



# Cx MONITOR



The **Cx Monitor**® 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 provide a means for also gathering wireless T&H or DC voltage data for over one hundred (100) locations! The **Cx Monitor**® 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.

## 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

## General Specifications:

- Clock: Leap Year, 24-Hour, with time zone info
- Real-time Clock Accuracy: +/- 1Sec / day max.
- Internal Memory: Minimum 512Mbytes high speed NAND Flash
- Wireless 802.11g Integration (Ad-hoc mode)
- 10/100Mbit Ethernet; FTP, SMTP, HTTP, HTTPS, SSL, SSH.
- USB Mass storage class support
- Remote access though 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 Barrel positive
- UPS standby time: Programmable Max time 10 Minute
- Dimensions: 11.5 x 10.25 x 4 Inches. (Height x Width x Depth)
- Weight: 5.55lb

## Synchronization & Sampling:

### **Low Frequency:**

- Sampling Frequency: 256Samples/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 input impedance: 1.2Mohm

### **High Frequency**

- Voltage Measurement Range: 0-2500V
- Measurement type: Digital Sampled 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 }

### Peripherals:

- 1 Minute to 30 Minutes
- Up to 130 Probes
- Wireless DC Voltage +/- 0-600V AutoRanging
- 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)

#### 2 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)

### 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

### 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





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## Voltage and Current Accuracy:

### Low Frequency

- A/D Measurement type: True RMS calculated every half cycle
- A/D Measurement Uncertainty: AC +/- 0.5% reading +/- 0.5% full scale above 50Vrms  
DC +/- 0.5% reading +/- 0.5% full scale above 50V dc    Offset Error: AC/DC: 0.5Vrms

### 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 +/- 1% reading +/- 1% full scale above 50Arms
- DC +/- 1% reading +/- 1% full scale above 50Adc  
Offset Error: AC/DC: 1Arms

## Measurement Uncertainty Current Probes:

### AEMC 200 Arms medium

#### -Wire Length 12ft

- Measuring range: 0.5A- 240Arms AC
- Max Working Voltage: 600Vrms
- Basic probe accuracy: Of reading
 

0.5A-10A:	3.0%
10A-40A:	2.5%
40A-100A:	2.0%
100A-240A:	1.0%
- Linearity: 1% + accuracy
- Conductor sensitivity: none
- Frequency Response 40Hz – 10 kHz
- Phase Shift:
 

0.5A-10A:	Not Specified
10A-40A:	< 5.0 degrees
40A-100A:	< 3.0 degrees
100A-240A:	< 2.5 degrees
- Total System Accuracy: +/- 4% rms with offset errors of +/- 0.5Apk
- System Gain: 0.02A/Count (16bit a2d)
- Output voltage: 10mV/Amp
- Total Range: +/- 600Apk

### 3000A ProSys:

#### -Wire Length 8ft

- Measuring range: 5A- 3200Arms AC
- Max Working Voltage: 600Vrms
- Basic probe accuracy: ± 1% of reading ± 1A
- Linearity: ± 0.2% of reading
- Conductor position sensitivity: ± 2% of reading
- Frequency Response: 10Hz to 10 kHz (-1dB)
- Phase Shift: < 1 degrees
- Total System Accuracy: +/- 2% rms with offset errors of +/- 2.5Apk
- System Gain: 0.2A/Count (16bit a2d)
- Output voltage: 1mV/Amp
- Total Range: +/- 6000Apk probe limited to 4500 Apk
- DC offset on startup can be significant for approximately 10 sec.

### 6000A ProSys:

#### -Wire Length 8ft

- Measuring range: 10A- 6400Arms AC
- Max Working Voltage: 600Vrms
- Basic probe accuracy: ± 1% of reading ± 10A
- Linearity: ± 0.2% of reading
- Conductor position sensitivity: ± 2% of reading
- Frequency Response: 10Hz to 10 kHz (-1dB)
- Phase Shift: < 1 degrees
- Total System Accuracy: +/- 2% rms with offset errors of +/- 5Apk
- System Gain: 0.4A/Count (16bit a2d)
- Output voltage: 0.5mV/Amp
- Total Range: +/- 12000Apk probe limited to 9000 Apk
- DC offset on startup can be significant for approximately 10 sec.

