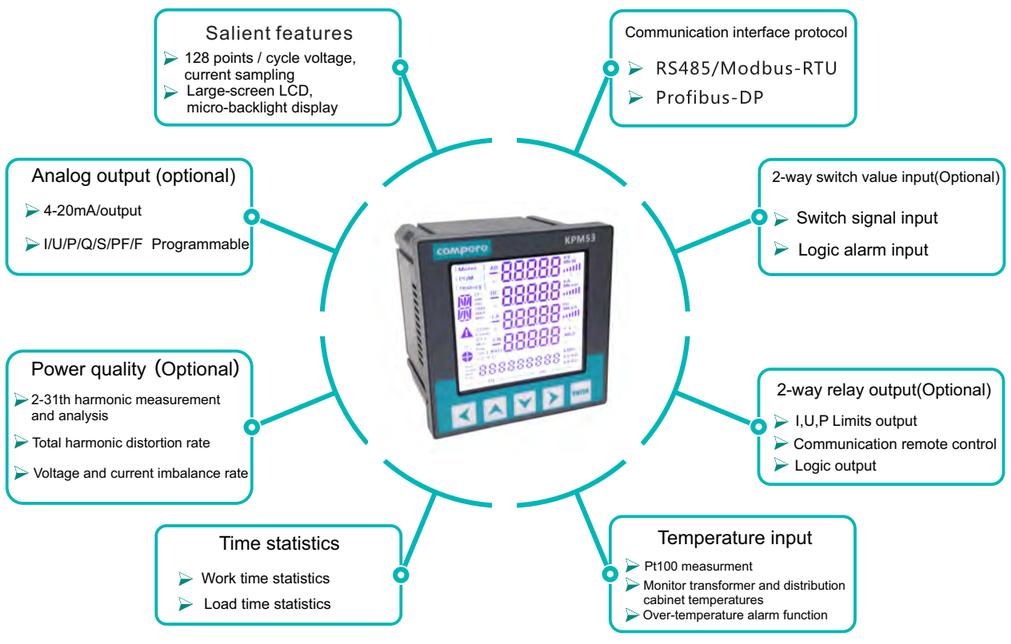
KPM53 Three-phase smart power meter

KPM53 series of three-phase smart power meter with accurate measurement of power parameters, the instrument uses advanced ARM processor and digital signal processing technology designed from the set of three-phase electrical parameters measurement, display, power statistics, power quality analysis, digital input / Output and network communications in one; with high precision, strong isolation, stable performance, anti-interference ability and a little; the instrument also has a very strong expansion capabilities, such as monitoring of external switching action, 4-20mA analog output, but also The network management of the instrument can be realized through RS-485 / Modbus communication protocol

Product Features



Function features

- Measuring three-phase AC voltage, current, voltage / current unbalance rate, four-quadrant power, active / reactive power, power factor, frequency, maximum / minimum
- Voltage to current ratio programmable
- Working hours, load time statistics
- Support up to 51th harmonic calculation
- 1 –way RS485 communication interface, Modbus protocol
- Can be extended 2-way passive switch value input
- Can be extended 2-way relay output
- Can be extended 1-way 4-20mA analog output
- 1 road passive optical coupler collector active pulse output
- Can be extended 1-way PT100 temperature input
- Excellent temperature characteristics and work stability
- FSTN large screen LCD, bright LED backlight uniform display, in the bright light and large viewing angle environment to obtain a good visual effect

Products list

KPM 53 □ □–□

Rated parameters
No:Rated current 5A, measuring range 0-6A
1:Rated current 1A, measuring range 0-1.2A

Extention Function
A-1-way 4-20mA analog output
K-2-way switch value input
H-Harmonic measurement
P-Profibus-DPCommunication
R-2-way relay output
T-1-way temperature input

Functional module
I- Current, zero sequence current, current imbalance rate, time statistics
U-Voltage, zero sequence voltage, voltage unbalance rate, time statistics
S-Current, Voltage, Zero Sequence Current / Voltage, Voltage / Current Imbalance Rate, Power Factor, Power, Frequency, Time Statistics
E-Current, Voltage, Zero Sequence Current / Voltage, Voltage / Current Imbalance Rate, Power Factor, Power, Four-Quadrant Energy, Frequency, Time Statistics
Z-Current, voltage, zero sequence current / voltage, voltage / current unbalance rate, power factor, power, Four-quadrant energy, frequency, max&min value, time statistics

Product series

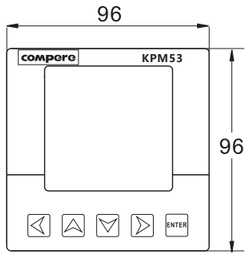
Compere Power Meter

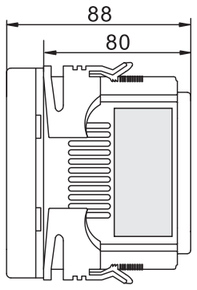
◆ Example:KPM53ZRH-1 : Rated current 1A, harmonic measurement function, 2 relay outputs, three-phase smart power meter.

Application occasion

Alternative analog pointer table	Display and control of electrical parameters in mid-low voltage distribution System	Collect energy consumption data that cost center analysis needs	DC/Green building or DC

Product size

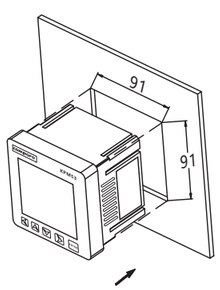




Technical Parameters

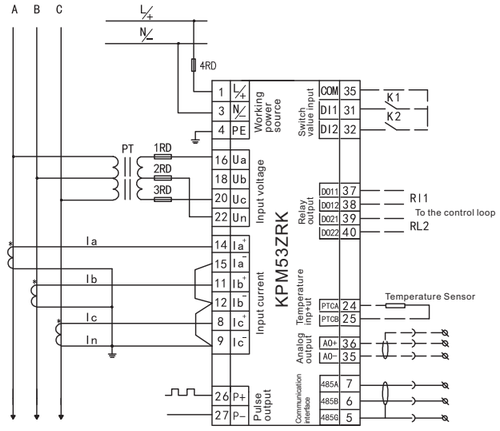
Working power source	Operating Voltage	AC 85-265V/DC 80-300V
	Rated power	< 3VA
Input voltage	Rated voltage	220V
	Sill value	5V
	Overload capacity	1.2 times rated voltage allowed, continuous work; 2 times the rated voltage allowed 1second
	Power consumption	<0.5VA/phase (rated)
	Measurement range	5~260VAC
	Frequency range	45~65Hz
Input current	Rated current	Default 5A,Input range 1-6A;Optional 1A,Input range 1-1.2A
	Sill value	5A Configuration,5mA ;1A Configuration,0.8mA
	Overload capacity	1.2 times rated current allowed, continuous work; 20 times the rated current allowed 1 second
	Power consumption	<0.75VA/phase (Rated current 5A) ;<0.25VA/phase (Rated current 1A)
Input output	Switch value input	2-way passive main line contact DI input, internal supply DC24V power source
	Relay output	2-way DO output,Contact capacity 250VAC/5A,30VDC/5A
	Analog output	Output range 4~20mA,overload allows 1.2times
	Temperature input	Measure range 0℃~100℃
Power quality monitor	Harmonic measurement	Voltage/current2~51th harmonic distortion rate、total harmonic distortion rate.
	Harmonic distortion rate	Phase voltage, line voltage
	Imbalance rate	Voltage. current
Measure-ment accuracy	Voltage	±0.2%(0.01V)
	Current	±0.2%(0.01A)
	Active power	±0.5%(0.1W)
	Reactive power	±2.0%(0.1kvar)
	Active energy	±0.5%(0.1kWh)
	Reactive energy	±2.0%(0.1kvarh)
	Power factor	±0.5%(0.001)
	Frequency	±0.02Hz(0.01Hz)
	Temperature	±1℃(1℃)
Comm unication	Communication interface	RS485,Photoelectric isolation interface
	Communication protocol	Modbus-RTU,1200~38400bps
Electrical insulation	Power frequency withstand voltage	AC2kV/min~1mA Input-output-power source (GB/T 13729)
	Insulation resistance	>50MΩ (GB/T 13729)
	Impact voltage	5kV (Peak) ,1.2/50us (GB/T 13729)
Working environ-ment	Operating temperature	-25℃ ~ +70℃
	Relative humidity	5%~95% No condensation
	Storage temperature	-30℃ ~ +75℃
	Altitude	No more than 4000m
Electrom-agnetic Compati-bility (EMC)	Electrical fast transient/ burst immunity test	IEC61000-4-4,Level4
	Surge immunity test	IEC61000-4-5,Level4
	Electrostatic discharge immunity	IEC61000-4-3,Level4
	Power frequency magn-etic field immunity	IEC61000-4-8,Level4

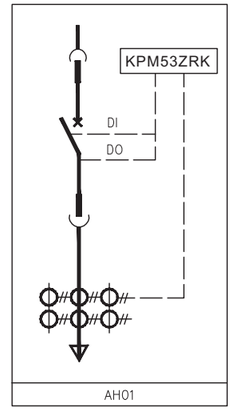
Installation instructions



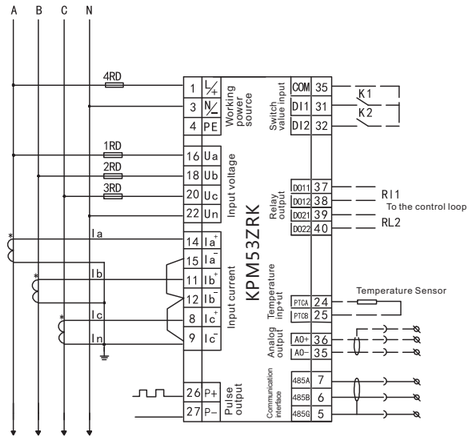
Typical wiring

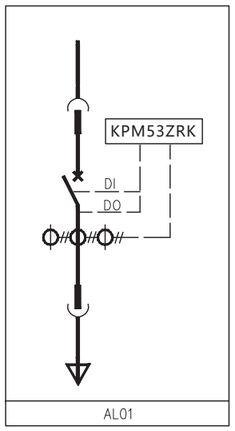
KPM53ZRK High-voltage three-phase three-wire typical wiring diagram





KPM53ZRK Low-voltage three-phase four-wire typical wiring diagram





Explanation:

1.The wiring diagram is suitable for high voltage three-phase three-wire system,low voltage three-phase four-wire system, regard to other system wiring please refer to KPM53 instruction manual.
2.Terminal that without function description is invalid.
3.The function of dotted lines is optional.
4.The final interpretation belongs to Compere.