

Class 0.5

High accuracy measurement

3-digit decimal display provides accurate data



PA/PZ666-□ series Single Phase Digital Ammeter, Voltmeter



Single Phase Digital Ammeter



Single Phase Digital Voltmeter

Main Functions and Characteristics

- Real-time measurement and indication for the current and voltage value of the power circuit.
- Extensible analog output function, current range 4~20mA, 0~20mA, 0~10 mA selectable.
- Extensible relay switch output function, upper and lower alarm output can be realized.
- Extensible RS485 communication interface, according to MODBUS-RTU communication protocol, the baud rate can be set.

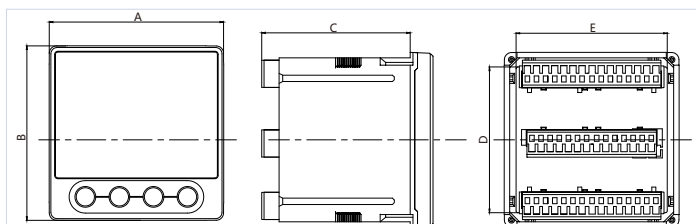
Technical Parameters

Item	Specification
Voltage	AC 100V, 660V selectable, DC 75mV, 660V, other special specifications can be custom-made
Current	AC 1A, 5A selectable, DC 4~20mA, 5A selectable, other special specifications can be custom-made
Frequency	45Hz~65Hz
Accuracy class	Class 0.5
Auxiliary power supply	220VAC±20%, AC/DC85-264 switch power supply customizable
Operation temperature range	Operation temperature range: -25°C ~ 55°C, limit operation temperature range: -40°C ~ 70°C
Power consumption	≤2W/10VA
Display mode	LED display

External and Installation Dimensions

Units: mm

Model	Panel dimension (A×B)	Main part dimension (E×D)	Depth (C)	Hole spacing dimensions (W×H)
P-1	96×48	90×44	110	92×45
P-2	72×72	66×66	90	68×68
P-3	96×96	90×90	90	92×92
P-4	48×48	44×44	110	45×45
P-6	80×80	75×75	90	76×76
P-8	120×120	112×112	90	114×114



PA/PZ666-□ series Single Phase Digital Ammeter, Voltmeter

Model Specification and Selection Description

Units : mm

Model	Measurement display		T RS485 communication	K Switch signal output	B Analog signal output	External dimension	Display mode
	Single phase voltage	Single phase current					
PA666-1		●	⊙	⊙	⊙	96×48	LED Display
PA666-2		●	⊙	⊙	⊙	72×72	
PA666-3		●	⊙	⊙	⊙	96×96	
PA666-4		●	⊙	⊙	⊙	48×48	
PA666-6		●	⊙	⊙	⊙	80×80	
PA666-8		●	⊙	⊙	⊙	120×120	
PZ666-1	●		⊙	⊙	⊙	96×48	
PZ666-2	●		⊙	⊙	⊙	72×72	
PZ666-3	●		⊙	⊙	⊙	96×96	
PZ666-4	●		⊙	⊙	⊙	48×48	
PZ666-6	●		⊙	⊙	⊙	80×80	
PZ666-8	●		⊙	⊙	⊙	120×120	

Note : ● Means the intrinsic functions of the instrument.

⊙ Means extendible corresponding optional functions of this series of instruments.

Technical parameters	index		
Accuracy class	Class 0.5		
Input	Voltage	Rated value	AC/DC (0~660)V, the other special specifications can be custom-made
		Overload	Continuous: 1.2 times, instant: 10 times/5s
		Resistance	≤1Ω
	Current	Rated value	AC/DC (0~5)A, the other special specifications can be custom-made
		Overload	Continuous: 1.2 times, instant: 10 times/5s
		Resistance	≤1Ω
Output	Display mode		Single line 4 digit LED display, the max. voltage resolution is 0.1V, the max. current resolution is 0.001A
	Polarity indication		Complete the positive and negative value switch through polarity light(only for DC meter)
	Communication	Mode	RS-485
		Protocol	MODBUS-RTU
	Baud rate	1200bps, 2400bps, 4800bps, 9600bps, 19200bps, assumed to be 9600bps	
Working power supply	Range		AC220V±20%
	Consumption		≤5VA

PA/PZ666-□ series Three Phase Digital Ammeter, Voltmeter



Three Phase Digital Ammeter



Three Phase Digital Voltmeter

Main Functions and Characteristics

- Real-time measurement and indication for the phase current and voltage value of the power circuit.
- Extensible analog output function, current range 4~20mA, 0~20 mA, 0~10 mA selectable.
- Extensible relay switch output function, upper and lower alarm output can be realized.
- Extensible RS485 communication interface, according to MODBUS-RTU communication protocol, and baud rate can be set.

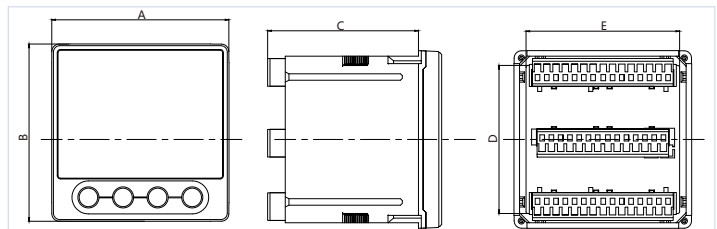
Technical Parameters

Item	Specification
Voltage	AC 100V, 450V, other special specifications can be custom-made
Current	AC 3×1A, AC3×5A, other special specifications can be custom-made
Frequency	45Hz~65Hz
Accuracy class	Class 0.5
Auxiliary power supply	220VAC±20%, AC/DC85-264 switch power supply customizable
Operation temperature range	Operation temperature range: -25°C ~ 55°C, limit operation temperature range: -40°C ~ 70°C
Power consumption	≤2W/10VA
Display mode	LED display

External and Installation Dimensions

Units: mm

Model	Panel dimension (A×B)	Main part dimension (E×D)	Depth (C)	Hole spacing dimensions (W×H)
P-2	72×72	66×66	90	68×68
P-3	96×96	90×90	90	92×92
P-4	48×48	44×44	110	45×45
P-6	80×80	75×75	90	76×76
P-8	120×120	112×112	90	114×114



PA/PZ666-□ series Three Phase Digital Ammeter, Voltmeter

Model Specification and Selection Description

Units : mm

Model	Measurement display		T RS485 communication	K Switch signal output	B Analog signal output	External dimension	Display mode
	Three phase voltage	Three phase current					
PA666-2S		●	⊙	⊙	⊙	72×72	LED Display
PA666-3S		●	⊙	⊙	⊙	96×96	
PA666-4S		●				48×48	
PA666-6S		●	⊙	⊙	⊙	80×80	
PA666-8S		●	⊙	⊙	⊙	120×120	
PZ666-2S	●		⊙	⊙	⊙	72×72	
PZ666-3S	●		⊙	⊙	⊙	96×96	
PZ666-4S	●					48×48	
PZ666-6S	●		⊙	⊙	⊙	80×80	
PZ666-8S	●		⊙	⊙	⊙	120×120	

Note : ● Means the intrinsic functions of the instrument.

⊙ Means extendible corresponding optional functions of this series of instruments.

Technical parameters	index			
Accuracy class	Class 0.5			
Input	Voltage	Rated value	AC100V, 450V	
		Overload	Continuous: 1.2 times, instant: 2 times/5s	
		Consumption	≤1VA(each phase)	
		Resistance	100V(about 120K), 450V(about 600K)	
	Current	Rated value	AC1A, 5A	
		Overload	Continuous: 1.2 times, instant: 10 times/5s	
		Consumption	≤0.5VA(each phase)	
		Resistance	<20mΩ(each phase)	
	Measuring rang of the frequency		45Hz-65Hz	
	Output	Display mode		3 phase 4 digit LED display, the max. Voltage resolution is 0.1V, the max. Current resolution is 0.001A; the unit switches automatically, the decimals shift automatically.
Display range		Voltmeter AC0~999.9kV Ammeter AC0~99.99kA		
Communication (*)		Mode	RS-485	
		Protocol	MODBUS-RTU	
	Baud rate	1200bps, 2400bps, 4800bps, 9600bps, 19200bps, assumed to be 9600bps		
Working power supply	Range		AC220V±20%	
	Consumption		≤5VA	

PD666-□ series Three Phase Digital Multi-function Meter



LCD Display



LED Display

Main Functions and Characteristics

- LED and LCD display function.
- Measurement three phase current, voltage, active power, reactive power, power factor, frequency, import and export active energy, four quadrant reactive energy.
- RS485 communication interface, it according to MODBUS-RTU communication protocol, and baud rate can be set.
- Extensible switch input function.
- Extensible analog output function, current range 4~20mA, 0~20 mA, 0~10 mA selectable.
- Extensible relay switch output function, upper and lower alarm output can be realized.

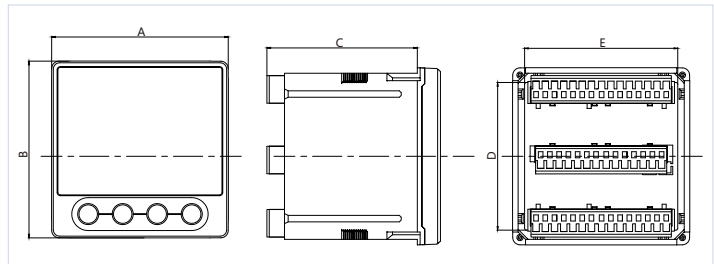
Technical Parameters

Item	Specification
Voltage	AC 100V, 450V
Current	AC 3×1A, AC3×5A
Frequency	45Hz~65Hz
Accuracy class	Class 0.5
Auxiliary power supply	AC/DC85-264 switch power supply
Operation temperature range	Operation temperature range: -25°C ~ 55°C, limit operation temperature range: -40°C ~ 70°C
Power consumption	≤2W/10VA
Display mode	LCD or LED display

External and Installation Dimensions

Units: mm

Model	Panel dimension (A×B)	Main part dimension (E×D)	Depth (C)	Hole spacing dimensions (W×H)
P-2	72×72	66×66	90	68×68
P-3	96×96	90×90	90	92×92
P-6	80×80	75×75	90	76×76
P-8	120×120	112×112	90	114×114



PD666-□ series Three Phase Digital Multi-function Meter

Model Specification and Selection Description

Units : mm

Model	Measurement display						Energy		T RS485 communication	K Switch signal output	B Analog signal output	External dimension	Display mode
	Voltage	Current	Active power	Reactive power	Power factor	Frequency	Active energy	Reactive energy					
PD666-2S3	●	●	●	●	●	●	●	●	●	⊙	⊙	72×72	LCD Display
PD666-3S3	●	●	●	●	●	●	●	●	●	⊙	⊙	96×96	
PD666-6S3	●	●	●	●	●	●	●	●	●	⊙	⊙	80×80	
PD666-8S3	●	●	●	●	●	●	●	●	●	⊙	⊙	120×120	
PD666-2S4	●	●	●	●	●	●	●	●	●	⊙	⊙	72×72	LED Display
PD666-3S4	●	●	●	●	●	●	●	●	●	⊙	⊙	96×96	
PD666-6S4	●	●	●	●	●	●	●	●	●	⊙	⊙	80×80	
PD666-8S4	●	●	●	●	●	●	●	●	●	⊙	⊙	120×120	

Note : ● Means the intrinsic functions of the instrument.

⊙ Means extendible corresponding optional functions of this series of instruments.

Model	CHINT PD666-S4		CHINT PD666-S3
Chế độ kết nối	Ba pha ba dây hoặc ba pha bốn dây là tùy chọn		
Đầu vào	Điện áp	Giá trị đánh giá	AC100V, 220V, 380V, 450V
		Quá tải	Liên tục: 1,2 lần, tức thì: 2 lần / 5s
		Tiêu dùng	≤2VA (mỗi pha)
		Sức cản	> 500kΩ
	Dòng	Giá trị đánh giá	AC1A, 5A
Quá tải		Liên tục: 1,2 lần, tức thì: 10 lần / 5s	
Tiêu dùng		≤1VA (mỗi pha)	
Sức cản		<20mΩ (mỗi pha)	
Đo tần số	45Hz-65Hz		
Đầu ra	Chế độ hiển thị Độ độ chính xác	Màn hình LED Voltage Class 0.5 Resolution 0.1V Current Class 0.5 Resolution 0.001A Active power Class 0.5 Resolution 1W Reactive power Class 1.0 Resolution 1var Power factor Class 0.5 Resolution 0.001 Frequency Class 0.5 Resolution 0.01Hz Active energy Class 0.5 Resolution 0.01kWh Reactive energy Class 2.0 Resolution 0.01kvarh Thiết bị có thể tự động chuyển đổi, số thập phân tự động thay đổi	Màn hình LCD Voltage Class 0.5 Resolution 0.1V Current Class 0.5 Resolution 0.001A Active power Class 0.5 Resolution 1W Reactive power Class 1.0 Resolution 1var Power factor Class 0.5 Resolution 0.001 Frequency Class 0.5 Resolution 0.01Hz Active energy Class 0.5 Resolution 0.01kWh Reactive energy Class 2.0 Resolution 0.01kvarh Thiết bị có thể tự động chuyển đổi, số thập phân tự động thay đổi
	Năng lượng điện	Đo lường năng lượng	Hỗ trợ năng lượng tích cực đo lường tích cực / tiêu cực, năng lượng phản ứng đo lường bốn góc phần tư.
		Hằng số xung	Công suất hoạt động: 10000imp / kWh, Công suất phản kháng: 10000imp / kvarh
		Đầu ra tín hiệu xung	Cung cấp 2 bộ (năng lượng hoạt động / phản ứng) của tín hiệu xung và bộ ghép quang cách ly mở đầu ra xung tín hiệu điện cực thu, độ dài xung: 80ms ± 16ms
	Giao tiếp	Chế độ	RS-485
		Giao thức	MODBUS-RTU
		Tốc độ truyền	1200b / giây, 2400b / giây, 4800b / giây, 9600b / giây, 19200b / giây, giá định là 9600b / giây
Cung cấp năng lượng làm việc	Phạm vi	AC / DC85V ~ 264V	
	Tiêu dùng	≤15VA	



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Mounted Digital Instrument

Pd7777- □S Series Multi-function Power Instrument



12 PD7777-□S Series Multi-function Power Instrument

12.1 Function: having multiple functions like programmable measurement, display and digital communication, mainly used to measure and analyze many electric parameters of power grid and communicate with external device via RS485 data interface, thereby realizing display and remote transmission of electric data. Function expansion: four-way analog quantity (0~10mA/0~20mA/4~20mA) output can achieve the function of transmitting output of electricity; four-way on-off input and output can realize the monitoring and control output of local or remote switching signal (function of “remote signalling” and “remote control”). The programmable keyboard on the panel is available for programming and setting the parameters of the instrument, such as multiplying factor of transformer, grid type, displaying mode of electricity, communication address of instrument, baud rate, object and range of transmitting output, alarm object, upper and lower limits of alarm and so forth.

12.2 Variety & specification and selection description

Model	Measuring display							Additional functions							Displaying mode	Description
	3-phase voltage	3-phase current	Active power	Reactive power	Power factor	Frequency	Active electric energy	Reactive electric energy	Demand power	Multi-rate input/output	4-way transmit-contact alarm	4-way alarm location	Rs485 communication	2-way electric energy pulse output		
PD7777-3S4	●	●	●	●	●	●	●	●				YES	YES			
PD7777-3SK4	●	●	●	●	●	●	●	●				YES	YES	YES	YES	
PD7777-3SB4	●	●	●	●	●	●	●	●	YES			YES	YES	YES	YES	
PD7777-3S3	●	●	●	●	●	●	●	●				YES	YES			
PD7777-3SK3	●	●	●	●	●	●	●	●				YES	YES	YES	YES	
PD7777-3SB3	●	●	●	●	●	●	●	●	YES			YES	YES	YES	YES	
PD7777-8S4	●	●	●	●	●	●	●	●				YES	YES			
PD7777-8SK4	●	●	●	●	●	●	●	●				YES	YES	YES	YES	
PD7777-8SB4	●	●	●	●	●	●	●	●	YES			YES	YES	YES	YES	
PD7777-8S3	●	●	●	●	●	●	●	●				YES	YES			
PD7777-8SK3	●	●	●	●	●	●	●	●				YES	YES	YES	YES	
PD7777-8SB3	●	●	●	●	●	●	●	●	YES			YES	YES	YES	YES	
PD7777-8S7	●	●	●	●	●	●	●	●				YES	YES			
PD7777-8SK7	●	●	●	●	●	●	●	●				YES	YES	YES	YES	
PD7777-8SB7	●	●	●	●	●	●	●	●	YES			YES	YES	YES	YES	

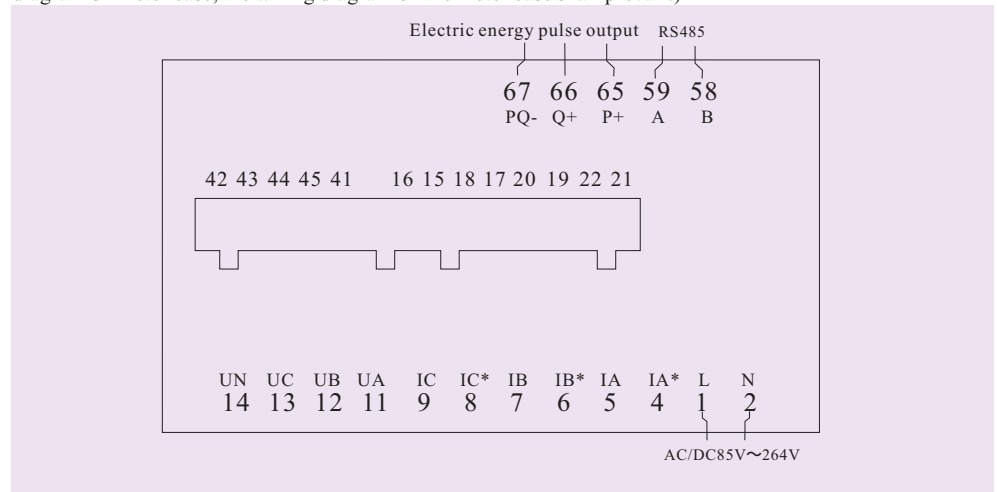
12.3 Main technical performances and parameters

Technical parameters		Index
Voltage	Network	Single-phase, three-phase three-wire or three-phase four-wire available
	Rated value	AC100V, 220V, 380V; other special specifications customizable
	Overload	Continuous: 1.2 times; instantaneous: 2 times/5s; display “HHHH” overload symbol if exceeding the rated value by 1.2 times
	Power consumption	≤ 1VA (each phase)
Input	Impedance	>500KHz
	Rated value	AC1A, 5A
Current	Overload	Continuous: 1.2 times; instantaneous: 10 times/5s; display “HHHH” overload symbol if exceeding the rated value by 1.2 times
	Power consumption	≤ 1VA (each phase)
	Impedance	<20mΩ (each phase)
Measuring range of frequency		45Hz~65Hz
Displaying mode		current 0.001A, active power 1W, reactive power 1var, apparent power 1VA, power factor 0.001, frequency 0.01Hz, electric energy 0.01kWh; automatic unit switching, automatic shifting of decimal point.
Output	Output mode	Open optocoupler pulse output of two-way collector
	Pulse constant Communication (Active imp/kwh; Reactive imp/kvarh)	100000 (Other constants customizable)
Communication	Mode	RS-485
	Protocol	MODBUS-RTU
	Baud rate	1200bps, 2400bps, 4800bps, 9600bps, 19200bps, default as 9600bps
On-off output	Upper- and lower-limit alarms output by the same relay; contact capacity: AC250V/5A, DC30V/2A	
Transmitting output	Current output: DC0m~20mA, DC4mA~20mA, Class 0.5 or Voltage output: DC0V~5V, Class 0.5	
On-off input	Mode of 4-way passive stem node input	

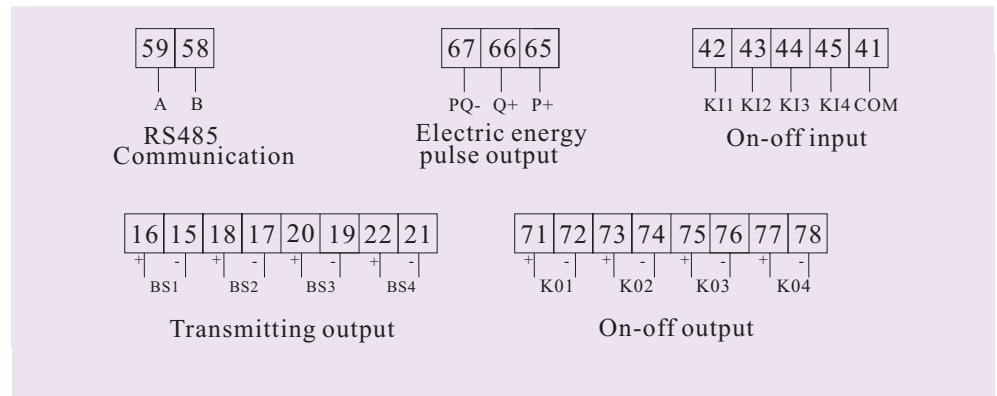
Mounted Digital Instrument

Technical parameters	Index	
Accuracy class	Voltage, current, active power, Apparent power, frequency, power factor	Class 0.5
	Reactive power	Class 1
	Active electric energy	Class 0.5S
	Reactive electric energy	Class 2
	Power supply	Range
Environment	Power consumption	<15VA
	Temperature	-25°C~55°C
	Humidity	25%RH≤Humidity≤93%RH, no condensation of moisture, sites without corrosive gas
	Atmospheric pressure	86kPa~106kPa

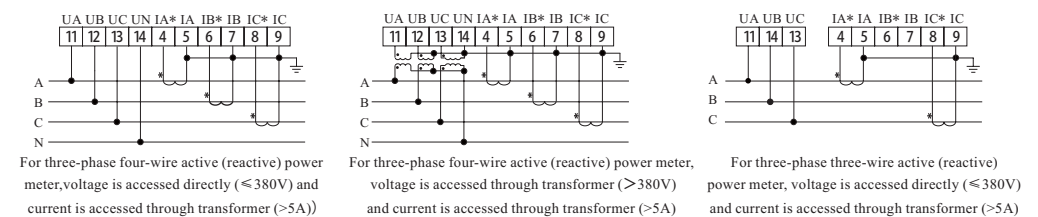
12.4 Description of terminal arrangement and wiring code (Note: in case of inconsistency with the wiring diagram on meter case, the wiring diagram on the meter case shall prevail.)



12.5 Nos. of main functional terminals



12.6 Wiring mode



1. Main functions and characteristics:

- ◆ It adopts dot colorized LCD sketch display with intuitive and friendly interface.
- ◆ It can measure the electrical parameters such as current, voltage, active/reactive power, apparent power, power factor, frequency, etc. in the electrical network.
- ◆ Accurate measurement four-quadrant energy.
- ◆ power quality monitoring:
 Measure the 2nd~31st harmonic content of the voltage, current, total harmonic distortion, bar graph of the display harmonic in the electrical network.
 Measure the power quality parameters such as positive sequence, negative sequence, zero sequence of voltage/current, degree of unbalancedness, etc.
 Online real-time displayed voltage, current waveform, observing the real-time condition of power grid, which can realize the phase sequence regulation such as voltage and current and loss of phase detection, etc.
- ◆ Input/output function of the modules:
 Provide one-way active energy and one-way reactive power impulse output.
 Provide multi-way relay switch output function, which can realize upper and lower limit alarm output.
 Provide four-way switch input state indicating function, adopting passive stem node resistive signal input method.
- ◆ With the standard RS-485 communication interface, adopting the standard ModBus-RTU communication protocol and the baud rate can be set.
- ◆ Each switch quantity has 500 SOE event recording function.
- ◆ It is characterized with 500 pieces of manual and automatic fault wave recording function, continuously saving loaded curve data records for one year.

2. Model specification and selection description:

Model	Measurement display						Energy		Power pulse	RS485 communication	Analog quantity output	Switch quantity output	Switch quantity input	External size	Display mode
	voltage	current	Active power	Reactive power	Power factor	Frequency	Active energy	Reactive energy							
PD7777-3H	•	•	•	•	•	•	•	•	•	•	•	•	96×96	Color LCD	
PD7777-8H	•	•	•	•	•	•	•	•	•	•	•	•	120×120	graphic display	

Note: • means the intrinsic functions of the instrument.

3. Main technical performance and parameters:

Technical parameters	index		
Connection mode	Three phase three wire or three phase four wire optional		
Input	Voltage	Rated value	AC100V, 220V, 380V
		Overload	Continuous: 1.2 times, instant: 2 times/1s, adopt red font identification when out of 1.2 times of the rated value
		Consumption	<2VA(each phase)
		Resistance	>500kΩ
	Current	Rated value	AC1A, 5A
		Overload	Continuous: 1.2 times, instant: 10 times/5s, adopt red font identification when out of 1.2 times of the rated value
		Consumption	<1VA(each phase)
		Resistance	<20mΩ(each phase)
Measuring rang of the frequency		45Hz-65Hz	
Output	Display mode		3.5 inch/4.3 inch lattice LCD
	Measuring accuracy		Voltage Class 0.2 Resolution 0.1V Current Class 0.2 Resolution 0.001A Active power Class 0.2 Resolution 1W Reactive power Class 0.5 Resolution 1var Power factor Class 0.5 Resolution 0.001 Frequency Class 0.2 Resolution 0.01Hz Active energy Class 0.2 Resolution 0.01kWh Reactive energy Class 2.0 Resolution 0.01kvarh The unit can switch automatically, the decimals shift automatically
	Electric energy	Energy measurement	Support positive/negative measurement active(reactive) energy
		Pulse constant	Active power: 10000imp/kWh, Reactive power: 10000imp/kvarh
		Pulse signal output	Provide 2 sets(active/reactive energy) of optical signal and optocoupler isolated open collector electrical signal pulse output
	Communication	Mode	RS-485
		Protocol	MODBUS-RTU
		Baud rate	1200bps, 2400bps, 4800bps, 9600bps, 19200bps, assumed to be 9600bps
	Switch quantity input		4-way passive dry node input mode
	Switch quantity output		Support 4-way relay-state output, relay contact capacity:AC250V/2A, DC30V/2A(-3H only has 2-way)
	Analog quantity output		Current output: DC0mA~10mA, DC0mA~20mA, DC4mA~20mA, Class 0.5(-3H without this function)
	Switch quantity input		4-way passive dry node input mode
	Harmonic		2 nd ~31 st harmonic of voltage/current
	Calendar clock		Clock error: 0.5s/d (reference temperature: 23°C)
	USB interface		Host mode(-3H without this function)
Working power supply	Range		AC/DC85V~264V
	Consumption		≤15VA



Summary:

PD7777-□H series digital harmonic multi-functional meter is mainly applied into highly accurate real-time measurement and indication such as voltage, current, active power, reactive power, apparent power, frequency, power factor, four-quadrant electric energy, voltage/current harmonic content (2nd ~31st), total harmonic content of voltage/current and degree of unbalancedness of voltage/current (including positive, negative, zero sequence) in the electrical circuit. The instrument supports switch quantity input, switch quantity output, analog quantity output, RS485 interface, USB interface and other functions.

The meter is widely applied into the relevant fields such as industrial automation control, energy management system, substation automation, distribution network automation, electric power monitoring, complete equipment, switchgear and so on, to complete the industrial automation control and communication networking.

4. External instructions and installation

4.1 External drawing and dimension

Model	Panel size (width×height)	Casing size (width×height×depth)	cutting size (width×height)	weight
PD7777-8H	120mm×120mm	112mm×112 mm×114mm	114mm×114mm	About 500g

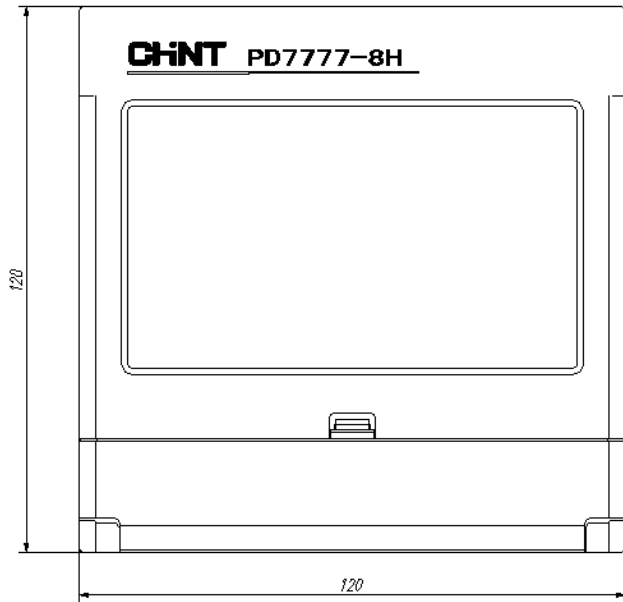


Diagram 4.1.1 front view

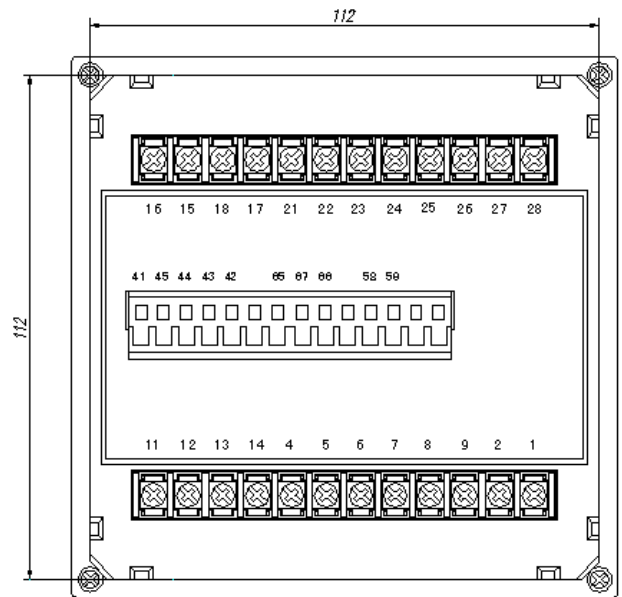


Diagram 4.1.2 back view

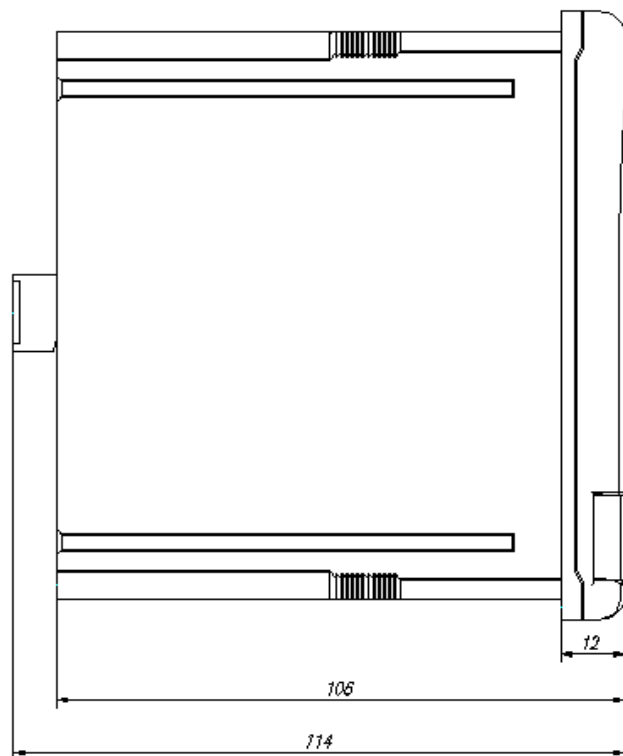


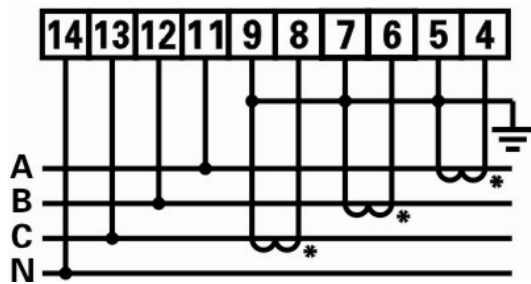
Diagram 4.1.3 side view

4.2 Installation method

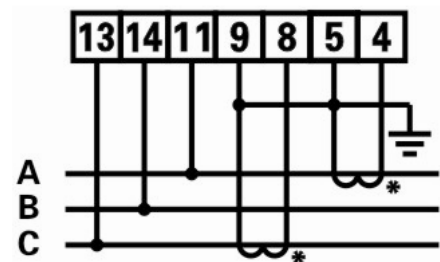
- 1 Take the meter, clamping parts and manual out;
- 2 Cut a hole in the installation screen according to the external and installation size of the meter;
- 3 Push the clamping parts into the card groove of the meter after the meter is embedded into the installation hole, and push tightly by hand.

4.3 Wiring method

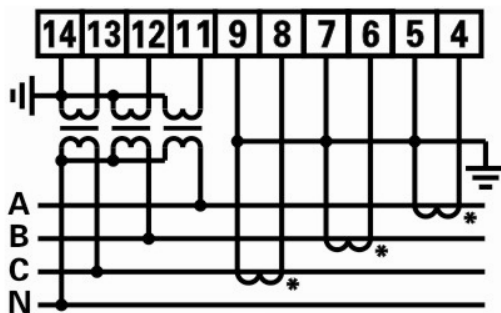
Signal input



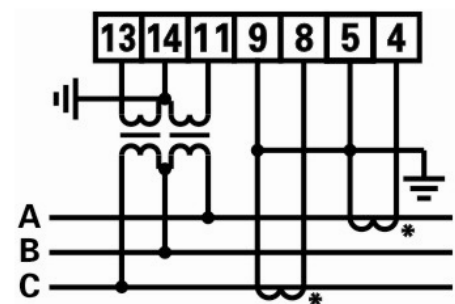
3 phase 4 wire direct voltage input, current input via CT



3 phase 3 wire direct voltage input, current input via CT



3 phase 4 wire input via CT, PT



3 phase 3 wire input via CT, PT

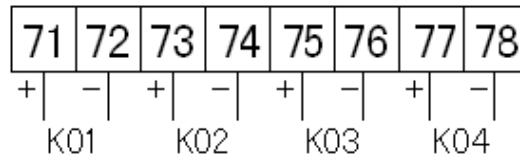
Instructions:

- 1) voltage input: the input voltage should be no more than the rated input voltage of the product(100V,220V or 380V), otherwise PT should be used, the secondary side of PT can not be short-circuited, it's recommended to install 1A fuse wire in the voltage input terminal;
- 2) current input: standard rated input current is 5A or 1A, external CT should be used when it's over 5A or 1A, the secondary side of CT can be not open-circuited. If the used CT has other meters connected, the wiring should adopt series connection, the primary loop of CT should be open or the secondary loop of CT should be short-circuited before the current of the disassembling product inputs the wiring. It's recommended to use line bank for easy

disassembly;

- 3) make sure input voltage, current corresponding, sequence consistent, direction consistent; otherwise it will occur numerical and symbol errors(power, power factor and energy).

Switch output

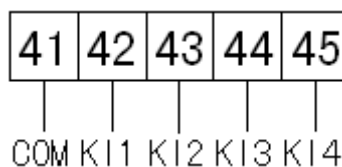


Schematic diagram of switch output terminals

The meter provides 4-way relay switch output function, can be used for alarm indication, protecting control output functions in all kinds of places. When switch output is valid, the relay is on, when switch output is on, the relay is off.

- 1) each output can be equipped with remote control and alarm function (alarm is divided into upper alarm and lower alarm)
- 2) when the output is set as remote control, it can control the state of the switch quantity by host computer;
- 3) when the output is set as alarm function, more than 36 electrical parameters can be chosen as the alarm parameters, the alarm value can be modified by manual or communication of host computer;
- 4) electrical parameters; load parameter AC250V/2A,DC30V/2A.

switch input



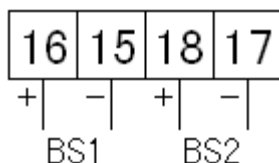
Schematic diagram of switch input terminals

The meter provides 4- way switch input detecting function, adopt passive stem node resistive signal input method, external power supply is needless. When the external is on, sample the connection information through switch input module of the meter, the interface display is on-state. When the external is off, sample off information through the switch input module of the meter, the interface

display is off-state.

Electrical parameters: $R_i < 500\Omega$ is on, $R_i > 100k\Omega$ is off.

Analog transmitting output



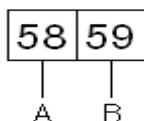
Schematic diagram of analog transmitting output

The meter provides 2-way analog transmitting output function, each way can choose and set any one in the 26 electrical parameters, it can realize analog output function of the electrical parameters through analog transmitting module of the meter.

Electrical parameters: current output 0~10mA, 0~20mA, 4~20mA, output load $\leq 500\Omega$, the voltage output can be custom-made;

Accuracy: class 0.5

RS-485 communication



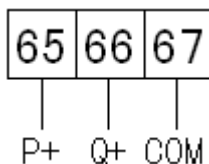
RS-485 communication terminals

The meter provides 1-way 485 communication interface of industrial Modbus protocol, can realize network communication for max. 247 slave computers at the same time.

Electrical parameters: characteristic impedance is 120Ω , input resistance $\geq 48k\Omega$.

Baud rate: 1200bps, 2400bps, 4800bps, 9600bps, 19200bps optional.

Power impulse output



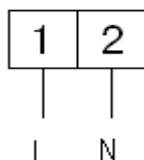
Schematic diagram of power impulse output terminals

The meter provide four-quadrant power measurement function, 2-way power impulse output function (P: active, Q: reactive). Power impulse adopts open-collector optical coupling isolation output to realize the remote of the active and reactive energy. The accuracy of the energy can be tested by impulse output method.

Electrical parameters: impulse sampling interface circuit $V_{cc} \leq 5V$, $I_z \leq 50mA$.

Impulse constant: 10000imp/kwh(kvarh).

Auxiliary power supply



Schematic diagram of auxiliary power terminals

The meter can only work normally with external auxiliary power supply (please see the specification in the label of the meter), it has the common (AC/DC) power input terminal, limit working voltage is AC/DC85V~264V. In case the meter will be damaged accidentally, it's recommended to install 1A fuse wire on the live wire side when it is AC power supply, in the area where the power quality is poorer, it's recommended to install surge suppressor and fast impulse group suppressor in the power circuit.

4.4 Diagnosis、analysis、exclusion of common fault

4.4.1 No display when the meter is power on

make sure the supplied power is suitable for this series of meter or not before power on, and check if the connection of the meter is correct or not carefully, if the connection diagram is different from that in the casing of the meter, please take according to the connection diagram in the casing. Turn the multi-meter gear to 1000V AC, and check if the auxiliary power supply has the required voltage for working.

4.4.2 No change of the measurements while the input signal changes

Check and ensure the connection of the signal input terminals is right, contact is reliable, can measure on-off condition of the corresponding signal input terminals through on-off gear of the multi-meter.

4.4.3 The symbol of power、power factor and power data is incorrect

Check again the input voltage, current corresponding, phase and direction are consistent.

4.4.4 Communication failure

Enter communication settings interface, check if the four parameters of the meter including communication address、baud rate、check bit、stop bit are the same as the

setting of the host computer, and there are no a number of slave devices (two or above) with the same address in the network.

If the fault still can not be cleared with the above method, or other abnormal phenomena occurs, please contact Zhejiang CHINT Instrument & Meter Co.,Ltd.

5. Programming instructions

5.1 Function description

The meter can measure all the electrical parameters in the power network, take 3 phase 4 wire input network as an example: can measure U_a 、 U_b 、 U_c (phase voltage), U_{ab} 、 U_{bc} 、 U_{ca} (line voltage), I_a 、 I_b 、 I_c (current), P_a 、 P_b 、 P_c 、 P (active power), Q_a 、 Q_b 、 Q_c 、 Q (reactive power), S_a 、 S_b 、 S_c 、 S (apparent power), F (frequency), PF_a 、 PF_b 、 PF_c 、 PF (power factor), voltage、current harmonic content (2nd-31st), voltage current total harmonic content THD, degree of unbalance of voltage, voltage positive sequence component、negative sequence component、zero sequence component, current positive sequence component、negative sequence component、zero sequence component and four-quadrant energy. Can carry out fault wave record, manual wave record, load curve, vector diagram.

5.2 Menu introduction and operation

After the meter is power on, display main interface, as the drawing shows 5-1 interface includes 3 parts: main display area, menu bar and status bar.

There is menu bar on the left and right side of the interface, 8 function menu items, including "Instant", "Energy", "Harmonic", "Quality", "Digital", "analog", "wave/evt", "Setting".

It is status bar under the interface, including "help", "full", "time" from left to right.

The rest area is the main display area.