

# Power Quality and Energy Monitoring Gateways



Industrial equipment runs best when fed quality power. The lifetime, performance, and efficiency of devices from motors to computers improves when events such as sags, harmonics, and phase imbalance are eliminated. Power quality events are a major cause of asset failure, unplanned downtime, and seemingly insignificant problems like flickering lights or crashing computers. Modern power electronics are more sensitive to power quality problems, yet are more likely to cause them. Detecting power quality events is the first step to eliminating them.

Less than 15% of industrial plants monitor their power quality. Denison Technologies offers two pre-engineered and quotable power quality and energy monitoring gateways. Markets served include all manufacturing and large commercial buildings. Denison's gateways are easy to install for rapid and cost effective monitoring, and scalable to support anything from a single machine to a global enterprise. Options are available to expand the gateways' capabilities. All gateways are UL listed and assembled by a certified fabricator.



Data captured may be monitored onsite or stored securely in the cloud. Both gateways interoperate with Denison's software dashboards for remote monitoring. Data may be encrypted using DNP3. The base model gateway uses a wired ethernet connection. Wireless connections are available options.

Gateway	Basic	Advanced
<b>Market</b>		
Large Commercial	✓	✓
Industrial	✓	✓
<b>Power Quality Measurements</b>		
Voltage line to line	✓	✓
Voltage line to neutral	✗	✓
Current per phase	✓	✓
Neutral current	✗	✓
Real power kW	✓	✓
Reactive power kVAR	✓	✓
Apparant power kVA	✓	✓
Displacement power factor	✓	✓
True power factor	✗	✓
Phase rotation	✓	✓
Frequency	✓	✓
THD V & I	✗	✓
Harmonics range	NA	DC to 127th
Interharmonics	✗	✓
K factor	✗	✓
Crest factor	✗	✓
<b>Energy Monitoring</b>		
Real energy odometer kWh	✓	✓
Reactive energy kVARH	✓	✓
Apparant energy kVAH	✓	✓
Peak demand kW	✓	✓
Hours	✓	✓
<b>Advanced Features</b>		
Event capture	✗	✓
Waveform capture	✗	✓
Flicker	✗	✓
IEEE 519 pass/fail	✗	✓
Transients (IEEE 1159)	✗	✓
<b>Accuracy</b>		
Voltage & current	2%	0.10%
Power (real and reactive)	5%	0.20%
<b>Voltage Rating (line to line)</b>	600V	1144V
<b>Control Power</b>	120V AC	120V AC
<b>Available Options</b>		
Opt 1 WiFi modem	✓	✓
Opt 2 ATT 4G modem	✓	✓
Opt 3 Verizon 4G modem	✓	✓
Opt 4 3G modem	✓	✓
Opt 5 24V power supply	✓	✓
Opt 6 uninterruptible power	✓	✓
Opt 7 230V AC control power	✓	✓
Opt 8 24V DC control power	✓	✓
Opt 9 explosion proof enclosure	✓	✓
Opt 10 dust ignition proof enclosure	✓	✓
<b>Product Number</b>	G102	G202

Example: G102 opt 1,6

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## Connectivity

- **Base model:** Wired ethernet TCP/IP
- **Option 1:** WiFi 2.4GHz
- **Option 2:** 4G ATT
- **Option 3:** 4G Verizon
- **Option 4:** 3G



## Markets Served

- Agriculture
- All Manufacturing
- Automotive
- Cement
- Chemical Plants
- Data centers
- Electronics
- Food and Beverage
- Large Commercial
- Metals and Mining
- Oil and Gas
- Pharmaceuticals
- Pulp and Paper
- Semiconductors
- Tire and Rubber
- Water
- Wastewater



## Control Power

- **Base model:** 120V AC nominal
- **Option 5:** AC to 24V DC supply included (required for options 1 through 4 unless 24 DC is available at customer site)
- **Option 6:** Uninterruptible power supply, accepts 100 to 240V AC nominal
- **Option 7:** Wired for 230V AC control power
- **Option 8:** Wired for 24V DC control power
- All models and options include appropriately sized control power circuit breaker.



## Enclosures

- **Base model:** Powder coated steel NEMA 12 or 13 industrial panel. Suitable for splashing or dripping water and industrial areas.
- **Option 9:** Explosion proof enclosure, class I, NEMA type 7. Suitable for flammable atmospheres such as oil refineries.
- **Option 10:** Dust ignition proof enclosure, class II, NEMA type 9. Suitable for environments with flammable dust such as grain elevators.
- Other enclosures, such as wet location and stainless steel, may be custom ordered.

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