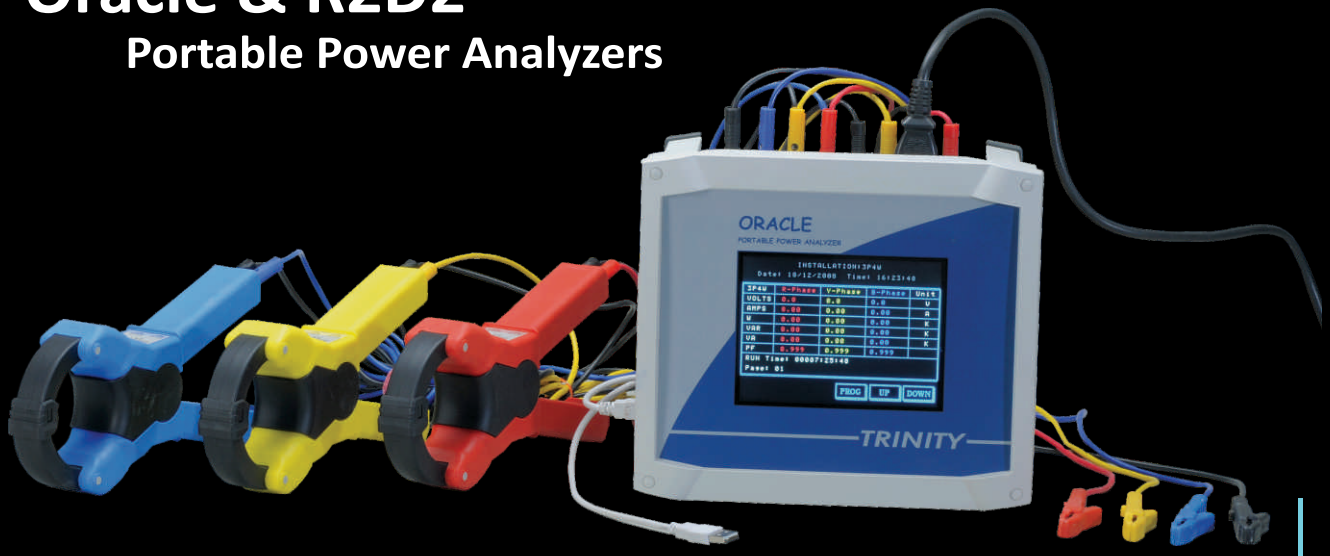
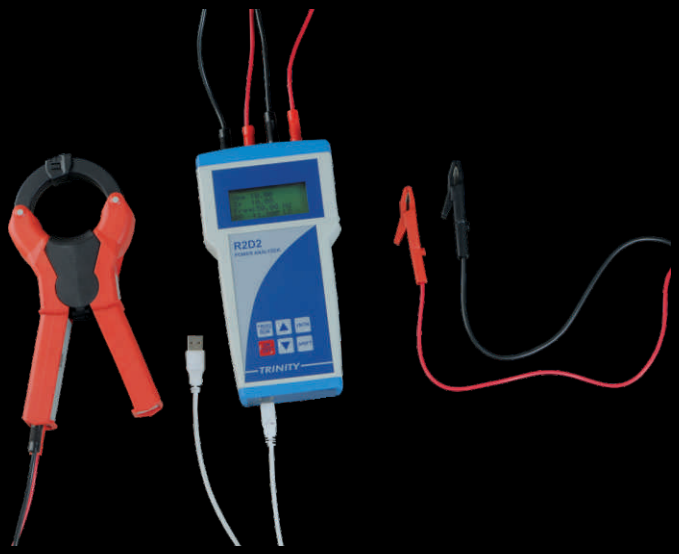
Oracle & R2D2

Portable Power Analyzers



- 1-Ø Model – R2D2 & 3-Ø Model - ORACLE
- A rugged full-featured instrument measuring all essential power quality data including Harmonics & Demands.
- Measures Voltage, Current, Power, Energy, Events, THD, Individual Harmonics, Frequency & Power Factor.
- Real-time, display of odd Harmonic Content up to 15th in R2D2 & 29th in ORACLE.
- Data retrieval through USB port.



Applications :

- Energy audits and forecasting
- Load balancing
- Power factor surveys
- Power quality investigations
- Billing verification
- Harmonic surveys & analysis for filter design
- Load profiling
- Substation monitoring

Portable Power Analyzers -Oracle & R2D2

The new Oracle & R2D2 are the latest innovations of the previous successful Portable Power Quality Analyzer platform. It incorporates newly enhanced key features including a faster ARM Processor to support continually evolving capabilities, a complete 8 MB of nonvolatile internal memory and auxiliary power input capabilities.

Power Quality data can be downloaded from the instrument to PC or Laptop.

The standard software utility has been enhanced to fully support the new functionality and is included at no cost with every Oracle & R2D2 sold.

The Oracle & R2D2 record power quality and power flow information simultaneously. The recorded information can be viewed via the built-in graphics display (in Oracle only) & downloaded to a computer using the USB interface.

Trinity offers a comprehensive line of flexible voltage probes and clamp-on current probes for use with both Oracle & R2D2.

Comprehensive Measurement:

- All readingsh are True RMS measurements.
- Fast, real-time cycle by cycle measurements, at 80 samples/cycle
- Four quadrant readings (Power Factor).
- Min/Max. Values.
- KVA and KW Demands.

Data Logging:

- ON board 8 MB of memory in Oracle & 32 KB in R2D2.
- Log all Min./Max. Values.
- Log all electrical parameters, real-time and integrated (energies and demands) and harmonics to get complete Energy system snap-shot.
- Event Logging: Four events ca be programmed by the user for parameter, high-low, time delay and value (Oracle).

Display:

20X4 Numeric LC display in R2D2 and 320X240 color TFT in ORACLE. Graphical display makes it possible to present harmonic data in histogram waveforms of all voltages and currents.

Technical Specifications :

Parameter			Statistics	
Type	Name		ORACLE	R2D2
True RMS Basic Parameters	Voltage (Volts L-N)	Direct Voltage Input	0 to 300V AC	
		PT Ratio	Freely Programmable up to 220KV	Freely Programmable up to 66KV
		Range of Reading	0.0 to 220KV	0.0 to 66KV
		Accuracy	0.5% of Reading	
	Voltage (Volts L-L)	Direct Voltage Input	0 to 510V AC	
		PT Ratio	Freely Programmable up to 220KV	Freely Programmable up to 66KV
		Range of Reading	0.0 to 220KV	0.0 to 66KV
		Accuracy	1.0% of Reading	
	Current (Amps Ir, Iy, Ib)	Secondary Current Input	2mA, 300mA, 1000mA	
		CT Ratio	Freely Programmable up to 9999A	Freely Programmable up to 999A
		Range of Reading	0.0 to 9999A	0.0 to 999A
		Accuracy	0.25% of Reading	
	Neutral Current	Accuracy	3% of Reading	N/A
	Line Frequency	Range of Reading	45 to 55 Hz	
		Accuracy	0.3% of Reading	
Power	Active Power (P)	Accuracy (Between 0.5 Lag to 0.8 Lead)	1.0% of Reading	
	Reactive Power (Q)	Accuracy (Between 0.5 Lag to 0.8 Lead)	1.5% of Reading	
	Apparent Power (S)	Accuracy	1.0% of Reading	
	Power Factor	Accuracy	1% of Reading (IPFI>0.5)	
		Range of Reading	0.05 to 1.00 Lag/Lead	
Energy	Total Active Energy (KWh)	Range of Reading	0 to 314780.00 MWh	
		Accuracy	1.0S as per IS13779	
	Total Reactive Energy (KVARh)	Range of Reading	0 to 314780.00 MWh	
		Accuracy(Between 0.5 Lag to 0.8 Lead)	1.5% of Reading	
	Total Apparent Energy (KVAh)	Range of Reading	0 to 314780.00 MWh	
		Accuracy	1.0% of Reading	
Demand	Active Power (KW) Demand		Sliding & Fixed Selectable	N/A
	Apparent Power (KVA) Demand			
	Predictive Demand		Fixed Window	N/A
Power Quality	Harmonics for Voltages		3rd to 29th Odd Only	3rd to 15th Odd Only
	Harmonics for Currents		3rd to 29th Odd Only	3rd to 15th Odd Only
	THD for each Voltage		✓	✓
	THD for each Current		✓	✓
Misc.	Phase angles		✓	N/A
	Run time		✓	N/A

Input Specifications :

Supply: ORACLE : Three Phases and Neutral of a 3P4W system/ Three phases of a 3P3W system.
R2D2 : One Phase and Neutral of a 1P2W system/ Two phases of a 3P3W system.

	ORACLE	R2D2
Voltage:		
Direct Voltage Input	Up to 510V L-L and 300V L-N	
PT Ratio	Freely Programmable up to 220KV Site selectable.	Freely Programmable up to 66KV Site selectable.
Range of Reading	1-220KV	1-66KV
Burden	0.5VA	
Current:		
Secondary Current Input	5A or 1A	
Range of Reading	0 – 9999A	0 – 999A
Burden	< 1.0VA	
Overload	5A CT = 6A RMS Continuous 1A CT = 5A RMS Continuous	

Power Supply :

Oracle : Self Power. Unit has in-built 3 phase supply with an operating range of 60 VAC - 480 VAC, 50-60 Hz. Mains supply (80-500 VAC) for connection at lab/office while downloadable data.

R2D2 : There are two entirely new sources of power. A small SMPS derives power from the line itself when connected to the electrical system, and powers the system. No need for adapter/battery. During downloading process, since the unit connects to the PC/Laptop through USB cable, it derives power straight from USB port itself.

Data Logging :

Product Name	Records	Logging Interval	Total Duration	
			Min.	Max.
Oracle	30395	1 Sec. to 16.65 Min(999 Sec.)	8.4 Hours	351.4
R2D2	1025	02 Sec. to 16.65 Min (999Sec.)	1 Hours	12 Days

Display : 320X240 Color TFT (in Oracle)
: 20X4 Line Graphics LCD (B/W), with LED bac light (in R2D2).
Dimensions : ORACLE : 225(W) X 198(H) X 80 (D) mm.
R2D2 : 110(W) X 220(H) X 45(D) mm.
Operating Temp. : 10^0C to 50^0C.

Clamp-On CT Specification:

Current Transformer Ratios (Arms) : 600A/300mA, 5A/2mA (single range); 1A, 5A, 300mA (triple range)

For CTR-600A/300mA
Weight : 0.36 kg.
Dimension : overall 183(L) X 96(W) X 60 (D) mm
Conductor size : 96 mm
Burden Resistance : ≤ 2 ohms.
Accuracy : Class 0.5
Frequency Range : 50 to 400 Hz.

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