



Rx Monitoring Services, Inc.

# Cx Monitor



The **Cx Monitor**<sup>®</sup> is a power quality monitor adapted specifically for the needs of a commissioning agent.

The monitor gathers all of the voltage and current data required for all of the commissioning tests as well as provides a means for gathering wireless T/H and DC voltage data for one hundred (100) locations! The **Cx Monitor**<sup>®</sup> is equipped to simultaneously monitor in real time, voltage on ten (10) separate channels and current on five (5) separate channels. This is ideal for documenting the testing of generators, UPS's and transfer switches.

## General Specifications:

- Clock: Leap Year, 24-Hour, with time zone info
- Real-time Clock Accuracy: +/- 1 sec / day max
- Synchronize time between Cx Monitors +/- 10 mSec / day
- Internal Memory: Minimum 512Mbytes high speed NAND Flash
- Wireless 802.11gn Integration
- 10/100Mbit Ethernet; FTP, SMTP, HTTP, HTTPS, SSL, SSH, NTP
- USB Mass storage class support
- Remote access through secure remote Ethernet tunneling
- Max number of events: Only limited by internal memory
- Power Requirements: 100V-240V ACrms +/-10% 47-63 Hz 10Watts 24Vdc 0.5Arms Center positive barrel
- UPS standby time: Programmable (Max time 10 Minutes)
- Dimensions: 11.5 x 10.25 x 4 Inches (Height x Width x Depth)
- Weight: 5.55lb

## Environmental & Safety

- Operating environment: Indoors
- Storage Temperature: -20°C to 50°C (-4F-122F)
- Operating Temperature: 0°C to 40°C (32F-104F)
- Max Changes per hour temp: 30°C
- Operating Humidity: 80% Max Non-Condensing
- Conforms to IEC61010 CAT III 600V

## Synchronization & Sampling:

### **Low Frequency:**

- Sampling Frequency: 256 samples/cycle
- A/D Resolution: 16 bit oversampled voltage 2X ; current 4X
- Auto 50/60 Hz ; or locked to input
- Voltage & Current RMS triggers ; Cross triggering
- Adaptable trigger thresholds

### **High Frequency:**

- 1.666Msample/sec per channel
- A/D Resolution: 12 bit

## Voltage and Current Measurement:

### **Low Frequency**

- Voltage Measurement Range: 0-600Vrms
- Voltage multiplier ready for PT integration
- Voltage input impedance: 1.2Mohm

### **High Frequency**

- Voltage Measurement Range: 0-2,500V
- Measurement type: AC coupled digital threshold trigger 500 sample buffer per channel
- Voltage input impedance: 1.2Mohm

### **Current Measurement Range (Probe dependant)**

- Current input type: AC/DC +/- 6Vdc Input impedance 120K, 1M to gnd





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## Log Types & Rates:

### RMS Voltage / Current:

- 1 Second to 30 Minutes
- 10 Voltage Channels Ph-Ph, Ph-G, Ph-N & N-G
- 5 Current Channels { L1, L2, L3, N & G }
- 1 Residual Current {L1+L2+L3+N}
- RMS Voltage Imbalance

### Frequency:

- 10 Seconds to 30 Minutes
- 3 Voltage {L1-G, L2-G, L3-G}

### Peripherals:

- 4 Seconds to 30 Minutes
- Up to 100 Probes
- Wireless DC Voltage +/- 0-600V AutoRanging
- Wireless DCx Voltage {10Ch - 60dc}
- Wireless DC Current {2,000A, 4,000A}
- Wireless Temperature / Humidity
- Wired Temperature / Humidity

### Power:

- 10 Seconds to 30 Minutes
- 3 Phase Delta**
- {Min/Max/Average} Apparent Power(KVA), Real power (KW), Reactive (KVAR), Power Factor (PF), Total KVA, Total KW, Total KVAR, Total PF, Total KVAH, Total KWH, Total KVARH, Total Demand (KVA) and Total Demand (KW)

**3 Phase Wye - Split Phase - Single Pole Single Phase**  
 {Min/Max/Average} Apparent Power (KVA), Real power (KW), Reactive (KVAR), Power Factor (PF), Total KVA, Total KW, Total KVAR, Total PF, Total KVAH, Total KWH, Total KVARH, Total Demand (KVA) and Total Demand (KW)

### Single Phase (2 Pole)

{Min/Max/Average} Apparent Power (KVA), Real power (KW), Reactive (KVAR), Power Factor (PF), Total KVA, Total KW, Total KVAR, Total PF, Total KVAH, Total KWH, Total KVARH, Total Demand (KVA) and Total Demand (KW)

### Harmonics:

- 10 Seconds to 30 Minutes
- 3 Ph-Ph, 3 Ph-G & 3 Current channels to the 31st.

### THD:

- 10 Seconds to 30 Minutes
- 3 Ph-Ph, 3 Ph-G & 3 Current{Odd, Even, Total & Max}

### Phase Angle:

- 10 Seconds to 30 Minutes
- 3 Ph-Ph, 3 Ph-G

### Symmetrical Components:

- 10 Seconds to 30 Minutes
- Voltage & Current : Magnitude, Angle & Imbalance

## Voltage Current & Time Accuracy:

V/I Calibrated at 72° f. TC = 0.003%/°F

### Low Frequency

- A/D Measurement type: True RMS calculated every half cycle
- A/D Measurement Uncertainty: AC +/- 0.1% reading +/- 0.1% full scale above 50Vrms
- DC +/- 0.1% reading +/- 0.1% full scale above 50V dc Offset Error: AC/DC: 0.05Vrms

### High Frequency

- A/D Measurement type: Sampled Threshold cross 500 sample buffer per channel
- A/D Measurement Uncertainty: AC +/- 5% reading Offset Error: AC: 5V

### Current:

- A/D Measurement type: True RMS calculated every cycle
- A/D Measurement Uncertainty System:
- AC +/- 0.1% reading +/- 0.1% full scale above 50Arms
- DC +/- 0.1% reading +/- 0.1% full scale above 50Adc
- Offset Error: AC/DC: 1Arms

### Time:

- 10mSec/day calibrated at 72° f. TC = 100ppb/°F

## Additional Links:

- Cx User Manual:** [https://reports.rxms.com/image/data/instructions/Cx\\_Monitor\\_User\\_Manual.pdf](https://reports.rxms.com/image/data/instructions/Cx_Monitor_User_Manual.pdf)
- AC Current Probes:** [https://reports.rxms.com/image/data/spec\\_sheet/Spec\\_AC\\_Current.pdf](https://reports.rxms.com/image/data/spec_sheet/Spec_AC_Current.pdf)
- Wireless Spec Sheet:** [https://reports.rxms.com/image/data/spec\\_sheet/Wireless\\_battery\\_Specsheet.pdf](https://reports.rxms.com/image/data/spec_sheet/Wireless_battery_Specsheet.pdf)

