

# Electrical Calculations

All about calculations

- [How is power factor calculated?](#)
- [AC \(RMS\) / DC \(Mean\) / Frequency values](#)

# How is power factor calculated?

We calculate power factor off of real power (P) and apparent power (S). Where  $pf = P/S$ . Real power is calculated from the product of the Instantaneous Voltage and Current. Apparent power is calculated from the product of the RMS values for Voltage and Current.

# AC (RMS) / DC (Mean) / Frequency values

The Channel Checker shows 4 values for each channel input:

- AC+DC (RMS)
  - *Geometric* sum of the AC and DC values. May not match the numerical sum of the AC and DC values.
- AC (RMS)
  - AC-only RMS value of the signal input.
- DC (Mean)
  - DC-only value of the signal input.
- Frequency
  - The frequency count of the signal. Firmware **v4.0.5 and above** calculates this based on the zero-crossing of the signal, firmware **prior to v4.0.5** calculates frequency based around the mean-value of the signal.