

FU2200A

Multifunction Power Meter with Data Logger

FU2200A is a three-phase multifunction power and energy meter manufactured by GFUVE. The meter provide 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 running the Modbus RTU protocol. It 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. By the way, it can measure the harmonics. With a wide range of models to choose from, the FU2200A power meter offers unparalleled value and functionality.



Features

1. True-RMS measuring parameters
2. ANSI and IEC 0.2 accuracy class
3. Power quality analysis
4. 4 quadrant energy
5. 2MB onboard memory, can be extended to 16M
6. Data logging
7. High-speed RS485, Ethernet port (option)
8. Measure individual harmonics from 2nd to 49th (option)
9. TOU, 4 Tariffs, 6 Seasons, 6 Schedules
10. Class leading warranty
11. With PC management software; web browse data

Applications

1. Metering of distribution feeders, transformers, generators, capacitor banks and motors
3. Medium and low voltage systems
4. Commercial, industrial, utility
5. Power quality analysis
6. Data logging
7. Monitoring system



Parameters

Electrical parameters

| | |
|-------------------------------|---|
| Power Supply (AC/DC) | AC85-400V / DC85-330V Power consumption: <4VA |
| Measurement Parameters | Voltage (Ph-N); Voltage (Ph-Ph); Current; Frequency; PF; Active Power(W); Reactive Power(Q); Apparent Power(S), 2nd to 49th harmonics(option) |
| Harmonics | Total harmonics ratio of phase-voltage Total harmonics ratio of current 2nd to 49th harmonics ratio of phase-voltage 2nd to 49th 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 Reverse active power energy Forward reactive power energy Reverse reactive power energy |
| Measuring Range | 0-400V (0-800V is optional), 0-6A, 45-65Hz, -1 ~ 0 ~ 1 |
| Measuring Accuracy | Voltage: 0.5%RD±0.05%FS Current: 0.5%RD±0.05%FS Active Power: 0.5%RD±0.05%FS Reactive Power: 1.5%RD +0.05%FS Apparent power: 0.5%RD +0.1%FS Power Factor: 0.5%RD Frequency: 0.05%RD Active Energy: 0.5% |
| Maximum Demand | Ia, Ib, Ic, ΣPtotal, ΣQtotal, ΣStotal, 15 minutes |
| Display | Blue back-lit LCD Display 5 display figures 4 operation keys |
| Communication | Support RS-485 interface port, 32 (128) Networking ModBus-TCP/IP, SNMP communication protocol Ethernet 10/100M port (RJ45) |
| Memory | 2M onboard memory, can be extended to 16M. Data logger interval can set by end users from 1min to 60min. The default is 15min. 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 Transformation Ratio: PT 1-10000; CT 1-10000 |

Electrical parameters - continued

| | |
|-----------------|---|
| Energy pulse | Provides active & reactive energy pulse output Pulse parameters can be chosen Range: 0.1-10000kWh/kvarh Dry contact output (1Ax100V) |
| Connection mode | 3P4W, 3P4W BAL, 3P3W, 3P3W BAL, 1P3W, 1P2W |
| Baud | 1200-57600, Standard 38400 |

Mechanical parameters

| | |
|-----------------------------|--|
| Dimensions (L x W x H) (mm) | 96 x 96 x 12.8 |
| Mounting | Panel mounting Trepanning: 92x92mm The thickness of installation: 51mm |

Environmental conditions

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

Index

| Parameters | Accuracy | Resolution | Measuring range | Show on the display |
|-----------------|--------------------|------------|-------------------|------------------------|
| Voltage | 0.20% | 0.01V | 0-400V | 0.5-500kV |
| Current | 0.20% | 0.01mA | 0-6.5A | 5mA-50000A |
| Active power | 0.50% | 0.2W | 0-2400W/phase | -9999MW to +9999MW |
| Reactive power | 2% | 0.2var | 0-2400var/phase | -9999Mvar to +9999Mvar |
| Apparent power | 0.50% | 0.2VA | 0-2400VA/phase | 0-9999MVA |
| Active demand | 0.50% | 0.2W | 0-2400W/phase | -9999MW to +9999MW |
| Reactive demand | 2% | 0.2var | 0-2400var/phase | -9999Mvar to +9999Mvar |
| Apparent demand | 0.50% | 0.2VA | 0-2400VA/phase | 0 to 9999MVA |
| Power factor | 0.005 | 0.0001 | -2 | -2 |
| Frequency | 0.01Hz | 0.01Hz | 45.000-65.000Hz | 45.000-65.000Hz |
| Active energy | 0.5%,0.2% (Option) | 0.001kWh | 0-999999.999kWh | 0-99999999.9kWh |
| Reactive energy | 2% | 0.001kvarh | 0-999999.999kvarh | 0-99999999.9kvarh |
| Apparent energy | 0.50% | 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 |

Software Interface From FU2200A

Max & Min data

| Max & Min Data | Readings | Parameters |
|--------------------|---------------|---------------|
| Real Time Metering | Energy | Energy |
| Harmonic | Wave & Vector | Wave & Vector |
| Wave & Vector | Max & Min | Max & Min |
| Max & Min | Block1 | Block1 |
| Block1 | Block2 | Block2 |
| Block2 | Block3 | Block3 |
| Block3 | Block4 | Block4 |
| Block4 | DeviceInfo | DeviceInfo |

Energy include TOU

Energy include TOU

| Readings | Parameters |
|----------|------------|
| Energy | Energy |
| Block1 | Block1 |
| Block2 | Block2 |
| Block3 | Block3 |
| Block4 | Block4 |

Real time metering

| Readings | Parameters |
|--------------------|---------------|
| Real Time Metering | Energy |
| Harmonic | Wave & Vector |
| Wave & Vector | Max & Min |
| Max & Min | Block1 |
| Block1 | Block2 |
| Block2 | Block3 |
| Block3 | Block4 |
| Block4 | DeviceInfo |

General parameter

General Parameter

Setting Parameter

Block1

Block2

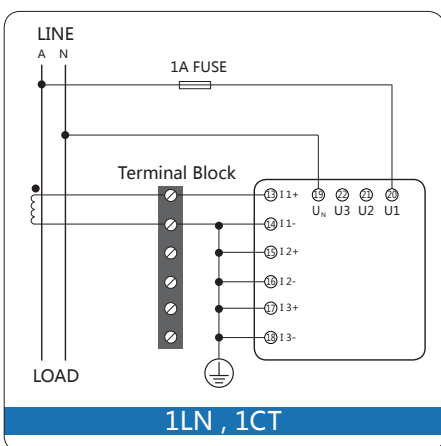
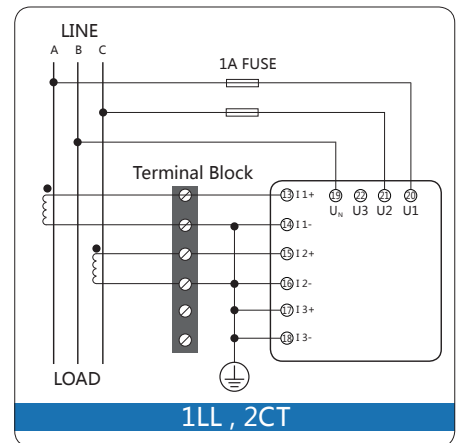
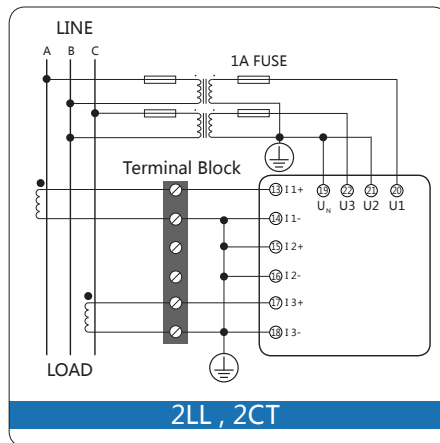
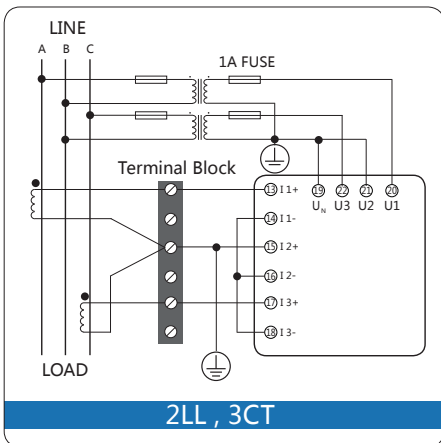
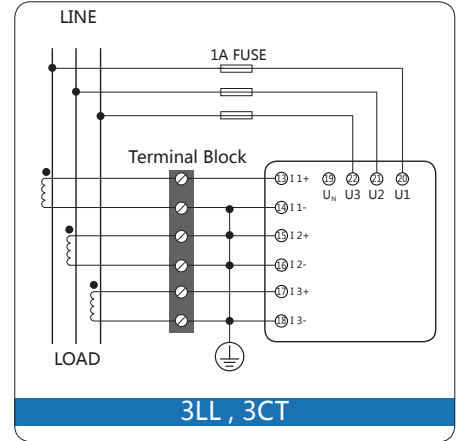
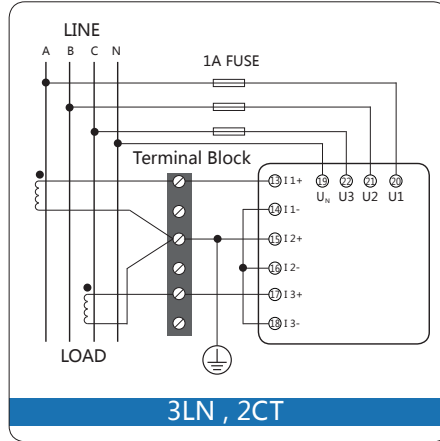
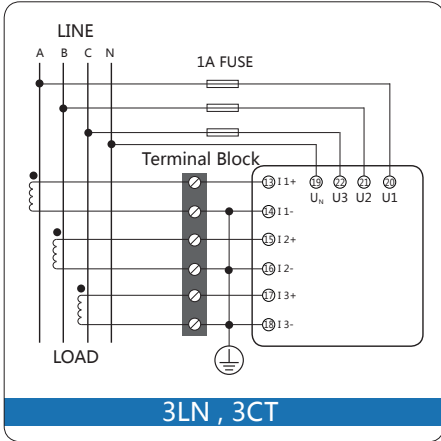
Block3

Block4

Data Logging From FU2200A

| No | YYYY-MM-DD hh:mm:ss | U1(V) | U2(V) | U3(V) | Ulnavg(V) | U12(V) | U23(V) | U31(V) | Ullavg(V) | I1(A) | I2(A) | I3(A) | Iavg(A) | In(A) | P1(kW) | P2(kW) | P3(kW) | Pst |
|----|---------------------|-------|-------|-------|-----------|--------|--------|--------|-----------|-------|-------|-------|---------|-------|--------|--------|--------|-----|
| 1 | 2015-02-03 13:59:00 | 99.96 | 99.95 | 99.96 | 99.95 | 173.14 | 173.10 | 173.14 | 173.12 | 1.000 | 0.999 | 1.000 | 0.999 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 2 | 2015-02-03 14:00:00 | 99.96 | 99.95 | 99.96 | 99.95 | 173.14 | 173.10 | 173.14 | 173.12 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 3 | 2015-02-03 14:01:00 | 99.96 | 99.95 | 99.96 | 99.95 | 173.14 | 173.10 | 173.14 | 173.12 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 4 | 2015-02-03 14:02:00 | 99.96 | 99.95 | 99.96 | 99.95 | 173.14 | 173.10 | 173.14 | 173.12 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 5 | 2015-02-03 14:03:00 | 99.97 | 99.95 | 99.96 | 99.96 | 173.15 | 173.10 | 173.15 | 173.13 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 6 | 2015-02-03 14:04:00 | 99.96 | 99.95 | 99.96 | 99.95 | 173.14 | 173.10 | 173.14 | 173.12 | 1.000 | 1.000 | 1.000 | 1.000 | 0.000 | 0.050 | 0.050 | 0.050 | 0 |
| 7 | 2015-02-03 14:05:00 | 99.96 | 99.95 | 99.97 | 99.96 | 173.14 | 173.11 | 173.15 | 173.13 | 4.998 | 4.998 | 4.998 | 4.998 | 0.000 | 0.250 | 0.250 | 0.250 | 0 |
| 8 | 2015-02-03 14:06:00 | 99.96 | 99.95 | 99.97 | 99.96 | 173.14 | 173.11 | 173.15 | 173.13 | 4.999 | 4.998 | 4.998 | 4.998 | 0.000 | 0.250 | 0.250 | 0.250 | 0 |
| 9 | 2015-02-03 14:07:00 | 99.96 | 99.95 | 99.97 | 99.96 | 173.14 | 173.11 | 173.15 | 173.13 | 4.998 | 4.998 | 4.998 | 4.998 | 0.000 | 0.250 | 0.250 | 0.250 | 0 |

Wiring Diagram



Related Current Transformer (C.T)

| Model | Primary rated current | Rated load | Aperture (mm) | Description (mm) | Weight (kg) | Material | Water-proof |
|------------|-----------------------|------------|---------------|------------------|-------------|----------|-----------------------|
| LMCK055-10 | 300-1200A | ≤10VA | φ55 | 180×138×52 | 2 | PC | IP65 |
| LMCK185-10 | 300-3000A | ≤25VA | φ185 | 350×283×55 | 4.5 | PC | IP65 |
| LZCK310-10 | 300-600A | ≤10VA | φ50 | φ50 x φ110 x 32 | 1 | Resin | silicon case (option) |
| LZCK322-10 | 30-600A | ≤10VA | φ50 | φ50 x φ110 x 52 | 1.6 | Resin | silicon case (option) |
| LZCK350-10 | 20-600A | ≤25VA | φ50 | φ50 x φ110 x 105 | 3.1 | Resin | silicon case (option) |
| LZCG530-10 | 30-600A | ≤20VA | φ45 | φ45 x φ120 x 65 | 5 | Resin | silicon case (option) |

