Power Quality Measurement Equipment

RDCR5000 Power Quality Analyzer is a comprehensive test instrument and specially designed for field test of three phases, multi-functional and intelligent, concise man-machine operation. It is easy to use, large LCD screen display, high resolution, interface in both Chinese and English, shock-proof shell structure and so on. Can simultaneously measure the 4-channel current (ABC three phase and neutral wire current), 4-channel voltage (ABC three-phase voltage and neutral line voltage to ground), the peak value of current voltage, maximum/minimum value over a period, three-phase imbalance factor, short-time voltage flicker, transformer K factor, active power, reactive power, apparent power, power factor and displacement power factor, active power, reactive power, apparent power, total harmonic distortion and harmonic, etc; Display real-time waveform, harmonic ratio bar charts of current voltage; Dynamically capture instantaneous change of voltage current, monitoring starting current, monitoring the power parameters and generate the alarm list, generate the trend chart for a long time record test data.

Product features

1. The analyzer adopt DSP + ARM double processor architecture, DSP is use for data collection and the processing of algorithm, the ARM is use for the communication protocol and the man-machine interface processing;

2. Analog signal acquisition is by 2 pieces AD7655 of ADI company. Resolution for AD7655 is 16 bit and it is 4 channel synchronous sampling. The highest sampling rate can reach 1 MSPS, to ensure the accuracy of the channel and the information integrity, and wouldn't miss any transient changes in the grid, can more accurate

to detect the transient waveform rising and dropping drastically, and waveform instantaneous interrupt;

3. DSP working frequency is over 200 MHZ, to be able to timely monitoring of the power grid and dynamically adjust the sampling frequency to realize synchronization of power frequency and sampling frequency;

4. Using a 5.6 -inch LCD color screen display, a resolution of 640 dots x 480 dots, with different display color difference between the parameters of phase, waveform, vector diagram, harmonic ratio, the user can be more efficient and more intuitive understand the state of power grid parameters.

5. Built-in flash memory can store 60 group of screenshots at the same time, 150 groups of capture transient voltage/current waveform figure, and 12800 groups of alarm list. Starting current detection model can continuously capture starting current waveform for 100 s.

6. Built-in 2G memory card to store the trend curve record, simultaneous recording 20 parameters (can choose according to need) collect data for once every five seconds, trend curve records can be stored for 300 days

🕮 Product specifications and technical parameters

1. General Specification

Function	Description
Power supply	Rechargeable lithium-ion battery packs 9.6V, backup charger.
Battery Level indicator	Battery symbol 5 grid  Display power, when the battery level is low, automatically shut down after 1 minute indication
Working Current	about 590mA, continuous working 8hours.
Display mode	LCD color screen, 640×480, 5.6 inches, display field 116mm × 88mm
Instrument Size	240mm×170mm×68 mm.

CT Size	008B small sharp current clamp: 7.5mm×13mm; (optional) 040B round jaw current clamp: 35mm×40mm; (otional) 068B round jaw current clamp: 68mm×68mm. (optional) 300F Flexible Coil Current Sensor (with Integrator) : Φ300mm (optional)
Number of channels	4 voltages, 4 currents
Line Voltage	1.0V~2000V.
Phase Voltage	1.0V~1000V.
Current	008B small sharp current clamp: 10mA~10.0A; (optional) 040B round jaw current clamp: 0.10A~100A; (optional) 068B round jaw current clamp: 1.0A~1000A; (optional) 300F Flexible Coil Current Sensor (with Integrator) : 10A ~ 6000A (optional)
Frequency	40Hz~70Hz.
Electricity Energy Parameter	W, VA, Var, PF, DPF, cosφ, tanφ.
Energy parameters	Wh, Varh, Vah.
Harmonic Wave	Yes, 0 - 50 times
Total harmonic distortion	Yes, 0 - 50 times, each phase
Expert Mode	Yes.
Transient Record Groups	150 groups
Voltage Flicker	Yes
Start Current Mode	Yes, 100 seconds

Three-phases Unbalance	Yes
Record	300 days (record 20 parameters simultaneously, every 5 seconds record 1 point)
Min/Max Recorded Value	Yes, the max min value can be measured for a certain time
Alarm	40 different types of parameter selection, 12800 group alarm logs
Peak	Yes.
Phasor Diagram Display	Automatic
Screenshot Capacity	60PCS
Menu language	English/Chinese.
Communication Interface	USB.
Automatic Shut Down	In the alarm/trend graph recording/transient capture mode (waiting or in progress), the instrument does not automatically shut down
	In other test modes, there is no button operation within 15 minutes, prompting to automatically shut down after 1 minute.
Backlight Function	Yes, suitable for dark places and nighttime use
Instrument Weight	Host: 1.6kg (with battery).
	008B small sharp current clamp: 170g×4; (optional)
	040B round jaw current clamp: 190g×4; (optional)
	068B round jaw current clamp: 510g×4; (optional)
	300F Flexible Coil Current Sensor (with Integrator) : 330g×4; (optional)
	Test wires and power adapter: 900g;
	Total weight: about 9.2kg (with package).

Voltage Test Wire Length	3m
Current Clamp Wire Length	2m
Working Temperature	-10°C~40°C; below 80%Rh.
Storage Temperature	-10°C~60°C; below 70%Rh.
Input Impedance	Test voltage input impedance: 1MΩ
Withstand voltage	Withstand the sine wave AC voltage of 3700V/50Hz one minute between the instrument line and out shell
Insulation	Between instrument line and shell ≥10MΩ.
Structure	Double insulation, with insulation shock-proof sheath.
SuitableSafely Standard	IEC 61010 1000V Cat III / 600V CAT IV, IEC61010-031, IEC61326, Pollution degree: 2.

2. Instrument Accuracy (excluding the current sensor)

Measurement Specification	Range	Display Resolution	Max Error of Reference Range
Frequency	40Hz～70Hz	0.01Hz	±(0.03)Hz
Phase Voltage True RMS	1.0V～1000V	Min resolution 0.1V	±(0.5%+5dgt)
Line Voltage True RMS	1.0V～2000V	Min resolution 0.1V	±(0.5%+5dgt)
DC Voltage	1.0V～1000V	Min resolution 0.1V	±(1.0%+5dgt)
Current True RMS	10mA～1000A	Min resolution 0.1mA	±(0.5%+2dgt)
Phase Voltage Peak	1.0V～1414V	Min resolution 0.1V	±(1.0%+5dgt)
Line Voltage Peak	1.0V～2828V	Min resolution 0.1V	±(1.0%+5dgt)

Current Peak	10mA～1414A	Min resolution 0.1mA	±(1.0%+5dgt)
Peak Factor	1.00～3.99	0.01	±(1%+2dgt)
	4.00～9.99	0.01	±(5%+2dgt)
Active Power	0.000W～9999.9kW	Min resolution 0.001W	±(1%+3dgt); Cosφ≥0.8
			±(1.5%+10dgt); 0.2≤Cosφ<0.8
Reactive power Inductive& Capacitive	0.000Var～ 9999.9kVar	Min resolution 0.001Var	±(1%+3dgt);Sinφ≥0.5
			±(1.5%+10dgt); 0.2≤Sinφ<0.5
Apparent Power	0.000VA～ 9999.9kVA	Min resolution 0.001VA	± (1%+3dgt %)
Power Factor	-1.000～1.000	0.001	±(1.5%+3dgt); Cosφ≥0.5
			±(1.5%+10dgt); 0.2≤Cosφ<0.5
Active Energy	0.000Wh～ 9999.9MWh	Min resolution 0.001Wh	±(1%+3dgt); Cosφ≥0.8
			±(1.5%+10dgt); 0.2≤Cosφ<0.8
Reactive Energy Inductive& Capacitive	0.000Varh～ 9999.9MVarh	Min resolution 0.001Varh	±(1%+3dgt);Sinφ≥0.5
			±(1.5%+10dgt); 0.2≤Sinφ<0.5
Apparent Energy	0.000VAh～ 9999.9MVAh	Min resolution 0.001VAh	±(1%+3dgt)
Phase Angle	-179°～180°	1°	±(2°)
Tanφ(VA≥50VA)	-32.768～32.768	Min resolution 0.001	±(1%+5dgt)

Displacement Power Factor(DPF)	-1.000～1.000	0.001	±(1%+5dgt)
HarmonicRatio (Vrms>50V)	0.0 %～99.9 %	0.1 %	±(1%+5dgt)
Harmonic Angle(Vrms >50V)	-179°～180°	1°	±(3°)harmonic1~25
			±(10°)harmonic26~50
Total Harmonic Rate (DF or THD-F)≤50	0.0 %～99.9 %	0.1 %	±(1%+5dgt)
Distortion Factor (DF or THD-R)≤50	0.0 %～99.9 %	0.1 %	±(1%+10dgt)
Transformer K Factor	1.00～99.99	0.01	±(5 %)
Three-phase Unbalance	0.0%～100 %	0.1 %	±(1 %)

Note: The following data are presented in reference conditions and ideal current sensors (completely linear and without phase displacement).

3. Current Sensor Characteristics (Optional)

Current sensor model	Current Clamp	Current True RMS	Current True RMS Max Error	Phase Angle φ Max Error
008B small sharp current clamp: 7.5mm×13mm		10mA～99mA	±(1%rdg+3dgt)	±(1.5°),Arms≥20mA
		100mA～10.0A	±(1%rdg+3dgt)	±(1°)
040B		0.10A～0.99A	±(1%rdg+3dgt)	±(1.5°)

round jaw current clamp:Φ40mm		1.00A～100A	±(1%rdg+3dgt)	±(1°)
068B round jaw current clamp:Φ68mm		1.0A～9.9A	±(2%rdg+3dgt)	±(3°)
		10.0A～1000A	±(2%rdg+3dgt)	±(2°)
300F Flexible Coil Current Sensor：Φ300mm		10A～99A	±(1%rdg+3dgt)	±(3°)
		100A～6000A	±(1%rdg+3dgt)	±(2°)

Note: the above four current sensors are selected by users according to their own needs. (If not, selected R068B round jaw current clamp by default)

Rui Du Mechanical and electrical (Shanghai) Co., Ltd

TEL: +86-021-68769756
Contact: Nico Zhou
Position: Sales Manager
Email: sales@hvtesters.com
Website: **www.hvtesters.com**
Mob/ WhatsApp:
+86-136 6190 8522