



# Raptor Eye

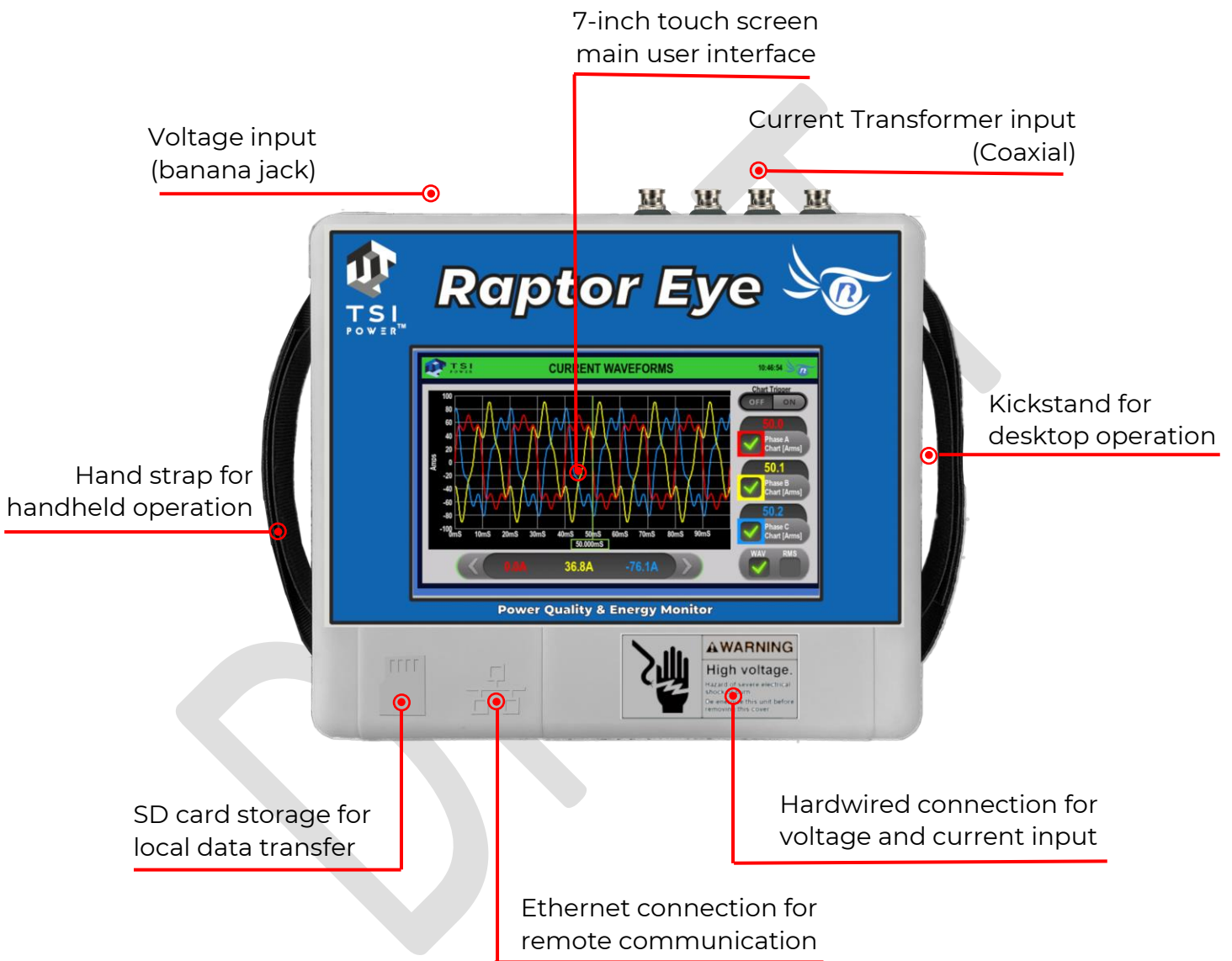
Model: REM-1000 | Power Quality & Energy Monitor |



The Raptor Eye Monitor (REM-1000) is a highly sophisticated Power Quality and Energy Monitor developed by the power quality expert team of TSI Power. This is a one-of-a-kind device that is designed from the ground up with design input from industrial application users. The aim is to provide the users with a practical and easy to use monitor for all their power and energy monitoring needs.

Features and Benefits	
Ease of use with intuitive user interface via touchscreen, or remote client software.	Large local LCD screen enable on the spot viewing and setting. Remote client software provides option of remotely viewing and setting.
Complete with all essential voltage, current and power parameters monitoring.	Data privacy with users able to keep all monitoring data locally without sending data to external cloud storage.
No software license fee or annual subscription required. Software updates are supported free of charge.	Flexibility to be used as temporary monitor or permanent monitor with various mounting kits.
Options for local data retrieval via SD card or online remote download.	Raptor Eye Power Quality Reporter software will generate on demand reports from data collected.

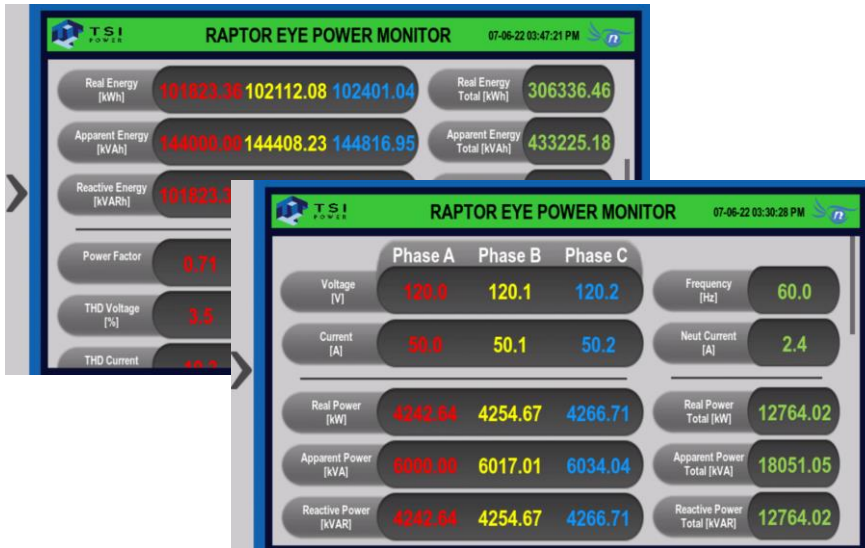
# Raptor Eye Monitor at a glance



# Monitoring Screens

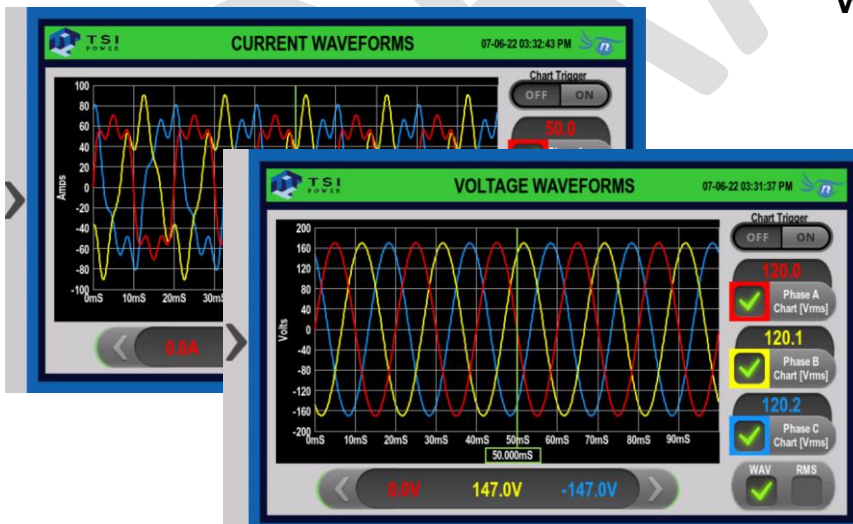
## Main Screen

- Display a table of RMS values of all parameters monitored.
- These includes three phase Voltage, Current, Power, Energy, THD, Power Factor and Phase Angle.



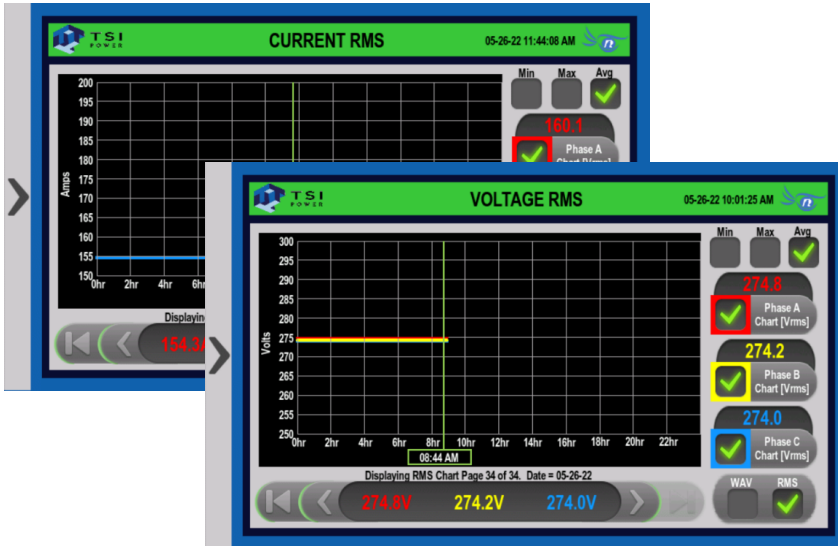
## Waveforms Display

- Three phase voltage and current waveform can be displayed in real time.
- Exact values of the voltage and current on any instance, can be shown by scrolling through the waveforms.



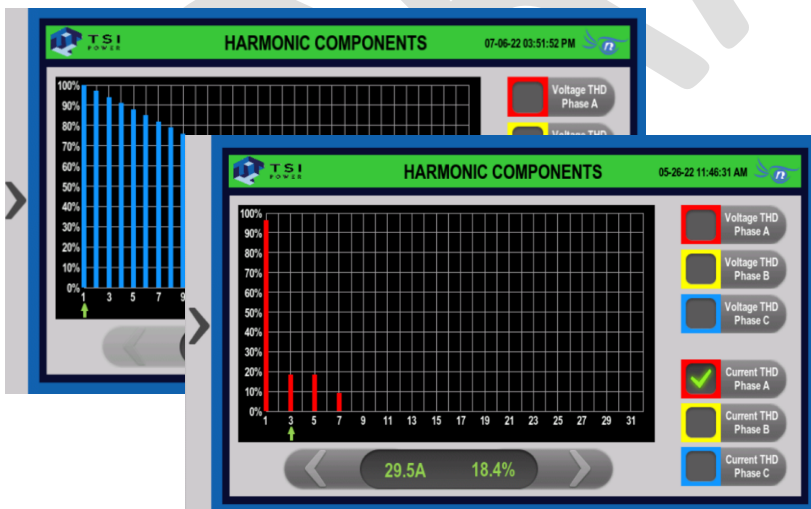
# Monitoring Screens

## RMS Chart



- The historical RMS charts of three phase voltage and current can be displayed.
- Exact RMS values of the voltage and current can be shown by scrolling through the chart.

## Harmonic Spectrum Chart



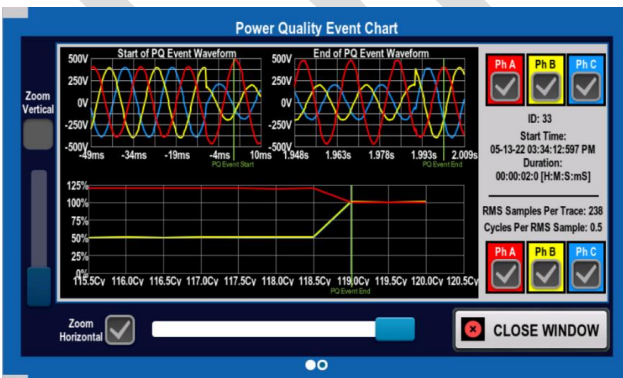
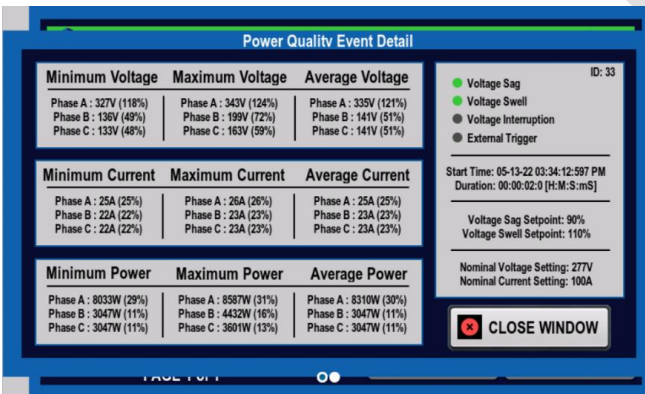
- Instantaneous harmonic spectrum for three phase voltage and current can be displayed.
- Various order of harmonic distortion values can be shown by scrolling through the chart.

# Event Logs

## Event Logs

- All power quality events are displayed in the Event Logs table, showing a summary of the voltage values, duration of the event, event description, date and time stamp
- Each event will have further details in numerical as well as waveform/RMS chart display.

ID	EVENT CLASS	WORST-CASE VOLTS [%]	TIMESTAMP	DURATION
34	VOLTAGE SWELL	A=144   B=144   C=143	05-13-22 03:46:57 PM	00:00:00:4 [H:M:S:mS]
33	VOLTAGE SAG	A=124   B=49   C=48	05-13-22 03:34:12 PM	00:00:02:0 [H:M:S:mS]
32	VOLTAGE SAG	A=109   B=120   C=103	05-13-22 03:34:10 PM	00:00:00:359 [H:M:S:mS]
31	VOLTAGE INTERRUPTION	A=0   B=0   C=0	05-13-22 03:34:08 PM	00:00:01:113 [H:M:S:mS]
30	VOLTAGE SAG	A=134   B=49   C=50	05-13-22 03:33:22 PM	00:00:02:12 [H:M:S:mS]
29	VOLTAGE SWELL	A=145   B=143   C=144	05-13-22 03:33:06 PM	00:00:00:4 [H:M:S:mS]



## Model Number and Accessories

Model Number	Description
<b>REM-1000</b>	Raptor Eye Monitor base unit
	<b><i>Current Transformer</i></b>
<b>CP100-1</b>	Set of four split-core current transformers, 100A Primary, 5A Secondary, 3% Accuracy, with standard circular connector
<b>CP200-1</b>	Set of four split-core current transformers, 200A Primary, 5A Secondary, 0.5% Accuracy, with standard circular connector
<b>CP400-1</b>	Set of four split-core current transformers, 400A Primary, 5A Secondary, 0.5% Accuracy, with standard circular connector
<b>CP800-1</b>	Set of four split-core current transformers, 800A Primary, 5A Secondary, 0.5% Accuracy, with standard circular connector
<b>CP1000-1</b>	Set of four split-core current transformers, 1000A Primary, 5A Secondary, 1% Accuracy, with standard circular connector
<b>CT100-1</b>	Set of four split-core current transformers, 100A Primary, 5A Secondary, 3% Accuracy, for hardwire connection
<b>CT200-1</b>	Set of four split-core current transformers, 200A Primary, 5A Secondary, 0.5% Accuracy, for hardwire connection
<b>CT400-1</b>	Set of four split-core current transformers, 400A Primary, 5A Secondary, 0.5% Accuracy, for hardwire connection
<b>CT800-1</b>	Set of four split-core current transformers, 800A Primary, 5A Secondary, 0.5% Accuracy, with standard circular connector
<b>CT1000-1</b>	Set of four split-core current transformers, 1000A Primary, 5A Secondary, 1% Accuracy, for hardwire connection
	<b><i>Voltage Probe</i></b>
<b>VP-1</b>	Set of five cords of voltage probes. Each cord measure 59.1" (1500.00mm) sheathed To Banana Plug, with voltage probe clip. Rated at 1000V.
	<b><i>Accessories</i></b>
<b>PS1</b>	24V 12 W AC/DC External Wall Mount Adapter Fixed Blade Input
<b>RS1</b>	MicroSD Memory Card 16GB



## Technical Specifications\*

Voltage	
<b>Number of Inputs</b>	4 (L1, L2, L3, N), with reference to Ground
<b>Three Phase with neutral system, max. voltage</b>	347 V / 600 Vrms (+15%)
<b>Three Phase without neutral system, max. voltage</b>	600 Vrms (+15%)
<b>Maximum Voltage</b>	±1000 V peak
<b>Overvoltage category</b>	1000 V CAT II, 600 V CAT III, 300 V CAT IV
<b>Voltage Magnitude</b>	RMS refreshed 1 second
<b>Frequency</b>	50/60 Hz (user configurable)
<b>Voltage harmonic component</b>	0.0% - 399% (1 <sup>st</sup> - 32 <sup>nd</sup> )
<b>Total Harmonic Distortion (THD)</b>	0.0% - 399%
<b>Crest Factor</b>	1.6 (related to 600 Vrms)
<b>Impedance</b>	1.69 MΩ
<b>Sampling rate</b>	8kHz sample / phase
<b>Waveform capture rate</b>	133(60Hz), 160(50Hz) sample / cycle
<b>Voltage sag event trigger</b>	1/2-cycle RMS voltage < Sag Detection % or > Swell Detection %
<b>Voltage deviation event Nominal</b>	User configurable depending on wiring configuration setting Single Phase: Min = 109V, Max = 382V, Default = 120V Split Phase: Min = 216V, Max = 264V, Default = 240V 3 Phase 3 Wire: Min = 172V, Max = 660V, Default = 480V 3 Phase 4 Wire: Min = 99V, Max = 380V, Default = 277V
<b>Sag Detection % of Nominal</b>	User configurable Min = 65%, Max = 95%, Default = 85%
<b>Swell Detection % of Nominal</b>	User configurable Min = 105%, Max = 130%, Default = 110%
<b>Voltage deviation event storage</b>	Non-volatile event storage up to 500 events Oldest events overwritten after event 500
<b>RMS data trend logging</b>	1440 data points per chart page (1-day worth of data) Each data point = Min V, Max V, Avg V, values consisting of 1 second-RMS samples, aggregated over 1-minute.
<b>RMS data trend storage</b>	Non-volatile RMS trend file storage up to 30 days. Oldest trend files overwritten after 30 days

## Technical Specifications\*

Current	
<b>Number of Inputs</b>	4 (L1, L2, L3, N)
<b>Current Sensor</b>	Current transformer (100:5, 200:5, 400:5, 800:5, 1000:5 or 5000:5)
<b>Current Magnitude</b>	RMS refreshed 1 second
<b>Rated current</b>	5 Arms
<b>Maximum current</b>	6 Arms
<b>Current harmonics component</b>	0.0% - 399% (1 <sup>st</sup> – 32 <sup>nd</sup> )
<b>Total Harmonic Distortion (THD)</b>	0.0% - 399%
<b>Crest Factor</b>	1.6 (related to 5 A)
<b>Sampling rate</b>	8kHz sample / phase
<b>Waveform capture rate</b>	133(60Hz), 160(50Hz) sample / cycle
<b>Power Consumption</b>	1.25 VA
<b>RMS data trend logging</b>	1440 data points per chart page (1-day worth of data) Each data point = Min I, Max I, Avg I, values consisting of 1 second-RMS samples, aggregated over 1-minute)
<b>RMS data trend storage</b>	Non-volatile RMS trend file storage up to 30 days Oldest trend files overwritten after 30 days
Power	
<b>Number of Channels</b>	3
<b>Real Power</b>	kW (per – phase and total)
<b>Apparent Power</b>	kVA (per – phase and total)
<b>Reactive Power</b>	kVAR (per – phase and total)
<b>Power Factor</b>	Per – phase and total
Energy	
<b>Number of Channels</b>	3
<b>Real Energy</b>	kWh (per – phase and total)
<b>Reactive Energy</b>	kVAh (per – phase and total)
<b>Apparent Energy</b>	kVARh (per – phase and total)

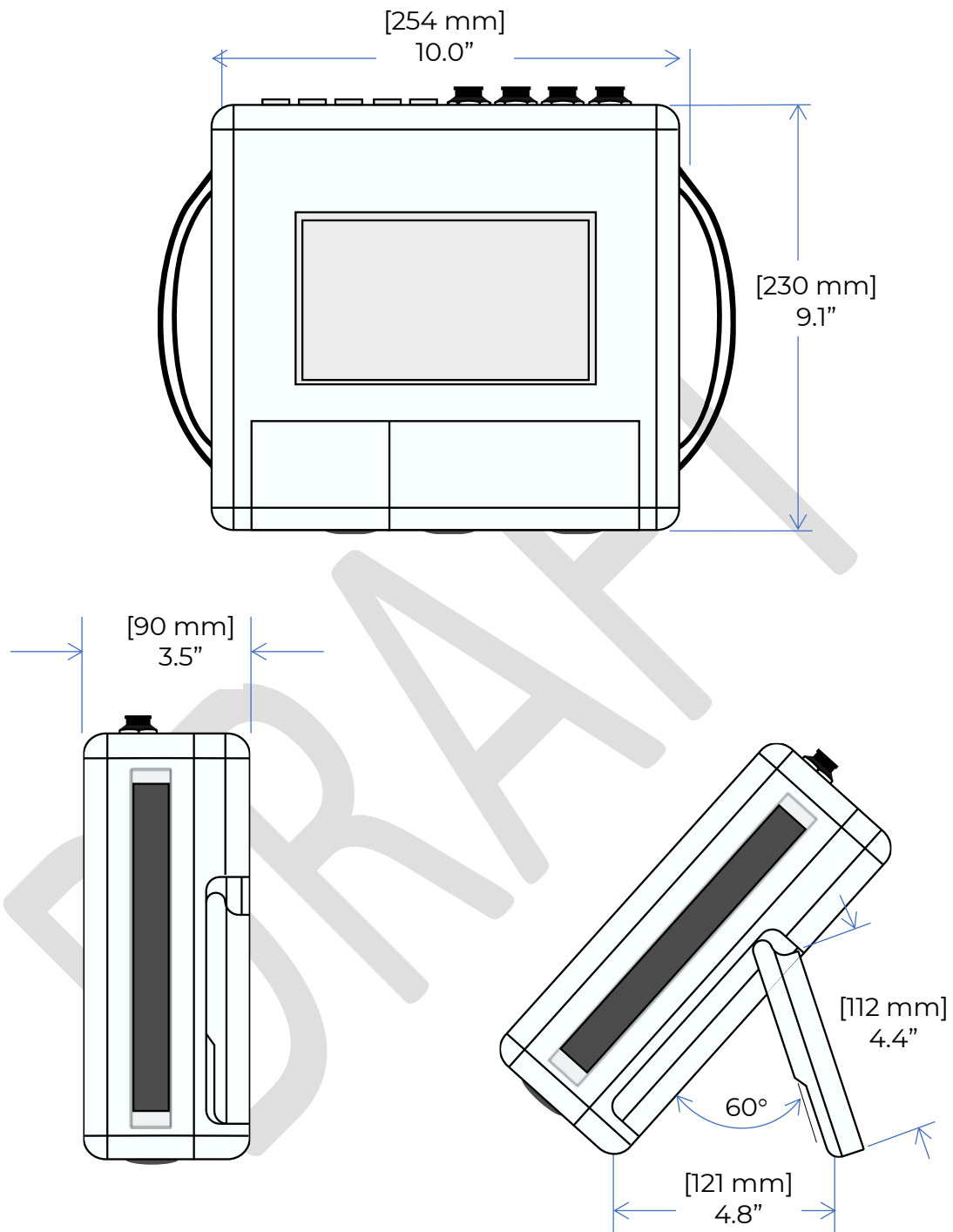


## Technical Specifications\*

Mechanical	
<b>Enclosure construction</b>	ABS plastic
<b>Enclosure environmental rating</b>	NEMA 1 / IP 20 (for use in protected indoor environments)
<b>Net weight (with connectors)</b>	5.5 lbs. (2.5 kg)
<b>Device dimensions</b>	10.0" (254 mm) W x 9.1" (230 mm) H x 3.5" (90 mm) D
<b>Battery (Real Time Clock)</b>	Type Li-Mn CR2032, 3V
Environment	
<b>Operating altitude range</b>	From 0 to 1,500 meters above sea level (without derating)
<b>Operating temperature range</b>	0 to +40 °C
<b>Operating humidity range</b>	0 to 90% relative humidity (non-condensing)
Communication	
<b>Communication protocol</b>	Ethernet IEEE 802.3 100 Base-T (RJ45) modular connector TCP/IP port 11030, 11031 – Optional Remote client connection TCP/IP port
<b>Removable storage media</b>	microSD card socket
<b>Removable storage restrictions</b>	microSD HC, or microSD XC, format FAT32
<b>Display</b>	7" LCD Touch Screen Display
Design standards	
	UL, IEC

\***Note 1:** For continuous product improvement, specifications are subject to change without notice.

# Dimensions



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