

Multifunction Power Meter User Manual

**This manual is applied to the following model:
LNF66**

JIANGSU SFERE ELECTRIC CO., LTD.

1 Product description

1.1 Overview

LNF66 multifunction power meter can measure basic electrical parameters, bi-directional energy, four-quadrant reactive energy and harmonic parameters, etc. It has communication and energy pulse output interface, and can be equipped with digital input and relay output. As an advanced intelligent and digital grid front-end acquisition component, it can be applied for power monitoring systems and energy management systems to realize power data collection.

1.2 Model selection

Function		LNF66
Appearance	Display mode	LCD
	Panel size(mm)	96×96
Real-time measurement	U/I/P/Q/S/PF/F	■
	Demand	■
Energy metering	Bi-directional energy	■
	Four-quadrant reactive energy	■
Power quality	THD	■
	Sub-harmonic content	2 nd - 15 th
	Sequence component, phase	■
	Unbalance	■
	RS485 communication interface	■
	Digital input	○
	Relay output	○

Note: “■” Yes, “○”Optional.

2 Technical parameters

2.1 Technical specification

Working environment	
Working temperature	-10°C -- 55°C
Storage temperature	-25°C -- 70°C
Relative humidity	≤95% RH, no condensation
Working altitude	≤2500m
Anti-pollution level	Non-corrosive gas
Protection degree	Front case IP54, rear case IP20.
Insulation	Between signal, power supply, output terminal to case resistance >100MΩ
Withstand voltage	Input and power supply ≥ 2kV, input and output ≥ 2kV, power supply and output ≥ 2kV
Display	
Display method	LCD
Working power supply	
Rated range	AC/DC (80~270) V
Power consumption	≤5VA
Withstand voltage	≥2kV
Voltage input	
Range	3×230/400V
Resolution	0.1 V
Impedance	≥1.7 MΩ/ per phase
Power consumption	≤0.1 VA / per phase
Overload	Continuous: 1.2Vn Instantaneous: 2Vn/1min
Frequency	45-65 Hz
Current input	
Range	3×5A/1A
Resolution	1 mA
Impedance	≤20mΩ/ per phase

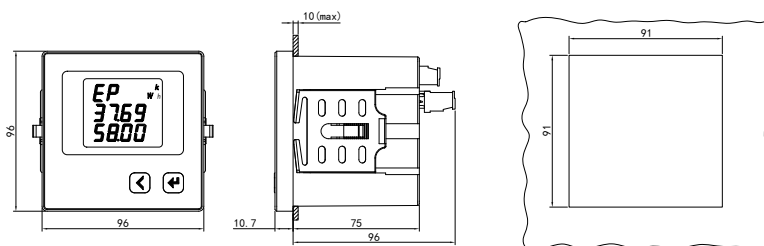
Power consumption	≤0.2 VA/ per phase
Overload	Continuous:1.2Vn Instantaneous: 10In/5s
Energy pulse output	
Pulse width	80ms±20%
Max. terminal voltage	35V
Max. terminal current	10mA
Pulse frequency	≤10Hz
Output object	Import active energy, import reactive energy
Communication interface	
Physical interface	RS-485
Communication speed	Up to 9600bps
Communication protocol	Modbus-RTU
Isolation voltage	2000 VAC (1 min)
Electromagnetic compatibility	
Electrostatic discharge immunity	IEC 61000-4-2-III
Radiated, radio-frequency, electromagnetic field immunity	IEC 61000-4-3-III
Electrical fast transient/burst immunity	IEC 61000-4-4-IV
Impact (surge) immunity	IEC 61000-4-5-IV
Immunity to conducted disturbances, induced by radio-frequency fields	IEC 61000-4-6-III
Power frequency magnetic field immunity	IEC 61000-4-8-III
Voltage dips, short interruptions and voltage variations immunity	IEC 61000-4-11-III

2.2 Measurement parameter

Measurement variable	Accuracy	Instant	Demand	Sum	Unit
V1/V2/V3	0.2	●	—	—	[V,kV]
U12/U23/U31	0.2	●	—	—	[V,kV]
I1/I2/I3	0.2	●	●	—	[A,kA]
F	0.01Hz	●	—	—	[Hz]
P1/P2/P3	0.5	●	—	—	[kW,MW,GW]
P	0.5	●	●	—	[kW,MW,GW]
Q1/Q2/Q3	0.5	●	—	—	[kvar,Mvar,Gvar]
Q	0.5	●	●	—	[kvar,Mvar,Gvar]
S1/S2/S3	0.5	●	—	—	[kVA,MVA,GVA]
S	0.5	●	●	—	[kVA,MVA,GVA]
PF1/PF2/PF3	0.5	●	—	—	—
PF	0.5	●	—	—	—
EP+/EP-	0.5S	—	—	●	[kWh,MWh]
EQ+/EQ-	2	—	—	●	[kvarh,Mvarh]
EQ1/EQ2/EQ3/EQ4	2	—	—	●	[kvarh,Mvarh]
THDV1/THDV2/THDV3	A	●	—	—	[%]
THDI1/THDI2/THDI3	A	●	—	—	[%]
Harmonic ratio-U (1~63rd)	A	●	—	—	[%]
Harmonic ratio-I (1~63rd)	A	●	—	—	[%]

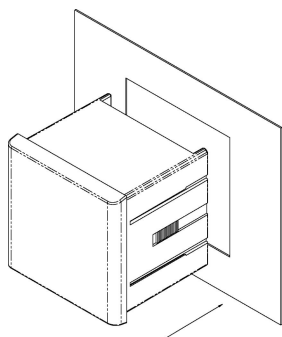
3 Installation

3.1 Dimension

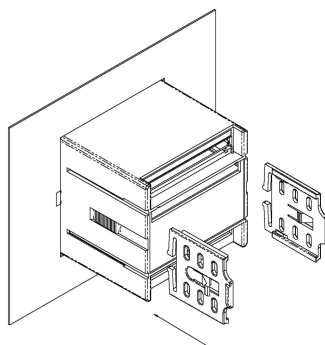


Picture 3-1 Installation Dimension

3.2 Installation



Picture 3-2 Front View



Picture 3-3 Rear View

- (1) Open a 91×91 hole in the fixed power distribution cabinet;
- (2) Take out the meter and remove the fixing bracket;
- (3) Put the meter into the mounting hole from the front;
- (4) (4)Insert the meter mounting bracket to fix the meter.

3.3 Wiring

