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The Power of Knowing

QualiTrack - Panel Mount Energy and Harmonic Recorder

The QualiTrack PM Instrument is a panel mounted energy recorder designed to provide detailed information of a specific electrical feed. USB communication capabilities enable fast and accurate information retrieval and the software provides a graphical interface for quick and easy analysis of recorded data.

The unit has the following main functions:

- Extensive load profiling, recording per phase and summated parameters.
- Record dips with a 10ms resolution.
- Record swells with a 10ms resolution.
- Records and stores the first 19 Harmonics.
- Display of the first 19 Harmonics per phase on the LCD screen.
- Display of all instantaneous energy related values on the graphical screen.

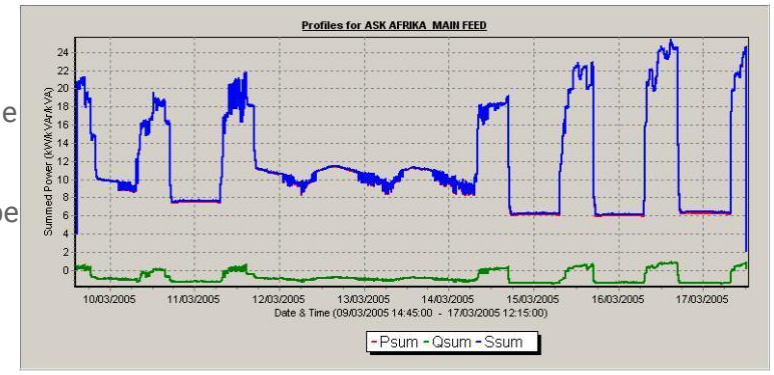
Typical Applications

- Costing Analysis – Determine cost centers, identify opportunities for demand control and determine energy consumption patterns.
- Load Studies – Determine the capacity of a network, perform load trending, phase balancing, DSM studies.
- Power Factor Investigation – Determine the maximum demand and capacitor bank sizes required for unity power factor.
- Harmonic and quality of supply investigations.

Energy Profile Recording

The QualiTrack is suitable for installation at a three-phase (3 Wire/2 Watt 110Volt or 4 Wire/3 Watt 400 Volt) and single phase supplies. The instrument records all energy parameters at preset averaging intervals ranging from 1 second to 60 minutes on a large onboard flash memory.

The 4 key keypad enables the user to scroll through different screens for viewing of measured parameters as well as selecting the various viewing formats of real-time parameters on -site. The recorded data can be downloaded to any computer where the data are presented in various analytical formats including graphs, statistics and export functions.



Harmonic Profile Recording

The first 19 Harmonics are recorded over the same averaging interval as the energy parameters. A profile of each harmonic can be drawn using the supplied QTrack3 software.

Dip Profile Recording

Any sudden drop in supply voltage below a programmable threshold is recorded with a resolution of 10 milliseconds. The profile of each dip can be viewed using the QTrack3 software.

Swell Profile Recording

Any sudden rise in supply voltage above a programmable threshold is recorded with a resolution of 10 milliseconds. The profile of each swell can be viewed using the QTrack3 software.

Peak profile Recording

The Qualitrack3 records the peak values over a selectable interval of 20ms to 1000ms within the set averaging interval. The highest and lowest values for Frequency and voltage are stored as well as the highest value for current.

Voltage and Current Inputs

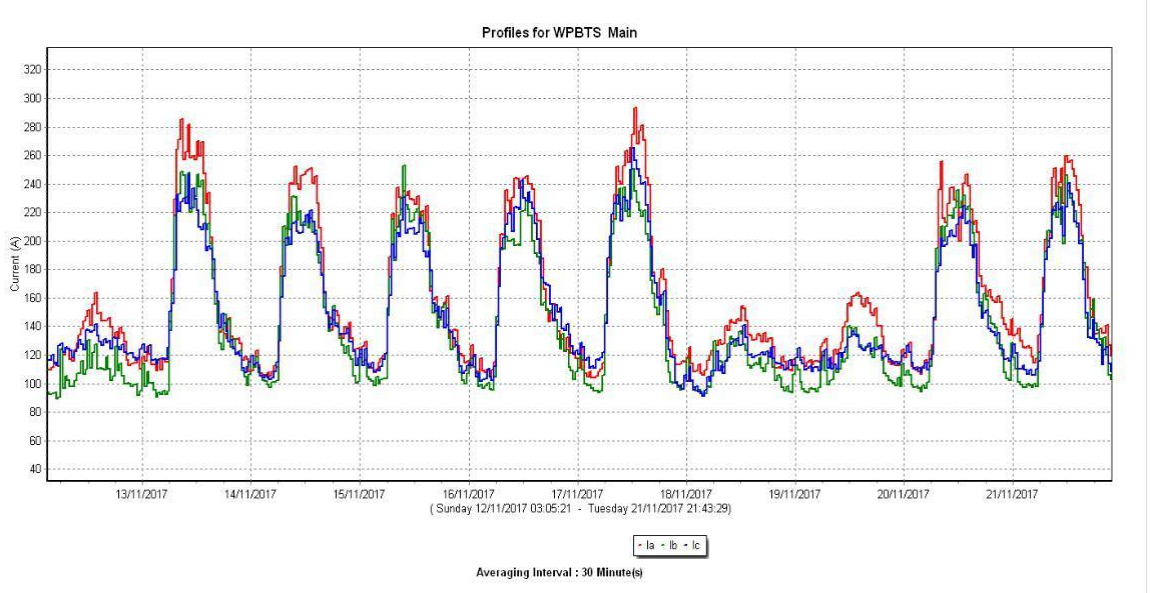
The QualiTrack PM is issued standard with a three phase voltage input of 0 – 260 V phase to neutral. An additional input measures the voltage between ground and neutral.

Current inputs are 0 – 5 Amp or 0 -1 Amp as a standard. A CT ratio can be programmed into the unit so that primary currents are displayed on the screen.

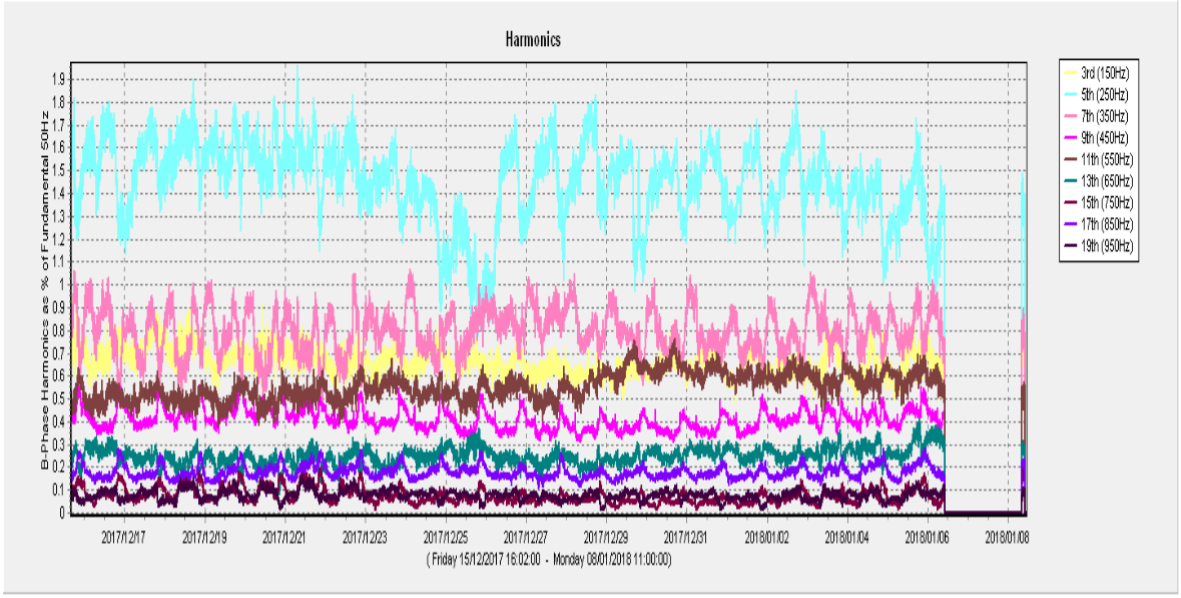
Software Functionality

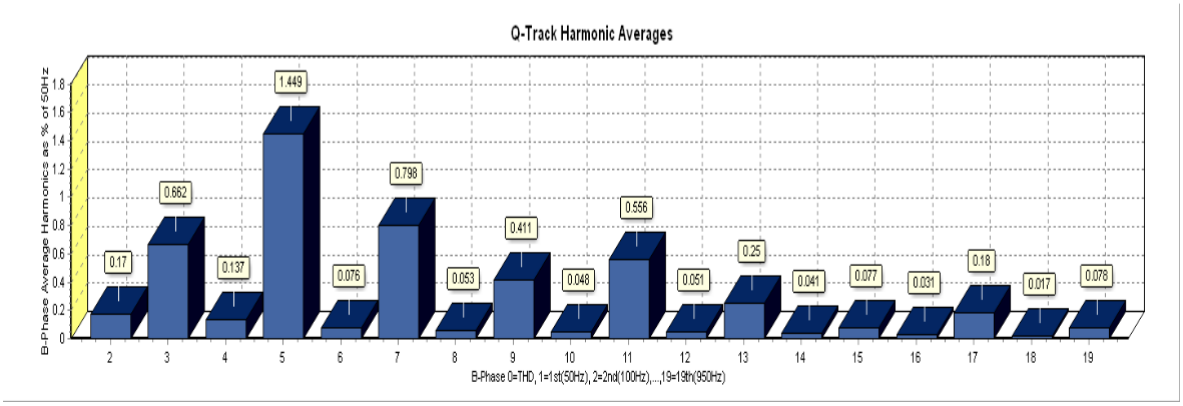
The QTrack3 software incorporates various graphical and analytical functions for quick and easy analysis of recorded data. Extensive zooming capabilities and multiple export functions allows for sensible and presentable reporting of recorded data.

Typical Load Profile Graph

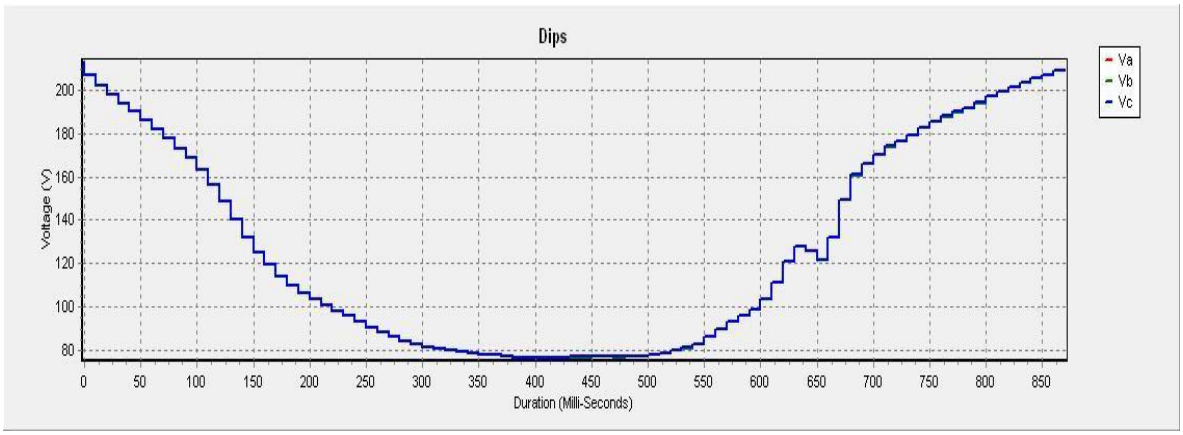


Typical Harmonic Graph





Typical Dip Graph

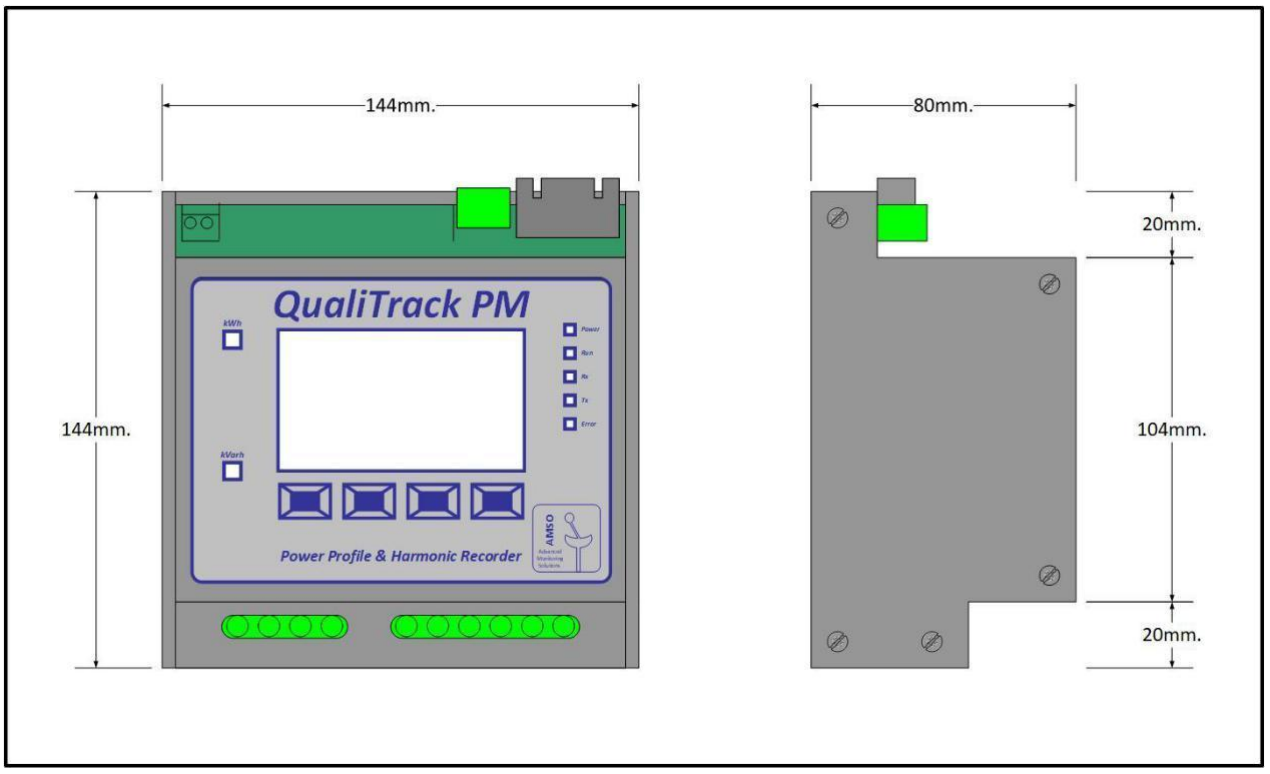


Graphical Statistics

Information	Parameter	Date & Time	Value	Unit
Description	Main Supply			
Feeder	Feeder 1			
Graph Statistics	Recording Start	25/07/2007 11:00:00		
	Recording End	03/08/2007 16:30:00		
Phase Voltage	Phase A Maximum Va	01/08/2007 05:00:00	246.5	V
	Phase B Maximum Vb	01/08/2007 05:00:00	249.3	V
	Phase C Maximum Vc	01/08/2007 05:00:00	248.0	V
Line Voltage	Phase AB Maximum Vab	01/08/2007 05:00:00	429.4	V
	Phase BC Maximum Vbc	01/08/2007 05:00:00	430.7	V
	Phase CA Maximum Vca	01/08/2007 05:00:00	428.3	V
Current	Phase A Maximum Ia	26/07/2007 12:00:00	508.9	A
	Phase B Maximum Ib	26/07/2007 15:30:00	462.0	A
	Phase C Maximum Ic	26/07/2007 12:30:00	583.3	A
Active Power	Phase A Maximum	26/07/2007 12:00:00	119.336	kW
	Phase B Maximum	26/07/2007 15:30:00	107.671	kW
	Phase C Maximum	26/07/2007 12:30:00	138.846	kW
Reactive Power	Phase A Maximum	27/07/2007 16:30:00	28.544	kVAr
	Phase B Maximum	27/07/2007 17:00:00	29.601	kVAr
	Phase C Maximum	27/07/2007 11:30:00	21.575	kVAr
Apparent Power	Phase A Maximum	26/07/2007 12:00:00	122.443	kVA
	Phase B Maximum	26/07/2007 15:30:00	110.815	kVA
	Phase C Maximum	26/07/2007 12:30:00	140.399	kVA
Maximum Demand kW	Active Power	26/07/2007 12:00:00	354.296	kW
	Apparent Power		362.599	kVA
	Reactive Power		77.152	kVAr
	Power Factor		0.977	
Maximum Demand kVA	Apparent Power	26/07/2007 12:00:00	362.599	kVA
	Active Power		354.296	kW
	Reactive Power		77.152	kVAr
	Power Factor		0.977	
Energy	Import Active Energy		50943.600	kWh
	Export Active Energy		0.000	kWh
	Inductive Reactive Energy		12824.200	kVArh
	Capacitive Reactive Energy		0.000	kVArh
Load Factor kW	(Avg kW)/(Max kW)		0.650	
Load Factor kVA	(Avg kVA)/(Max kVA)		0.650	

Technical Information

Dimensions



General Specifications	
Dimensions	144 x 144 x 80 (L x W x D)
Voltage input Range	85V ac - 260V ac (Phase to Neutral)
Current Inputs	0 - 5 Amp
	0 - 1 Amp
	Flexible Passive Current Probe (2400 A) (Optional)
Communication Interface	1 x USB Port , 2 x RS 485 Port
Communication Protocol	Modbus RTU
Accuracy	Class 1
Clock Accuracy	Accurate to ±1 Minute/Month (0°C to +40°C)
Keypad	4 Key Keypad for scrolling through Screens
Power Consumption	3.5 VA
Expected data retention	Minimum 5 years

Display	
Type of Display	128 x 64 Graphical LCD with backlight & contrast control
Instantaneous Displayed Values	Line Current (Per Phase)
	Phase Voltage (4Wire/3Watt Only)
	Line Voltage
	kW (Per Phase & Summed)
	kVA (Per Phase & Summed)
	kVAr (Per Phase & Summed)
	Power Factor (Per Phase & Summed)
	Harmonics (1 – 19) Per Phase
	Frequency
Measuring Method	3Watt/4Wire or 2Watt/3Wire

Profile Recording	
Memory Capacity	16 MB
Memory Type	SD Card
Load Parameters Recorded	V, I, kW, kVA, kVar and Power factor (Per phase & Summed)
Frequency Recorded	Average, Highest, Lowest
Harmonics Recorded	1st to 19th Harmonics
Recording Intervals	1, 2, 5, 10, 15, 30, 60 Second(s) or Minute(s)
Recording Method	Average over recording period
Recording Buffer	Continuous buffer (FIFO)
Typical Recording Time	22 Hours 45 Minutes @ 1 Second
	9 Days 11 Hours 35 Minutes @ 10 Seconds
	8 Weeks @ 1 Minute
	2 Years 17 Weeks @ 15 Minutes

Onboard Statistics and Month End Data	
Voltage	Highest and Lowest Voltage
Current	Highest Current
Energy (Meter Grand Totals)	Active Energy Import
	Active Energy Export
	Reactive Energy Capacitive
	Reactive Energy Inductive

Need more information?

Please feel free to contact us at sales@power-star.co.za should you have any enquiries.