



HARMONIC ANALYZER

PZ96L-EH



SHANGHAI ACREL LTD.

ADD: No.253 Yulv Road, Madong Industrial Park, Jiading District, Shanghai, China

ZIP: 201801

TEL:0086-21-69158338 FAX: 0086-21-69158303

EMAIL:acrel008@vip.163.com

WEB: <http://www.acrel.cn>



General

- Communication and programming via optical interface, or remotely via Ethernet network or RS485 output
- Energy: measurement on all 4 quadrants in class 0.5s according to IEC 62053-22
- Display of harmonics by order to 32th
- Up to 4DI & 2DO configurable
- Log of last 64 events
- Possibility of upgrading the embedded software via the optical interface
- Graphic display (Enerium 150 only): Fresnel diagram, harmonics in bargraph form, U, I and P displayed as gauges
- With multi rate count energy (4 rates & 8 zones)

Functions

- Measurement of the 1s, min., max. and avg. values of the electrical quantities
- Energy metering in all 4 quadrants
- Measurement of harmonics by order up to the 31th order
- Measurement of THD-U, THD-V and THD-I, crest factor and composite voltage unbalance
- Measurement of cos and power factor
- Up to 8 configurable alarms each with 2 conditions (and, or)
- Recording of the last 64 overruns with time/date-stamping
- Energy management by recording 1 to 8 load curves chosen among 10 measured or calculated quantities: P+, P-, Q1, Q2, Q3, Q4, S+, S-, On-off1 and On-off2 (integration time 10 minutes to 60 minutes)
- 2 configurable inputs (metering, on-off)
- 2 configurable outputs (alarm or pulse)
- Communication
 - via optical interface
 - via RS485 link with ModBus protocol
 - via Ethernet with ModBus/TCP protocol
- Software updating and upgrading via the optical interface (option)



Energy management

- Measure all types of energy consumption and check billing
- Control costs and optimize consumption according to applicable rate contracts
- Allocate the costs per work centre
- Monitor active power consumption trends
- Class 0.5s (IEC 62053-22)
- Up to 8 configurable inputs/outputs for multienergy measurement
- Load curves for each type of energy measured
- Automatic reconstitution of total consumption index

Monitoring

- Monitor the functional parameters in real time and remotely
- Record all the essential electrical parameters of an installation
- Measure and analyse drift to avoid operating losses
- Manage alarms remotely, analyse the event log and verify circuit-breaker status
- Measure U and I with $\pm 0.2\%$ accuracy
- Measure energy in all 4 quadrants in class 0.5s
- Measure the earth-neutral voltage
- Log of last 64 events
- Verify correct wiring order
- Monitor electrical network balance
- Monitor alarm status locally (flashing on screen)

Sizing

- Assess the possibility of adding loads to a network or modifying a production process
- Define reactive energy compensation requirements: reduced penalties, increase in available active energy depending on long process variations
- Find out the transformer's load rate
- Simultaneously record 4 trend curves chosen among 12 quantities measured or calculated by the product
- Measure and record the cos and power factor per phase (average and instantaneous in all 4 quadrants)

Quality

- Investigate the possible causes of dysfunction linked to harmonics
- Evaluate the way electrical equipment ages
- Assess distorting power due to harmonics
- Measure the harmonics per order and per phase:
 - phase-to-earth and phase-to-phase voltage
 - current up to order 31th
- Measure THD-U, THD-V and THD-I
- Measure the unbalance

Feature	Values	
Input	Network	Single phase, 3P3L, 3P4L
	Frequency	45~65Hz
	Voltage	Normal: AC 100V, 400V
		Overloading: 600V(continuous); 1000V / 30s
		Consumption: < 0.2VA
	Current	Normal: AC 1A, 5A
Overloading: 6A(continuous); 50A /1s		
Consumption: < 0.2VA		
Pulse output	Optocoupler pulse output	
Communication	RS485 (Modbus-RTU)	
Logic input (DI)	4 drying contact inputs, with +5V power	
Logic output (DO)	4 NO contacts (AC 250V/3A, DC 30V/3A)	
Accuracy	Frequency 0.01Hz, reactive energy 1 class, others 0.5 class	
Display	LCD	
Power supply	AC/DC 85~270V; consumption: ≤4VA	
Isolation	Power / current input / voltage input: AC2kV/1min;	
	Power / logic inputs / RS485: AC1.5kV/1min;	
	Inputs / outputs / housing >5MΩ	
Environment	Working T: -10C~+45C; Storing T: -20C~+70C	
	Relative humidity: 5%~95% Non-Condensing; Altitude: ≤2500m	
Format	96*96mm	
Harmonics	Individual to 31th order	
Norms	IEC61000-4-2: 1995 Electrostatic discharge immunity test Level 3	
	IEC61000-4-3: 1995 Radiated, radio-frequency, Level 3	
	IEC61000-4-4: 1995 Electrical fast transient pulse immunity test Level 3	
	IEC61000-4-5: 1995 Surge immunity test Level 3	



