

Measurement	Definition	Indicators	Equipment Symptoms	Possible Solutions
Term	What it Means	What to Look For	How it Affects Equipment	How to Resolve
Line Voltage	<p>Line voltage refers to the AC voltage supplied through the wall outlet.</p> <p>Typically is 110/120V or 208/220V.</p>	Excessive over-voltage or under-voltage. +/- 20% could be cause for concern.	<ul style="list-style-type: none"> • Copier jams • Unexplained error codes • Loss of print quality • Damaged power supply • Shut down/Re-starts • Decreased component life 	<p>Contact a qualified electrician to diagnose problems with circuit.</p> <p>ESP products with over/under voltage protection will protect equipment from damage, but will not prevent the connected equipment from shutting down when line voltage has gone above/below operating limits. The enVision PCS Diagnostic Software allows you to customize over/under voltage threshold settings. A voltage regulator or UPS might be potential solutions, but cost and other potential “side effects” may make these solutions impractical.</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>
Current Draw - Amps	<p>Current Draw, measured in amps, refers to the amount of current flowing through the circuit based on the rating of the connected equipment. Will vary based on operating state of equipment (sleep mode, printing, etc.).</p>	Excessive amp reading above equipment rating, or zero amp reading could be cause for concern.	<ul style="list-style-type: none"> • Damaged power supply • Failing component 	<p>Test/replace power supply or malfunctioning circuit boards.</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>
Power - Watts	<p>Power, measured in Watts, refers to the total power being consumed by connected equipment at any given time.</p>	Excessive power/watts reading at idle or during operation beyond baseline readings could be cause for concern.	<ul style="list-style-type: none"> • Damaged power supply • Failing component 	<p>Test/replace power supply or other worn components (motors, fuser, etc.).</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>
N-G – Neutral – Ground Voltage	<p>Refers to the voltage present between neutral and ground connections at the outlet (with no load/equipment attached).</p>	Excessive N-G voltage greater than 0.5V can indicate excessive load on the branch circuit or improper wiring.	<ul style="list-style-type: none"> • Error codes • Board failures • Shut down/Re-starts 	<p>Contact a qualified electrician to determine cause of problem. May require true dedicated circuit. Isolation transformer can be used to correct problem, but cost might make this solution impractical.</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>

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Scope Meter	The Scope Meter function allows the user to view the voltage, current, and power waveforms on a connected laptop or tablet device.	The Line voltage reading visually indicates over/under voltage conditions, flat-topping, harmonic distortion in real-time. Power usage and current draw can also be monitored in real-time.	<ul style="list-style-type: none"> Fuser failures Loss of print quality Damaged power supply Error codes 	<p>Contact qualified electrician to diagnose and repair circuit.</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>
Crest Factor	Crest Factor is a measure of the voltage waveform showing the ratio of peak values to the average value.	Readings below 1.414 indicate “flat topping” of AC power signal. Caused by other equipment on branch circuit. A low crest factor (i.e. CF << 1.414) means that there is a high value of non-linear loads on branch circuit and possible under-voltage conditions.	<ul style="list-style-type: none"> Error codes Shut down/Re-starts 	<p>Contact qualified electrician to diagnose problems with circuit. May require true dedicated circuit.</p> <p>Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.</p>
Power Factor	Power Factor is defined as the ratio of the real power flowing to the connected equipment (load), to the apparent power in the circuit. Measurement results are between 0 and 1.	<p>Power Factor can be used for comparison to similar equipment. Indicates energy efficiency when in operation. Value of 1.0 indicates highest energy efficiency.</p> <p>Power factor (PF) is displayed on the enVision PCS product LCD and on enVision Diagnostic Software. Also displayed on Software is whether the power factor is leading or lagging (i.e. capacitive or inductive load).</p>	N/A	Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.
Energy - Kwh	Energy, measured in Kwh (Kilowatt Hours), is the amount of energy consumed by connected equipment over time.	Energy measurement can be used for comparison to similar or competitive equipment.	N/A	Contact ESP Technical Support at 1-800-645-9721 for additional recommendations/information.