

# Voltech

## Universal Breakout Box

Provides an easy connection to all Voltech power analyzers.

Universal socket for all standard international power cords.

Line input via standard IEC socket.

Maximum rating 265 Vac at 15 Amps.

Connects to power analyzer via 4mm safety banana sockets. (Normal mode).

Built-in switchable  $1\Omega$  shunt for low-power standby measurements to IEC62301.

Configured for direct connection to a PM1000+ power analyzer via 2mm safety sockets in low-power mode.

Switches the voltage connection for low power measurements as required by IEC62301 Edition 2.



Ideal for ENERGY STAR and all low-power standby measurements.



# Modes of Operation

## Internal Shunt used to measure 10 watts and above.

NOTE: 15A rms rating is achieved only when 15A rated line cords are used for both input and output of the break-out box. For example, if a 10A rated cable and is used to supply power to the box, then only 10A may be drawn from the output.

Using the break-out box.

- Connect the box to the analyzer via the 4mm Vhi, Vlo, Ahi, Alo terminals using the 4mm leads supplied with the analyzer. Vhi to Vhi and so on.
- Connect the device under test to the universal socket.
- Supply power to the device under test (via the box) using the standard IEC inlet.
- The black switch is pushed down toward the INT-SHUNT label.
- The power analyzer is set to internal shunt via its menu .  
PM1000+ → Press Menu, select INPUTS and then select SHUNTS and then Internal  
PM1000+ → Press Menu, select INPUTS and the SCALING, current and make the scaling 1.
- Return to the measurements menu on the PM1000+ to read your devices power.

## External Shunt used to measure Low power standby modes such as required by ENERGY STAR and IEC62301. Maximum rating 1Arms.

- Connect and setup the analyzer as above. Before applying power via the IEC inlet, connect the 2mm EXT-HI and EXT-LO box sockets to the external shunt inputs of the power analyzer.  
PM1000+ → use the blue and black 2mm leads to connect EXT-HI on the box to EXT-HI on the analyzer and EXT-LO on the box to EXT-LO on the analyzer.
- Now apply power.
- In normal mode, check that the current is less than 1A. If not, do not use the external shunt (low power) mode since this will blow the fuse.
- In normal mode, check the inrush current by selecting inrush mode on the power analyzer and switching the device-under-test off and on several times. If the inrush exceeds 3Apk, leave the device-under-test on when switching to low-power mode since the inrush might blow the fuse.
- Now Set up the analyzer to measure from its external shunt input with a 1 ohm shunt.  
PM1000+ → Press Menu, select INPUTS and then select SHUNTS and then select External.  
PM1000+ → Press Menu, select INPUTS then SCALING then AMPS and then type in 0.0125.
- Push the switch toward the EXT-SHUNT label.
- The analyzer is now ready to make low-power standby measurements. See the power analyzer user manual for details.

Note: If the 1 Amp fuse blows, remove the power and all connections and replace the fuse only with the correct rating and specification. 20x5mm 1AT HRC CERAMIC (Voltech part number 66-028).

Complies with IEC61010-1 

For professional use only. No user serviceable parts inside. Clean only with a dry cloth.

Connect to a ground protected, current limited ac supply only.