

Multifunction Power Meter User Manual

**This manual is applied to the following models:
LNF56**

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1. Product description

1.1 Overview

LNF56 multifunction power meter can measure all electrical parameters and bi-directional electric energy, with functions such as communication and energy pulse output. The instrument adopts ultra-thin design and is easy to be installed. 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

		LNF56
Real-time measurement	U/I/P/Q/S/PF/F	■
	Demand	■
Energy metering	Bi-directional energy	■
	Four-quadrant reactive energy	■
Power quality	Sequence component and phase position of voltage and current	■
	Voltage and current unbalance	■
Input and output	Input and output	■
	RS485 communication interface	■
Appearance dimension	Display mode	LCD
	Panel size(mm)	96×96

Note: “■” indicates that this function is available.

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 Hz-65 Hz
Current input	
Range	3×5A/1A

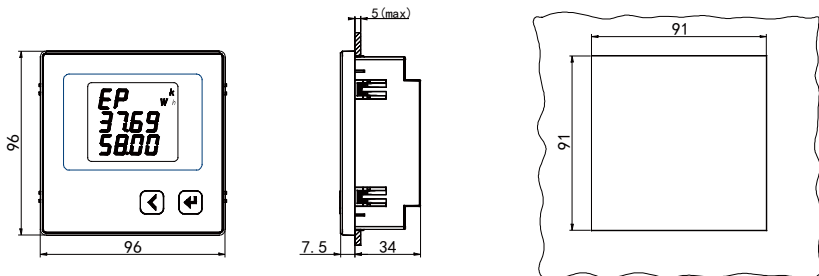
Resolution	1mA
Impedance	≤20mΩ/ per phase
Power consumption	≤0.2 VA/ per phase
Overload	Continuous:1.2Vn Instantaneous: 10In/5s
Energy pulse output	
Pulse width	80ms±20%
Max. terminal voltage	35V
Max. terminal current	10mA
Pulse frequency	≤10Hz
Output object	Import active energy, import reactive energy
Communication interface	
Physical interface	RS-485
Communication speed	Up to 9.6 kbps
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

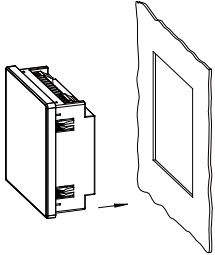
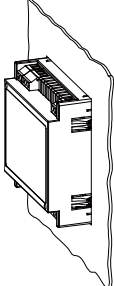
Measurement variable	Accuracy	Instant	Demand	Sum	Unit
V1/V2/V3	0.2	●	—	—	[V,kV]
U12/U23/U31	0.2	●	—	—	[V,kV]
I1/I2/I3	0.2	●	●	—	[A,kA]
F	±0.01Hz	●	—	—	[Hz]
P1/P2/P3	0.5	●	—	—	[kW,MW,GW]
P	0.5	●	●	—	[kW,MW,GW]
Q1/Q2/Q3	0.5	●	—	—	[kvar,Mvar,Gvar]
Q	0.5	●	●	—	[kvar,Mvar,Gvar]
S1/S2/S3	0.5	●	—	—	[kVA,MVA,GVA]
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]

3. Installation

3.1 Dimension



3.2 Installation

 <p>The diagram shows a rectangular meter with a top-mounted terminal block. An arrow points from the meter towards a square mounting hole in a panel with a decorative border.</p>	<p>Install the meter from the outside of the panel into the mounting hole.</p>
 <p>The diagram shows the meter fully inserted into the panel's mounting hole. The meter's bottom edge is held in place by a small spring mechanism within the panel's frame.</p>	<p>Install it to the end and fix the meter with a snap spring.</p>

3.3 Wiring

