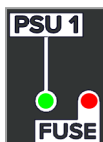
The fuse of the power unit has tripped.

The fault relay closes and triggers an alert.

Read more on page 9.
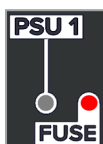
The power unit has failed and needs to be replaced.

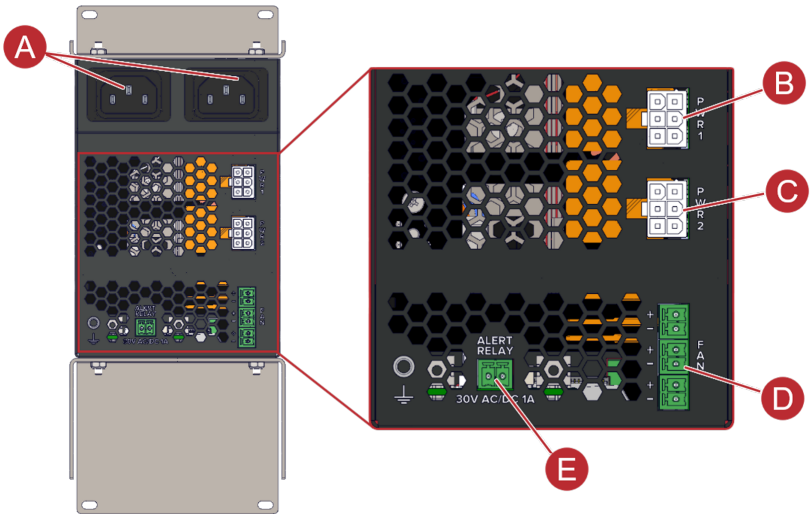The fault relay closes and triggers an alert.

Read more on page 7.

Both power units have failed, or there is no power supplied to the dual-redundant PSU.

The fault relay closes and triggers an alert.

Rear panel

A	Connect power leads		**D**	Connect up to three fan covers
B	Connect a daisy-chain cable to the upper power rail		**E**	Fault relay. 2-pin 3.5 mm detachable terminal block. Relay contact rating 1 A 30 V AC/DC. Closes on fault. Connect an alerting device, for example, a buzzer, light, or third-party control system.
C	Connect a daisy-chain cable to the lower power rail			

Fitting the ONErack dual-redundant PSU

> ❗ To avoid damaging your ONErack, build it in a clean, tidy area.

This installation guide assumes you have already built a ONErack chassis.

Read more about building a chassis in the installation guide for the ONErack chassis. The guide is available from the Support Documents tab at tvone.com/onerack.

> ❗ **Airflow**
> You can place the dual-redundant PSU anywhere in your ONErack chassis. If you mount the dual-redundant PSU at the left-hand end, leave an empty numbered hole at the left-hand end. If you mount the dual-redundant PSU at the right-hand end, leave an empty numbered hole at the right hand end. Leaving an empty numbered hole allows space for airflow.

1. Clip a pair of guide rails into the lower and upper mounting rails.

   - Use the numbers on the mounting rails, and the included template, to help you fit the guide rails straight and in line with one another.

   - Leave 16 numbered holes between each pair of guide rails.

   - Make sure the groove is on the right when you look from the front of the chassis.
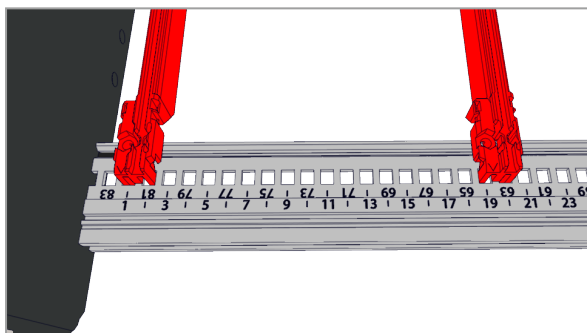
2. Slide the dual-redundant PSU into the groove in the guide rails.
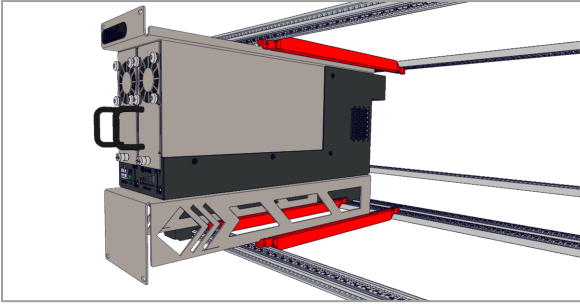
3. Screw the top and bottom of the dual-redundant PSU in place with 4 M3 screws.
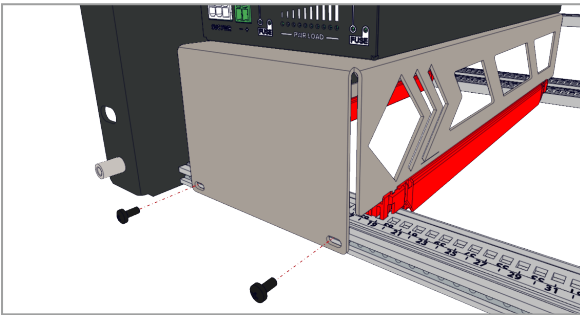
4. OPTIONAL: Connect one or both daisy-chain cables to the rear of the dual-redundant PSU, ready for your modules.

   You only need to connect a daisy-chain cable to the upper port if you need to provide 350 W to the lower rail, or if you intend to create an upper rail with extra voltage selectors, sold separately. Ask your sales representative about 1RK-XTRA-RAIL and 1RK-XTRA-PWR.

5. When you have connected all your modules with daisy-chain cables, connect your dual-redundant PSU to two electrical outlets.

   The green LEDs on the front of the dual-redundant PSU light up.

   Read more in the guide for ONErack modules. The guide is available from the Support Documents tab at tvone.com/onerack.
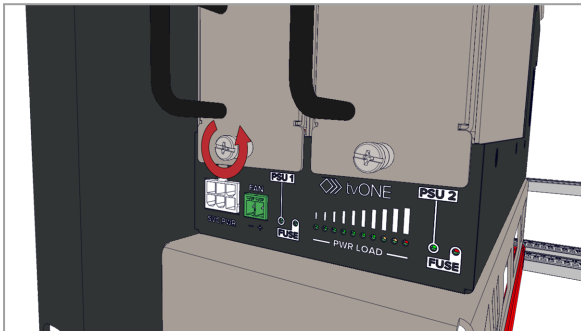
Replacing the power units in your ONErack dual-redundant PSU

You can replace each of the power units in your dual-redundant PSU during operation, with no need to power off.
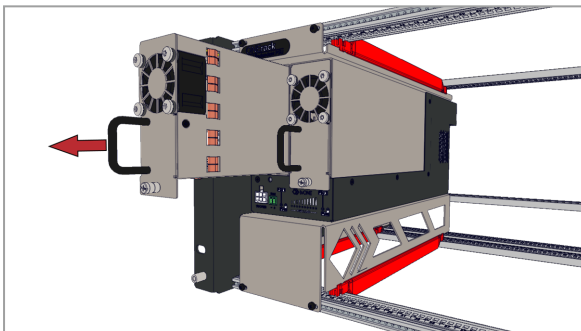
Replacement power units are sold separately. Ask your sales representative about 1RK-PSU-HSWP.
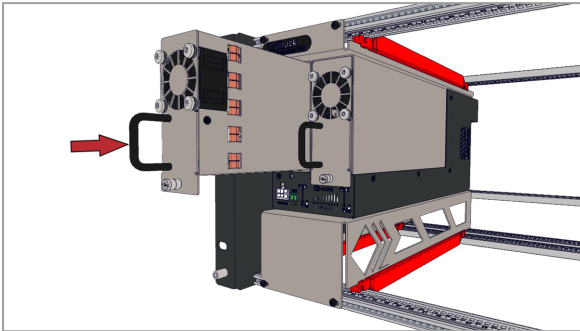
Replace the power units one at a time.
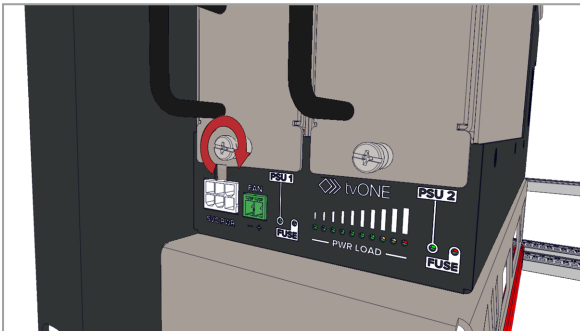
1. Unscrew the thumbscrew.

2. Use the handle to pull the power unit toward you and out of the dual-redundant PSU.

3. Slide the new power unit firmly into the dual-redundant PSU.


4. Tighten the thumbscrew.

Overloading the ONErack dual-redundant PSU

Drawing too much power from the ONErack dual-redundant PSU can cause power units to fail, or the fuse can trip. The front panel of your dual-redundant PSU includes a power load meter to help you prevent this happening.

The power meter shows you how much power you are drawing. Green LEDs only shows a safe power load below 450 W. Two yellow LEDs warns you the power load is at its limit of 450 W.

The red LED tells you the power load is over 450 W and there is a risk of failure. For best results, keep the power load to 450 W or below.
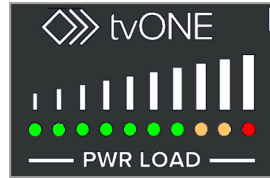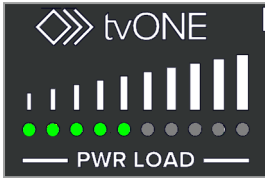
The power load is too high

If the red LED is lit, reduce the amount of power drawn by disconnecting one or more devices or fan covers, until only green and yellow LEDs are lit. If you want to run more devices, use an extra power supply, or power the devices using a different method.

Read about the different ways to power devices in the installation guide for ONErack modules. The guide is available from the Support Documents tab at tvone.com/onerack.

The fuse has tripped

If the PSU and FUSE LEDs of a power unit are both lit, the fuse of that power unit has tripped. This is probably due to overloading the power. In the example below, the fuse of power unit 1 has tripped.

To reset the fuse

1. Remove the cause of the power overload by disconnecting one or more devices or fan covers.

2. Remove the power unit.

3. Wait for one minute, and then replace the power unit.

Powering modules outside your ONErack with the service cable

> ⚠️ When using the service cable to power a module, do not open the voltage selector or attempt to change the voltage of that module.
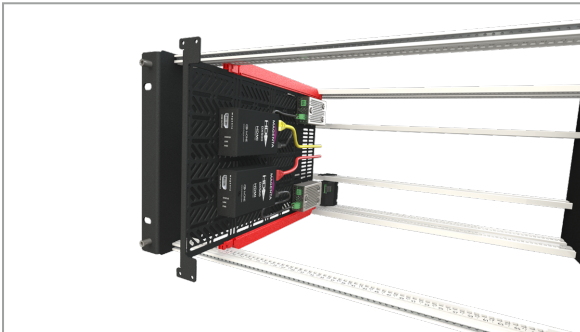
> ❗ Before you connect the service cable to a module, make sure the connector is up the right way.

To service devices mounted on modules, you remove the module from the ONErack chassis. Removing the module from the chassis disconnects the module from your ONErack power supply.

The service cable allows you to remove a module and connect it directly to your ONErack power supply. Your devices are powered, and serviceable.
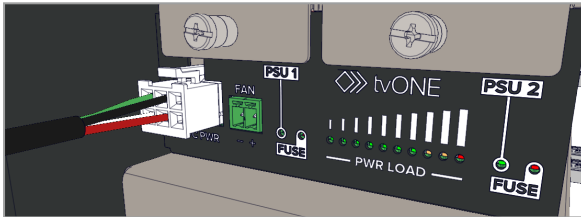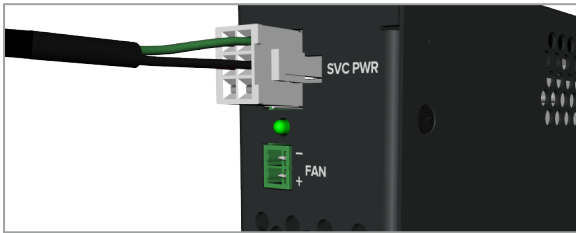
1. Remove the module from the chassis.

2. Connect the service cable to the voltage selector of the module.
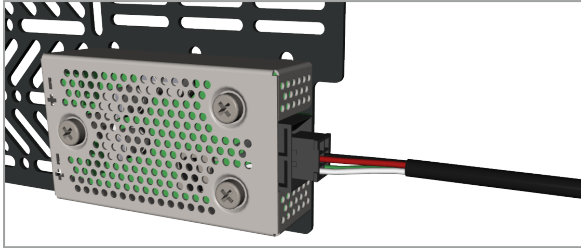
3. Connect the service cable to the internal power supply, or dual-redundant PSU.

Safety information for the internal power supply and the dual-redundant PSU

⚠️ ## Risk of electrical shock

- Do not open the cover of the internal power supply or dual-redundant PSU.

  There are no user-serviceable parts inside.

- When using the service cable to power a module, do not open the voltage selector or attempt to change the voltage of that module.

⚠️ ## Risk of damage to equipment

- In the internal power supply, each daisy-chain cable is protected by an 8 A fuse. Do not overload the cables.

- The internal power supply can supply up to 200 W to a single daisy-chain, or up to 250 W across two daisy-chains. Do not overload the internal power supply. If the internal power supply is overloaded, it will not start.

- The dual-redundant PSU can supply up to 350 W to a single daisy-chain, or up to 450 W across two daisy-chains. Do not overload the dual-redundant PSU. If the dual-redundant PSU is overloaded, one or both power units can fail.

  If a single power unit fails, and the dual-redundant PSU is still overloaded, the other can fail soon afterward.

- Do not block the vents of the internal power supply or dual-redundant PSU. If a power supply overheats, it shuts down and will not restart.

- Before you connect the service cable to a module, make sure the connector is up the right way.

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