

## FU2200B

### RS485 SOLAR DIGITAL PANEL POWER ANALYZER WITH RJ45 LAN

FU2200B 0-800V digital panel power analyzer with RJ45 internet LAN port is a three-phase multifunction power and energy meter manufactured by GFUVE GROUP. It provides excellent value for monitoring power and energy management systems. It may be used as data gathering devices for intelligent power distribution or plant automation systems. All monitored data is available via a standard digital RS485 communication port or 10/100M internet port, which is based on the Modbus RTU and TCP/IP protocol.

FU2200B RJ45 digital panel power analyzer has the PC software and the data logger function, which can set by end users from 1min to 60min intervals to record. You can read the data through a PC. Also, you can share the data in the Internet LAN, and download data to excel file. By the way, it can measure the harmonics from 2 to 63nd. Back of power meter FU2200B with Ethernet port as photo shows here. Also two color of the shell can be choose, white or black.

## Application

1. Airport;
2. Power plant;
3. Data logging;
4. Energy meter;
5. Power quality analysis;
6. Power monitoring system;
7. Photovoltaic power station;
8. Commercial, industrial, utility;
9. High voltage distribution cabinet;
10. Low voltage distribution cabinet;
11. Electric energy metering cabinet;
12. Mobile communication company;
13. Industrial and mining enterprises;
14. Medium and low voltage systems;
15. Energy consumption monitoring system;
16. Electric energy metering of photovoltaic power station;
17. Metering of distribution feeders, transformers, generators, capacitor banks and motors;



## Features

1. Data logging;
3. Web browse data;
5. Three years warranty;
7. Unbalance & phase angles;
9. With PC management software;
11. Demands and Multi-tariff energy;
13. True-RMS measuring parameters;
15. ANSI and IEC 0.2/0.5S/1 accuracy class;
17. Measure individual harmonics from 2nd to 63st;
2. Load analysis;
4. 4 quadrant energy;
6. Power quality analysis;
8. Max/Min log with timestamp;
10. High-speed RS485, Ethernet port;
12. 1-60minutes time interval setting;
14. TOU, 4 Tariffs, 6 Seasons, 6 Schedules;
16. 2MB onboard memory, extended to 16M;

## Parameters

| Electrical parameters         |                                                                                                                                                                                                                              |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply (AC/DC)          | AC 85-400V / DC 85-330V<br>Power consumption: <4VA                                                                                                                                                                           |
| Measurement parameters        | Voltage (Ph-N); Voltage (Ph-Ph); Current; Frequency; PF; Phase angle; Active Power(W); Reactive Power(Q); Apparent Power(S),                                                                                                 |
| Harmonics                     | Total harmonics ratio of phase-voltage<br>Total harmonics ratio of current<br>2 <sup>nd</sup> to 63 <sup>nd</sup> harmonics ratio of phase-voltage<br>2 <sup>nd</sup> to 63 <sup>nd</sup> harmonics ratio of current         |
| Maximum value & minimum value | Voltage, current, frequency, active power, reactive power, apparent power,demandP,demandQ, demandS.                                                                                                                          |
| Computation                   | Forward active power energy<br>Reverse active power energy<br>Forward reactive power energy<br>Reverse reactive power energy                                                                                                 |
| Measuring range               | 0-800V, 0-10A, 45-65Hz, -1 ~ 0 ~ 1                                                                                                                                                                                           |
| Measuring accuracy            | Voltage: 0.2%RD±0.05%FS<br>Current: 0.2%RD±0.05%FS<br>Active power: 0.5%RD±0.05%FS<br>Reactive power: 1.5%RD +0.05%FS<br>Apparent power: 0.5%RD +0.1%FS<br>Power factor: 0.2%RD<br>Frequency: 0.05%RD<br>Active energy: 0.5% |

**Electrical parameters - continued**

|                                         |                                                                                                                                                                                                                                              |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum demand                          | Ia, Ib, Ic, $\Sigma P_{total}$ , $\Sigma Q_{total}$ , $\Sigma S_{total}$ , 15 minutes                                                                                                                                                        |
| Data logger interval time               | 1 minute - 60 minutes can be set                                                                                                                                                                                                             |
| Data logger                             | U1, U2, U3, U12, U23, U31, I1, I2, I3, F, P, Q, S, demand, Ep, Eq, Es, Phase, Unbalance, EPrate, EQrate, ESrate                                                                                                                              |
| Load recorder or curve                  | Yes                                                                                                                                                                                                                                          |
| Display                                 | Blue back-lit LCD Display<br>5 display figures<br>4 operation keys                                                                                                                                                                           |
| Communication                           | Support RS-485 interface port, 32 (128) Networking<br>ModBus-TCP/IP, SNMP communication protocol<br>Ethernet 10/100M port (RJ45)                                                                                                             |
| Memory                                  | 2M onboard memory, can be extended to 16M.<br>Data logger interval can be set by end users from 1min to 60min. The default is 15min.<br>You can read the data through a PC, also you can select the data to display and store from software. |
| Programmable                            | Measuring system: 3P4W/3P3W etc<br>Transformation Ratio: PT 1-10000; CT 1-10000                                                                                                                                                              |
| Energy pulse                            | Provides active & reactive energy pulse output<br>Pulse parameters can be chosen<br>Pulse constant range: 0.1-10000kWh/kvarh<br>Pulse constant can be programmable<br>Dry contact output (1A x 100V)                                         |
| Input every voltage/current consumption | 0.5VA/channel                                                                                                                                                                                                                                |
| Tariffs                                 | 4                                                                                                                                                                                                                                            |
| Seasons                                 | 6                                                                                                                                                                                                                                            |
| Schedules                               | 6                                                                                                                                                                                                                                            |
| Connection mode                         | 3P4W, 3P4W BAL, 3P3W, 3P3W BAL, 1P3W, 1P2W                                                                                                                                                                                                   |
| Clock                                   | Yes                                                                                                                                                                                                                                          |
| Baud                                    | 1200-57600, Standard 38400                                                                                                                                                                                                                   |
| Web browser                             | Yes                                                                                                                                                                                                                                          |
| PC management software                  | Yes, download data to excel file                                                                                                                                                                                                             |
| Standard                                | EN61010-1:2010; EN61010-2-030:2010; EN61326-1:2013;<br>EN61000-3-2:2014; EN61000-3-3:2013; IEC61000-4;<br>IEC61557-12; IEC60068-2-1/2/30<br>IEC 62052-11; IEC 62053-21; IEC 62053-22                                                         |

### Mechanical parameters

|                             |                                                                                                         |
|-----------------------------|---------------------------------------------------------------------------------------------------------|
| Dimensions (L x W x H) (mm) | 96 x 96 x 14                                                                                            |
| Mounting                    | Panel mounting<br>Trepanning: 92x92mm<br>The thickness of installation: 84mm<br>DIN mounting (optional) |

### Environmental conditions

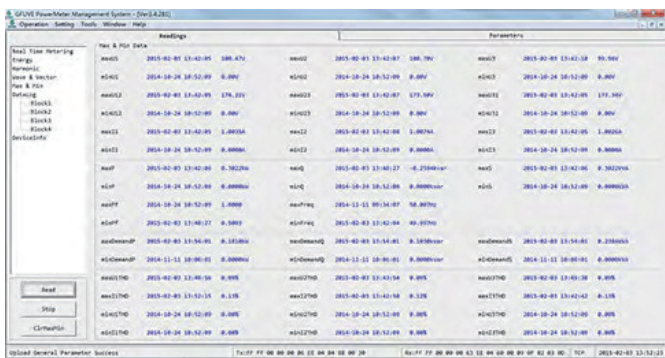
|             |                                 |
|-------------|---------------------------------|
| Temperature | -5 to +50 °C                    |
| Humidity    | 20%-95%RH, without condensation |
| Warranty    | Three years warranty            |

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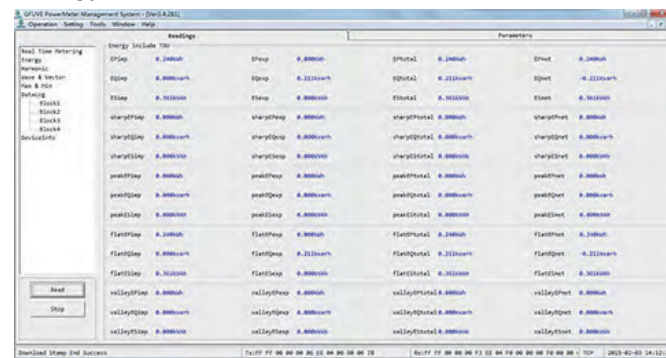
| Parameters          | Accuracy         | Resolution | Measuring range            | Show on the display    |
|---------------------|------------------|------------|----------------------------|------------------------|
| Voltage             | 0.2%             | 0.01V      | 0-800V                     | 0.5-500kV              |
| Current             | 0.2%             | 0.01mA     | 0-10A                      | 5mA-50000A             |
| Active power        | 0.5%             | 0.2W       | 0-4800W/phase              | -9999MW to +9999MW     |
| Reactive power      | 2%               | 0.2var     | 0-4800var/phase            | -9999Mvar to +9999Mvar |
| Apparent power      | 0.5%             | 0.2VA      | 0-4800VA/phase             | 0-9999MVA              |
| Active demand       | 0.5%             | 0.2W       | 0-4800W/phase              | -9999MW to +9999MW     |
| Reactive demand     | 2%               | 0.2var     | 0-4800var/phase            | -9999Mvar to +9999Mvar |
| Apparent demand     | 0.5%             | 0.2VA      | 0-4800VA/phase             | 0 to 9999MVA           |
| Power factor        | 0.005            | 0.0001     | -1.000 - 0 - 1.000         | -1.000 - 0 - 1.000     |
| Frequency           | 0.01Hz           | 0.01Hz     | 45.000-65.000Hz            | 45.000-65.000Hz        |
| Active energy       | 0.5S, 0.5%, 0.2% | 0.001kWh   | 0-999999.999kWh            | 0-99999999.9kWh        |
| Reactive energy     | 2%               | 0.001kvarh | 0-999999.999kvarh          | 0-99999999.9kvarh      |
| Apparent energy     | 0.5%             | 0.001VAh   | 0-999999.999kVAh           | 0-99999999.9kVAh       |
| Phase angle         | 0.1°             | 0.01°      | 0-359.99°                  | 0-359.99°              |
| Unbalance           | 2%               | 0.01%      | 0-300.00%                  | 0-300.00%              |
| PT ratio            |                  | 1          |                            | 1-10000                |
| CT ratio            |                  | 1          |                            | 1-10000                |
| Address code        |                  | 1          |                            | 1-253                  |
| IP Address(default) | 192.168.1.16     |            | IP address can be modified |                        |

## Software Interface From FU2200B

### Max & Min data



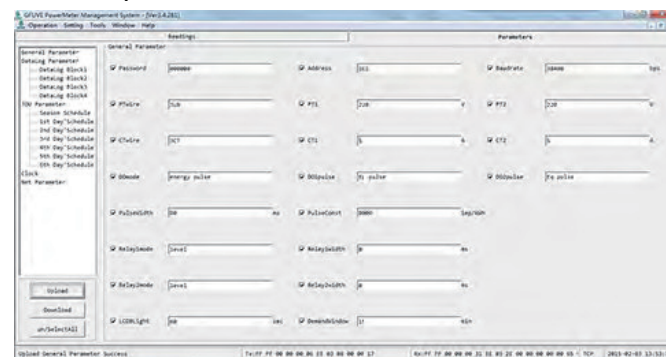
### Energy include TOU



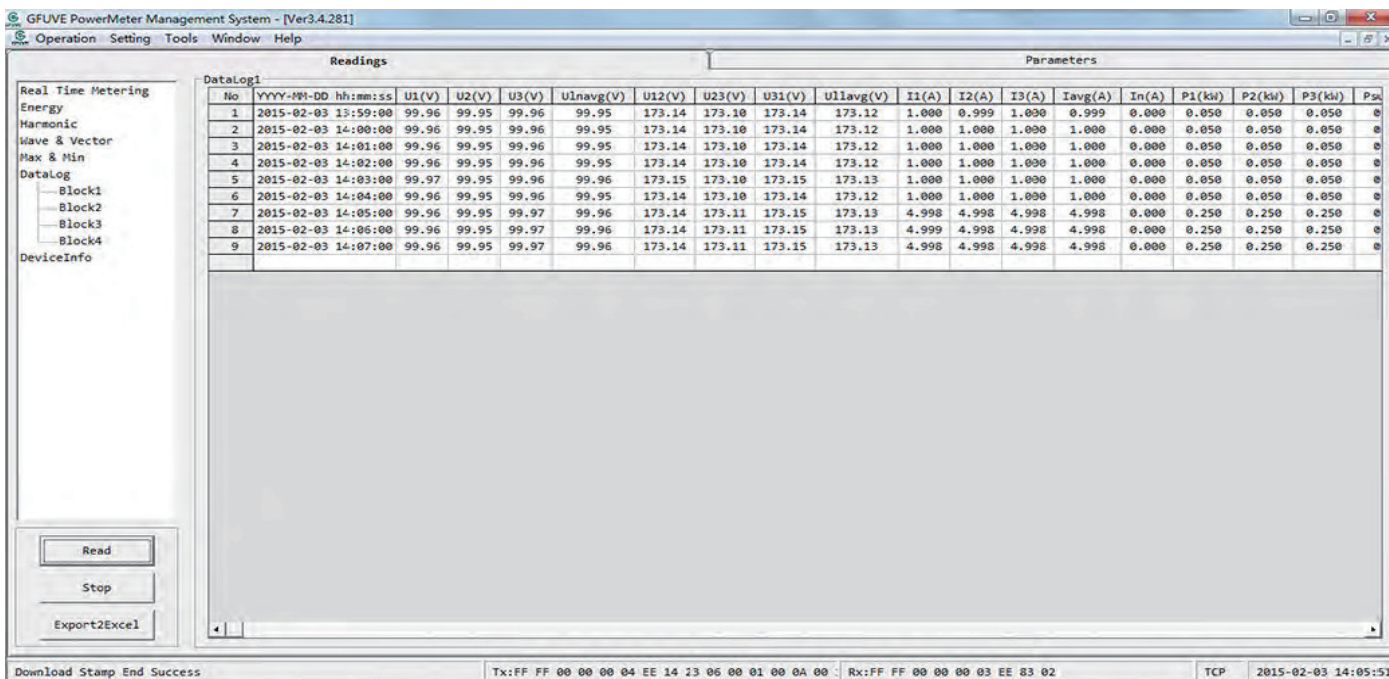
### Real time metering



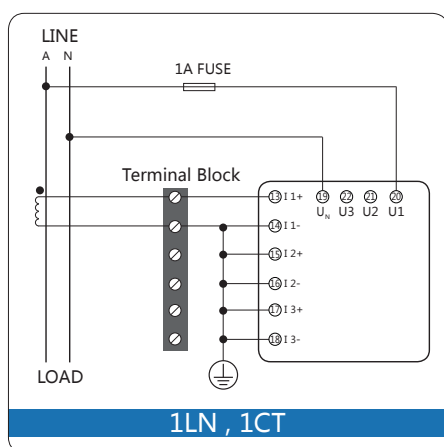
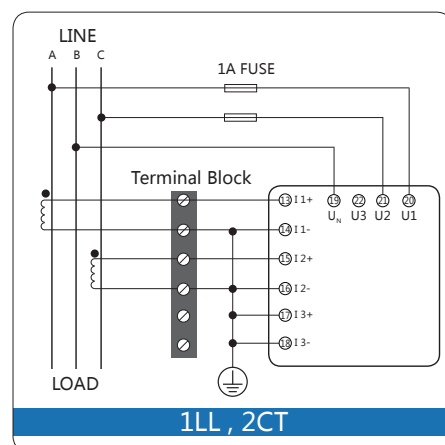
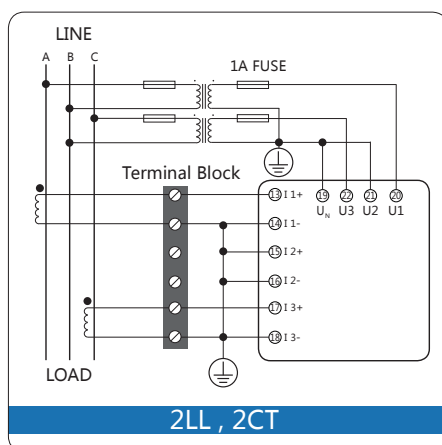
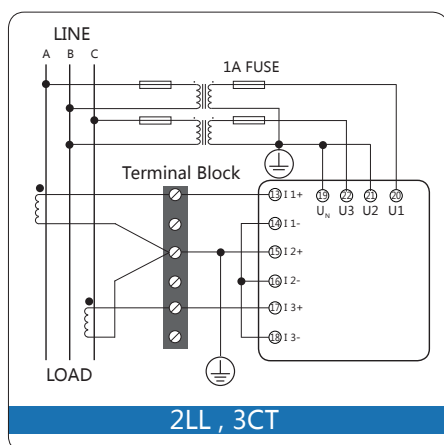
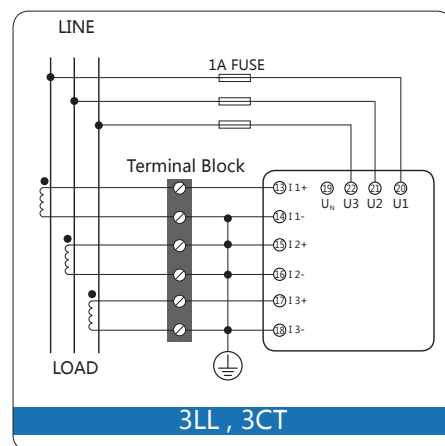
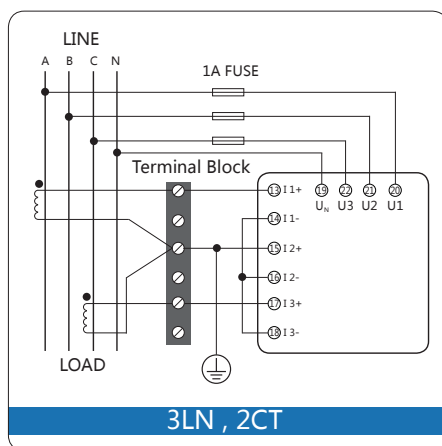
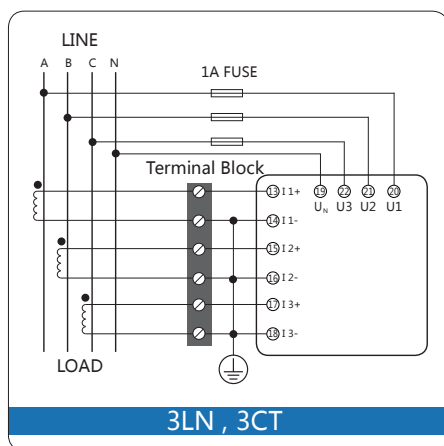
### General parameter



## Data Logging From FU2200B



## Wiring Diagram



## Related Current Transformer (C.T)

| Model      | Primary rated current | Rated load         | Aperture (mm) | Description (mm)                     | Weight (kg) | Material | Water-proof           |
|------------|-----------------------|--------------------|---------------|--------------------------------------|-------------|----------|-----------------------|
| LZCK-55    | 300-1200A             | $\leq 10\text{VA}$ | $\phi 55$     | 180×138×52                           | 2           | PC       | IP65                  |
| LMCK185-10 | 300-3000A             | $\leq 25\text{VA}$ | $\phi 185$    | 350×283×55                           | 4.5         | PC       | IP65                  |
| LZCK310-10 | 300-600A              | $\leq 10\text{VA}$ | $\phi 50$     | $\phi 50 \times \phi 110 \times 32$  | 1           | Resin    | silicon case (option) |
| LZCK322-10 | 30-600A               | $\leq 10\text{VA}$ | $\phi 50$     | $\phi 50 \times \phi 110 \times 52$  | 1.6         | Resin    | silicon case (option) |
| LZCK350-10 | 20-600A               | $\leq 25\text{VA}$ | $\phi 50$     | $\phi 50 \times \phi 110 \times 105$ | 3.1         | Resin    | silicon case (option) |
| LZCG530-10 | 30-600A               | $\leq 20\text{VA}$ | $\phi 45$     | $\phi 45 \times \phi 120 \times 65$  | 5           | Resin    | silicon case (option) |



LZCK-55



LMCK185-10



LZCK310-10



LZCK322-10



LZCK350-10



LZCG530-10