

# TUF-R<sup>®</sup>A+C 25W POWER DELIVERY

USB Type A  
Reversible

USB Type C  
Power Delivery

OE Electric's TUF-R<sup>®</sup> PD (25W) is our next generation USB fast charging module incorporating the latest Power Delivery technology and an industry first reversible USB A port.

The new TUF-R<sup>®</sup> PD (25W) USB charger enables mobile devices to charge at optimum speeds. For a low battery boost, a quick 10-minute charge is all that is needed to add around 20% for the latest phones.

The A and C outlets have 3-4 supply voltages available depending on the device being charged. TUF's Intelligent Device Recognition (IDR) ensures your device is charged at the optimal level in the shortest time.

- Total 25W Power Output
- Intelligent USB Type C with Power Delivery
- Reversible USB Type A with Fast Charge
- Patented Replaceable USB cartridge
- Internal overload protection
- LED Power Delivery indication
- Integrates into most OE units
- Tested to the highest safety standards



The new TUF-R® A+C USB charger offers different supply voltages depending on the device being charged.

When a device is plugged into either the Type A or Type C socket a digital 'handshake' takes place allowing the TUF to charge the device at the optimum level.



### USB Type A

5.0 Volts	x	3.0 Amps	=	15.0 Watts
9.0 Volts	x	2.0 Amps	=	18.0 Watts
12.0 Volts	x	1.5 Amps	=	18.0 Watts

### USB Type C

5.0 Volts	x	3.0 Amps	=	15.0 Watts
9.0 Volts	x	2.2 Amps	=	19.8 Watts
15.0 Volts	x	1.7 Amps	=	25.5 Watts
20.0 Volts	x	1.2 Amps	=	24.0 Watts



Blue LED - standard Fast charging upto 5V

Green LED - Power Delivery 9V - 20V

Device Charge Time	10-90% Charge Time
iPhone X Max	65 minutes
iPhone X	77 minutes
Samsung S9 plus	79 minutes
Samsung S10	63 minutes
Low battery boost charge	Up to 20% in ten minutes for the latest phones

Our new USB Type A not only offers advanced charging, but can accept the USB inserted either way - getting it right - every time.

The reversibility of the Type A socket makes it far less likely to be damaged while in use and has been independently tested to over 10,000 insertions.

In standard Fast Charging mode the Type C charger remains blue, but if your device accepts Power Delivery the LED will turn green as soon as your device pulls 9-20V providing the most optimal charge.





Our new **TUF-R® A+C 25W POWER DELIVERY** module can be integrated into most of our existing units. You could even upgrade a unit you've already bought.\*

## Technical Information

Features	
Internal Over Temp Protection	Yes, Self Resetting, Blue & Green LED flash
Internal Over Voltage Protection	Self Resetting
Output Over Current Protection	Self Limiting Type C - Flash Green Type A - Flash Blue
Short Circuit Protection	Self Resetting
USB Sockets	Gold plated for improved contact. Type A and Type C manufactured for minimum 10.000 insertions.
Power indicator	Blue LED Standard Voltage Green LED Higher Voltage (PD/QC)
Charge Standards	(IDR) - Intelligent Device Recognition, PD3.0; QC2/QC3
Certifications - Safety	IEC 62368-1 : 2014 UL62368-1 cTUVus
Certifications - EMC	EN 50121-3-2 (railway) EN61204 : 2000 FCC part 15 (B)
Certifications - ROHS	EU 2015/863

Specifications	
USB Charging Outlets	1 x Type-A Female (Reversible) 1 x Type-C Female (Reversible)
Charging specifications	<b>Type-C</b> <ul style="list-style-type: none"> <li>• 5.0V/3.0A (15.0W)</li> <li>• 9.0V/2.2A (19.8W)</li> <li>• 15.0V/1.7A (25.5W)</li> <li>• 20.0V/1.2A (24.0W)</li> </ul> <b>Type-A</b> <ul style="list-style-type: none"> <li>• 5.0V/3.0A (15.0W)</li> <li>• 9.0V/2.0A (18.0W)</li> <li>• 12.0V/1.5A (18.0W)</li> </ul> <b>Combined</b> <ul style="list-style-type: none"> <li>• 5.0V/4.0A (20.0W)</li> </ul>
Rated Total Output Power	25W
AC Voltage Range	100-240VAC at 50/60Hz
AC Input Current (Full Load)	Maximum 0.6A
Efficiency	87.1%
Efficiency at low load	85.75%
Environment	0-25°C
Standby Power	0.06W

\*Only units with an existing TUF-R module can be upgraded.





## Upgrading/Replacing a TUF module



TUF replacing tool.



Insert the 'snake eye' bit into the tool as shown.



Use the tool to unscrew the 'snake eye' screws.



Lift off the TUF fascia



Insert the second part of the TUF replacing tool into the TUF as shown, until a click is heard.



Pull the TUF cartridge out from the unit.



Unwrap and insert the new TUF cartridge, paying close attention to the orientation of the cartridge to the blue housing.



Push the cartridge into the blue housing until a click is heard.



Place the TUF fascia back into position.



Using the TUF replacing tool and 'snake eye' bit, screw the snake eye screws back into place