REVOLUTION

How Much is it *Actually* **Costing You** to **Roll a Truck** for PQ Problems?

Did You Know:

A *single* truck roll can cost your utility **up to $2,000**, depending on the truck and number of engineers required. With costs of labor, truck costs, fuel, and other expenses, truck roll costs can quickly add up.

Let's Investigate... PQ CAL ...In Comparison...

A *Typical* Power Quality Investigation

Day 1

A customer reports a problem and the utility rolls a truck to install a power quality monitor.

Truck Roll #1
Cost: $1,000

Days 2-15

Wait a couple of weeks and hope the problem appears for the device to record.

Day 16

Roll a truck and pick up the device to bring back to the office.

Truck Roll #2
Cost: $2,000

Day 17

Download and analyze the data to determine the problem. Send a team to fix the problem.

Day 18

Send a technician to reinstall the device to ensure the problem is fixed.

Truck Roll #3
Cost: $3,000

Day 32

Wait a few weeks and hope the event hasn't happened again.

Day 33

Roll a truck and pick up the device to bring back to the office.

Truck Roll #4
Cost: $4,000

Day 34

Download and analyze the data and hope the problem did not occur again.

Day _?

An investigation may extend further if the next event fails to trigger or if the initial solution didn't fix the problem; costing you even more money.

A *Cell Revolution* Power Quality Investigation

Day 1

A customer reports a problem and the utility rolls a truck to install the Cell Revolution power quality recorder.

Truck Roll #1
Cost: $1,000

Day 2

Analyze the data right from your office to determine the problem after receiving an email or text alert. Send a team to fix the problem.

Day 3

Now with the Cell Revolution in place, you can monitor & ensure the problem doesn't return. Just leave the device in place until you move it to the next PQ investigation and your truck roll costs could be significantly reduced!

To Recap:

A *typical* PQ investigation can cost up to **$4,000 or more** and can last weeks, depending on the circumstances. Meanwhile, a *Cell Revolution* PQ investigation only costs **one** truck roll, or approximately $1,000 and the investigation lasts only a few days.

The Cell Revolution can pay for itself in just one power quality investigation!

Cellular Communication

- Download recorded data at any time from your office or the field
- Get email or text alerts at the first sign of an event

Fewer Truck Rolls

- Cut your truck rolls down by accessing your data off-site
- Access recorded data, view livev readings, & change configuration remotely, saving both time & money

Pocket-Sized

- Compact form factor
- Can be installed inside meter bases, transformers, and panels with ease

Weather-resistant

- NEMA 4X – The Revolution's rugged, weather-resistant enclosure allows for long-term placement in problem areas

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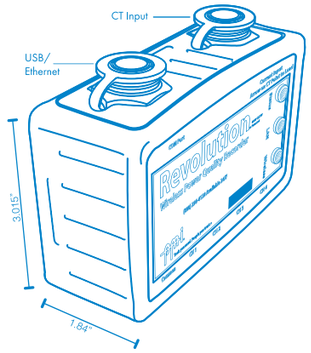
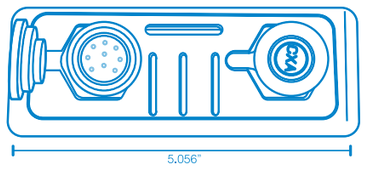
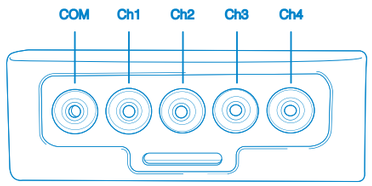
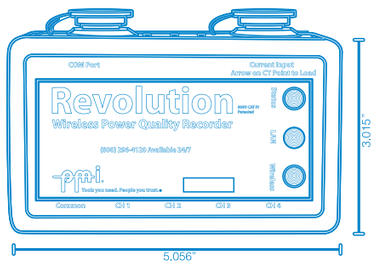




INPUTS	AC Voltage	0 to 600 V RMS continuous per phase (±5 kV peak transients)
	AC Current	0 to 5000 A RMS
	Sample Rate	1 MHz Voltage (16666 samples/cycle) 250 kHz current (4166 samples/cycle)
CHANNELS	Voltage	4 channels
	Current	4 channels
MEASURED QUANTITIES PER CYCLE	RMS Voltage	Volts
	RMS Current	Amps
	Real Power	Watts
	Apparent Power	VAs
	Reactive Power	VARs
	Phase Angle	Degrees
	Power Factor	Watts/VA
	Displacement PF	cos (phase angle)
	Power Usage	kWh, kVARh, kVAh
ACCURACY	Voltage	0.33% of full scale
	Current	1.0% of full scale w/o probe
	Power	1.0% of full scale w/o probe
	Phase Angle	1.0° w/o probe
	Power Factor	±0.02 w/o probe
	Displacement PF	±0.02 w/o probe
POWER FAIL OPERATION	The recorder can operate without any input voltage for up to 30 minutes.	
HARMONICS	Voltage	to the 51st
	Current	to the 51st
	Measures	Magnitude, phase, THD
	Interharmonics	Interharmonics at 5 Hz spacing, harmonic and interharmonic groups and subgroups
SAFETY	IEC 61010-1, 600 V CAT IV, UL Listed	

TIME SYNCHRONIZATION	User-configurable SNTP time synchronization through either Ethernet or cell modem. Without SNTP, clock accuracy is better than 10ppm.	
COMMUNICATIONS	Standard	Bluetooth® Wireless, USB
	Options	Cell Modem, Ethernet
INFORMATION STORAGE	Data Storage	16 MB (Standard), 128 MB, 512 MB or 1 GB (Optional)
	Significant Change	1000 records
	Flicker	1000 records
RECORD SETTINGS	Interval Graphs	1 cycle to 4 hour interval, user selected, stop-when-full or wrap-around memory modes
	Significant Change	1 V to 8 V in 1 V steps
	Flicker Settings	User-defined, or conform to IEEE 1453/ IEC 61000-4-15, and IEEE Std. 141
	Waveform Capture	Voltage and current threshold, periodic capture, waveshape, event cross triggers
	Transient Capture	Peak voltage threshold
POWER SUPPLY REQUIREMENTS	Voltage	60-600 VAC Channel 1 to Common (47-63 Hz)
	Power Consumption	5 Watts max, 15 VA max at 600 V
ENVIRONMENTAL	Operating Temp	-20° F to +135° F
	Humidity	Less than or equal to 85%
	Shock	60 Hz to 2 kHz, acceleration 25 G
	Vibration	10 Hz to 60 Hz, amplitude 1.8 mm
	Max Altitude	2.0 km (6560 ft), derated above 2.0 km
PHYSICAL DIMENSIONS	Size	4.8" L x 3.35" W x 1.84" H
	Weight	less than 1 lb
	Case	NEMA 4X





Features & Benefits

Reduce fleet and labor costs with this small, rugged, lightweight recorder. The Cell Revolution allows you to continuously view, analyze and retrieve data wirelessly from anywhere you have an internet connection. Record standard measurements like voltage, current, and power factor, to more advanced data like harmonics and transients. The included ProVision software lets you monitor real-time current, flicker, voltage, power and more from the field, to your computer.

Communication Options:

The Revolution includes Bluetooth, cell modem, USB, and Ethernet networking communication options.

Large Memory Capacity:

With storage options varying from 16 MB, 128 MB, 512 MB, and up to 1 GB, the Revolution can store an enormous amount of PQ data. This allows for longer recording times and very high-resolution waveform capture.

High Sampling Rate:

Don't miss a single PQ issue with high-speed transient capture at a 1 MHz rate up to 5,000 V.

24/7 Technical Support

Call Us Anytime

At Power Monitors, Inc we strive to provide the best product support possible. As long as you use your PMI recorder, you have unlimited phone support from the factory at no charge, seven days a week, twenty-four hours a day, every day of the year. If you can't find the answer to your question on our web site, give us a call toll-free at (800) 296-4120, and we'll be happy to provide you with service tailored to your specific needs.

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Cloud-based Distribution Monitoring

- Use a web browser to see the state of your distribution system at a glance in a map based display
- Access stripcharts, histograms, and daily profile graphs
- Compare voltage, current and power from different locations, and find correlations across a distribution system

Live Data and Event Notifications

- Programmable email and text message alerts for voltage threshold exceedences, outages, or other events
- Get real-time readings in the device status window
- View up-to-the-minute data anywhere with a web browser

Applications

- Distribution situational awareness
- CVR or Volt/VAR optimization tuning and monitoring
- Outage notification
- End of Line Monitoring