

## FU2200

### RS485 PORT THREE PHASE STOP DIGITAL POWER METER

*FU2200 industrial panel RS485 power meter is a powerful three phase stop digital power meter, it can measure and display all the electrical parameters as well as harmonics ratio of current and voltage. Four modules can be plugged-in together: RS-485 communication, digital input/output, energy pulse and DC 4-20mA analog output module, in order to meet all kinds of demands. This model FU2200 RS485 digital power meter be used in various energy management system, residential power monitoring, control system, industrial automation, smart buildings etc. It can as 3×220/380V, 3×5A, 0.5s three phase energy meter.*

## Features

1. High accuracy 0.5s/0.5%;
2. 5-line LCD with backlight;
3. Multiple preset value alarms;
4. Max/Min Log with Timestamp;
5. PT,CT ratio can be programmable;
6. Direct voltage input up to 600V / AC;
7. RS485 communication module optional;
8. Field configurable 5A/1A CT input by key;
9. Profibus communication module optional;
10. Time division multiple rate, real-time clock;
11. DC 4-20ma analog output module optional;
12. Electric energy pulse output module optional;
13. Visual display bar chart indicates full load rate;
14. Remote signaling and remote control module optional;
15. 96×96mm panel installation, 92×92mm trepanning dimension;
16. Measure the harmonic content of voltage and current of each phase;
17. There are six wiring modes: 3P4W, 3P4W balance, 3P3W, 3P3W balance, 1P2W and 1P3W;
18. Measure phase voltage, line voltage, current, power, power factor, frequency, positive and negative active energy metering and positive and negative reactive energy metering;



## Application

1. Hotel;
2. High voltage distribution cabinet;
3. Airport;
4. Mobile communication company;
5. Factory;
6. Industrial and mining enterprises;
7. Power plant;
8. Medium and low voltage systems;
9. Energy meter;
10. Energy consumption monitoring system;
11. Industrial system;
12. Electric energy metering of photovoltaic power station;

- |   |                                       |
|---|---------------------------------------|
| 13. Intelligent building;   | 14. Power quality analysis;           |
| 15. Data transmission center;   | 16. Power monitoring system;          |
| 17. Photovoltaic power station;   | 18. Commercial, industrial, utility;  |
| 19. Low voltage distribution cabinet;   | 20. Electric energy metering cabinet; |
| 21. Metering of distribution feeders, transformers, generators, capacitor banks and motors; |                                       |

## Parameters

### Electrical parameters

Power supply (AC/DC)	AC85-265V / DC85-330V, DC18-90V (optional) Power consumption: <3VA
Class	0.5S, 0.5, 1.0
Measurement parameters	Voltage (Ph-N); Voltage (Ph-Ph); Current; Frequency; PF; Active Power(W); Reactive Power(Q) ; Apparent Power(S), 2 <sup>nd</sup> -31 <sup>st</sup> harmonics, Energy
Harmonics	Total harmonics ratio of phase-voltage Total harmonics ratio of current 2nd-31st harmonics ratio of Phase-voltage (RS485 output) 2nd-31st harmonics ratio of current (RS485 output) Voltage THD: 0-30% Current THD: 0-30%
Maximum value	Max. value for voltage/current Max. value for active power Max. value for reactive power Max. value for apparent power
Computation	Forward active power energy Reverse active power energy Forward active power energy Reverse reactive power energy
Measuring range	30-600V, 0-6A, 45-65Hz, -1 ~ 0 ~ 1
Measuring accuracy	Frequency: 0.1% Electric energy: 0.5S, 0.5%, 1.0% Voltage : 0.2%±0.1V Current : 0.2%±0.001A Power : 0.5% ±0.4W Power factor : 0.5% ±0.001
Display	Wide screen angle; Light blue back-lit LCD display; 5 display figures; 6 operation keys.
Communication	Support RS485 port with expansion module FM-485, Modbus-RTU communication protocol. 32 (128) meters are connected as a network.

**Electrical parameters - continued**

Programmable	Measuring system: 3P4W/3P3W etc. Transformation ratio : PT,CT. Communication: Address: 1-247; Baud: 1200~19200; Parity bit: N/E/O Energy: reset
Energy pulse (expansion)	FM-E2 provides active & reactive energy pulse output. 6 pulse parameters can be choose. Range: 0.1-10000kWh/kvarh; Dry contact output (1AX100V).
Data collection (expansion)	Each FM-K2 module can collect 2-ways dry contact counting
Control (expansion module)	Each FM-K2 provides 2 relay contact outputs, which can be controlled by communication or the measured parameters.
Analog output (expansion module)	Each FM-A20 module provides 2 ways of DC 4-20mA outputs, the function-relations can be set according to the measured parameters.
Connection mode	3P4W, 3P4W BAL, 3P3W, 3P3W BAL, 1P2W, 1P3W
Standard	EN610101:2010; EN61010-2-030:2010; EN61326-1:2013; EN61000-3-2:2014; EN61000-3-3:2013; IEC61000-4; IEC61557-12; IEC60068-2-1/2/30 IEC 62052-11; IEC 62053-21; IEC 62053-22

**Mechanical parameters**

Dimensions (mm)	Mounting panel: 96x96 Thickness: 20 Depth: 60 (without expansion module) 80 (without expansion module)
Weight	550g
Mounting	Panel mounting Trepanning: 92x92mm

**Environmental conditions**

Temperature	-25 to +55°C
Humidity	20%-95%RH, Without condensation

## Index

Parameters	Accuracy	Resolution	Measuring range	Show on the display
Voltage(P-N)	0.2%	0.01V	0-400V	0.5-500kV
Current	0.2%	0.01mA	0-6A	5mA-50000A
Active power	0.5%	0.2W	0-4000W/phase	-9999MW to +9999MW
Reactive power	2%	0.2var	0-4000var/phase	-9999Mvar to +9999Mvar
Apparent power	0.5%	0.2VA	0-4000VA/phase	0-9999MVA
Active demand	0.5%	0.2W	0-4000W/phase	-9999MW to +9999MW
Reactive demand	2%	0.2var	0-4000var/phase	-9999Mvar to +9999Mvar
Apparent demand	0.5%	0.2VA	0-4000VA/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	45.00-65.00Hz	45.00-65.00Hz
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	0.5%	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