

Product Catalogue

(22B Version)



Company Profile

Toky Electrical Co., Ltd. has been committed to the research and development, production and sales of intelligent meters since the establishment in 1992. Our products include power meters, industrial control instruments, smart energy meters, transmitters, sensors, and software of power/ energy efficiency/ industrial automation system, etc. The products are widely used in various fields of industrial automation, as well as intelligent monitoring fields such as electric power, communication, and rail transit. At present, it has offices in major large and medium cities in China, and distributors in more than 80 countries around the world, which builds a complete sales and service network. Over the years, more than 10 million units of products have been sold worldwide.

Since 2000, the company has successively introduced office software such as ERP, OA and CRM to realize the office automation management of enterprises, and passed the ISO9001:2000 international quality management system certification in 2003. The company has always attached great importance to the investment in product research and development, and has been rated as National High-tech Enterprise and Zhongshan Intelligent Instrument Engineering Technology Center, and has in-depth cooperation with many scientific research institutions. In recent years, the company has optimized and improved the PID algorithm of the intelligent process controller, launched a variety of intelligent power and energy meter products, and integrated multiple types of instrument development technology platforms. The speed of new product development and product upgrades has been significantly accelerated. The company has obtained more than a dozen national inventions, software copyrights, utility models and other patents.

The company has a complete production line type on various types of equipment, new equipment production, production testing and other equipment, an automated production line for independent production lines, and a production system for automated production line products, which realizes product testing, production and testing. The improved production detection rate at high and low temperature greatly improves the production efficiency of product production and finished products, provides advanced production line quality for products and guarantees delivery of products.

The company has a full range of instruments and equipments for experimentation, production and testing. It has successively built a complete new product type test laboratory, independently innovated and optimized the production line, developed the instrument calibration system platform, and realized the automatic calibration of the digital instrument production. The production guarantee in industries such as automated high and low temperature production lines has greatly improved the production efficiency and yield of products, and provided advanced production qualification rates and delivery quality assurance for products. The advanced production and testing equipment in the industry, such as automatic high and low temperature aging production line, greatly improves the production efficiency and the qualified rate of finished products, and provides a strong quality assurance and delivery guarantee for the products.

At present, the company is the Vice-chairman unit of China Display Control Instrument Professional Committee, the Vice-chairman unit of Guangdong Instrument and Meter Association, the Vice-chairman unit of Guangdong Measurement Control Technology and Equipment Application Promotion Association, and the Director unit of Automation Instrumentation Branch of China Instrument and Meter Association. The company participated in the drafting of a number of national standards, such as <Safety Requirements for Industrial Automation Products>, <Zener Diode Safety Barriers>, <Analog Signal Conditioners for Industrial Process Control Systems>, <Internet of Things Current Transmitter Specifications>, < Internet of Things Temperature Transmitter Specification>, etc.

At present, the Chinese government is promoting the implementation of the "Made in China 2025" strategy, and has made a strategic plan to comprehensively improve the quality and level of China's manufacturing industry. In line with the national strategic development trend, we will further exert our innovative technological advantages in the field of smart instrumentation industry, seize the commanding heights of the smart instrumentation industry, and make unremitting efforts to promote the development and progress of China's science and technology!

Industrial park exterior



Our vision:

Be an enterprise of conscience

that reassures employees and partners.

Corporate Culture

Our core values:

With public spiritedness & open-mindedness.

Our management concept:

Work with passion, keep improving, develop to the full potential, and create a better future.

Company mission:

Make measurement and control more accurate, reliable and efficient.



Related Certificates



TOKY Trademark Registration

ISO9001



High Tech Enterprise Certificate Certificate of Pattern Approval (CPA) China Metrology Certification(CMC)

Industry Association Certificates



Patent certificates



Standards Drafting, Product Certificate, Verification Report

National Standards that TOKY Participated in Drafting



CE Certificates



Calibration Certificates



Pattern Assessment Qualified Reports



Wonderful Review

Company office and Production Picture



R&D team



Comprehensive type
evaluation laboratory



Advanced experiment and
test instruments



Production workshop

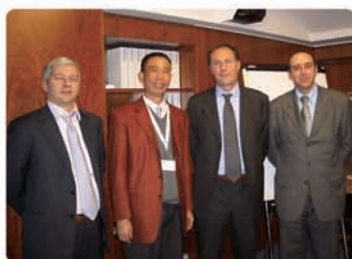


SMT chip workshop



Assembly workshop

Customer Visit Picture and Academic conference Presentation Picture



Foreign customers visit our company



Attended the academic conference
of China Instrument Society



Attended the academic conference
of Guangdong Instrument Society

Office team and Exhibition Picture



Excellent domestic distribution team



2017 Hannover Industrial Exhibition



Guangzhou Automation Exhibition

Product application Picture



Mechanical application



Power application



System application

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Panel Meter Function Comparison Table

Panel Meter	No.	Model Function	DW8, 9	DP4	DL8A	DL8	DA8	DP3	DX	DK8A/B/C	DM	DE
Sensor Indicator												
Temperature Controller	1	Digits	4	4 1/2	4	4	4 1/2	3 1/2	3 1/2	3 1/2	3 1/2 / 4 1/2	3 1/2
Digital Counter	2	Accuracy	0.5%F.S	0.1%F.S	0.5%F.S	0.5%F.S	0.3%F.S	0.5%F.S	0.5%F.S	0.5%F.S	0.5%F.S	0.5%F.S
	3	Meas Data	All 8 datas	AC/DC voltage / current	AC/DC voltage / current universal	AC/DC voltage / current universal	AC/DC voltage / current	AC/DC voltage / current	AC/DC voltage / current	AC/DC voltage / current	DC voltage / current	AC/DC voltage / current
	4	Keeping Function	No	*Yes	No	#Yes, switchable	No	No	No	No	No	No
Timer Relay	5	Max/Min value	No	#Yes, switchable	No	#Yes, switchable	/	/	/	/	/	/
	6	Average value	/	#Yes, switchable	/	#Yes, switchable	√	√	√	√	√	√
Tacho/Speed Pulse Meter	7	Effective value	√	#Yes, switchable	√	#Yes, switchable	/	/	/	/	/	/
Recorder	8	Display change	Yes	Yes	Yes	Yes	No	No	No	No	No	No
	9	Display Speed	1 times/s	1-9 times/switchable	2 times/s	3 times/s	2 times/s	2 times/s	2 times/s	2 times/s	2 times/s	2 times/s
Signal Isolator	10	Sampling Rate	250us	52us	250us	18us	/	/	/	/	/	/
	11	Zero setting	No	Yes	No	Yes	No	No	No	Yes	Yes	No
Rotary Encoder	12	Decimal point setting	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No
Proximity Sensor	13	Alarm	2 channels, upper & lower limit alarm	3 channels, upper & lower limit alarm	2 channels, upper & lower limit alarm	2 channels, upper & lower limit alarm, within & out range alarm	/	/	/	/	/	/
	14	Delay alarm	No	Yes	Customized	Yes	/	/	/	/	/	/
Solid State Relay	15	DI/DO	No	No	No	#2DI, 2DO	/	/	/	/	/	/
	16	Analog	Yes	Yes	Yes	Yes	/	/	/	/	/	/
Power Meter	17	Com	Yes	Yes	Yes	Yes	/	/	/	/	/	/

Remarks: * **DP4 series**: models with communication function, have no hold function, and models with hold function, have no communication function; Dual-function models need to be customized.

DL8 series: when you need it with hold function or DI input function, pls order models that supports communication or transmission function. (Only products with transmission or communication functions support hold or DI input)

Remarks for range selection: The max DC direct input current is DC 2A, a shunt is required for over 2A, and the transformation ratio is 75mV input. The max AC direct input current is AC 5A, a transformer is required for more than 5A, and the transformation ratio is 5A input. The max DC direct voltage input is DC 600V, the voltage is divided into 100V input if it is greater than 600V. The max AC direct input voltage is AC 600V, transformers are required for voltage greater than 600V, and the transformation ratio is 100V input.

1. DW Series Single Phase Multi-function Panel Meter

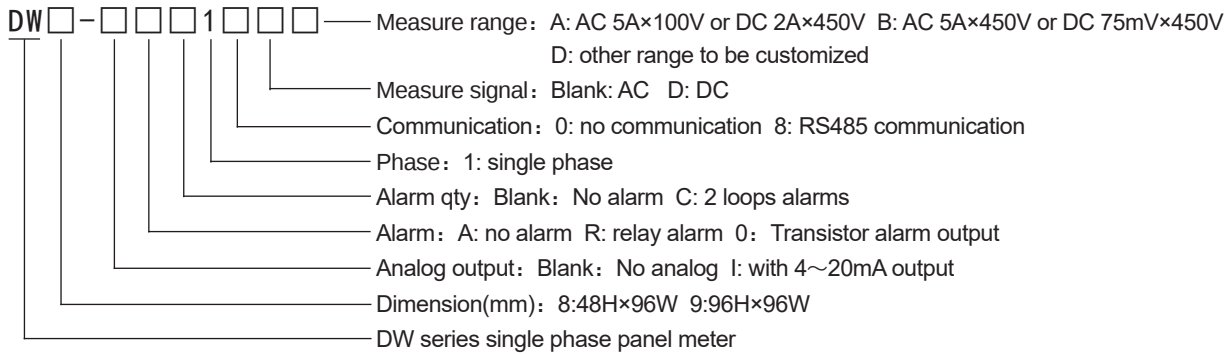
■ Photos and Features



Features:

- ★ Voltage & current accuracy: $\pm 0.5\%$ F.S, Kwh accuracy: level 1
- ★ Measure voltage, current, power factor, active power, reactive power, apparent power, and Kwh; true effective value measurement.
- ★ DC 2 loops signal measurement (DC power meter)
- ★ Optional 2 channels alarm (upper and lower limits are set arbitrarily)
- ★ Optional 4~20mA transmission output function (any can be set)
- ★ Optional RS485 communication interface, Modbus RTU protocol.
- ★ The display switching and menu setting are easy to operate, the running status and power value are protected against power failure.

■ Model Illustration



■ Ordering Information

Model	Alarm	Analog	Communication	Measure range	Measure Parameters	Code
DW8/9-A10A/B	No	No	No	AC A:5A×100V B:5A×450V	Voltage/Current/Active power/ Reactive Power/Active energy /Frequency/Power Factor	B0360DW03
DW8/9-RC10A/B	2	No	No			B0400DW03
DW8/9-RC18A/B	2	No	RS485			B0500DW03
DW8/9-IRC10A/B	2	4~20mA	No			B0460DW03
DW8/9-IRC18A/B	2	4~20mA	RS485			B0560DW03
DW8/9-A10DA/B	No	No	No	DC A:2A×450V B:75mV×450V	Voltage/Current/ Power/Energy	B0360DW03
DW8/9-RC10DA/B	2	No	No			B0400DW03
DW8/9-RC18DA/B	2	No	RS485			B0500DW03
DW8/9-IRC10DA/B	2	4~20mA	No			B0460DW03
DW8/9-IRC18DA/B	2	4~20mA	RS485			B0560DW03

■ Technical Specifications

Input Signal	Input voltage	Single phase 5~450V Power consumption<1VA, DC 5~450V
	Voltage impedance	≥300KΩ
	Input current	0.025~5A (1A customized) Power consumption<0.4VA, DC 0~2A, DC 0~75mV
	Current impedance	<20mΩ
	Rated frequency	50Hz, 60Hz
	Accuracy	Active energy: 1.0S Reactive energy: 2.0S Voltage/current: 0.5%FS
	Measurement range	Current: 0.001In~1.2In Voltage: 0.01~1.1Un
Data	Relay capacity	AC 250V 5A DC24V 5A (Resistive load)
	Analog output	DC 4~20mA load<600Ω (DC 24V)
	Display	High brightness red LED
Communication	Port	RS485 port Modbus RTU protocol
	Baud rate	4.8kbps, 9.6kbps

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

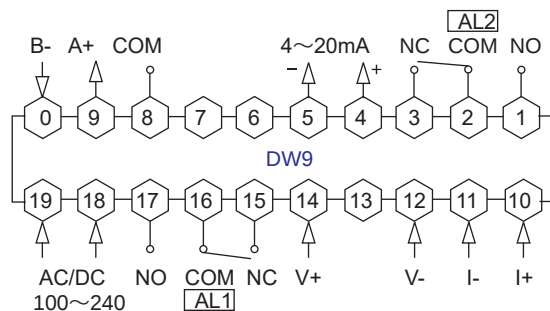
Solid
State
Relay

Power
Meter

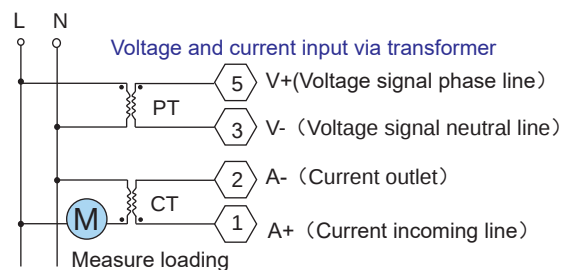
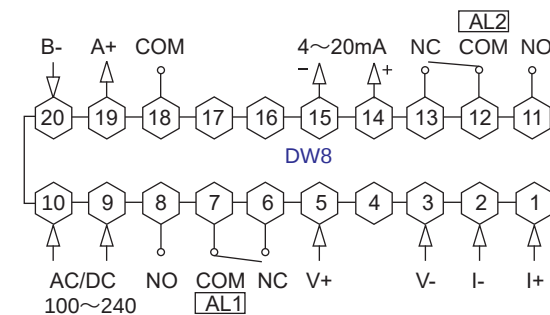
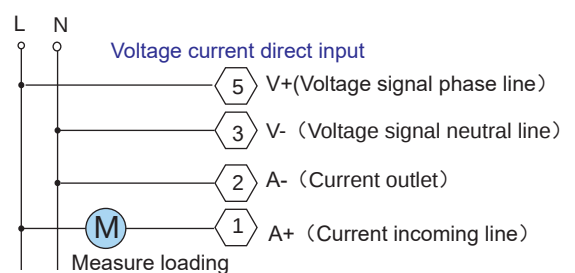
■ Technical Specifications

Panel Meter	Electromagnetic Compatibility	Static electricity	Level 3 Contact discharge ±6000V Air discharge ±8000V
		Burst	Level 4 each model ±4000V _{P-P}
		Frequency drop	Level 3
		Lightning surge	Level 4 Line to ground ±4000V Line to line ±2000V
Sensor Indicator	Environment	Environment	Temperature: -10℃～50℃ Humidity: 5～90%R.H (No condensation)
		Limit condition	-20℃～55℃
		Storage Temperature	-40℃～65℃
		Participation conditions	Temperature: 23℃±2℃ Humidity:40%～60%RH
Temperature Controller	Casing	Anti-vibration level	10～57Hz (XYZ direction 2G/30minutes)
		Casing materials	VO grade flame retardant PC+ABS, PC mirrored panel
		Protective level	IP65 (front panel)
Digital Counter	Power	Power supply	AC/DC 100～240V 50/60Hz
		Power consumption	<5W
	Safety	Compressive strength	2000VAC 50Hz
		Insulation resistance	100MΩ DC 500V
	Weight		about 0.3kg

■ Wiring Diagram



DW8 wiring example:

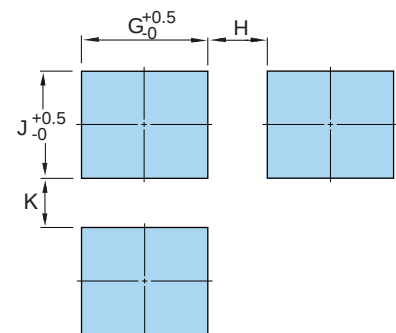
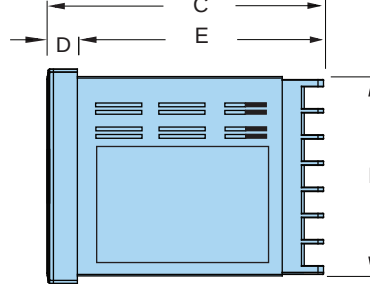
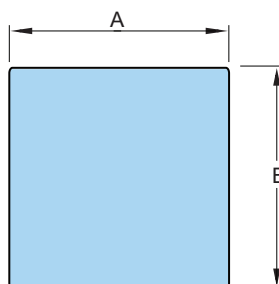


■ Installation And Hole Size (Unit: mm)

Panel size

Side size

Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
DW8	96	48	97.5	9	88.5	44	92	30	45	25
DW9	96	96	97.5	9	88.5	91.5	92	25	92	25

2. DP4/DP4H Series Panel Meter

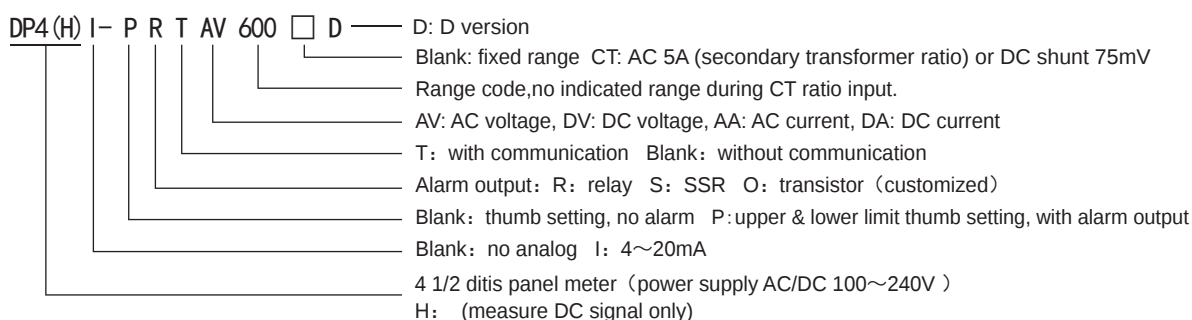
■ Photos and Features



Photos and Features

- ★ 4 1/2 digits, high resolution, high precision display.
- ★ High/low limit alarm of 2 groups of thumb switch.
- ★ Optional 1 loop insulated analog 4~20mA output.
- ★ Optional RS485 communication, Modbus RTU protocol.
- ★ D version has virtual value and average value measurement.
- ★ D version high-speed data acquisition 51.2us/time, 400Hz MF can be ordered..
- ★ With effective value, average value, hold value, maximum value, minimum value display function.
- ★ It can be set from 1 time/s to 9 times/s, display refresh rate.
- ★ Zero setting, alarm delay setting, display change setting and other special functions.

■ Model Illustration



■ Ordering Information (DP4H series measure DC signal only)

Model	Type	Alarm	Analog	Communication	Measurement range	Code
DP4-AV/DV/DA/AA□ (D)	Regular	No	No	No	AV (AC Voltage) / DV (DC Voltage) : 0.2/2/20(10)/200(100)/600V	A0800DP03
DP4I-AV/DV/DA/AA□ (D)		No	No	No		A0970DP03
DP4-TAV/DV/DA/AA□ (D)		No	4-20mA	RS485		A1100DP03
DP4I-TAV/DV/DA/AA□ (D)		No	4-20mA	RS485		A1300DP03
DP4-PRAV/DV/DA/AA□ (D)		High/Low limit, middle value	No	No	DA(DC Current)/ AA(AC Current): 2mA/20mA/200mA/2A	A1200DP03
DP4I-PRAV/DV/DA/AA□ (D)			No	No		A1400DP03
DP4-PRTAV/DV/DA/AA□ (D)			4-20mA	RS485		A1500DP04
DP4I-PRTAV/DV/DA/AA□ (D)			4-20mA	RS485		A1800DP04
DP4-DA/AACT (D)	Regular	No	No	No	AACT: AC 5A (secondary transformer ratio) DACT: DC shunt 75mV	A0800DP03
DP4I-DA/AACT (D)		No	No	No		A0970DP03
DP4-TDA/AACT (D)		No	4-20mA	RS485		A1100DP03
DP4I-TDA/AACT (D)		No	4-20mA	RS485		A1300DP03
DP4-PRDA/AACT (D)		High/Low limit, middle value	No	No		A1200DP03
DP4I-PRDA/AACT (D)			No	No		A1400DP03
DP4-PRTDA/AACT (D)			4-20mA	RS485		A1500DP04
DP4I-PRTDA/AACT (D)			4-20mA	RS485		A1800DP04
DP4H-DV/DA□ (D)	High impedance	No	No	No	DV(DC Voltage): 0.02/0.2/2/6/20V	A1100DP03
DP4HI-DV/DA□ (D)		No	No	No		A1270DP03
DP4H-TDV/DA□ (D)		No	4-20mA	RS485		A1400DP03
DP4HI-TDV/DA□ (D)		No	4-20mA	RS485		A1600DP03
DP4H-PRDV/DA□ (D)		High/Low limit, middle value	No	No	DA (DC Current) : 200uA/2mA/20mA	A1500DP03
DP4HI-PRDV/DA□ (D)			No	No		A1700DP03
DP4H-PRTDV/DA□ (D)			4-20mA	RS485		A1800DP04
DP4HI-PRTDV/DA□ (D)			4-20mA	RS485		A2100DP04

Technical Specifications

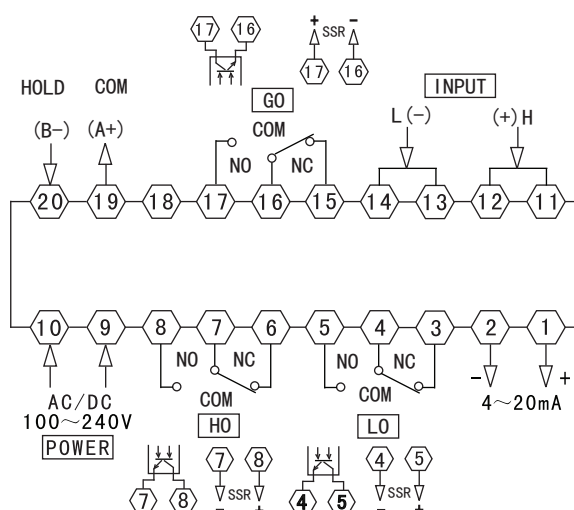
Panel Meter	Input signal	Input impedance	Ref to range details	Power supply	Voltage	100~240V AC/DC 50/60Hz
		Overload capacity	1.2 times rated range max		Power consumption	≤5W
		Measurement accuracy	200V/A below: 0.1%FS 200V/A above: 0.2%FS	Protection level	Panel	IP54
		Refresh rate	2.5~10 times/s or 51.2us/times		Body	-
Sensor Indicator	Analog output	Output type	4~20mA	Environment	Work environment	0~50℃ <85%RH
		Load capacity	600Ω max		Storage environment	-20~60℃ <85%RH
		Output accuracy	0.5%FS or 0.2%FS	Structure	Vibration, stack	10~55Hz X\Y\Z 0.75mm
		Resolution	0.01mA 12 digits DA		Screw torque	0.74n.m~0.9n.m
Temperature Controller	Relay output	Load capacity	3A/250V AC	Safety	Dielectric strength	2000V AC 50/60Hz 1 minute
		Electrical life	100,000 times		Insulation resistance	100MΩ DC 500V
Digital Counter	Communication	Mechanical life	1 million times	EMC	ESD	Level 3
		Communication protocol	RS-485 ModBUS-RTU		Pulse train anti-interference	Level 4 each mode ±4000V _{P-P}
		Baud rate	4800bps, 9600bps		Lightning surge	Level 3 N-L ±2000V
					Periodic waveform drop	Level 3

Measurement Range Specifications (* For high impedance type, and measure DC signal only)

Type	Range	Resolution	Input Impedance	H high impedance type	Accuracy Level
Voltage signal	* 20mV	0.001mV	1MΩ	10MΩ	±0.1%FS ±3Digits
	* 200mV	0.01mV	1MΩ	10MΩ	±0.1%FS ±3Digits
	* 2V	0.1mV	1.2MΩ	10MΩ	±0.1%FS ±3Digits
	* 6V	0.1mV	/	10MΩ	±0.1%FS ±3Digits
	* 20V	1mV	AV1.2MΩ/DV2MΩ	10MΩ	±0.1%FS ±3Digits
	200V	10mV	12MΩ	/	±0.1%FS ±3Digits
	600V	100mV	12MΩ	/	±0.2%FS ±3Digits
Current signal	* 200uA	10nA	/	100Ω	±0.1%FS ±3Digits
	* 2mA	10nA	200Ω	10Ω	±0.1%FS ±3Digits
	* 20mA	1uA	20Ω	1.2Ω	±0.1%FS ±3Digits
	200mA	10uA	2Ω	/	±0.1%FS ±3Digits
	2A	100uA	0.1mΩ	/	±0.2%FS ±3Digits
	Above AC 5A	1mA	>1MΩ	/	±0.2%FS ±3Digits
	Above DC 2A	1mA	>1MΩ	/	±0.2%FS ±3Digits

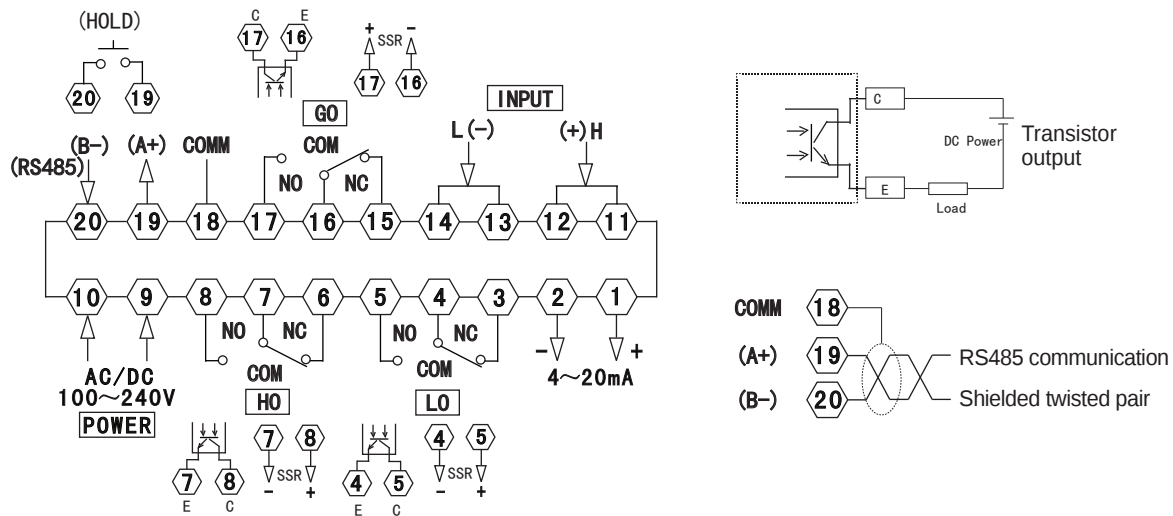
Note: When the measured voltage > 600V, it must be changed to AC 0~100V input by 100V ratio voltage transformer and the meter will display the ratio value.

DP4 Connection



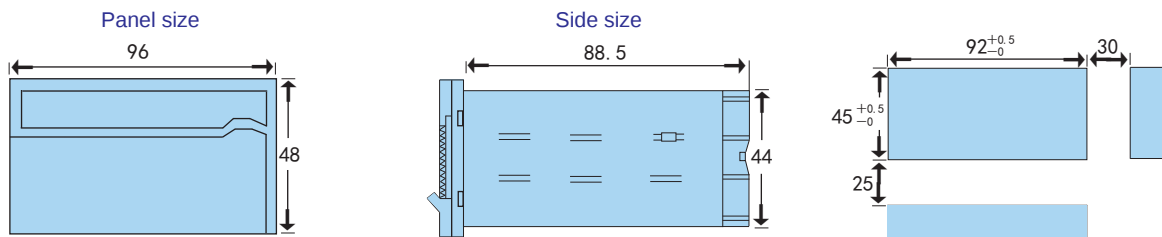
※When HOLD and COM are short-circuited, the meter data can be kept, and this function is invalid when it has communication. Note: Pls subject to the connections on meter if any changes.

DP4H connection



- Note: 1. Only one of the communication function and the hold function can be selected
2. Please subject to the connections on meter if any changes.

Dimensions (Unit: mm)



Panel Meter
Sensor Indicator
Temperature Controller
Digital Counter
Timer Relay
Tacho/Speed Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter

3. DL8A Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

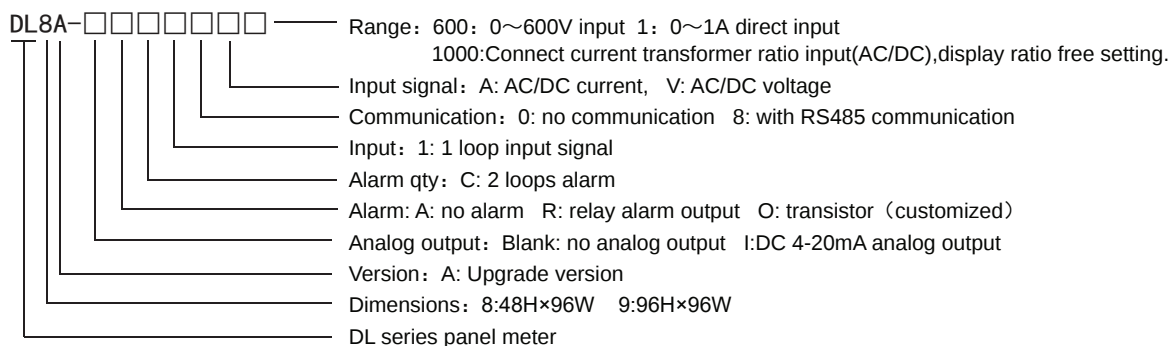
■ Photos and Features



Features:

- ★ universal AC/DC (AC signal ture effective value measuring)
- ★ Single phase multichannel input,can meet measuring range of demand all kinds of signal types.
- ★ 2 loops free setting alarm output function.
- ★ 1 loop 4 ~ 20mA analog output
- ★ RS485 communication, Modbus RTU procotol

■ Model Illustration



■ Ordering Information

Model	Alarm	Analog	Communication	Measure Specification	Code
DL8/9A-IA10V600	No	4~20mA	No	AC/DC 10V, 100V, 600V 3 channels input	B0410DL01
DL8/9A-RC10V600	2 loops	No	No	AC/DC 10V, 100V, 600V 3 channels input	B0390DL01
DL8/9A-RC18V600	2 loops	No	RS485	AC/DC 10V, 100V, 600V 3 channels input	B0520DL01
DL8/9A-IRC10V600	2 loops	4~20mA	No	AC/DC 10V, 100V, 600V 3 channels input	B0460DL01
DL8/9A-IRC18V600	2 loops	4~20mA	RS485	AC/DC 10V, 100V, 600V 3 channels input	B0590DL01
DL8/9A-IA10A1000	No	4~20mA	No	AC0~5A,DC0~75mV 2 channels input(ratio display)	B0420DL01
DL8/9A-RC10A1000	2 loops	No	No	AC0~5A,DC0~75mV 2 channels input(ratio display)	B0400DL01
DL8/9A-RC18A1000	2 loops	No	RS485	AC0~5A,DC0~75mV 2 channels input(ratio display)	B0530DL01
DL8/9A-IRC10A1000	2 loops	4~20mA	No	AC0~5A,DC0~75mV 2 channels input(ratio display)	B0470DL01
DL8/9A-IRC18A1000	2 loops	4~20mA	RS485	AC0~5A,DC0~75mV 2 channels input(ratio display)	B0600DL01
DL8/9A-IA10A1	No	4~20mA	No	AC/DC 10mA,100mA,1000mA 3 channels input	B0410DL01
DL8/9A-RC10A1	2 loops	No	No	AC/DC 10mA,100mA,1000mA 3 channels input	B0390DL01
DL8/9A-RC18A1	2 loops	No	RS485	AC/DC 10mA,100mA,1000mA 3 channels input	B0520DL01
DL8/9A-IRC10A1	2 loops	4~20mA	No	AC/DC 10mA,100mA,1000mA 3 channels input	B0460DL01
DL8/9A-IRC18A1	2 loops	4~20mA	RS485	AC/DC 10mA,100mA,1000mA 3 channels input	B0590DL01

■ Technical Specifications

Input Signal	Input resistance	See the range description	Power Supply	Voltage	100~240V AC/DC 50/60Hz
	Overload capacity	Max 1.2 times of rated range		Power consumption	≤5W
	Accuracy	0.5%FS	Protection level	Panel	IP54
	Resolution	Voltage: 0.1V,Current: 0.001A		Casing	-
	Refresh rate	2.5times/second	Environment	Work environment	0~50℃ <85%RH
Analog Output	Output	4~20mA		Storage environment	-20~60℃ <85%RH

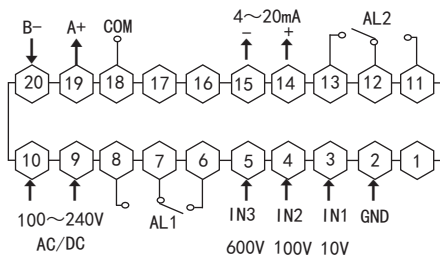
Technical Specifications

Analog Output	Load	600Ω max	Structure	Vibration,stack	10~55Hz X\Y\Z 0.75mm
	Output accuracy	0.5%FS		Screw torque	0.74n.m~0.9n.m
	Resolution	0.01mA 12 digits DA		Dielectric strength	2000V AC 50/60Hz 1minute
Relay Output	Load	3A/250V AC	Safety	Insulation resistance	100MΩ DC 500V
	Electrical	100,000 times		ESD	Level 3
	Mechanical	1 million times		Pulse train anti-interference	Level 4 each mode±4000Vp-p
Communication	Protocol	RS-485 ModBUS-RTU	EMC	Lightning surge	Level 3 N-L ±2000V
	Baud rate	4800bps,9600bps		Frequency drop	Level 3

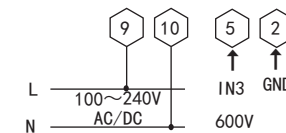
Connection

Note:Pls subject to the connections on meter if any changes as follow.

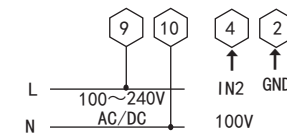
Voltage input connection



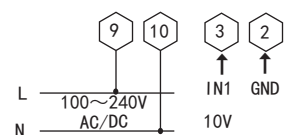
600V range voltage input



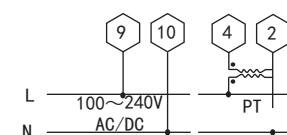
100V range voltage input



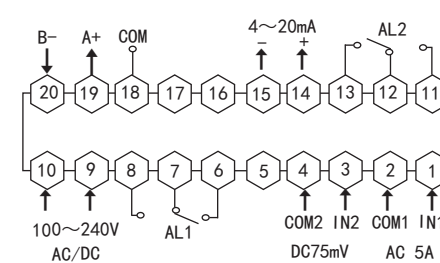
10V range voltage input



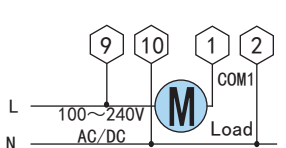
100V range voltage ratio input



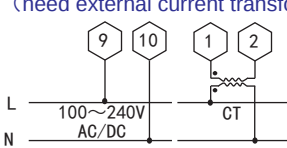
AC/DC ratio current input diagram



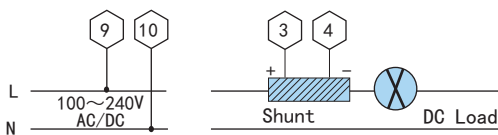
Below AC 5A direct input



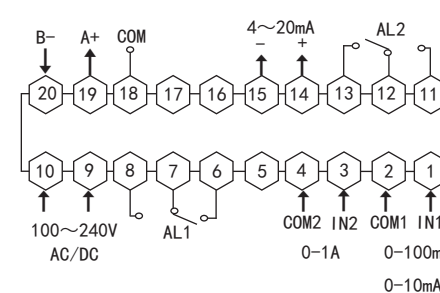
Above AC 5A ratio input (need external current transformer)



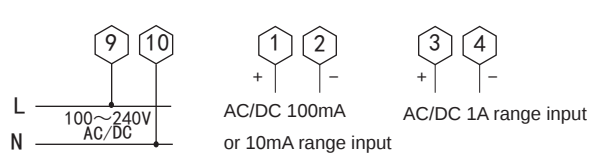
DC 75mV current ratio input



AC/DC small range current input wiring diagram

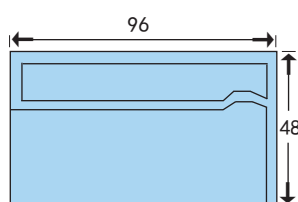


AC/DC small range current direct input

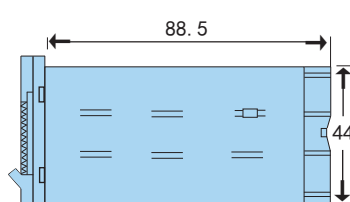


Dimensions (Unit:mm)

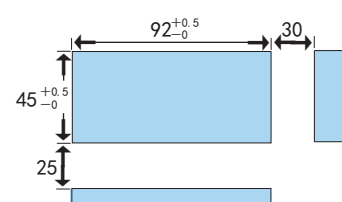
Panel size



Side size



Hole size



4. DL8 Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

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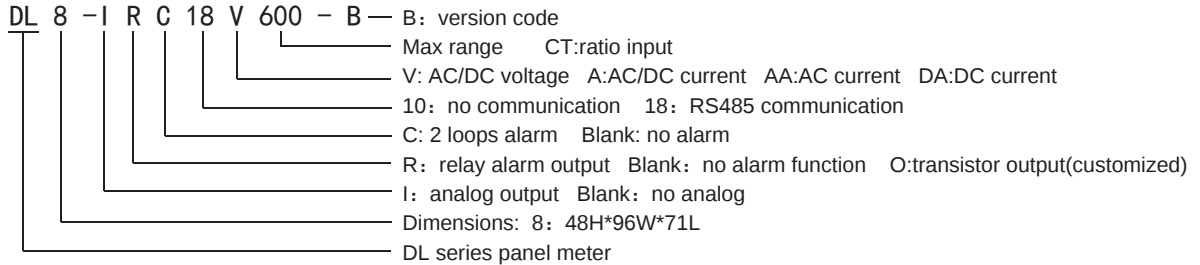
■ Photos and Features



Features:

- ★ Short case design, installation depth is 65mm only, save the space.
- ★ Multi channel input, can measure both AC and DC.
- ★ AC signal TRMS measurement and AVG measurement can be switched freely.
- ★ Extended function: force to reset, keep current value, keep maximum value, keep minimum value, alarm delay.
- ★ Optional 2 loops free setting alarm output function.
- ★ Optional 1 loop 4~20mA analog output.
- ★ Optional RS485 communication, Modbus RTU protocol.
- ★ 2 loop DI input (This function is only available when the analog input change to be RS485 communication, and only when there is DI input hold function)

■ Model Illustration



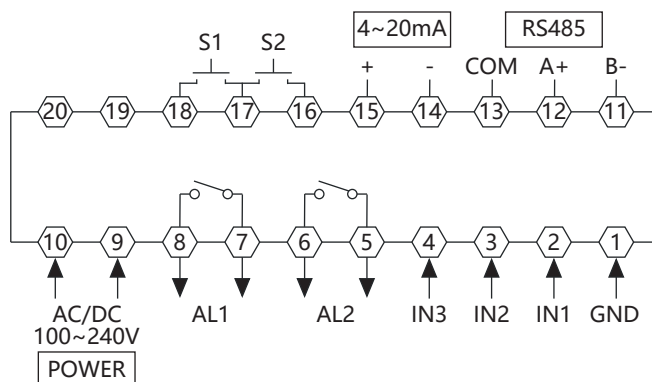
■ Ordering Information

Model	Alarm	Analog	RS485	DI input	Input range	Code
DL8-IRC18V600	2 loops	4~20mA	Yes	Yes	IN1:6V,IN2:60V,IN3:600V	B0490DL01
DL8-IRC18V200	2 loops	4~20mA	Yes	Yes	IN1:2V,IN2:20V,IN3:200V	B0490DL01
DL8-IRC18V100	2 loops	4~20mA	Yes	Yes	IN1:1V,IN2:10V,IN3:100V	B0490DL01
DL8-IRC18A2	2 loops	4~20mA	Yes	Yes	IN1:2A,IN2:0.2A,IN3:0.02A	B0490DL01
DL8-IRC18AACT	2 loops	4~20mA	Yes	Yes	IN1:5A (AC)	B0490DL01
DL8-IRC18DACT	2 loops	4~20mA	Yes	Yes	IN1:75mV (DC)	B0490DL01
DL8-RC18V600	2 loops	No	Yes	Yes	IN1:6V,IN2:60V,IN3:600V	B0410DL01
DL8-RC18V200	2 loops	No	Yes	Yes	IN1:2V,IN2:20V,IN3:200V	B0410DL01
DL8-RC18V100	2 loops	No	Yes	Yes	IN1:1V,IN2:10V,IN3:100V	B0410DL01
DL8-RC18A2	2 loops	No	Yes	Yes	IN1:2A,IN2:0.2A,IN3:0.02A	B0410DL01
DL8-RC18AACT	2 loops	No	Yes	Yes	IN1:5A (AC)	B0410DL01
DL8-RC18DACT	2 loops	No	Yes	Yes	IN1:75mV (DC)	B0410DL01
DL8-IRC10V600	2 loops	4~20mA	No	No	IN1:6V,IN2:60V,IN3:600V	B0370DL01
DL8-IRC10V200	2 loops	4~20mA	No	No	IN1:2V,IN2:20V,IN3:200V	B0370DL01
DL8-IRC10V100	2 loops	4~20mA	No	No	IN1:1V,IN2:10V,IN3:100V	B0370DL01
DL8-IRC10A2	2 loops	4~20mA	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0370DL01
DL8-IRC10AACT	2 loops	4~20mA	No	No	IN1:5A (AC)	B0370DL01
DL8-IRC10DACT	2 loops	4~20mA	No	No	IN1:75mV (DC)	B0370DL01
DL8-RC10V600	2 loops	No	No	No	IN1:6V,IN2:60V,IN3:600V	B0280DL01
DL8-RC10V200	2 loops	No	No	No	IN1:2V,IN2:20V,IN3:200V	B0280DL01
DL8-RC10V100	2 loops	No	No	No	IN1:1V,IN2:10V,IN3:100V	B0280DL01
DL8-RC10A2	2 loops	No	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0280DL01
DL8-RC10AACT	2 loops	No	No	No	IN1:5A (AC)	B0280DL01
DL8-RC10DACT	2 loops	No	No	No	IN1:75mV (DC)	B0280DL01
DL8-IV600	No	4~20mA	No	No	IN1:6V,IN2:60V,IN3:600V	B0300DL01
DL8-IV200	No	4~20mA	No	No	IN1:2V,IN2:20V,IN3:200V	B0300DL01
DL8-IV100	No	4~20mA	No	No	IN1:1V,IN2:10V,IN3:100V	B0300DL01
DL8-IA2	No	4~20mA	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0300DL01
DL8-IAACT	No	4~20mA	No	No	IN1:5A (AC)	B0300DL01
DL8-IDACT	No	4~20mA	No	No	IN1:75mV (DC)	B0300DL01
DL8-V600	No	No	No	No	IN1:6V,IN2:60V,IN3:600V	B0215DL01
DL8-V200	No	No	No	No	IN1:2V,IN2:20V,IN3:200V	B0215DL01
DL8-V100	No	No	No	No	IN1:1V,IN2:10V,IN3:100V	B0215DL01
DL8-A2	No	No	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0215DL01
DL8-AACT	No	No	No	No	IN1:5A (AC)	B0215DL01
DL8-DACT	No	No	No	No	IN1:75mV (DC)	B0215DL01

Technical Specifications

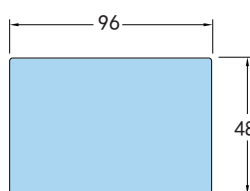
Power supply	100~240V AC/DC (85-265V)
Measurement accuracy	(>2000)±0.5%F.S±3digits @ 25±3°C Measuring temperature drift < 500PPM
Resolution	Minimum unit display value of default range or 12bits
AC Frequency	AC measuring frequency range:45~400Hz measuring accuracy range: 50~100Hz
Relay capacity	AC 250V /1A rated load life > 100000 times
Power consumption	< 6VA
Environment	In door, temperature: 0~50°C no condensation, humidity: <85%RH, altitude<2000m
Storage environment	-10~60°C, no condensation
Switching input	No power dry contact input Signal voltage≤DC 24V
Current output	DC 4~20mA Load<500Ω Temperature drift 300PPM
Communication	RS485 port Modbus-RTU protocol, can be connected up to max 30 units.
Insulation resistance	Input, output, power VS meter cover >20MΩ
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Pulse train anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0%~70% perf.Criteria B
Isolation withstand voltage	Signal input, output, power: 2000VAC 1min
Weight	About 400g
Cover material	The shell and panel frame PC/ABS (Flame Class UL94V-0)
Panel material	PET(F150/F200)
Power failure memory	10 years, times of writing: 1 million times
Panel Protection level	IP65 (IEC60529)
Safety Standard	IEC61010-1 Overvoltage category II, pollution level 2, levelIII (Enhanced insulation)

Connection

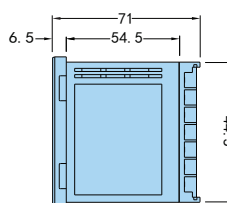


Note:Pls subject to the connections on meter if any changes as above.

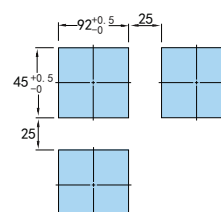
Dimensions (Unit:mm)



Panel size



Side size



Hole size

5. DLW Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
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Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

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Rotary
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Power
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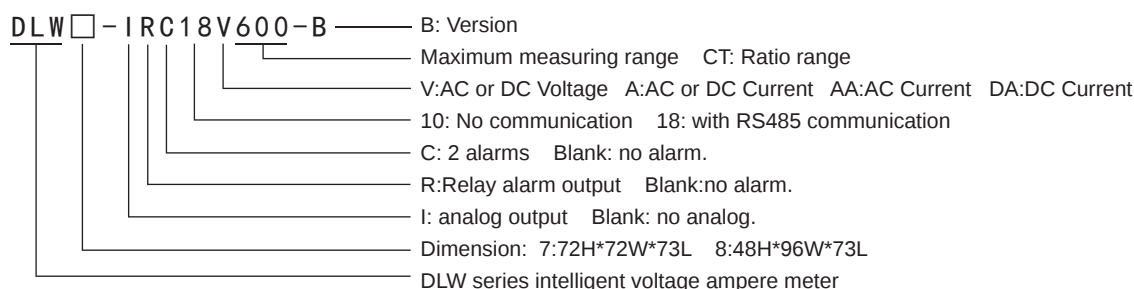
■ Photos and Features



Features:

- ★ It has up to three input range options.
- ★ It has the functions of measurement display, alarm output, transmission output, communication, etc.
- ★ 2 DI inputs and two DO output.
- ★ Widely used for voltage or current monitoring in industrial machinery, machine tools and related equipments.
- ★ AC and DC effective value measurement, polarity display can be selected during DC measurement.
- ★ Economical and practical, easy to operate.

■ Model Illustration



■ Ordering Information

Model	Alarm	Analog	RS485	DI input	Input range	Code
DLW ☐ -IRC18V600	2	4~20mA	Yes	Yes	IN1:6V,IN2:60V,IN3:600V	B0515DLW01
DLW ☐ -IRC18V200	2	4~20mA	Yes	Yes	IN1:2V,IN2:20V,IN3:200V	B0515DLW01
DLW ☐ -IRC18V100	2	4~20mA	Yes	Yes	IN1:1V,IN2:10V,IN3:100V	B0515DLW01
DLW ☐ -IRC18A2	2	4~20mA	Yes	Yes	IN1:2A,IN2:0.2A,IN3:0.02A	B0515DLW01
DLW ☐ -IRC18AACT	2	4~20mA	Yes	Yes	IN1:5A (AC)	B0515DLW01
DLW ☐ -IRC18DACT	2	4~20mA	Yes	Yes	IN1:75mV (DC)	B0515DLW01
DLW ☐ -RC18V600	2	No	Yes	Yes	IN1:6V,IN2:60V,IN3:600V	B0435DLW01
DLW ☐ -RC18V200	2	No	Yes	Yes	IN1:2V,IN2:20V,IN3:200V	B0435DLW01
DLW ☐ -RC18V100	2	No	Yes	Yes	IN1:1V,IN2:10V,IN3:100V	B0435DLW01
DLW ☐ -RC18A2	2	No	Yes	Yes	IN1:2A,IN2:0.2A,IN3:0.02A	B0435DLW01
DLW ☐ -RC18AACT	2	No	Yes	Yes	IN1:5A (AC)	B0435DLW01
DLW ☐ -RC18DACT	2	No	Yes	Yes	IN1:75mV (DC)	B0435DLW01
DLW ☐ -IRC10V600	2	4~20mA	No	No	IN1:6V,IN2:60V,IN3:600V	B0395DLW01
DLW ☐ -IRC10V200	2	4~20mA	No	No	IN1:2V,IN2:20V,IN3:200V	B0395DLW01
DLW ☐ -IRC10V100	2	4~20mA	No	No	IN1:1V,IN2:10V,IN3:100V	B0395DLW01
DLW ☐ -IRC10A2	2	4~20mA	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0395DLW01
DLW ☐ -IRC10AACT	2	4~20mA	No	No	IN1:5A (AC)	B0395DLW01
DLW ☐ -IRC10DACT	2	4~20mA	No	No	IN1:75mV (DC)	B0395DLW01
DLW ☐ -RC10V600	2	No	No	No	IN1:6V,IN2:60V,IN3:600V	B0305DLW01
DLW ☐ -RC10V200	2	No	No	No	IN1:2V,IN2:20V,IN3:200V	B0305DLW01
DLW ☐ -RC10V100	2	No	No	No	IN1:1V,IN2:10V,IN3:100V	B0305DLW01
DLW ☐ -RC10A2	2	No	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0305DLW01
DLW ☐ -RC10AACT	2	No	No	No	IN1:5A (AC)	B0305DLW01
DLW ☐ -RC10DACT	2	No	No	No	IN1:75mV (DC)	B0305DLW01
DLW ☐ -IV600	No	4~20mA	No	No	IN1:6V,IN2:60V,IN3:600V	B0325DLW01
DLW ☐ -IV200	No	4~20mA	No	No	IN1:2V,IN2:20V,IN3:200V	B0325DLW01
DLW ☐ -IV100	No	4~20mA	No	No	IN1:1V,IN2:10V,IN3:100V	B0325DLW01
DLW ☐ -IA2	No	4~20mA	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0325DLW01
DLW ☐ -IAACT	No	4~20mA	No	No	IN1:5A (AC)	B0325DLW01
DLW ☐ -IDACT	No	4~20mA	No	No	IN1:75mV (DC)	B0325DLW01
DLW ☐ -V600	No	No	No	No	IN1:6V,IN2:60V,IN3:600V	B0235DLW01

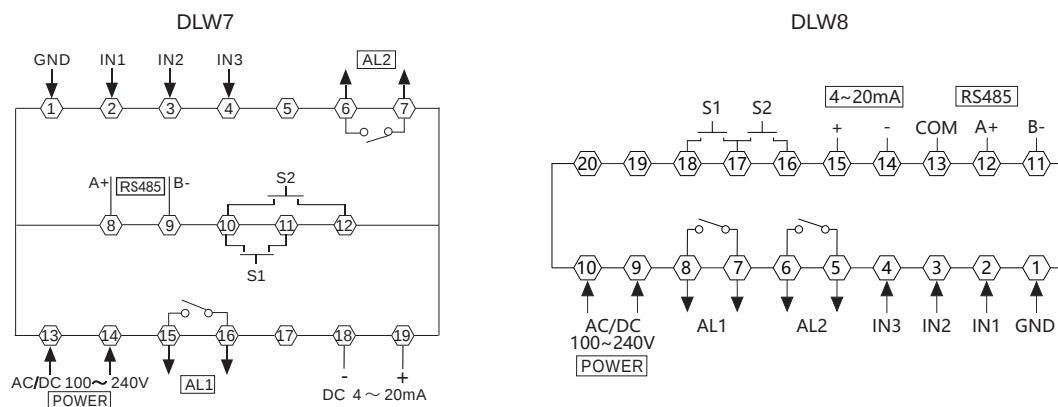
Ordering Information

Model	Alarm	Analog	RS485	DI input	Input range	Code
DLW□-V200	No	No	No	No	IN1:2V,IN2:20V,IN3:200V	B0235DLW01
DLW□-V100	No	No	No	No	IN1:1V,IN2:10V,IN3:100V	B0235DLW01
DLW□-A2	No	No	No	No	IN1:2A,IN2:0.2A,IN3:0.02A	B0235DLW01
DLW□-AACT	No	No	No	No	IN1:5A (AC)	B0235DLW01
DLW□-DACT	No	No	No	No	IN1:75mV (DC)	B0235DLW01

Technical Specifications

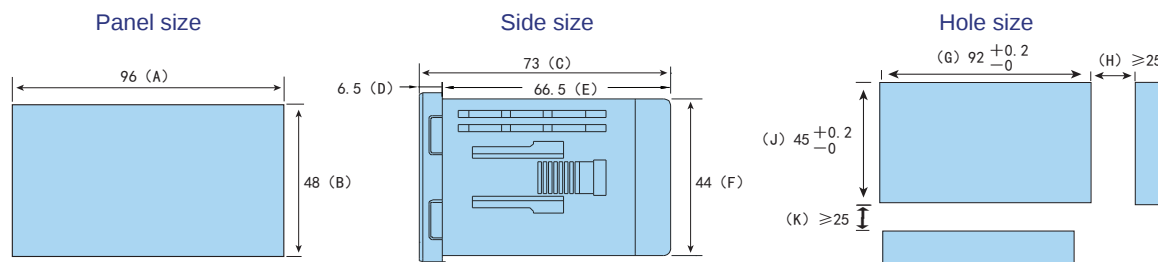
Power supply	100~240V AC/DC (85-265V)	Insulation resistance	Input, output, power VS meter cover>20MΩ
Measurement accuracy	(>2000)±0.5%F.S±3digits @ 25±3°C Measuring temperature drift < 500PPM	ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Resolution	Minimum unit display value of default range or 12bits	Pulse train anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
AC Frequency	AC measuring frequency range:45~400Hz measuring accuracy range: 50~100Hz	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Relay capacity	AC 250V /1A rated load life > 100000 times	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0%~70% perf.Criteria B
Power consumption	< 6VA	Isolation withstand voltage	Signal input, output, power: 2000VAC 1min
Environment	In door, temperature: 0~50°C no condensation, humidity: <85%RH, altitude<2000m	Weight	About 400g
Storage environment	-10~60°C, no condensation	Housing material	The shell and panel frame PC/ABS (Flame Class UL94V-0)
Switching input	No power dry contact input	Panel material	PET(F150/F200)
Current output	DC 4~20mA Load<500Ω Temperature drift 300PPM	Power failure memory	10 years, times of writing: 1 million times
Communication	RS485 port Modbus-RTU protocol, can be connected up to max 30 units.	Panel Protection level	IP54(IEC60529)
		Safety Standard	IEC61010-1 Overvoltage category II, pollution level 2, levelIII (Enhanced insulation)

Connection



Note:Pls subject to the connections on meter if any changes as above.

Dimensions (Unit:mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
7:(72*72)	72	72	73	6.5	64.5	67	67	25	67.5	25
8:(96*48)	96	48	73	6.5	66.5	44	92	25	45	25

6. DA8 Series Panel Meter

Panel
Meter

■ Photos and Features



Features:

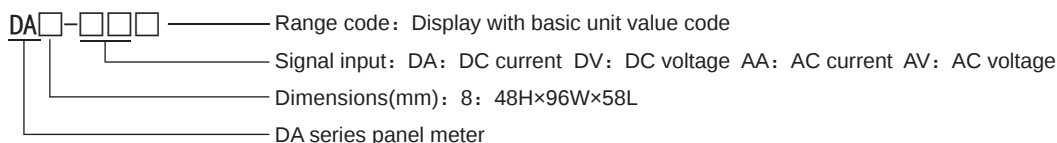
- ★ Hardware design, good anti-interference, stable performance.
- ★ AC/DC 85~265 switch power.
- ★ 4 1/2 digits, high measuring accuracy, digital display range ± 19999
- ★ 58mm depth module design, saving mounting space.

Sensor
Indicator

Temperature
Controller

Digital
Counter

■ Model Illustration



Timer
Relay

■ Ordering Information

Model	Dimension	Measurement range	Code
DA8-AV□	48H×96W×58L	AC Voltage: 20/200/600	B0300DA01
DA8-DV□		DC Voltage: 0.2/2/20/200/600	B0300DA01
DA8-AA□		AC Current: 0.2/2/20/200	B0300DA01
DA8-DA□		DC Current: 0.0002/0.002/0.02/0.2/2/20	B0300DA01

Tacho/Speed
Pulse Meter

Recorder

■ Technical Specifications

Input	Please refer to the range description
Accuracy	AC: $\pm 0.3\% F.S \pm 3$ Digits DC: $\pm 0.2\% F.S \pm 3$ Digits
A/D switch	Double integral
Sampling rate	About 2.5 times/second
Input impedance	Refer to measuring specifications table
Display range	0~ ± 19999 , Decimal point can switch through pin of PCB board
Display	4 1/2 red LED 0.56 inch
Overflow indication	Display "1" or "-1"
Environment	0°C~50°C 35~85%RH
Storage environment	-20°C~60°C 35~90%RH
Power	AC 100~240V 50/60Hz
Power consumption	$\leq 3W$
Dielectric strength	AC 1500V 1min 50Hz
Insulation strength	100M Ω DC 500V
Dimension	48H×96W×58L
Vibration	Sweep-frequency vibration: 10~50HZ
Weight	0.5kg

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

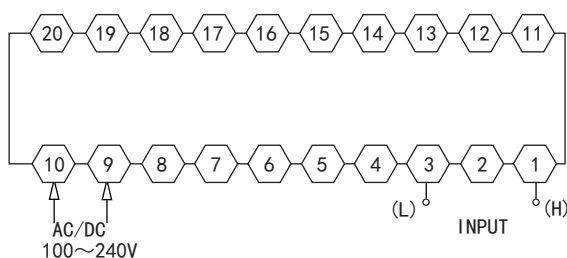
Power
Meter

Measuring Range Specifications

Type	Range	Input	Resolution	Input Impedance	AC Accuracy Level	AC Accuracy Level
Voltage Signal	200mV	Direct input	0.01mV	200KΩ	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	2V	Direct input	0.1mV	2MΩ	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	20V	Direct input	1mV	2MΩ	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	200V	Direct input	10mV	2MΩ	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	600V	Direct input	100mV	5.1MΩ	±0.5%F.S ±3Digits	±0.3%F.S ±3Digits
Current Signal	2mA	Direct input	0.0001mA	100Ω	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	20mA	Direct input	0.001mA	10Ω	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	200mA	Direct input	0.01mA	1Ω	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	2A	Direct input	0.1mA	0.2Ω	±0.3%F.S ±3Digits	±0.2%F.S ±3Digits
	Above AC 5A	AC 0~5A input (ratio display)	1mA	2mΩ	±0.3%F.S ±3Digits	
	Above DC 2A	DC 0~75mV input (ratio display)	1mA	100KΩ		±0.2%F.S ±3Digits

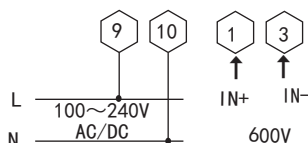
Note: When the measured voltage > 600V, it must be changed to AC 0~100V input by 100V ratio voltage transformer and the meter will display the ratio value.

Connection

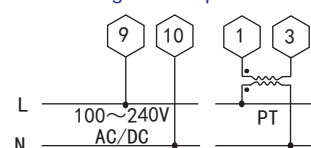


Note: Pls subject to the connection on meter if any changes.

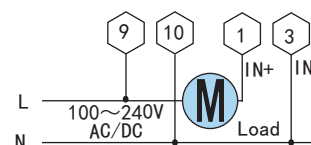
<600V range voltage direct input



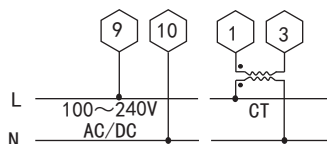
100V voltage ratio input



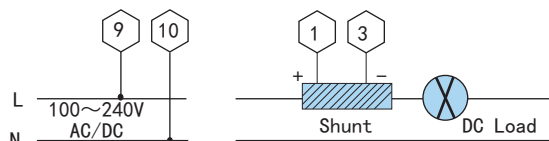
Voltage direct input



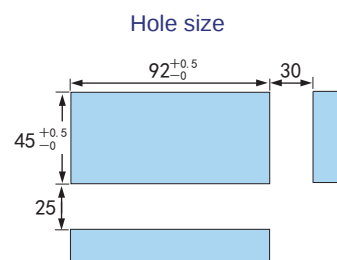
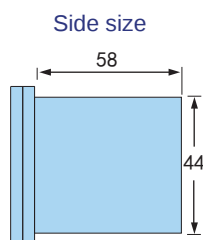
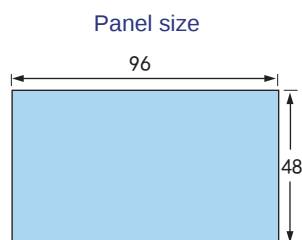
>AC 5A current ratio input (need external current transformer)



DC 75mV current ratio input



Dimensions (Unit:mm)



7. DP3 Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

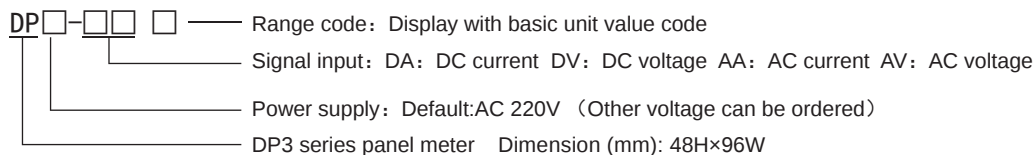
■ Photos and Features



Features:

- ★ Classical hardware design, stable performance.
- ★ AC 220V power supply.
- ★ AC/DC voltage current, rich measurement ranges.
- ★ The decimal point is switched by the internal PCB board jumper.

■ Model Illustration



■ Ordering Information

Model	Power supply	Analog	Measurement range	Code
DP3-AA ☐	AC 220V	No	AA: 2mA/20mA/200mA/2A/20A/200A	B0248DP01
DP3-AV ☐			AV: 0.2V/2V/20V/200V/600V	B0248DP01
DP3-DA ☐			DA: 2mA/20mA/200mA/2A/20A/200A	B0248DP01
DP3-DV ☐			DV: 0.2V/2V/20V/200V/600V	B0248DP01

Note: The original DP3I model with analog output was discontinued in 2015 and replaced with DL8A items.

■ Technical Specifications

Input	Please refer to the range description
Accuracy	±0.5%F.S ±2Digits
A/D switch	Double integral
Sampling rate	About 2.5times/second
Input impedance	Please refer to the range description
Analog output	No
Display range	0~±1999, Decimal point can switch through pin of PCB board.
Display	3 1/2 digits red LED 0.56 inch
Overflow indication	Display "1" or "-1"
Environment	0℃~50℃ 35~85%RH
Storage environment	-20℃~60℃ 35~90%RH
Power	AC 220V 50Hz(AC 110V、DC 18~30V to be ordered)
Power consumption	≤5W
Dielectric strength	AC 1500V 1min 50Hz
Insulation strength	100MΩ DC 500V
Dimension	48H×96W×100L
Vibration	Sweep-frequency vibration: 10~50Hz
Weight	0.5kg

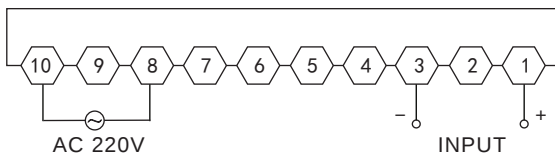
Measuring Range Specifications

Type	Range	Input	Resolution	Input resistance	Accuracy Level
Voltage signal	200mV	Direct input	100uV	5MΩ	±0.5%F.S ±2Digits
	2V	Direct input	1mV	5MΩ	±0.5%F.S ±2Digits
	20V	Direct input	10mV	5MΩ	±0.5%F.S ±2Digits
	200V	Direct input	100mV	5MΩ	±0.5%F.S ±2Digits
	600V	Direct input	1V	5MΩ	±1.0%F.S ±2Digits
Current signal	2mA	Direct input	1uA	100Ω	±0.5%F.S ±2Digits
	20mA	Direct input	10uA	10Ω	±0.5%F.S ±2Digits
	200mA	Direct input	100uA	1Ω	±0.5%F.S ±2Digits
	2A	Direct input	1mA	0.1Ω	±0.5%F.S ±2Digits
	Above AC 5A	AC 0~5A input (ratio display)	10mA	2mΩ	±0.5%F.S ±2Digits
	Above DC 2A	DC 0~75mV input (ratio display)	10mA	100KΩ	±0.5%F.S ±2Digits

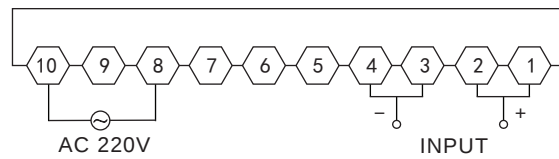
Note: When the measured voltage > 600V, it must be changed to AC 0~100V input by 100V ratio voltage transformer and the meter will display the ratio value.

Connection

1. Diagram (A/2) without analog function:



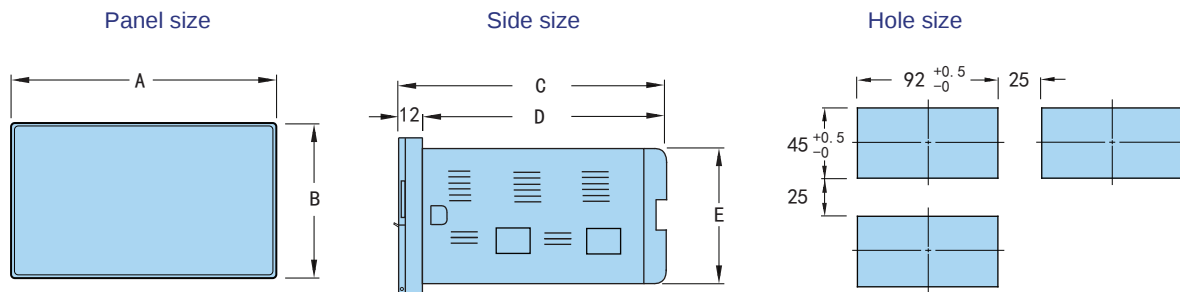
AC/DC voltage meter, DC ampere meter



AC ampere meter

Note: Pls subject to the connection on meter if any changes.

Dimensions (Unit: mm)



Model	A	B	C	D	E
DP3	96	48	100.5	88.5	44.5

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

8. DX Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

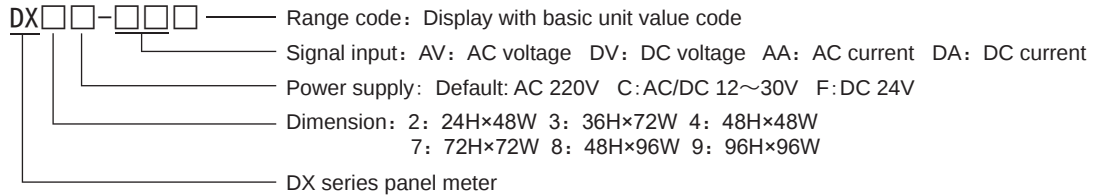
■ Photos and Features



Features:

- ★ Classical hardware design, stable performance.
- ★ Easy mounting..
- ★ Connections with EU safety standard.
- ★ 58mm short module design.
- ★ Rich measurement ranges.

■ Model Illustration



■ Ordering Information

Model	Power supply	Measurement range	Code
DX2F-AV□	DC 24V	AV: 0.2V/2V/20V/200V/600V	B0173DX01
DX2F-AA□		AA: 2mA/20mA/200mA/2A/20A/200A	B0173DX01
DX2F-DV□		DV: 0.2V/2V/20V/200V/600V	B0173DX01
DX2F-DA□		DA: 2mA/20mA/200mA/2A/20A/200A	B0173DX01
DX3/4/7/8/9-AV□	AC 220V	AV: 0.2V/2V/20V/200V/600V	B0148DX01
DX3/4/7/8/9-AA□		AA: 2mA/20mA/200mA/2A/20A/200A	B0148DX01
DX3/4/7/8/9-DV□		DV: 0.2V/2V/20V/200V/600V	B0148DX01
DX3/4/7/8/9-DA□		DA: 2mA/20mA/200mA/2A/20A/200A	B0148DX01

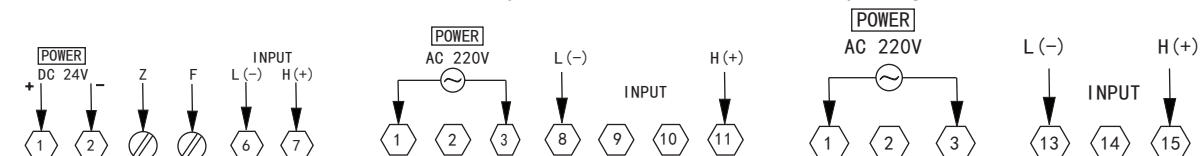
Note: DX3/DX8 DC24V power supply to be ordered.
DX2F AC current range is only available for models below 2A, above AC 5A to be ordered.

■ Technical Specifications

Input	Please refer to the range description
Accuracy	±0.5%F.S ±2Digits
A/D switch	Double integral
Sampling rate	About 2.5times/second
Input impedance	Please refer to the range description
Display range	0~±1999, Decimal point can switch through pin of PCB board.
Display	3 1/2 digits red LED 0.56 inch
Overflow indication	Display "1" or "-1"
Environment	0℃~50℃ 35~85%RH
Storage environment	-20℃~60℃ 35~90%RH
Power	AC 220V 50Hz、DC 24V
Power consumption	≤3W
Dielectric strength	AC 1500V 1min 50Hz
Insulation strength	100MΩ DC 500V
Dimension	Pls refer to the mounting drawing
Vibration	Sweep-frequency vibration: 10~50Hz
Weight	0.5kg

Connection

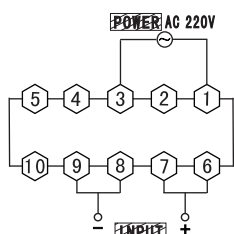
Note: Pls subject to the connection on meter if any changes.



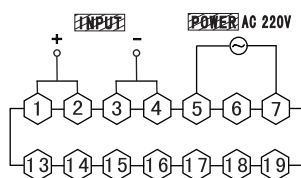
Z: 0 point adjustment F: full scale adjustment
DX2F AC/DC voltage/ampere meter

DX3 AC/DC voltage/ampere meter

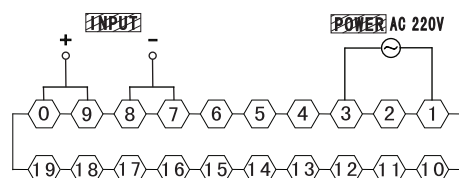
DX8W AC/DC voltage/ampere meter



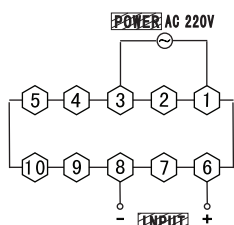
DX4 AC ampere meter



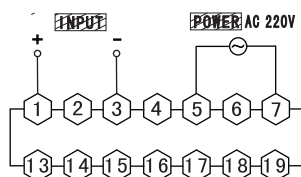
DX7 AC ampere meter



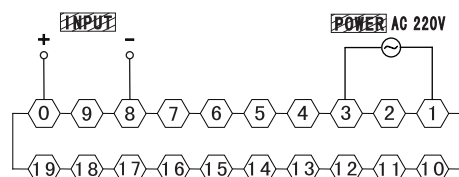
DX9 AC ampere meter



DX4 AC/DC voltage meter DC ampere meter

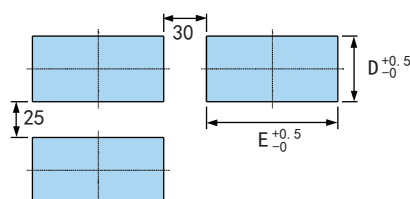
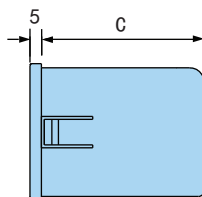
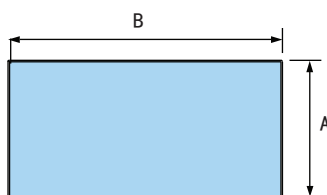


DX7 AC/DC voltage meter DC ampere meter



DX9 AC/DC voltage meter DC ampere meter

Dimensions (Unit: mm)

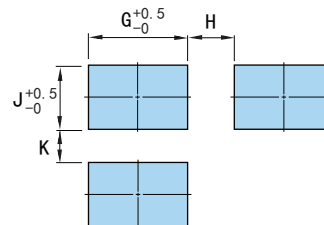
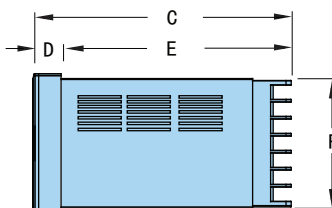
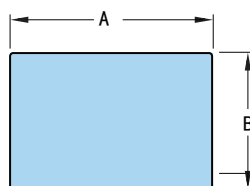


Model	A	B	C	D	E
DX2F	24	48	58	22.5	46.5
DX3	36	72	58	33.5	68.5
DX8W	48	96	58	45	92.5

Panel size

Side size

Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25

Remarks Unit: (mm) Tolerance +0.5% (except for special indication)

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

9. DK Series Short Shell Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

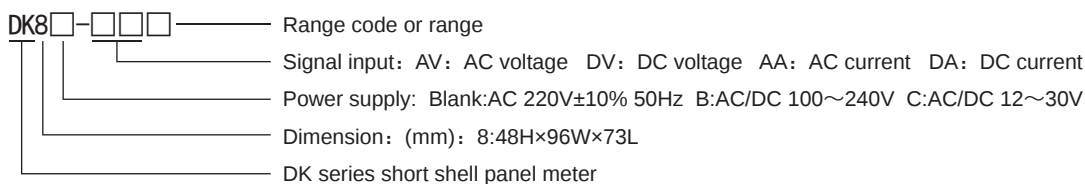
■ Photos and Features



Features:

- ★ Conversion rate 2.5 times/sec
- ★ Zero and ratio potentiometer can be adjusted on the panel
- ★ Dimension: 48H×96W×71L
- ★ Number range ±1999

■ Photos and Features



■ Ordering Information

Model	Power supply	Measurement range	Code
DK8-AV□	Blank: AC 220V±10% 50Hz	20V/200V/600V	C0080DK03
DK8-DV□		0.2V/2V/20V/200V/600V	C0080DK03
DK8-AA□		0.2A/2A/20A/200A	C0080DK03
DK8-DA□		0.0002A/0.002A/0.02A/0.2A/2A/20A	C0080DK03
DK8B-AV□ (customized)	AC/DC 100~240V	20V/200V/600V	B0193DK03
DK8B-DV□ (customized)		0.2V/2V/20V/200V/600V	B0193DK03
DK8B-AA□ (customized)		0.2A/2A/20A/200A	B0193DK03
DK8B-DA□ (customized)		0.0002A/0.002A/0.02A/0.2A/2A/20A	B0193DK03
DK8C-AV□	AC/DC 10~30V	20V/200V/600V	B0193DK03
DK8C-DV□		0.2V/2V/20V/200V/600V	B0193DK03
DK8C-AA□		0.2A/2A/20A/200A	B0193DK03
DK8C-DA□		0.0002A/0.002A/0.02A/0.2A/2A/20A	B0193DK03

Note: DK8B series items to be ordered, please indicate the power supply range when order.

■ Technical Specifications

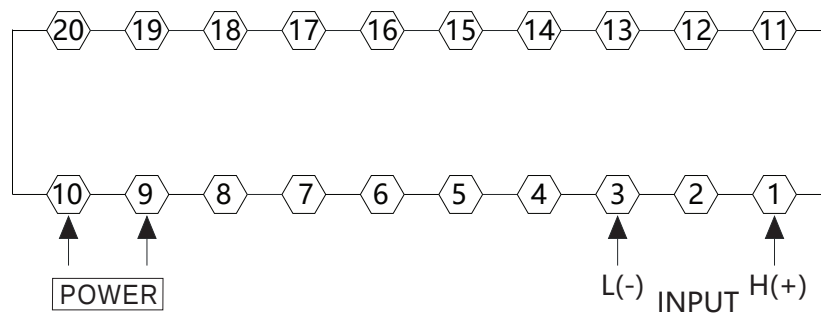
Max display	1999 (AC display effective value)
Input	Single input
A/D Convert	Dual integral
Overflow indication	"1" or "-1"
Polarity display	Only display "-" (for AC only)
Display	Red LED (20.30mmH)
Power supply	Switching power supply: AC/DC 100~240V 50/60Hz Low-voltage power supply: AC/DC 24V Linear power supply: AC 220V
Power consumption	≤5VA
Withstand voltage	AC 2000V 1min
Insulation resistance	DC 500V≥100MΩ
Weight	500g
Frequency range of the measured AC signal	40~200Hz

Measuring Range Specifications

Type	Range	Input	Resolution	Input resistance	Accuracy Level
Voltage signal	20mV	Direct input	0.01mV	20KΩ	±0.5%F.S ±2Digits
	200mV	Direct input	0.1mV	200KΩ	±0.5%F.S ±2Digits
	2V	Direct input	1mV	2MΩ	±0.5%F.S ±2Digits
	20V	Direct input	10mV	2MΩ	±0.5%F.S ±2Digits
	200V	Direct input	100mV	2MΩ	±0.5%F.S ±2Digits
	600V	Direct input	1V	5.1MΩ	±1.0%F.S ±2Digits
Current signal	2mA	Direct input	0.001mA	100Ω	±0.5%F.S ±2Digits
	20mA	Direct input	0.01mA	10Ω	±0.5%F.S ±2Digits
	200mA	Direct input	0.1mA	1Ω	±0.5%F.S ±2Digits
	2A	Direct input	1mA	0.2Ω	±0.5%F.S ±2Digits
	Above AC 5A	AC 0~5A input (ratio display)	10mA	2mΩ	±0.5%F.S ±2Digits
	Above DC 2A	DC 0~75mV input (ratio display)	10mA	100KΩ	±0.5%F.S ±2Digits

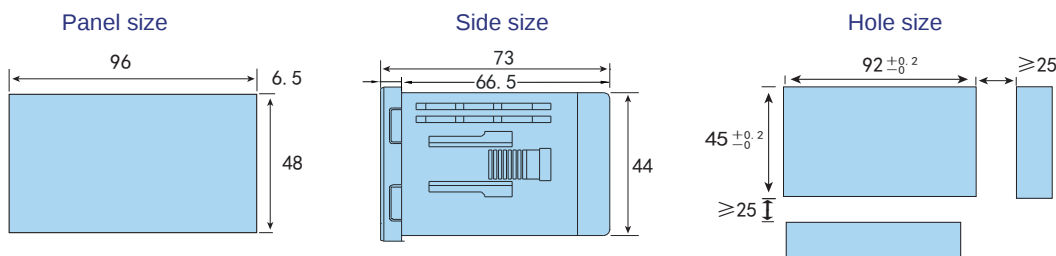
Note: When the measured voltage > 600V, it must be changed to AC 0~100V input by 100V ratio voltage transformer and the meter will display the ratio value.

Connection



Note: Pls subject to the connection on meter if any changes.

Dimensions (Unit:mm)



Display Adjustment



SPAN: Display ratio adjustment potentiometer

ZERO: Zero adjustment potentiometer

The mirror panel has an external display and adjustment potentiometer, which is convenient to fine-tune and use.

Panel Meter
Sensor Indicator
Temperature Controller
Digital Counter
Timer Relay
Tacho/Speed Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter

10. DM, DE Series Panel Meter

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

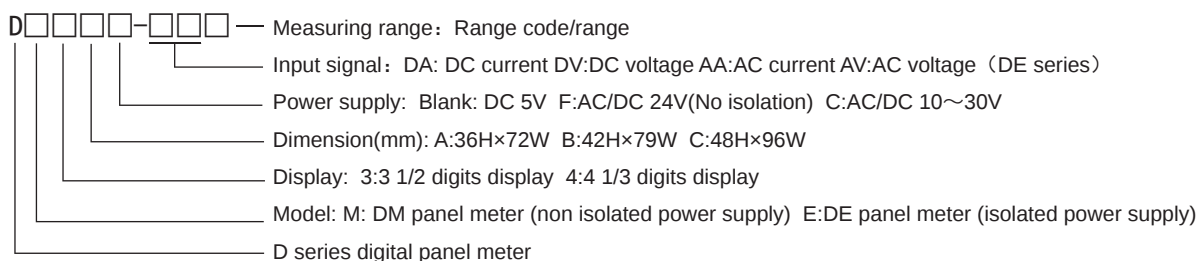
■ Photos and Features



Features:

- ★ Classical hardware design, stable performance.
- ★ Ultra-thin panel design
- ★ Optional measuring range.

■ Model Illustration



■ Ordering Inforamtion

Model	Power	Max digit	Normal range	Code
DM3□-DV/DA□	DC 5V	3 1/2 digits	AA: 2mA/20mA/200mA/2A/20A/200A AV: 0.2V/2V/20V/200V/600V DA: 2mA/20mA/200mA/2A/20A/200A DV: 0.2V/2V/20V/200V/600V (Special range need to be ordered)	B0080DM01
DM3□F-DV/DA□	DC 24V			B0108DM01
DM3□C-DV/DA□	AC/DC 10~30V			B0130DM01
DM4C-DV/DA□	DC 5V	4 1/2 digits		B0183DM01
DE3A-DA/DV□	AC/DC 10~30V	3 1/2 digits		B0110DE01
DE3A-AA/AV				B0110DE04
Note: DM series only support DC range signal, DE series AC current range only support AC below 2A, AC above 2A need to be ordered.				

■ Specifications

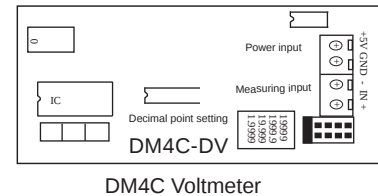
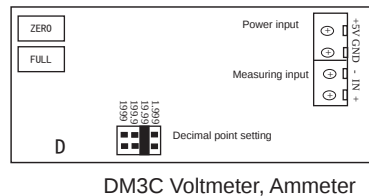
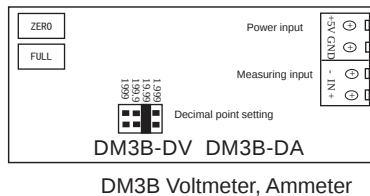
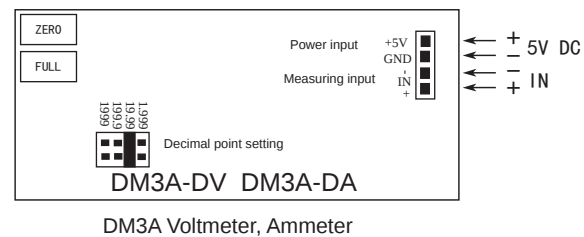
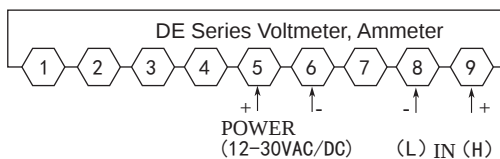
Input	Refer to measuring range specifications table
Accuracy	3 1/2: ±0.5%F.S ±2Digits 4 1/2: ±0.2%F.S ±2Digits
A/D convert	Dual integral
Sampling rate	About 2.5 times/sec
Input resistance	Refer to measuring range specifications table
Display range	0~±1999, decimal place can be set by adjusting the jumper cap position on PCB board.
Display	3 1/2 digits or 4 1/2 digits red LED, size 0.56 inch
Overflow indication	"-1"or"1"(3 1/2); "0000"or"-0000"(4 1/2) LED flash
Environment	0℃~50℃ <85%RH
Storage environment	-20℃~60℃ 35~90%RH
Power supply	DC 5V±10% ≤70mA(3 1/2); DC 5V±0.2V ≤80mA(4 1/2) Note: This product is powered by non isolated power supply. When multiple instruments share the same power supply, it is necessary to consider the signal sharing the same ground.
Power consumption	≤3W
Dielectric strength	AC 1500V 1min 50Hz
Insulation strength	100MΩ DC 500V
Dimension	Refer to mounting drawing
Vibration	Sweep-frequency vibration: 10~50Hz
Weight	0.5kg

Measuring Range Specifications

Type	Range	Input	Resolution	Input impedance	3 1/2 digits accuracy	4 1/2 digits accuracy
Voltage Signal	20mV	Direct input	0.01mV	20KΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	200mV	Direct input	0.1mV	200KΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	2V	Direct input	1mV	2MΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	20V	Direct input	10mV	2MΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	200V	Direct input	100mV	2MΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	600V	Direct input	1V	5.1MΩ	±1.0%F.S±2Digits	±0.5%F.S ±2Digits
Current Signal	2mA	Direct input	0.001mA	100Ω	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	20mA	Direct input	0.01mA	10Ω	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	200mA	Direct input	0.1mA	1Ω	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	2A	Direct input	1mA	0.2Ω	±0.5%F.S±2Digits	±0.2%F.S ±2Digits
	>DC 2A	DC 0~75mV input (ratio display)	10mA	100KΩ	±0.5%F.S±2Digits	±0.2%F.S ±2Digits

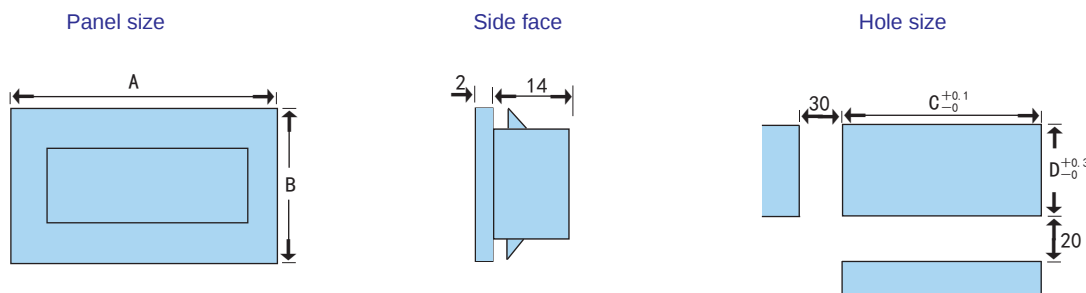
Note:When the measured voltage > 600V, it must be changed to AC 0 ~100V input by 100V ratio voltage transformer and the meter will display the ratio value.

Connection



Note:Please subject to the connections on meter if any changes here.

Dimensions (Unit: mm)



Model	A	B	C	D
DM-A	72	36	69	33.5
DM-B	79	42	76	39.5
DM-C	96	48	93	45.5
DE	72	36	69	33.5

1. SV Series Intelligent Sensor Indicator

Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

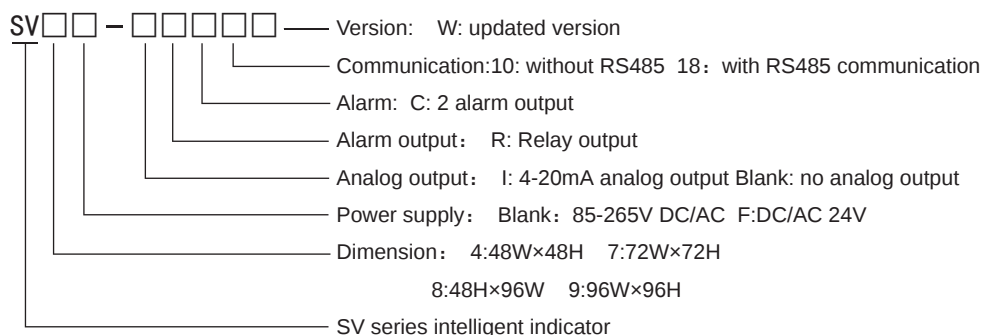
■ Photos and Features



Features:

- ★ TC,RTD,standard analog signal input,set by input menu freely.
- ★ 2 programable alarm relay output
- ★ Optional isolated analog 4-20mA output,and RS485 communication port
- ★ Provide 24VDC max 30mA isolated power supply
- ★ Large LCD display
- ★ Accuracy level $\pm 0.5\%FS$

■ Model Illustration



■ Ordering Information

Model	Alarm	Analog output	Communication	Code
SV4/7/8/9-RC10W	2	No	No	B0380SVW02
SV4/7/8/9-IRC10W(DC10W)	2	4~20mA	No	B0450SVW02
SV4/7/8/9-RC18W	2	No	RS485	B0510SVW02
SV4/7/8/9-IRC18W(DC18W)	2	4~20mA	RS485	B0570SVW02

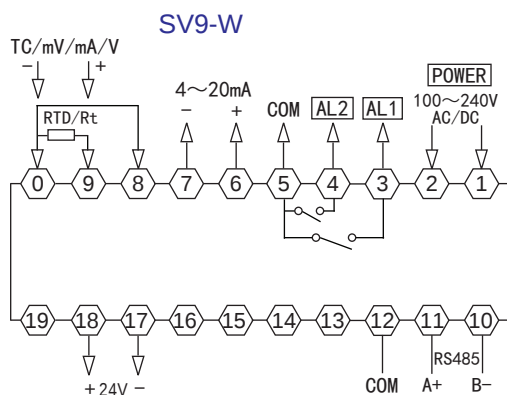
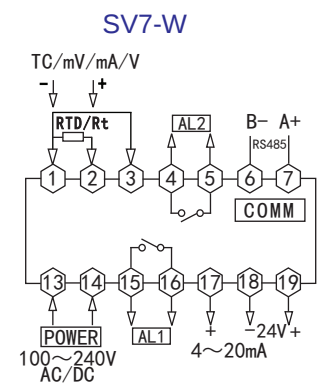
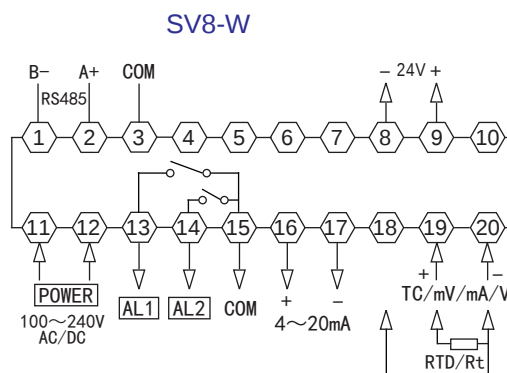
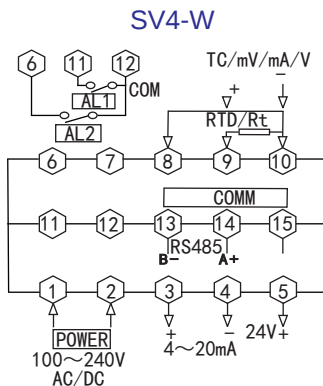
■ Specifications

Display&menu	Display digit	4 digits	Communication	Protocol	RS-485 ModBUS-RTU
	Range	-1999~9999		Baud rate	4800bps,9600bps
Input signal	Input type	TC/RTD universal input standard analog signal input (See the table below)	Power supply	IP range	1-247
	Accuracy	0.5%FS		Delay	No
	Resolution	can set freely	Protection level	Voltage	100~240V AC/DC 50/60Hz
	Sample rate	2.5 times/s		Consumption	≤5W
			Environment	Panel	IP54
Analog output	Output	one		Body	-
	Type	4~20mA	Structure	Work environment	0~50°C <85%RH
	Range&load	Load resistance 600Ωmax		Storage environment	-20~60°C <85%RH
	Output accuracy	0.5%FS	Safe	Vibration	10~55Hz X\Y\Z 0.75mm
	Resolution	0.01mA 12digits		Screw torque	0.74n.m~0.9n.m
Auxiliary voltage output	Voltage	DC 24V	EMC	Dielectric strength	2000V AC 50/60Hz 1min
	Capacity	60mA max		Insulation Impedance	100MΩ DC 500V
Relay output	Load	3A/250V AC		ESD	3level
	Electircal life	100,000 times		Pulse train anti-interference	4level each mode±4000Vp-p
	Machanical life	1million times		Lightning surge	3 level N-L ±2000V
				Frequency drop	3 level

Input parameters

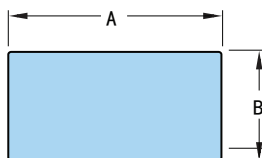
Number	Symbol	Input type	Measuring range	Resolution	Accuracy	Input resistance
0		K type TC	-50~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
1		J type TC	0~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
2		E type TC	0~850°C	1°C	±0.5%F.S±3digits	>100KΩ
3		T type TC	-50~400°C	1°C	±0.5%F.S±3digits	>100KΩ
4		B type TC (to be ordered)	600~1800°C	1°C	±0.5%F.S±3digits	>100KΩ
5		R type TC (to be ordered)	500~1600°C	1°C	±0.5%F.S±3digits	>100KΩ
6		S type TC (to be ordered)	-10~1600	1°C	±0.5%F.S±3digits	>100KΩ
7		N type TC	-50~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
8		PT100	-199.9~650.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
9		CU50	-50.0~150.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
10		CU100	-50.0~150.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
11		DC 0~50mV	-1999~9999	1digit	±0.5%F.S±3digits	>100KΩ
12		DC 4~20mA	-1999~9999	1digit	±0.5%F.S±3digits	<150Ω
13		DC 0~10V	-1999~9999	1digit	±0.5%F.S±3digits	>1MΩ
14		0~400Ω	-1999~9999	1digit	±0.5%F.S±3digits	>100KΩ

Connection

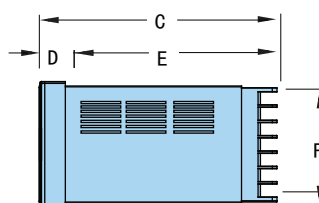


Dimensions (Unit: mm)

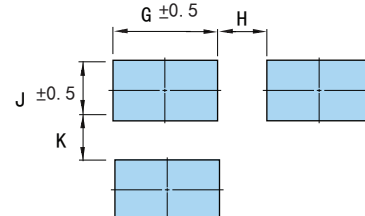
Panel Size



Side Size



Hole Size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25

Panel Meter
Sensor Indicator
Temperature Controller
Digital Counter
Timer Relay
Tacho/Speed Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter

2. SD Series Intelligent Sensor Indicator



■ Photos and Features

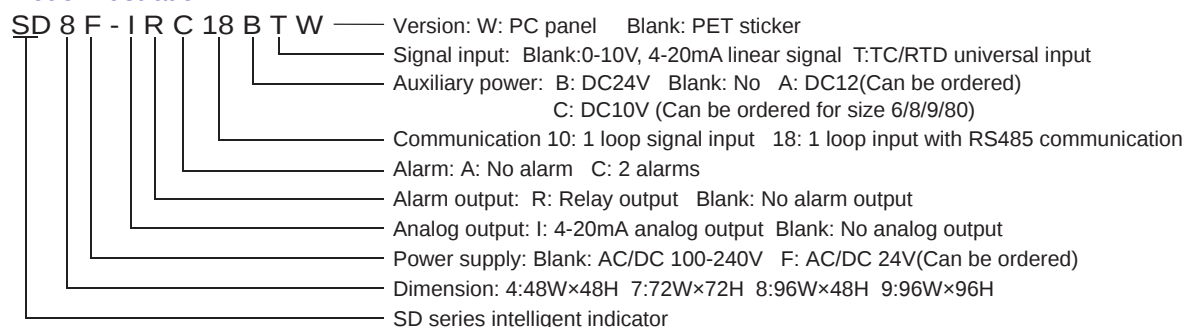


Note: SD-W is PC panel version

Features:

- ★ Optional analog signal v/mA input or temperature sensor signal input.
- ★ Display range can be set arbitrarily for analog signal measuring
- ★ Panel with zero operation function.
- ★ 2 loops free-setting alarm output function.
- ★ Optional 4-20mA analog output and RS485 communication port
- ★ Keep max value, min value, current value, square root of signal

■ Model Illustration



■ Ordering Information

Model	Input signal	Analog output	Communication	Alarm	Auxiliary power	Code
SD□-A10	Blank: 0~10V 0~5V 1~5V 4~20mA 0~20mA Other input signal can be ordered.	No	No	No	No	B0188SD01
SD□-A10B		No	No	No	DC24V(12V can be ordered)	B0215SD01
SD□-RC10B		No	No	2	DC24V(12V can be ordered)	B0225SD01
SD□-RC18B		No	Yes	2	DC24V(12V can be ordered)	B0360SD01
SD□-IRC10B		Yes	No	2	DC24V(12V can be ordered)	B0300SD01
SD□-IRC18B		Yes	Yes	2	DC24V(12V can be ordered)	B0430SD01
SD□-A10C		No	No	No	DC10V	B0290SD01
SD□-RC10C		No	No	2	DC10V	B0300SD01
SD□-RC18C		No	No	2	DC10V	B0435SD01
SD□-IRC10C		Yes	No	2	DC10V	B0375SD01
SD□-IRC18C		Yes	No	2	DC10V	B0505SD01
SD□-A10-T	T: TC/RTD universal input	No	Yes	No	No	B0193SD01
SD□-RC10B-T		No	No	2	DC24V(12V can be ordered)	B0225SD01
SD□-A10W	Blank: 0~10V 0~5V 1~5V 4~20mA 0~20mA Other input signal can be ordered.	No	Yes	No	No	B0210SD01
SD□-A10BW		No	No	No	DC24V(12V can be ordered)	B0240SD01
SD□-RC10BW		No	No	2	DC24V(12V can be ordered)	B0250SD01
SD□-RC18BW		No	No	2	DC24V(12V can be ordered)	B0385SD01
SD□-IRC10BW		Yes	No	2	DC24V(12V can be ordered)	B0325SD01
SD□-IRC18BW		Yes	No	2	DC24V(12V can be ordered)	B0455SD01
SD□-A10CW		No	No	No	DC10V	B0315SD01
SD□-RC10CW		No	Yes	2	DC10V	B0325SD01
SD□-RC18CW		No	No	2	DC10V	B0460SD01
SD□-IRC10CW		Yes	Yes	2	DC10V	B0400SD01
SD□-IRC18CW		Yes	No	2	DC10V	B0525SD01
SD□-A10-TW	T: TC/RTD universal input	No	No	No	No	B0210SD01
SD□-RC10B-TW		No	No	2	DC24V(12V can be ordered)	B0250SD01

■ Specifications

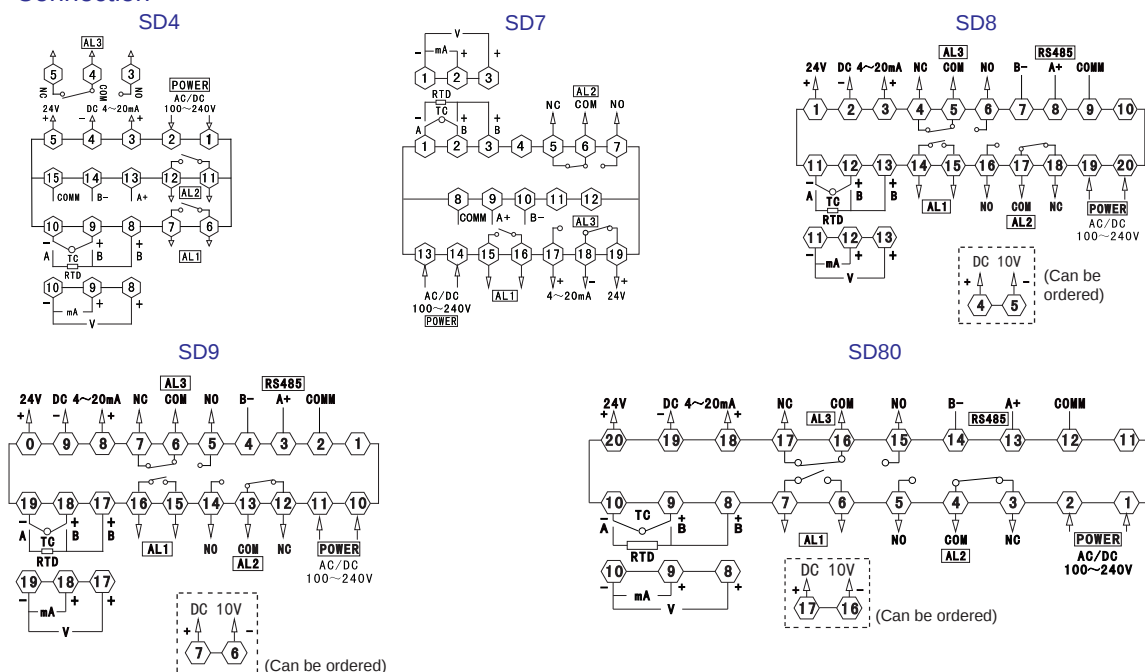
Sample rate	4 times/sec	Pulse trap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Relay capacity	AC 250V /3A rated load life>100 thousand times	Lightning surge	IEC/EN61000-4-5 ±2KV perf.Criteria B
Power supply	AC/DC 100-240V(85-265V), 24V(can be ordered)	Voltage dips & short supply interruption	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Consumption	< 6VA	Dielectric strength	Signal input & output & power: 1500VAC 1min Among <60V low voltage circuit: DC500V, 1min
Environment	Indoor only, temperature: 0~50℃ no condensation, Humidity: <85%RH, altitude<2000m	Weight	About 400g
Storage environment	-10~60℃, no condensation	Case material	The case and panel frame PC/ABS (Flame class UL94V-0)
SSR output	DC 24V pulse level, load <30mA		

Current output	DC 4 ~ 20mA load<500Ω, temperature drift 250PPM	Panel sticker	PET(F150/F200)
Communication port	RS485 port Modbus-RTU protocol, can connect max 30 units.	Power-off data protection	10 years, times of writing:1 million times
Insulation impedance	Input,output,power to the case>20MΩ	Protection level of panel	IP65(IEC60529)
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.CriGT Eria B	Safety Standard	IEC61010-1 Overvoltage category II , pollution level 2,level II (Enhanced insulation)

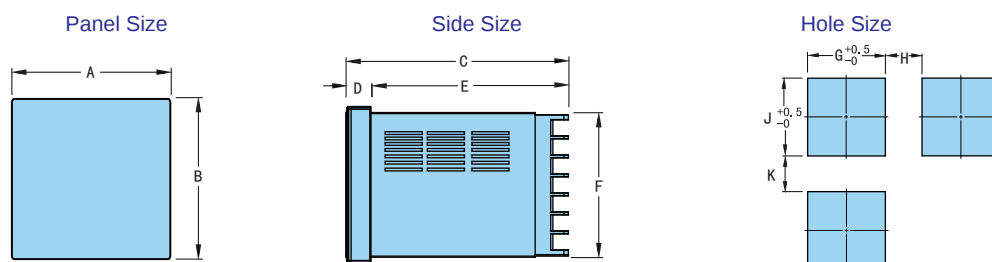
Input parameters

Symbol	Input type	Measuring range	Resolution	Accuracy	Input resistance
θ	K type TC	-50~1200°C	1°C	0.5%F.S	>500KΩ
J	J type TC	0~1200°C	1°C	0.5%F.S	>500KΩ
E	E type TC	0~850°C	1°C	0.5%F.S	>500KΩ
t	T type TC	-50~400°C	1°C	0.5%F.S	>100KΩ
Pt	PT100	-199.9~600.0°C	0.1°C	0.5%F.S	(0.2mA)
CU50	CU50	-50.0~150.0°C	0.1°C	0.5%F.S	(0.2mA)
CU00	CU100	-50.0~150.0°C	0.1°C	0.5%F.S	(0.2mA)
mV	0~50mV	-1999~9999	0.1%FS	0.5%F.S	>500KΩ
Ω	0~400Ω	-1999~9999	0.1%FS	0.5%F.S	(0.2mA)
0~10	0~10V	-1999~9999	0.1%FS	0.5%F.S	>500KΩ
4~20	4~20mA	-1999~9999	0.1%FS	0.5%F.S	<100Ω
0~5V	0~5V	-1999~9999	0.2%FS	1%F.S	>500KΩ
1~5V	1~5V	-1999~9999	0.2%FS	1%F.S	>500KΩ
0~20	0~20mA	-1999~9999	0.1%FS	0.5%F.S	<100Ω

Connection



Dimensions (Unit: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25

Panel Meter
Sensor Indicator
Temperature Controller
Digital Counter
Timer Relay
Tacho/Speed Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter

3. DP3-SVA Series Sensor Indicator

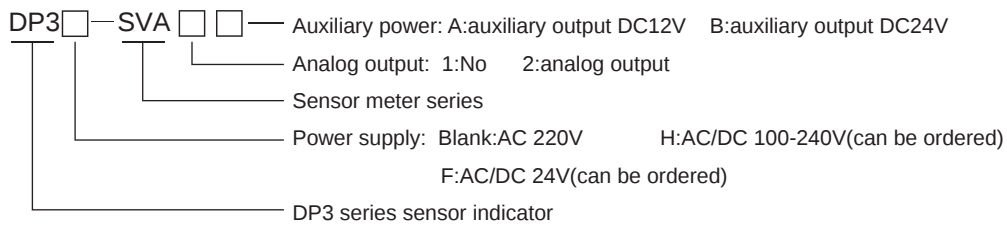
■ Photos and Features



Features:

- ★ Panel display range is adjustable, and interior can switch decimal point.
- ★ Optional analog output function (4-20mA)
- ★ Auxiliary power output +12V or +24V/60mA.max
- ★ Widely used for measuring analog speed pressure in mechanical light industries.
- ★ Hardware design, stable and reliable.

■ Model Illustration



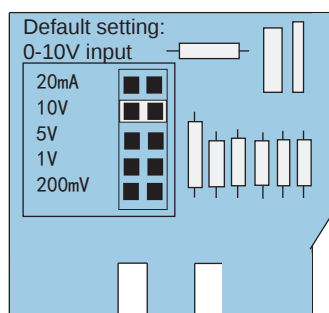
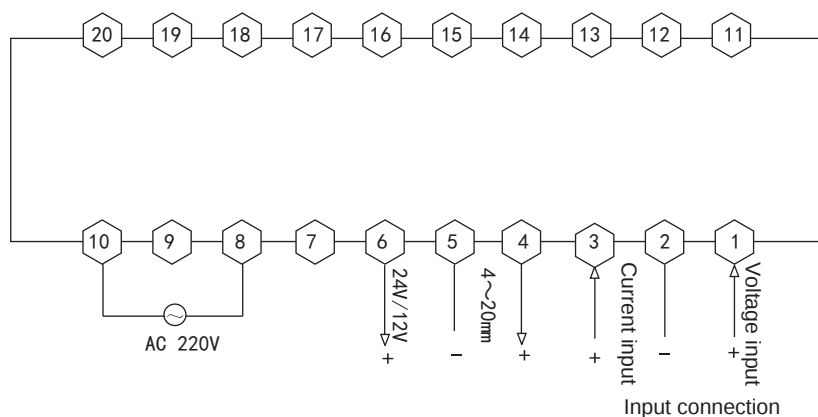
■ Ordering Information

Model	Display range	Input	Analog output	Measuring accuracy	Auxiliary power	Sampling rate	Code
DP3-SVA1A	±1999 decimal point free range choosing free setting	0~5V	No	±0.5%FS ±2Digit	DC 12V/50mA	2 times/sec	B0220DP01
DP3-SVA1B		0~10V	No	±0.5%FS ±2Digit	DC 24V/50mA	2 times/sec	B0220DP01
DP3-SVA2A		4~20mA	4~20mA	±0.5%FS ±2Digit	DC 12V/50mA	2 times/sec	B0300DP01
DP3-SVA2B		0~1V 0~200mV (default setting 0~10V)	4~20mA	±0.5%FS ±2Digit	DC 24V/50mA	2 times/sec	B0300DP01

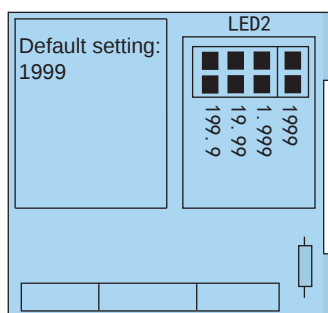
■ Specification

Measuring function	0~10V、0~5V、0~1V、0~200mV、4~20mA(Default setting: input 0~10V, display 0~2000)
Accuracy	±0.5%FS ±2Digit(23°C±5°C)
A/D convert	Dual integral
Sampling rate	About 2.5 times/sec
Input resistance	4-20mA(0-20mA) current: 100Ω 0~10V、0~5V voltage: 2MΩ 0-200mV voltage: 200KΩ
Analog output	4~20mA ≤600Ω
Max display	0~±1999, decimal point can be switched by the pin on the PCB board.
Display	3 1/2 red LED size 0.56 inch
Overflow	Display "1" or "-1"
Environment	0°C~50°C 35~85%RH
Storage environment	-20°C~60°C 35~90%RH
Power	AC 220V 50Hz(AC 110V、DC 18~30V can be ordered)
Power consumption	≤5W
Dielectric strength	AC 1500V 1min 50Hz
Insulation impedance	100MΩ DC 500V
Dimension	48H×96W×100L
Vibration	Frequency vibration: 10~50HZ
Weight	0.5kg

■ Connection



Range setting by short-connecting the pins (Figure 1)



Decimal point setting pin (Figure 2)

1、Range setting

Positions of jumper cap	20mA	10V	5V	1V	200mV
Input scale	4~20mA/0~20mA	0~10V	0~5V/1~5V	0~1V	0~200mV

2、Decimal point setting: Insert the pin in different position to get different decimal place as shown on Figure 2.

Note: The original setting range is 0-10V, display 0-2000, the user can adjust them according to the actual situation.

3、Display value adjustment: when the user adjust the SPAN and ZERO, they can adjust on the adjusting hole as shown on Figure 3.

(1) Span adjustment (SPAN)

Input with a typical value, clockwise adjustment can increase the display value, counterclockwise adjustment can reduce the display value.

(2) Zero point adjustment(ZREO)

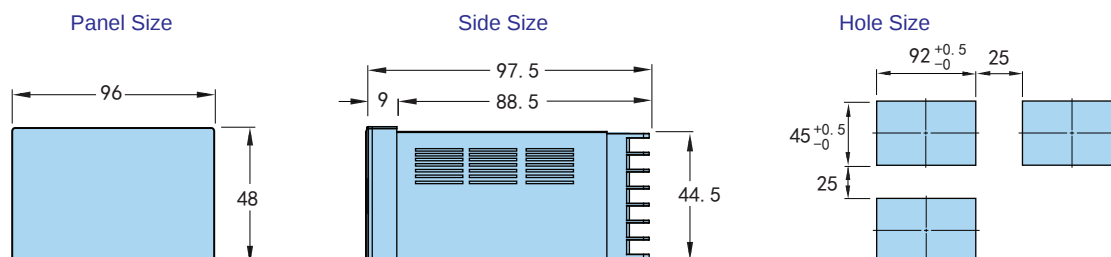
Clockwise adjustment is reverse biased, counterclockwise adjustment is forward biased.

Note: After adjustment of SPAN value and scale setting, need to check whether ZERO need to be reseted.

Zero adjustment must be in zero input or input shortcircuit or an adjustment signal. If input 4~20mA and need to display zero, please input 4mA signal and adjust to zero. In order to diminish error, please adjust SPAN and ZERO several times.



■ Dimensions (Unit: mm)



Panel Meter
Sensor Indicator
Temperature Controller
Digital Counter
Timer Relay
Tacho/Speed Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter

4. DK8A-SVA Series Sensor Indicator

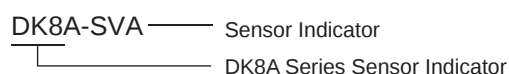
■ Photos and Features



Features:

- ★ Suitable for all kinds of sensors or measuring equipments with linear output characteristics, such as the measurement of pressure, weight, temperature, humidity, etc.
- ★ With decimal point, SPAN, range and ZERO setting function.

■ Model Illustration



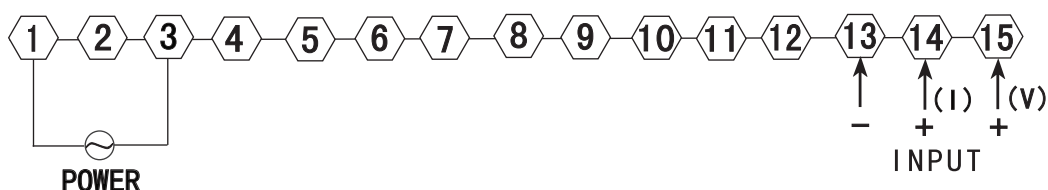
■ Ordering Information

Model	Display range	Input	Analog output	Measuring accuracy	Auxiliary power	Sampling rate	Code
DK8A-SVA	1999 decimal point	0~5V	No	±0.5%FS ±2Digit	No	2 times/sec	B0175DK01

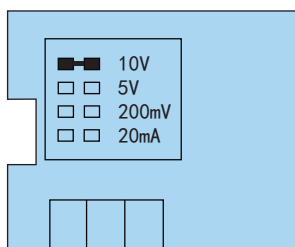
■ Specifications

Measuring function	Can be used with various sensors	
Input type	Current: 4~20mA(0~20mA) Voltage: 0~10V (0~5V, 0~200mV)	
Accuracy	±0.5%F.S±2Digit (23°C±5°C)	
A/D convert	Dual integral	
Sampling rate	About 2.5 times/sec	
Respond speed	About 4.5 sec	
Max display	1999, decimal point can be set freely	
Display	Red LED display, height 14.2mm	
Power consumption	≤3.5VA	
Working temperature	0°C~50°C	
Power supply	AC 220V 50Hz (or AC/DC 24V)	
Dimension	48mm(H)×96mm(W)×62mm(L)	
Weight	500g	
Dielectric strength	AC 1500V 1min	
Insulation impedance	DC 500V ≥100MΩ	
ZERO adjustable range	Input 0V/0mA ±300, Input 4mA -100~+300	
Full scale adjustable range	Input 10V/20mA 1000~1999	

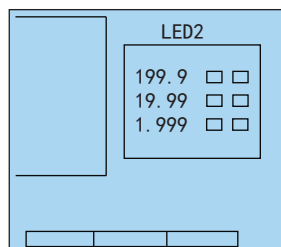
■ Connection



Note: If there is any change, please subject to connection diagram on the meter.



Range setting by short-connecting the pins
(Figure 1)



Decimal point setting pin
(If need to display 1999, please remove the pin)
(Figure 2)

1.Range setting (Figure 1)

Positions of jumper cap	20mA	5V	10V	200mV
Input scale	4~20mA/0~20mA	0~5V	0~10V	0~200mV

2.Decimal point setting (Figure 2)

While moving the jumper cap on the PIN head, you can get the position of the DP that you want.

Note: The original setting range is 0~10V, display 0~1500, the user can adjust them according to the actual situation.

3.Display value adjustment: if need to adjust the SPAN and ZERO, need to open the panel protective cover.

Shown as Figure 3.

(1).Span adjustment (SPAN)

Input a typical value, clockwise adjustment can increase the display value, counterclockwise adjustment can reduce the display value.

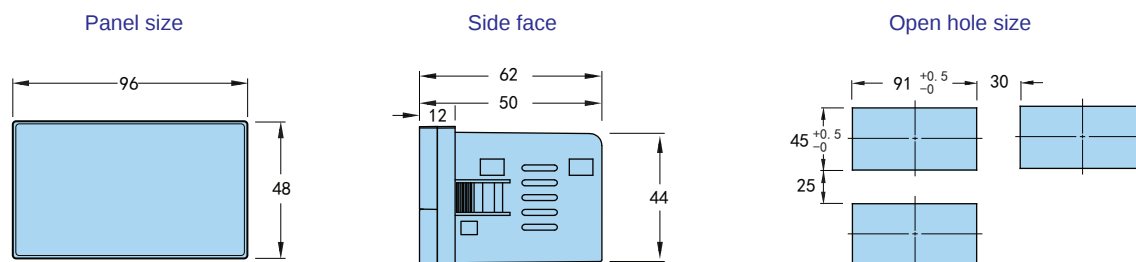
(2).Zero point adjustment (ZERO)

Clockwise adjustment is reverse biased, counterclockwise adjustment is forward biased.

Note:After adjustment of SPAN value and scale setting, need to check whether ZERO need to be reseted. Zero adjustment must be in zero input or input shortcircuit or an adjustment signal. If input 4~20mA and need to display zero, please input 4mA signal and adjust to zero.In order to diminish error, please adjust SPAN and ZERO several times.



■ Dimensions (Unit: mm)



Panel
Meter

Sensor
Indicator

Temperature
Controller

Digital
Counter

Timer
Relay

Tacho/Speed
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid
State
Relay

Power
Meter

Temperature Controller Function Comparison Table

	No.	Model	AI808P	AI708	AI518	AI208	AI108	TP	TEP	TE	TM	GTE2		GTA2
Panel Meter		Function												
Sensor Indicator			50 Segment Program	Adjustor	4 Digits Adjustor	3 digits Economical	3 Digits Simple Type	LCD	16 Segment Program	4 Digits General	Thumb switch	Din Rail 1 channel	Din Rail 2 channels	Din Rail 4 channels
Temperature Controller	1	Input	TC/RTD/MV/RT/MA/V	TC/RTD/MV/RT/MA/V	TC/RTD/MV/RT/MA/V	TC/RTD	TC or RTD	TC/RTD or MA/V	TC/RTD or MA/V	TC/RTD or MA/V	TC/RTD or MA/V	TC/RTD or MA/V	TC/RTD or MA/V	TC
Digital Counter	2	Control output	Relay/SSR/Current/SRC			Relay/SSR		Relay/SSR/Current/SRC			Relay/SSR	Relay/SSR/Current/SRC		SSR
Timer Relay	3	Auto-turning	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	4	Manual/auto switch	Yes	Yes	No	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Tacho/Speed Pulse Meter	5	Power mode	Customized (RUN/STOP/HOLD)	No	No	(RUN/STOP)	(RUN/STOP)	(RUN/STOP)	(RUN/STOP)	(RUN/STOP)	No	(RUN/STOP)	(RUN/STOP)	(RUN/STOP)
Recorder	6	Control function	ON/OFF heating, PID heating, PID cooling, PID heating & cooling		ON/OFF heating, PID heating, PID heating & cooling, ON/OFF cooling	ON/OFF heating, PID heating, PID heating & cooling, ON/OFF cooling		ON/OFF heating, PID heating, PID cooling, PID heating & cooling, ON/OFF cooling			ON/OFF heating, PID heating, PID heating & cooling, ON/OFF cooling	ON/OFF heating, PID heating, PID cooling, PID heating & cooling, ON/OFF cooling		ON/OFF heating, PID heating, PID heating & cooling, ON/OFF cooling
Signal Isolator	7	Sample Rate	2 times/s	2 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s	3 times/s
	8	Program	50	No	No	No	No	No	16	No	No	No	No	No
Rotary Encoder	9	Decimal point setting	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Proximity Sensor	10	Alarm	2	3	3	1	1	2	2	2	1	2	2	No output in communication read status
	11	Delay Alarm	No	No	No	No	No	Customized	No	Customized	No	No	No	No
Solid State Relay	12	DI/DO	No	No	No	No	No	No	No	No	No	No	No	No
	13	Analog	No	No	Yes	/	/	Yes	Yes	Yes	/	Yes	Yes	/
Power Meter	14	Com	Yes	Yes	Yes	/	/	Yes	Yes	Yes	/	Yes	Yes	Yes

1. AI808P Series Programmable Temperature Controller

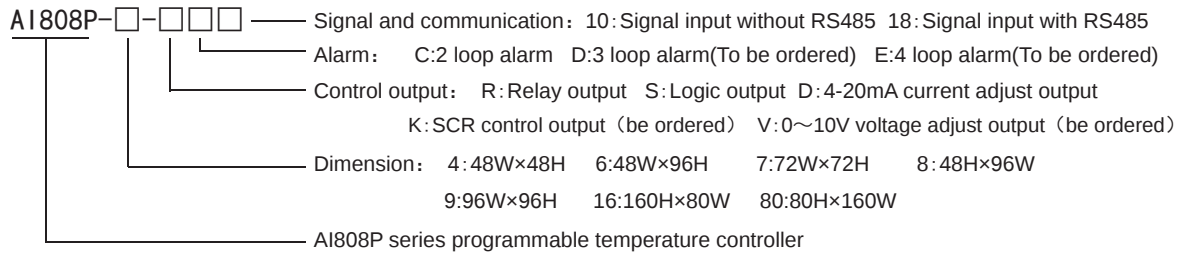
Photos and Features



Features:

- ★ 50 programmable segments control function
- ★ 0.2%FS high-accuracy signal measurement, industrial universal signal input.
- ★ Two freedom degree PID arithmetic with positive and negative control output.
- ★ Optional kinds of control output, heating control with inear output.
- ★ 2 loop alarm, optional kinds of alarm type.
- ★ Rich sizes, big LED display
- ★ RS485 communication, ModBUS-RTU protocol.
- ★ Industrial level of EMC test and higher reliability

Model Illustration



Ordering Information

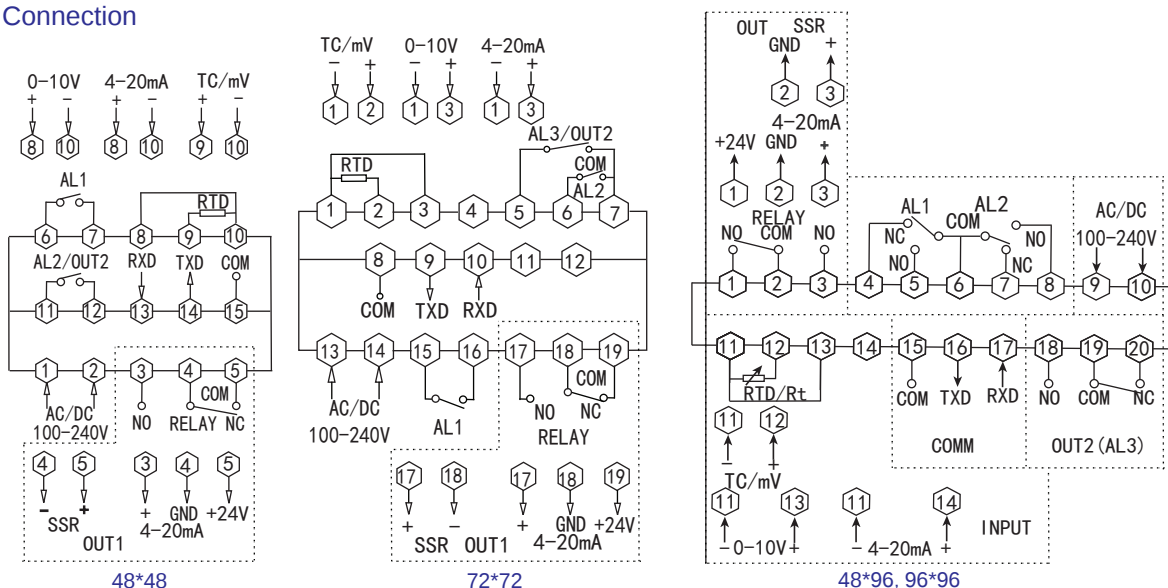
Model	Alarm output	Control output	Input type	Communication	Code
AI808P-□-SC10	2 loop alarm (It can add 1 loop alarm if without cooling control)	SSR output	K, J, E, T, R, S, B, N, CU50, CU100, PT100, 0-10, 4-20mA, 0-50mV, 0-400Ω	No	A01900AI02
AI808P-□-RC10		Relay output		No	A01900AI02
AI808P-□-DC10		Current output		No	A02100AI02
AI808P-□-SC18		SSR output		R485	A02200AI02
AI808P-□-RC18		Relay output		R485	A02200AI02
AI808P-□-DC18		Current output		R485	A02400AI02

Technical Specifications

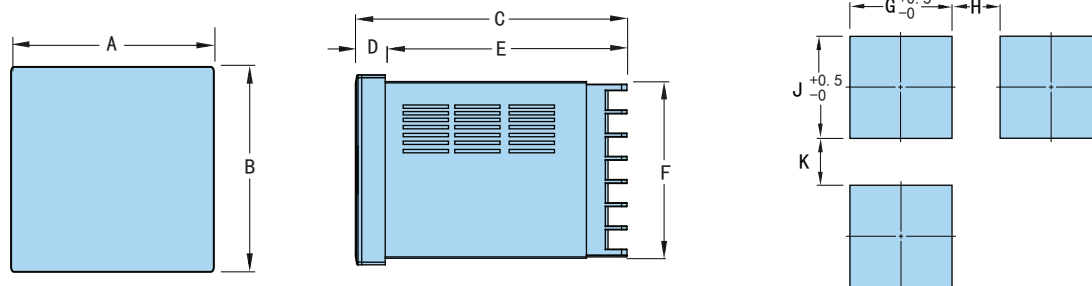
Display	Digits	4 digits	Communication	Protocol	RS-485 ModBUS-RTU
	Max	Refer input signal table		Baud	4800bps, 9600bps
Input signal	Input type	TC/RTD universal input	Power supply	IP range	1-247
		Standard analog signal input		Communication delay	No
	Accuracy	Refer input signal specification table	Protection level	Voltage	100~240V AC/DC 50/60Hz
	Resolution	Display ± 0.1°C		Power consumption	≤5W
Analog output	Sample rate	3 time/second	Environment	Panel	IP64
	Output points	1 loop		Body	-
	Type	4~20mA	Structure	Working environment	0~50°C <85%RH
	Range & Load	Load resistance 600Ωmax		Storage environment	-10~60°C <85%RH
Voltage output	Output accuracy	0.5%FS	Safe	Vibrate, pile	10~55Hz X/Y/Z 0.75mm
	Resolution	0.01mA 12 digits		Screw torque	0.74n.m~0.9n.m
	Voltage supply	DC 24V	EMC	Dielectric strength	2000V AC 50/60Hz 1min
Relay output	Capacity	30mA max		Insulation Impedance	100MΩ DC 500V
	Load	3A/250V AC		ESD	3level
	Electrical life	100,000 times		Pulse train anti-interference	4level each mode ±4000Vp-p
	Mechanical life	1 million times		Lightning surge	3level N-L ±2000V
				Frequency drop	3level

Number	Symbol	Input type	Measuring range	Resolution	Input resistance
0		K type TC	-50~1300℃	1℃	>100KΩ
1		J type TC	-50~1200℃	1℃	>100KΩ
2		E type TC	-50~1000℃	1℃	>100KΩ
3		T type TC	-50~400℃	1℃	>100KΩ
4		B type TC	600~1800℃	1℃	>100KΩ
5		R type TC	-10~1700℃	1℃	>100KΩ
6		S type TC	-10~1600	1℃	>100KΩ
7		N type TC	-50~1200℃	1℃	>100KΩ
8	000	Reservation			
9	PT	PT100	-199.9~850.0℃	0.1℃	(0.2mA)
10	JPT	JPT100	-199.9~500.0℃	0.1℃	(0.2mA)
11	CU50	CU50	-50.0~150.0℃	0.1℃	(0.2mA)
12	CU100	CU100	-50.0~150.0℃	0.1℃	(0.2mA)
13	00	Linear voltage	0~50mV	0.01%FS	>100KΩ
14	0A	Linear current(AI708-4,to be ordered)	4~20mA	0.01%FS	<110Ω
15	11	Linear voltage	0~10V	0.01%FS	>100KΩ
16	rt	Linear resistance	0~400Ω	0.01%FS	>0.2mA

Connection



Dimensions (Unit:mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30
16:(160*80)	80	160	96	13	83	155	76	30	155.5	30

2. AI708 Series Intelligent Temperature Controller

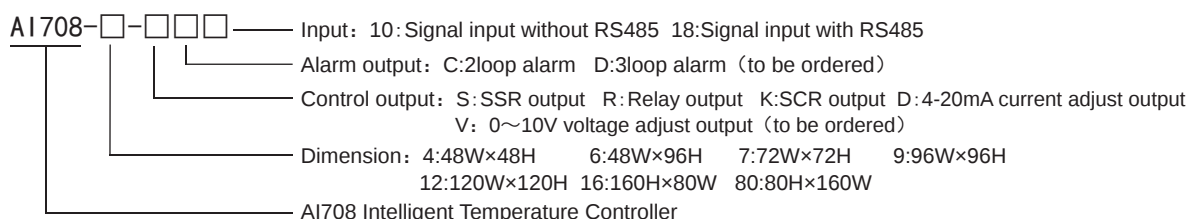
Photos and Features



Features:

- ★ Optional input of TC/RTD/analog signal, universal software.
- ★ 0.3%FS high-accuracy signal measurement.
- ★ Fuzzy PID algorithm, forward/reverse control output.
- ★ Multiple control output options: ON/OFF, PID heating, PID heating and cooling.
- ★ 2 loop alarm, optional kinds of alarm type.
- ★ Rich sizes for option, with big LED display.
- ★ RS485 communication, ModBUS-RTU protocol.
- ★ Industrial level of EMC test and higher reliability

Model Illustration



Ordering Information

Model	Control output	Cooling control	Alarm	Communication	Input type	Code
AI708-□-SC10	SSR output	Relay output	2	No	Universal input: A:TC/RTD universal input K/J/E/T/R/S/B/N/CU50/CU100 PT100 B:standard analog signal input: 0-10V/4-20mA/0-50mV/0-400Ω	A0620AI02
AI708-□-RC10	Relay output	Relay output	2			A0620AI02
AI708-□-KC10	SCR output	Relay output	2			A0680AI02
AI708-□-DC10	Current output	Relay output	2			A0700AI02
AI708-□-SC18	SSR output	Relay output	2	RS485		A0790AI02
AI708-□-RC18	Relay output	Relay output	2			A0790AI02
AI708-□-KC18	SCR output	Relay output	2			A0820AI02
AI708-□-DC18	Current output	Relay output	2			A0920AI02

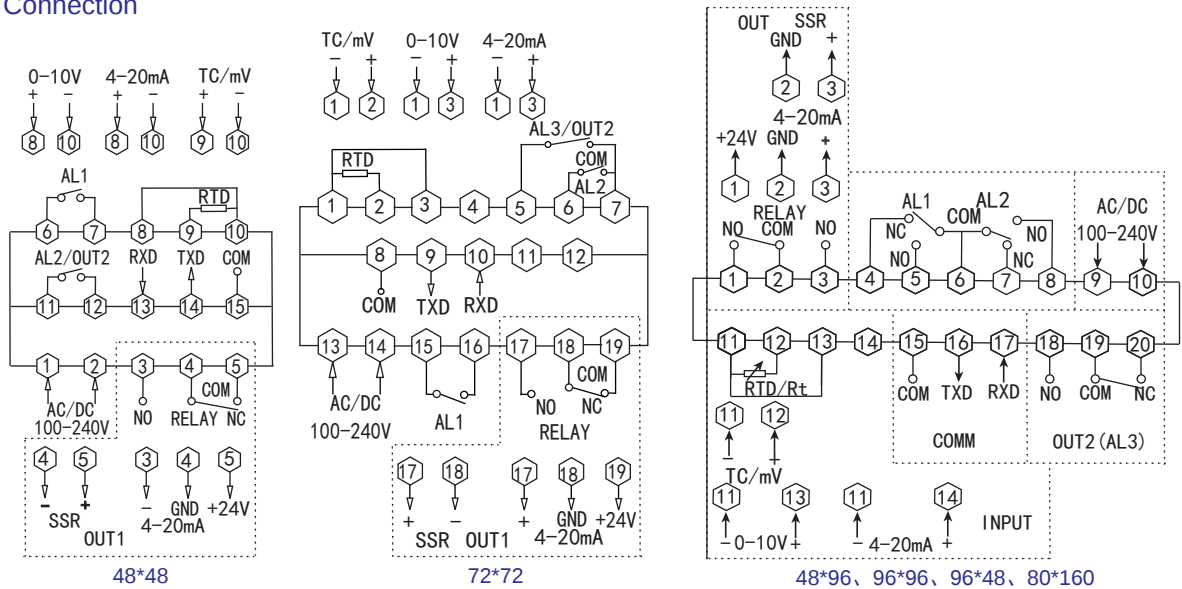
Note:It is 1 alarm for heating-cooling control of 48*48 type,2 alarms for other options control. And for other sizes,it is 2 alarms for heating-cooling control,3 alarm for other control types. 4-20mA output can be as analog output or PID control output. (The factory default setting is PID output)

Technical Specifications

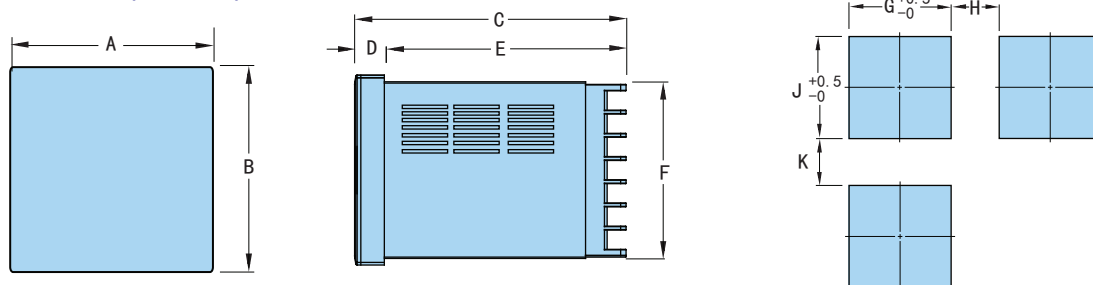
Display	Digits	4 digits	Communication	Communication protocol	RS-485 ModBUS-RTU
	Max	Refer to the input signal table		Baud	4800bps,9600bps
Input signal	Input type	TC, RTD universal input standard analog signal input. Refer to input signal parameter comparison table for details.	Power supply	IP range	1-247
	Accuracy	0.3%FS		Communication delay	No
	Resolution	Display± 0.1℃	Protection	Voltage	100~240V AC/DC 50/60Hz
	Sampling rate	3 times/s		Power consumption	≤5W
Analog output	Output points	1loop	Environment	Panel	IP54
	Type	4~20mA		Body	-
	Range & Load	Load resistance 600Ωmax	Structure	Work environment	0~50℃ <85%RH
	Output accuracy	0.5%FS		Storage environment	-20~60℃ <85%RH
	Resolution	0.01mA 12 digits	Safe	Vibrate,pile	10~55Hz X/Y/Z 0.75mm
Voltage output	Voltage supply	DC 24V		Screw torque	0.74n.m~0.9n.m
	Capacity	30mA max	EMC	Dielectric strength	2000V AC 50/60Hz 1min
Relay output	Load	3A/250V AC		Insulation impedance	100MΩ DC 500V
	Electrical life	100,000times		ESD	3 level
	Mechanical life	1million times		Pulse train anti-interference	4 level each mode±4000VP-P
				Lightning surge	3 level N-L ±2000V
				Frequency drop	3 level

Number	Symbol	Input type	Measuring range	Resolution	Input Impedance
0		K type TC	-50~1300℃	1℃	>100KΩ
1		J type TC	-50~1200℃	1℃	>100KΩ
2		E type TC	-50~1000℃	1℃	>100KΩ
3		T type TC	-50~400℃	1℃	>100KΩ
4		B type TC	600~1800℃	1℃	>100KΩ
5		R type TC	-10~1700℃	1℃	>100KΩ
6		S type TC	-10~1600	1℃	>100KΩ
7		N type TC	-50~1200℃	1℃	>100KΩ
8	000	Reservation			
9	PT	PT100	-199.9~850.0℃	0.1℃	(0.2mA)
10	JPT	JPT100	-199.9~500.0℃	0.1℃	(0.2mA)
11	CU50	CU50	-50.0~150.0℃	0.1℃	(0.2mA)
12	CU100	CU100	-50.0~150.0℃	0.1℃	(0.2mA)
13	0.0	Linear voltage	0~50mV	0.01%FS	>100KΩ
14	0A	Linear current(AI708-4 need to order)	4~20mA	0.01%FS	<110Ω
15	1	Linear voltage	0~10V	0.01%FS	>100KΩ
16	1t	Linear resistance	0~400Ω	0.01%FS	> (0.2mA)

Connection



Dimensions (Unit:mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30
16:(160*80)	80	160	96	13	83	155	76	30	155.5	30

3. AI518 Series Intelligent Temperature Controller



■ Photos and Features



Features:

- ★ Optional input of TC/RTD/analog signal, universal software.
- ★ Two freedom degree PID arithmetic with auto-tuning function.
- ★ Optional various control output and 4~20mA linear output
- ★ 2 loop alarm, many kinds of alarm type are optional.
- ★ Rich sizes, big LED display.
- ★ RS485 communication, ModBUS-RTU protocol.
- ★ Industrial level of EMC test and higher reliability.

■ Model Illustration

AI518-□ □ □ □ — Input: 10: 1loop without RS485 18: 1loop with RS485
 Alarm: C: 2loop alarm output D: 3loop alarm output (to be ordered)
 Control output: R: Relay output D: 4-20mA current output S: SSR output
 K: SCR output (to be ordered) V: 0~10V voltage output (to be ordered)
 Dimension: 4: 48W×48H 6: 48W×96H 7: 72W×72H 8: 96W×48H 9: 96W×96H (mm)
 AI518 series temperature controller

■ Ordering Information

Model	Control output	Analog output	Communication	Input	Accuracy	Code
AI518-□-SC10	Voltage output	No	No	Input signal included TC input RTD input Standard analog input (0~10V, 4~20mA, 0~50mV, 0~400Ω)	±0.5%FS	B0370AI01
AI518-□-RC10	Relay output	No				B0370AI01
AI518-□-KC10	SCR output	No				B0390AI01
AI518-□-DC10	Current output	Yes				B0420AI01
AI518-□-SC18	Voltage output	No	RS485			B0450AI01
AI518-□-RC18	Relay output	No				B0450AI01
AI518-□-KC18	SCR output	No				B0470AI01
AI518-□-DC18	Current output	Yes				B0500AI01

Note: 4-20mA output can be switched to analog output or PID control output on the menu, factory default setting is PID control output.

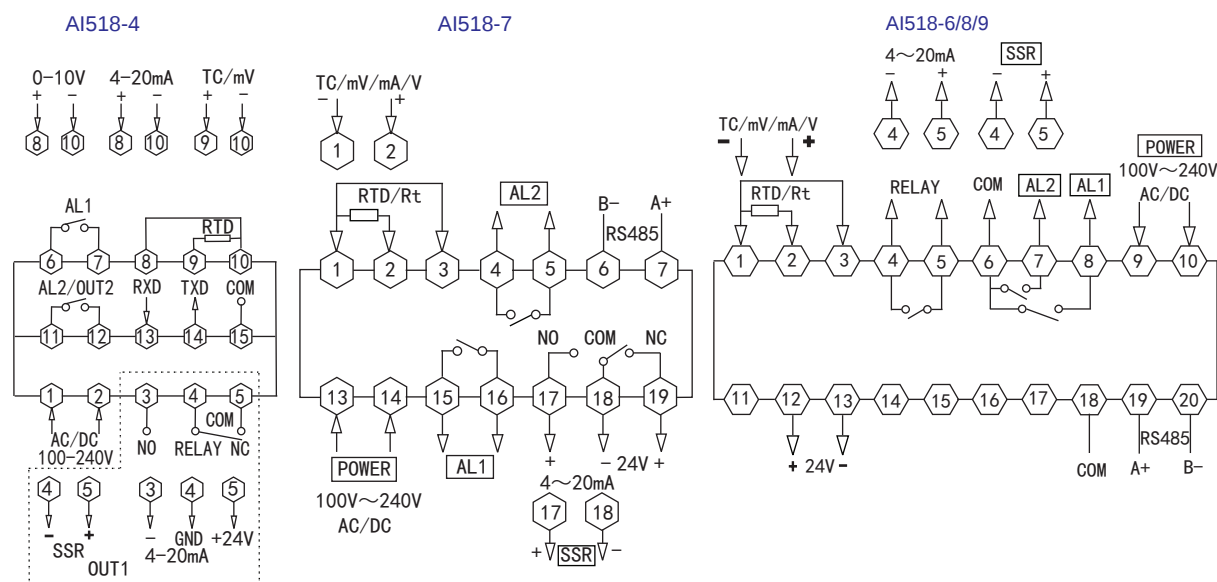
■ Technical Specifications

Display	Digits	4 digits	Communication	Comm. protocol	RS-485 ModBUS-RTU
	Max display	Refer to input signal table		Baud	4800bps, 9600bps
Input signal	Input signal type	TC, RTD universal input		IP range	1-247
		Standard analog input		Delay	No
	Accuracy	Refer to input signal table	Power supply	Voltage	100~240V AC/DC 50/60Hz
	Resolution	0.5%FS		Power consumption	≤5W
Analog output	Sampling rate	Display ± 0.1°C	Protection level	Panel	IP54
	Output points	2.5 times/second		Body	-
	Type	1 loop	Environment	Working environment	0~50°C <85%RH
	Range & load	4~20mA		Storage environment	-20~60°C <85%RH
Relay output	Output accuracy	Load resistance 600Ωmax	Structure	Vibration, pile	10~55Hz X/Y/Z 0.75mm
	Resolution	0.5%FS		Screw torque	0.74N.m~0.9N.m
	Voltage supply	0.01mA 12 digits	Safe	Dielectric strength	2000V AC 50/60Hz 1 min
	Capacity	DC 24V		Insulation impedance	100MΩ DC 500V
Relay output	Load capacity	30mA max	EMC	ESD	3 class
	Electrical	3A/250V AC		Pulse train anti-interference	4 class each mode ±4000Vp-p
	Mechanical	100 thousand times		Lightning surge	3 class N-L ±2000V
		1 million times		Frequency drop	3 class

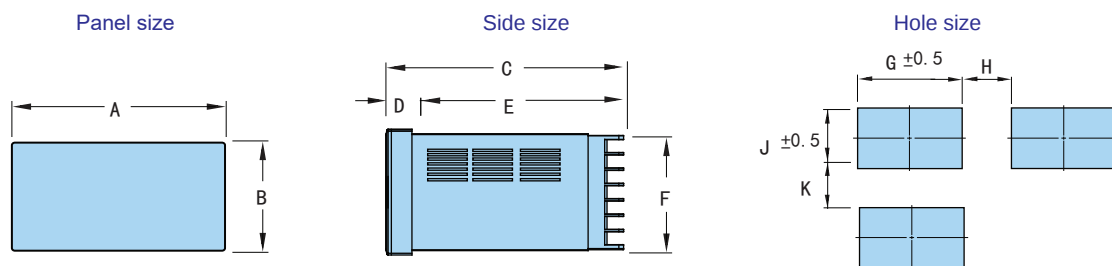
Input parameters

No.	Symbol	Input type	Measuring range	Resolution	Accuracy	Input impedance
0		K	-50~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
1		J	0~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
2		E	0~850°C	1°C	±0.5%F.S±3digits	>100KΩ
3		T	-50~400°C	1°C	±0.5%F.S±3digits	>100KΩ
4		B (to be ordered)	600~1800°C	1°C	±0.5%F.S±3digits	>100KΩ
5		R (to be ordered)	500~1600°C	1°C	±0.5%F.S±3digits	>100KΩ
6		S (to be ordered)	-10~1600	1°C	±0.5%F.S±3digits	>100KΩ
7		N	-50~1200°C	1°C	±0.5%F.S±3digits	>100KΩ
8		PT100	-199.9~650.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
9		CU50	-50.0~150.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
10		CU100	-50.0~150.0°C	0.1°C	±0.5%F.S±3digits	(0.2mA)
11		0~50mV	0~50mV	1digit	±0.5%F.S±3digits	>100KΩ
12		4~20mA	4~20mA	1digit	±0.5%F.S±3digits	<150Ω
13		0~10V	0~10V	1digit	±0.5%F.S±3digits	>100KΩ
14		0~400Ω	0~400Ω	1digit	±0.5%F.S±3digits	>(0.2mA)

Connection



Dimensions (Unit: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30
16:(160*80)	80	160	96	13	83	155	76	30	155.5	30

4. AI208/AI208X Series Intelligent Temperature Controller



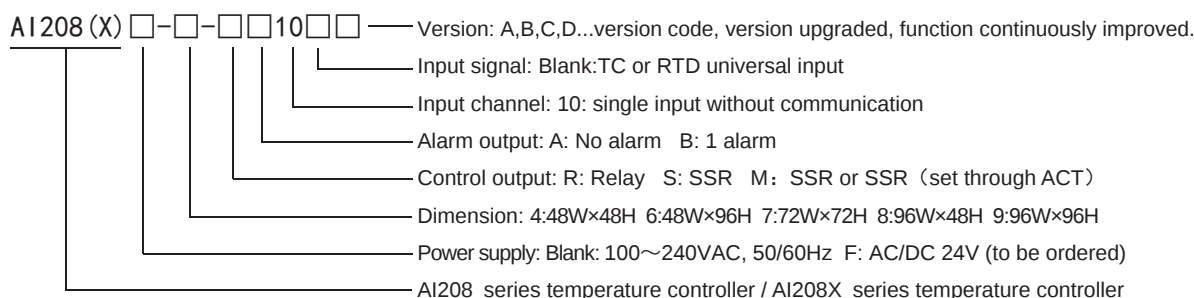
Photos and Features



Features:

- ★ Easy operation,economy model.
- ★ Intelligent fuzzy PID algorithm with auto-tuning function.
- ★ One-press to enter the auto-tuning state, calculate the best controlling state automatically.
- ★ 1 loop free-setting alarm function.
- ★ Heating control , compressor cooling control, heating-cooling control for extruder screw.
- ★ AI208X series use integrated digital tube.

Model Illustration



Ordering Information

Model	Version	Panel size	Alarm	Control output	Input type	Power supply	Code	
AI208-4/6/7/8-R/SB10	E Version	4:48W×48H	1	S:SSR	Universal input (TC/RTD)	AC/DC 100~240V	B0170AI01	
AI208-9-R/SB10		6:48W×96H		R:Relay			B0190AI01	
AI208X-4/6/7/8-MB10	A Version	7:72W×72H		M:SSR or Relay (set through ACT)			B0175AI01	
AI208X-9-MB10		8:96W×48H 9:96W×96H					B0195AI01	

Specifications

Sampling speed	2 times per second
Relay capacity	AC 250V /3A Life of rated load>100 thousand times
Power supply	AC/DC 100 ~ 240V (85-265V)
Total consumption	< 6VA
Ambient environment	Indoor use, temperature: 0 ~ 50°C, no condensation, humidity:<85%RH, altitude<2000m
Storage environment	-10 ~ 60°C, no condensation
SSR output	DC 24V impulse level, load<30mA
Insulation impedance	Input, output, power to cabinet>20MΩ
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Pulse triap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V, 1min
Weight	About 400g
Shell material	PC/ABS (flame class UL94V-0)
Panel material	PET(F150/F200)
Power-off protection	10 years, times of writing:1 million times
Panel protection class	IP65(IEC60529)
Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II (Enhanced insulation)

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

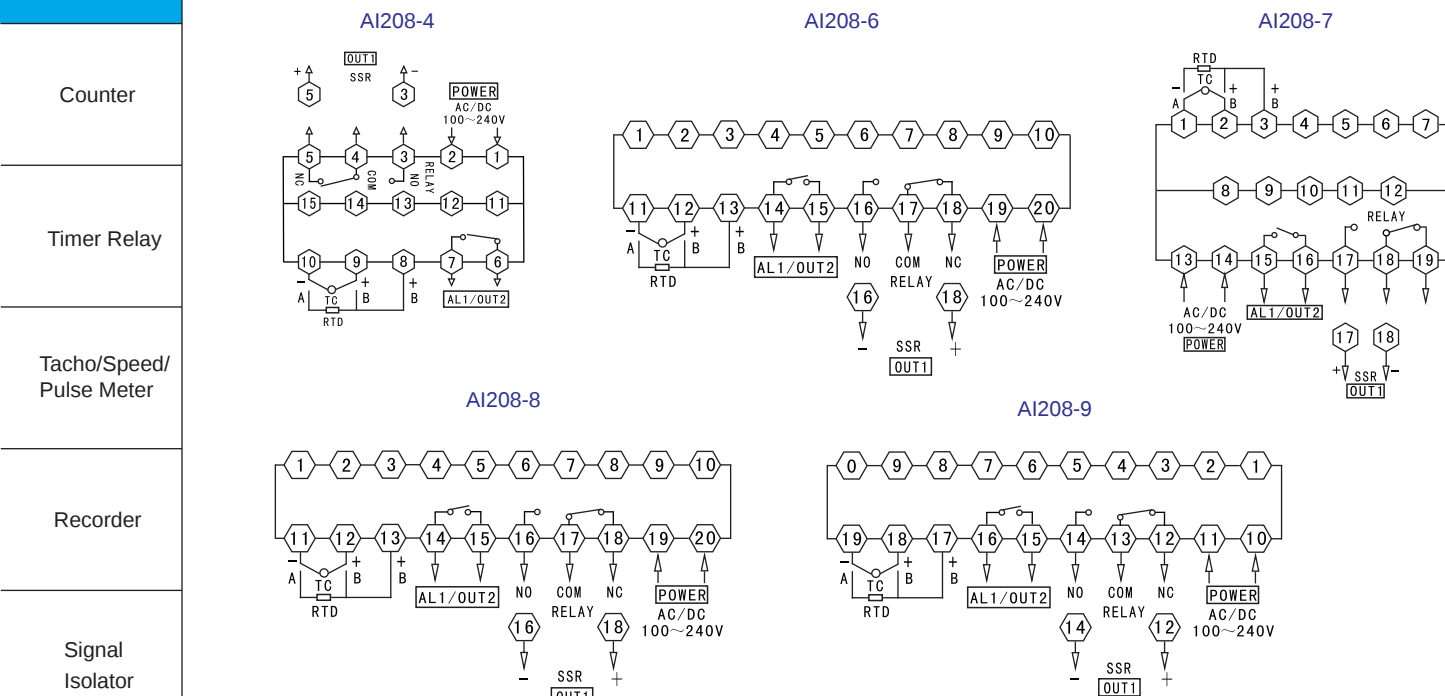
Solid State Relay

Power Meter Introduction

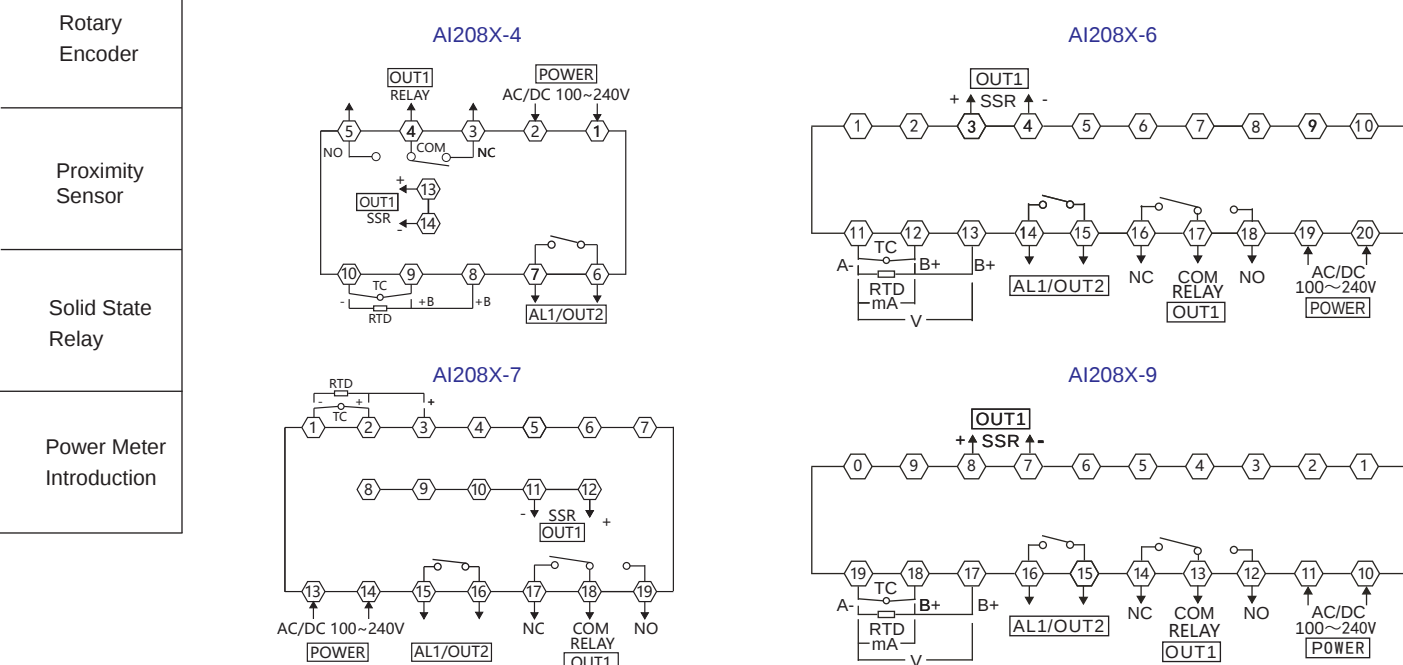
Input Signal List

	Input type	Symbol	Measuring range	Resolution	Accuracy	Input impedance/auxiliary current
Panel Meter	K		-50 ~ 999	1°C	0.5%F.S±3digits	>500kΩ
	J		0 ~ 999	1°C	0.5%F.S±3digits	>500kΩ
Sensor Indicator	E		0 ~ 850	1°C	0.5%F.S±3digits	>500kΩ
	T		-50 ~ 400	1°C	0.5%F.S±2°C	>500kΩ
	PT100		-200 ~ 600	1°C	0.5%F.S±3digits	0.2mA
Temperature Controller	CU50		-50 ~ 150	1°C	0.5%F.S±3°C	0.2mA
	CU100		-50 ~ 150	1°C	0.5%F.S±1°C	0.2mA

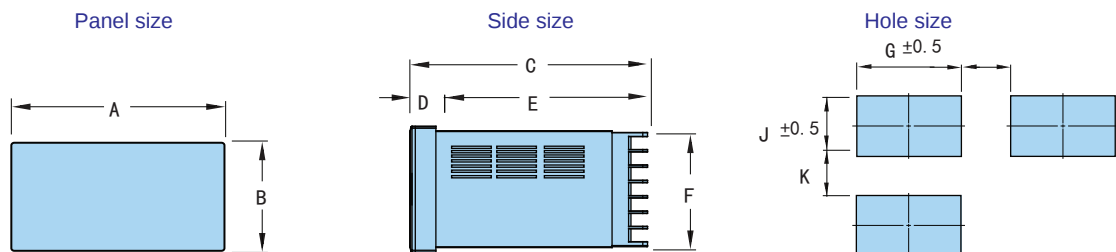
AI208 Series Connection



AI208X Series Connection

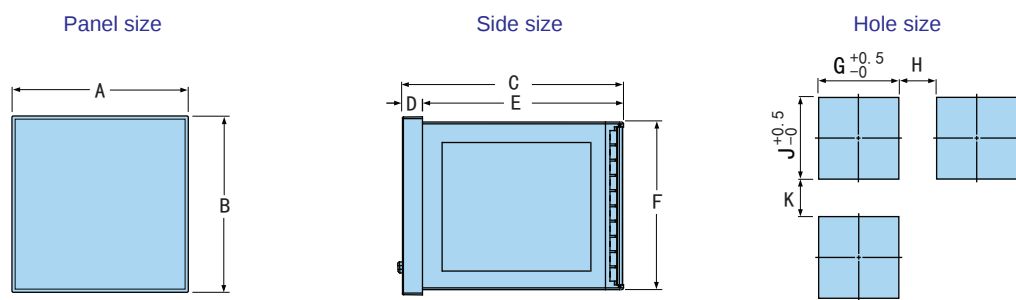


■ AI208 Series Dimensions (Units: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25

■ AI208X Series Dimensions (Units: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	73	6.5	66.5	44	45	25	45	25
6:(96*48)	48	96	73	6.5	66.5	90	91.5	25	45	25
7:(72*72)	72	72	73	6.5	66.5	66	67.5	25	67.5	25
9:(96*96)	96	96	73	6.5	66.5	90	91.5	25	91.5	25

5. AI108 Series Intelligent Temperature Controller

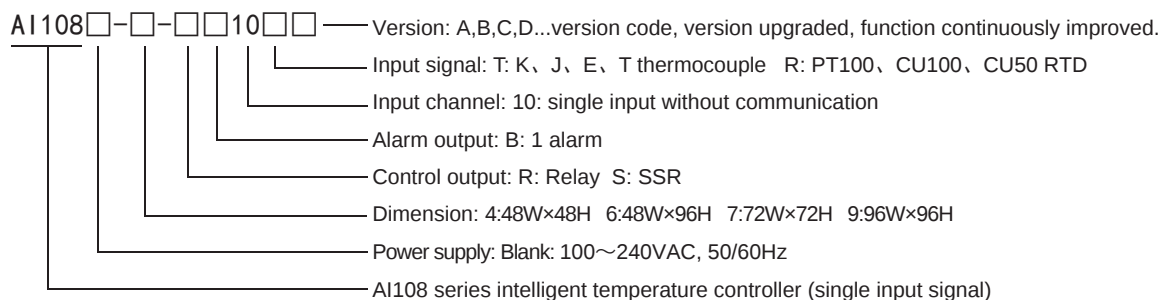
Photos and Features



Features:

- ★ Easy operation, economy model.
- ★ Intelligent fuzzy PID algorithm with auto-tuning function.
- ★ One-press to enter the auto-tuning state, calculate the best controlling state automatically.
- ★ 1 loop free-setting alarm function.
- ★ Heating control , compressor cooling control, heating-cooling control for extruder screw.

Model Illustration



Ordering Information

Model	Version	Panel size	Alarm	Control output	Input type	Power supply	Code
AI108-4/6/7-R/SB10-R	A version	4:48W×48H	1 loop	S: SSR R: Relay	R: PT100, CU100, CU50	AC/DC 100~240V	C0087AI01
AI108-4/6/7-R/SB10-T		6:48W×96H			T: K, J, ,T		C0087AI01
AI108-9-R/SB10-R		7:72W×72H			R: PT100, CU100, CU50		C0095AI01
AI108-9-R/SB10-T		9:96W×96H			T: K, J, E, T		C0095AI01

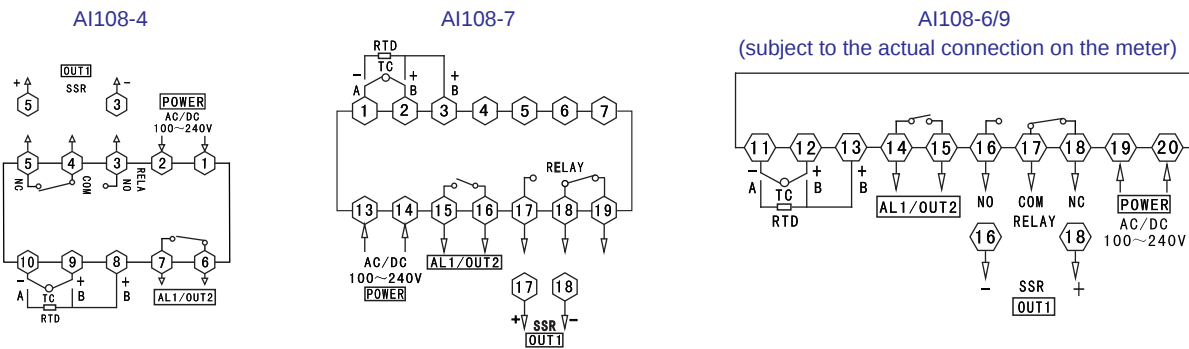
Technical Specifications

Sampling speed	2 times per second
Relay capacity	AC 250V /3A Life of rated load>100 thousand times
Power supply	AC/DC 100 ~ 240V (85-265V)
Total consumption	< 6VA
Ambient environment	Indoor use, temperature: 0 ~ 50°C, no condensation, humidity:<85%RH, altitude<2000m
Storage environment	-10 ~ 60°C, no condensation
SSR output	DC 24V impulse level, load<30mA
Insulation impedance	Input, output, power to cabinet>20MΩ
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Pulse triap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V, 1min
Weight	About 400g
Shell material	PC/ABS (flame class UL94V-0)
Panel material	PET(F150/F200)
Power-off protection	10 years, times of writing:1 million times
Panel protection class	IP65(IEC60529)
Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II (Enhanced insulation)

Input parameters

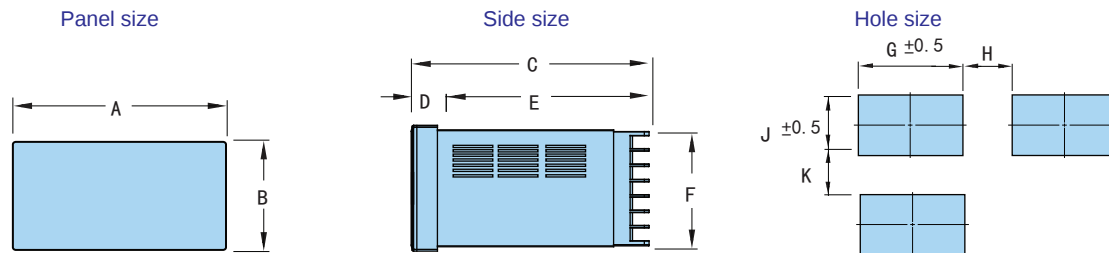
Input type		Symbol	Measuring range	Resolution	Accuracy	Input impedance/auxiliary current
TC	K		-50 ~ 400	1℃	0.5%F.S±3digits	> 500kΩ
	J		0 ~ 400	1℃	0.5%F.S±3digits	> 500kΩ
	E		0 ~ 400	1℃	0.5%F.S±3digits	> 500kΩ
	T		-50 ~ 400	1℃	0.5%F.S±2℃	> 500kΩ
RTD	PT100		-200 ~ 400	1℃	0.5%F.S±3digits	0.2mA
	CU50		-50 ~ 150	1℃	0.5%F.S±3℃	0.2mA
	CU100		-50 ~ 150	1℃	0.5%F.S±1℃	0.2mA

Connection



Note: if there is any change, please subject to the connection on the meter.

Dimensions (Units: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25

6. TP Series LCD Display Intelligent Temperature Controller

■ Photos and Features

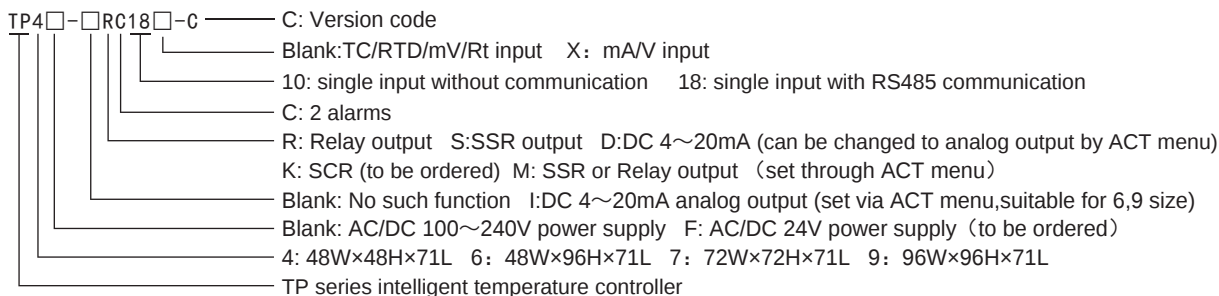


New design

Features:

- ★ Segment LCD display, Super brightness backlight, wide viewing angle.
- ★ Short housing design, save installation space.
- ★ Multi input signals, multi dimensions, multi control outputs for option.
- ★ With measurement display, control output, alarm output, analog output, RS485 communication function.
- ★ Multi PID algorithm for option, and with auto tune function.
- ★ This meter is applicable to industrial machinery, machine tools, general measuring instruments and equipment.

■ Model Illustration



■ Ordering Information

Model	OUT1 Control output			Alarm output		Analog	Communication	Auxiliary power	Code
	RELAY	SSR	4~20mA	AL1 OUT2	AL2	4~20mA	RS485	24V	
TP4-DC18□			●	●	●	◎	●	●	B0510TP01
TP4-DC10□			●	●	●	◎		●	B0390TP01
TP4-RC18□	●			●	●		●		B0430TP01
TP4-SC18□		●		●	●		●		B0430TP01
TP4-MC10□	●	●		●	●				B0310TP01
TP7-DC18□			●	●	●	◎	●	●	B0510TP01
TP7-DC10□			●	●	●	◎		●	B0390TP01
TP7-MC18□	●	●		●	●		●		B0430TP01
TP7-MC10□	●	●		●	●				B0310TP01
TP6/9-IMC18□	●	●	●	●	●	◎	●	●	B0550TP01
TP6/9-IMC10□	●	●	●	●	●	◎		●	B0430TP01
TP6/9-DC18□			●	●	●	◎	●	●	B0510TP01
TP6/9-DC10□			●	●	●	◎		●	B0390TP01
TP6/9-MC18□	●	●		●	●		●		B0430TP01
TP6/9-MC10□	●	●		●	●				B0310TP01

□: The default "Blank" input signal is TC/RTD/mV/Rt; "X" input signal is 4~20mA/0~10V.
 ●: Standard configuration function.
 ◎: With this function, but multiplexed with other functions. This series has only one DC 4-20mA output, but it can be configured for main control output or transmission output through the ACT menu.

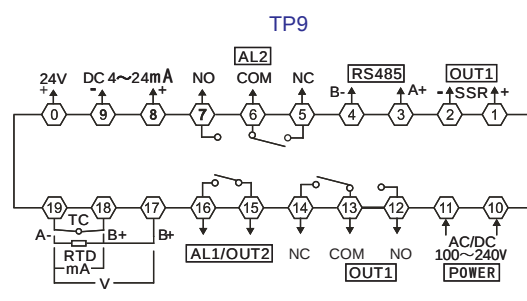
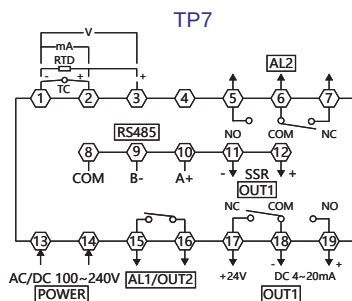
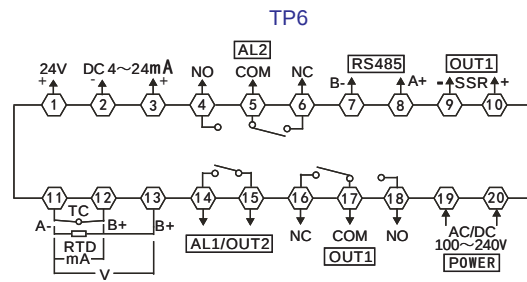
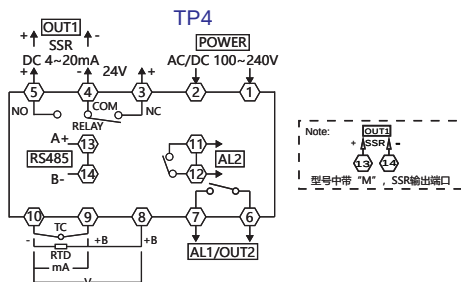
■ Technical Specifications

Sampling speed	2 times per second	ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Relay capacity	AC 250V /3A Life of rated load>100000 times	Pulse triaip anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Power supply	AC/DC 100 ~ 240V (85-265V)	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Total consumption	< 6VA	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Ambient environment	Indoor use, temperature: 0~50°C, no condensation, humidity:<85%RH, altitude<2000m	Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V,1min
Storage environment	-10 ~ 60°C, no condensation	Weight	About 400g
SSR output	DC 24V impulse level, load<30mA	Shell material	PC/ABS (flame class UL94V-0)
Current output	DC 4~20mA load<500Ω, temperature drift 250PPM	Panel material	PC
Communication port	RS485 port Modbus-RTU protocol, maximum input:30units	Power-off protection	10 years, times of writing:1 million times
Insulation impedance	Input, output, power to housing>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)

Input type	Symbol	Measuring range	Resolution	Accuracy	Input impedance/ auxiliary current	Communication data code
K1	ℰ 1	-50 ~ 1200	1°C	0.5%F.S±3digits	>500KΩ	0
K2	ℰ 2	-50.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500kΩ	16
J1	ℰ 1	0 ~ 1200	1°C	0.5%F.S±3digits	>500KΩ	1
J2	ℰ 2	0.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500KΩ	17
E1	ℰ 1	0 ~ 850	1°C	0.5%F.S±3digits	>500KΩ	2
E2	ℰ 2	0.0 ~ 850.0	0.3°C	0.5%F.S±1°C	>500KΩ	18
T1	ℰ 1	-50 ~ 400	1°C	0.5%F.S±3°C	>500KΩ	3
T2	ℰ 2	-50.0 ~ 400.0	0.4°C	0.5%F.S±3°C	>500KΩ	19
B	ℰ	250 ~ 1800	1°C	1%F.S±2°C	>500KΩ	4
R	ℰ	-10 ~ 1700	1°C	1%F.S±2°C	>500KΩ	5
S	ℰ	-10 ~ 1600	1°C	1%F.S±2°C	>500KΩ	6
N1	ℰ 1	-50 ~ 1200	1°C	0.5%F.S±1°C	>500KΩ	7
N2	ℰ 2	-50.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500KΩ	20
PT100-1	ℰ 1	-200.0 ~ 600.0	0.2°C	0.5%F.S±0.3°C	0.2mA	8
PT100-2	ℰ 2	-200 ~ 600	1°C	0.5%F.S±3digits	0.2mA	21
JPT100-1	ℰ 1	-200.0 ~ 500.0	0.2°C	0.5%F.S±0.3°C	0.2mA	9
JPT100-2	ℰ 2	-200 ~ 500	1°C	0.5%F.S±3digits	0.2mA	22
CU50-1	ℰ 1	-50.0 ~ 150.0	0.2°C	0.5%F.S±3°C	0.2mA	10
CU50-2	ℰ 2	-50 ~ 150	1°C	0.5%F.S±3°C	0.2mA	23
CU100-1	ℰ 1	-50.0 ~ 150.0	0.2°C	0.5%F.S±1°C	0.2mA	11
CU100-2	ℰ 2	-50 ~ 150	1°C	0.5%F.S±3digits	0.2mA	24
0 ~ 50mV	ℰ	-1999 ~ 9999	12bit	0.5%F.S±3digits	>500kΩ	12
0 ~ 400Ω	ℰ	-1999 ~ 9999	12bit	0.5%F.S±3digits	0.2mA	13
* 4 ~ 20mA	ℰ	-1999 ~ 9999	12bit	0.5%F.S±3digits	<50Ω	14
* 0 ~ 10V	ℰ	-1999 ~ 9999	12bit	0.5%F.S±3digits	>1MΩ	15

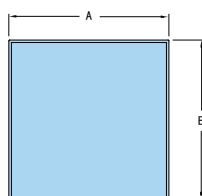
*: Please specify the signal input requirements when ordering.

■ **Connection** Note: if any change, please subject to the connection drawing on the meter.

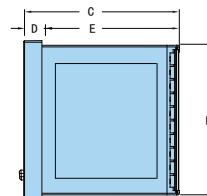


■ **Dimensions (Units: mm)**

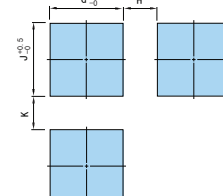
Panel size



Side size



Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	73	6.5	66.5	44	45	25	45	25
6:(96*48)	48	96	73	6.5	66.5	90	91.5	25	45	25
7:(72*72)	72	72	73	6.5	66.5	66	67.5	25	67.5	25
9:(96*96)	96	96	73	6.5	66.5	90	91.5	25	91.5	25

Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

7. TE Series Intelligent Temperature Controller

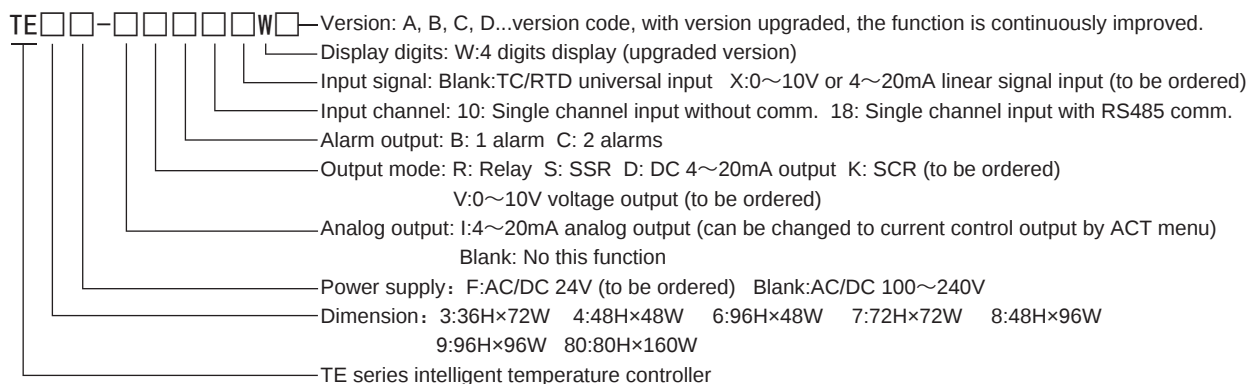
Photos and Features



Features:

- ★ Easy operation,economy model.
- ★ Multi input signal types and models.
- ★ Measured value display, control output, alarm output, analog output, RS485 communication, etc.
- ★ Intelligent PID control and auto-tuning function
- ★ Positive-negative PID action for option.
- ★ Manual automatic control switch.
- ★ This product is used in industrial machinery, machine tools, general measuring instruments and equipment.

Model Illustration



Ordering Information

Model	Control output	Alarm	Analog output	Communication	Code
TE4/6/7/8-R/SB10W	R: Relay output S: SSR output I:4~20mA analog output D:4~20mA Current output	1	No	No	B0210TEW01
TE9/80-R/SB10W		1	No	No	B0225TEW01
TE4/6/7/8-R/SC10W		2	No	No	B0238TEW01
TE9/80-R/SC10W		2	No	No	B0253TEW01
TE□-R/SC18W		2	No	RS485	B0380TEW01
TE□-DC10W		2	4~20mA(multiplex with control output)	No	B0310TEW01
TE□-DC18W		2	4~20mA(multiplex with control output)	RS485	B0450TEW01
TE6/8/9/80-IR/SC10W		2	4~20mA	No	B0350TEW01
TE6/8/9/80-IR/SC18W		2	4~20mA	RS485	B0490TEW01

Note:Input signal 4~20mA, 0~10V and power supply DC24V need to be ordered, please indicate it before place an order.

Technical Specification

Sampling speed	2 times per second	Pulse traip anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Relay capacity	AC 250V /3A Life of rated load>100000 times	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Power supply	AC/DC 100~240V (85~265V)	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Total consumption	< 6VA	Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V,1min
Ambient environment	Indoor use, temperature: 0~50°C, no condensation, humidity: <85%RH, altitude<2000m	Weight	About 400g
Storage environment	-10~60°C, no condensation	Shell material	PC/ABS (flame class UL94V-0)
SSR output	DC 24V impulse level, load<30mA	Panel material	PET(F150/F200)
Current output	DC 4~20mA load<500Ω,temperature drift 250PPM	Power-off protection	10 years,times of writing:1 million times
Communication port	RS485 port Modbus-RTU protocol, maximum input: 30 units	Panel protection class	IP65(IEC60529)
Insulation impedance	Input, output, power to housing>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.CriGTEria B		

Input parameters

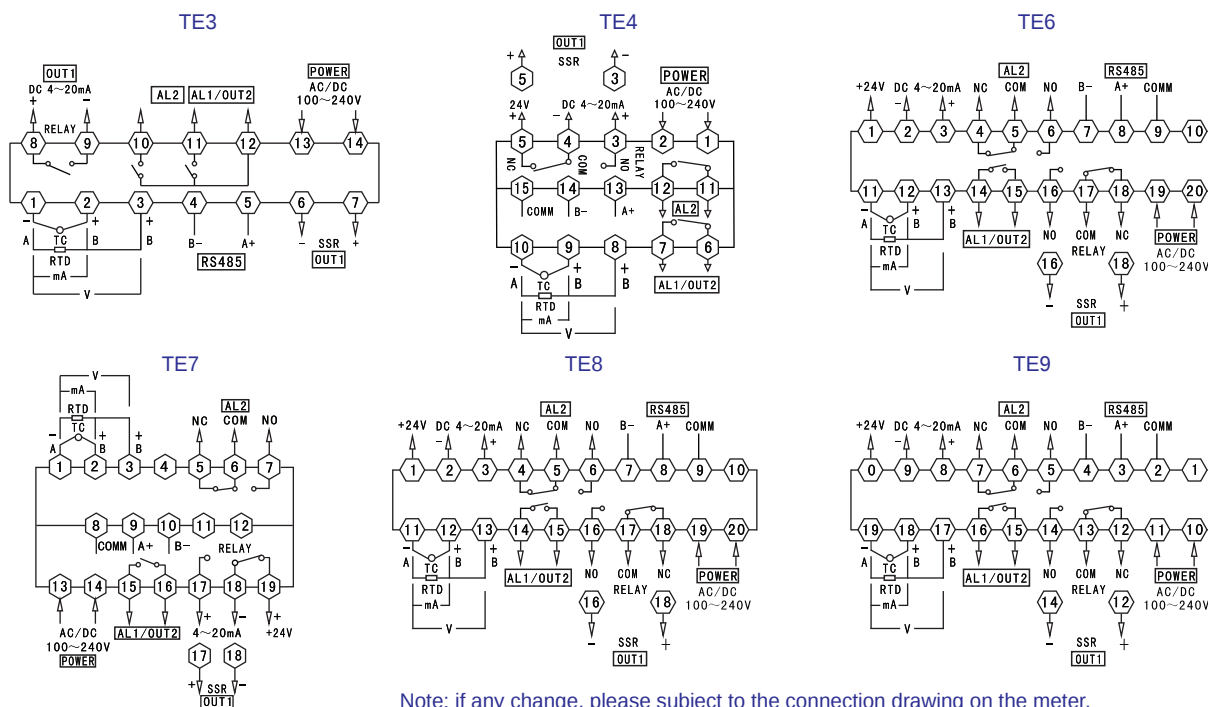
Symbol	Input type	Measuring range	Resolution	Accuracy	Input impedance	Symbol	Input type	Measuring range	Input impedance	Resolution
K	K	-50~1300℃	1℃	0.5%F.S	>100KΩ	0-50mV	-1999 ~9999		>500KΩ	12bit
J	J	0~1200℃	1℃	0.5%F.S	>100KΩ	0-400Ω			0.2mA	
E	E	0~850℃	1℃	0.5%F.S	>100KΩ	4-20mA			100Ω	
T	T	-50~400℃	1℃	0.5%F.S	>100KΩ	0-10V			>1MΩ	
B	B	250~1800℃	2℃	1%F.S	>500kΩ	*: Note: 4~20mA, 0~10V input need to be ordered				
R	R	-10~1700℃	1℃	1%F.S	>500kΩ					
S	S	-10~1600℃	1℃	1%F.S	>500kΩ					
N	N	-50~1200℃	1℃	0.5%F.S	>500kΩ					
PT100	PT100	-199.9~600.0℃	0.2℃	0.5%F.S	(0.2mA)					
CU50	CU50	-50.0~150.0℃	0.2℃	0.5%F.S	(0.2mA)					
CU100	CU100	-50.0~150.0℃	0.2℃	0.5%F.S	(0.2mA)					

Panel Meter

Sensor
Indicator

Temperature
Controller

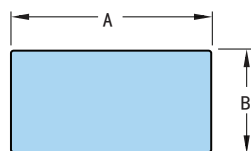
Connection



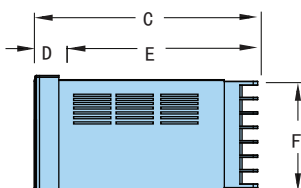
Note: if any change, please subject to the connection drawing on the meter.

Dimensions (Units: mm)

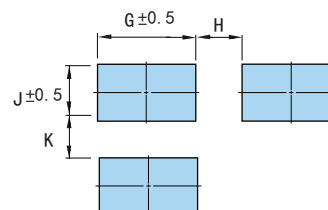
Panel size



Side size



Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
3:(72*36)	72	36	70.5	6.5	64	32	68	25	33	25
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

8. TEP Series Intelligent Programmable Temperature Controller

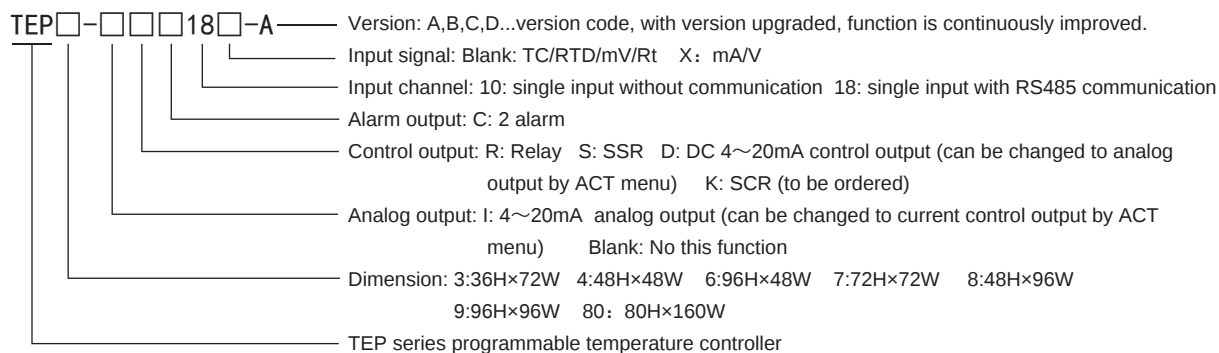
Photos and Features



Features:

- ★ Intelligent fuzzy PID algorithm with auto-tuning function, rapid performance, high efficiency.
- ★ Max 16 segments ramp/soak program, free setting curve number and length.
- ★ TC/RTD universal input. Linear signal input can be ordered.
- ★ RELAY/SSR/SCR control output for option.
- ★ Menu operation for manual output, pause, stop, repeat, PV activation, etc.
- ★ Optional 4-20mA control output or analog output.
- ★ Optional RS-485 communication to easy communicate with PLC, HMI.

Model Illustration



Ordering Information

Model	Program	Control output	Alarm	Analog output	Communication	Code
TEP□-R/SC10W	16 segments program	R: Relay S: SSR I: 4~20mA analog output D: 4~20mA control output	2	No	No	B0410TEP01
TEP□-R/SC18W			2	No	RS485	B0620TEP01
TEP□-DC10W			2	4~20mA(multiplex with control output)	No	B0570TEP01
TEP□-DC18W			2	4~20mA(multiplex with control output)	RS485	B0680TEP01
TEP6/8/9/80-IR/SC10W			2	No	No	B0570TEP01
TEP6/8/9/80-IR/SC18W			2	4~20mA	RS485	B0680TEP01

Note: Input signal 4~20mA, 0~10V and power supply DC24V need to be ordered, please indicate it before place an order.

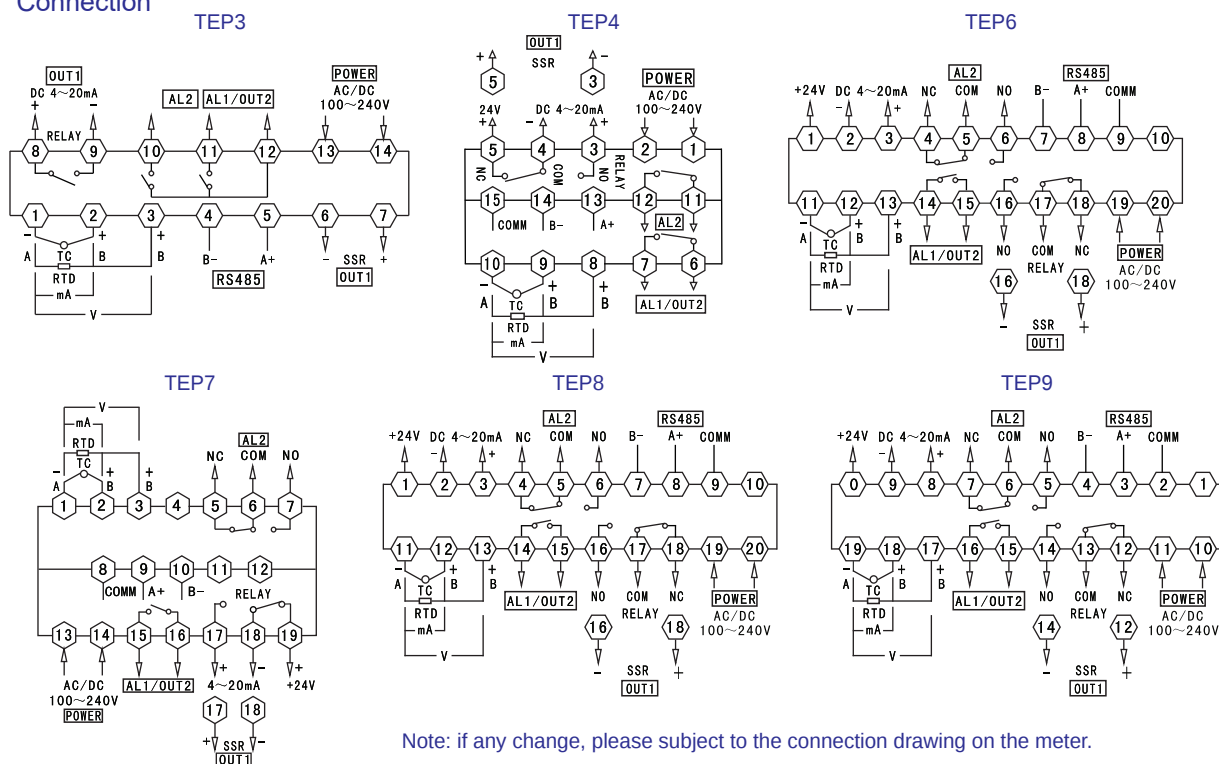
Technical Specifications

Sampling speed	2 times per second	Pulse trap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Relay capacity	AC 250V /3A Life of rated load>100000 times	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Power supply	AC/DC 100 ~ 240V (85-265V)	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Total consumption	< 6VA	Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V,1min
Ambient environment	Indoor use, temperature: 0 ~ 50°C, no condensation humidity:<85%RH, altitude<2000m	Weight	About 400g
Storage environment	-10 ~ 60°C, no condensation	Shell material	PC/ABS (flame class UL94V-0)
SSR output	DC 24V impulse level, load<30mA	Panel material	PET(F150/F200)
Current output	DC 4 ~ 20mA load<500Ω,temperature drift 250P	Power-off protection	10 years,times of writing:1 million times
Communication port	RS485 port Modbus-RTU protocol, maximum input: 30 units	Panel protection class	IP65(IEC60529)
Insulation impedance	Input, output, power to housing>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.CriGTEria B		

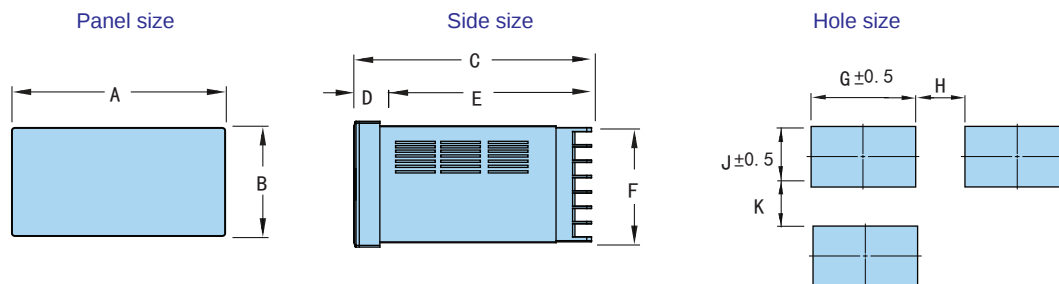
Input parameters

Symbol	Input type	Measuring range	Resolution	Accuracy	Input impedance	Symbol	Input type	Measuring range	Input impedance	Resolution
ℰ	K	-50～1300℃	1℃	0.5%F.S	>100KΩ	㏊	0-50mV	-1999 ～9999	>500KΩ	12 bit
J	J	0～1200℃	1℃	0.5%F.S	>100KΩ	㏋	0-400Ω		0.2mA	
E	E	0～850℃	1℃	0.5%F.S	>100KΩ	* ㏌	4-20mA		100Ω	
ℰ	T	-50～400℃	1℃	0.5%F.S	>100KΩ	* ㏍	0-10V		>1MΩ	
b	B	250～1800℃	2℃	1%F.S	>500kΩ	*: Note: 4～20mA、0～10V input need to be ordered				
r	R	-10～1700℃	1℃	1%F.S	>500kΩ					
S	S	-10～1600℃	1℃	1%F.S	>500kΩ					
n	N	-50～1200℃	1℃	0.5%F.S	>500kΩ					
PT100	PT100	-199.9～600.0℃	0.2℃	0.5%F.S	(0.2mA)					
CU50	CU50	-50.0～150.0℃	0.2℃	0.5%F.S	(0.2mA)					
CU100	CU100	-50.0～150.0℃	0.2℃	0.5%F.S	(0.2mA)					

Connection



Dimensions (Units: mm)



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
3:(72*36)	72	36	70.5	6.5	64	32	68	25	33	25
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45.5	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(80*160)	160	80	96	13	83	75.5	155.5	30	76	30

9. TEY Series Intelligent Temperature Controller

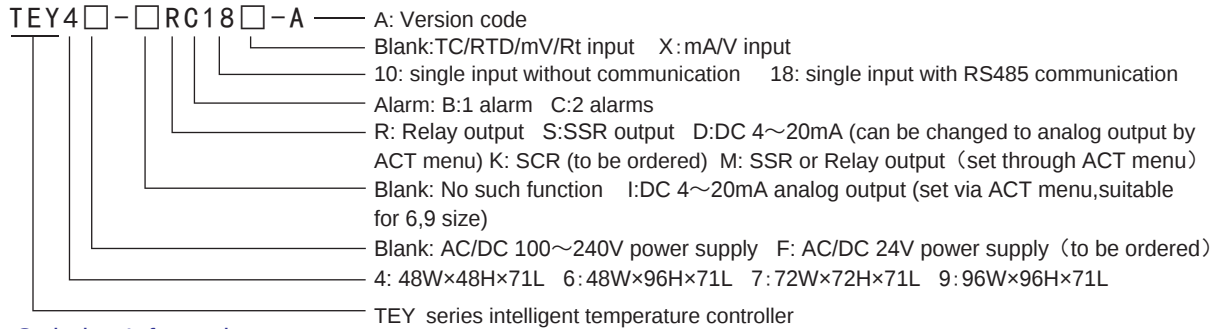
■ Photos and Features



Features:

- ★ Multi input signal, multi models for option.
- ★ With measurement display, control output, alarm output, analog output, RS485 communication function.
- ★ Multi PID control algorithms for option, with self-tuning function
- ★ Suitable for industrial machinery, machine tools, general measuring instruments and equipment.
- ★ Short shell, integrated digital tube.

■ Model Illustration



■ Ordering Information

Model	OUT1 Control output			Alarm output		Analog	Communication	Auxiliary power	Code
	RELAY	SSR	4~20mA	AL1 OUT2	AL2	4~20mA	RS485	24V	
TEY4-DC18□			•	•	•	◎	•	•	B0475TEY01
TEY4-DC10□			•	•	•	◎		•	B0335TEY01
TEY4-RC18□	•				•		•		B0405TEY01
TEY4-SC18□		•		•	•		•		B0405TEY01
TEY4-MC10□	•	•		•	•				B0263TEY01
TEY7-DC18□			•	•	•	◎	•	•	B0475TEY01
TEY7-DC10□			•	•	•	◎		•	B0335TEY01
TEY7-MC18□	•	•		•	•		•		B0405TEY01
TEY7-MC10□	•	•		•	•				B0263TEY01
TEY6/8/9-IMC18□	•	•	•	•	•	◎	•	•	B0515TEY01
TEY6/8/9-IMC10□	•	•	•	•	•	◎		•	B0375TEY01
TEY6/8/9-DC18□		•	•	•	•	◎	•	•	B0475TEY01
TEY6/8/9-DC10□		•	•	•	•	◎		•	B0335TEY01
TEY6/8/9-MC18□	•	•		•	•		•		B0405TEY01
TEY6/8/9-MC10□	•	•		•	•				B0263TEY01

□: The default "Blank" input signal is TC/RTD/mV/Rt; "X" input signal is 4~20mA/0~10V.

•: Standard configuration function.

◎: With this function, but multiplexed with other functions. This series has only one DC 4-20mA output, but it can be configured for main control output or transmission output through the ACT menu.

■ Specifications

Sampling speed	2 times per second	Pulse trap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Relay capacity	AC 250V /3A Life of rated load>100000 times	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Power supply	AC/DC 100 ~ 240V (85-265V)	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Total consumption	<10VA		
Ambient environment	Indoor use, temperature: 0~50°C, no condensation, humidity:<85%RH, altitude<2000m	Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V,1min
Storage environment	-10 ~ 60°C, no condensation	Weight	About 400g
SSR output	DC 24V impulse level, load<30mA	Shell material	PC/ABS (flame class UL94V-0)
Current output	DC 4~20mA load<500Ω, temperature drift 250PPM	Panel material	PC
Communication port	RS485 port Modbus-RTU protocol, maximum input:30units	Power-off protection	10 years,times of writing:1 million times
Insulation impedance	Input, output, power to housing>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.CriGTEria B		

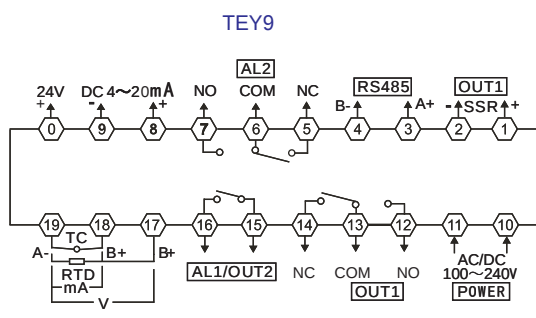
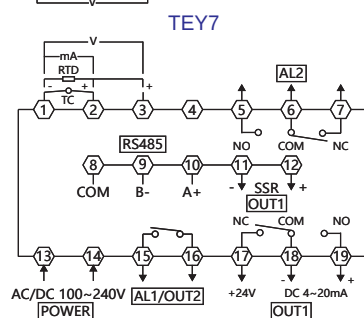
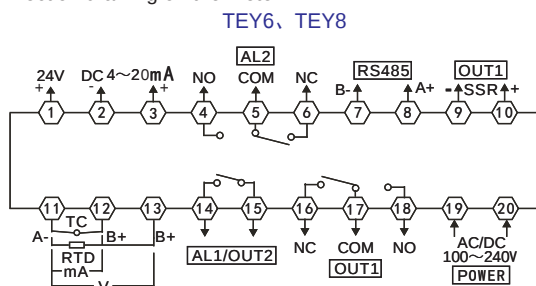
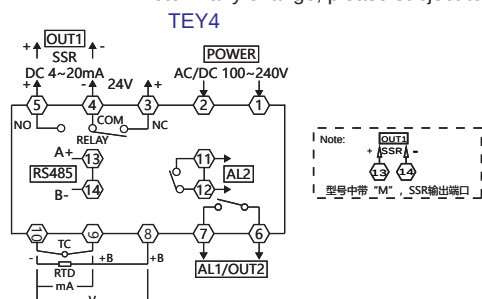
Input parameters

*: Please specify signal input requirements when ordering.

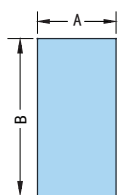
Input type	Symbol	Measuring range	Resolution	Accuracy	Input impedance/ auxiliary current	Communication data code
K1	$\overline{E1}$	-50 ~ 1200	1°C	0.5%F.S±3digits	>500KΩ	0
K2	$\overline{E2}$	-50.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500kΩ	16
J1	$\overline{J1}$	0 ~ 1200	1°C	0.5%F.S±3digits	>500KΩ	1
J2	$\overline{J2}$	0.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500KΩ	17
E1	$\overline{E1}$	0 ~ 850	1°C	0.5%F.S±3digits	>500KΩ	2
E2	$\overline{E2}$	0.0 ~ 850.0	0.3°C	0.5%F.S±1°C	>500KΩ	18
T1	$\overline{E1}$	-50 ~ 400	1°C	0.5%F.S±3°C	>500KΩ	3
T2	$\overline{E2}$	-50.0 ~ 400.0	0.4°C	0.5%F.S±3°C	>500KΩ	19
B	$\overline{b}$	250 ~ 1800	1°C	1%F.S±2°C	>500KΩ	4
R	$\overline{r}$	-10 ~ 1700	1°C	1%F.S±2°C	>500KΩ	5
S	$\overline{S}$	-10 ~ 1600	1°C	1%F.S±2°C	>500KΩ	6
N1	$\overline{n1}$	-50 ~ 1200	1°C	0.5%F.S±1°C	>500KΩ	7
N2	$\overline{n2}$	-50.0 ~ 999.9	0.2°C	0.5%F.S±1°C	>500KΩ	20
PT100-1	$\overline{PE1}$	-200.0 ~ 600.0	0.2°C	0.5%F.S±0.3°C	0.2mA	8
PT100-2	$\overline{PE2}$	-200 ~ 600	1°C	0.5%F.S±3digits	0.2mA	21
JPT100-1	$\overline{JPE1}$	-200.0 ~ 500.0	0.2°C	0.5%F.S±0.3°C	0.2mA	9
JPT100-2	$\overline{JPE2}$	-200 ~ 500	1°C	0.5%F.S±3digits	0.2mA	22
CU50-1	$\overline{CU51}$	-50.0 ~ 150.0	0.2°C	0.5%F.S±3°C	0.2mA	10
CU50-2	$\overline{CU52}$	-50 ~ 150	1°C	0.5%F.S±3°C	0.2mA	23
CU100-1	$\overline{CU01}$	-50.0 ~ 150.0	0.2°C	0.5%F.S±1°C	0.2mA	11
CU100-2	$\overline{CU02}$	-50 ~ 150	1°C	0.5%F.S±3digits	0.2mA	24
0 ~ 50mV	$\overline{H1}$	-1999 ~ 9999	12bit	0.5%F.S±3digits	>500kΩ	12
0 ~ 400Ω	$\overline{r1}$	-1999 ~ 9999	12bit	0.5%F.S±3digits	0.2mA	13
* 4 ~ 20mA	$\overline{H8}$	-1999 ~ 9999	12bit	0.5%F.S±3digits	<50Ω	14
* 0 ~ 10V	$\overline{V1}$	-1999 ~ 9999	12bit	0.5%F.S±3digits	>1MΩ	15

Connection

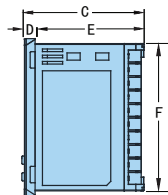
Note: if any change, please subject to the connection drawing on the meter.



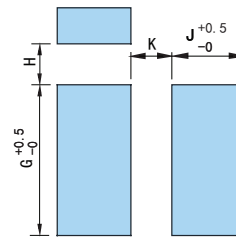
Dimensions (Units: mm)



Panel size



Side size



Hole size

Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	73	6.5	66.5	44	45	25	45	25
6:(96*48)	48	96	73	6.5	66.5	90	91.5	25	45	25
7:(72*72)	72	72	73	6.5	66.5	66	67.5	25	67.5	25
8:(48*96)	96	48	73	6.5	66.5	90	91.5	25	45	25
9:(96*96)	96	96	73	6.5	66.5	90	91.5	25	91.5	25

Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

10. TM Series Universal Input Thumb Switch Temperature Controller

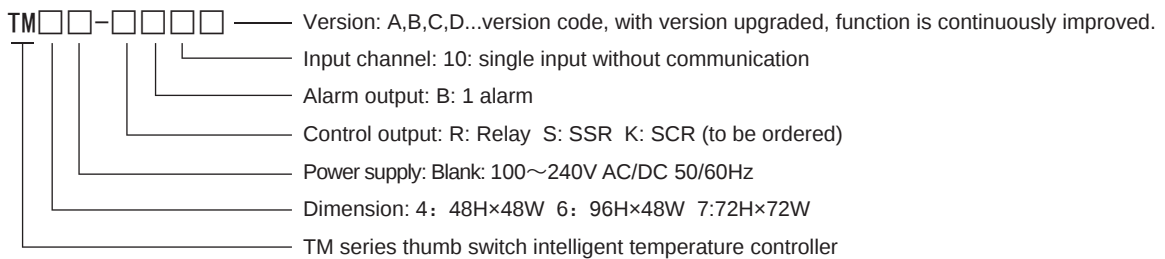
Photos and Features



Features:

- ★ Easy operation,economy model.
- ★ Intelligent fuzzy PID algorithm with auto-tuning function.
- ★ One-press to enter the auto-tuning state, calculate the best controlling state automatically.
- ★ 1 loop free-setting alarm function.
- ★ Heating control , compressor cooling control, heating-cooling control for extruder screw.
- ★ Thumb switch for easy operation.

Model Illustration



Ordering Information

Model	Panel size	Alarm	Control output	Input type	Power supply	Code
TM4-RB10,TM4-SB10	4:48W×48H	1 loop	S: SSR	Universal input (TC/RTD)	AC/DC 100~240V	A0238AI01
TM6-RB10,TM6-SB10	6:48W×96H		R: Relay			A0238AI01
TM7-RB10,TM7-SB10	7:72W×72H		K: SCR (to be ordered)			A0238AI01

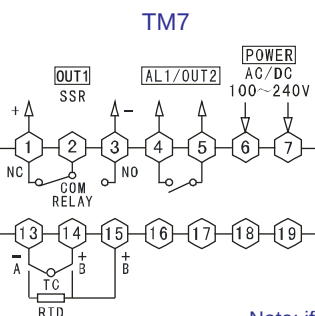
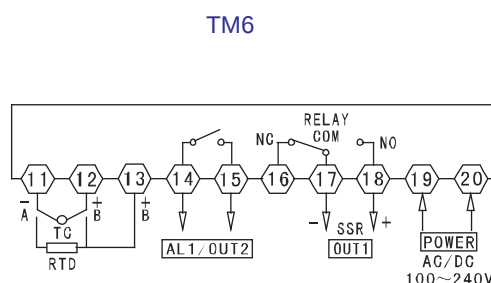
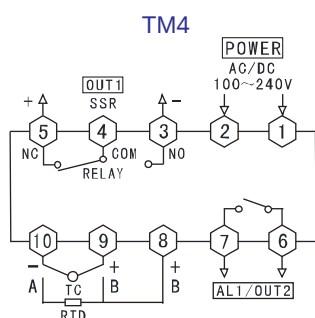
Technical Specifications

Sampling speed	2 times per second
Relay capacity	AC 250V /3A Life of rated load>100 thousand times
Power supply	AC/DC 100 ~ 240V (85-265V)
Total consumption	< 6VA
Ambient environment	Indoor use, temperature: 0 ~ 50°C, no condensation, humidity:<85%RH, altitude<2000m
Storage environment	-10 ~ 60°C, no condensation
SSR output	DC 24V impulse level, load<30mA
Insulation impedance	Input, output, power to housing>20MΩ
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Pulse triap anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V, 1min
Weight	About 400g
Shell material	PC/ABS (flame class UL94V-0)
Panel material	PET(F150/F200)
Power-off protection	10 years, times of writing:1 million times
Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II (Enhanced insulation)

Input parameters

Input type	Symbol	Measuring range	Resolution	Accuracy	Input impedance/auxiliary current
K		-50 ~ 999	1°C	0.5%F.S±3digits	> 500kΩ
J		0 ~ 999	1°C	0.5%F.S±3digits	> 500kΩ
E		0 ~ 850	1°C	0.5%F.S±3digits	> 500kΩ
T		-50 ~ 400	1°C	0.5%F.S±2°C	> 500kΩ
PT100		-200 ~ 600	1°C	0.5%F.S±3digits	0.2mA
CU50		-50 ~ 150	1°C	0.5%F.S±3°C	0.2mA
CU100		-50 ~ 150	1°C	0.5%F.S±1°C	0.2mA

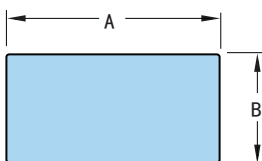
Connection



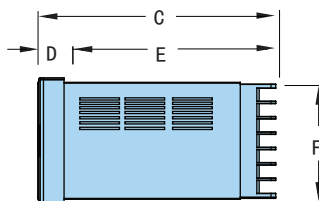
Note: if there is any change, please subject to the connection on the meter.

Dimensions (Units: mm)

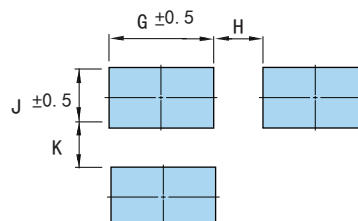
Panel size



Side size



Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45.5	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25

11. GTE Din Rail Mounting Module Type Temperature Controller

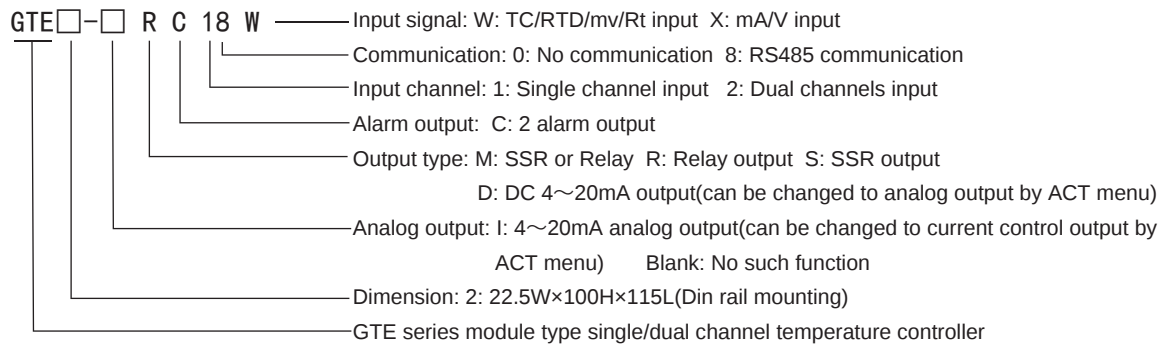
■ Photos and Features



Features:

- ★ Module type design, din rail mounting, with display, easy setting, no need to install display module separately.
- ★ RS485 communication, easy to communicate with PLC, HMI.
- ★ With intelligent PID control and auto-turning function.
- ★ RELAY/SSR, 4~20mA control output available.

■ Model Illustration



■ Ordering Information

Model	Channel	Control output function	RS485	Alarm	Analog 4~20mA	Code
GTE2-MC10W/X	Single channel	SSR, Relay output	No	2	No	B0380GTE01
GTE2-MC18W/X		SSR, Relay output	Yes	2	No	B0490GTE01
GTE2-IMC10W/X		SSR, Relay output, 4~20mA available	No	2	multiplex with control output	B0450GTE01
GTE2-IMC18W/X		SSR, Relay output, 4~20mA available	Yes	2	multiplex with control output	B0560GTE01
GTE2-RC20T/R/X	Dual channel	Relay output	No	2	No	B0520GTE01
GTE2-RC28T/R/X		Relay output	Yes	2	No	B0620GTE01
GTE2-SC20T/R/X		SSR output	No	2	No	B0520GTE01
GTE2-SC28T/R/X		SSR output	Yes	2	No	B0620GTE01
GTE2-DC20T/R/X		4~20mA	No	2	multiplex with control output	B0620GTE01
GTE2-DC28T/R/X		4~20mA	Yes	2	multiplex with control output	B0720GTE01

Note: Input signal 4~20mA, 0~10V and power supply DV24V need to be ordered, please indicate it before place and order.

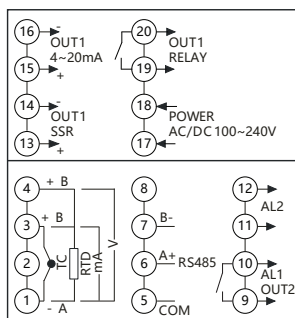
■ Technical Specifications

Sampling rate	2 times per second	ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B
Relay capacity	AC 250V /3A Life of rated load>100000/time	Pulse traip anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B
Power supply	AC/DC 100 ~ 240V (85-265V)	Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B
Total consumption	< 6VA	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
Ambient environment	Indoor use, temperature:0 ~ 50°C, no condensation, humidity:<85%RH, altitude 2000m	Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V, 1min
Storage environment	-10 ~ 60°C, no condensation	Weight	About 400g
SSR output	DC 24V impulse level, load<30mA	Shell material	PA66-FR(flame class UL94V-0)
Current output	DC 4 ~ 20mA load<500Ω, temperature drift 250PPM	Panel material	PVC and PEM
Communication port	RS485 port Modbus-RTU protocol, maximum input: 30 units	Power-off protection	10 years, times of writing: 1 million times
Insulation impedance	Input, output, power cabinet>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)

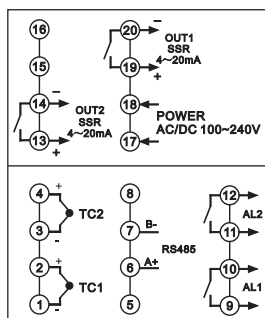
Input parameters

Input	Symbol	Measuring range	Resolution	Accuracy	Input impedance/ auxiliary current
K	K	-50 ~ 1200	1°C	0.5%F.S $\pm$ 3digits	>500k Ω
J	J	0 ~ 1200	1°C	0.5%F.S $\pm$ 3digits	>500k Ω
E	E	0 ~ 850	1°C	0.5%F.S $\pm$ 3digits	>500k Ω
T	T	-50 ~ 400	1°C	0.5%F.S $\pm$ 2°C	>500k Ω
S	S	-10 ~ 1600	1°C	0.5%F.S $\pm$ 1°C	>500k Ω
PT100	PT100	-200 ~ 600	0.2°C	0.5%F.S $\pm$ 3digits	0.2mA
CU50	CU50	-50 ~ 150	0.2°C	0.5%F.S $\pm$ 3°C	0.2mA
CU100	CU100	-50 ~ 150	0.2°C	0.5%F.S $\pm$ 1°C	0.2mA
0 ~ 50mV	mV	-1999 ~ 9999	12bit	0.5%F.S $\pm$ 3digits	>500k Ω
0 ~ 400 Ω	Ω	-1999 ~ 9999	12bit	0.5%F.S $\pm$ 3digits	0.2mA
4 ~ 20mA	mA	-1999 ~ 9999	12bit	0.5%F.S $\pm$ 3digits	100 Ω
0 ~ 10V	V	-1999 ~ 9999	12bit	0.5%F.S $\pm$ 3digits	>1M Ω

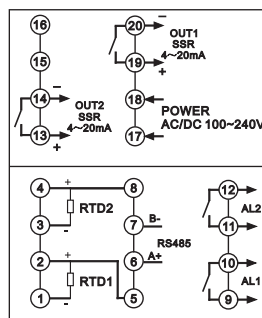
Connection



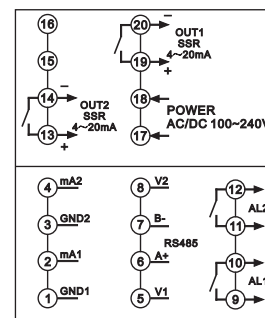
Single channel connection



GTE2-T



GTE2-R

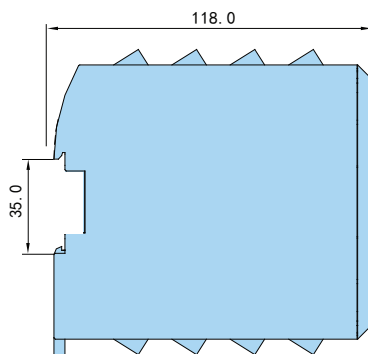
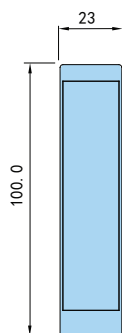


GTE2-X

Dual channels connection

Note: if any change, please subject to the connection drawing on the meter.

Dimensions (Units: mm)



13. GTAX Din Rail Mounting Type 4 Channels Temperature Controller

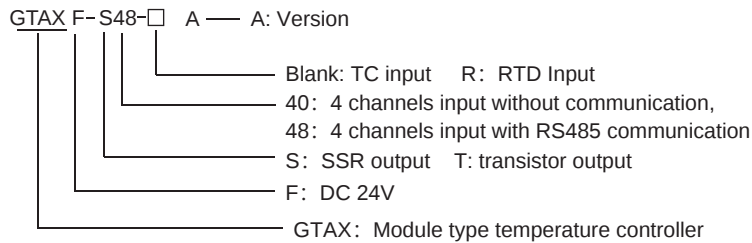
■ Photos and Features



Features:

- ★ Multi Tc/Rtd input signal for option, with isolation between signal inputs,
- ★ With measurement display, control output, RS485 communication function.
- ★ Multi PID control algorithms for option, with self-tuning function.
- ★ Suitable for measuring and controlling industrial equipment or measuring instruments.
- ★ With limit target value setting function

■ Model Illustration



■ Ordering Information

Model	RS485	Input	Output	Power supply	Code
GTAX-S48	Yes	TC	SSR drive voltage output	100-240V AC/DC	B0750GTAX01
GTAX-T48	Yes	TC	Transistor passive output	100-240V AC/DC	B0750GTAX01
GTAX-S40	No	TC	SSR drive voltage output	100-240V AC/DC	B0600GTAX01
GTAX-T40	No	TC	Transistor passive output	100-240V AC/DC	B0600GTAX01
GTAXF-S48-R	Yes	RTD	SSR drive voltage output	24V AC/DC	B0750GTAX01

■ Technical Specifications

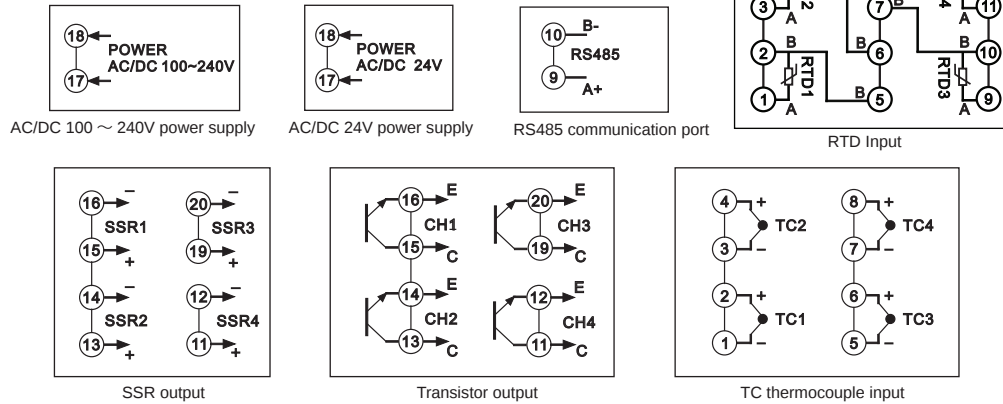
Display refresh	2 times/second/channel		
Power supply	100~240V AC/DC (85-265V) AC/DC 24V (to be ordered)		
Total consumption	<6VA		
Ambient environment	Indoor use, temperature: 0 ~ 50°C no condensation, humidity: <85%RH Altitude: <2000m		
Storage environment	-10~60°C, no condensation		
SSR output	DC 24V pulse level, each loop load <20mA		
Transistor output capacity	DC 24V DC 100mA each loop		
Communication port	RS485 port Modbus-RTU protocol		
Insulation resistance	Input, output, power to housing >20MΩ		
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B		
Pulse traip anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B		
Surge immunity	IEC/EN61000-4-5 ±2KV perf.Criteria B		
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0%~70% perf.Criteria B		
Dielectric strength	Signal input & output & power 1500VAC 1min, <60V Low voltage circuit between DC500V, 1min		
Weight	about 400g		
Shell material	PA66-FR (flame class UL94V-0)		
Panel material	PVC panel sticker and PEM key		
Power-off protection	10 years, times of writing: 1 million times		
Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)		

Input Signal List

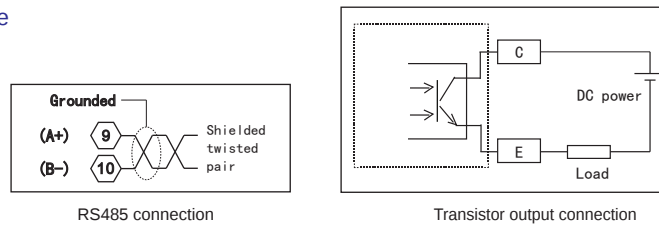
Input type	Symbol	Measuring range	Resolution	Accuracy	Input resistance Auxiliary current	Communication parameter code
K	K1	-50~1200	1°C	0.5%F.S±3digits	>500kΩ	0
	K2	-50.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ	16
J	J1	0~1200	1°C	0.5%F.S±3digits	>500kΩ	1
	J2	0.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ	17
E	E1	0~850	1°C	0.5%F.S±3digits	>500kΩ	2
	E2	0.0~850.0	0.3°C	0.5%F.S±1°C	>500kΩ	18
T	T1	-50~400	1°C	0.5%F.S±3°C	>500kΩ	3
	T2	-50.0~400.0	0.4°C	0.5%F.S±3°C	>500kΩ	19
B	b	250~1800	1°C	1%F.S±2°C	>500kΩ	4
R	r	-10~1700	1°C	1%F.S±2°C	>500kΩ	5
S	s	-10~1600	1°C	1%F.S±2°C	>500kΩ	6
N	N1	-50~1200	1°C	0.5%F.S±1°C	>500kΩ	7
	N2	-50.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ	20
0~50mV		-1999~9999	12bit	0.5%F.S±3digits	>500kΩ	12

Connection

1. Connection explanation

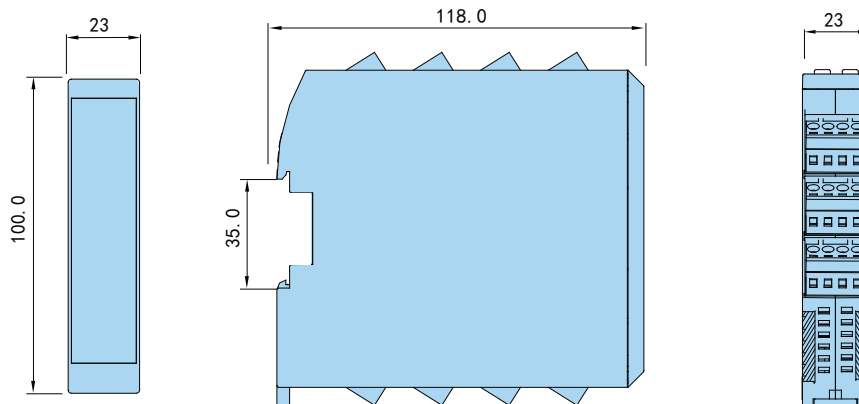


2. Connection example



Note: if any change, please subject to the actual connection drawing on the meter.

Dimension & Installation (units: mm)



13. TH Series Temperature Humidity Controller

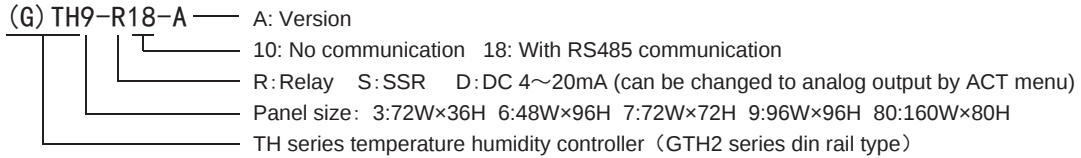
Photos and Features



Features:

- ★ With heating, cooling, humidifying, dehumidifying, 4 loops control output.
- ★ Measuring accuracy: humidity $\pm 2\%RH$, temperature $\pm 0.2^\circ C$.
- ★ 4 digits temperature and humidity display, resolution $0.1^\circ C$ or $0.1\%RH$.
- ★ With PID or ON/OFF heating function (ON/OFF or compressor cooling delay function, ON/OFF humidifying and dehumidifying function).
- ★ With RS485 communication function, adopt Modbus-RTU communication protocol.
- ★ Adopt high accuracy digital temperature humidity sensor.

Model Illustration



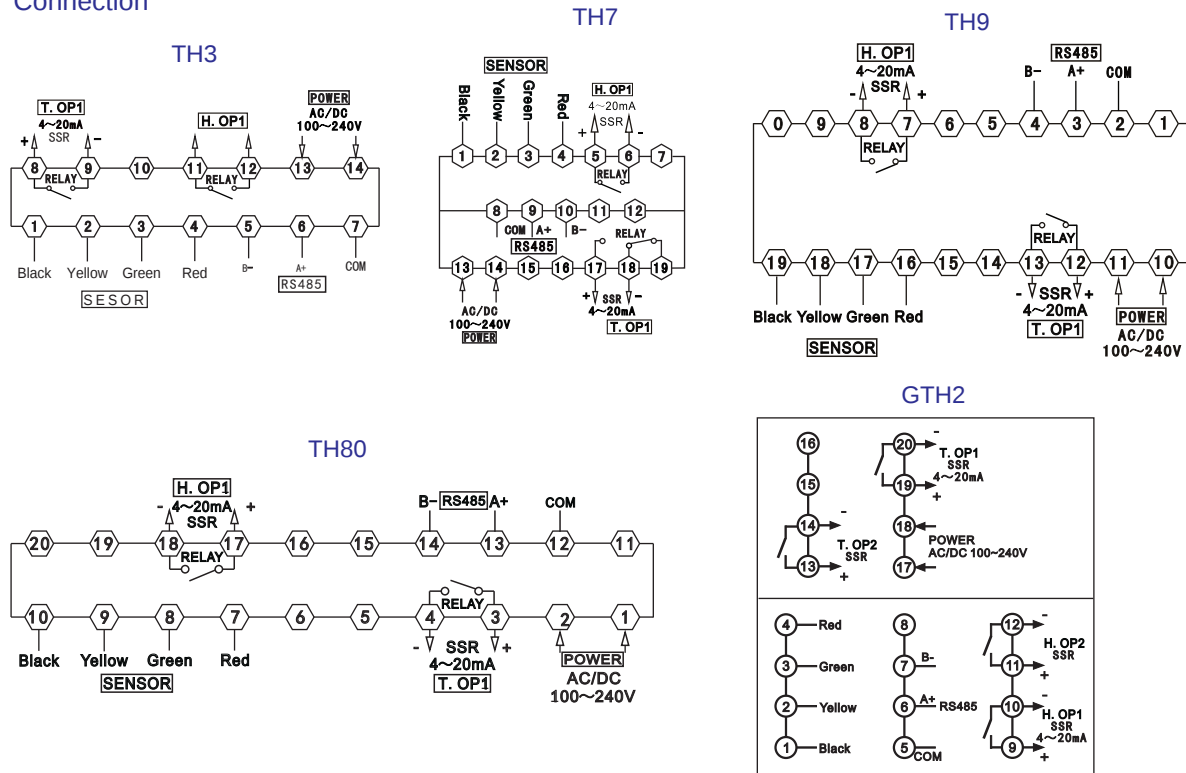
Ordering Information

Model	Power supply	Control output	Sensor	RS485	Code
TH□/GTH2-A10	AC/DC 100 ~ 240V	No	Plastic housing temperature humidity sensor	No	B0300TH01
TH□/GTH2-A18				Yes	B0400TH01
TH□/GTH2-R10	AC/DC 100 ~ 240V	Relay heating/cooling or relay humidifying/dehumidifying		No	B0400TH01
TH□/GTH2-R18				Yes	B0500TH01
TH□/GTH2-S10	AC/DC 100 ~ 240V	SSR heating/cooling or SSR humidifying/dehumidifying		No	B0400TH01
TH□/GTH2-S18				Yes	B0500TH01
TH□/GTH2-DR10	AC/DC 100 ~ 240V	4~20mA heating or analog/relay cooling or relay humidifying/dehumidifying		No	B0450TH01
TH□/GTH2-DR18				Yes	B0550TH01
TH□/GTH2-A10C	AC/DC 100 ~ 240V	No	Stainless steel housing temperature humidity sensor	No	B0350TH01
TH□/GTH2-A18C				Yes	B0450TH01
TH□/GTH2-R10C	AC/DC 100 ~ 240V	Relay heating/cooling or relay humidifying/dehumidifying		No	B0450TH01
TH□/GTH2-R18C				Yes	B0550TH01
TH□/GTH2-S10C	AC/DC 100 ~ 240V	SSR heating/cooling or SSR humidifying/dehumidifying		No	B0450TH01
TH□/GTH2-S18C				Yes	B0550TH01
TH□/GTH2-DR10C	AC/DC 100 ~ 240V	4~20mA heating or analog/relay cooling or relay humidifying/dehumidifying		No	B0500TH01
TH□/GTH2-DR18C				Yes	B0600TH01
DMSHT3XD0A temperature humidity sensor	Plastic housing temperature humidity sensor				B0120TH01
DMSHT3XD0B temperature humidity sensor	Plastic housing, rail-mounted, with wiring terminal				B0120TH01
DMSHT3XD0C temperature humidity sensor	Stainless steel housing temperature humidity sensor with aviation plugs				B0170TH01

Technical Specifications

Recorder	Sampling speed	0.5/1/2/4/10 times per second selected by MPS menu	Pulse trap anti-interference	IEC/EN61000-4-4 $\pm 2KV$ perf.Criteria B
	Relay capacity	AC 250V /3A Life of rated load>100000 times	Surge immunity	IEC/EN61000-4-5 $\pm 2KV$ perf.Criteria B
Signal Isolator	Power supply	AC/DC 100 ~ 240V (85-265V)	Voltage drop & short interruption immunity	IEC/EN61000-4-29 0% ~ 70% perf.Criteria B
	Total consumption	< 6VA	Dielectric strength	Signal input & output & power 2000VAC 1min, <60V Low voltage circuit between DC500V,1min
Power Meter Introduction	Ambient environment	Indoor use, temperature: 0 ~ 50°C, no condensation, humidity: <85%RH, altitude<2000m	Weight	About 400g
	Storage environment	-10 ~ 60°C, no condensation	Shell material	PC/ABS (flame class UL94V-0)
	SSR output	DC 24V impulse level, load<30mA	Panel material	PET(F150/F200)
	Current output	DC 4 ~ 20mA load<500Ω, temperature drift 250PPM	Power-off protection	10 years,times of writing:1 million times
	Communication port	RS485 port Modbus-RTU protocol, maximum input:30units	Panel protection class	IP65(IEC60529)
	Insulation impedance	Input, output, power to housing>20MΩ	Safe standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)
	ESD	IEC/EN61000-4-2 Contact $\pm 4KV$ /Air $\pm 8KV$ perf.Criteria B		

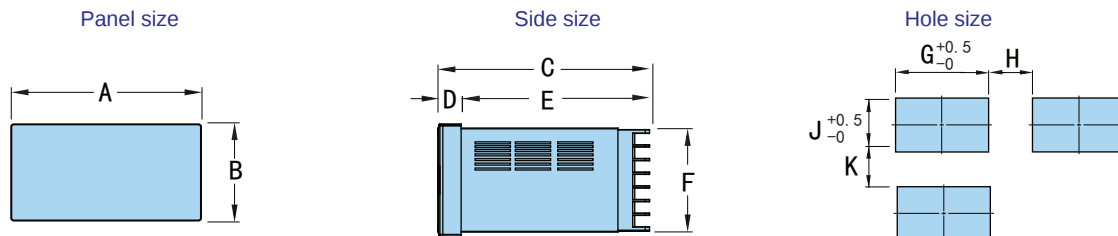
■ Connection



Note: if any change, please subject to the connection drawing on the meter.

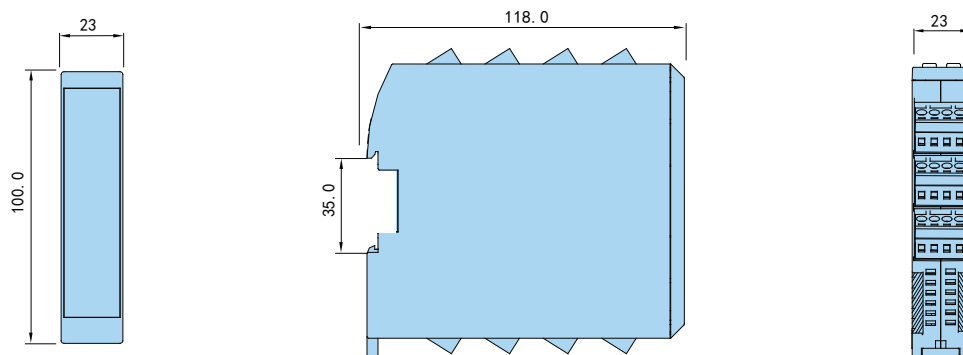
■ Dimensions (Units: mm)

TH series dimension



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
3:(72*36)	72	36	70.5	6.5	64	32	68	25	33	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45	25
9:(96*96)	96	96	97.5	9	88.5	91.5	92	25	92	25
80:(160*80)	160	80	96	13	83	75.5	155.5	30	76	30

GTH2 series dimension



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Rotary Encoder

Proximity Sensor

Solid State Relay

Recorder

Signal Isolator

Power Meter Introduction

14. GTD series multi-channel temperature controller

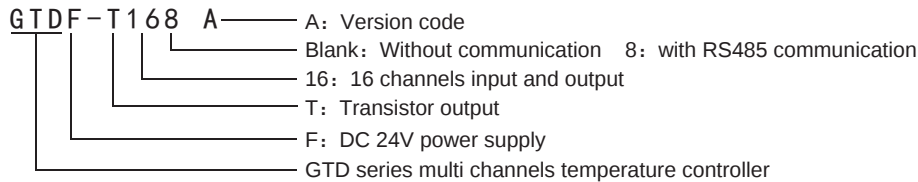
■ Photos and Features



Features:

- ★ Using STM32 series 32-bit MCU processor, multi-series meter co-platform chip.
- ★ The AD chip sampling rate is up to 125,000 times/second, 16 channels are sampling at high speed, 0.5% F.S accuracy.
- ★ 16 channels thermocouple isolated input, 16 channels transistor control output, with PID operation and auto-tuning function.
- ★ DC 24V power supply, RS485 communication interface, standard Modbus communication protocol.
- ★ Software alarm, communication collect the alarm status.
- ★ 2 loops alarm relay output.
- ★ Support total power setting, intelligent power distribution per channel to reduce the grid fluctuations.

■ Model Illustration



■ Ordering Information

Model	Control output	RS485	Code
GTD-T168	Transistor output	Yes	B2000GTD01
GTD-T16	Transistor output	No	B1860GTD01

■ Technical Specifications

Main control output type	Transistor open collector output	
Main control output capacity	DC 24V maximum 100mA withstand voltage: 100V	
Display update	1 time per second per channel	
Power supply	DC 24V	
Power consumption	< 4VA	
Ambient environment	Indoor use, temperature: 0~50°C, no condensation, humidity: <85%RH, altitude <2000m	
Storage environment	-10 ~ 60°C, no condensation	
Communication	RS485 interface, Modbus-RTU protocol	
Insulation impedance	Input, output, power to housing > 20MΩ	
ESD	IEC/EN61000-4-2 Contact ±4KV /Air ±8KV perf.Criteria B	
Pulse traip anti-interference	IEC/EN61000-4-4 ±2KV perf.Criteria B	
Surge immunity	IEC/EN61000-4-5 ±0.5KV perf.Criteria B	
Voltage drop & short interruption immunity	IEC/EN61000-4-29 0%~70% perf.Criteria B	
Dielectric strength	Between the power supply and other input and output circuits AC1000V, 1 minute	
Weight	about 400g	
Shell material	PC/ABS (flame class UL94V-0)	
Panel material	PVC mask and PEM silicone button	
Power-off memory protection	10 years	
Safety standard	IEC61010-1 Overvoltage category II, pollution level 2, level II(Enhanced insulation)	

Input parameters

Input type	Symbol	Measuring range	Resolution	Accuracy	Input impedance Auxiliary current	Communication parameter code
K	K1	E1	-50~1200	1°C	0.5%F.S±3digits	>500kΩ
	K2	E2	-50.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ
J	J1	J1	0~1200	1°C	0.5%F.S±3digits	>500kΩ
	J2	J2	0.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ
E	E1	E1	0~850	1°C	0.5%F.S±3digits	>500kΩ
	E2	E2	0.0~850.0	0.3°C	0.5%F.S±1°C	>500kΩ
T	T1	E1	-50~400	1°C	0.5%F.S±3°C	>500kΩ
	T2	E2	-50.0~400.0	0.4°C	0.5%F.S±3°C	>500kΩ
B	b		250~1800	1°C	1%F.S±2°C	>500kΩ
R	r		-10~1700	1°C	1%F.S±2°C	>500kΩ
S	S		-10~1600	1°C	1%F.S±2°C	>500kΩ
N	N1	N1	-50~1200	1°C	0.5%F.S±1°C	>500kΩ
	N2	N2	-50.0~999.9	0.2°C	0.5%F.S±1°C	>500kΩ
0~50mV		N1	-1999~9999	12bit	0.5%F.S±3digits	>500kΩ

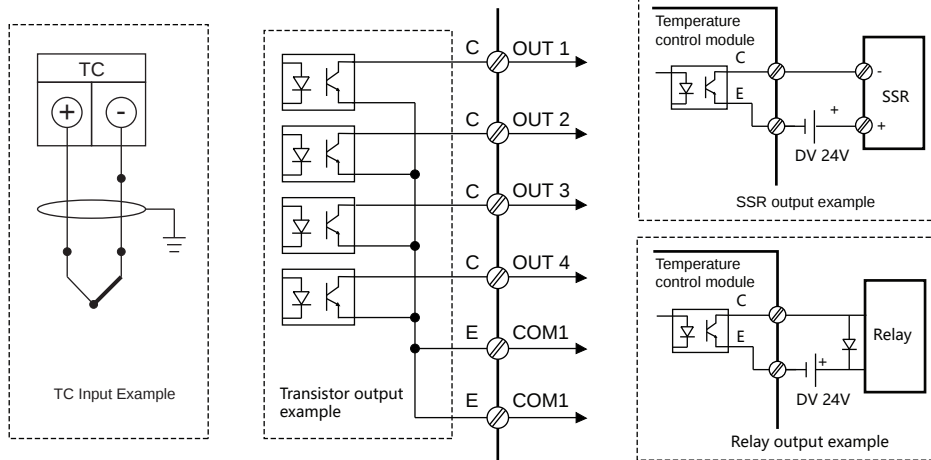
Connection Note: if any change, please subject to the connection drawing on the meter.

1. Wiring diagram

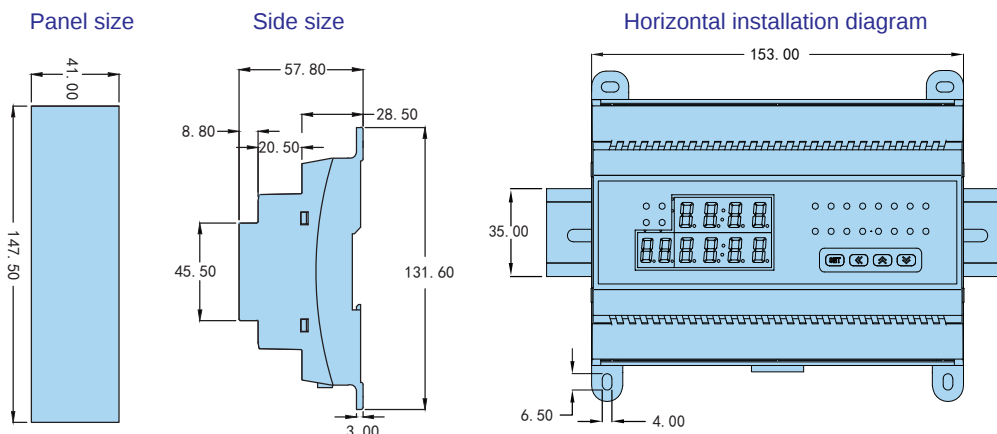
+	-	C	E	C	C	C	C	E	E	C	C	C	C	E	E			+	-	+	-	+	-	+	-	+	-
POWER		AU2	9	10	11	12	COM3		13	14	15	16	COM4		NC		9	10	11	12	13	14	15	16			
OUT												NC		TC INPUT													

RS485		AU1	OUT					NC					TC INPUT							
1	2	3	4	COM1		5	6	7	8	COM2		1	2	3	4	5	6	7	8	
A	B	G	C	E	C	C	C	C	E	E	C	C	+	-	+	-	+	-	+	-

2. Wiring diagram



Dimensions (Units: mm)



Digital Counter Function Comparison Table

Panel Meter	No.	Model Function	CL	CI	CI-W	CA	CA-W	CA-X	CM	CX	TCN
											
Sensor Indicator											
Temperature Controller	1	Realtime measurement	Counting/length counting/rpm counting	Counting/length counting/batch counting	Counting/length counting/batch counting/total counting	Counting/length counting	Counting/length counting	Counting/length counting	Counting/length counting/time counting	Counting/length counting/time counting	Counting
Counter	2	Input	2	2	2	1	1	2	2	2	1
	3	Input type	Count up/Count down/Count up & down/Rotary encoder count up & down			Count up	Count up	Count up/Count down/Count up & down/Rotary encoder count up & down			Count up
Timer Relay	4	Output	Relay/SCR/SSR	Relay/SCR/SSR	Relay/SCR/SSR	Relay/SCR	Relay/SCR	Relay/SCR	Relay/SCR	Relay/SCR	Relay
	5	Outputs	2 alarms + 1 rpm	2 alarms + 1 rpm	2 alarms + 1 rpm	1	1	1	2	1	1
Tacho/Speed/Pulse Meter	6	Output type	12	12	12	4	4	12	8	4	4
Recorder	7	Ratio factor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	8	Ratio Demical Point	5 digits settable	5 digits settable	5 or 7 digits settable	3 digits fixed	3 digits fixed	5 digits settable	5 digits settable	3 digits fixed	No
Signal Isolator	9	Digit	6	6	6, 8	6	6	6	4, 5, 6	4, 6	4, 6
Rotary Encoder	10	Demical Point	Settable	Settable	Settable	Settable	Settable	Settable	Settable	Automatic	No
	11	SV Demical Point	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Settable	Settable	No
Proximity Sensor	12	Delay output	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	13	Stop Reset	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Solid State Relay	14	Analog	To be ordered	No	To be ordered	No	No	No	No	No	No
Power Meter Introduction	15	Comm	Yes	Yes	Yes	/	/	No	/	/	/

Remarks: * All models of transistor output and solid state output need to be ordered;

1. CI Series Digital Counter

Photos and Features



CI Series



CI-W Series

Features:

- ★ Multi-function: number counting/length counting/ batch counting.
- ★ High speed counting, up to 10Kcps.
- ★ 1 loop batch output/ 2 loops counting output.
- ★ Voltage input (PNP) and non-voltage input (NPN) can be switched by software.
- ★ Adjustable pulse width of control signal.
- ★ Key Lock Function.
- ★ RS485 communication function selectable.
- ★ Excellent anti-interference capability.

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

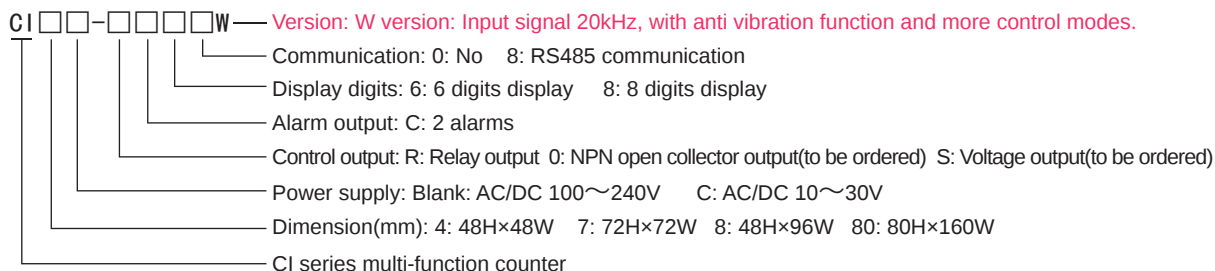
Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

Model Illustration



Ordering Information

Model	Panel Size(mm)	Output Mode	Output	Display	Batch output	Communication	Code
CI80-RC60	80H×160W	Relay output	2 loops	6 digits	1 loop relay	No	B0380CI01
CI80-RC68	80H×160W					RS485	B0510CI01
CI8-RC60	48H×96W					No	B0380CI01
CI8-RC68	48H×96W					RS485	B0510CI01
CI7-RC60	72H×72W					No	B0380CI01
CI7-RC68	72H×72W					RS485	B0510CI01
CI4-RC60	48H×48W				No	No	B0380CI01
CI4-RC68	48H×48W					RS485	B0510CI01
CI8-RC80	48H×96W			8 digits	1 loop relay	No	B0510CI01
CI8-RC88	48H×96W					RS485	B0620CI01
CI7-RC80	72H×72W					No	B0510CI01
CI7-RC88	72H×72W					RS485	B0620CI01
CI80-RC60W	80H×160W	Relay output	2 loops	6 digits	1 loop relay	No	B0425CI01
CI80-RC68W	80H×160W					RS485	B0550CI01
CI8-RC60W	48H×96W					No	B0425CI01
CI8-RC68W	48H×96W					RS485	B0550CI01
CI7-RC60W	72H×72W					No	B0425CI01
CI7-RC68W	72H×72W					RS485	B0550CI01
CI4-RC60W	48H×48W				No	No	B0425CI01
CI4-RC68W	48H×48W					RS485	B0550CI01

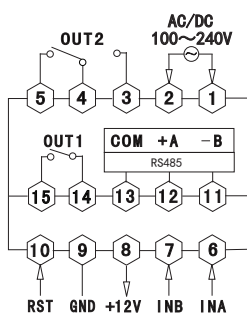
Technical Specifications

Display	Display digits	Dual-line, 6 digits, high light LED	Communication	Comm. Protocol	ModBUS RTU
	Display Range	-19999~999999		Baud Rate	4.8KBPS 9.6KBPS
Input Signal	Signal Type	Square wave, sine wave, passive contact		Address Range	1-247
	Input Impedance	Voltage input impedance is 5.4KΩ, Non-voltage input: short circuit impedance is max. 1KΩ	Function	Comm. Delay	No
	Signal Level	High Level: 5-30VDC Low Level: 0-2VDC		Power-Fail Memory	YES/NO
				Reset Pause Lock	Optional

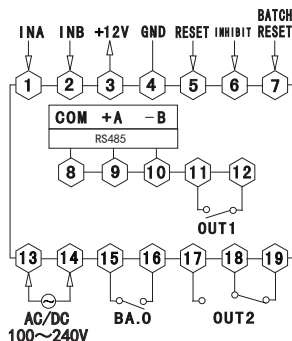
Panel Meter	Input Signal	Max Frequency	1Hz,30Hz,1KHz,5KHz,10KHz selectable	Power supply & consumption		100~240V AC/DC <5W
		Edge Trigger	NPN falling edge,PNP rising edge	Protection Class	Panel	IP 54
		Counting Accuracy	±1 pulse (more or less)		Housing	—
		Ratio Coefficient	0.00001~9.99999	Mechanical requirements	Screw torque	0.74n.m~0.9n.m
Sensor Indicator	Relay	Load Capacity	>100,000 times (NO:250VAC 3A resistive load NC:250VAC 2A resistive load)		Installation size	Refer to the Dimensions
		NO/NC guide	Refer to the connections		Installation Mode	Panel mounting
		Mechanical Life	>10,000,000 times	Transportation requirements	Vibration, Stacking	Amplitude:0.75mm Frequency:10~55Hz 1h for each X,Y,Z directions
Temperature Controller	Input mode	UP/DOWN counting	U UP counting/D DOWN counting	Min Pulse Width	Reset	1,20ms optional
		UP/DOWN counting control	UD-A UP/DOWN-A、UD-B UP/DOWN-B		Pause	1,20ms optional
		Phase Difference Counting	Rotary Encoder Input	Output	Passive contactor output (to be ordered)	NPN open collector output
Counter	Output	Output Mode	12 kinds, F、N、C、R, etc.	Withstand Voltage	Dielectric Strength	2000V AC 50/60Hz 1 min
		Delay Time	0.01~499.99s		Insulation Resistance	Min. 100MΩ (at500VDC)
	Auxiliary power supply	Supply Voltage	12VDC±10%	EMC Anti-interference capability	Static	3 class
Timer Relay	Temp.	Capacity	<100mA		Group of Pulses	4 class each mode±4000VP-P
		Working Temp.	-10°C~50°C (Unfrozen)		Lightning surge	3 class wire to wire±2000V
		Storage Temp.	-25°C~65°C (Unfrozen)		Frequency Drop	3 class
		Environment RH	35-85%RH			

■ Connection

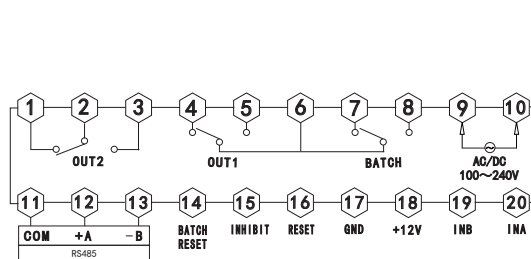
CI4, CI4W



CI7, CI7W



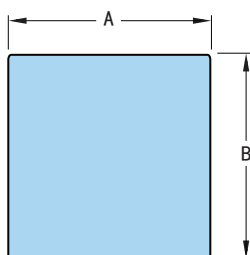
CI8/CI80, CI8W/CI80W



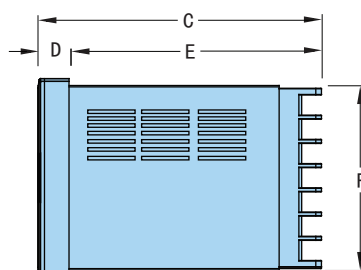
Note: if there is any change, please subject to the connection on the meter.

■ Dimensions (Unit: mm)

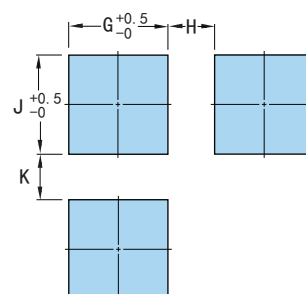
Panel Size



Side Size



Hole Size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48*96)	96	48	97.5	9	88.5	44.5	92	25	45	25
80:(80*160)	160	80	96	13	83	155	76	30	155.5	30

2. CL Series Digital Counter

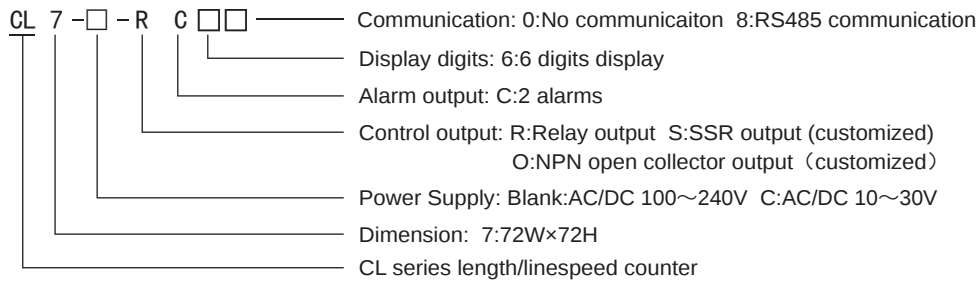
■ Photos and Features



Features:

- ★ With 2 loops length (number) counting control output, 1 loop linespeed control output.
- ★ Linespeed coefficient, length (number) coefficient can be set respectively.
- ★ Various input/output modes,easy for flexible using.
- ★ Excellent anti-interference capability, highly reliable pulse input circuit design
- ★ Optional counting speed range,to guarantee the measuring accuracy.
- ★ RS-485 ModBus-RTU communication function optional.
- ★ Used in zipper,foodstuff and packing mechanism industries.

■ Model Illustration



■ Ordering Information

Model	Dimension(mm)	Output	Display digits	Counting output	Linespeed output	Communication	Code
CL7-RC60	72H×72W	Relay	6 digits	2 loops	1 loop	No	B0510CL01
CL7-RC68						RS485	B0620CL01

■ Technical Specifications

Power Supply	AC/DC 100~240V 50/60Hz
Comsuption	<5W
Trigger Edge	Rising edge,falling edge
Data Reserve	10 years
Input Signal(Square/Sin wave)	Electrical level: Hight:3~30V Low:0~2V
Counting Speed	≤10Kcps
Environment Temperature	0°C~50°C
Anti-interference	3000Vp-p
Counting Range	-199999~999999(6 digits)
Linespeed Display Range	0.00001~999999(6 digits)
Delay Time	0.01~9999.99s
Counting Output Mode	F、N、C、R、K、P、Q、A optional(UP/DOWN counting)
Input Impedance	5.4kΩ
Relay Contact Capacity	AC 250V 3A (Resistance loading)
Insulation Impedance	≥20MΩ
Dielectric Strength	AC 1.5KV 1min(Power port&External port)
Dimension(mm)	72H×72W×100L

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

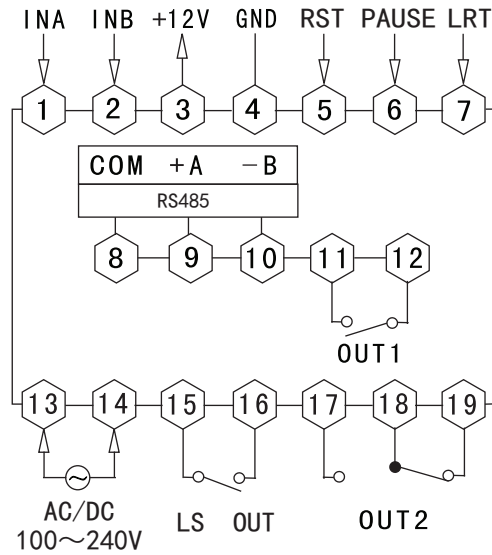
Proximity Sensor

Solid State Relay

Power Meter Introduction

■ Connection

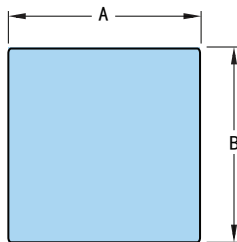
Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



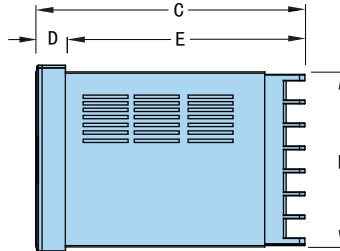
Note: if there is any change, please subject to the connection on the meter.

■ Dimensions (Unit: mm)

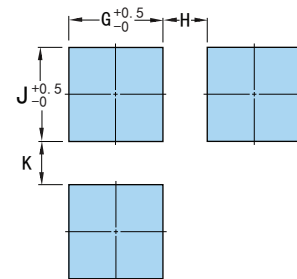
Panel size



Side size



Hole size



Panel	A	B	C	D	E	F	G	H(Min)	J	K(Min)
72*72	72	72	97.5	3	94.5	67	67.5	25	67.5	25

3. CM Series Conter/Timer

■ Photos and Features



Features:

- ★ Thumb switch setting, intuitive and easy operation.
- ★ CP1/CP2 2 inputs, mutple input modes:A/B/C/D
- ★ Max 2 output channels(relay or NPN open collector), AL1,AL2
- ★ 12 output modes: F/N/R/C/L1/K2P/Q/A/D/H/L
- ★ Power fail memory, timing pausing functions.
- ★ Counting/timing functions switchable by software.
- ★ 8 timing modes, optional decimal or sexagesimal.

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

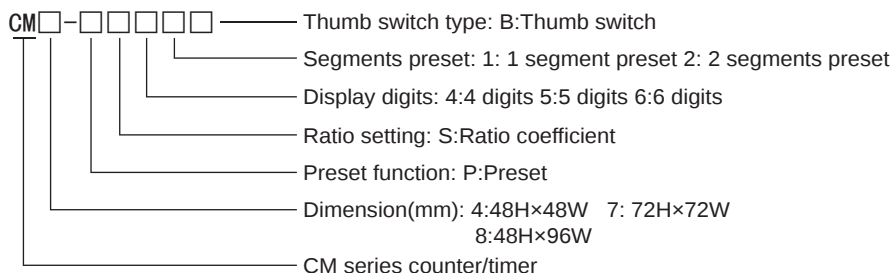
Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

■ Model Illustration



■ Ordering Information

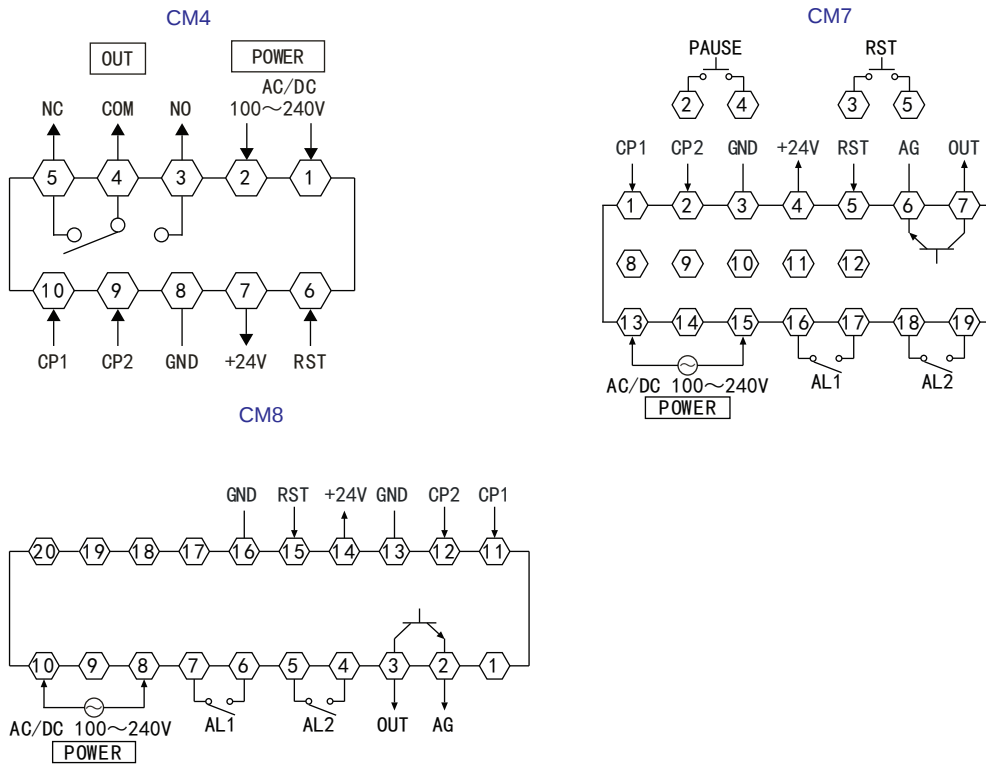
Model	Dimension(mm)	Display digits	Output	Power supply	Code
CM4-PS41B	48H×48W×100W	4 digits	1 loop output	AC/DC 100~240V	A0550CM01
CM7-PS41B	72H×72W×100W	4 digits			A0550CM01
CM8-PS51B	48H×96W×100W	5 digits			A0570CM01
CM7-PS61B	72H×72W×100W	6 digits			A0590CM01
CM7-PS42B	72H×72W×100W	4 digits	2 loops output		A0790CM01
CM8-PS52B	48H×96W×100W	5 digits			A0840CM01
CM7-PS62B	72H×72W×100W	6 digits			A0850CM01

■ Technical Specifications

Power Supply	AC/DC 100~240V
Consumption	≤5W
Input Signal(Sin/square wave)	Electrical level:High:3~30V Low:0~2V
Trigger Edge	Rising edge,falling edge
Counting Speed	≤5Kcps
Data Reserve	10 year
Anti-interference	Power:2000Vp-p I/O Port:500Vp-p
Environment Temperature	0℃~50℃
Counting Range	-19999~99999(5digit)、-199999~999999(6 digit)、-1999~9999(4 digit)
Relay Contact Capacity	AC 250V 3A(Resistance loading)
Input Impedance	≤6 KΩ
Counting Output Mode	F、N、C、R、K、P、Q、A(UP/DOWN counting optional)
Insulation Impedance	≥20MΩ(Power port & External port)
Dielectric Strength	AC 1.5KV 1min(Power port & External port)
Timing Accuracy	0.2%FS
Timing Range	0.01S~999.9H(4 digits) 0.01S~9999.99H(6 digits) 0.01S~9999.9H(5 digits)

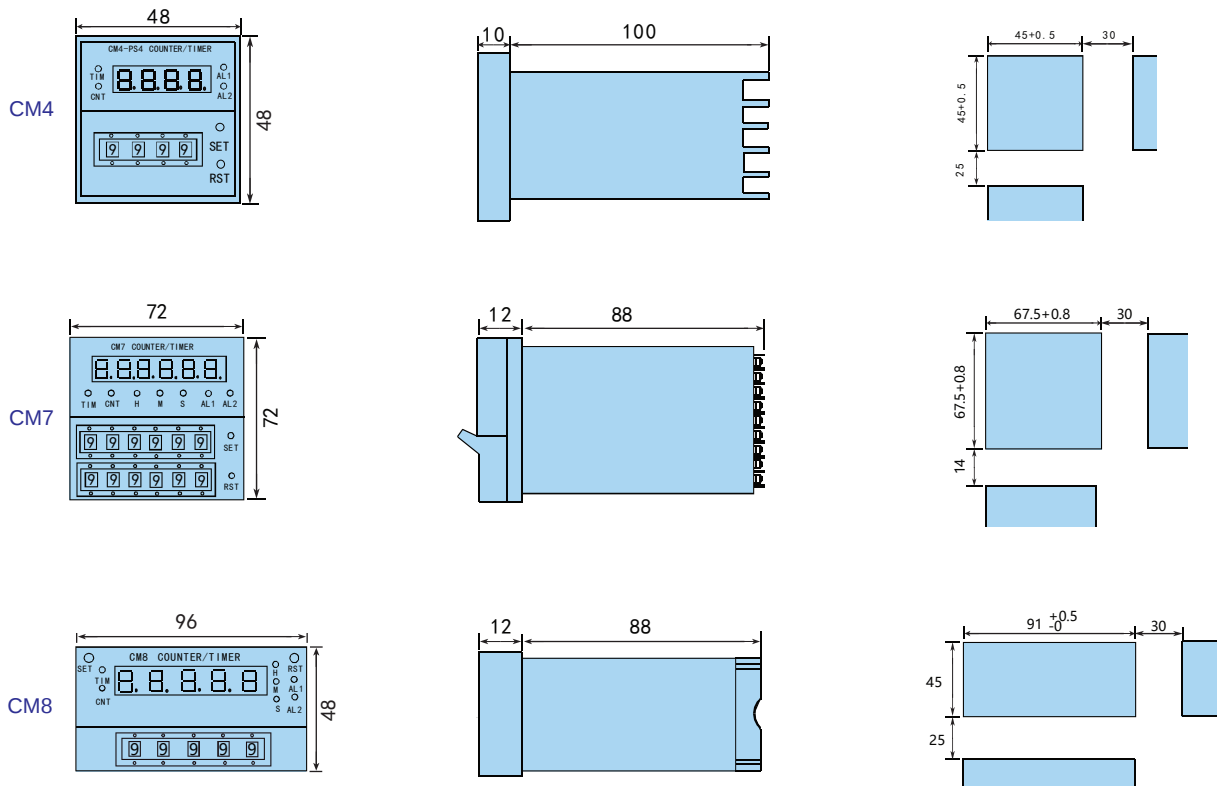
Connection

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



Note: if there is any change, please subject to the connection on the meter.

Dimensions (Unit: mm)



4. CX Series Counter/Timer

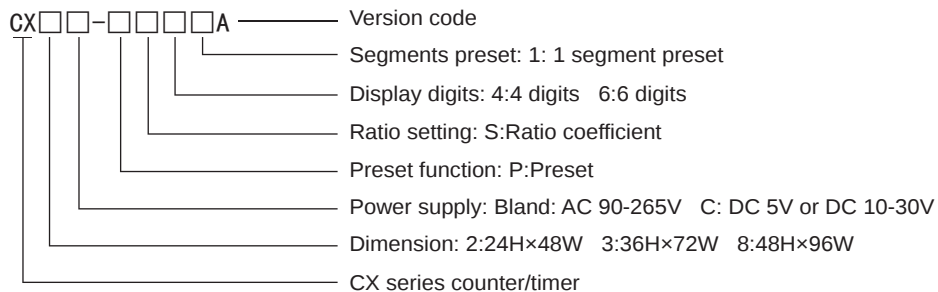
■ Photos and Features



Features

- ★ 48*96、36*72、24*48 compact size, saving installation space
- ★ One setting output, multi control modes to satisfy customers' requirements
- ★ Counting/timing function switchable.
- ★ Length counting coefficient setting range 0.001~9999
- ★ NPN open collector output (CX2C/CX3C) or relay output (CX3/CX8)
- ★ Key-pressing and external terminal resetting function, high anti-interference capability.

■ Model Illustration



■ Ordering Information

Model	Dimension(mm)	Display digits	Output	Output Mode	Auxiliary Output	Power Supply	Code
CX2C-PS41A	24H×48W×58L	4 digits	1 loop output	NPN open collector output	No	DC 5V or AC/DC 10-30V	B0205CA01
CX3C-PS61A	36H×72W×58L	6 digits					B0205CA01
CX8C-PS61A	48H×98W×58L						B0205CA01
CX3-PS61A	36H×72W×58L			Relay output	12V	AC/DC 85-265V	B0238CA01
CX8-PS61A	48H×98W×58L						B0238CA01

■ Technical Specifications

Power Supply	85~256V AC/DC、5V DC、10-30V AC/DC (to be ordered)
Comsuption	<5W
Input Signal(Sin/square wave)	Electrical level: Height:5~30V
Trigger Edge	Rising edge,falling edge
Counting Speed	10cps/100cps/1000cps/3000cps optional
Data Reserve	10 years
Environment Temperature	0℃~50℃
Anti-interference	Power: 2000VP-P I/O Port: 500VP-P
Counting Range	-1999~9999(4digit) -199999~999999(6digit)
Output delay time	0.01~99.99S
Input Impedance	≥10KΩ
Relay Contact Capacity	AC 250V 3A (Resistance loading)
Transistor output capacity	24VDC/30mA(OC port)
Insulation Impedance	≥20MΩ
Dielectric Strength	AC 1.5KV 1min(Power port & External port)
Timing Accuracy	0.1%FS
Timing Range	0.01S~99H59M(4 digits) 0.01S~9999H59M(6 digits)
Dimension	24H×48W×58L 36H×72W×58L 48H×96W×58L

Panel Meter

Sensor
Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary Encoder

Proximity Sensor

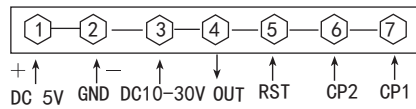
Solid State Relay

Power Meter Introduction

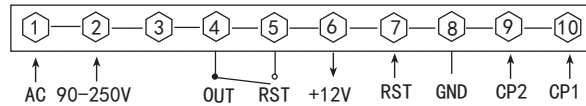
■ Connection

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction

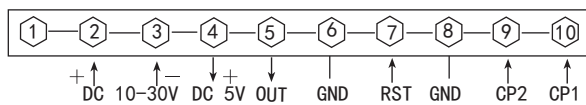
CX2C-PS41A



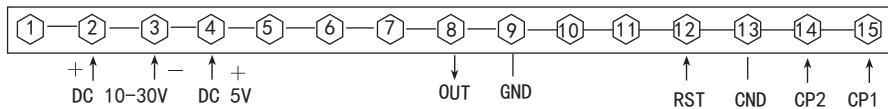
CX3-PS61A



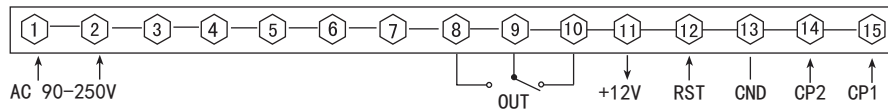
CX3C-PS61A



CX8C-PS61A



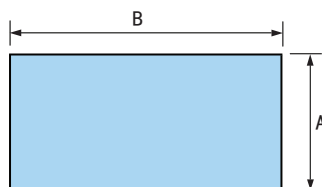
CX8-PS61A



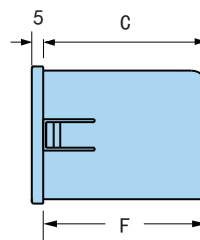
Note: if there is any change, please subject to the connection on the meter.

■ Dimensions (Unit: mm)

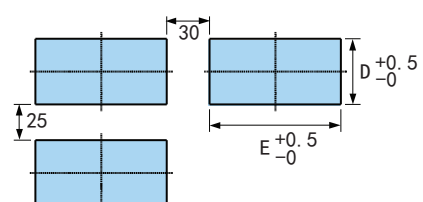
Panel size



Side size



Hole size



CX2C	A=24	B=48	C=58	D=22.5	E=46.5	F=68
CX3	A=36	B=72	C=58	D=33.5	E=68.5	F=68
CX8	A=48	B=96	C=58	D=45	E=92.5	F=68

5. CA-X Series Economy Counter

Photos and Features



Features:

- ★ Switching power supply.
- ★ Number/length counting function.
- ★ Max pulse input frequency 5kHz.
- ★ 2 loops pulse signal input, can be connected with rotary encoder.
- ★ Key lock function.
- ★ With multi output modes, F/R/N/C, ect.

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

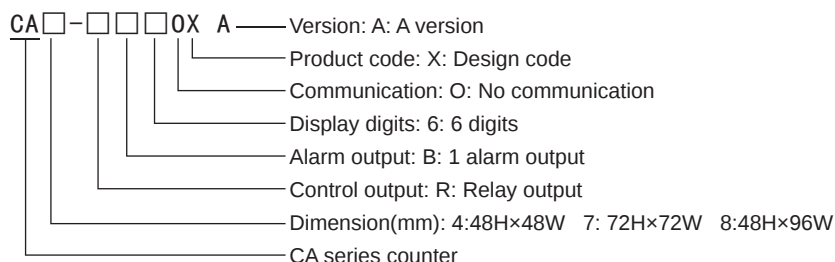
Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

Model Illustration



Ordering Information

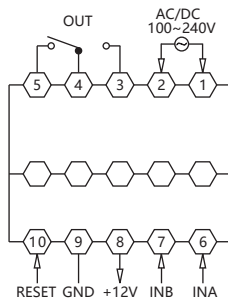
Model	Dimension(mm)	Display digits	Alarm output	Power supply	Code
CA4-RB60X	48H×48W	6 digits	1 alarm	AC/DC 100~240V 50/60Hz	B0248CA01
CA7-RB60X	72H×72W				B0248CA01
CA8-RB60X	48H×96W				B0248CA01

Technical Specifications

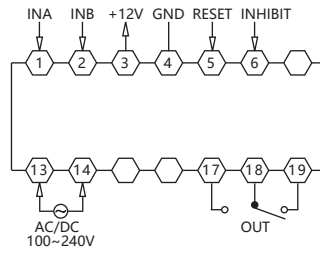
Display	Display digits	Dual-line,6 digits,high light LED	Communication	Comm. Protocol	—
	Display Range	-19999~999999		Baud Rate	—
Input Signal	Signal Type	Square wave, sine wave, passive contact		Address Range	—
	Input Impedance	Voltage input impedance is 5.4KΩ, Non-voltage input: short circuit impedance is max. 1KΩ		Comm. Delay	—
	Signal Level	High Level:5-30VDC Low Level:0-2VDC	Function	Power-Fail Memory	YES/NO
	Max Frequency	1Hz, 30Hz, 1KHz, 5KHz selectable		Reset Pause Lock	Optional
	Edge Trigger	NPN falling edge,PNP rising edge	Power supply & consumption		100~240V AC/DC <5W
	Counting Accuracy	±1 pulse (more or less)	Protection Class	Panel	IP 54
	Ratio Coefficient	0.00001~999999		Housing	—
Relay	Load Capacity	>100,000 times (NO:250VAC 3A resistive load NC:250VAC 2A resistive load)	Mechanical requirements	Screw torque	0.74n.m~0.9n.m
				Installation size	Refer to the Dimensions
				Installation Mode	Panel mounting
	NO/NC guide	Refer to the connections	Transportation requirements	Vibration, Stacking	Amplitude:0.75mm Frequency:10~55Hz 1h for each X,Y,Z directions
Mechanical Life	>10,000,000 times				

■ Connection

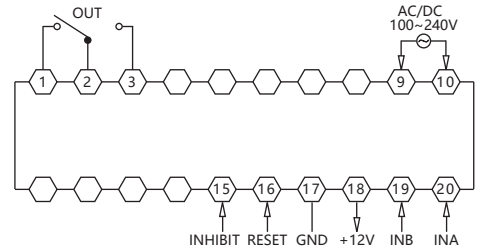
Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



CA4-X

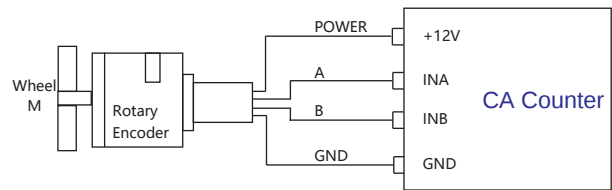
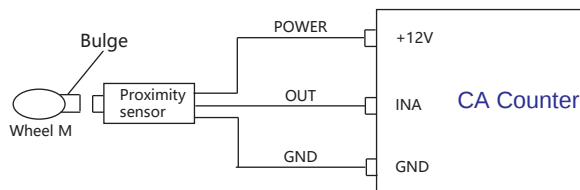


CA7-X



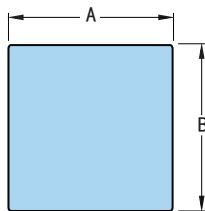
CA8-X

Note: if any change, please subject to the connection drawing on the meter.

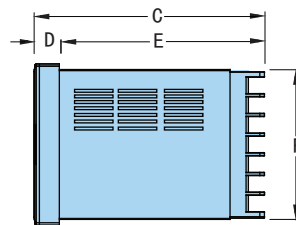


■ Dimensions (Unit: mm)

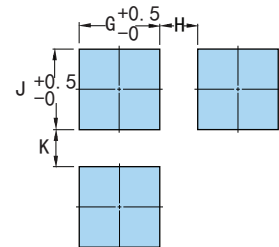
Panel size



Side size



Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48×48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72×72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48×96)	96	48	97.5	9	88.5	44.5	92	25	45	25
Remark	Unit:(mm) Tolerance +0.5%(Except for special indications)									

6. CA/CA-W Series Economy Type Counter



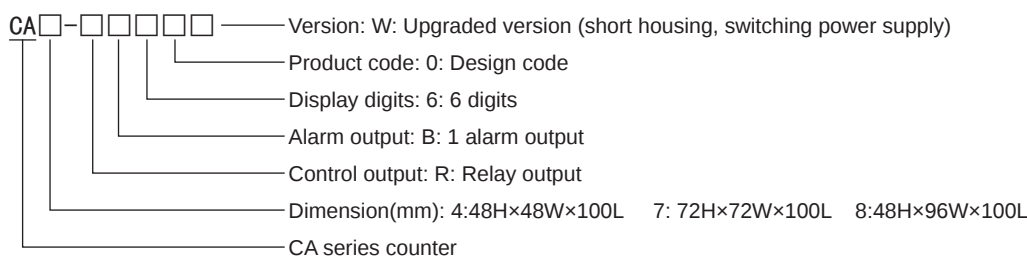
■ Photos and Features



Features:

- ★ Economical and practical, dual-line 6 digits display.
- ★ High-performance, micro processor as controlling core
- ★ High accuracy and anti-interference capability.
- ★ NPN, PNP can be switched by changing the internal short-circuit pin.
- ★ With F/R/N/C output function.
- ★ Upgraded version with 100~240V switching power supply.
- ★ Upgraded version with short housing design, installation depth is 65mm only.

■ Model Illustration



■ Ordering Information

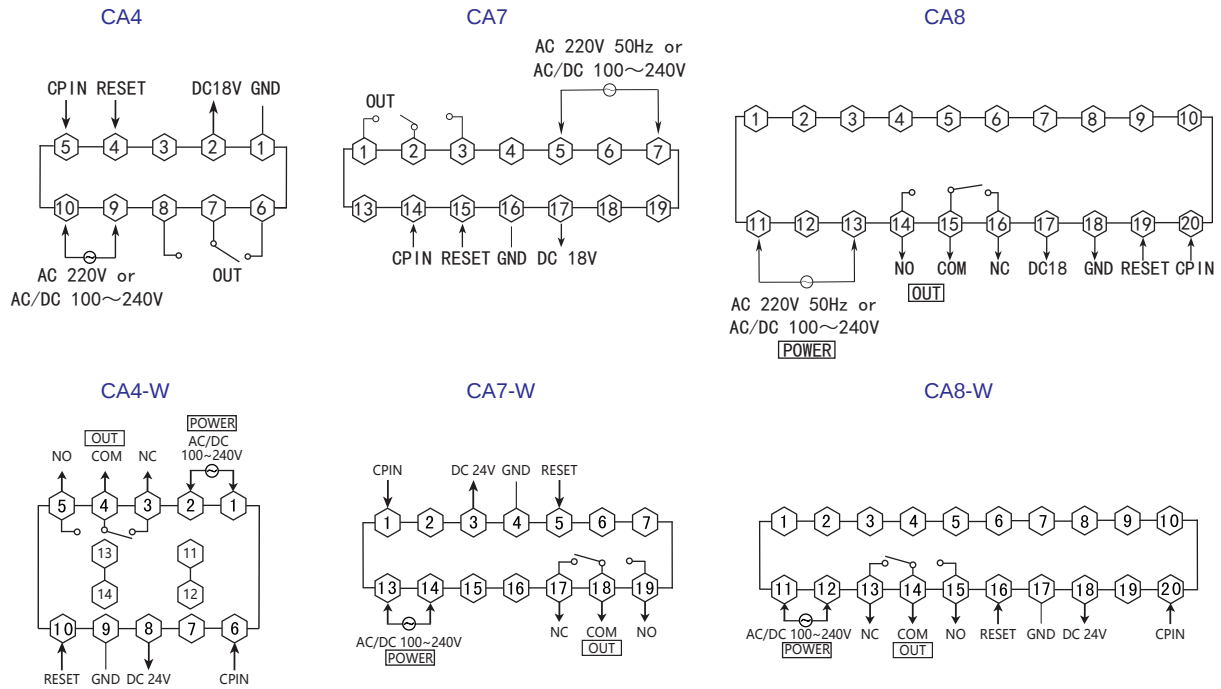
Model	Power supply	Output mode	Display digits	Alarm output	Code
CA□-RB60	AC 220V	Relay output	6 digits	1 loop alarm	B0180CA01
CA□-RB60W	AC/DC 100~240V				B0210CA01

■ Technical Specifications

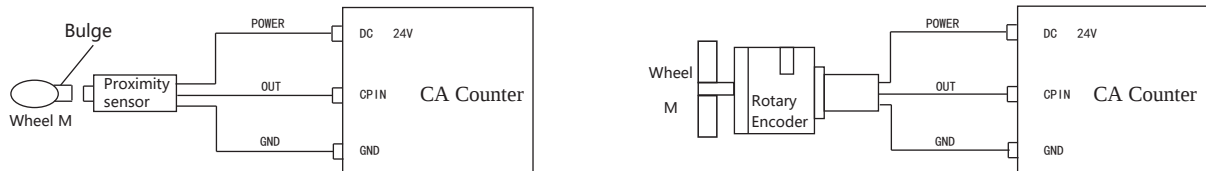
Power Supply	AC 220V±10% 50Hz W: AC/DC 100~240V 50/60Hz
Consumption	≤4W
Relay Contact Capacity	AC 250V/3A
Auxiliary Voltage	DC 18V±5V(≤25mA)
Input Impedance	Voltage input impedance 5.4KΩ,
Counting Speed	≤1/30/300/1000Hz(4 ranges to be chosen)
Counting Range	0.001-999999
Delay Time	0.01-600.00s
Coefficient Setting Range	0.001-99.999
External Signal	External reset frequency 2,10,100,500Hz selectable
Working Environment	-10℃~50℃ (unfrozen)
Storage Environment	-25℃~65℃ (unfrozen)
Dielectric Strength	2000V AC 50/60Hz 1 min
Insulation Impedance	≥100MΩ (at500VDC)
Anti-static strength	3 class direct discharging 6kV air discharging 8kV
Anti-interference Capacity	4 class each mode±4000VP-P
Lightning Surge	3 class wire to wire±2000V
Frequency Drop	3 class

■ Connection

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



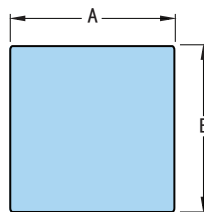
Note: if any change, please subject to the connection drawing on the meter.



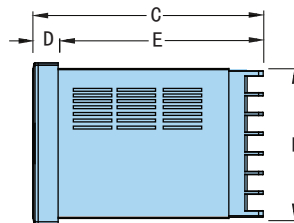
Note: if any change, please subject to the connection drawing on the meter.

■ Dimensions (Unit: mm)

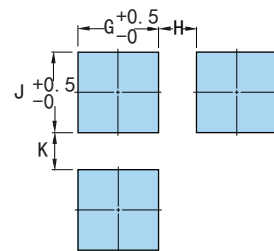
Panel size



Side size



Hole size



CA

Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48×48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
7:(72×72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25
8:(48×96)	96	48	97.5	9	88.5	44.5	92	25	45	25
Remark	Unit:(mm) Tolerance +0.5%(Except for special indications)									

CA-W

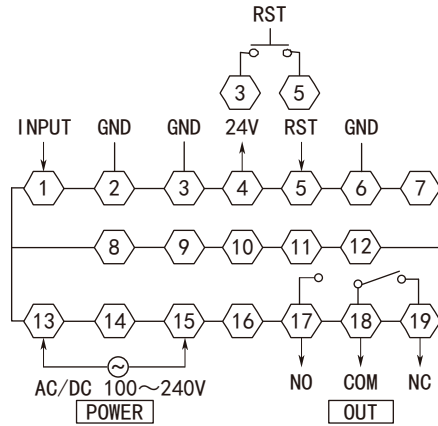
Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48×48)	48	48	71	6.5	64.5	44.5	45.5	25	45.5	25
7:(72×72)	72	72	71	6.5	64.5	67.5	67.5	25	67.5	25
8:(48×96)	96	48	71	6.5	64.5	44.5	92	25	45	25
Remark	Unit:(mm) Tolerance +0.5%(Except for special indications)									

Power Supply	AC/DC 100~240V (DC 24V to be ordered)
Comsuption	<5W
Relay Contact Capacity	250VAC/3A
Auxiliary power	DC24V±2V 50mA
Input Impedance	Voltage input impedance 5.4KΩ,
Counting Speed	≤1000Hz
Counting range	0.01~999999(6 digits) 0.001~9999(4 digits)
Delay time	0~15 second
Output mode	F/N/R/C
Working Environment	-10℃~50℃ (unfrozen)
Storage Environment	-25℃~65℃ (unfrozen)
Dielectric Strength	2000V AC 50/60Hz 1 min
Insulation Impedance	≥100MΩ (at500VDC)
Anti-interference Capacity	2 class each mode ±2000VP-P
Lightning Surge	3 class wire to wire±2000V
Frequency Drop	3 class

Power Meter Introduction

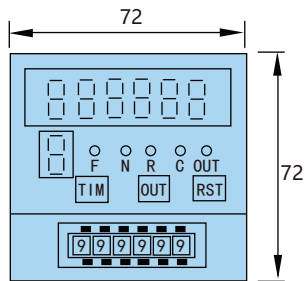
■ Connection

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction

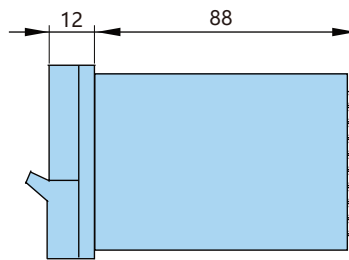


Note: if any change, please subject to the connection drawing on the meter.

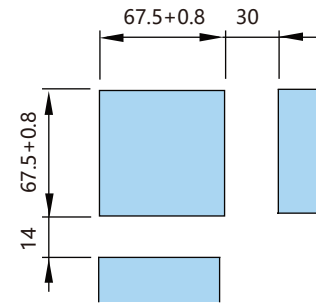
■ Dimensions (Unit: mm)



Panel size



Side size



Hole size

1. HP Series Timer Relay

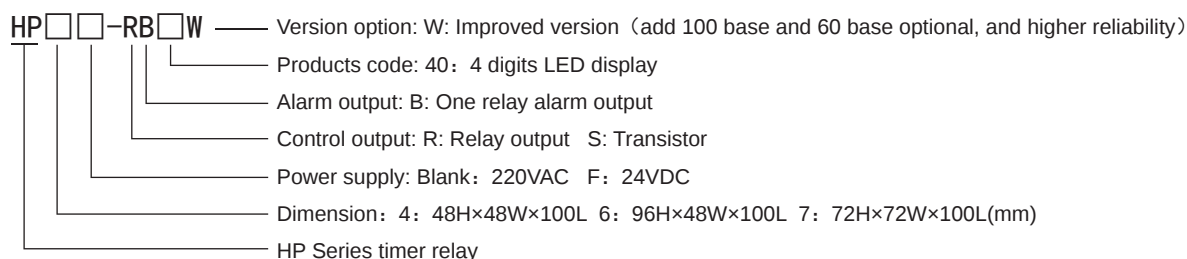
■ Photos and Features



Features:

- ★ Dual-line 4 digits bright LED display.
- ★ High timing accuracy.
- ★ Power fail memory function.
- ★ Optional dimension.
- ★ Multiple output delay function modes selected by the menu.
- ★ Passed strict EMC and reliability testing.
- ★ With decimal/centesimal/sexagesimal timing function.
- ★ With pausing,resetting function.

■ Model Illustration



■ Ordering Information

Model	Display	Power supply	Dimension	Alarm	Code
HP4-RB40W	Dual-line 4 digits	220VAC 50Hz	48H×48W	1	B0205HPW01
HP6-RB40W			96H×48W		B0205HPW01
HP7-RB40W			72H×72W		B0205HPW01

■ Technical Specifications

Power Supply	220±10% 50Hz (other power supply be ordered)
Power Consumption	≤3W
Installation	Panel mounting
Timing Range	0.01-99.99S, 0.1-999.9S, 1-9999S, 1-99M59S, 0.01-99.99M, 0.1-999.9M, 1-9999M, 1-99H59M, 0.01-99.99H, 0.1-999.9H, 1-9999H
Timing Accuracy	±0.1%±0.05sec
Reset Mode	Panel reset/external reset/automatic reset/power-off reset selectable
Input Signal	Active Low
Output Capacity	AC/DC 250V 5A(Resistive load)
Impulse Interference	Level 3 2000Vp-p
Lightning Surge	Level 3 Power port L-N ±2000V
Working Environment	0~50℃ ≤85%R.H
Storage Environment	-20~55℃ ≤85%R.H
Withstand Voltage	AC 2000V 50Hz 1 minute
Insulation Resistance	DC 500V ≥100MΩ
Vibration	X/Y/Z axis 10~50Hz 0.75mm

Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer
Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

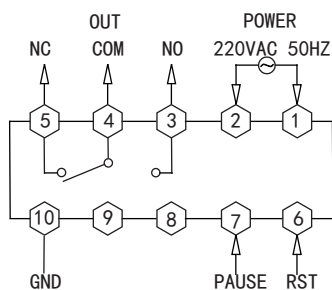
Solid State
Relay

Power Meter
Introduction

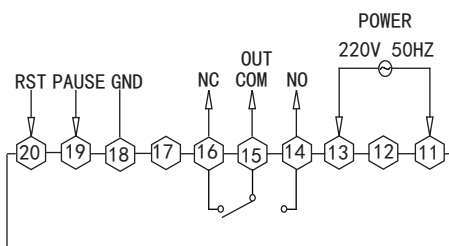
■ Wiring Diagram

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction

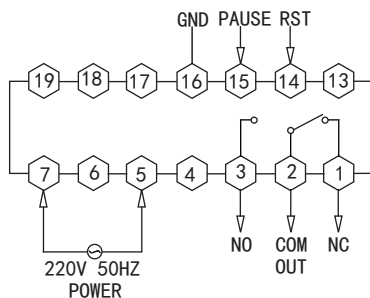
HP4



HP6

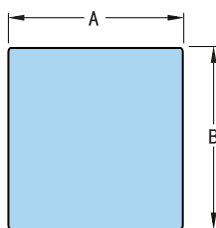


HP7

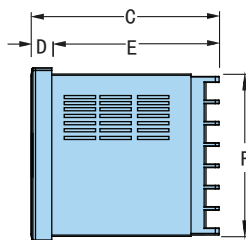


■ Installation And Hole Size (Unit: mm)

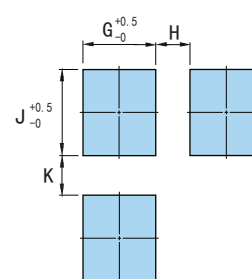
Panel size



Side size



Hole size



Model	A	B	C	D	E	F	G	H(Min)	J	K(Min)
4:(48*48)	48	48	97.5	6.5	91	45	45.5	25	45.5	25
6:(96*48)	48	96	97.5	9	88.5	89.5	45	25	92	25
7:(72*72)	72	72	97.5	9	88.5	67	67.5	25	67.5	25

No.	Model Function	CL	FI	FM	FA
					
1	Measure	Counting/length counting/ frequency/speed/line speed	Frequency/speed/ line speed	Frequency/speed/ line speed	Frequency/speed
2	Input	2	1	1	1
3	Input type	Up count/down count/ up/down counting/ encoder up/down counting	NPN/PNP input	NPN/PNP input	NPN input
4	Operation method	Key setting	Key setting	Thumb switch setting	Thumb switch setting
5	Output	Relay	Relay	Relay/transistor	Relay/transistor
6	Output channels	2	2	2	1
7	Output type	12 Types	4 Types	4 Types	2 Types
8	Ratio	Yes	Yes	Yes	Yes
9	Ratio decimal point	5 Digits settable	5 Digits settable	3 Digits/4 digits settable	3 Digits fixed
10	Digits	6	6	4 / 5	4
11	Decimal point	Settable	Settable	Settable	Settable
12	Delay output	Yes	Yes	No	No
13	Reset	Yes	Yes	Yes	No
14	Analog	Customized	Yes	No	No
15	Communication	Yes	Yes	No	No

Remarks: * All models of transistor output and solid state output are customized.

Panel Meter

Sensor
Indicator

Temperature
Controller

191nUO

Timer
Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

1. FI Series Frequency/Speed/Tacho Meter

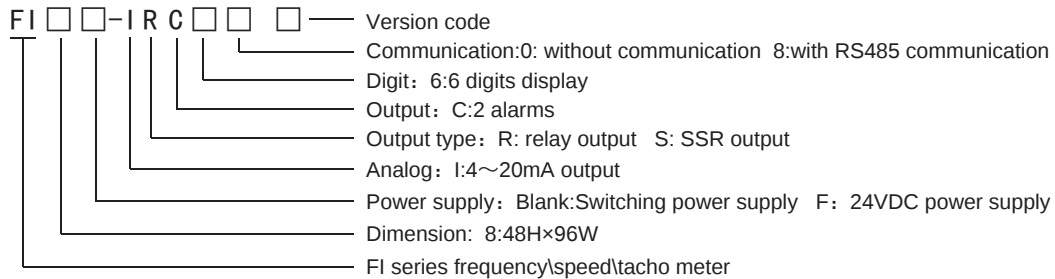
■ Photos and Features



Features:

- ★ 6 digit LED display, upper row displays the measured value, the lower row displays the setting value.
- ★ Optional 2 control output : high limit alar (U), low limit alarm(d).
- ★ With hysteresis setting, which improve the working stability.
- ★ Optional 4~20mA analog output and RS485 communication.
- ★ High measurement accuracy, and the decimal point can be fixed or floating display.
- ★ Multipurpose: It can be used as frequency meter, line speed meter and tachometer, can set freely by operation menu

■ Model Illustration



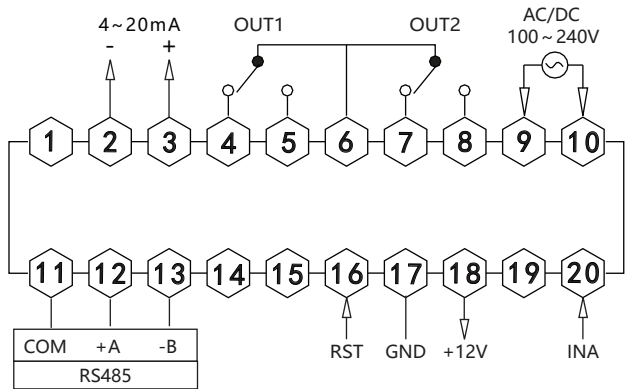
■ Ordering Information

Model	Dimension (mm)	Digits	Alarm	Analog	Communication	Code
FI8-RC60	48H*96W	6 Digits	2	No	No	B0550FI01
FI8-IRC60	48H*96W	6 Digits	2	4~20mA	No	B0620FI01
FI8-RC68	48H*96W	6 Digits	2	No	RS485	B0700FI01
FI8-IRC68	48H*96W	6 Digits	2	4~20mA	RS485	B0775FI01

■ Technical Specifications

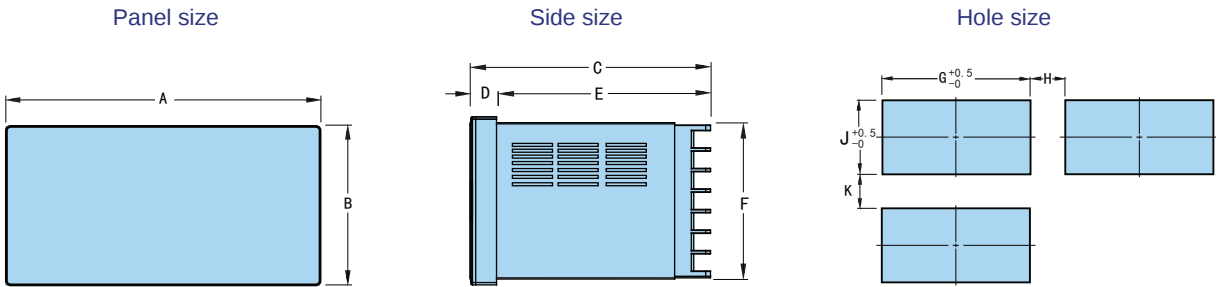
Power Supply	AC/DC 100 ~ 240V±15%
Consumption	<5W
Contact rating	AC 250V/3A or DC 30V/3A
External power	DC 12V±2V 100mA max
Insulation resistance	≥100MΩ
Anti-interference	Power: 4000Vp-p I/O terminal: 2000Vp-p
Anti-vibration	10 ~ 55Hz; 0.75mm
Environment	-15 ~ 50°C 35 ~ 85% RH
Input signal	Square wave, sine wave pulse signal: 3V≤high level≤30V 0≤low level≤1V
Input resistance	≥5.4kΩ
Measure range	0.1 ~ 10000Hz
Accuracy	0.1%RD±3Digits
Communication data	Communication port: RS485
	Protocol: MODBUS-RTU Verification method: no verification
	Baud rate: 4800bps, 9600bps optional. Frame format: 1 start bit, 8 data bits, 2 stop bits
Analog output	Output range: 4 ~ 20mA
	Load Resistance: ≤600Ω

■ Wiring Diagram



Note:Pls subject to the connection on meter if any changes.

■ Installation And Hole Size (Unit: mm)



Dimension	A	B	C	D	E	F	G	H(Min)	J	K(Min)
48*96	96	48	97.5	3	94.5	44.5	90	25	45	25

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/ Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction

2. FM Series Frequency/Speed/Tacho Meter

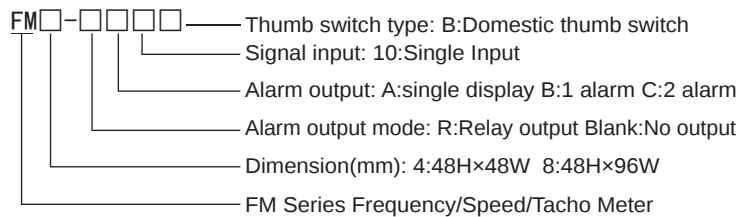
■ Photos and Features



Features:

- ★ The frequency/tacho/linespeed measuring function selected by software.
- ★ Input/output optoelectronic isolation, high anti-interference.
- ★ Thumb switch setting alarm value, 4 control mode: U-U, U-d, d-U, d-d.
- ★ High accuracy, decimal point is optional for float or fixed display.
- ★ The display refreshing rate can be set according to customer's viewing habits.
- ★ Frequency range of the input pulse is settable.

■ Model Illustration



■ Ordering Information

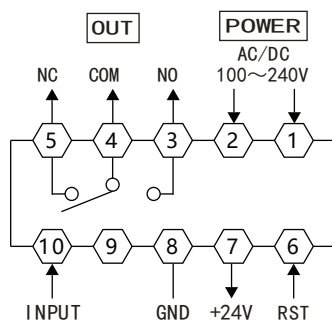
Model	Dimension(mm)	Display digits	Alarm	Output	Power supply	Code
FM4-A10B	48H×48W	4	No	Relay output	AC 220V 50Hz	A0620FM01
FM4-RB10B	48H×48W	4	1			A0840FM01
FM8-A10B	48H×96W	5	No			A0650FM01
FM8-RB10B	48H×96W	5	1			A0890FM01
FM8-RC10B	48H×96W	5	2			A1120FM01

■ Technical Specifications

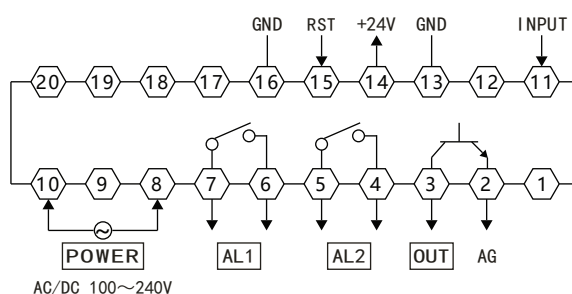
Power supply	FM8: AC 220V±10% 50Hz FM4: 90~260V 50/60Hz
Power consumption	≤5W
Display refresh	0.5~20 seconds adjustable, when set to 0, it is automatic mode
Accuracy	±0.1%RD
Display range	FM8: 0.0000-99999 FM4: 0.000-9999
Input level	Pulse signal: 5~30V pulse voltage
Input signal	Pulse signal: Square wave, sine wave 0.1~5000Hz
Input resistance	Pulse signal: ≥10kΩ
Auxiliary voltage	12V load current ≤50mA
Output capacity	AC/DC 250V 5A(Resistive load)
Pulse interference	Level 3 2000Vp-p
Lightning surge	Level 3 Power port L-N ±2000V
Environment	0~50°C ≤85%R.H
Storage environment	-20~60°C ≤85%R.H
Withstand voltage	AC 2000V 50Hz 1 minute
Insulation resistance	DC 500V ≥100MΩ
Vibration test	10~55Hz X\Y\Z axis 0.7mm

■ Wiring Diagram

FM4

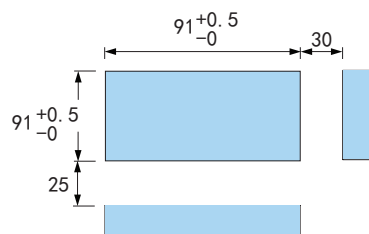
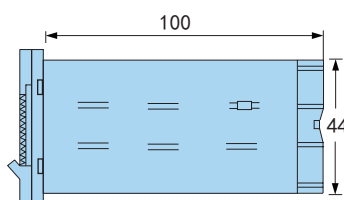
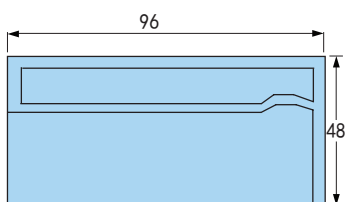
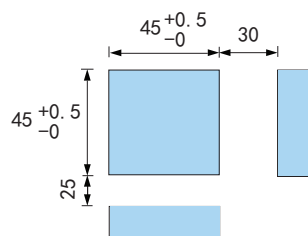
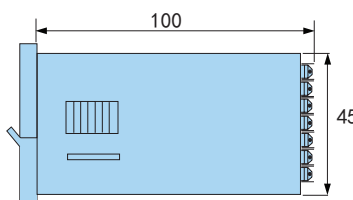
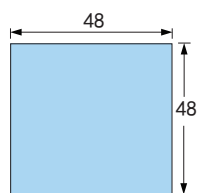


FM8



Note:Pls subject to the connection on meter if any changes.

■ Installation And Hole Size (Unit: mm)



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

3. FA8 Series Frequency Meter

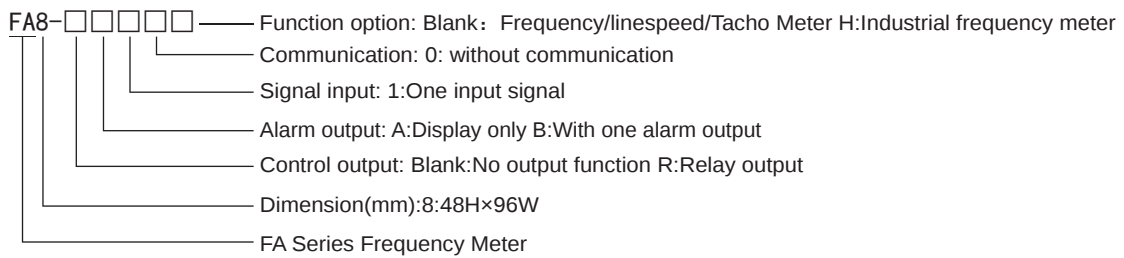
■ Photos and Features



Features:

- ★ Pulse signal/high-voltage industrial frequency signal input.
- ★ Frequency/linespeed/tacho measuring is selectable.
- ★ One alarm relay output function.
- ★ Input signal is specially filtered, which improves anti-clutter ability.

■ Model Illustration



■ Ordering Information

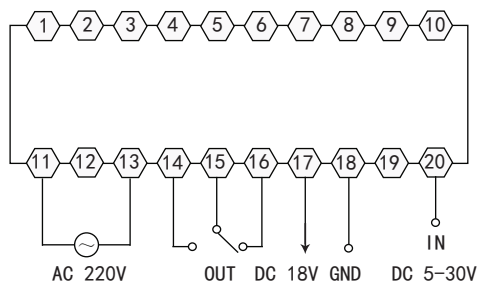
Model	Replaced Model	Input Signal	Frequency upper line	Alarm	Alarm Qty	Code
FA8-A10	DP4-FR1	5~30V pulse signal	0~5000Hz	No	No	B0380FA01
FA8-RB10				Relay	1	B0430FA01
FA8-A10H	DP4-HZ11	60~380V voltage range	0~400Hz	No	No	B0400FA03
FA8-RB10H				Relay	1	B0450FA03

■ Technical Specifications

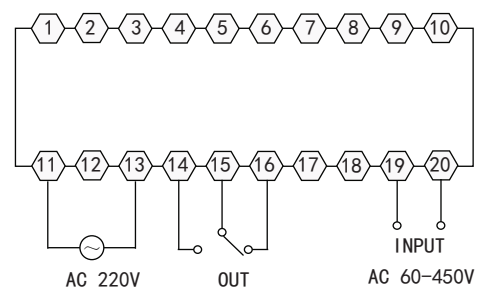
Power supply	AC 220V±10% 50Hz
Power consumption	≤3.5W
Response speed	About 1 second
Accuracy	±0.1Hz
Display range	0.000-9999
Input voltage	Pulse signal: 5~30V pulse voltage Power frequency voltage: 60~380V/AC
Input frequency	Pulse signal: 0~5000Hz Power frequency voltage: 0~400Hz
Input Impedance	Pulse signal: ≥5kΩ Power frequency voltage: ≥2MΩ
Auxiliary voltage	12V Load current ≤30mA
Output capacity	AC/DC 250V 5A(Resistive load)
Pulse interference	Level 3 2000Vp-p
Lightning surge	Level 3 Power port L-N ±2000V
Working environment	0~50℃ ≤85%R.H
Storage environment	-20~60℃ ≤85%R.H
Withstand voltage	AC 2000V 50Hz 1 minute
Insulation resistance	DC 500V ≥100MΩ

■ Wiring Diagram

FA8-A10/FA8-RB10

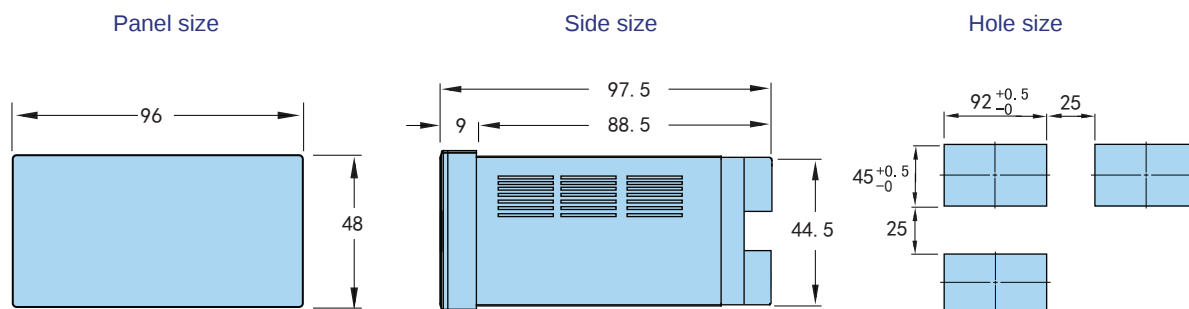


FA8-A10H/FA8-RB10H



Note:Pls subject to the connection on meter if any changes.

■ Installation And Hole Size (Unit: mm)



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

4. DM Series Frequency Meter

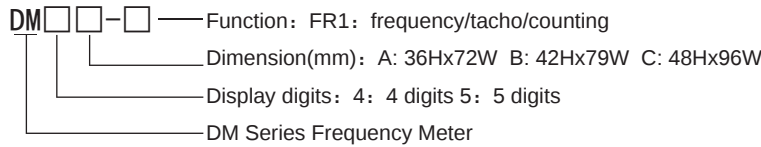
■ Photos and Features



Features:

- ★ Ultra-thin design, delicate size, easy to install.
- ★ High accuracy, good performance.
- ★ For measuring frequency/tacho/counting.
- ★ Decimal point floating display. Will display the fractional values according to available space next to the last digit from the left.

■ Model Illustration



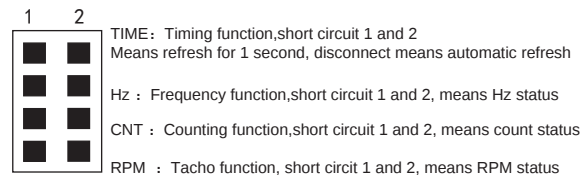
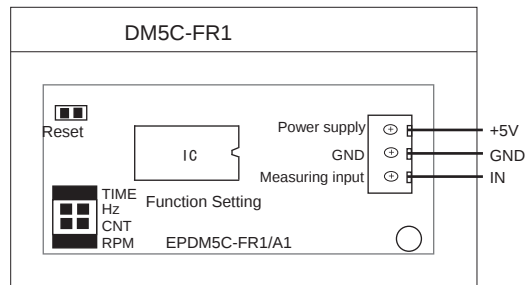
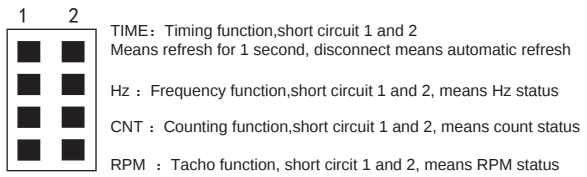
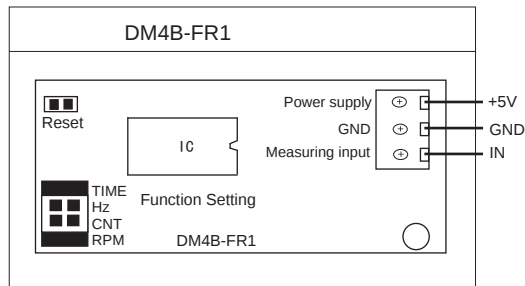
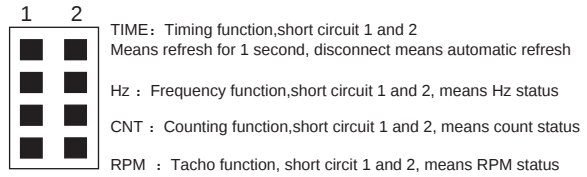
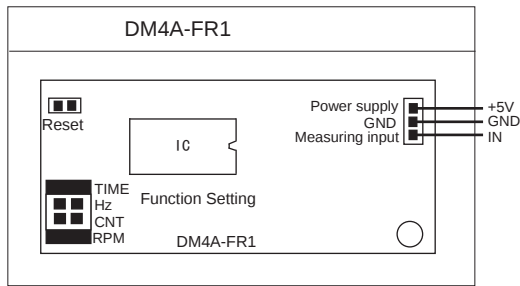
■ Ordering Information

Model	Frequency range	Tacho Range	Counting Range	Code
DM4A-FR1	1-9999Hz	60-9999Rpm	0-9999	B0130DM
DM4B-FR1	1-9999Hz	60-9999Rpm	0-9999	B0130DM
DM5C-FR1	1-10000Hz	60-99999Rpm	0-99999	B0140DM

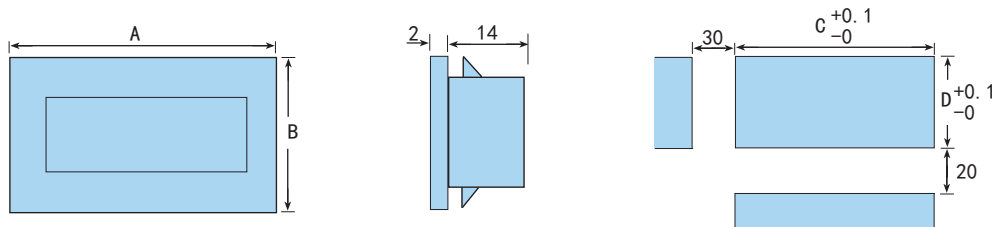
■ Technical Specifications

Display	0.56 inch red LED
Input Impedance	> 10KΩ
Input Level	5~25V
Input Signal	Square wave, sine wave signal
High Input Voltage	30V
Frequency Measuring Accuracy	±0.05%±1Digit (DM4A-FR1/DM4B-FR1) ±0.05%±10Digits(DM5C-FR1)
Frequency Measuring Range	0.1~10KHZ
Counting Speed	≤1000CPS
Frequency Sampling Time	Automatically
Decimal Point	Change automatically according to measuring range
Overflow Display	“UUUU” or “UUUUU”
Power Supply	DC 5V±10% ≤90mA
Working Environment	0~50℃ <85% RH
Storage Environment	-20~60℃ ≤85%R.H
Vibration Test	10~55Hz X/Y/Z shaft 0.7mm
Switch Function	Change the Short circuit pin on the PCB board manually
Counting Resetting Mode	Connect the reset switch to the outside of PCB lead wire.

■ Wiring Diagram



■ Installation And Hole Size (Unit: mm)



Model	A	B	C	D
DM-A	72	36	69	33.5
DM-B	79	42	76	39.5
DM-C	96	48	93	45.5

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

1. VX80, 14, 28 Series Multi-channel Paperless Recorder

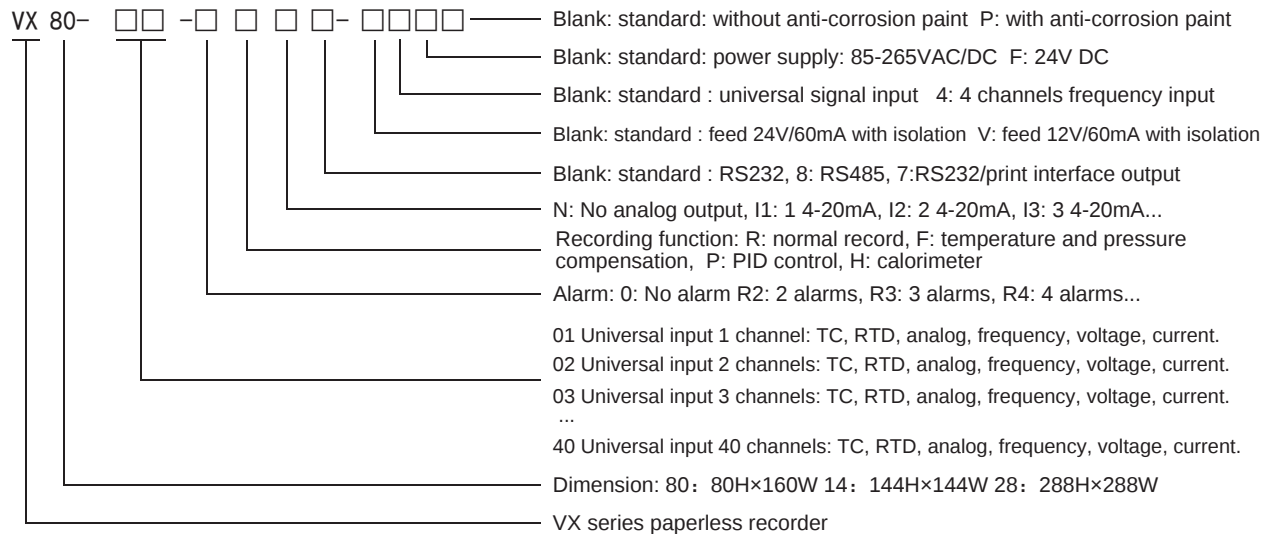
■ Photos and Features



Features:

- ★ High-speed, high-performance 32-bit ARM microprocessor, the screen response time is < 0.2 seconds, which can simultaneously realize the detection, recording/display and alarm of multiple signals.
- ★ Fully isolated universal input, which can support multi input signals without jumper wires, and can be configured through software.
- ★ Switching power supply, can work normally within 85V~265VAC.
- ★ Integrated hardware real-time clock that can run accurately even when the power is off.
- ★ Provide transmitter 24VDC isolated power distribution, and equipped with U disk and cumulative report function.
- ★ True TFT LCD display, clear picture and wide viewing angle.
- ★ Large-capacity FLASH memory stores historical data, and the data will never be lost after power failure.

■ Model Illustration



■ Ordering Information

Model	Input channel	Alarm output	Analog output	Communication/print	Code
VX80-01-0RN	1-4 channels, 1 loop frequency input	2 or 4 optional	1 loops	Standard RS232	D01800VX02
VX14-01-0RN*	1-12 channels or 16 channels of pulse input	6 or 12 optional	1-4 loops	Standard RS232	D04500VX02
VX14-01-0RN	1-12 channels or 16 channels of pulse input	6 or 12 optional	1-4 loops	Standard RS232	D06000VX02
VX28-08-0RN	8,16,24,32 or 40 channels	12 or 24 optional	4 or 8 loops	Standard RS232	D14400VX02

*Note: VX14 size is available with monochrome LCD screen and color LCD screen, please pay attention when ordering.

1. The models listed above are basic models. If you need other functions, please insert it into the model list according to the function module. For example: VX80-04-R2R11, For example: VX80-04-R2R11, means 80 size, 4 channel input, 2 relay alarms, common record, 1 4-20mA output, standard RS232 communication.
2. 80 size has only 1 transmission output, only 2 or 4 alarm outputs for option, and only one frequency pulse input;
3. For 14 size, 6 or 12 alarm outputs, 1 to 4 transmission outputs, and 8 and 16 inputs for option when selecting frequency signals.
4. For the 28 size, 12 or 24 relay alarms, 4 or 8 transmission outputs, 8, 16, 24, 32, and 40 inputs are available for frequency input.
5. All models can be connected to a micro printer through an external RS232 communication interface.

- Model list module

Code	Module	Code	Code	Module	Code	Code	Module	Code
01	1 Universal input	C0350TD02	0	No relay alarm	No	R	Ordinary record	No
02	2 Universal input	C0700TD02	R2	2 relay alarm	C0120R02	P	PID control	C0600P02
03	3 Universal input	C1050TD03	N	No analog output	No	F	Temperature & pressure compensation	C0600F02
**	* Universal input	0350/TD	I1	1 analog output:4-20mA	C0350M02	H	Calorimeter	C0350F02
F	24V DC power supply	C0150B02	8	RS485 communication	C0350S02	7	RS232 communication/print	C0350S02

Technical Specifications

Input channels	1~16	Input resistance	Current: 10Ω	Ambient temperature	0-50℃
Measurement period	1S	Excitation current	0.25mA	Environment humidity	0-85%
Analog output	4-20mA, 4 max	Burnout detection current	1uA	Preheat time	30 minutes
Auxiliary power	24V DC	Max common mode noise voltage	250V/AC rms	Storage temperature	-10-60℃
Auxiliary power capacity	≤30mA	Power supply	220V/AC、24V/DC	Storage humidity	0-95%(No condensation)
Alarm type	L,H	Voltage range	85-240VAC, 22-26DC	Clock	2000-2099 year
Alarm	12 max	Frequency, power consumption	50Hz, <10W	Battery Life	10 years (room temperature)
Alarm record	50	Installation	Embedded	USB port	1
Contact rating	250VAC/3A	Dimesion	Ref to model illustration	Communication	RS232/RS485
Display resolution	320*234	Hole size	Refer to the hole size table	Print	Panel type micro printer
Accuracy	≤0.2%F.S	Weight	Refer to different size	Antisepsis	To be ordered

Input Signal

Signal tpe	Signal range	Input resistance	Accuracy(25℃)	Signal	Signal range	Input resistance	Accuracy(25℃)
4-20mA	4.00-20.00	≤200	±0.2%	S	-50-1768	10M	±2℃
0-10mA	0.00-10.00	≤200	±0.2%	R	-50-1768	10M	±2℃
0-5V	0.000-5.000	1M	±0.2%	B	250-1820	10M	±2℃
1-5V	1.000-5.000	1M	±0.2%	K	-200-1372	10M	±1℃
0-10V	0.000-10.000	1M	±0.2%	N	-200-1300	10M	±1℃
0-20mV	0.00-20.00	10M	±0.2%	E	-200-1000	10M	±1℃
0-100mV	0.00-10.00	10M	±0.2%	J	210-1200	10M	±1℃
350ohm	0.0-350.0	---	±0.2%	T	-200-400	10M	±1℃
Fr	0-10000	---	±1Hz	F1	7000-2000	10M	±2℃
WRE5-26	0-2310	10M	±2℃	F2	700-2000	10M	±2℃
WRE3-25	0-2310	10M	±2℃	Cu100	-50.0-150.0	---	±0.4℃
Pt100	-200.0-650.0	---	±0.4℃	BA1	-200.0-650.0	---	±0.4℃
Cu50	-50.0-150.0	---	±0.4℃	BA2	-200.0-650.0	---	±0.4℃

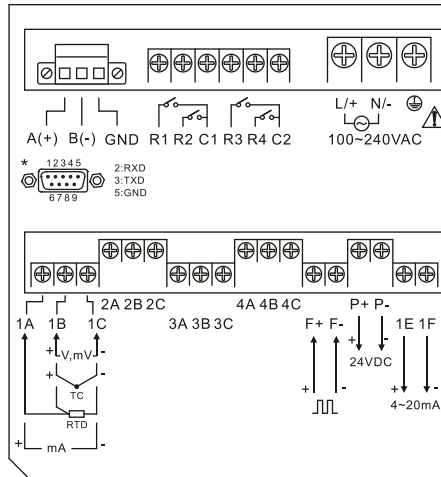
Measurement period: 1 second. Thermocouple cold junction compensation: internal cold junction compensation is used, with ±0.5℃ accuracy. Digital filtering: 0-9.9 seconds inertial filtering. Vacuum operation: ordinary algorithm, LOG curve operation is used in the entire range, segmented algorithm, linear operation is used in the first segment

Spare Parts

Description	Specification	Code	Description	Specification	Code
U disk	2 GB	A070U01	Communication conversion	Active RS232/RS485 conversion module	A0800T01
Communication cable	1.5m RS232 communication cable	Free gift	Power filter	220VAC/1:1/50W	A0100L01
	1.5m RS485 communication cable	A015RS01	Software	Data management software	Free gift

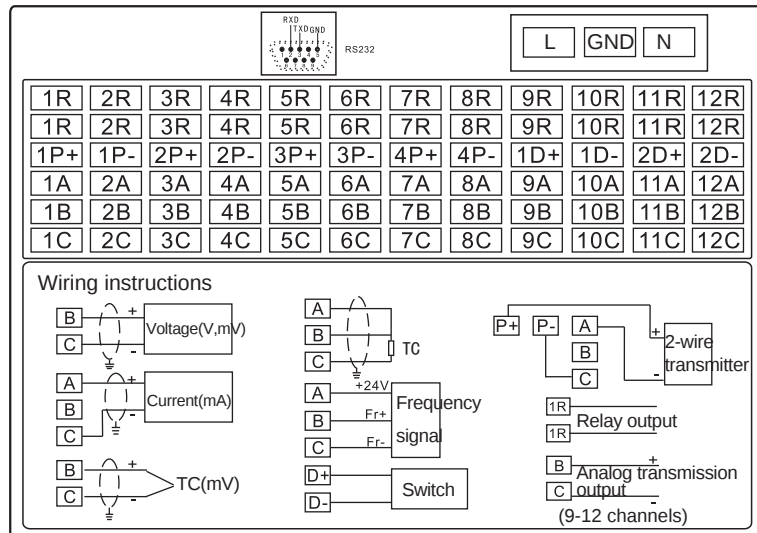
■ Connection

VX80 connection

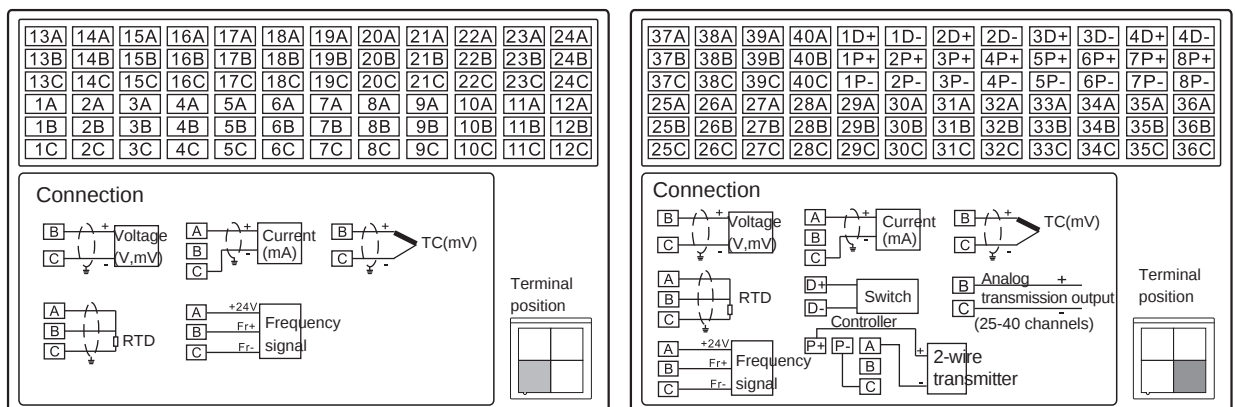


Power terminal arrangement	Input voltage
220V power supply 	100VAC-240VAC 50~60Hz
24V power supply 	24VDC±10%

VX14 connection

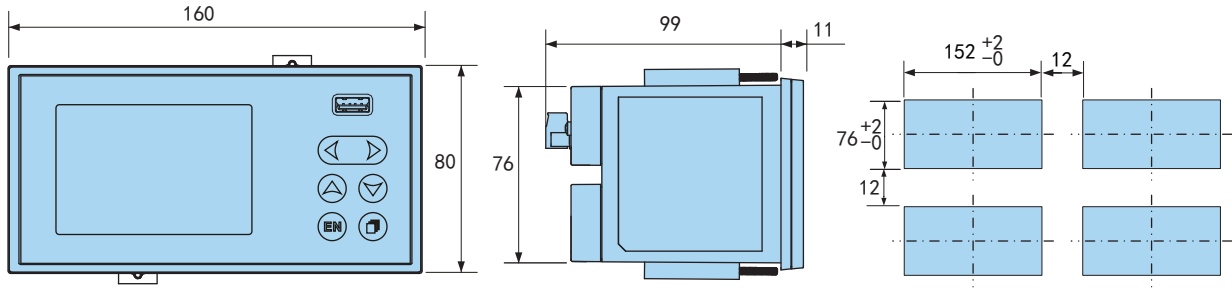


VX28 connection

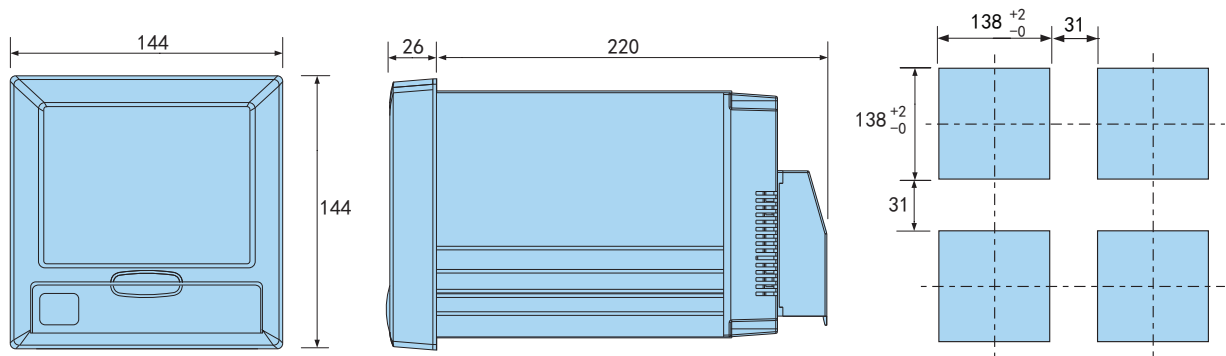


■ Dimension (unit:mm)

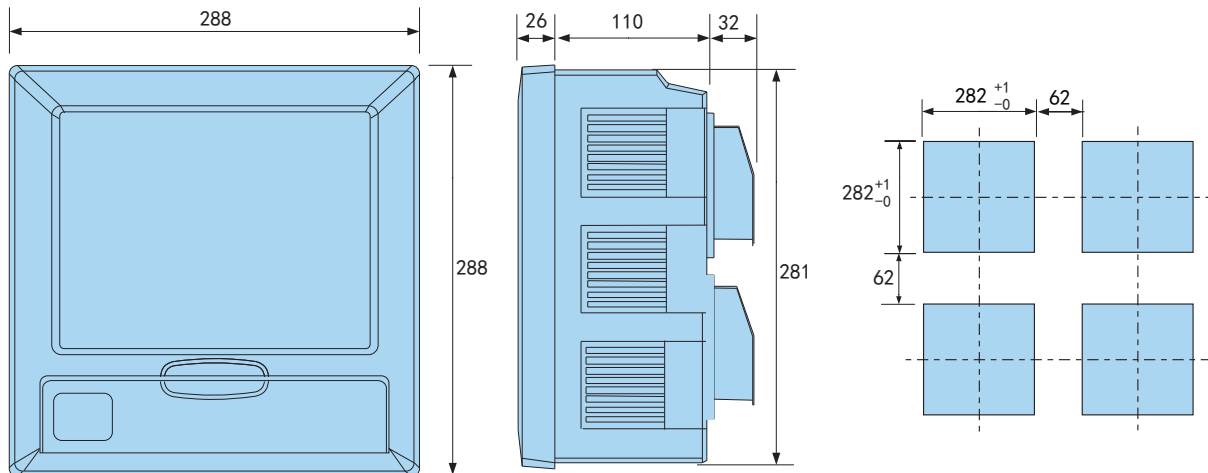
VX80 Dimension



VX14 Dimension



VX28 Dimension



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

1. PD voltage and current isolation transmitter

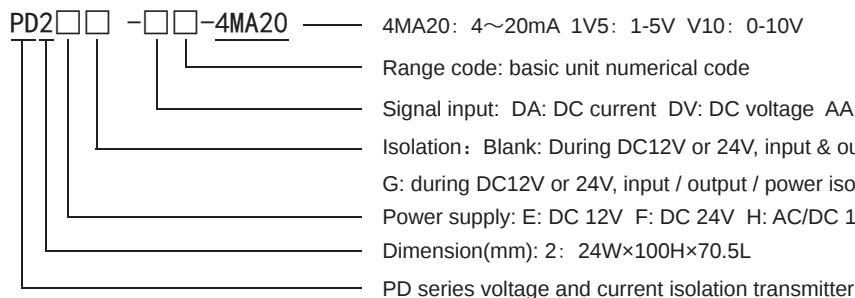
Photos and Features



Features:

- ★ Electromagnetic isolation, more stable and reliable
- ★ Rail installation
- ★ Low power consumption design
- ★ Quick response
- ★ Din rail mounting

Model Illustration



Ordering Information

Model	Power supply	Isolation mode	Measuring range	Analog output	Code
PD2E(F)-AA□-4MA20	E:12V DC F:24V DC	Isolation between input and output.	AA: 200mA/2A/20A/200A	4~20mA (Other output signal need to customized)	D0650PD203
PD2E(F)-AV□-4MA20			AV: 20V/200V/600V		D0650PD203
PD2E(F)-DA□-4MA20			DA: 200mA/2A/20A/200A		D0770PD203
PD2E(F)-DV□-4MA20			DV: 20V/200V/600V		D0770PD203
PD2E(F)G-AA□-4MA20		Isolation among input, output and power.	AA: 200mA/2A/20A/200A		D0770PD203
PD2E(F)G-AV□-4MA20			AV: 20V/200V/600V		D0770PD203
PD2E(F)G-DA□-4MA20			DA: 200mA/2A/20A/200A		D0850PD203
PD2E(F)G-DV□-4MA20			DV: 20V/200V/600V		D0850PD203
PD2H-AA□-4MA20	AC/DC 100~240V	AA: 200mA/2A/20A/200A	D0920PD203		
PD2H-AV□-4MA20		AV: 20V/200V/600V	D0920PD203		
PD2H-DA□-4MA20		DA: 200mA/2A/20A/200A	D1000PD203		
PD2H-DV□-4MA20		DV: 20V/200V/600V	D1000PD203		

Specifications

Input parameters	Refer to measure specifications table
Accuracy	±0.5%
Temperature drift	±0.015%/℃
Input impedance	Refer to measure specifications table
Analog output	4~20mA ≤300Ω (0~20mA,0~10mA,0~10V,1~5V,0~5V need to be ordered)
Environment	0℃~50℃ 35~85%RH
Storage environment	-25℃~70℃ 35~90%RH
Power	DC24V、DC12V、AC/DC100~240V 50/60HZ
Power consumption	<3W
Isolation strength	AC 2000V 1min 50Hz
Isolation features	Isolation between input and output, or Isolation among input, output and power.
Insulation impedance	100MΩ DC 500V
Dimension	24W×100H×70.5L(mm)
Vibration	Sweep-frequency vibration: 10~50Hz
Weight	0.5kg

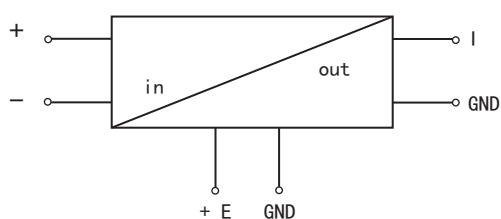
Measuring signal parameters

Signal type	Measuring range	Input method	Input impedance
Voltage signal	20V	Direct input	2MΩ
	200V	Direct input	2MΩ
	600V	Direct input	5.1MΩ
Current signal	200mA	Direct input	1Ω
	2A	Direct input	0.2Ω
	≥ AC 5A	AC 0~5A input (Ratio display)	2mΩ
	≥ DC 2A	DC 0~75mV input (Ratio display)	100KΩ

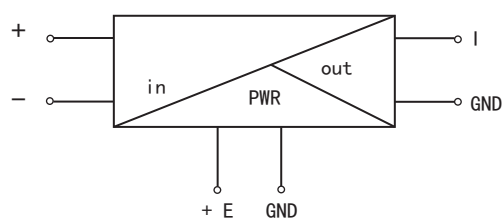
Note: When measured voltage >600, input it to the meter through the 100V ratio voltage transformer, the ratio is AC 0~100V, the meter displays ratio value.

Connection

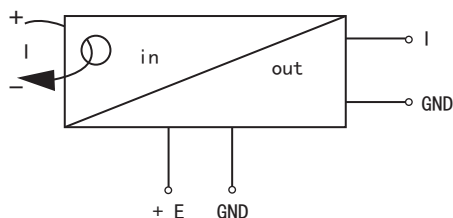
Note: if any change, please subject to the connection drawing on the meter



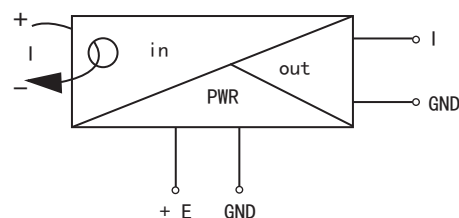
Isolation between input and output.



Isolation among input, output and power.

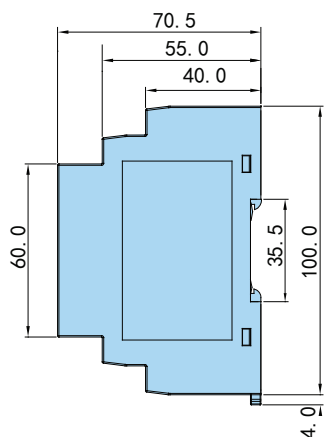


Isolation between input and output.



Isolation among input, output and power.

Dimension (units: mm)



2. PP Series Signal Isolator

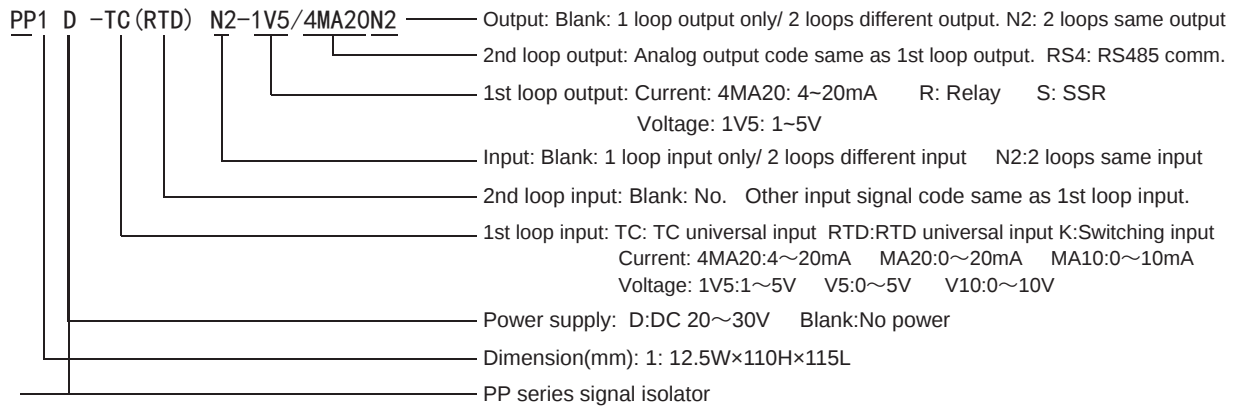
■ Photos and Features



Features:

- ★ Ultra-thin shell, high accuracy, high anti-interference ability.
- ★ Optional signals: 4~20mA, 0~10V, 0~400Ω, TC, RTD, etc.
- ★ Various combination ways of analog: 1 input 2 output, 2 input 2 output, 1 input 1 output, etc.
- ★ To communicate with the product by the equipped software, the signal type can be switched easily.
- ★ With electromagnetic isolation technology.
- ★ Standard 35mm din rail mounting

■ Model Illustration



■ Ordering Information

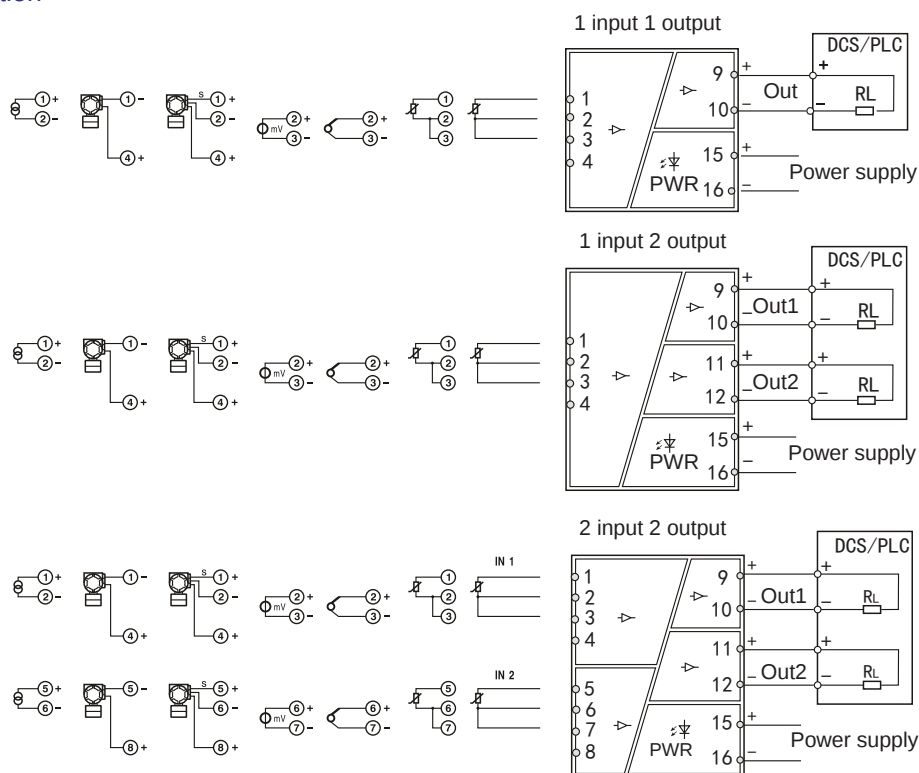
Model	Power supply	Input channel	Input signal	Analog output	Code
PP1D-□-□	DC 20~30V	1 input 1 output	4~20mA (with auxiliary power), 0~20mA 1~5V, 0~10V	1~5V 4~20mA or other appointed signal	D0430PP02
PP1D-□-□N2		1 input 2 output			D0555PP02
PP1D-□N2-□N2		2 input 2 output			D0680PP02
PP1-□-□	No power	1 input 1 output	4~20mA		D0600PP02
PP1-□N2-□N2		2 input 2 output			D0860PP02
PP1D-TC(RTD)-□	DC 20~30V	1 input 1 output	TC, RTD		D0760PP02
PP1D-TC(RTD)-□N2		1 input 2 output			D0860PP02
PP1D-TC(RTD)N2-□N2		2 input 2 output			D1000PP02
PP1D-K-□	DC 20~30V	1 input 1 output	Switching signal	Relay/ Level signal/ Transistor	D0600PP02
PP1D-K-□N2		1 input 2 output			D0760PP02
PP1D-KN2-□N2		2 input 2 output			D0860PP02

■ Specifications

Input signal	0~5V 1~5V 0~10V 4~20mA 0~20mA TC RTD (or appointed signal)		
Output signal	0~5V 1~5V 0~10V 4~20mA 0~20mA (or appointed signal)		
Input impedance	Voltage input signal impedance: ≥500KΩ Current input signal impedance: 50Ω		
Load	≤350Ω		
Wire resistance effect	RTD 3 wires input, <0.005%/Ω		
TC cold junction compensation error	±0.5~1℃ (compensation range -15~+75℃)	Shell material	PC (polycarbonate)
Standard accuracy	±0.1%	Total weight	C type: about 50g R type: about 80g A type: about 110g
Temperature drift	±0.015%/℃	Mounting	35mm standard din rail mounting
Load change effect	±0.1%	Connection cable	Solid cable or multicore cable 0.5~2.5 (mm²)
Response time	<10ms	Connection type	T type: M3 screw /below 0.8Nm

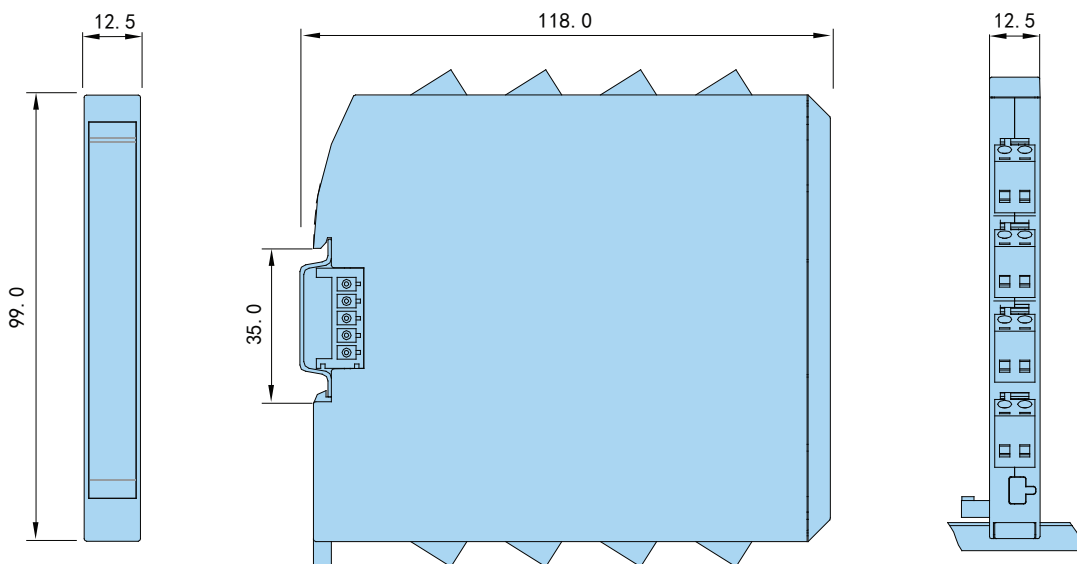
Output current high limit	25mA	Environment humidity	5~95% (No condensation)
Output Ripple	<10mA P-P	Operated temperature	-20~60℃
Electricity/storage time drift	2μA	Storage temperature	-40~80℃
Electrical stability time	<1s	Protection level	IP20
Power voltage range	20~30VDC	Isolated ability	1.5kV(50Hz,1min)
Rated power voltage	24VDC	Insulation resistance	≥100MΩ/500VDC
Current consumption	<100mA(24VDC power/20mA output/80Ω)	EMC	GB/T18268(IECC613 26-1)

Connection



Note: if any change, please subject to the connection drawing on the meter.

Dimension (units: mm)



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

Rotary Encoder Function Comparison Table

	No.	Model Function	HY25	HY30	HY38	HY50	HY58	HU38
Panel Meter								
Sensor Indicator								
Temperature Controller	1	Output	NPN open collector output, voltage output	NPN open collector output, voltage output	Push and pull output, NPN open collector output, voltage output, line drive output	Push and pull output, NPN open collector output, voltage output, line drive output	Push and pull output, NPN open collector output, voltage output, line drive output	Push and pull output, voltage output, line drive output
Counter	2	Output signal	A、B、Z A、B、Z	A、B、Z A、B、Z	A、B、Z A、B、Z	A、B、Z A、B、Z	A、B、Z A、B、Z	A、B
Timer Relay	3	Out diameter	M25	M30	M38	M50	M58	M38
Tacho/Speed/ Pulse Meter	4	Shaft	Solid shaft: M4	Solid shaft: M4	Solid shaft: M6, M8 Semi-hollow shaft: M6, M8 Hollow shaft: M6, M8	Solid shaft: M8, M10, M12 Semi-hollow shaft: M8, M10, M12 Hollow shaft: M8, M10, M12	Solid shaft: M8, M10, M12, M14, M15 Semi-hollow shaft: M8, M10, M12, M14, M15 Hollow shaft: M8, M10, M12, M14, M15	Solid shaft: M6, M8
Recorder	5	Pulse	20-1200 for option	20-1200 for option	10-5000 for option	10-5000 for option	10-5800 for option	200, 400, 600, 1000
Signal Isolator	6	Power supply	DC 8-26V	DC 8-26V	DC 8-26V DC 5V	DC 8-26V DC 5V	DC 8-26V DC 5V	DC 8-26V
Rotary Encoder	7	Cable	PVC 2 meter length	PVC 2 meter length	PVC 2 meter length	PVC 2 meter length	PVC 2 meter length	PVC 2 meter length
Proximity Sensor	8	Protection	Reverse connection protection, short-circuit protection between output and power	Reverse connection protection, short-circuit protection between output and power	Reverse connection protection, short-circuit protection between output and power	Reverse connection protection, short-circuit protection between output and power	Reverse connection protection, short-circuit protection between output and power	Reverse connection protection, short-circuit protection between output and power
Solid State Relay								
Power Meter Introduction								

1、HY25 Series Rotary Encoder

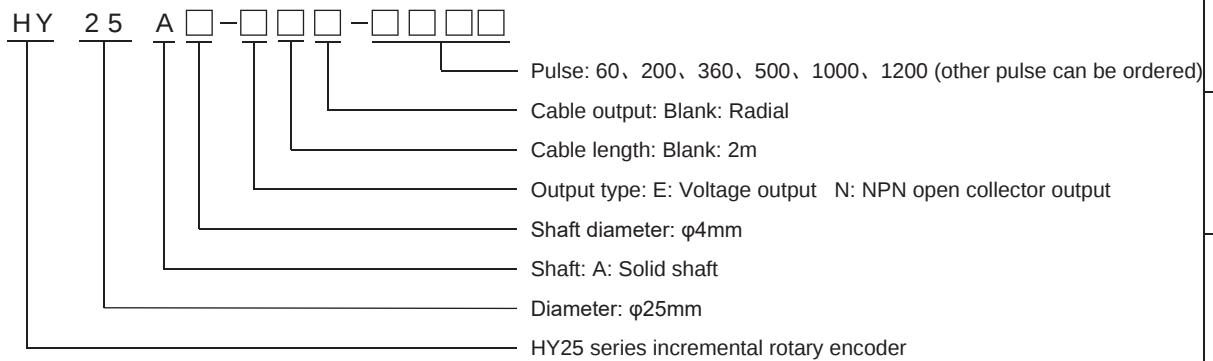
■ Photo and Features



Features:

- ★ Out diameter $\Phi 25$
- ★ Shaft $\Phi 4$
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 300KHz
- ★ Max speed 6000r/min
- ★ Protection: IP54
- ★ Resolution (PPR) 20~1200

■ Model Illustration



■ Ordering Information

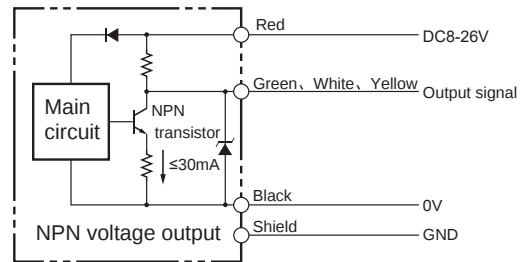
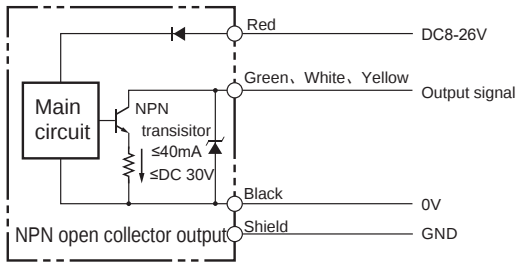
Model	Shaft	Pulse	Output and Power Supply	Pulses	Code
HY25A4-E- ☐	Solid shaft $\phi 4\text{mm}$	≤ 1200	E: Voltage output, 8-26V DC	Below 1200	D0345HY01
HY25A4-N- ☐	Solid shaft $\phi 4\text{mm}$	≤ 1200	N: NPN open collector output, 8-26V DC	Below 1200	D0345HY01

■ Specifications

Power supply	Voltage	DC 8~26V $\pm 5\%$	Input and Output	Response time	$\leq 1\mu\text{s}$ (when cable length is 1m)
	Ripple wave	$\leq 3\%\text{rms}$		NPN open collector output	Negative logic (for low-level) Load current $\leq 40\text{mA}$
	Current consumption	$\leq 120\text{mA}$, DC 5V Power $\leq 80\text{mA}$			
Output wave	Signal mode	A, B phase + Z phase (zero position)		Voltage output	Output voltage $\geq$ power supply -3V DC Output current $\leq 30\text{mA}$
	Max response frequency	300kHz			
	Max speed	(Max frequency/resolution) $\times 60$		Residual voltage	$\leq 0.5\text{V DC}$
	Duty ratio	$50\pm 25\%$			
	Phase difference width	$25\pm 12.5\%$			
	Z phase signal Width	$100\pm 50\%$			

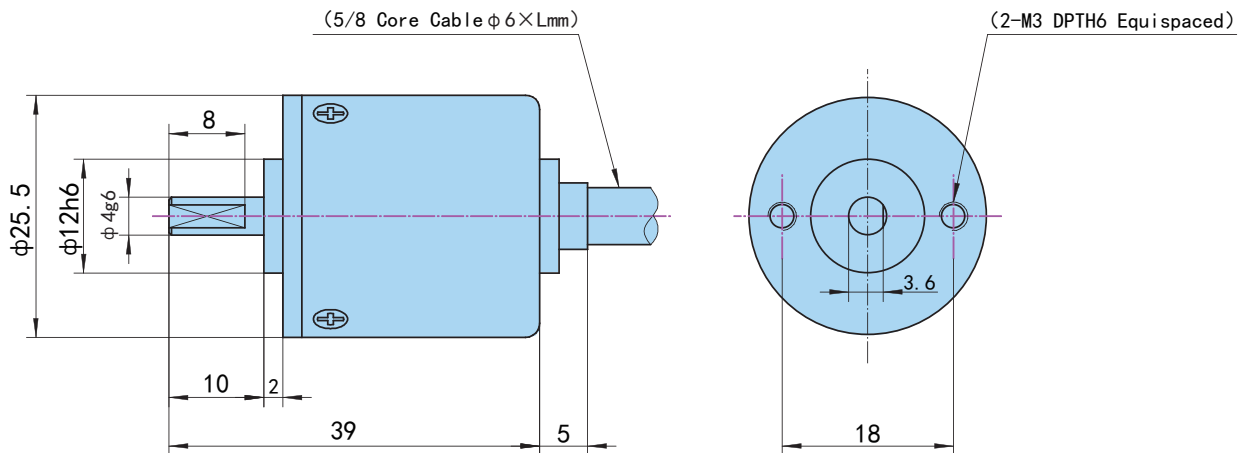
Mechanical specification	Starting torque		$\leq 0.01\text{N} \cdot \text{m} \left(+20^{\circ}\text{C} \right)$	Ambient specification	Short-circuit protection	Output and power supply
	Rotor inertia		$0.3 \times 10^{-6} \text{ kg} \cdot \text{m}^2$		Ambient tempaure	$-20 \sim +85^{\circ}\text{C}$
	Shaft loading	Radial	15N		Store temperature	$-30 \sim +95^{\circ}\text{C}$
		Thrust	10N		Ambient humidity	35~85%RH (Non Condensing)
	Max revolution		6000rpm		Dielectric strength	AC 500V (50/60Hz) for 1 min
	Cable	Material	PVC		Insulation resistance	$\geq 50\text{M}\Omega$
		Length	2m		Anti-vibration	0.75mm amplitude at 10~55Hz ^{*2}
		Diameter	$\Phi 5\text{mm}$		Anti-impact	$490\text{m/S}^2 \quad 11\text{ms}^{*3}$
	Weight		About 200g		Protection	IP54

Wire Connection



Cable color	Red	Black	Green	White	Yellow	Shield
NPN open collector output	Vcc	OV	A	B	Z	G
Voltage output						

Dimension (unit: mm)



2、HY30 Series Rotary Encoder

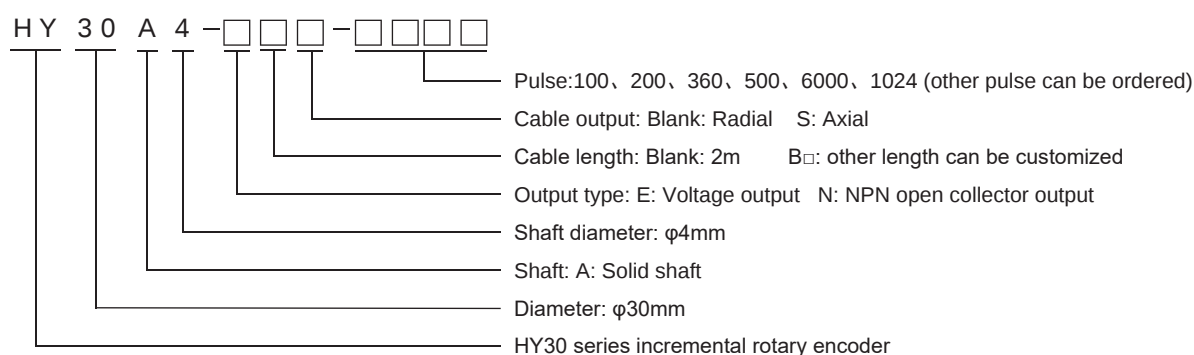
■ Photo and Features



Features:

- ★ Out diameter Φ30
- ★ Shaft Φ4x10mm
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 300KHz
- ★ Max speed 6000r/min
- ★ Protection: IP54
- ★ Resolution (PPR) 20~1200

■ Model Illustration



■ Ordering Information

Model	Shaft	Pulse	Output	Power supply	Code
HY30A4-E-□	Solid shaft Φ4mm	≤1200	E: Voltage output	DC8-26V	D0345HY01
HY30A4-N-□	Solid shaft Φ4mm	≤1200	N: NPN open collector	DC8-26V	D0345HY01

■ Specifications

Power supply	Voltage	DC 8~26V ±5%	Input and Output	Response time	≤1μs (when cable length is 1m)
	Ripple wave	≤ 3%rms		NPN open collector output	Negative logic (for low-level) Load current ≤ 40mA
	Current consumption	≤ 120mA			
Output wave	Signal mode	A, B phase + Z phase (zero position)		Voltage output	Output voltage ≥ power supply -3V DC Output current ≤ 30mA
	Max response frequency	300kHz			
	Max speed	(Max frequency/resolution)×60		Residual voltage	≤0.5V DC
	Duty ratio	50± 25%			
	Phase difference width	25± 12.5%			
	Z phase signal width	100± 50%			

Power Meter Introduction

Cable color	Red	Black	Green	White	Yello	Shield
NPN open collector output Voltage output	Vcc	OV	A	B	Z	G

Technical drawing of a circular part. The drawing shows a cross-section of a cylinder with a diameter of $\phi 22 \pm 0.1$. The part has a central hole with a diameter of $\phi 2$ and a depth of 4 mm. The outer diameter is $\phi 22 \pm 0.1$. The drawing includes a center line and a dimension line for the outer diameter.

3、HY38 Series Rotary Encoder



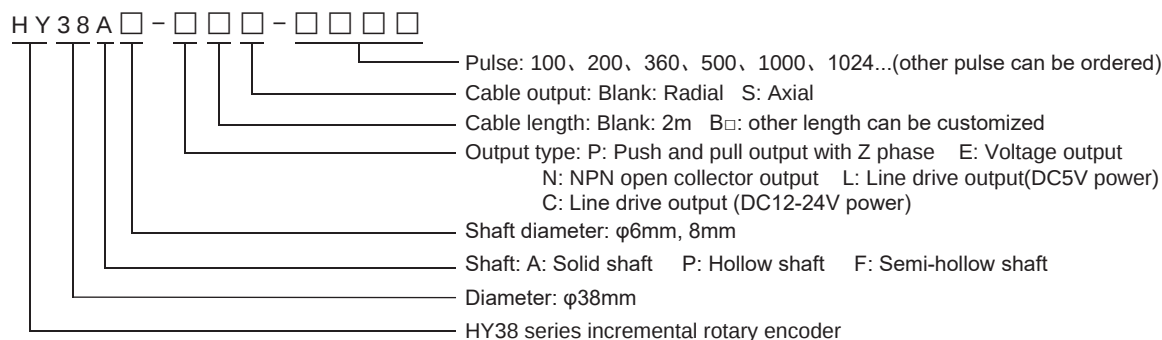
■ Photo and Features



Features:

- ★ Out diameter Φ38
- ★ Shaft Φ6/8
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 300KHz
- ★ Max speed 6000rpm
- ★ Protection: IP54

■ Model Illustration



■ Ordering information

Model	Shaft	Output and power supply	Pulse	Code
HY38A6/8-□-□	Solid shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0310HY01
HY38A6/8-□-□	Solid shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0360HY01
HY38A6/8-□-□	Solid shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-3500	D0460HY01
HY38A6/8-□-□	Solid shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3600-4096	D0475HY01
HY38A6/8-□-□	Solid shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	5000	D0575HY01
HY38F6/8-□-□	Semi-hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0320HY01
HY38F6/8-□-□	Semi-hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0380HY01
HY38F6/8-□-□	Semi-hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-3500	D0460HY01
HY38F6/8-□-□	Semi-hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3600-4096	D0515HY01
HY38F6/8-□-□	Semi-hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	5000	D0575HY01
HY38P6/8-□-□	Hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0375HY01
HY38P6/8-□-□	Hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0420HY01
HY38P6/8-□-□	Hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-3500	D0520HY01
HY38P6/8-□-□	Hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3600-4096	D0525HY01
HY38P6/8-□-□	Hollow shaft φ6mm φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	5000	D0720HY01

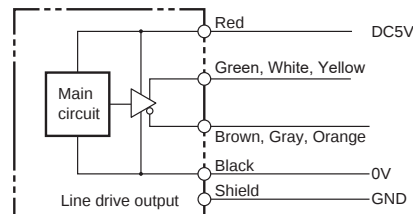
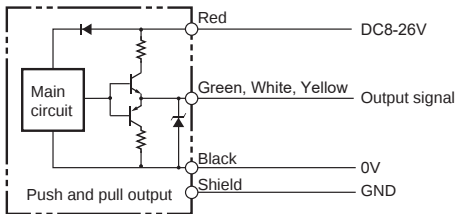
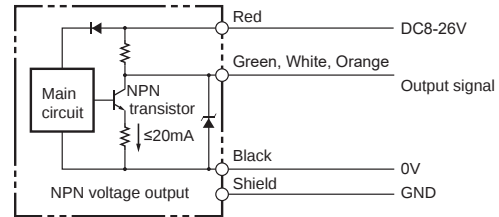
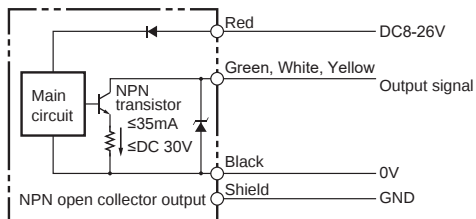
For example: HY38A8-P-1000, solid shaft φ8mm, pulse 1000, push and pull output, power supply DC 8~26V.

■ Specifications

Power supply	Voltage	Line drive output DC 5V ±5% Other output DC 8~26V ±5%	Input and Output	Response time	≤1μs (when cable length is 2m)
	Ripple wave	≤3%rms		NPN open collector output	Negative logic (for low-level) Load current≤30mA
	Current consumption	≤120mA, DC 5V power ≤80mA		Push and pull output	Output voltage≥ power voltage - 3V DC Load current≤30mA output current ≤10mA
Output wave	Signal mode	A, B phase+Z phase (zero position)		Voltage output	Output voltage≥power voltage - 3V DC Output current≤30mA
	Max response frequency	300kHz		Line drive output	Output voltage≥2.5V DC Load/output current≤20mA
	Max speed	(Max frequency/resolution)×60		Residual voltage	≤0.5V DC
	Duty ratio	50±25%			
	Phase difference width	25±12.5%			
	Z phase signal width	100±50%			

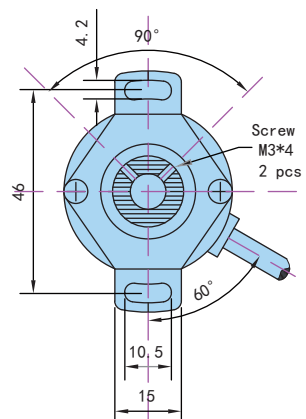
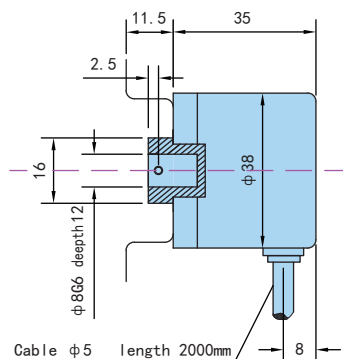
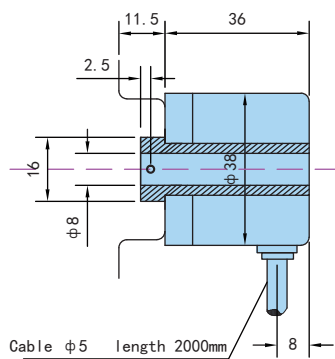
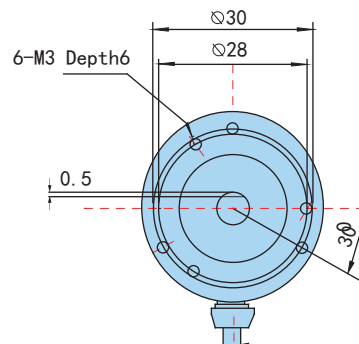
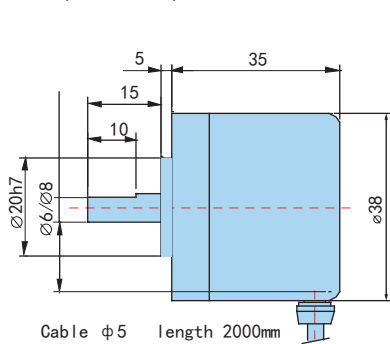
Mechanical specification	Starting torque		$\leq 0.01\text{N} \cdot \text{m} \text{ (+20}^{\circ}\text{C)}$	Ambient specification	Short-circuit protection		Output and power supply	
	Rotor inertia		$0.3 \times 10^{-6} \text{ kg} \cdot \text{m}^2$		Ambient temperaure		$-20 \sim +85^{\circ}\text{C}$	
	Shaft loading	Radial	20N		Store temperature		$-30 \sim +95^{\circ}\text{C}$	
		Thrust	15N		Ambient humidity		35~85%RH (Non Condensing)	
	Max revolution		6000rpm		Dielectric strength		AC 500V (50/60Hz) for 1 min	
	Cable	Material	PVC		Insulation resistance		$\geq 50\text{M}\Omega$	
		Length	2m		Anti-vibration		0.75mm amplitude at 10~55Hz ^{*2}	
		Diameter	$\Phi 5\text{mm}$		Anti-impact		$490\text{m/S}^2 \quad 11\text{ms}^{*3}$	
	Weight		About 200g		Protection		IP54	

Wire Connection



Cable color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Shield
NPN open collector output	Vcc	OV	A	—	B	—	Z	—	G
Push and pull output	Vcc	OV	A	—	B	—	Z	—	G
Voltage output	Vcc	OV	A	—	B	—	Z	—	G
Line drive output	Vcc	OV	A	$\bar{A}$	B	$\bar{B}$	Z	$\bar{Z}$	G

Dimension (unit: mm)

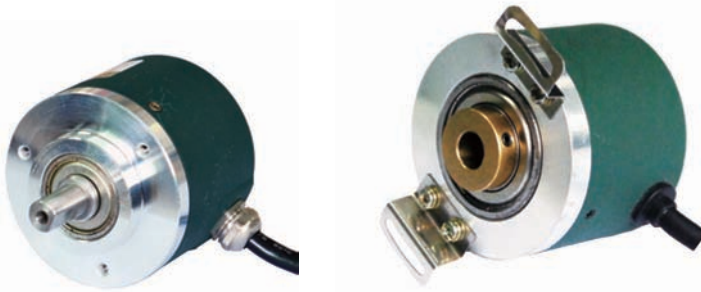


Hollow shaft

Semi-hollow shaft

4、HY50 Series Rotary Encoder

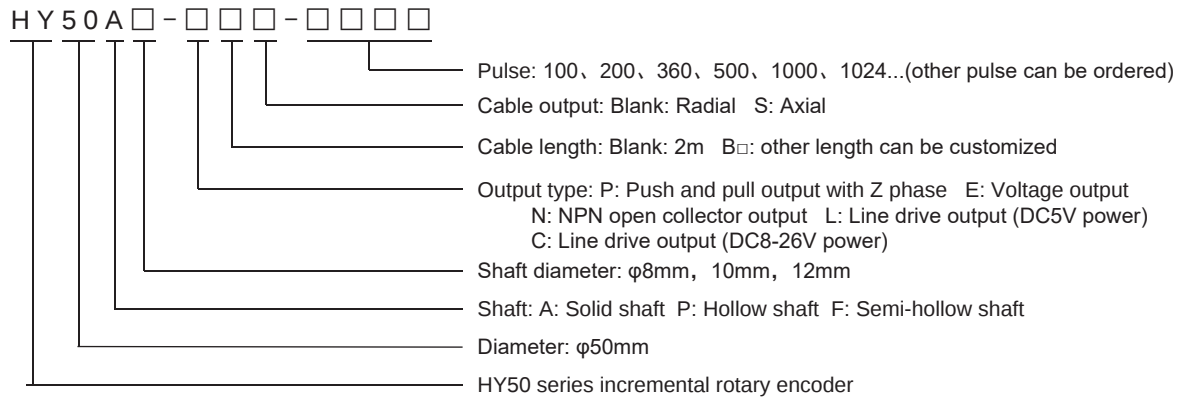
■ Photo and Features



Features:

- ★ Out diameter Φ50
- ★ Shaft Φ8x10mm
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 300KHz
- ★ Max speed 6000rpm
- ★ Protection: IP54

■ Model Illustration



■ Ordering Information

Model	Shaft	Output and power supply	Pulse	Code
HY50A8-□-□	Solid shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0420HY01
HY50A8-□-□	Solid shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0490HY01
HY50A8-□-□	Solid shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-5000	D0555HY01
HY50F8/10/12-□-□	Semi-hollow shaft φ8mm,10mm,12mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0440HY01
HY50F8/10/12-□-□	Semi-hollow shaft φ8mm,10mm,12mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0525HY01
HY50F8/10/12-□-□	Semi-hollow shaft φ8mm,10mm,12mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-5000	D0600HY01
HY50P8-□-□	Hollow shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0485HY01
HY50P8-□-□	Hollow shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	2000-2500	D0570HY01
HY50P8-□-□	Hollow shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	3000-5000	D0650HY01

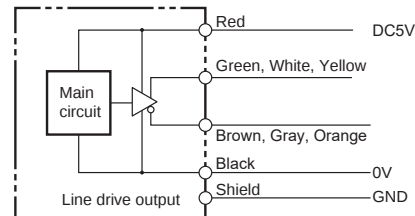
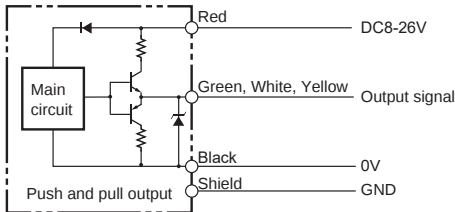
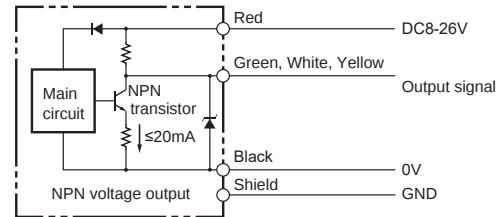
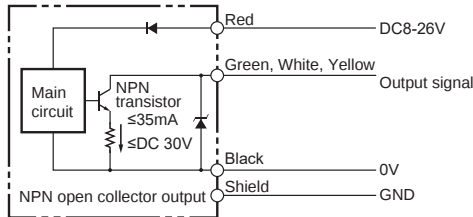
For example: HY50A6-P-1000, solid shaft φ6mm, pulse 1000, push and pull output, power supply DC 8~26V.

■ Specification

Power supply	Voltage	Line drive output DC 5V ±5% Other output DC 8~26V ±5%	Input and Output	Response time	≤1μs (when cable length is 1m)
	Ripple wave	≤3%rms		NPN open collector output	Negative logic (for low-level) Load currents≤30mA
	Current consumption	≤120mA, DC 5V power ≤80mA		Push and pull output	Output voltage≥ power voltage - 3V DC Load currents≤30mA output current ≤10mA
Output wave	Signal mode	A, B phase+Z phase (zero position)		Voltage output	Output voltage≥power voltage - 3V DC Output currents≤30mA
	Max response frequency	300kHz		Line drive output	Output voltage≥2.5V DC Load/output currents≤20mA
	Max speed	(Max frequency/resolution)×60		Residual voltage	≤0.5V DC
	Duty ratio	50±25%			
	Phase difference width	25±12.5%			
	Z phase signal width	100±50%			

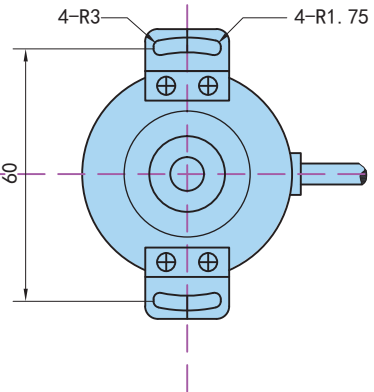
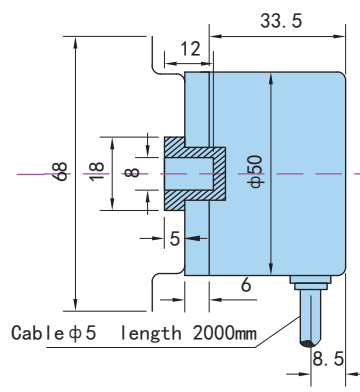
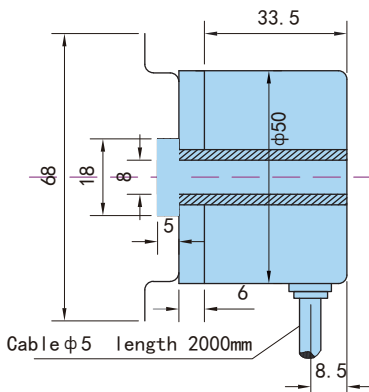
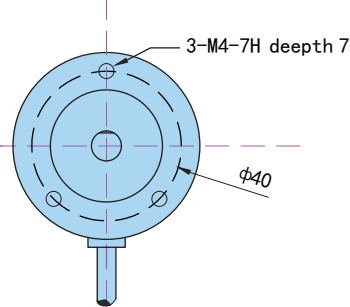
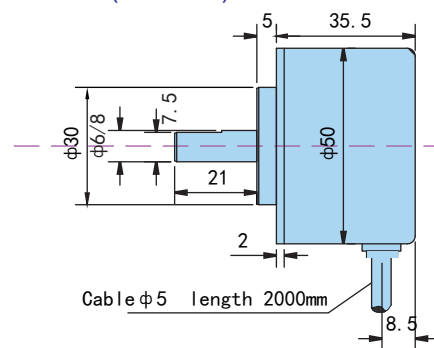
Panel Meter	Mechanical specification	Starting torque	$\leq 0.01\text{N} \cdot \text{m} (+20^\circ\text{C})$	Ambient specification	Short-circuit protection	Output and power supply
		Rotor inertia	$0.3 \times 10^{-6} \text{kg} \cdot \text{m}^2$		Ambient temperature	$-20 \sim +85^\circ\text{C}$
		Shaft loading	Radial 20N		Store temperature	$-30 \sim +95^\circ\text{C}$
			Thrust 15N		Ambient humidity	35~85%RH (Non Condensing)
Sensor Indicator	Cable	Max revolution	6000rpm		Dielectric strength	AC 500V (50/60Hz) for 1 min
		Material	PVC		Insulation resistance	$\geq 50\text{M}\Omega$
			Length 2m		Anti-vibration	0.75mm amplitude at $10 \sim 55\text{Hz}^{*2}$
			Diameter $\Phi 5\text{mm}$		Anti-impact	$490\text{m/S}^2 \ 11\text{ms}^{*3}$
Temperature Controller	Weight		About 200g		Protection	IP54

Wire Connection



Cable color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Shield
NPN open collector output	Vcc	OV	A	—	B	—	Z	—	G
Push and pull output	Vcc	OV	A	—	B	—	Z	—	G
Voltage output	Vcc	OV	A	—	B	—	Z	—	G
Line drive output	Vcc	OV	A	$\bar{A}$	B	$\bar{B}$	Z	$\bar{Z}$	G

Dimension (unit: mm)



5、HY58 series rotary encoder

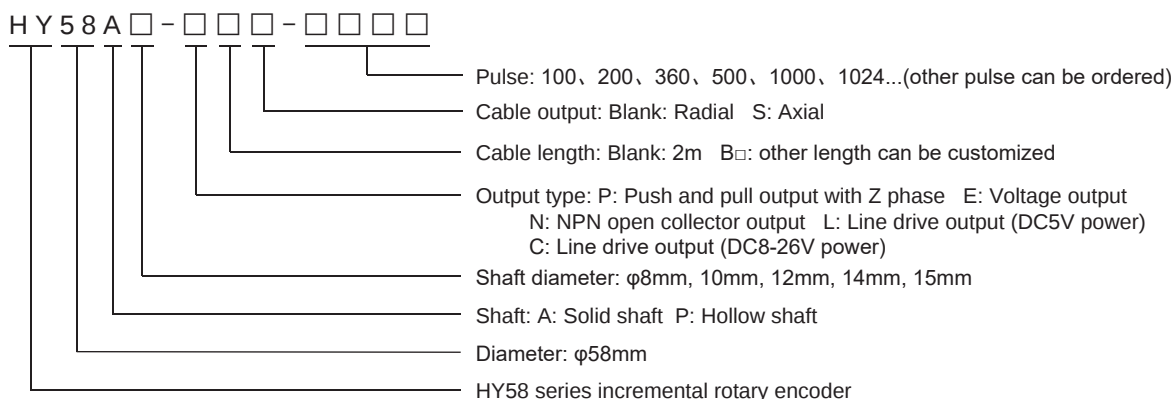
■ Photo and Features



Features:

- ★ Out diameter Φ58
- ★ Shaft Φ8/10/12/14/15
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 300KHz
- ★ Max speed 6000rpm
- ★ Protection: IP54
- ★ 100-6000PPR

■ Model Illustration



■ Ordering Information

Model	Shaft	Output and power supply	Pulse	Code
HY58A8-□-□	Solid shaft φ8mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0720HY01
HY58A8-□-□		P/E/N/C (DC 8~26V), L (DC5V)	2000-2580	D0720HY01
HY58A8-□-□		P/E/N/C (DC 8~26V), L (DC5V)	3000-5800	D0865HY01
HY58P8/10/12/14/15-□-□	Hollow shaft φ8mm φ10mm φ12mm φ14mm φ15mm	P/E/N/C (DC 8~26V), L (DC5V)	10-1800	D0865HY01
HY58P8/10/12/14/15-□-□		P/E/N/C (DC 8~26V), L (DC5V)	2000-2580	D0865HY01
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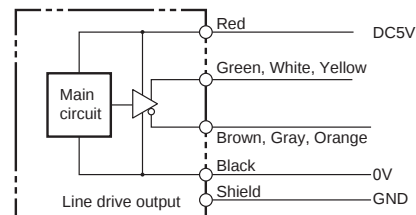
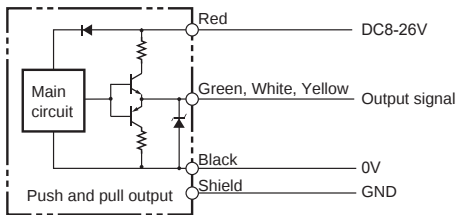
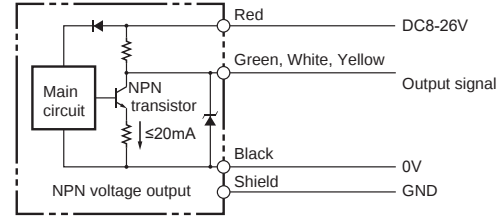
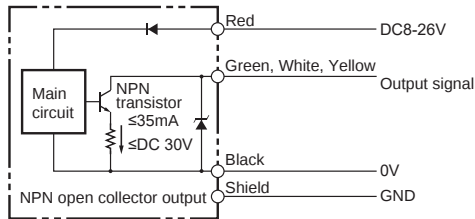
For example: HY58A8-P-1000, solid shaft φ8mm, pulse 1000, push and pull output, power supply DC 8~26V.

■ Specification

Power supply	Voltage	Line drive output DC 5V ±5% Other output DC 8~26V ±5%	Input and Output	Response time	≤1μs (when cable length is 1m)
	Ripple wave	≤3%rms		NPN open collector output	Negative logic (for low-level) Load current≤30mA
	Current consumption	≤120mA, DC 5V power ≤80mA		Push and pull output	Output voltage≥ power voltage - 3V DC Load current≤30mA output current ≤10mA
Output wave	Signal mode	A, B phase+Z phase (zero position)		Voltage output	Output voltage≥power voltage - 3V DC Output current≤30mA
	Max response frequency	300kHz		Line drive output	Output voltage≥2.5V DC Load/output current≤20mA
	Max speed	(Max frequency/resolution)×60		Residual voltage	≤0.5V DC
	Duty ratio	50±25%			
	Phase difference width	25±12.5%			
	Z phase signal width	100±50%			

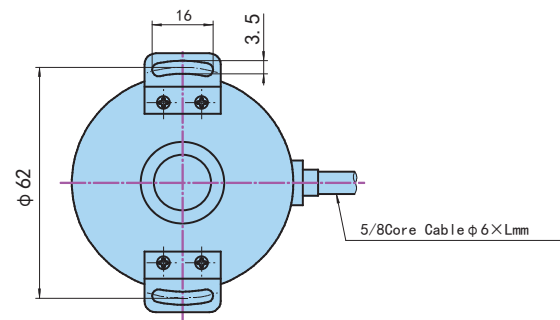
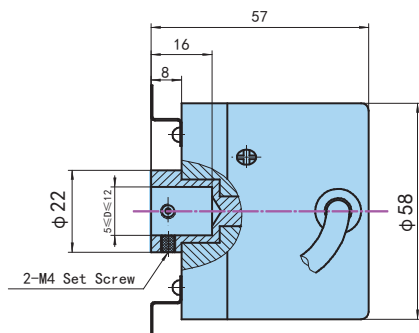
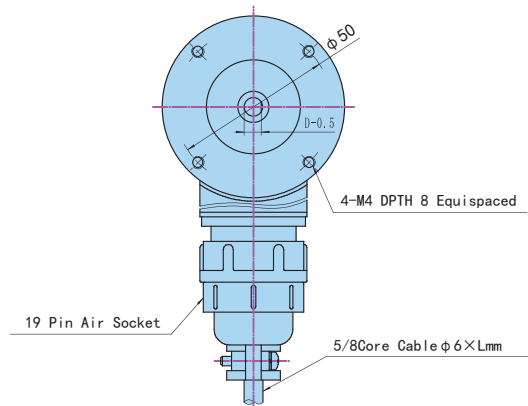
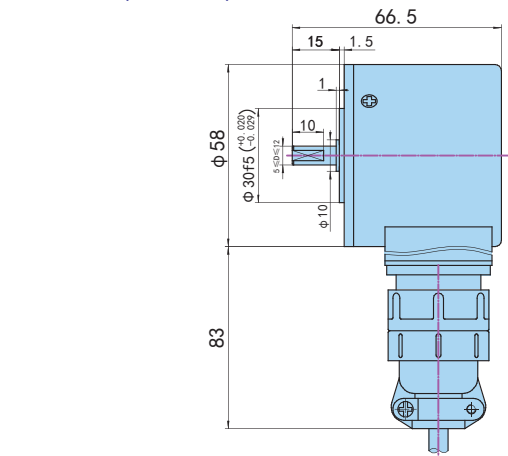
Mechanical specification	Starting torque		≤ 0.01N · m (+20℃)	Ambient specification	Short-circuit protection		Output and power supply	
	Rotor inertia		0.3×10 ⁻⁶ kg · m ²		Ambient tempereare		-20~-+85℃	
	Shaft loading	Radial	30N		Store temperature		-30~-+95℃	
		Thrust	20N		Ambient humidity		35~85%RH (Non Condensing)	
	Max revolution		6000rpm		Dielectric strength		AC 500V (50/60Hz) for 1 min	
	Cable	Material	PVC		Insulation resistance		≥ 50MΩ	
		Length	2m		Anti-vibration		0.75mm amplitude at 10-55Hz ^{*2}	
		Diameter	Φ 5mm		Anti-impact		490m/S ² 11ms ^{*3}	
	Weight		About 200g		Protection		IP54	

■ Wire Connection



Cable color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Shield
NPN open collector output	Vcc	OV	A	—	B	—	Z	—	G
Push and pull output	Vcc	OV	A	—	B	—	Z	—	G
Line drive output	Vcc	OV	A	$\bar{A}$	B	$\bar{B}$	Z	$\bar{Z}$	G

■ Dimension (unit:mm)



6、HU38 Series Rotary Encoder

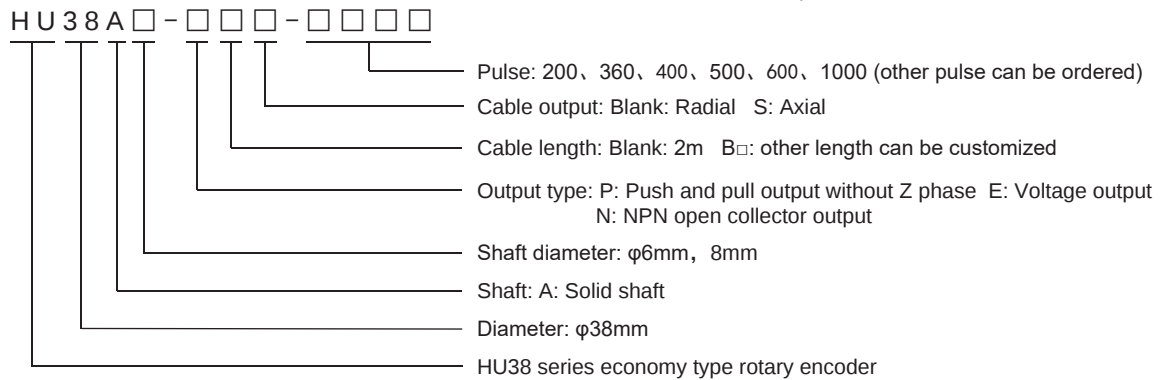
■ Photo and Features



Features:

- ★ Out diameter $\Phi 38$
- ★ Shaft $\Phi 6/8$
- ★ Sideward cable, 2m length
- ★ Different output types for option
- ★ Max output frequency 20KHz
- ★ Max speed 3000rpm
- ★ Protection IP50
- ★ Without Z phase (zero position) signal
- ★ Output pulse 200、360、400、500、600、1000 for option

■ Model Illustration



■ Ordering Information

Model	Shaft	Output and power supply	Pulse	Code
HU38A6/8- ☐ - ☐	Solid shaft $\phi 6\text{mm}$ $\phi 8\text{mm}$	P/E/N, 12-24V DC	200/360/400/500/600/1000	D0200HU01

For example: HU38A6-P-1000, solid shaft $\phi 6\text{mm}$, pulse 1000, push and pull output, power supply DC 12~24V.

■ Specification

Power supply	Voltage	DC 12~24V $\pm 5\%$	Input and Output	Response time	$\leq 1\mu\text{s}$ (when cable length is 1m)
	Ripple wave	$\leq 3\%\text{rms}$		NPN open collector output	Negative logic (for low-level) Load current $\leq 30\text{mA}$
	Current consumption	$\leq 60\text{mA}$		Push and pull output	Output voltage $\geq$ power voltage - 3V DC Load current $\leq 30\text{mA}$ output current $\leq 10\text{mA}$
Output wave	Signal mode	A B phase		Voltage output	Output voltage $\geq$ power voltage - 3V DC Output current $\leq 30\text{mA}$
	Max response frequency	20kHz		Line drive output	Output voltage $\geq 2.5\text{V}$ DC Load/output current $\leq 20\text{mA}$
	Max speed	(Max frequency/resolution) $\times 60$		Residual voltage	$\leq 0.5\text{V}$ DC
	Duty ratio	$50 \pm 25\%$			
	Phase difference width	$25 \pm 12.5\%$			
	Z phase signal width	$100 \pm 50\%$			

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

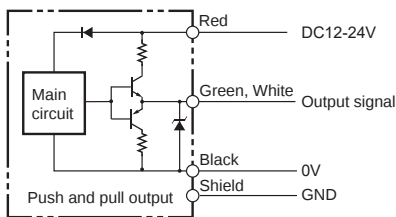
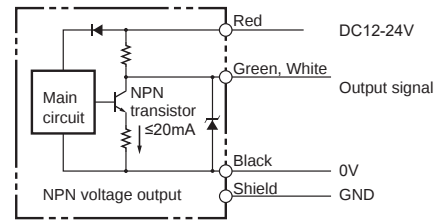
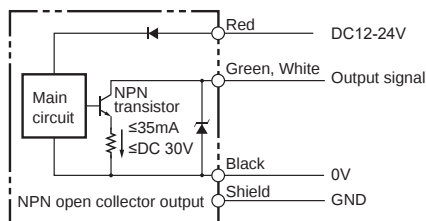
Proximity Sensor

Solid State Relay

Power Meter Introduction

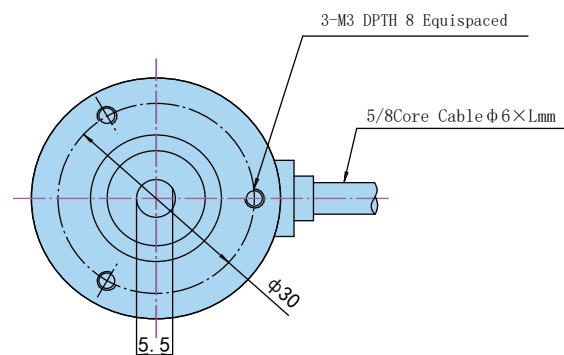
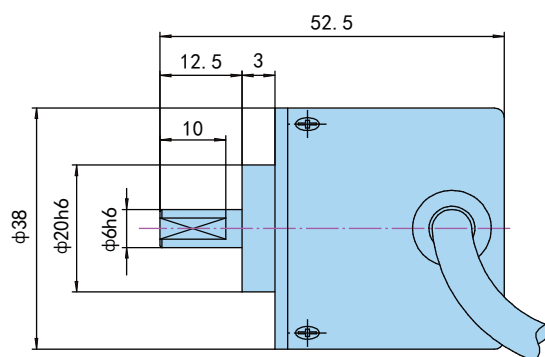
Mechanical specification	Starting torque		≤ 0.01N · m (+20℃)	Ambient specification	Short-circuit protection		Output and power supply	
	Rotor inertia		0.3×10 ⁻⁶ kg · m ²		Ambient temperaure		-25~-+70℃	
	Shaft loading	Radial	20N		Store temperature		-25~-+85℃	
		Thrust	10N		Ambient humidity		35~85%RH (Non Condensing)	
	Max revolution		3000rpm		Dielectric strength		AC 500V (50/60Hz) for 1 min	
	Cable	Material	PVC		Insulation resistance		≥ 50MΩ	
		Length	2m		Anti-vibration		0.75mm amplitude at 10~55Hz ^{*2}	
		Diameter	Φ5mm		Anti-impact		490m/S ² 11ms ^{*3}	
	Weight		About 200g		Protection		IP54	

Wire Connection



Cable color	Red	Black	Green	White	Shield
NPN open collector output	Vcc	OV	A	B	G
Push and pull output	Vcc	OV	A	B	G
Voltage output	Vcc	OV	A	B	G
Line drive output	Vcc	OV	A	B	G

Dimension (unit: mm)



Proximity Sensor Function Comparison Table

No	Model Function	TK	TKX	TL	TC
					
	Category	Inductive	Enhanced Inductive	Inductive short type	Capacitive
1	Output	NPN NO NPN NC PNP NO PNP NC DC 2-wire NO AC 2-wire NO AC 2-wire NC	NPN NO NPN NC PNP NO PNP NC DC 2-wire NO	NPN NO NPN NC PNP NO PNP NC	NPN NO NPN NC PNP NO PNP NC AC 2-wire NO AC 2-wire NC
2	Shape	Column shape: M8/12/18/30 Square shape: 18/30/40/65 Protuberant shape: 40/50/70	Column shape: M8/12/18/30 Square shape: 18/30/40	Column shape: M8/12/18/30	Column shape: M18/30
3	Connector	No connector/ Straight/ With angle	No connector/ Straight/ With angle	No connector	No connector
4	Sensing distance	Column shape: 2/4/5/8/10/15 Square shape: 5/10/15/20/35 Protuberant shape: 10/20/35	Column shape: 2/4/5/8/10/15 Square shape: 5/10/15/20	Column shape: 2/4/5/8/10/15	Column shape: 8/15mm
5	Power supply	DC 3 wire: DC 10-30V DC 2 wire: DC 24V AC 2 wire: AC 90-250V	DC 3 wire: DC 10-30V DC 2 wire: DC 24V	DC 3 wire: DC 10-30V	DC 3 wire: DC 10-30V AC 2 wire: AC 90-250V
6	Cable	PVC sheath & multi-strand copper wire cable	Glass fiber wire & multi-strand copper wire flexible cable	PVC sheath & multi-strand copper wire cable	PVC sheath & multi-strand copper wire cable
7	Protection	No	Protection of power supply reverse Protection of output reverse Short-circuit load protection Overvoltage/power surge protection High voltage pulse absorption protection Power supply voltage fluctuation Working environment temperature compensation	No	No
8	Load capacity	200mA 300mA	200mA	100mA	200mA 300mA
9	Cylindrical length	52mm	45mm	38mm	52mm
10	Thread length	35mm	45mm	28mm	35mm

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

1. TL Series Inductive Proximity Sensor

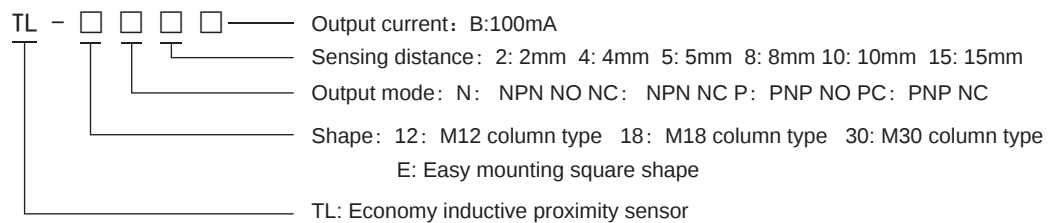
■ Photos and Features



Features:

- ★ Economical and practical, widely used in machinery and equipment.
- ★ With power supply reverse connection protection design, 10-30V power supply.
- ★ Has excellent anti-interference ability.
- ★ The sensing distance is precisely adjusted.
- ★ Inductive non-contact detection, no wear, long service life

■ Model Illustration



■ Ordering Information

1. Inductive Column Shape

Model	Output type	Mounting type	Sensing distance	Effective distance	Frequency	Load current	Protection level	Code
TL-12N(NC)4B	NPN NO(NC)	Non-flush	4mm	3.2mm	400Hz	100mA	IP66(IEC)	C0021TL01
TL-12P(PC)4B	PNP NO(NC)	Non-flush	4mm	3.2mm	400Hz	100mA	IP66(IEC)	C0021TL01
TL-18N(NC)5B	NPN NO(NC)	Flush	5mm	4mm	400Hz	100mA	IP66(IEC)	C0026TL01
TL-18P(PC)5B	PNP NO(NC)	Flush	5mm	4mm	400Hz	100mA	IP66(IEC)	C0026TL01
TL-18N(NC)8B	NPN NO(NC)	Non-flush	8mm	6.4mm	200Hz	100mA	IP66(IEC)	C0028TL01
TL-18P(PC)8B	PNP NO(NC)	Non-flush	8mm	6.4mm	200Hz	100mA	IP66(IEC)	C0028TL01
TL-30N(NC)10B	NPN NO(NC)	Flush	10mm	8mm	200Hz	100mA	IP66(IEC)	C0038TL01
TL-30P(PC)10B	PNP NO(NC)	Flush	10mm	8mm	200Hz	100mA	IP66(IEC)	C0038TL01
TL-30N(NC)15B	NPN NO(NC)	Non-flush	15mm	12mm	100Hz	100mA	IP66(IEC)	C0040TL01
TL-30P(PC)15B	PNP NO(NC)	Non-flush	15mm	12mm	100Hz	100mA	IP66(IEC)	C0040TL01

2. Inductive Square Shape

Model	Output type	Mounting type	Sensing distance	Effective distance	Frequency	Load current	Protection level	Code
TL-EN(NC)5B	NPN NO(NC)	Screws	5mm	4mm	500Hz	100mA	IP66 (IEC)	C0016TL01
TL-EP(PC)5B	PNP NO(NC)	Screws	5mm	4mm	500Hz	100mA	IP66 (IEC)	C0016TL01

Note: It will be TL-12N2B for NPN NO and TL-12NC2B for NPN NC.

■ Technical Specifications

1. Column shape

Type	DC 3-wire					
	Flush	Non-flush	Flush	Non-flush	Flush	Non-flush
Model	TL-12N(C)2B	TL-12N(C)4B	TL-18N(C)5B	TL-18N(C)8B	TL-30N(C)10B	TL-30N(C)15B
	TL-12P(C)2B	TL-12P(C)4B	TL-18P(C)5B	TL-18P(C)8B	TL-30P(C)10B	TL-30P(C)15B
Dimension	M12×43mm		M18×48mm		M30×58mm	
Detected object	Magnetic metal (detection distance decreases when it's non-magnetic metal)					
Stipulate distance	2mm	4mm	5mm	8mm	10mm	15mm
Sensing distance	0~1.6mm	0~3.2mm	0~4.0mm	0~6.4mm	0~8.0mm	0~12.0mm
Frequency	≤600Hz	≤400Hz	≤400Hz	≤200Hz	≤200Hz	≤100Hz
Output current	≤100mA					
Power supply	DC 10~30V					
Hysteresis	Less than 10% of the stipulate distance					
Control output	Pure resistance load≤100mA, induction load≤50mA					
Voltage drop	≤2V (At DC 24V 100mA)					
Leakage current	≤0.5mA(At DC 24V)					
Insulation resistance	≥100MΩ (At DC 500V)					
Dielectric strength	AC 1000V 1min (At 50/60Hz)					
LED	Yellow					
Protection level	IP66(IEC)					
Working environment	-25℃~70℃					
Cable length	Standard 2m					

2. Square shape/Little square shape/Easy mounting square shape

Type	DC 3-wire
Model	TL-EN(NC)5B/TL-EP(PC)5B
Dimension	18Wx18Hx36Dmm
Detected object	Magnetic metal (detection distance decreases when it's non-magnetic metal)
Standard detected object	Iron 18×18×1mm
Stipulate distance	5mm
Sensing distance	0~4mm
Frequency	≤400Hz
Output current	≤100mA
Power supply	DC 10~30V
Hysteresis	Less than 10% of the stipulate distance
Control output	Pure resistance load≤100mA, induction load≤50mA
Voltage drop	≤2V (At DC 24V 100mA)
Leakage current	≤0.5mA (At DC 24V)
Insulation resistance	≥100MΩ (At DC 500V)
Dielectric strength	AC 1000V 1min (At 50/60Hz)
LED	Yellow
Protection level	IP66(IEC)
Working environment	-25°C~70°C
Cable length	Standard 2m

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/Pulse Meter

Recorder

Signal Isolator

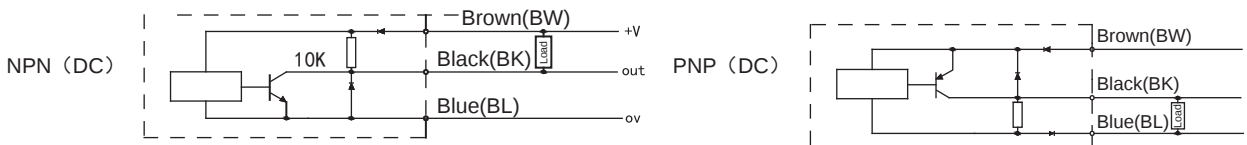
Rotary Encoder

Proximity Sensor

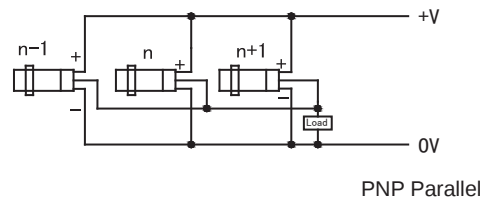
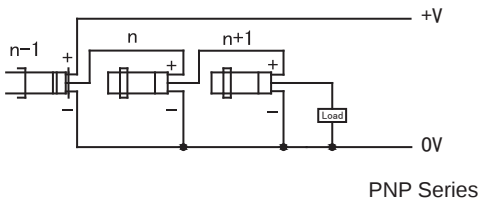
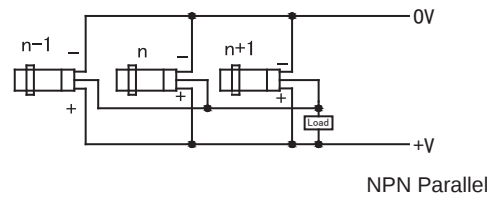
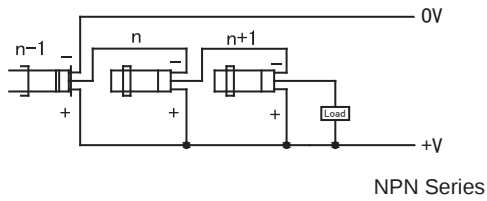
Solid State Relay

Power Meter Introduction

■ Wiring Diagram

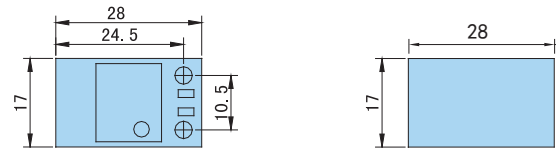
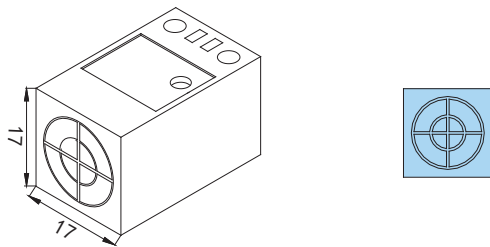


Series and parallel

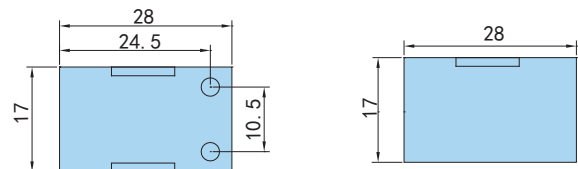
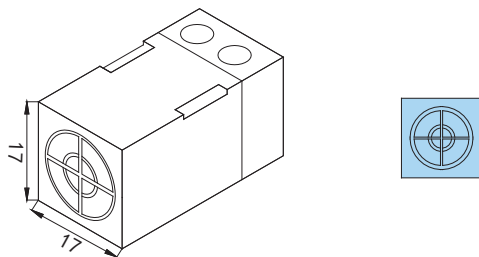


■ Dimension (Unit: mm)

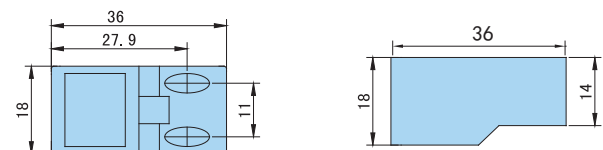
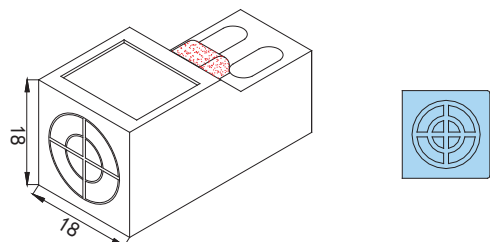
TL-Q short square shape



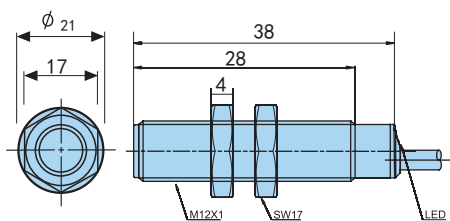
TL-R short square shape



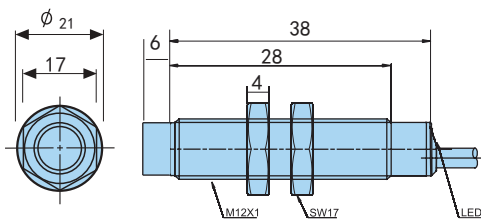
TL-E Easy-mounting square shape



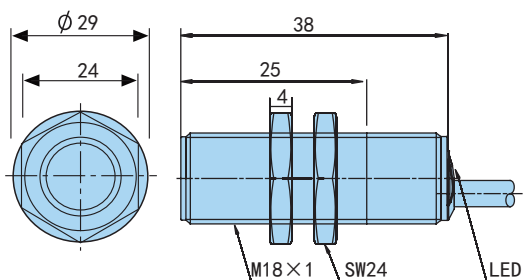
TL-12 Flush



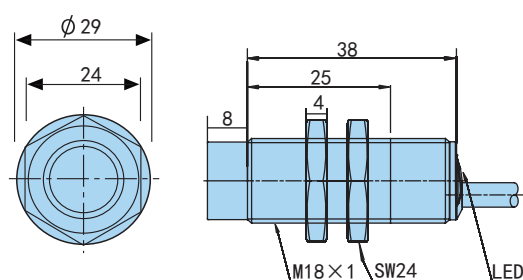
TL-12 Non-flush



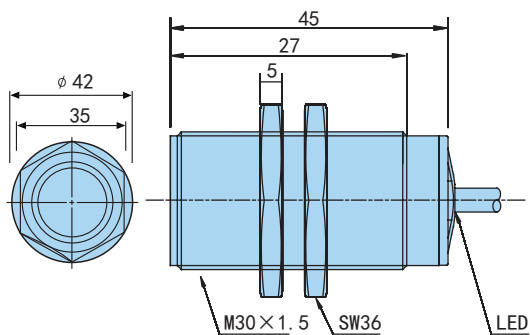
TL-18N Flush



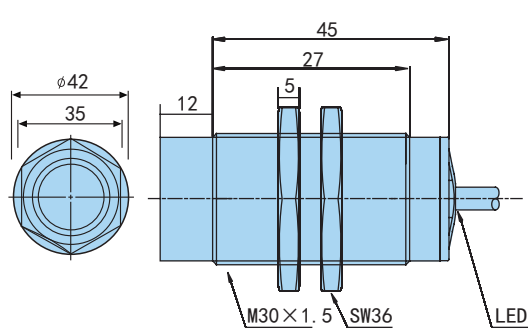
TL-18 Non-flush



TL-30 Flush



TL-30 Non-flush



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

2. TK Series Inductive Proximity Sensor

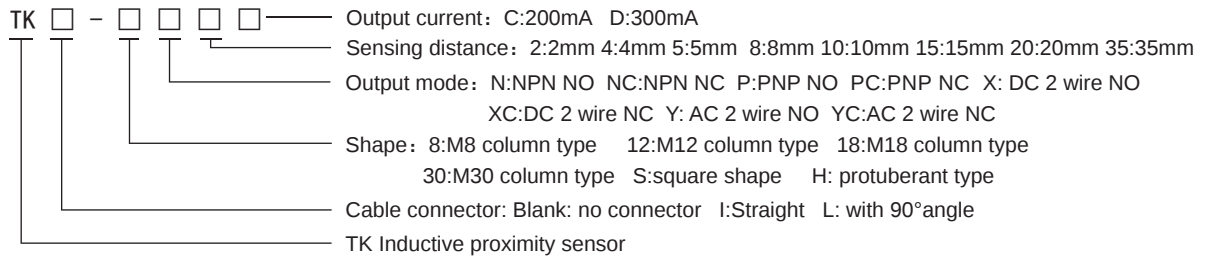
■ Photos and Features



Features:

- ★ Inductive non-contact detecting, long service life.
- ★ Accurated sensing distance, and strong anti-interference ability.
- ★ Optional model:3/2wires, DC/AC type,NC/NO type
- ★ Connection type and direct line type selectable.
- ★ Optional mounting,sensing distance and control mode.
- ★ Transistor driven design with abnormal protection circuit
- ★ Optimal designed sensing detection circuit for better performance.

■ Model Illustration



■ Ordering Information

1. TK Square Shape “S” Series Inductive Proximity Sensor

Model	Output mode	Sensing distance	Effective distance	Frequency	Protection level	Code
TK-SN(NC)5C/SP(PC)5C	NPN/PNP NO(NC)	5mm	4mm	500Hz	IP66(IEC)	B0043TK01
TK-SN(NC)10C/SP(PC)10C	NPN/PNP NO(NC)	10mm	8mm	200Hz	IP66(IEC)	B0070TK01
TK-SN(NC)20C/SP(PC)20C	NPN/PNP NO(NC)	20mm	16mm	100Hz	IP66(IEC)	B0085TK01
TK-SN(NC)35C/SP(PC)35C	NPN/PNP NO(NC)	35mm	28mm	50Hz	IP66(IEC)	B0118TK01
TK-SY(YC)10D	AC NO(NC)	10mm	8mm	20Hz	IP66(IEC)	B0085TK01
TK-SY(YC)20D	AC NO(NC)	20mm	16mm	10Hz	IP66(IEC)	B0093TK01
TK-SY(YC)35D	AC NO(NC)	35mm	28mm	5Hz	IP66(IEC)	B0135TK01

2. TK Normal Type Inductive Proximity Sensor

Model	Output mode	Sensing distance	Effective distance	Frequency	Protection level	Code
TK-HN(NC)10C/HP(PC)10C	NPN/PNP NO(NC)	10mm	8mm	200Hz	IP66(IEC)	B0070TK01
TK-HN(NC)20C/HP(PC)20C	NPN/PNP NO(NC)	20mm	16mm	100Hz	IP66(IEC)	B0085TK01
TK-HN(NC)35C/HP(PC)35C	NPN/PNP NO(NC)	35mm	28mm	50Hz	IP66(IEC)	B0118TK01

3. Protuberant Type “H”Series AC Inductive Proximity Sensor

Model	Output mode	Sensing distance	Effective distance	Frequency	Protection level	Code
TK-HY(YC)10D	AC NO(NC)	10mm	8mm	20Hz	IP66(IEC)	B0108TK01
TK-HY(YC)20D	AC NO(NC)	20mm	16mm	10Hz	IP66(IEC)	B0145TK01
TK-HY(YC)35D	AC NO(NC)	35mm	28mm	5Hz	IP66(IEC)	B0155TK01

4. Column Type Series Inductive Proximity Sensor

Model	Output mode	Mounting type	Sensing distance	Effective distance	Frequency	Protection level	Code
TK-8N(NC)2B/8P(PC)2B	NPN/PNP NO(NC)	Non-flush	2mm	1.6mm	600Hz	IP66(IEC)	B0065TK01
TK-12N(NC)2C/12P(PC)2C	NPN/PNP NO(NC)	Flush	2mm	1.6mm	600Hz	IP66(IEC)	B0036TK01
TK-12N(NC)4C/12P(PC)4C	NPN/PNP NO(NC)	Non-flush	4mm	3.2mm	400Hz	IP66(IEC)	B0036TK01
TK-18N(NC)5C/18P(PC)5C	NPN/PNP NO(NC)	Flush	5mm	4mm	400Hz	IP66(IEC)	B0041TK01
TK-18N(NC)8C/18P(PC)8C	NPN/PNP NO(NC)	Non-flush	8mm	6.4mm	200Hz	IP66(IEC)	B0043TK01
TK-30N(NC)10C/30P(PC)10C	NPN/PNP NO(NC)	Flush	10mm	8mm	100Hz	IP66(IEC)	B0080TK01
TK-30N(NC)15C/30P(PC)15C	NPN/PNP NO(NC)	Non-flush	15mm	12mm	100Hz	IP66(IEC)	B0093TK01
TK-18Y(YC)5D	AC NO(NC)	Flush	5mm	4mm	20Hz	IP66(IEC)	B0085TK01
TK-18Y(YC)8D	AC NO(NC)	Non-flush	8mm	6.4mm	20Hz	IP66(IEC)	B0085TK01
TK-30Y(YC)15D	AC NO(NC)	Non-flush	15mm	12mm	20Hz	IP66(IEC)	B0103TK01
TK-18X5B	DC NO	Flush	5mm	4mm	80Hz	IP66(IEC)	B0085TK01

5. TKI (L) Column Type Inductive Proximity Sensor With Cable Connector

Model	Output mode	Mounting type	Sensing distance	Effective distance	Frequency	Protection level	Code
TKI(L)-12N(NC)2C/12P(PC)2C	NPN/PNP NO(NC)	Flush	2mm	1.6mm	600Hz	IP66 (IEC)	B0085TK01
TKI(L)-12N(NC)4C/12P(PC)4C	NPN/PNP NO(NC)	Non-flush	4mm	3.2mm	400Hz	IP66 (IEC)	B0085TK01
TKI(L)-18N(NC)5C/18P(PC)5C	NPN/PNP NO(NC)	Flush	5mm	4mm	400Hz	IP66 (IEC)	B0098TK01
TKI(L)-18N(NC)8C/18P(PC)8C	NPN/PNP NO(NC)	Non-flush	8mm	6.4mm	400Hz	IP66 (IEC)	B0098TK01
TKI(L)-30N(NC)10C/30P(PC)10C	NPN/PNP NO(NC)	Flush	10mm	8mm	100Hz	IP66 (IEC)	B0108TK01
TKI(L)-30N(NC)15C/30P(PC)15C	NPN/PNP NO(NC)	Non-flush	15mm	12mm	100Hz	IP66 (IEC)	B0118TK01
TKI(L)-18Y(YC)5D	AC NO(NC)	Flush	5mm	4mm	20Hz	IP66 (IEC)	B0108TK01
TKI(L)-18Y(YC)8D	AC NO(NC)	Non-flush	8mm	6.4mm	20Hz	IP66 (IEC)	B0118TK01
TKI(L)-30Y(YC)15D	AC NO(NC)	Non-flush	15mm	12mm	20Hz	IP66 (IEC)	B0130TK01
TKI(L)-18X5B	DC NO	Flush	5mm	4mm	80Hz	IP66 (IEC)	B0108TK01

■ Technical Specifications

1. Square Shape S Series Proximity Sensor

Type		DC 3-wire				AC 2-wire	DC 3-wire		AC 2-wire	DC 3-wire		AC 2-wire
Model	Output	DC		DC		AC	DC		AC	DC		AC
	Type	NPN	PNP	NPN	PNP		NPN	PNP		NPN	PNP	
	NO	TK-SN5	TK-SP5C	TK-SN10C	TK-SP10C	TK-SY10D	TK-SN20C	TK-SP20C	TK-SY20D	TK-SN35C	TK-SP35C	TK-SY35D
	NC	TK-SNC5C	TK-SPC5C	TK-SNC10C	TK-SPC10C	TK-SYC20D	TK-SNC20C	TK-SPC20C	TK-SYC20D	TK-SNC35C	TK-SPC35C	TK-SYC35D
Dimension		18W×18H×36Dmm		30W×30H×52Dmm		40W×40H×53Dmm			65W×65H×70Dmm			
Detected object		Magnetic metal (detection distance decreases when it's non-magnetic metal)										
Standard detected object		Iron 18×18×1mm		Iron 30×30×1mm		Iron 40×40×1mm			Iron 65×65×1mm			
Sensing distance		5.0mm		10.0mm		20.0mm			35.0mm			
Stipulate distance		0~4.0mm		0~8.0mm		0~16.0mm			0~28.0mm			
Frequency		≤400Hz		≤200Hz		≤20Hz	≤100Hz		≤10Hz	≤50Hz		≤5Hz
Power supply		DC 10~30V		DC 10~30V		AC 90~250V	DC 10~30V		AC 90~250V	DC 10~30V		AC 90~250V

2. Protuberant Type H Series Proximity Sensor

Panel Meter	Type		DC 3-wire		AC 2-wire	DC 3-wire		AC 2-wire	DC 3-wire		AC 2-wire
	Model	Output	DC		AC	DC		AC	DC		AC
Type		NPN	NPN	NPN		PNP	NPN		PNP		
Sensor Indicator		NO	TK-HN10C	TK-HP10C	TK-HY10C	TK-HN20C	TK-HP20C	TK-HY20D	TK-HN35C	TK-HP35C	TK-HY35D
	NC	TK-HNC10C	TK-HPC10C	TK-HYC10C	TK-HNC20C	TK-HPC20C	TK-HYC20D	TK-HNC35C	TK-HPC35C	TK-HYC35C	
	Dimension	40W×40H×25Dmm				50W×50H×35Dmm			70W×70H×55Dmm		
Temperature Controller	Detected object	Magnetic metal (detection distance decreases when it's non-magnetic metal)									
	Standard detected object	Iron 40×40×1mm				Iron 50×50×1mm			Iron 65×65×1mm		
	Sensing distance	10.0mm				20.0mm			35.0mm		
	Stipulate distance	0~8.0mm				0~16.0mm			0~28.0mm		
Counter	Frequency	≤200Hz		≤20Hz	≤100Hz		≤10Hz	≤50Hz		≤5Hz	
	Power supply	DC 10~30V		AC 90~250V	DC 10~30V		AC 90~250V	DC 10~30V		AC 90~250V	

3. Colum Type Proximity Sensor

Timer Relay	Type		DC 3-wire		DC 3-wire		AC 2-wire
	Model	Output	DC		DC		AC
Type		NPN	PNP	NPN	PNP		
Tacho/Speed/ Pulse Meter		NO	TK-12N2(4)C	TK-12P2(4)C	TK-18N5(8)C	TK-18P5(8)C	TK-18Y5(8)D
	NC	TK-12NC2(4)C	TK-12PC2(4)C	TK-18NC5(8)C	TK-18PC5(8)C	TK-18YC5(8)D	
	Dimension	M12×53(L) mm			M18×53(L) mm		
Recorder	Detected object		Magnetic metal (detection distance decreases when it's non-magnetic metal)				
	Standard detected object		Iron 12×12×1mm		Iron 18×18×1mm		
	Sensing distance		2.0mm	4.0mm	5.0mm	8.0mm	
	Stipulate distance		2mm:0~1.6mm	4mm:0~3.2mm	5mm:0~4.0mm	8mm:0~6.4mm	
	Frequency		2mm≤600Hz	4mm≤400Hz	5mm≤400Hz	8mm≤200Hz	≤20Hz
Signal	Power supply		DC 10~30V		DC 10~30V		AC 90~250V

4. W Positive Induction / DC 2-wire

Rotary Encoder	Type		DC 3-wire		DC 2-wire NO	
	Model	Output	DC		DC	
Type		NPN	PNP		DC 2-wire	
NO		TK-WN5B	TL-WP5B		TK-18X5B	
Proximity Sensor	Dimension		18W×10H×30Dmm		M18×53(L)	
	Detected object		Magnetic metal (detection distance decreases when it's non-magnetic metal)			
	Standard detected object		Iron 18×18×1mm			
Solid State Relay	Sensing distance		5mm			
	Stipulate distance		0~4.0mm			
	Frequency		≤500Hz		≤80Hz	
Power Meter	Output current		≤100mA			
	Power supply		DC 10~30V			

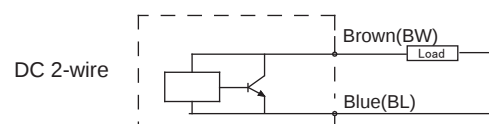
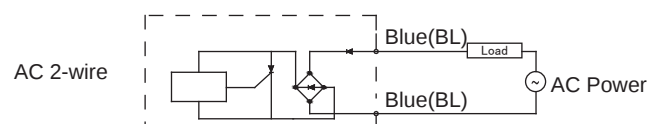
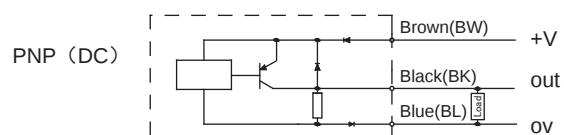
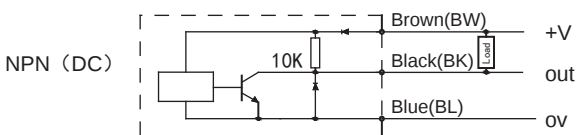
5. Column Shape With Connector

Type		DC 3-wire		DC 3-wire type with pins			
Model	Output	DC		DC		DC	
	Type	NPN	NPN	NPN	PNP	NPN	PNP
	NO	TK(I, L)-12N2(4)C	TK(I, L)-12P2(4)C	TK(I, L)-18N5(8)C	TK(I, L)-18P5(8)C	TK(I, L)-30N10(15)C	TK(I, L)-30P10(15)C
	NC	TK(I, L)-12NC2(4)C	TK(I, L)-12PC2(4)C	TK(I, L)-18NC5(8)C	TK(I, L)-18PC5(8)C	TK(I, L)-30NC10(15)C	TK(I, L)-30PC10(15)C
Dimension		M12×71（L）		M18×71（L）		M30×78（L）	
Detected object		Magnetic metal (detection distance decreases when it's non-magnetic metal)					
Standard detected object		Iron 12×12×1mm		Iron 18×18×1mm		Iron 30×30×1mm	
Sensing distance		2.0mm	4.0mm	5.0mm	8.0mm	10.0mm	15.0mm
Stipulate distance		2mm:0~1.6mm	4mm:0~3.2mm	5mm:0~4.0mm	8mm:0~6.4mm	10mm:0~8.0mm	15mm:0~12mm
Frequency		2mm≤600Hz	4mm≤400Hz	5mm≤400Hz	8mm:≤200Hz	10mm:≤200Hz	15mm:≤200Hz
Power supply		DC 10-30V					

Specifications

Hysteresis	Less than 10% of sensing distance
Control output	DC: pure resistance load≤200mA induction load≤100mA
Voltage drop	DC≤2V (At DC 24V 200mA)
Leakage	DC≤0.5mA (At DC 24V)
Insulation resistance	≥100MΩ (At DC 500V)
Insulation strength	DC: AC 1000V 1min (At 50/60HZ) AC: AC 2000V 1min (At 50/60HZ)
LED	Yellow
Protection level	IP66(IEC)
Work environment	-25°C-70°C
Output wire length	Standard 2m

Wiring Diagram



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

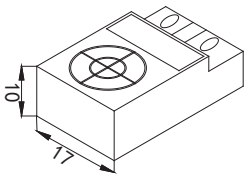
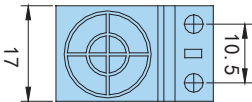
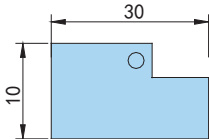
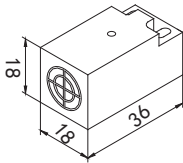
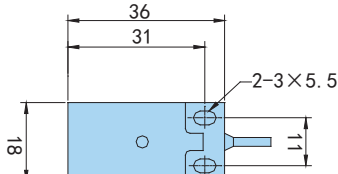
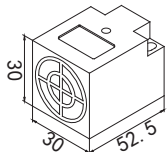
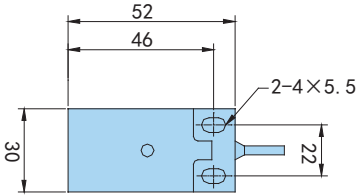
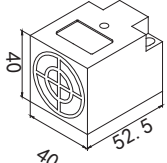
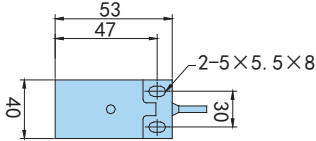
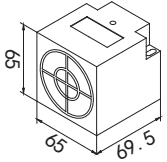
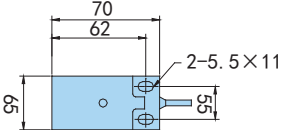
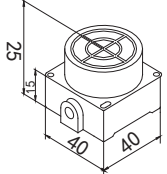
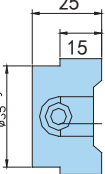
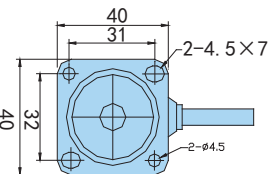
Rotary Encoder

Proximity Sensor

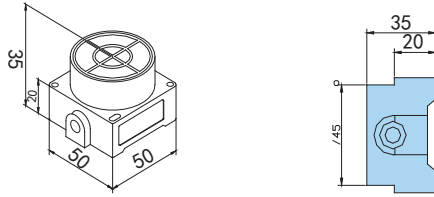
Solid State Relay

Power Meter Introduction

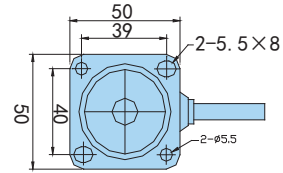
■ Dimension (Unit: mm)

Panel Meter	TK-WN(NC)/P(PC)5C		
Sensor Indicator			
Temperature Controller	TK-SN(NC)/P(PC)5C		
Counter			
Timer Relay	TK-SN(NC)/P(PC)10C		
Tacho/Speed/Pulse Meter			
Recorder	TK-SN(NC)/P(PC)20C		
Signal Isolator			
Rotary Encoder	TK-SN(NC)/P(PC)35C		
Proximity Sensor			
Solid State Relay	TK-HN(NC)/P(PC)10C		
Power Meter Introduction			

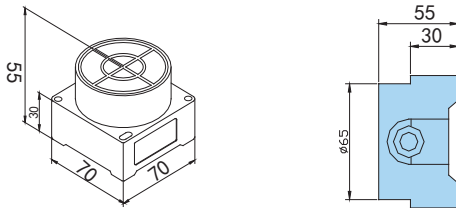
TK-HN(NC)/P(PC)20C



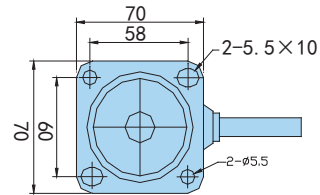
TK-HY(YC)20D



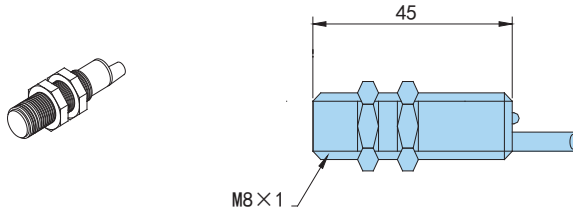
TK-HN(NC)/P(PC)35C



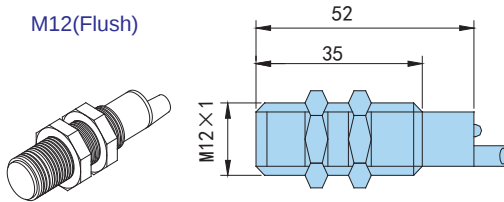
TK-HY(YC)35D



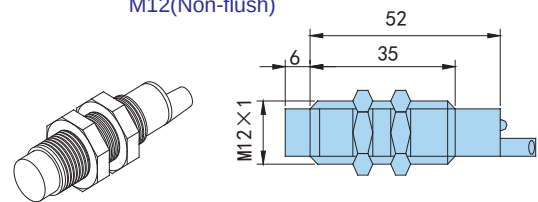
M8(Flush)



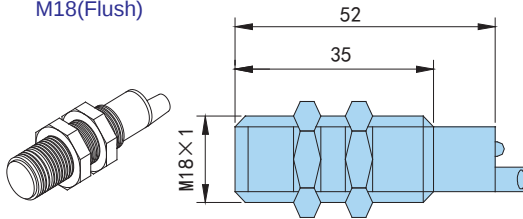
M12(Flush)



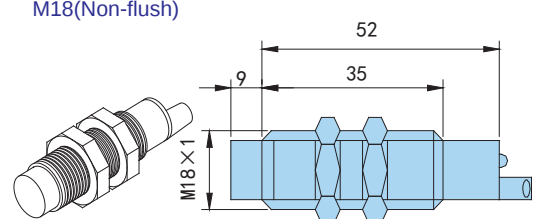
M12(Non-flush)



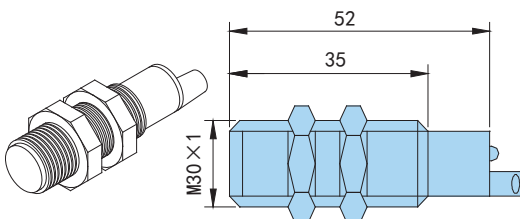
M18(Flush)



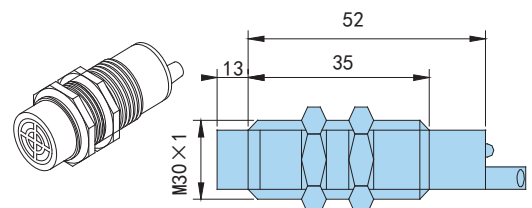
M18(Non-flush)



M30(Flush)



M30(Non-flush)



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

3.TKX Series Inductive Proximity Sensor

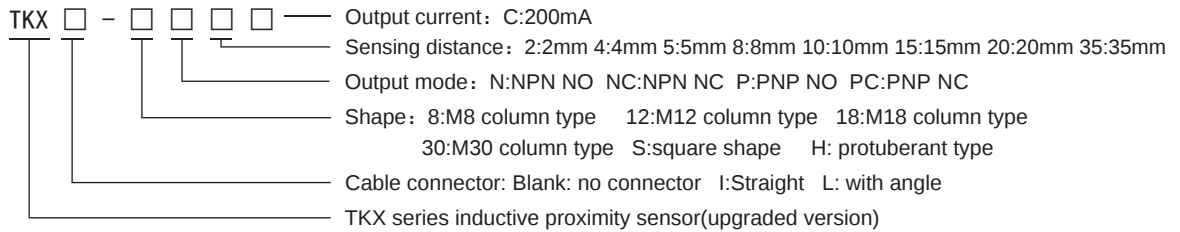
■ Photos and Features



Features:

- ★ Built-in power protection, signal protection, overvoltage protection, overload protection, short circuit protection, surge protection ect .
- ★ 40mm column for longger installation length.
- ★ Toothed screw nuts make the installation firmer.
- ★ IP65 protection level.
- ★ High-strength, flexible cable with wide temperature range, 32-strand copper core wire and built-in fiber wire to improve tensile and bending resistance.

■ Model Illustration



■ Ordering Information

1. TKX square column type S series inductive proximity sensor

Model	Output mode	Sensing distance	Effective distance	Frequency	Protection level	Code
TKX-SN(NC)5C/SP(PC)5C	NPN/PNP NO(NC)	5mm	4mm	400Hz	IP65(IEC)	B0043TKX01
TKX-SN(NC)10C/SP(PC)10C	NPN/PNP NO(NC)	10mm	8mm	200Hz	IP65(IEC)	B0070TKX01
TKX-SN(NC)20C/SP(PC)20C	NPN/PNP NO(NC)	20mm	16mm	100Hz	IP65(IEC)	B0096TKX01
TKX-SN(NC)35C/SP(PC)35C	NPN/PNP NO(NC)	35mm	28mm	50Hz	IP65(IEC)	B0130TKX01

2.TKX protuberant type inductive proximity sensor

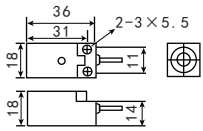
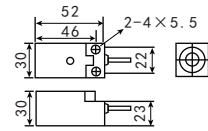
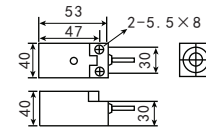
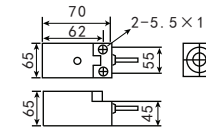
Model	Output mode	Sensing distance	Effective distance	Frequency	Protection level	Code
TKX-HN(NC)10C/HP(PC)10C	NPN/PNP NO(NC)	10mm	8mm	200Hz	IP65(IEC)	B0075TKX01
TKX-HN(NC)20C/HP(PC)20C	NPN/PNP NO(NC)	20mm	16mm	100Hz	IP65(IEC)	B0100TKX01
TKX-HN(NC)35C/HP(PC)35C	NPN/PNP NO(NC)	35mm	28mm	50Hz	IP65(IEC)	B0140TKX01

3. Column type series inductive proximity sensor

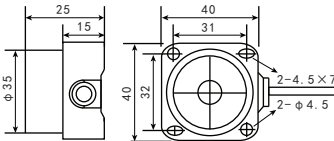
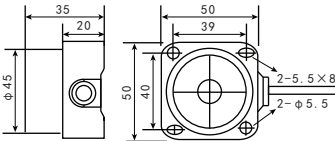
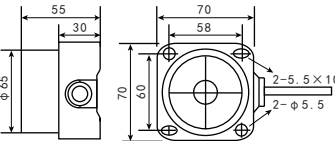
Model	Output mode	Mounting type	Sensing distance	Effective distance	Frequency	Protection level	Code
TKX-8N(NC)2B/8P(PC)2B	NPN/PNP NO(NC)	Non-flush	2mm	1.6mm	800Hz	IP65(IEC)	A0070TKX01
TKX-12N(NC)2C/12P(PC)2C	NPN/PNP NO(NC)	Flush	2mm	1.6mm	600Hz	IP65(IEC)	A0045TKX01
TKX-12N(NC)4C/12P(PC)4C	NPN/PNP NO(NC)	Non-flush	4mm	3.2mm	400Hz	IP65(IEC)	A0045TKX01
TKX-18N(NC)5C/18P(PC)5C	NPN/PNP NO(NC)	Flush	5mm	4mm	400Hz	IP65(IEC)	A0050TKX01
TKX-18N(NC)8C/18P(PC)8C	NPN/PNP NO(NC)	Non-flush	8mm	6.4mm	200Hz	IP65(IEC)	A0055TKX01
TKX-30N(NC)10C/30P(PC)10C	NPN/PNP NO(NC)	Flush	10mm	8mm	200Hz	IP65(IEC)	A0090TKX01
TKX-30N(NC)15C/30P(PC)15C	NPN/PNP NO(NC)	Non-flush	15mm	12mm	200Hz	IP65(IEC)	A0100TKX01

TKX Proximity Sensor Technical Specifications

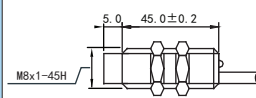
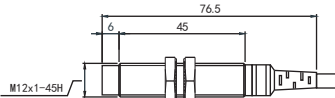
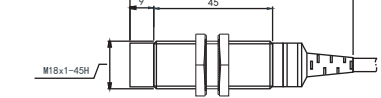
1. S type plastic box type inductive proximity sensor(power cord is perpendicular to the sensing surface)

Code		TKX-S□5C		TKX-S□10C		TKX-S□20C		TKX-S□35C	
Dimension									
Output mode		DC(3-wire)		DC(3-wire)		DC(3-wire)		DC(3-wire)	
		NPN	PNP	NPN	PNP	NPN	PNP	NPN	PNP
Model	NO	TKX-SN5C	TKX-SP5C	TKX-SN10C	TKX-SP10C	TKX-SN20C	TKX-SP20C	TKX-SN35C	TKX-SP35C
	NC	TKX-SNC5C	TKX-SPC5C	TKX-SNC10C	TKX-SPC10C	TKX-SNC20C	TKX-SPC20C	TKX-SNC35C	TKX-SPC35C
Sensing distance		5.0mm		10.0mm		20.0mm		35.0mm	
Stipulate distance		0~4.0mm		0~8.0mm		0~16.0mm		0~28.0mm	
Power supply		DC 10~30V		DC 10~30V		DC 10~30V		DC 10~30V	
Frequency		≤400Hz		≤200Hz		≤100Hz		≤50Hz	
Output current		≤200mA(DC24V)		≤200mA(DC24V)		≤200mA(DC24V)		≤200mA(DC24V)	
Mounting type		Non-flush							

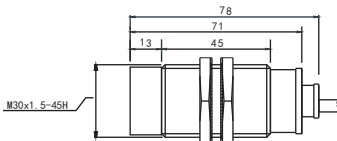
2. H type plastic box type inductive proximity sensor (power cord is parallel to the sensing surface)

Code		TKX-H□10C		TKX-H□20C		TKX-H□35C	
Dimension							
Output mode		DC(3-wire)		DC(3-wire)		DC(3-wire)	
		NPN	PNP	NPN	PNP	NPN	PNP
Model	NO	TKX-HN10C	TKX-HP10C	TKX-HN20C	TKX-HP20C	TKX-HN35C	TKX-HP35C
	NC	TKX-HNC10C	TKX-HPC10C	TKX-HNC20C	TKX-HPC20C	TKX-HNC35C	TKX-HPC35C
Sensing distance		5.0mm		10.0mm		35.0mm	
Stipulate distance		0~4.0mm		0~8.0mm		0~28.0mm	
Power supply		DC 10~30V		DC 10~30V		DC 10~30V	
Frequency		≤400Hz		≤200Hz		≤50Hz	
Output current		≤200mA(DC24V)		≤200mA(DC24V)		≤200mA(DC24V)	
Mounting type		Non-flush					

3. Metal shell inductive proximity sensor

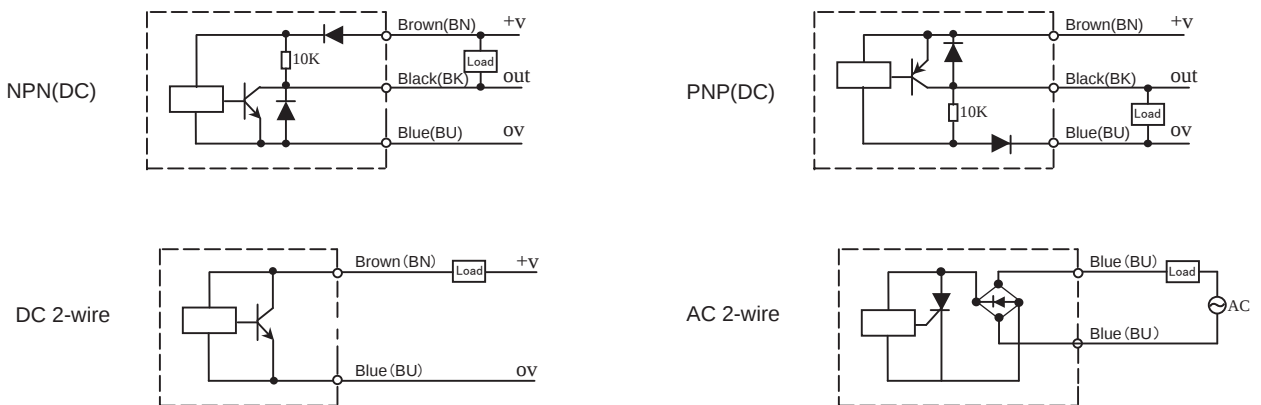
Code		TKX8□2B (customized)		TKX□-12□□C		TKX□-18□□C	
Dimension							
Output mode		DC(3-wire)		DC(3-wire)		DC(3-wire)	
		NPN	PNP	NPN	PNP	NPN	PNP
Model	NO	TKX-8N2B	TKX-8P2B	TKX(I, L)-12N2(4)C	TKX(I, L)-12P2(4)C	TKX(I, L)-18N5(8)C	TKX(I, L)-18P5(8)C
	NC	TKX-8NC2B	TKX-8PC2B	TKX(I, L)-12NC2(4)C	TKX(I, L)-12PC2(4)C	TKX(I, L)-18NC5(8)C	TKX(I, L)-18PC5(8)C
Sensing distance		2mm		2mm/4mm		5mm/8mm	
Stipulate distance		0~1.6mm		2mm:0~1.6mm 4mm:0~3.2mm		5mm:0~4.0mm 8mm:0~6.4mm	
Power supply		DC 10~30V		DC 10~30V		DC 10~30V	
Frequency		≤800Hz		2mm≤600Hz 4mm≤400Hz		5mm≤400Hz 8mm≤200Hz	
Output current		≤100mA		≤200mA(DC24V)		≤200mA(DC24V)	
Mounting type		Non-flush		2mm:flush 4mm: non-flush		5mm:flush 8mm: non-flush	

3. Metal shell inductive proximity sensor

Code	TKX□-30□□C		
Dimension			
Output mode	DC(3-wire)		
	NPN	PNP	
Model	NO	TKX(I, L)-30N10(15)C	TKX(I, L)-30P10(15)C
	NC	TKX(I, L)-30NC10(15)C	TKX(I, L)-30PC10(15)C
Sensing distance	10.0mm/15.0mm		
Stipulate distance	10mm:0~8.0mm		15mm:0~12.0mm
Power supply	DC 10~30V		
Frequency	≤200Hz		
Output current	≤200mA(DC24V)		
Mounting type	10mm:flush 15mm: non-flush		

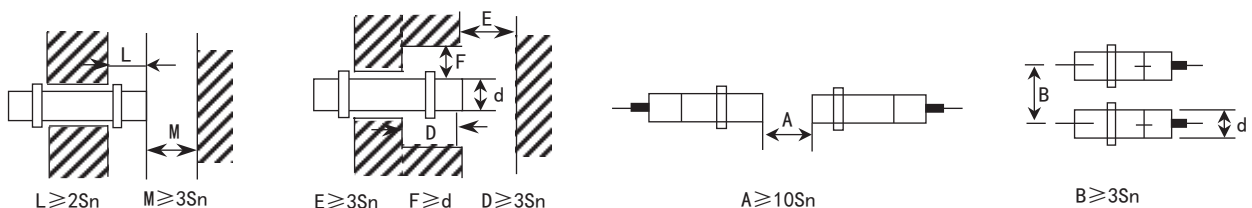
Note: The numbers in parentheses means the sensing distance, straight or angle connector. dimensions with ★ in parentheses indicate AC type proximity sensor dimensions.

Wiring diagram



Installation

During installation, when there is metal around them, and the proximity sensors are placed oppositely or side by side, please install them with a size larger than the size shown in the figure to avoid affecting the reliable operation.(Sn:sensing distance)



4. TC Series Capacitive Proximity Sensor

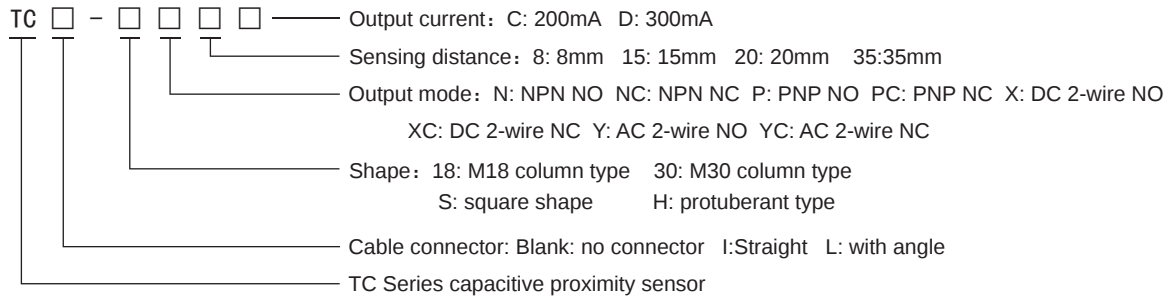
■ Photos and Features



Features:

- ★ Capacitive non-contact detecting, long service life.
- ★ Accurated sensing distance, and strong anti-interference ability.
- ★ Optional model:3/2wires, DC/AC type,NC/NO type.
- ★ Connector type and direct line type selectable.
- ★ Optional mounting type, sensing distance,control mode.
- ★ Transistor driven design with abnormal protection circuit.
- ★ Optimal designed sensing detection circuit for better performance.

■ Model Illustration



■ Ordering Information

Model	Output mode	Mounting Type	Sensing distance	Effective distance	Frequency	Protection level	Code
TC-18P(PC)8C/TC-18N(NC)8C	NPN/PNP NO(NC)	Non-flush	8mm	1~6.4mm	50HZ	IP66(IEC)	B0130TK01
TC-30P(PC)15C/TC-30N(NC)15C	NPN/PNP NO(NC)	Non-flush	15mm	1~12mm	20HZ	IP66(IEC)	B0173TK01
TC-18Y8C/TC-18YC8C	AC NO(NC)	Non-flush	8mm	1~6.4mm	50HZ	IP66(IEC)	B0193TK01
TC-30Y15C/TC-30YC15C	AC NO(NC)	Non-flush	15mm	1~12mm	20HZ	IP66(IEC)	B0215TK01

■ Technical Specifications

Type	DC 3-wire						AC 2-wire	
Model	TC-18N8C	TC-18NC8C	TC-22N15C	TC-22NC15C	TC-30N15C	TC-30NC15C	TC-18Y8C	TC-30Y15C
	TC-18P8C	TC-18PC8C	TC-22P15C	TC-22PC15C	TC-30P15C	TC-30PC15C	TC-18YC8C	TC-30YC15C
Dimension	M18x53(L)		M22x63(L)		M30x63(L)		M18x53(L)	M30x63(L)
Detected object	Iron:18×18×1mm		Iron:22×22×1mm		Iron: 30×30×1mm		Iron: 18×18×1mm	Iron: 30×30×1mm
Sensing distance	8mm		15mm		15mm		8.0mm	15.0mm
Stipulate distance	0～6.4mm adjustable		2～15mm adjustable		3～15mm adjustable		0～6.4mm adjustable	0～12.0mm adjustable
Frequency	≤50Hz				≤20Hz			
Current consumption/ Leakage current	Current consumption<15mA						Leakage currents≤2.2mA	
Power supply	DC 12～30V						AC 90～260V	
Hysteresis	<20% of the sensing distance						<20% of the sensing distance	
Control output	pure resistance load≤200mA induction load≤100mA						pure resistance load≤200mA induction load≤100mA	
Voltage drop	≤2V (At DC 24V 200mA)						≤10V(At AC 220V 200mA)	
Leakage	≤0.5mA (At DC 24V)						≤0.5mA(At AC 220V)	
Insulation resistance	≥100MΩ (At DC 500V)							
Insulation strength	AC 1000V 1min (At 50/60HZ)							
LED	Yellow							
Protection level	IP66(IEC)							
Work environment	-25℃-70℃							
Output wire length	Standard 2m							

Panel Meter

Sensor
Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

■ Wiring Diagram

Panel Meter	NPN (DC)		PNP (DC)	
Sensor Indicator				
Temperature Controller	AC 2-wire		AC 2-wire	
Counter	■ Dimension			
Timer Relay	M12			
Tacho/Speed/Pulse Meter				
Recorder	M18			
Signal Isolator				
Rotary Encoder				
Proximity Sensor	M30			
Solid State Relay				
Power Meter Introduction				

Solid State Relay Function Comparison Table

No	Model Function	RMA	RUA	RSA	RTA	RSYA	RTYA
							
1	Category	Economical	Long shell normal	Normal	Normal	Voltage regulating module	Voltage regulating module
2	SCR	Bi-direction SCR	Bi-direction SCR chip	Bi-direction SCR chip	Bi-direction SCR chip	Bi-direction SCR chip	Bi-direction SCR chip
3	Application	AC,single phase	AC,single phase	AC,single phase	AC, three phase	AC,single phase	AC, three phase
4	Activation type	Zero cross activation Random activation	Zero cross activation Random activation	Zero cross activation Random activation	Zero cross activation Random activation	Zero cross activation	Zero cross activation
5	Control signal	5-32V DC 90-280VAC 0-500KΩ	4-32V DC 90-280VAC	4-32V DC 90-280VAC	4-32V DC 90-280VAC	0-5V/0-10V/ 4-20mA	0-5V/0-10V/ 4-20mA
6	Loading voltage range	24-230VAC 24-400VAC	24-530VAC	48-440VAC 48-530VAC	48-530VAC	176-280VAC 300-530VAC	180-530VAC
7	Rated current	15A/25A/40A/ 60A/80A	30A/50A/75A	25A/40A/60A/ 80A/100A	25A/40A/ 60A/80A	25A/40A/ 60A/80A	25A/40A/ 60A/80A
8	Rated voltage	400VAC	480VAC	380VAC 480VAC	480VAC	240VAC 480VAC	480VAC

Panel Meter

Sensor
IndicatorTemperature
Controller

Counter

Timer
RelayTacho/Speed/
Pulse Meter

Recorder

Signal
IsolatorRotary
EncoderProximity
SensorSolid State
RelayPower Meter
Introduction

1. RMA/RCA/RFA Solid State Relay



■ Photos and Features



RMA Series



RCA Series

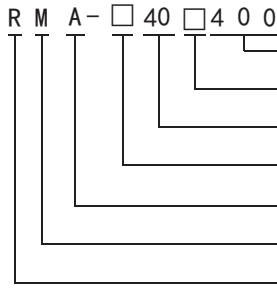


RFA Series

Features:

- ★ Using photoelectric coupling isolation, compressive strength can reach 2kv between the input - output - heat sink.
- ★ Choose from multiple trigger modes to meet a variety of control requirements.
- ★ RC filter circuit can absorb the instant surge to avoid malfunction occurs and to protect the chip.
- ★ Applied high quality triac devices.
- ★ The input applied constant current circuit to ensure the current constancy of the consumption between 5 ~ 32V.

■ Model Illustration



Rated voltage: 400:24~400V AC 230:24~230V AC

A: AC load

Rated current: 15 15Aac 25 25Aac 40 40Aac 60 60Aac 80 80Aac 100 100Aac

Control type: Blank: DC 5~32V input A: 90~250V AC input

A: Design number

M: Professional SCR C: Economic SCR F: Imported SCR

Solid State Relay

■ Ordering Information

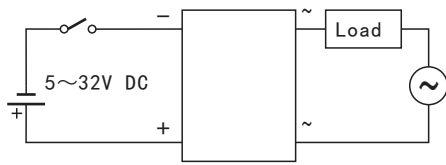
Type	Model	Rated voltage	Control signal	Activation type	Critical voltage rise rate	Rated current	Code
DC control AC ★	RMA-15A400	400V/AC	5~32VDC	Zero-cross activation	500V/μs	15Aac	C0032RMA01
	RMA-25A400					25Aac	C0034RMA01
	RMA-40A400					40Aac	C0037RMA01
	RMA-60A400					60Aac	C0056RMA01
	RMA-80A400					80Aac	C0075RMA01
DC control AC ▲	RCA-15A400	400V/AC	5~32VDC	Zero-cross activation	500V/μs	15Aac	D0028RCA01
	RCA-25A400					25Aac	D0031RCA01
	RCA-40A400					40Aac	D0033RCA01
	RCA-60A400					60Aac	D0055RCA01
	RCA-80A400					80Aac	D0068RCA01
DC control AC ●	RFA-15A400	400V/AC	5~32VDC	Zero-cross activation	500V/μs	15Aac	D0085RFA01
	RFA-25A400					25Aac	D0095RFA01
	RFA-40A400					40Aac	D0110RFA01

■ Technical Specifications

Compression strength input-output	≥500MΩ	Output rated current (Arms)	15, 25, 40, 60, 80A AC
Insulation strength input-output	2000Vrms	Off-stateleakage current (Max)	≤10mA AC
Insulation strength input/output-shell	2000Vrms	Power supply	24~400VAC
Input control range	5~32Vdc	Peak voltage	800Vp-p
Input current	≤10mA(DC)	Weight	110g
Min trigger voltage	≥4.5Vdc	Closed state saturation & voltage drop	1.8V/25°C
Min open-circuit voltage	≤3Vdc	Action response time	ON<10ms, OFF<10ms
Material	ABS+PC(flame retardance)	Ambient temperature	-20°C~80°C / -40°C~100°C

■ Connection

1. DC control AC connection



2. Installation Precautions

- ◆ Use a heat sink (accessory) to protect the solid state relay, and the heat sink must be grounded.
- ◆ Must install high speed fuse.
- ◆ The radiator must be correctly selected according to the working environment temperature and load current.
- ◆ When installing the radiator, the contact distance between the heat sink and radiator should not be greater than 0.05mm, and the surface roughness should not be greater than 0.02mm.

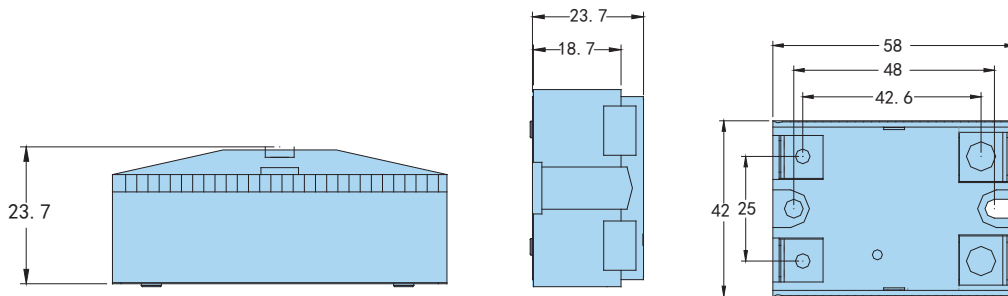
Note:

It can ensure the thermal conductivity without impurities by using a gram of thermal grease to paint on metal surface of heat sink.

Tightening up the 2 nuts in turn, the M4 nut torque of 1.2 NM , the M5 nut torque of 0.75NM.

It is suggested to disassemble and check whether the installation is correct, to ensure no bubbles between the metal coating and heat conduction layer.

■ Dimension (Unit:mm)



Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/ Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction

2. RUA Series Solid State Relay(Single phase AC output)

■ Photos and Features



Features:

- ★ Zero crossing or random turn-on switch.
- ★ Load current: 30A-75A@24-660VAC.
- ★ SCR output.
- ★ DC or AC input.
- ★ Medium withstand voltage 4000VACrms.
- ★ Optional built-in MOV protection or TVS protection.
- ★ Built-in RC protection.

■ Model Illustration

RUA-AP30A480M (XXX) — Feature code

Protection: Blank: no TVS/MOV protection M: MOV (optional) T: TVS (optional)

Load voltage: 480: 480VAC

Load current: 30A: 30Amp 50A: 50Amp 75A: 75Amp

Activation type: Blank: Zero-cross activation P: random activation

Control mode: Blank: DC control A: AC control

RUA series solid state relay

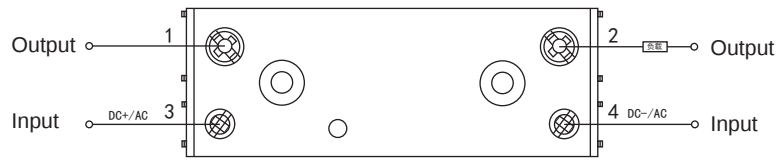
■ Ordering Information

Model	Activation type	Control signal	Rated current	Voltage range	Code
RUA-(P)30A480	Blank: Zero-cross P: Random	4-32VAC	30A	24-530VAC	D0067RUA01
RUA-(P)50A480		4-32VAC	50A	24-530VAC	D0098RUA01
RUA-(P)75A480		4-32VAC	75A	24-530VAC	D0170RUA01

■ Technical Specifications

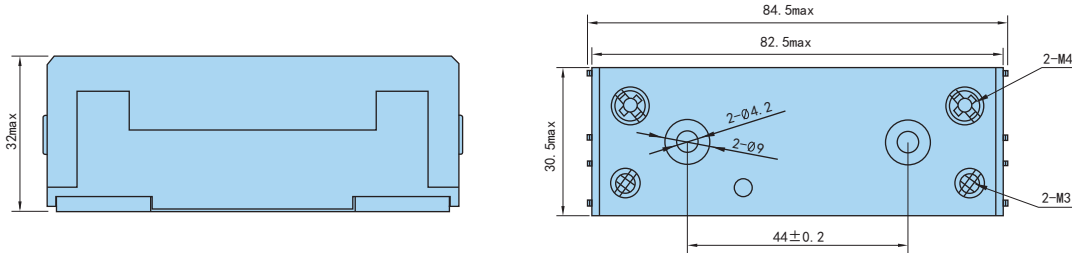
Input parameters	Control voltage range	DC control	4~32VDC	Output parameters	Output voltage range	480V	24-530VAC
		AC control	90~280VAC		Max turn-on time	DC control zero-cross	1ms
	Min turn-on voltage	DC control	4VDC			DC contrl random	10ms
		AC control	90VAC			AC control	40ms
	Min shutdown voltage	DC control	1VDC		Max surge current [@10ms]	30A	460A
		AC control	15VAC			40A	600A
Other parameters	Max input current	DC control zero-cross	15mA			75A	750A
		DC contrl random	18mA		Max I ² t value [@10ms]	30A	1058A ² s
		AC control	25mA			40A	1800A ² s
	Medium Withstand voltage		4000Vrms			75A	2812A ² s
		Input/output/bottom	2500Vrms		Max transient voltage	480V/600V	1200Vpk
	Min power factor		0.5		Max off-state leakage current (@under rated voltage)		10mA
	Min load current		100mA~		Max conduction voltage drop (@Under rated current)		1.7Vrms
	Environment temperature range		-30 C ~ +80 C		Off-state voltage index rise rate dv/dt		500V/μs
	Storage temperature range		-30 C ~ +100 C				
	Weight	30A/50A	100g				
		75A	130g				

Connection

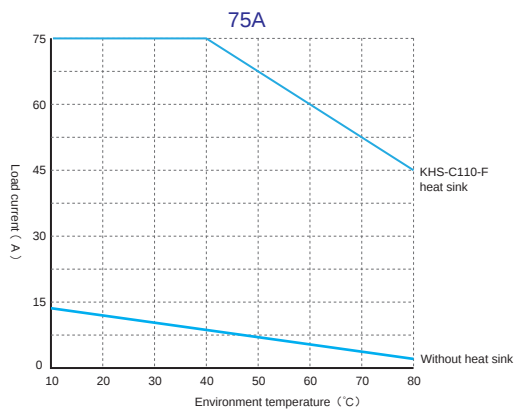
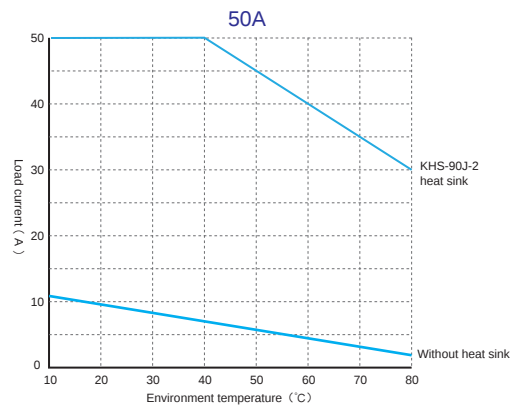
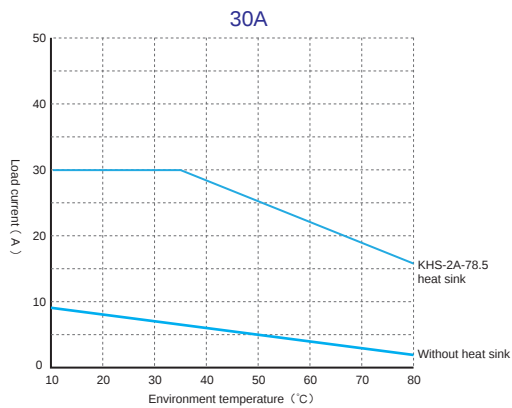


Dimension (Unit:mm)

Installation dimension



Temperature curve



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

3. RNA Series Solid State Relay(Single phase AC output)

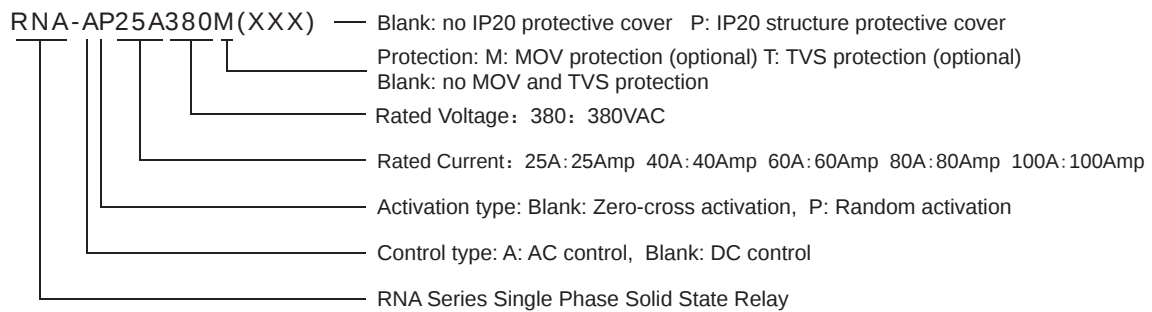
■ Photos and Features



Features:

- ★ Zero crossing or random conduction switch.
- ★ Load current: 15A-125A@24-660VAC.
- ★ AC Output or DC Output.
- ★ Medium withstand voltage 4000VACrms.
- ★ LED indicator

■ Model Illustration



■ Ordering Information

Model	Activation Type	Control Signal	Rated Current	Protection	Voltage Range	Code
RNA- (P) 25A380	Blank: Zero-cross activation P: Random activation	3~32VDC	25A	Without IP20 structure protective cover	48~280VAC	D0051RNA01
RNA- (P) 40A380		3~32VDC	40A		48~280VAC	D0076RNA01
RNA- (P) 60A380		3~32VDC	60A		48~280VAC	D0100RNA01
RNA- (P) 80A380		3~32VDC	80A		48~280VAC	D0180RNA01
RNA- (P) 100A380		3~32VDC	100A		48~280VAC	D0270RNA01
Remarks: ①: When the loading voltage is 380VAC, there is no TVS protection option; ②: 100A is high shell structure, which is SCR output; ③: 10A~25A is TRIAC output, 40A~60A is SCR output.						

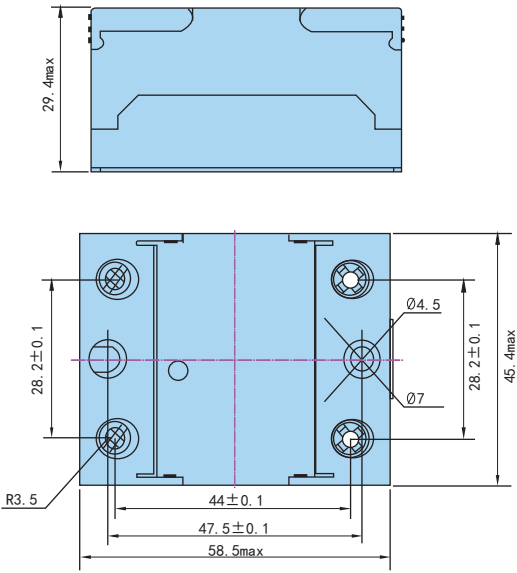
■ Technical Specifications

Input Parameters(Ta=25℃)	Control Voltage Range	DC Control	3~32VDC	Output Parameters(Ta=25℃)	Output voltage range	240V	24~280VAC
		AC Control	90~280VAC			480V	24~530VAC
	Minimum turn-on voltage	DC Control	3VDC			600V	24~660VAC
		Minimum turn-off voltage	DC Control		1VDC	Max Conducting Time	DC Control(Zero-cross)
	AC Control		90VAC		DC Control(Radom)		10ms
	Maximum input current	DC Control	25mA (@32VDC)		AC Control		40ms
		AC Control	35mA (@280VAC/50Hz)		Max Closing time	DC Control	10ms
	Other Parameters(Ta=25℃)	Medium Withstand voltage [50/60Hz]	Input/Output			4000Vrms	AC Control
Input/Output/Bottom			2500Vrms			Max Surge Current [10ms]	15A
Working Temperature Range		-30℃~+80℃			25A	250A	

■ Technical Specifications

Other Parameters(Ta=25℃)	Storage Temperature Range		-30℃~+100℃	Output Parameters(Ta=25℃)	Max Surge Current [@10ms]	40A	400A
	Insulation resistance (@500VDC)	Input/Output	1000MΩ			60A	600A
		Input/Output/Bottom				80A	800A
	Minimum power factor		0.5			100A	1000A
	Minimum load current		100mA			125A	1250A
	Weight		75g		15A	112A ² s	
Output Parameters(Ta=25℃)	Max Transient Voltage	240V	600Vpk		Max I ² t value [@10ms]	25A	312A ² s
		480V	1200Vpk			40A	800A ² s
		600V	1600Vpk			60A	1800A ² s
	Max off-state leakage current (under rated voltage)		0.1mA			80A	3200A ² s
	Max turn-on voltage drop (under rated current)		1.5Vrms			100A	5000A ² s
	Working frequency range		47Hz~63Hz			125A	7812A ² s

■ Dimensions (mm)



Use cold rolled copper nose wiring connection

Input terminal: W=9.5mm max

Output terminal: W=12mm max

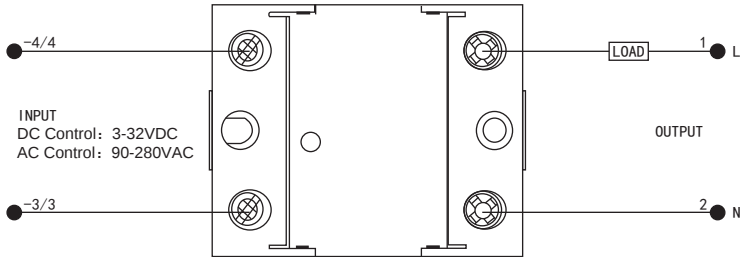
Wire: Input terminal: Max 3mm²

Torque: Output terminal: Max 2×6mm²

Torque: Input terminal: (0.58-0.98)N·m

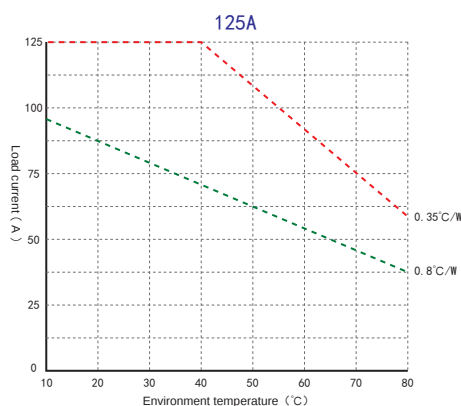
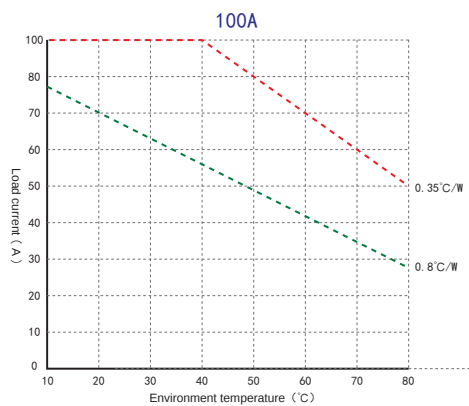
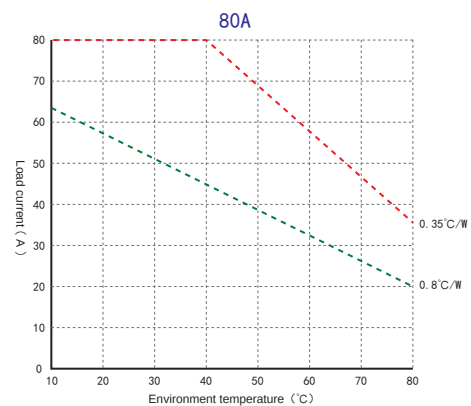
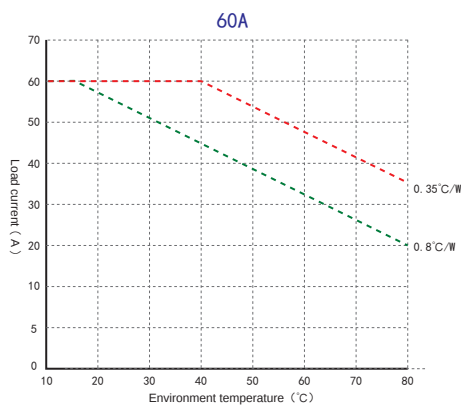
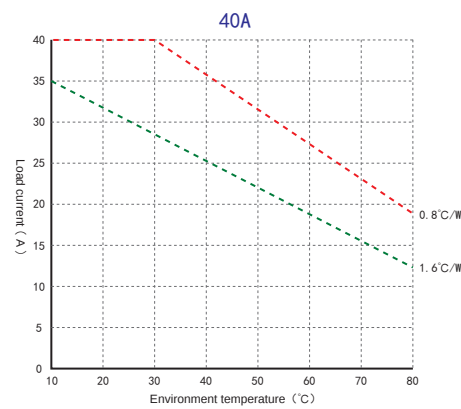
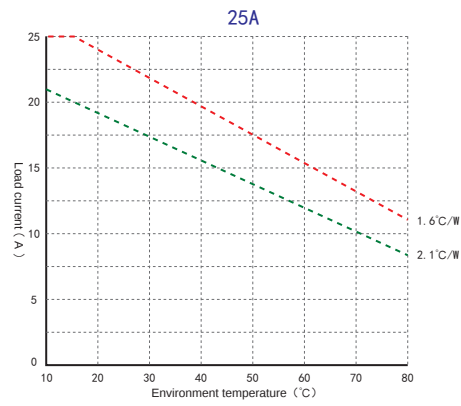
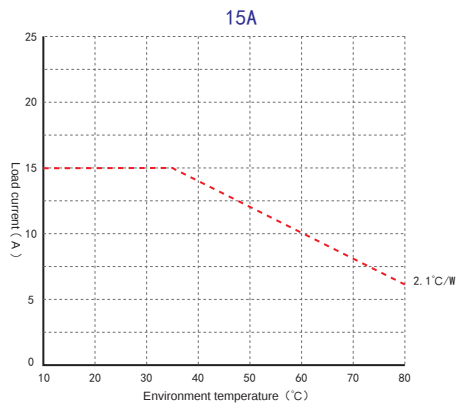
Output terminal: (0.98-1.37)N·m

■ Connection



■ Temperature curve

Panel Meter
Sensor Indicator
Temperature Controller
Timer Relay
Tacho/Speed/Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



4. RTA Series Solid State Relay (3-phase AC output)

Photos and Features



Features:

- ★ Zero crossing or random conduction switch.
- ★ Load current: 25A, 40A, 60A, 80A.
- ★ SCR output.
- ★ Built-in RC circuit and MOV protection.
- ★ Optical isolation.
- ★ Suitable for three-phase motor control; furnace temperature control system; large ovens, etc.

Model Illustration

RTA-PA80A480 (XXX) — Feature code

Load voltage: 480: 480VAC
Load current: 25A: 25Amp 40A: 40Amp 60A: 60Amp 80A: 80Amp
Control type: Blank: DC control A: 50~130VAC AC control B: 180~270VAC AC control
Activation type: P: random Blank: zero-cross
RTA series solid state relay

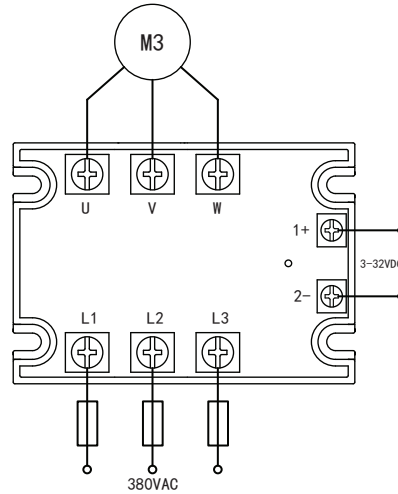
Ordering Information

Model	Activation type	Control signal	Rated current	Voltage range	Code
RTA-(P)25A480	Blank: Zero-cross activation	4-32VDC	25A	24-530VAC	D0310RTA01
RTA-(P)40A480		4-32VDC	40A	24-530VAC	D0380RTA01
RTA-(P)60A480		4-32VDC	60A	24-530VAC	D0490RTA01
RTA-(P)80A480		4-32VDC	80A	24-530VAC	D0630RTA01
RTA-(P)A25A480		90-130VDC	25A	24-530VAC	D0320RTA01
RTA-(P)B25A480	P: Random activation	180-270VDC	25A	24-530VAC	D0320RTA01
RTA-(P)A40A480		90-130VDC	40A	24-530VAC	D0400RTA01
RTA-(P)B40A480		180-270VDC	40A	24-530VAC	D0400RTA01
RTA-(P)A60A480		90-130VDC	60A	24-530VAC	D0500RTA01
RTA-(P)B60A480		180-270VDC	60A	24-530VAC	D0500RTA01
RTA-(P)A80A480		90-130VDC	80A	24-530VAC	D0640RTA01
RTA-(P)B80A480		180-270VDC	80A	24-530VAC	D0640RTA01

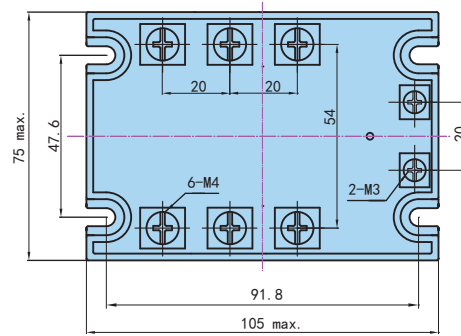
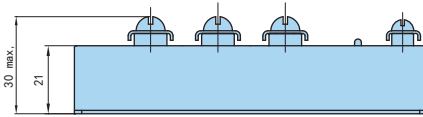
Technical Specifications

Input Parameters	Control Voltage Range	AC Control	90~280VAC	Output Parameters	Output voltage range	480	48~530VAC		
		DC Control	4~32VDC		Max Conducting Time	AC control		40ms	
	Mini conduction voltage	AC Control	90VAC			AC control(zero-cross)		10ms	
		DC Control	4VDC			DC control(random)		1ms	
	Minimum turn-off voltage	AC Control	15VAC		Max Closing time	AC control		40ms	
		DC Control	1VDC			DC control		10ms	
	Max reverse polarity voltage	DC Control	32VDC		Max impulse current [@10ms]	20A		300A	
Max Input Current	AC Control	30mA@280VAC	40A			500A			
	DC Control	35mA@32VDC	60A			860A			
Other Parameters	Medium Withstand voltage [50/60Hz]	Input / output	4000Vrms			Max I ² t value [@10ms]	80A		1280A
		Input/output/bottom	2500Vrms		Max transient voltage		480V	1200Vpk	
	Working Temperature Range		-30℃~+80℃		Max I ² t value [@10ms]		25A		450A ² s
	Storage Temperature Range		-30℃~+100℃				40A		1250A ² s
	Weight	25A/40A	385g			60A		3698A ² s	
		60A/80A	530g			80A		8192A ² s	
					Max off-state leakage current (@under rated voltage)			5mA	
					Max turn-on voltage drop (@under rated current)			1.6Vrms	
					Off-state voltage index rise rate dv/dt			500V/μs	

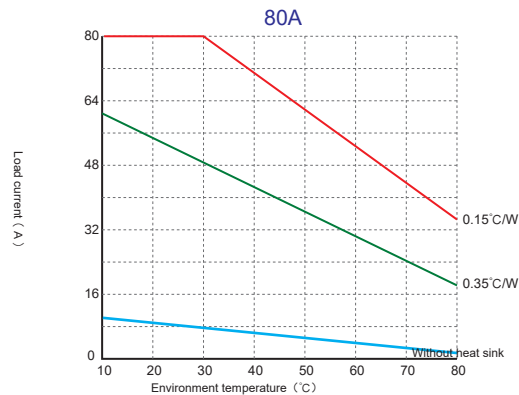
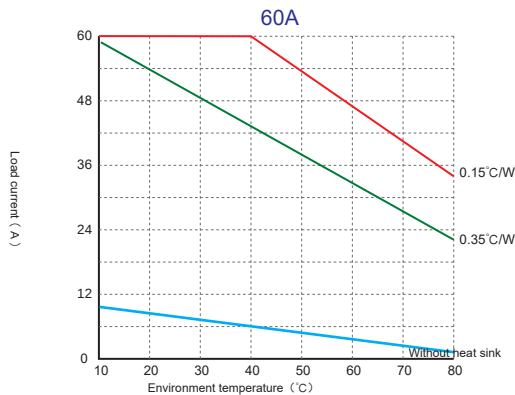
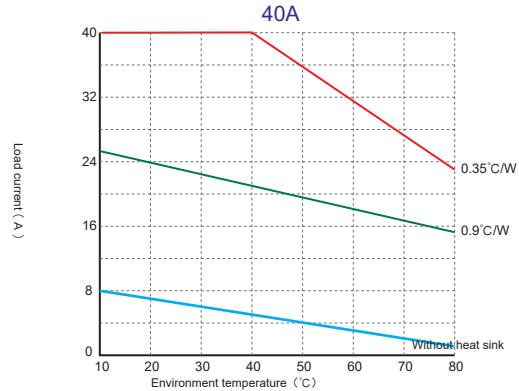
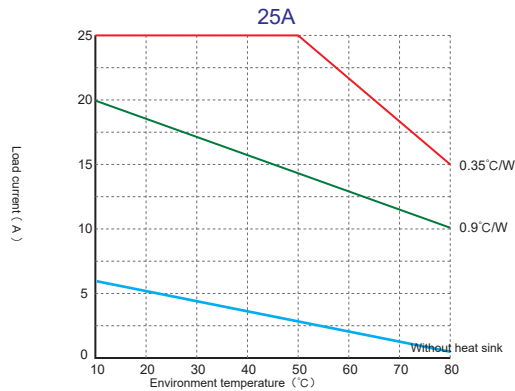
Connection



Dimension (Unit:mm)



Temperature curve



5. RSYA Series Solid State Relay(Single phase AC output)

■ Photos and Features

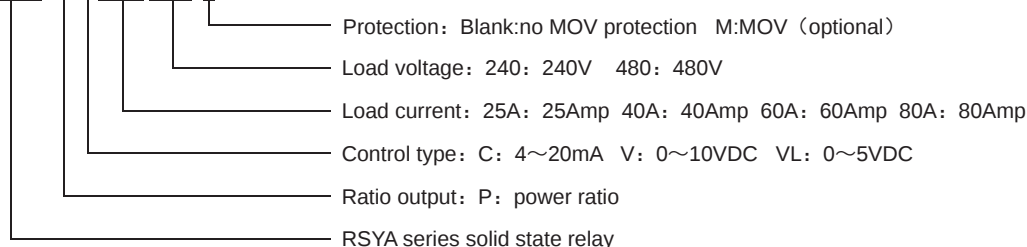


Features:

- ★ Load current: 25A,40A,60A,80A.
- ★ SCR output.
- ★ Control signal: 0~5VDC,0~10VDC,4~20mA.
- ★ Phase shift control output.
- ★ Optional built-in MOV protection

■ Model Illustration

RSYA-PC25A480M(XXX) — Code



■ Ordering Information

Model	Control signal	Rated current	Voltage range	Code
RSYA-PC25A240	4~20mA	25A	176~280VAC	D0180RSYA01
RSYA-PC40A240		40A	176~280VAC	D0210RSYA01
RSYA-PC60A240		60A	176~280VAC	D0240RSYA01
RSYA-PC80A240		80A	176~280VAC	D0290RSYA01
RSYA-PC25A480		25A	300~530VAC	D0190RSYA01
RSYA-PC40A480		40A	300~530VAC	D0230RSYA01
RSYA-PC60A480		60A	300~530VAC	D0270RSYA01
RSYA-PC80A480		80A	300~530VAC	D0310RSYA01
RSYA-PV25A240	0~10VDC	25A	176~280VAC	D0180RSYA01
RSYA-PV40A240		40A	176~280VAC	D0210RSYA01
RSYA-PV60A240		60A	176~280VAC	D0240RSYA01
RSYA-PV80A240		80A	176~280VAC	D0290RSYA01
RSYA-PV25A480		25A	300~530VAC	D0190RSYA01
RSYA-PV40A480		40A	300~530VAC	D0230RSYA01
RSYA-PV60A480		60A	300~530VAC	D0270RSYA01
RSYA-PV80A480		80A	300~530VAC	D0310RSYA01
RSYA-PVL25A240	0~5VDC	25A	176~280VAC	D0180RSYA01
RSYA-PVL40A240		40A	176~280VAC	D0210RSYA01
RSYA-PVL60A240		60A	176~280VAC	D0240RSYA01
RSYA-PVL80A240		80A	176~280VAC	D0290RSYA01
RSYA-PVL25A480		25A	300~530VAC	D0190RSYA01
RSYA-PVL40A480		40A	300~530VAC	D0230RSYA01
RSYA-PVL60A480		60A	300~530VAC	D0270RSYA01
RSYA-PVL80A480		80A	300~530VAC	D0310RSYA01

Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

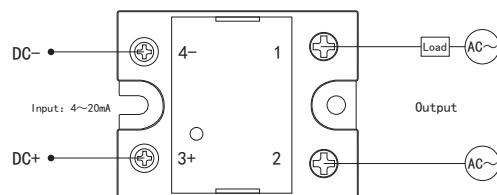
Technical Specifications

Panel Meter	Input Parameters	Voltage control	Auxiliary power voltage range		10~32VDC		Output Parameters	Load voltage range	240	176~280VAC	
			Control voltage range	VL	0~5VDC				480	300~530VAC	
				Conduction voltage	V	0~10VDC		Max surge current [@10ms]	25A	250A	
Turn-off voltage			VL		0.1VDC max				40A	400A	
				V	0.2VDC max				60A	600A	
				VL	0.05VDC min				80A	800A	
				V	0.1VDC min						
Input resistance				VL	30kΩTYP.			Max transient voltage		600Vpk	
			V	60kΩTYP.		1200vpk					
Sensor Indicator		Current control	Control voltage range		4~20mA			Output power		0~99%	
			Conduction current		4.6mA max			Frequency range		47~63Hz	
			Turn-off current		3.8mA min			Max off-state leakage current (Under rated voltage)		5mA	
			Input resistance		60kΩTYP. ⁽¹⁾			Off-state voltage index rise rate dv/dt		500V/μs	
Temperature Controller	Other Parameters		Medium Withstand voltage [50/60Hz]	Input / output		4000Vrms		Storage Temperature Range		-30℃~+100℃	
		Input/output/bottom		2500Vrms		Weight (typical value)		120g			
		Insulation resistance(@500VDC)		1000MΩ		LED indicator		Switching indication			
Working Temperature Range		-30℃~+80℃		LED introduction		LED(green)when item switched on, LED on					
Counter		Remark: (1) During current control, the drive voltage capability must be above 10V.									
Timer Relay											

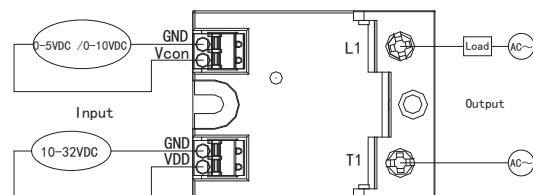
Remark: (1) During current control, the drive voltage capability must be above 10V.

Connection

Current controlled items



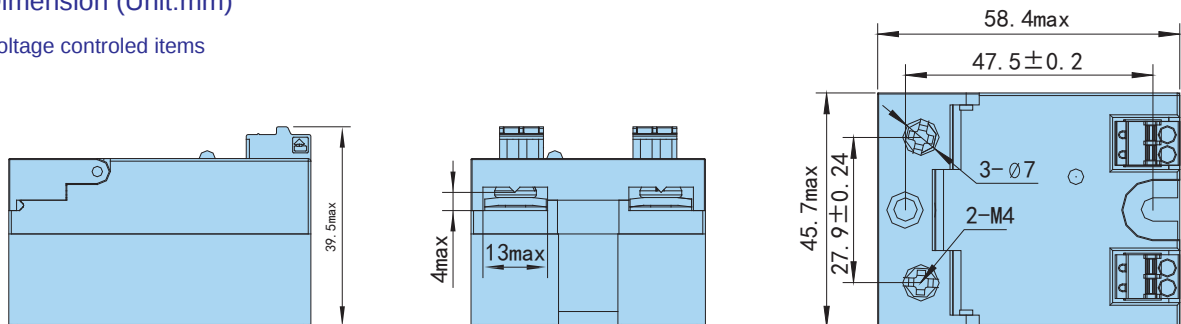
(2) Voltage controlled items



Remark: The auxiliary power supply GND and the control signal GND are internally short-circuited and use one terminal together. If the external control signal and the power supply are not connected through same terminal, then the GND signals of both need to be connected separately.

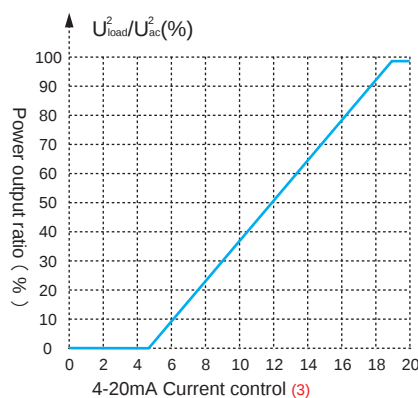
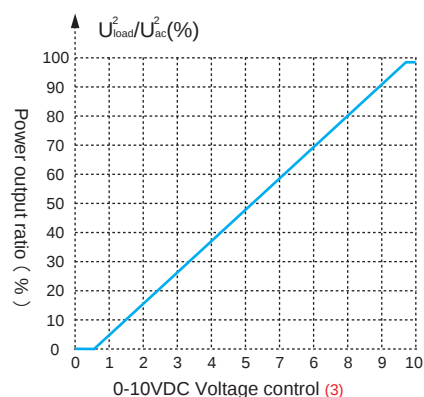
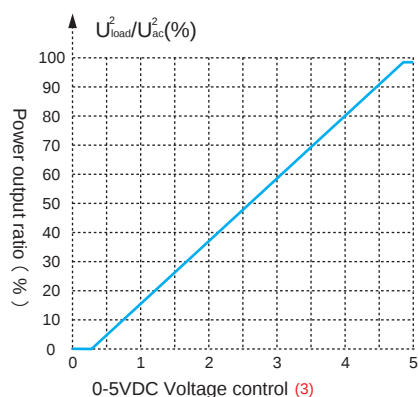
Dimension (Unit:mm)

Voltage controlled items



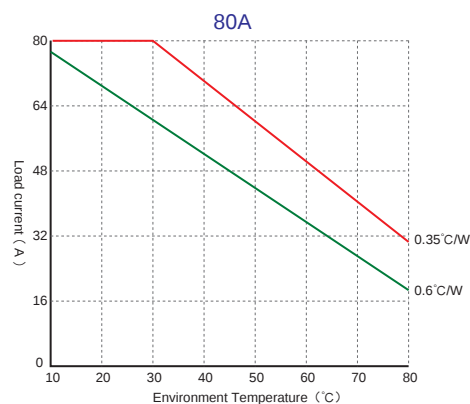
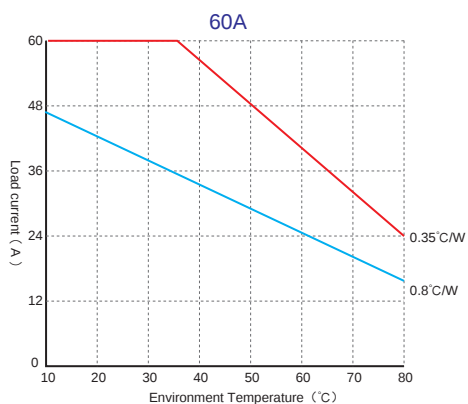
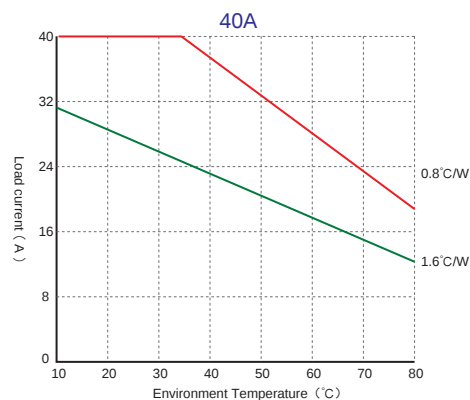
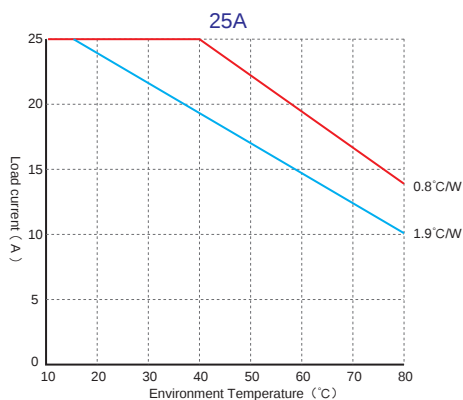
Use copper terminal for wiring	 
Input::W=12mm max	
Wire size	Input:max 1.5mm²
	Output:max 7mm²
Recommended installation torque	Output:0.98-1.37N·m

■ Output/Ratio control characteristics



Remarks: (3) The output curves are all measured under 50Hz conditions.

■ Temperature Curve



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

6. RTYA Series Solid State Relay (3-phase)

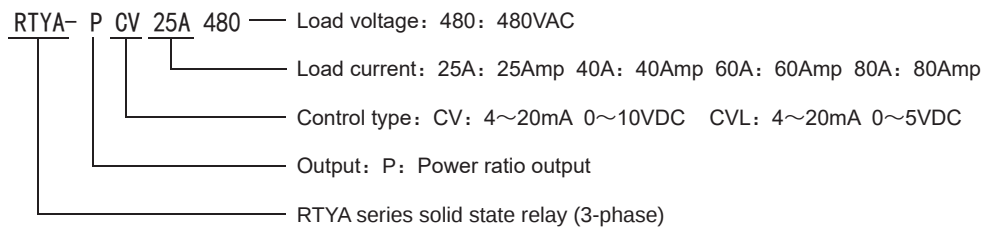
■ Photos and Features



Features:

- ★ SCR output is suitable for heavy industrial loads.
- ★ Control input mode 0-5V, 0-10V, 4-20mA.
- ★ Built-in RC protection, MOV protection.
- ★ High impulse group immunity, surge immunity design.
- ★ Phase shift control output.
- ★ IP20 protection design.

■ Model Illustration



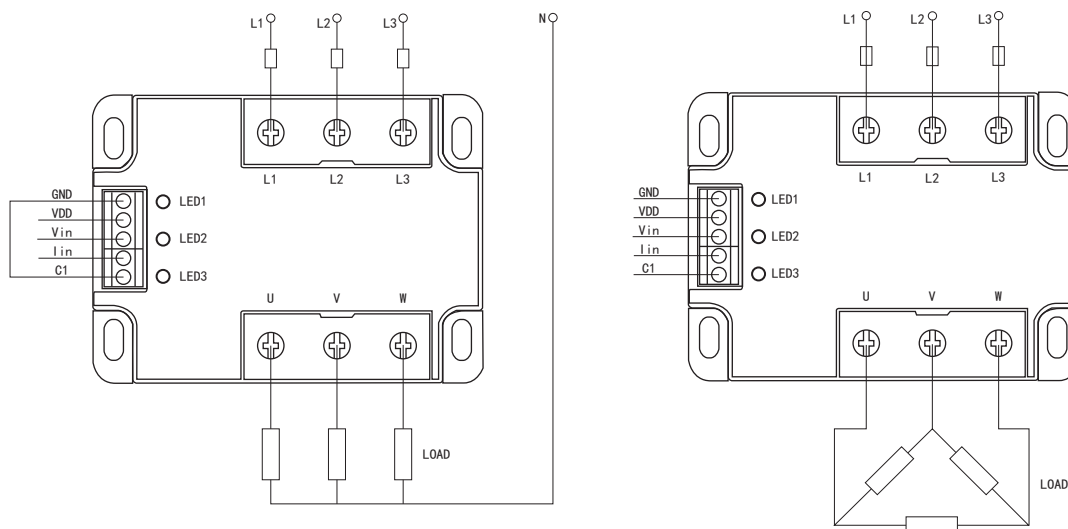
■ Ordering Information

Model	Control signal	Rated current	Voltage range	Code
RTYA-PCV/CVL 25A480	CV: 4~20mA 0~10VDC CVL: 4~20mA 0~5VDC	25A	180-530VAC	D1110RTYA01
RTYA-PCV/CVL 40A480		40A	180-530VAC	D1200RTYA01
RTYA-PCV/CVL 60A480		60A	180-530VAC	D1300RTYA01
RTYA-PCV/CVL 80A480		80A	180-530VAC	D1620RTYA01

■ Technical Specifications

Input Parameters	Control voltage range	VL	0~5VDC	Output Parameters	Load voltage range	480VAC	180~530VAC
		V	0~10VDC		Load current range [@10ms]	25A	300A
	Control current range		4-20mA			40A	400A
						60A	600A
	Input resistance [Typical value]	0-5V	110kΩ			Max I ² t value [@10ms]	80A
		0-10V	22kΩ		25A		450A ² s
		4-20mA	200kΩ		40A		800A ² s
	Conduction voltage	VL	≤0.2VDC		60A		1800A ² s
		V	≤0.4VDC			80A	7800A ² s
	Conduction current		≤4.5mA		Max transient voltage	480VAC	1200Vpk
Turn-off voltage		≥0.1VDC		Max off-state leakage current (Under rated voltage)		5mA	
Turn-off current		≥3.9mA		Max conduction voltage drop (@Under rated current)		1.6Vrms	
External power supply range		10~32VDC		Off-state voltage index rise rate dv/dt		500V/μs	
Other Parameters	Medium Withstand voltage [50/60Hz]	Input / output	4000Vrms	Other Parameters	Insulation resistance (@500VDC)		1000MΩ
		Output/bottom	2500Vrms		Working Temperature Range		-30℃~+80℃
	Pulse group immunity level	IEC61000-4-4	Storage Temperature Range		-30℃~+100℃		
	Surge immunity level	IEC61000-4-5	Weight (Typical value)		25A/40A	360g	
	Electrostatic discharge immunity level	IEC61000-4-6			60A/80A	560g	
		4kV/contact discharge, 8kV/air discharge					

■ Connection



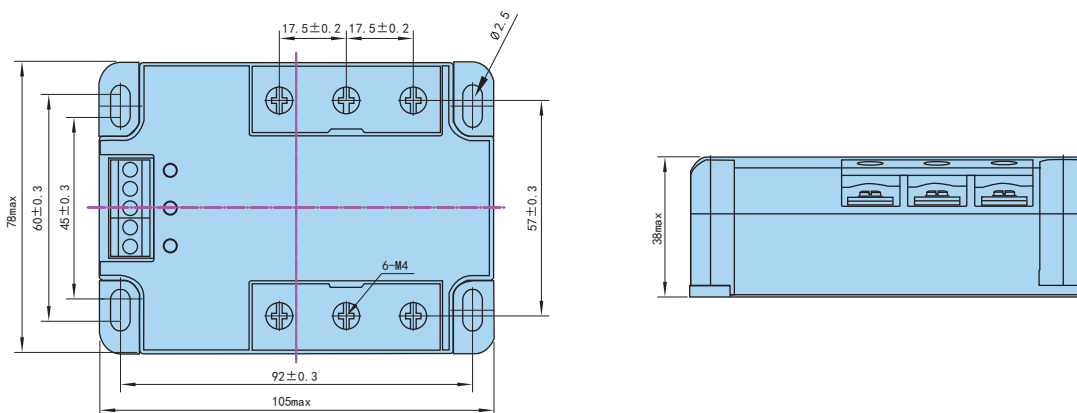
GND: Common negative terminal
VDD: positive power supply

C1: Load type selection, C1 floating or connected to VDD means the load is not connected to the neutral line, C1 connected to GND means the load is connected to the neutral line.

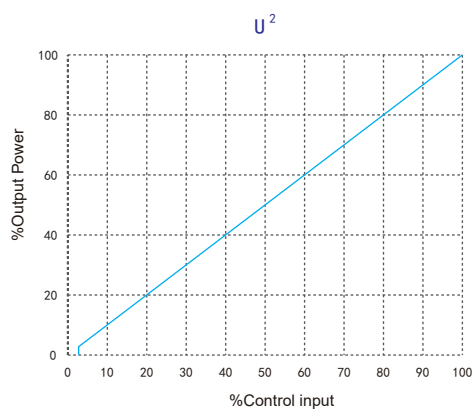
VIN: Voltage control input
IIN: Current control input

LED1: The LED light is on when the power supply is connected
LED2: The LED is on when there is output
LED3: The LED is on when 3-phase undervoltage fault occurs

■ Dimension (Unit:mm)



■ Output/ratio and mode control characteristics



Panel Meter

Sensor
Indicator

Temperature
Controller

Counter

Timer Relay

Tacho/Speed/
Pulse Meter

Recorder

Signal
Isolator

Rotary
Encoder

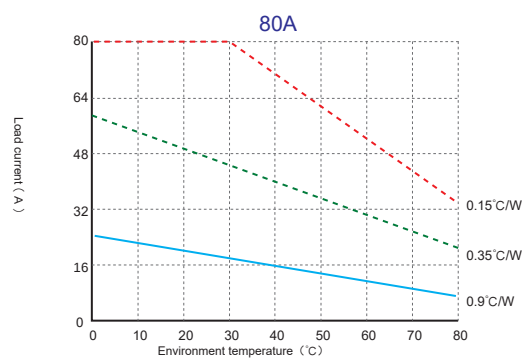
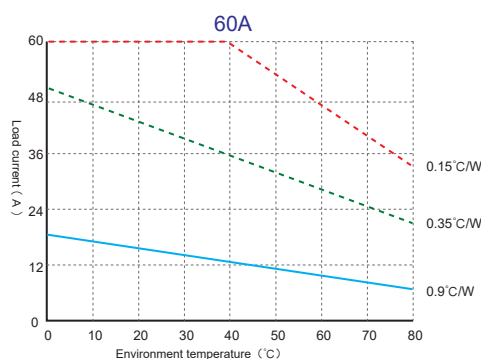
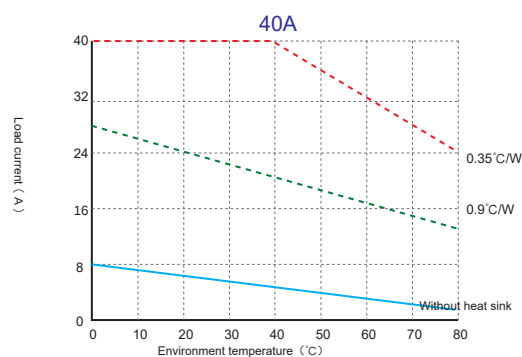
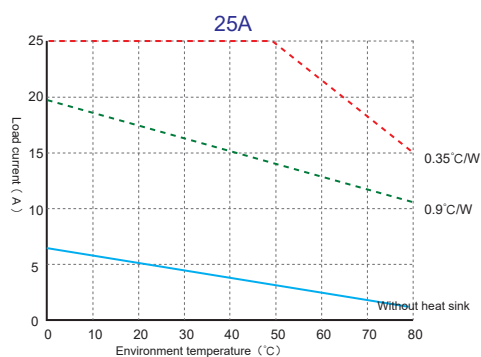
Proximity
Sensor

Solid State
Relay

Power Meter
Introduction

■ Temperature curve

Panel Meter
Sensor Indicator
Temperature Controller
Counter
Timer Relay
Tacho/Speed/Pulse Meter
Recorder
Signal Isolator
Rotary Encoder
Proximity Sensor
Solid State Relay
Power Meter Introduction



Power Meter Comparison Table

No	Model Function	DR9-IRC38	DW9T-IRC38	DW9L-IRC38	DW9E-IRC38	DS9L-W-RC38	DS9E-W-RC38	DS7L-W-RC38	DS7E-W-RC38	DS9L-W-RC18	DS7L-W-RC18
											
		Power Recorder	TFT Power Meter	LCD Power Meter	LED Power Meter	LCD Power Meter	LED Power Meter	LCD Power Meter	LED Power Meter	Single Phase LCD Power Meter	Single Phase LCD Power Meter
1	Real-time measurement	Full 28 Parameters				Full 28 Parameters	*Full 28 Parameters	Full 28 Parameters	*Full 28 Parameters	Full 8 Parameters	
2	Energy	Total energy, total active energy, total reactive energy, four-quadrant energy, rate energy				Total energy, total active energy, total reactive energy	*Total energy, total active energy, total reactive energy	Total energy, total active energy, total reactive energy	*Total energy, total active energy, total reactive energy	Active energy, reactive energy	
3	Demand	Current demand, maxi active power demand, max reactive power demand				No	No	No	No	No	No
4	Harmonics	Total harmonics of voltage and current		*Total harmonics of voltage & current, 32 sub-harmonics	Total harmonics of voltage & current (communication only)	No	No	No	No	No	No
5	Rate	4 rates, 8 periods		4 rates, 12 periods	4 rates, 12 periods (communication only)	No	No	No	No	No	No
6	Un-balance	Voltage and current unbalance			No	No	No	No	No	No	No
7	Event record	Alarm activation, alarm cancellation, energy clearing, parameter modification, event & time such as power on		Yes (communication only)	No	No	No	No	No	No	No
8	Neutral current	Yes	Yes	Yes	No	No	No	No	No	No	No
9	Phase	Yes	Yes	Yes	No	No	No	No	No	No	No
10	Curve record	Voltage, current, active power, power factor	No	No	No	No	No	No	No	No	No
11	Alarm	2	2	2	2	2	2	2	2	2	2 (with DI no alarm)
12	DIDO	4DI, 2DO	4DI, 2DO	4DI, 2DO	4DI, 2DO	2DI, 2DO	2DI, 2DO	2DO or 2DI	2DO or 2DI	2DI, 2DO	2DO or 2DI
13	Real-time clock	Yes	Yes	Yes	Yes	No	No	No	No	No	No
14	Analog output	Yes	Yes	Yes	Yes	No	No	No	No	No	No
15	Communication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Remarks: * (Communication only) means that only reading and setting via communication are supported, and panel display is not supported.

* DW9L: The 32 sub-harmonics are only supported by the F version.

Panel Meter

Sensor Indicator

Temperature Controller

Counter

Timer Relay

Tacho/Speed/Pulse Meter

Recorder

Signal Isolator

Rotary Encoder

Proximity Sensor

Solid State Relay

Power Meter Introduction



DR9 Series 3 Phase Multi-function Power Recorder

Product Introduction

DR9 is an innovative high-end multi-functional power recording instrument of TOKY. It has the functions of electrical parameter measurement, data recording, curve display, historical curve review, data transfer and storage. It integrates the function of the electric power recorder with the instrument. It also has the function of remote control and telemetry. It can be connected with each power distribution system and monitoring system through RS485 to facilitate data collection and automatic control.

Features

Basic function

DR9 has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: 3 phase phase voltage, line voltage
- Current I: 3 phase current
- Active power P: Active power of each phase and total
- Reactive power Q: Reactive power of each phase and total
- Apparent power S: Apparent power of each phase and total
- Power factor PF: Power factor of each phase and total
- Frequency F: Current voltage frequency
- Energy: Active energy, reactive energy
- Total harmonic: 3 phase voltage/current total harmonic

Energy measurement function

DR9 can realize high-precision bi-direction electric energy measurement. The measured electric energy includes the output/input active energy, the generated / absorbed reactive energy and the apparent energy. It has 8 periods and 4 tariff (time, peak, flat vale), and measures various active and reactive energy in different periods.

Model Illustration

DR 9 - □ R C 3 8

- Communication: 8:RS485(Modbus-RTU)
- Measure: 3: 3 phase network input
- Alarm: C: 2 alarms output
- Alarm output: R: Relay output
- Analog output: Blank: no analog output I: 4-20mA analog output
- Dimension(mm): 96W×96H
- DR series 3 phase multi-function power recorder

Application field

DR9 can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Intelligent switch panel
- Factory Automation System
- Electronic measuring instruments
- Industrial furnace equipment smelting
- Chemical industry and steel
- Food, medicine
- Professional research institutions

Abundant display function

- Data display: Data summary display, voltage, current, power(active, reactive, apparent), power factor, frequency, active/reactive energy, etc.
- Curve display: Voltage, current, power(active, reactive, apparent), power factor, frequency, active/reactive energy, etc.

Recording function

- Record the data and curve in real time, minimum record interval can be set as 1 second.
- Equipped with USB disc, SD card as external data memory, up to 4G capacity.
- History data is backedup to the SD card automatically
- With special analysis software, it can generate tables, data, circle diagrams and curves, and export documents in Excel format.

DI & DO functions

DR9 has 4 DI and 2 DO. DI is switch input, DO is switch output. The DI port information is read through RS485 communication to monitor the electric switch status, and the DO switch output is controlled by communication command to control the closing or breaking of electrical equipment.

Function List

● Inherent function ⊙ Optional function

Function		Parameters	
Real-time measured value	Phase voltage	Va, Vb, Vc	●
	Line voltage	Vab, Vbc, Vca	●
	Current	Ia, Ib, Ic, In	●
	Active power	Pa, Pb, Pc, P _{total}	●
	Reactive power	Qa, Qb, Qc, Q _{total}	●
	Apparent power	Sa, Sb, Sc, S _{total}	●
	Power factor	PFa, PFb, PFC, PF _{total}	●
	Power four-quadrant indication	Positive active power, reverse active power, positive reactive power, reverse reactive power	●
	Frequency	Hz	●
Energy	Active energy	Positive active energy, reverse active energy, four-quadrant energy	●
	Reactive energy	Positive reactive energy, reverse reactive energy, four-quadrant energy	●
	Total energy	Total active energy, total reactive energy	●
	Active/reactive energy combination	Measure each circuit's positive/reverse active energy, four quadrant reactive energy, combined active energy, combination1 reactive energy and combination 2 reactive energy	●
Demand	Max demand	Bi-direction max demand, max demand by time period and date & time of occurrence	●
	Demand cycle	Demand statistical period: 15 min, slip time :1 min (period & slip time can be set)	●
	Demand accounting date	Store the max demand data of 12 accounting days	●
Multi-tariff metering	Multi-tariff rate	Programmable 4 tariff rate: sharp, peak, flat and vale, 20 periods, 13 set of time table, 14 time zones and 30 public holidays	●
Record function	Event record	It can record the last 10 times of voltage loss, current loss, phase failure, reverse phase sequence, power failure, programming and other events	●
Power quality	3 phase voltage unbalance	Unbalance U_%	●
	3 phase current unbalance	Unbalance I_%	●
	Total harmonic content of each phase voltage and current	Total Harmonic Content	●
Analog	Analog output	1 loop DC 4-20mA, open circuit voltage DC 24V, load capacity <400Ω	⊙
Alarm	Over-limit alarm	Frequency, voltage of each phase, any phase loss of 3 phase, voltage of each line, current of each phase, current average, medium Line current, active/reactive power of each phase, total active/reactive power of 3 phase, apparent power of each phase, total apparent power of 3 phase, power factor of each phase, total power factor of 3 phase, voltage/current unbalance, voltage harmonic of each phase (line), voltage average harmonic of 3 phase (line), current harmonic of each phase, current average harmonic of 3 phase.	●
Time	Real-time clock	Year, month, day, hour, minute, second	●
Pulse output	Energy pulse output	Active/reactive energy pulse output, open-collector optocoupler output, V≤48V, Iz≤50mA	●
I/O option	I/O module	4DI, 2DO	●
Comm.	RS485 port (standard)	Modbus®-RTU protocol	●
	2nd RS485 port (be ordered)	Modbus®-RTU protocol	⊙
Display	TFT LCD display	3.5 inch display 320*240 lattice	●

Ordering Information

Model	Analog output	Alarm output	Switch input	RS485	Tariff	Harmonic	Input	Code
DR9-RC38	No	2 alarms	4 input	Yes	Yes	Yes	10~480V (L-L)	A04300DR03
DR9-IRC38	4~20mA	2 alarms	4 input	Yes	Yes	Yes	0.02~6A	A04600DR03

Parameters Pages and History Curve

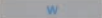
Home page

◀ ▶ Home		2013/09/09 09:09:09				
Para	Vol	Amp	PF	Pwr	QPwr	SPwr
Unit	V	A		W	VAR	VA
A	0.0	0.000	0.000	0.000	0.000	0.000
B	0.0	0.000	0.000	0.000	0.000	0.000
C	0.0	0.000	0.000	0.000	0.000	0.000
TOT		0.000	0.000	0.000	0.000	0.000
Comm	Frequency Hz			Total Energy kWh		
•	0.0			49.53		
DI	UP	DOWN	Alarm	A	B	C
Index						

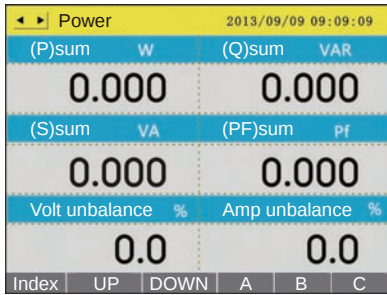
3 phase line voltage page

◀ ▶ Line Voltage		2013/09/09 09:09:09			
0.0		V			
0.0		V			
0.0		V			
Index	UP	DOWN	A	B	C

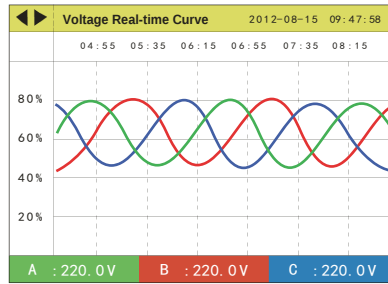
3 phase active power page

		Power		2013/09/09 09:09:09	
		 			
		 			
		 			
Index	UP	DOWN	A	B	C

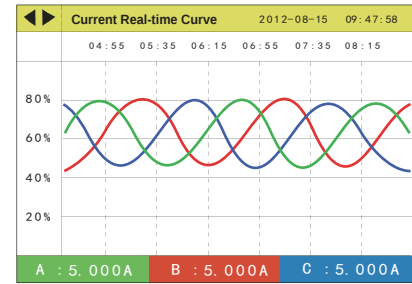
Total Power



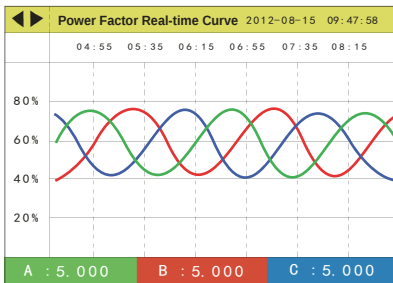
Voltage Real-time Curve Page



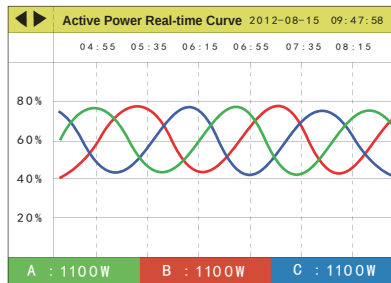
Current Real-time Curve Page



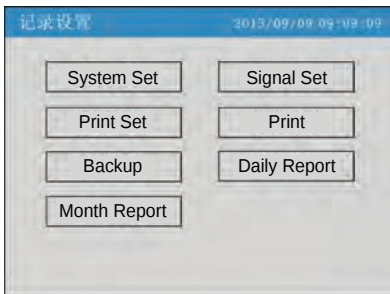
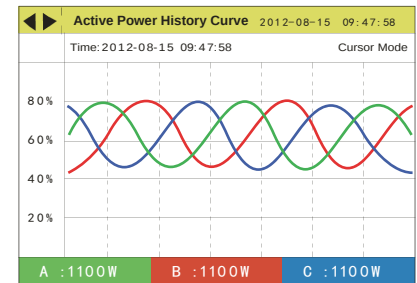
Power Factor Real-time Curve Page



Active Power Real-time Curve Page



Active Power History Curve Page



Daily Report			2012-08-15 09:47:58
Type	Active power	Time	2012-08
01:00:00	12.000	23:00:00	
02:00:00	13.000	24:00:00	
03:00:00	14.000	25:00:00	
04:00:00	15.185.20	26:00:00	
05:00:00	16.000	27:00:00	
06:00:00	17.000	28:00:00	
07:00:00	18.000	29:00:00	
08:00:00	19.000	30:00:00	
09:00:00	20.000	31:00:00	
10:00:00	21.000		
11:00:00	22.000		
Month Total:185.20			
Σ 185.20			

Print Backup

Monthly Report			2012-08-15 09:47:58
Type	Active power	Time	2012-08
2012-01:00:00	2012-08:185.20		
2012-02:00:00	2012-09:00:00		
2012-03:00:00	2012-10:00:00		
2012-04:00:00	2012-11:00:00		
2012-05:00:00	2012-12:00:00		
2012-06:00:00			
2012-07:00:00			
Year Total:185.20			
Σ 185.20			

Print Backup

Panel Indication



No.	Symbol	Name	Function
1	SET	Set Key	In measure interface, energy,harmonics, tariff rate, record, event interface, used to back to guide page . In setting interface , select the menu or parameter need to be modified, and press Set key to make confirmation after finishing modification.
2	⏪	Left Key	Move cursor to left: in parameter modifying interface, used to select the menu and modified parameter. Page down: in running interface , used to turn to back page.
3	⏩	Right Key	Move cursor to right: in parameter modifying interface, used to select the menu and modified parameter. Page up: in running interface , used to turn to front page.
4	⏴	Decrease Key	Parameter modification: used to decrease value in parameter modification interface.
5	⏵	Increase Key	Parameter modification: used to increase value in parameter modification interface.
6	ESC	Return Key	In menu operation, it is used to return to previous menu

Technical Parameters

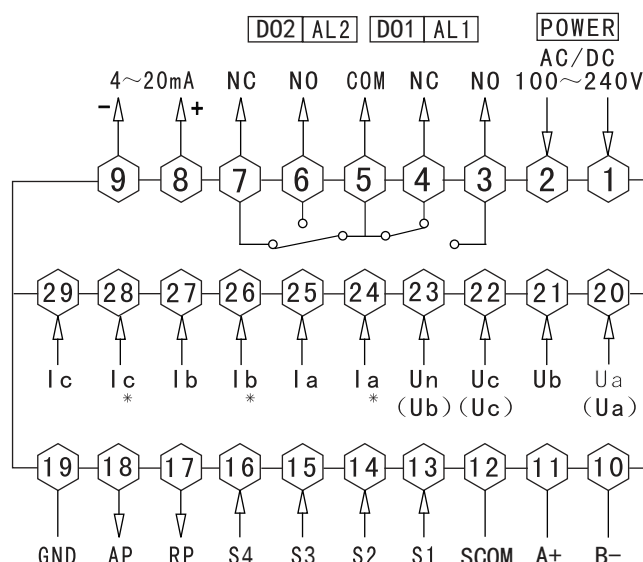
Input	
Current input	
Rated current	5 A ac/1 A ac (need to order)
Measurement range	0.01In~1.2n
Overload capacity	10 times In RMS for 1sec, discontinuous
Loading	0.05VA (typical value)
Start value	0.1% of the rated value
Accuracy	0.5%
Voltage input	
Rated voltage	400Vac L-N, 480Vac L-L
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Input resistance	300KΩ/phase
Measuring frequency range	45Hz~65Hz
Start value	50Vac
Accuracy	0.5%
Energy accuracy	
Active energy (in accordance with IEC 62053-22) 1 class (Comply with GB/T17215.322-2008)	
Reactive energy (in accordance with IEC 62053-23) 2 class	

DO(relay output)	
Load voltage	250Vac, 30Vdc
Load current	5A(resistive load), 2A(inductive load)
Turn-on time	10ms(max)
On-resistance	30mΩ(max)
Isolation voltage	3000V
Mechanical life	1.5x10 ⁷

Note: When it is applied to 3 phase 4 wire or 3 phase 3 wire unbalance load, the parameters measured values may deviate.

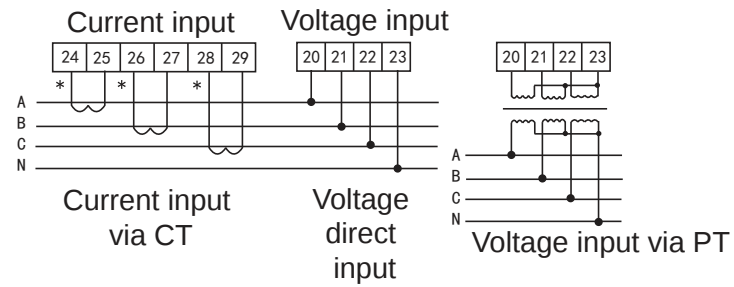
Communication	
RS485 (standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Baud rate: 4800~9600bps	
Power supply	
AC/DC power supply	
Power supply	100~240Vac, 50/60Hz;
Power consumption	5W
Withstand voltage	2000Vac, 50/60Hz 1 minute
I/O module	
DI input	
Input range	Passive dry contact
Environment	
Operating temperature	-25℃~55℃
Storage temperature	-40℃~70℃
Relative humidity	5%~95% (No condensation)
Standards compliance	
Measurement standard	IEC 62053-22, GB/T 17215.322-2008
Environment standard	IEC 60068-2
Safely standard	IEC 61010-1, UL61010-1
EMC standard	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSI C39.1
Analog output	
Output range	4~20mA
Accuracy	0.5%
Temperature drift	250ppm/℃ typical value
Isolation voltage	500V
Open circuit voltage	24V

Wiring diagram

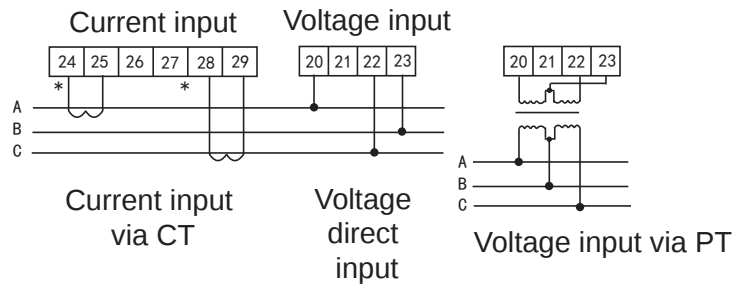


- Note:**
- ① Voltage input connection terminal, bracket terminals (Ua) (Uc) (Ub) shows 3 phase 3 wire connection method. If there is any change, please refer to the wiring diagram on the meter.
 - ② Terminals with "*" are current input terminal, all incoming and outgoing wires must be unified, otherwise, the measurement will be inaccurate.

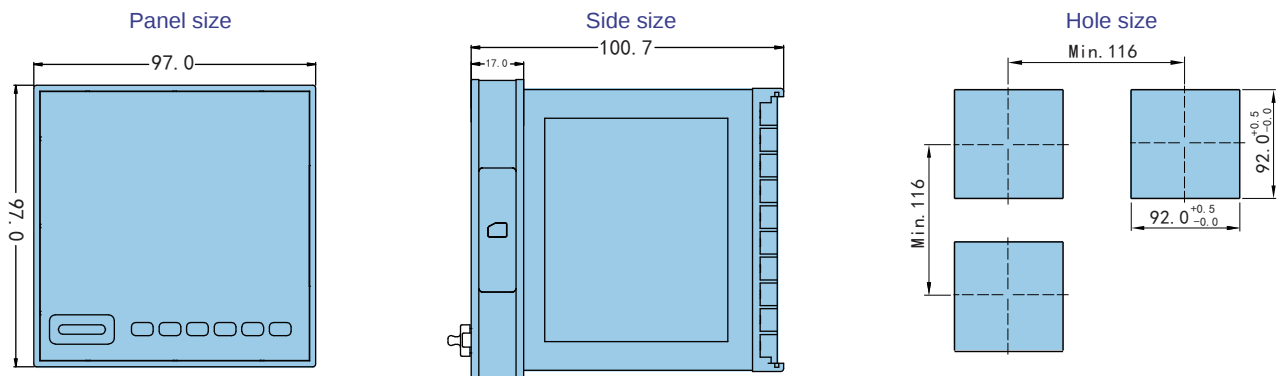
Method 1 (3 pcs of CT): 3 phase 4 wire wiring mode



Method 2 (2 pcs of CT): 3 phase 3 wire wiring mode



Dimension and Mounting Size





DW9T Series TFT 3 Phase Multi-function Power Meter

Product Introduction

DW9T is a high-end product developed by TOKY through comprehensive analysis of market demand in the power industry. The industry's high-quality measurement chips and high-precision transformers are used to ensure the high precision of the products. At the same time, the LCD color screen is used to display various power parameter info, with detailed display parameters. The advantages of complete info, rich pictures, and convenient switching between Chinese and English. It integrates multiple functions such as parameter measurement, power quality analysis, power measurement, event recording, DI & DO. It is ideal for power automation and smart grid applications.

Features

Basic function

DW9T has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: 3 phase phase voltage, line voltage and its average value
- Current I: 3 phase current, its average value, neutral current
- Active power P: Active power of each phase and total
- Reactive power Q: Reactive power of each phase and total
- Apparent power S: Apparent power of each phase and total
- Power factor PF: Power factor of each phase and total
- Frequency F: Current voltage frequency
- Demand : 3 phase active / reactive / apparent & current demand
- Four quadrant energy

Energy measurement function

DW9T can realize high-precision bi-direction electric energy measurement. The measured electric energy includes the output/ input active energy, the generated / absorbed reactive energy and the apparent energy. It has 8 periods and 4 tariff (time, peak, flat vale), and measures various active and reactive energy in different periods.

Model Illustration

- DW 9 T-□ R C 3 8
- Communication: 8: 1 loop RS485 communication 9: 2 loops RS485 communication (be ordered)
 - Measure unit: 3: 3 phase network input
 - Alarm qty: C: 2 channels alarm D: 4 channels alarm (When using the 4-channel alarm function, the transmission function cannot be used)
 - Alarm function: R: Relay alarm output
 - Analog output: Blank: No analog output I: 1 loop 4~20mA output 2I: 2 loops 4~20mA output (be ordered)
 - Display: TFT color display
 - Dimension(mm): 9: 96W×96H
 - DW series 3 phase multi-function power meter

Application Field

DW9T can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Communication, data center
- Intelligent Building
- Hydropower
- Energy Management System
- Commercial Plaza, City Plaza
- Intelligent Power grid

Power Quality Parameters

DW9T can monitor the total harmonic content of 3 phase system voltage and current in real time, which is very suitable for applications sensitive to power quality. The product can also expand the following harmonic analysis functions.

- 2~31th harmonic content rate
- Odd harmonic distortion rate (Total Odd HD)
- Telephone interference factor (THFF)
- Harmonic distortion rate (THD)
- Current K factor (CF)
- Crest factor (CF)

DI & DO Functions

DW9T has 4 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Other Functions

- Demand statistics, Bi-direction max demand, store the max demand data for 12 settlement days in time intervals.
- Load curve recording: 4m capacity, can record voltage, current, power, power factor, energy etc. (time interval can be set)
- Event record, can record the last 10 events such as undervoltage, undercurrent, phase failure, reverse phase sequence, disconnection, programming, etc.

Function List

● Inherent function ○ Optional function Blank: means no such function Order C or D version to be customized

Function			Parameters	DW9T-□B	DW9T-□C	DW9T-□D
Real-time measured value	Phase voltage	Va, Vb, Vc		●	●	●
	Line voltage	Vab, Vbc, Vca		●	●	●
	Current	Ia, Ib, Ic, In		●	●	●
	Active power	Pa, Pb, Pc, P _{total}		●	●	●
	Reactive power	Qa, Qb, Qc, Q _{total}		●	●	●
	Apparent power	Sa, Sb, Sc, S _{total}		●	●	●
	Power factor	PFa, PFb, PFc, PF _{total}		●	●	●
	Power four-quadrant indication	Positive active power, Reverse active power, Positive reactive power, Reverse reactive power		●	●	●
	Frequency	Hz		●	●	●
Energy	Active energy	Positive active energy, Reverse active energy, Four quadrant energy		●	●	●
	Reactive energy	Positive reactive energy, Reverse reactive energy, Four quadrant energy		●	●	●
	Total energy	Total active energy, total reactive energy		●	●	●
	Active & reactive energy combination	Measure the positive active energy, reverse active energy, four-quadrant reactive energy, combined active energy, reactive energy of combination 1, reactive energy of combination 2		●	●	●
	Harmonic energy	Measure the positive/reverse harmonic energy of the total phase and sub-phase of each loop			●	●
	Energy settlement date	Storage of energy data for 12 settlement days			●	●
Demand	Max Demand	Bi-direction max demand, max demand by time period and date & time of occurrence		●	●	●
	Demand cycle	Demand statistical period: 15 m, slip time :1 m (period & slip time can be set)		●	●	●
	Demand settlement date	Store max demand data for 12 settlement days		●	●	●
Time Meas	Multiple Rate	Programmable 4 tariff (time, peak, flat, vale), 20 time periods, 13 sets of daily time tables, 14 time zones and 30 public holidays		●	●	●
Record Function	Load curve record	4M capacity, record interval can be set, voltage, current, power, power factor, energy and other data can be recorded (time interval can be set)			●	●
	Event Recording	Record the last 10 events such as undervoltage, undercurrent, phase failure, reverse phase sequence, disconnection, programming, etc.		●	●	●
Power Quality	Voltage 3phase unbalance rate	Unbalance rate U _U %		●	●	●
	Current 3phase unbalance rate	Unbalance rate I _I %		●	●	●
	Harmonic content of each phase voltage & current	Total harmonic content rate		●	●	●
	Voltage harmonic content rate	2~31th harmonic content rate			●	●
	Ccurrent harmonic content rate	2~31th harmonic content rate				●
	Voltage and current harmonic distortion rate and its average value	Distortion rate, even distortion rate, odd distortion rate				●
	Voltage drop, voltage deviation, voltage fluctuation, frequency deviation	Voltage drop, voltage deviation, voltage fluctuation, frequency deviation				●
	Voltage crest factor	THFF				●
Sequence components	K factor of each phase current	K Factor				●
	Voltage and current sequence components	Positive sequence, negative sequence, zero sequence				●
	Phase angle	Voltage angle, current angle				●
Analog	Analog output	1 channel DC 4-20mA open circuit voltage DC 24V load capacity <400Ω		○	○	○
Alarm	Over-limit alarm	Frequency, voltage of each phase, lack of any of 3 phases, voltage of each line, current of each phase, current average, neutral current, active/reactive power of each phase, total active/reactive power of 3 phases, apparent power of each phase, total apparent power of 3 phases, Voltage/current asymmetry, each phase voltage, line voltage harmonic distortion rate, 3 phase voltage, 3 line voltage average harmonic distortion rate, each phase current harmonic distortion rate, 3 phase current average harmonic distortion rate.		●	●	●
Time	Real-time alarm	Year, Month, Day, Hour, Minute, Second		●	●	●
Pulse output	Energy pulse output	Active/reactive energy pulse output, open-collector optocoupler output, V≤48V, I _z ≤50mA		●	●	●
I/O options	I/O module	4DI、2DO		●	○	○
Com	RS485 port (Standard)	Modbus®-RTU protocol		●	●	●
	The 2nd RS485 port (be ordered)	Modbus®-RTU protocol		○	○	○
Display	TFT color display	3.5" display 320 * 240 dot matrix		●	●	●
Dimensions	96×96×105mm (Hole size: 92×92mm)					

Ordering Information

Model	Analog	Switch input	Switch input	RS485	Multiple Rate	Harmonic	Input measurement	Code
DW9T-RC38	No	2 loops output	4 loops input	1 loop	Yes	Yes	10~480V (L-L) 0.02~6A	A01700DW9T03
DW9T-IRC38	1 loop	2 loops output	4 loops input	1 loop	Yes	Yes		A01900DW9T03

Measurement Accuracy And Range

Parameter	Accuracy	Resolution	Range
Voltage	0.5%	0.1V	2V~100kV
Current	0.5%	0.001A	5mA~9999A
Active power	0.5%	1W	-214~214MW
Reactive power	0.5%	1Var	-214~214MVar
Apparent power	0.5%	1VA	0~214MVA
Active demand	0.5%	1W	-214~214MW
Reactive demand	0.5%	1Var	-214~214MVar
Apparent demand	0.5%	1VA	0~214MVA
Power factor	0.5%	0.001	-1.000~1.000
Frequency	0.5%	0.01Hz	45.00~65.00Hz
	1%	0.1kW	0~99999999.9kWh
	1%	0.1kWh	0~9999999.9kWh

Parameter	Accuracy	Resolution	Range
Reactive 1st meas	2.0%	0.1kvarh	0~99999999.9kVarh
power 2nd meas	2.0%	0.1kvarh	0~99999999.9kVarh
Harmonic	2.0%	0.1%	0.0%~100.0% 20.0%~100.0%
Phase angle	2.0%	0.1°	0.0°~359.9°
Unbalance level	2.0%	0.1%	0.0%~100.0%

Technical Specifications

Input	
Current input	
Rated current	5 A ac/1 A ac
Measurement range	0.01In~1.2In
Overload capacity	10 times In RMS for 1s, discontinuous
Loading	0.05VA (typical value)
Start value	0.1% of the rated value
Accuracy	0.5%
Voltage input	
Rated voltage	400Vac L-N, 480Vac L-L
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Input resistance	2MΩ/phase
Measuring frequency range	45Hz~65Hz
Start value	10Vac
Accuracy	0.5%
Energy accuracy	
Active energy (in accordance with IEC 62053-22)	Level 1 (Comply with GB/T17215.322-2008)
Reactive energy (in accordance with IEC 62053-23)	Level 2
Harmonic index	
Measured value	3 phase voltage and current total harmonic content rate

Communication	
RS485 (Standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	
The second RS485 (customized)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	

Power Supply	
AC and DC power supply	
Power supply	100~240Vac 50/60Hz
Power consumption	5W
Withstand voltage	2000Vac, 50/60Hz, 1 minute

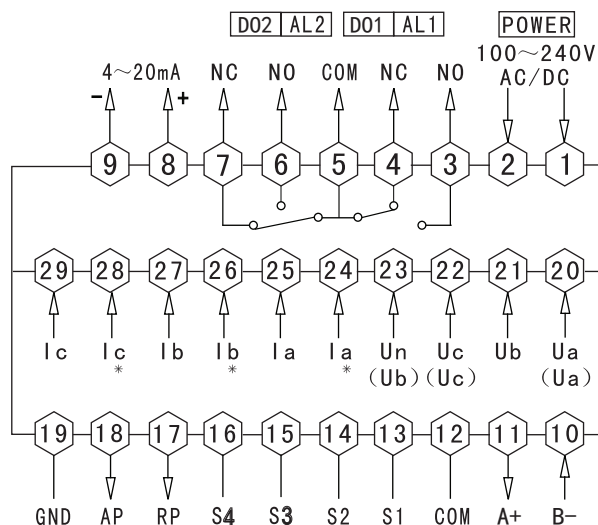
I/O module	
DI input	
Input range	Passive dry contact
Relay output	
Load voltage	250Vac, 30Vdc
Load current	5A (resistive load), 2A (inductive load)
Opening time	10ms(max)
Conduction Resistance	30mΩ(max)
Isolation voltage	3000V
Mechanical life	1.5x10 ⁷
Analog output	
Output range	4~20mA
Accuracy	0.5%
Temperature drift	250ppm/°C typical value
Isolation voltage	500V
Open circuit voltage	24V

Environment	
Operating temperature	-25°C~55°C
Storage temperature	-40°C~70°C
Relative humidity	5%~95% (No condensation)

Standard compliance	
Measurement standard	IEC 62053-22, GB/T17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSIC39.1

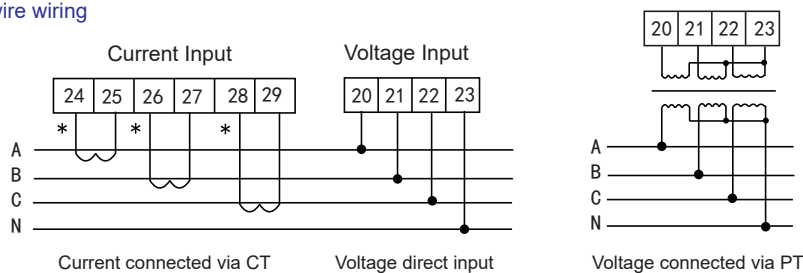
Note: When applied to 3-phase 4-wire or 3-phase 3-wire unbalanced load, the measured value of the parameter will have deviation.

Wiring Diagram

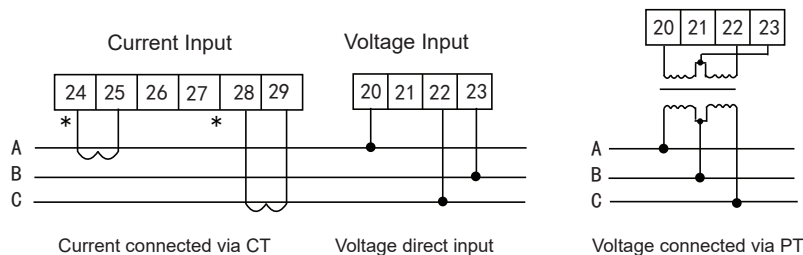


Remark: ① Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.
 ② The current "*" is the current inlet end, all incoming and outgoing wires must be unified, otherwise the measurement will be inaccurate.

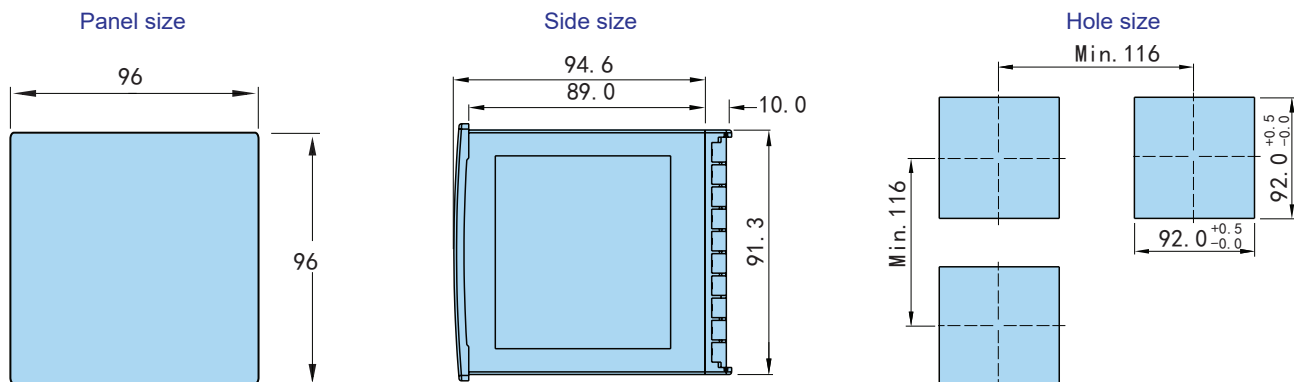
Method 1 (3 CTs): 3-phase 4-wire wiring



Method 2 (2 CTs): 3-phase 3-wire connection



Installation And Hole Size





DW9L Multi-function Power Meter

Product Introduction

DW9L is a multi-function power meter for the field of power automation. This product uses a high-speed single-chip microcomputer plus a special measurement chip, plus a precision transformer to ensure the measurement quantity accuracy. Use high-contrast segment LCD screen to ensure clear display. Silica gel buttons to ensure comfortable and convenient operation. Super anti-interference design guarantees the use of electric fields Long-term stable measurement, and safe and reliable.

Features

Basic Function

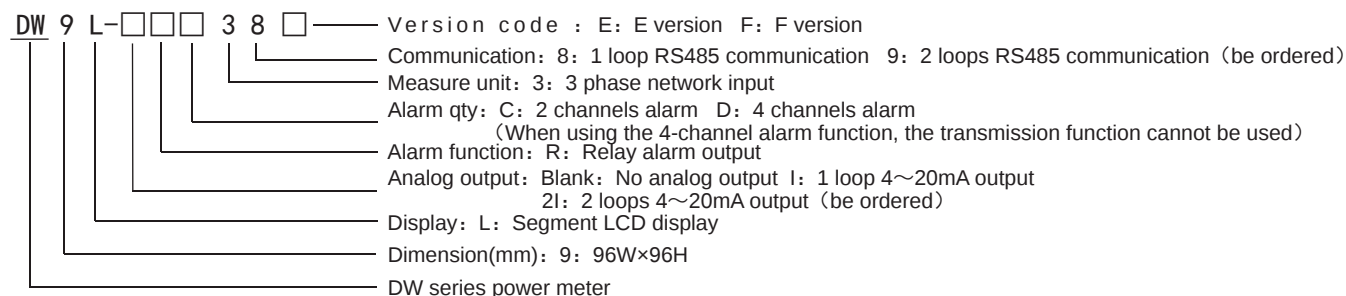
DW9L has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: 3 phase phase voltage, line voltage and its average value
- Current I: Three-phase current and its average value, neutral current
- Active power P: active power and total active power of each phase in the four quadrants
- Reactive power Q: Reactive power and total reactive power of each phase in the four quadrants
- Apparent power S: Apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: When the voltage signal exists, the frequency of the voltage can be measured
- Demand: 3 phase active/reactive demand
- Four quadrant energy

DI & DO Functions

DW9L has 4 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Model Illustration



Application Field

DW9L can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Communication, data center
- Rail transit
- Schools, hospitals, airports
- Intelligent switch panel
- Commercial Plaza, City Plaza
- Supporting data collection

Power Quality Parameters

DW9L can monitor the total harmonic content of 3 phase system voltage and current in real time, which is very suitable for applications sensitive to power quality. The product can also expand the following harmonic analysis functions.

- 2~31 Times harmonic content rate
- 3 Phase voltage unbalance
- T3 Phase current unbalance

Energy Measurement Function

Realize high-precision Bi-direction electric energy measurement. The measured electric energy includes output/input active energy, output/absorption of reactive energy and apparent energy.

- 8 periods of peak and valley 4 rates, and various active and reactive energy are measured in different periods.

Other Functions

- Demand statistics, Bi-direction max demand
- Over-limit alarm
- Analog output

Function List

● Inherent function ○ Optional function Blank: means no such function Order F version to be customized

Function			Parameters	DW9L-□E	DW9L-□F
Real-time measured value	Phase voltage	Va, Vb, Vc		●	●
	Line voltage	Vab, Vbc, Vca		●	●
	Current	Ia, Ib, Ic, In		●	●
	Active power	Pa, Pb, Pc, P _{total}		●	●
	Reactive power	Qa, Qb, Qc, Q _{total}		●	●
	Apparent power	Sa, Sb, Sc, S _{total}		●	●
	Power factor	PFa, PFb, PFc, PF _{total}		●	●
	Power four-quadrant indication	Positive active power, Reverse active power, Positive reactive power, Reverse reactive power		●	●
	Frequency	Hz		●	●
Energy	Active energy	Positive active energy, Reverse active energy, Four quadrant energy		●	●
	Reactive energy	Positive reactive energy, Reverse reactive energy, Four quadrant energy		●	●
	Total energy	Total active energy, total reactive energy		●	●
Demand	Max Demand	Bi-direction max demand, max demand by time period and date & time of occurrence		●	●
	Demand cycle	Demand statistical period: 15 m, slip time :1 m (period & slip time can be set)		●	●
Time Meas	Multiple Rate	Programmable four rates: sharp, peak, flat and valley		●	●
Record Function	Event Recording	Alarm activation/cancellation, power reset, parameter modification, meter power-on and other events and time of occurrence		●	●
Power Quality	Voltage 3phase unbalance rate	Unbalance rate U_%		●	●
	Current 3phase unbalance rate	Unbalance rate I_%		●	●
	Voltage & current harmonic content rate	2~31 times harmonic content rate			●
	Total harmonic content of each phase voltage and current	Total harmonic content rate		●	●
Analog	Analog output	1 channel DC 4~20mA, open circuit voltage DC 24V, load capacity <400Ω		○	○
Alarm	Over-limit alarm	Frequency, voltage of each phase, any phase loss of 3 phase, voltage of each line, current of each phase, current average, medium Line current, active/reactive power of each phase, total active/reactive power of 3 phase, apparent power of each phase, total apparent power of 3 phase, power factor of each phase, total power factor of 3 phase, voltage/current asymmetry level		●	●
Time	Real-time alarm	Year, Month, Day, Hour, Minute, Second		●	●
Pulse output	Energy pulse output	Active/reactive energy pulse output, open-collector optocoupler output, V≤48V, I≤50mA		●	●
I/O options	I/O module	4DI、2DO		●	●
Com	RS485 port (Standard)	Modbus®-RTU protocol		●	●
	The 2nd RS485 port (be ordered)	Modbus®-RTU protocol			○
Display	Large-screen high-definition LCD	Black text on white with LED backlight		●	●
Dimensions	96×96×105mm (Hole Dim: 92×92mm)				

Ordering Information

Model	Analog	Alarm output	Switch input	RS485	Multiple Rate	Total Harmonic	Input measurement	Code
DW9L-RC38 E/F	No	2 Alarms	4 loops input	1 loop	Yes	Yes	10~480V (L-L)	A01200DW9L03
DW9L-IRC38 E/F	4~20mA	2 Alarms	4 loops input	1 loop	Yes	Yes	0.02~6A	A01400DW9L03

Measurement Accuracy And Range

Parameter	Accuracy	Resolution	Range
Voltage	0.5%	0.1V	2V~100kV
Current	0.5%	0.001A	5mA~9999A
Active power	0.5%	1W	-214~214MW
Reactive power	0.5%	1Var	-214~214MVar
Apparent power	0.5%	1VA	0~214MVA
Active demand	0.5%	1W	-214~214MW
Reactive demand	0.5%	1Var	-214~214MVar
Apparent demand	0.5%	1VA	0~214MVA
Power factor	0.5%	0.001	-1.000~1.000
Frequency	0.5%	0.01Hz	45.00~65.00Hz
Active energy primary side	1%	0.1kW	0~99999999.9kWh
Active energy secondary side	1%	0.1kWh	0~9999999.9kWh

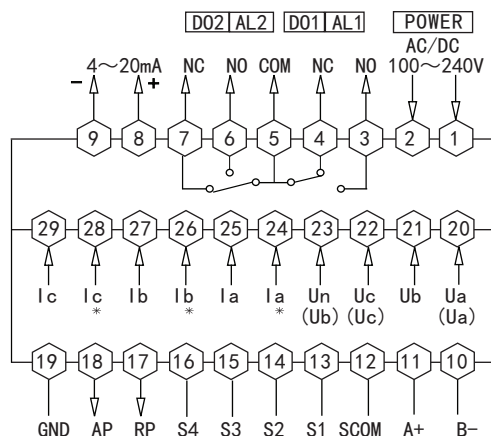
Parameter	Accuracy	Resolution	Range
Reactive power primary side	2.0%	0.1kvarh	0~99999999.9kVarh
Reactive power secondary side	2.0%	0.1kvarh	0~99999999.9kVarh
Harmonic	2.0%	0.1%	0.0%~100.0% 20.0%~100.0%
Phase angle	2.0%	0.1°	0.0°~359.9°
Unbalance level	2.0%	0.1%	0.0%~100.0%

Technical Specifications

Input	
Current input	
Rated current	5 A ac/1 A ac
Measurement range	0.01In~1.2In
Overload capacity	10 times In RMS for 1s, discontinuous
Loading	0.05VA (Typical value)
Start value	0.1% of the rated value
Accuracy	0.5%
Voltage input	
Rated voltage	400VacL-N, 480VacL-L
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Input resistance	2MΩ/phase
Measuring frequency range	45Hz~65Hz
Start value	10Vac
Accuracy	0.5%
Energy accuracy	
Active energy (in accordance with IEC 62053-22)	Level 1
(Comply with GB/T17215.322-2008)	
Reactive energy (in accordance with IEC 62053-23)	Level 2
Harmonic index	
Measured value	3 phase voltage and current total harmonic content rate
Communication	
RS485 (Standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	
The second RS485 (customized)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	
Power Supply	
AC and DC power supply	
Power supply	100~240Vac 50/60Hz, 1 minute
Power consumption	5W
Withstand voltage	2000Vac, 50/60Hz, 1 minute

I/O module	
DI input	
Input range	Passive dry contact
Relay output	
Load voltage	250Vac,30Vdc
Load current	5A (resistive load), 2A (inductive load)
Opening time	10ms(max)
Conduction Resistance	30mΩ(max)
Isolation voltage	3000V
Mechanical life	1.5×10 ⁷
Analog output	
Output range	4~20mA
Accuracy	0.5%
Temperature drift	250ppm/°C typical value
Isolation voltage	500V
Open circuit voltage	24V
Environment	
Operating temperature	−25°C~55°C
Storage temperature	−40°C~70°C
Relative humidity	5%~95% (No condensation)
Standard compliance	
Measurement standard	IEC 62053-22,GB/T17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1,UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11,CISPR 22
Dimension standard	DIN 43700, ANSIC39.1
Note: The "E" version is used in 3-phase 4-wire or 3-phase unbalanced loads, and the measured values of the parameters will be deviated; for unbalanced loads, "F" version is recommended.	

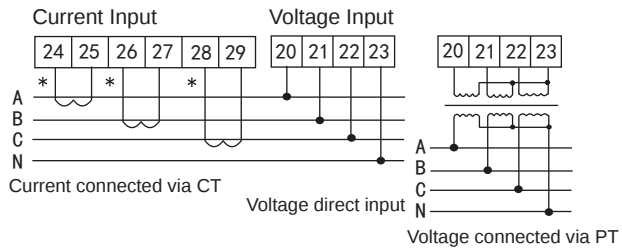
Wiring Diagram



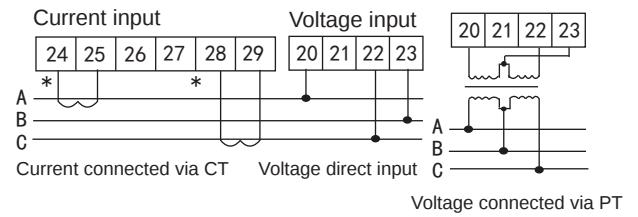
Remark:①Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.
 ②The current "*" is the current inlet end, all incoming and outgoing wires must be unified, otherwise the measurement will be inaccurate.

Wiring Diagram

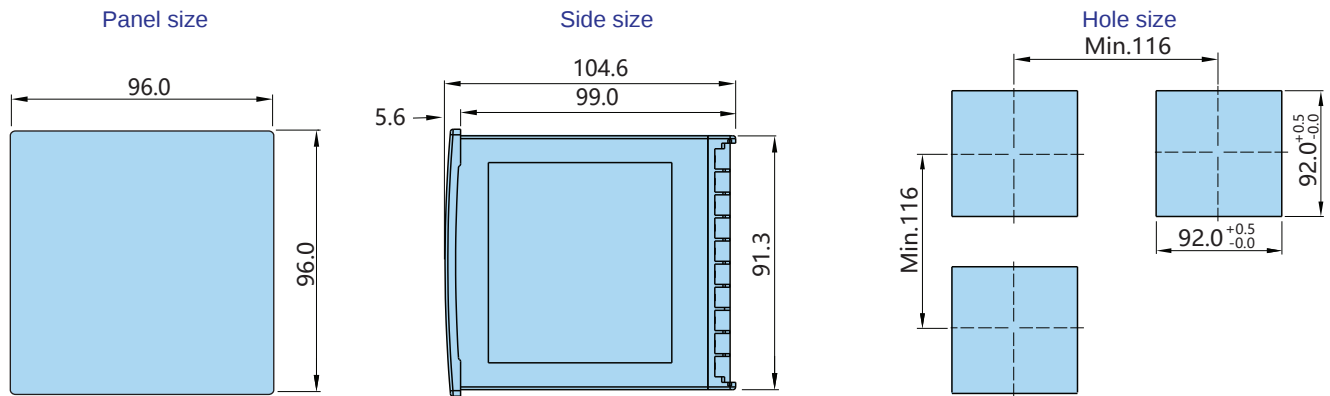
Method 1 (3 CTs): 3-phase 4-wire wiring



Method 2 (2 CTs): 3-phase 3-wire connection



Installation And Hole Size





DW9E Multi-function Power Meter

Product Introduction

DW9E series network power meter is suitable for continuous monitoring and control of power distribution system. It can measure various common power parameters. There are two switch outputs for alarm or remote control, and four DI digital inputs can be used to monitor switch status. In the intelligent power distribution system or enterprise process automation control, it can be used as the acquisition unit, all data is connected to the power monitoring system through the RS485 communication port to realize intelligent control.

Features

Basic Function

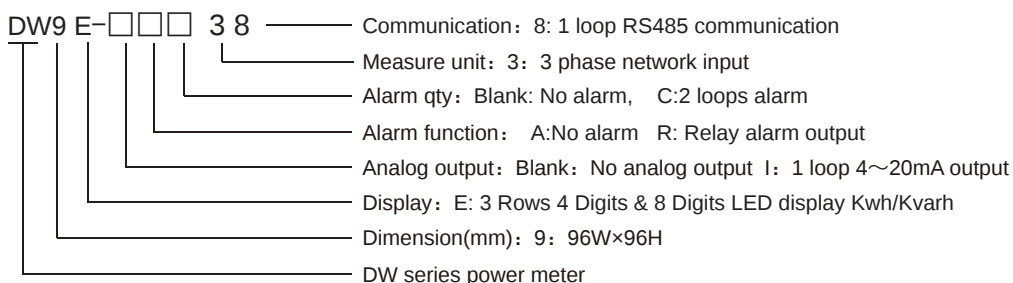
DW9E has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: 3 phase phase voltage, line voltage
- Current I: Three-phase current
- Active power P: active power and total active power of each phase in the four quadrants
- Reactive power Q: Reactive power and total reactive power of each phase in the four quadrants
- Apparent power S: Apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: When the voltage signal exists, the frequency of the voltage can be measured
- Energy: Active energy, Reactive energy

Over-limit Alarm

Users can select a parameter as the monitoring object, and set the high and low limits and time delay for it. When the parameter exceeds the set limit and the duration exceeds the set delay, the event alarm will be activated.

Model Illustration



Application Field

DW9E can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Industrial test equipment
- Intelligent Building
- Schools, hospitals, airports
- Intelligent switch panel
- Rail transit
- Energy Management System

Analog Output Function

Optional 4-20mA analog transmission output output, can set the corresponding output of any measurement parameters, such as voltage, current, power, frequency, etc.

Communication Function

Support RS485 communication, ModBus-RTU protocol

Energy Measurement Function

8 Digits LED displays the total active energy KWh, total reactive energy KVarh.

DI & DO Functions

DW9E has 4 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Function List

● Inherent function ⊙ Optional function Blank: means no such function Order F version to be customized

Function		Parameters	DW9E
Real-time measured value	Phase voltage	Va, Vb, Vc	●
	Line voltage	Vab, Vbc, Vca	●
	Current	Ia, Ib, Ic, In	●
	Active power	Pa, Pb, Pc, P _{total}	●
	Reactive power	Qa, Qb, Qc, Q _{total}	●
	Apparent power	Sa, Sb, Sc, S _{total}	●
	Power factor	PFa, PFb, PFc, PF _{total}	●
	Power four-quadrant indication	Positive active power, Reverse active power, Positive reactive power, Reverse reactive power	●
	Frequency	Hz	●
Energy	Active energy	Positive active energy, Reverse active energy, Four quadrant energy	●
	Reactive energy	Positive reactive energy, Reverse reactive energy, Four quadrant energy	●
	Total energy	Total active energy, total reactive energy	●
	Active & reactive energy combination	Measure each loop positive active energy/reverse active energy, four-quadrant reactive energy	●
Demand	Max Demand	Bi-direction max demand, max demand by time period and date & time of occurrence	●
	Demand cycle	Demand statistical period: 15 m, slip time :1 m (period & slip time can be set)	●
Time Meas	Multiple Rate	Programmable four rates: sharp, peak, flat and valley	●
Power Quality	Total harmonic content rate	Voltage total harmonic	●
	Total harmonic content rate	Current total harmonic	●
Analog	Analog output	1 channel DC 4~20mA, open circuit voltage DC 24V, load capacity <400Ω	⊙
Alarm	Over-limit alarm	Frequency, voltage of each phase, any phase loss of 3 phase, voltage of each line, current of each phase, current average, medium Line current, active/reactive power of each phase, total active/reactive power of 3 phase, apparent power of each phase, total apparent power of 3 phase, power factor of each phase, total power factor of 3 phase	⊙
Time	Real-time alarm	Year, Month, Day, Hour, Minute, Second	●
Pulse output	Energy pulse output	Active/reactive energy pulse output, open-collector optocoupler output, V≤48V, I _z ≤50mA	●
I/O options	I/O module	4DI, 2DO	⊙
Com	RS485 port (Standard)	Modbus®-RTU protocol	●
	The 2nd RS485 port (be ordered)	Modbus®-RTU protocol	⊙
Display	Red LED Display	3 Rows display parameters, 1 row display energy	●
Dimensions	96×96×105mm (Hole Dim: 92×92mm)		

Ordering Information

Model	Alarm (DO)	DI	Analog	Communication	Code
DW9E-RC38	2 Loops	4 Loops	NO	RS485	A01000DW9E03
DW9E-IRC38	2 Loops	4 Loops	4-20mA	RS485	A01200DW9E03

Technical Specifications

Input		I/O Module	
Current input		DI Input	
Rated current	5 A ac/1 A ac	Input range	Passive dry contact
Measurement range	0.01In~1.2In	Relay output	
Overload capacity	10 times In RMS for 1s, discontinuous	Load voltage	250Vac, 30Vdc
Loading	0.05VA (Typical value)	Load current	5A (resistive load), 2A (inductive load)
Start value	0.1% of the rated value	Opening time	10ms(max)
Accuracy	0.5%	Conduction Resistance	30mΩ(max)
		Isolation voltage	3000V
		Mechanical life	1.5×10 ⁷

Technical Specifications

Input		
Voltage input		
Rated voltage	400VacL-N, 480VacL-L	
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz, 1 minute	
Input resistance	2MΩ/Phase	
Measured frequency range	45Hz~65Hz	
Start value	10Vac	
Accuracy	0.5%	
Energy Accuracy		
Active energy (in accordance with IEC 62053-22) (Comply with GB/T17215.322-2008)		Level 1
Reactive energy (in accordance with IEC 62053-23)		Level 2

Communication		
RS485 (Standard)		
Modbus®-RTU protocol		
2-core shielded twisted pair wire		
Speed: 4800~19200bps		
The second RS485 (customized)		
Modbus®-RTU protocol		
2-core shielded twisted pair wire		
Speed: 4800~19200bps		

Power Supply		
AC and DC power supply		
Power Supply	100~240Vac 50/60Hz	
Power consumption	5W	
Withstand voltage	2000Vac, 50/60Hz, 1 minute	

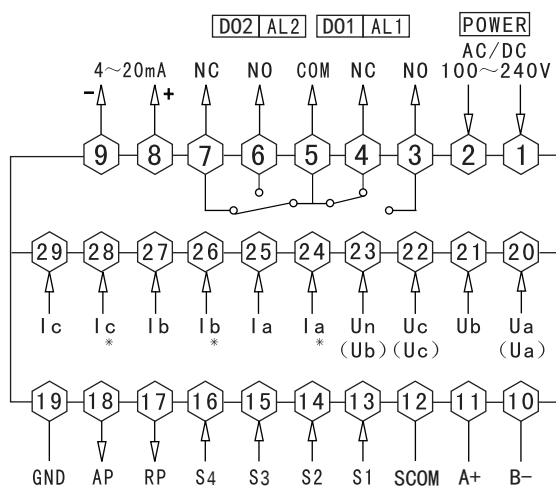
I/O module	
Analog output	
Output range	4~20mA
Accuracy	0.5%
Temperature drift	250ppm/°C typical value
Isolation voltage	500V
Open circuit voltage	24V

Environment	
Operating temperature	-25°C~55°C
Storage temperature	-40°C~70°C
Relative humidity	5%~95%(No condensation)

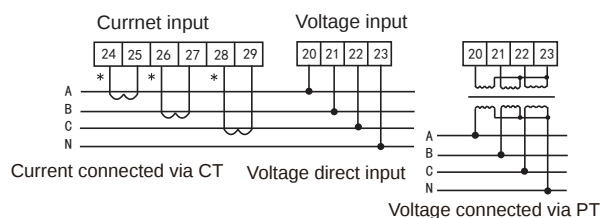
Standard compliance	
Measurement standard	IEC 62053-22, GB/T17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSI39.1

Note: When applied to 3-phase 4-wire or 3-phase 3-wire unbalanced load, the measured value of the parameter will have deviation.

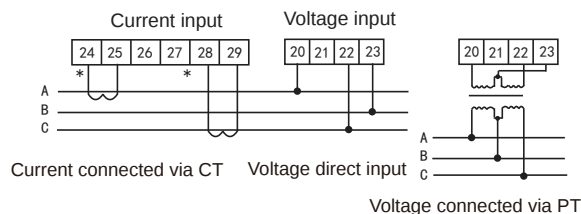
Wiring Diagram



Method 1 (3 CTs): 3-phase 4-wire connection

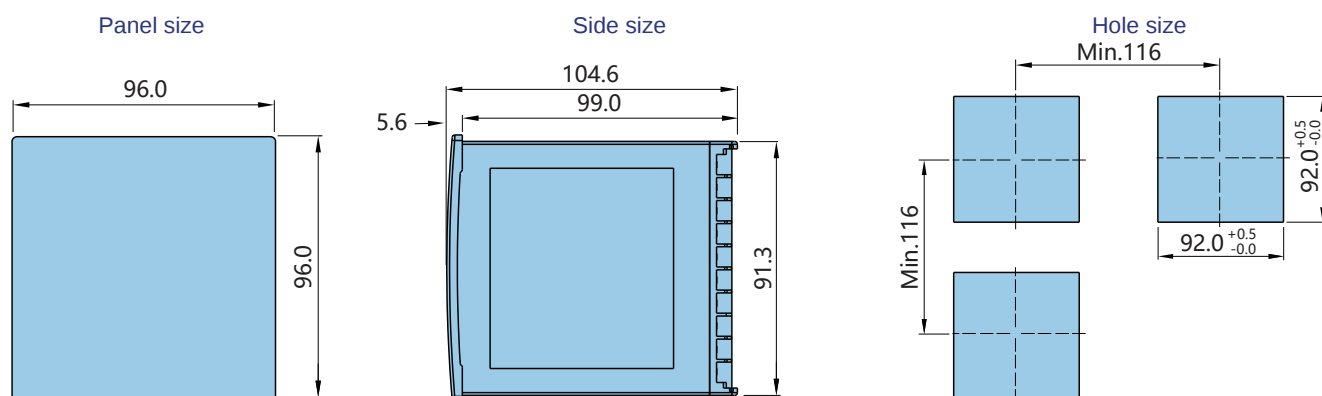


Method 2 (2 CTs): 3-phase 3-wire connection



Remark:①Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.
②The current "*" is the current inlet end, all incoming and outgoing wires must be unified, otherwise the measurement will be inaccurate.

Installation And Hole Size





DS9L/DS7L Multi-function Power Meter

Product Introduction

DS9L/DS7L series network power meters are suitable for continuous monitoring and control of power distribution systems. They can measure various common power parameters. There are 2 switch outputs for alarm or remote control, and 2 channels of DI digital inputs for monitoring switch status. In the intelligent power distribution system or enterprise process automation control, it can be used as the acquisition unit, all data is connected to the power monitoring system through the RS485 communication port to realize intelligent control.

Features

Basic Function

DS9L/DS7L has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: Three-phase phase voltage, line voltage
- Current I: Three-phase current
- Active power P: active power and total active power
- Reactive power Q: Reactive power and total reactive power
- Apparent power S: Apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: When the voltage signal exists, the frequency of the voltage can be measured
- Four quadrant energy

Model Illustration

DS9L-□-□□ 3 □ C	Version: C: C Version
□	Communication: 0: No communication function 8: 1 loop RS-485 communication (Modbus-RTU)
□	Measure unit: 3: 3 phase network input (3-phase 3-wire or 3-phase 4-wire)
□	Alarm qty: C: 2 loops alarm
□	Alarm function: A: No alarm R: Relay alarm output
□	Measurement function: W: full function measurement A: Current measurement V: Voltage measurement
□	Display: L: Segment LCD display
□	Dimension(mm): 9: 96H×96W 7: 72H×72W
□	Model: DS series power meter

Application field

DS9L/DS7L can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Industrial test equipment
- Intelligent Building
- Schools, hospitals, airports
- Intelligent switch panel
- Rail transit
- Energy Management System

Communication Function

Support RS485 communication, Modbus-RTU protocol

DI & DO Functions

DS9L/DS7L have 2 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Over-limit Alarm

Users can select a parameter as the monitoring object, and set the high and low limits and time delay for it. When the parameter exceeds the set limit and the duration exceeds the set delay, the event alarm will be activated.

Energy Measurement Function

DS9L/DS7L can measure energy: total active power, total reactive power, positive active power, negative active power, positive reactive power and negative reactive power.

Function List

● Inherent function ○ Optional function Blank: means no such function

Function	Parameters	□-W	□-A	□-V
Phase voltage	Ua, Ub, Uc	●		●
Line voltage	Uab, Ubc, Ucb	●		●
Current	Ia, Ib, Ic	●	●	
Active power	Pa, Pb, Pc, P _{total}	●		
Reactive power	Qa, Qb, Qc, Q _{total}	●		
Apparent power	Sa, Sb, Sc, S _{total}	●		
Power factor	PFa, PFb, PFc, PF _{total}	●		
Frequency	F Hz	●		
Active energy	Total active energy	●		
Reactive energy	Total reactive energy	●		
Over-limit alarm	Phase loss, frequency, voltage of each phase, voltage of each line, current of each phase, active power, reactive power, apparent power, power factor, kWh, etc.	○	○	○
Telemetry & remote control functions	2DI, 2DO	○	○	○
RS485 port	Modbus®-RTU protocol	●	○	○

Ordering Information (DS9L)

Model	Alarm(DO)	DI	Communication	Function	Input	Code
DS9L-W-RC38 C	2 DO	2 DI	RS485	Full parameter measurement	10~480V (L-L) 0.02~6A	A0860DS9L03
DS9L-W-A38 C	NO	2 DI	RS485			A0800DS9L03
DS9L-W-A30 C	NO	NO	NO			A0720DS9L03
DS9L-A-RC38 C	2 DO	2 DI	RS485	Current measurement	0.02~6A	A0690DS9L03
DS9L-A-A38 C	NO	2 DI	RS485			A0630DS9L03
DS9L-A-A30 C	NO	NO	NO			A0570DS9L03
DS9L-V-RC38 C	2 DO	2 DI	RS485	Voltage measurement	10~480V (L-L)	A0690DS9L03
DS9L-V-A38 C	NO	2 DI	RS485			A0630DS9L03
DS9L-V-A30 C	NO	NO	NO			A0570DS9L03

Ordering Information (DS7L)

Model	Alarm(DO)	DI	Communication	Function	Input	Code
DS7L-W-RC38 C	2 DO	2 DI	RS485	Full parameter measurement	10~480V (L-L) 0.02~6A	A0860DS7L03
DS7L-W-A38 C	NO	2 DI	RS485			A0800DS7L03
DS7L-W-A30 C	NO	NO	NO			A0720DS7L03
DS7L-A-RC38 C	2 DO	2 DI	RS485	Current measurement	0.02~6A	A0690DS7L03
DS7L-A-A38 C	NO	2 DI	RS485			A0630DS7L03
DS7L-A-A30 C	NO	NO	NO			A0570DS7L03
DS7L-V-RC38 C	2 DO	2 DI	RS485	Voltage measurement	10~480V (L-L)	A0690DS7L03
DS7L-V-A38 C	NO	2 DI	RS485			A0630DS7L03
DS7L-V-A30 C	NO	NO	NO			A0570DS7L03

Due to limited number of terminals in DS7L, -RC38 defaults to models with 2DO, no DI function. If DI function needed, pls order models of -A38 (-RC38 models have no DO function)

Technical Specifications

Input	
Current input	
Rated current	5 A ac/1 A ac (custmized)
Measurement range	0.01In~1.2In
Overload capacity	10 times In RMS for 1s, discontinuous
Loading	0.05VA (Typical value)
Start value	0.1% of the rated value
Accuracy	0.5%
Voltage input	
Rated voltage	400VacL-N, 480VacL-L
Overload capacity	1500Vac continuous
	2500Vac, 50/60Hz 1 minute
Conduction Resistance	2MΩ/phase
Measured frequency range	45Hz~65Hz
Start value	10Vac
Accuracy	0.5%

Energy Accuracy	
Active energy (in accordance with IEC 62053-22) level 1	
(Comply with GB/T17215.322-2008)	IEC 62053-23) 2
Reactive energy (in accordance with IEC 62053-23) level 2	

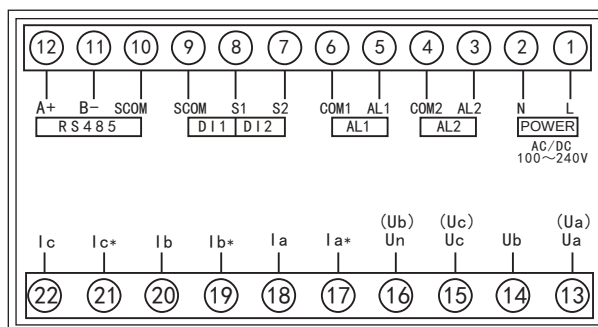
I/O Module	
DI input	
Input range	Passive dry contact
Relay output	
Load voltage	250Vac, 30Vdc
Load current	5A (resistive load), 2A (inductive load)
Mechanical life	1.5x10 ⁷

Communication	
RS485 (Standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	
Power Supply	
AC and DC power supply	
Power Supply	100~240Vac, 50/60Hz
Power consumption	5W
Withstand voltage	2000Vac, 50/60Hz 1 minute

Environment	
Operating temperature	-25℃~55℃
Storage temperature	-40℃~70℃
Relative humidity	5%~95% (No condensation)
Standard compliance	
Measurement standard	IEC 62053-22, GB/T 17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSI C39.1

Wiring Diagram

DS9L Wiring Diagram

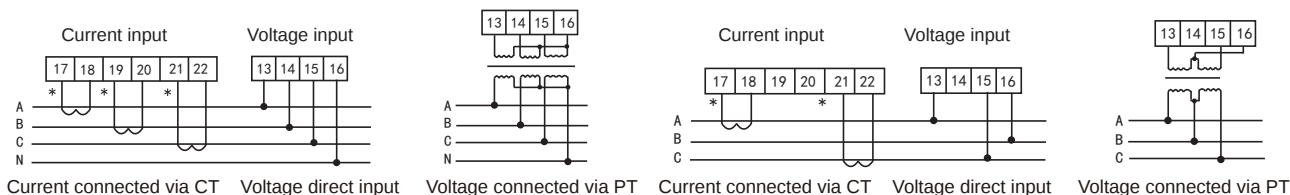


The wiring diagram should be based on the actual chassis

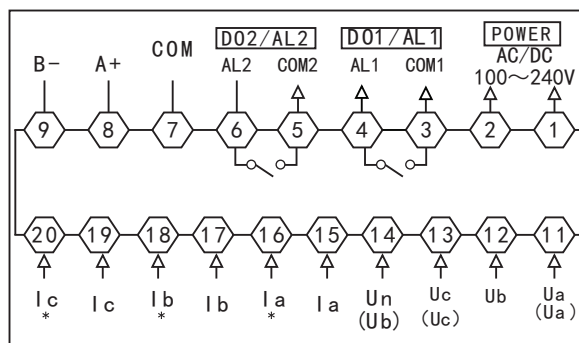
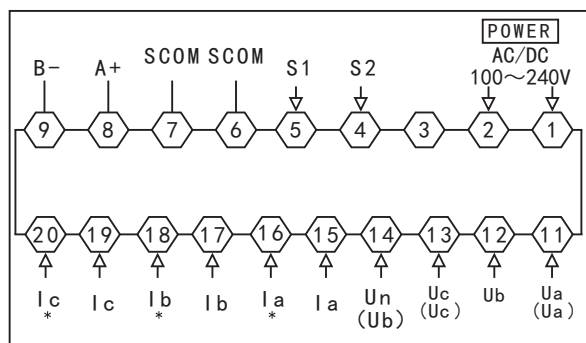
Remark: Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.

Method 1 (3 CTs): 3-phase 4-wire connection

Method 2 (2 CTs): 3-phase 3-wire connection(Only for energy measurement occasions)



DS7L Wiring Diagram

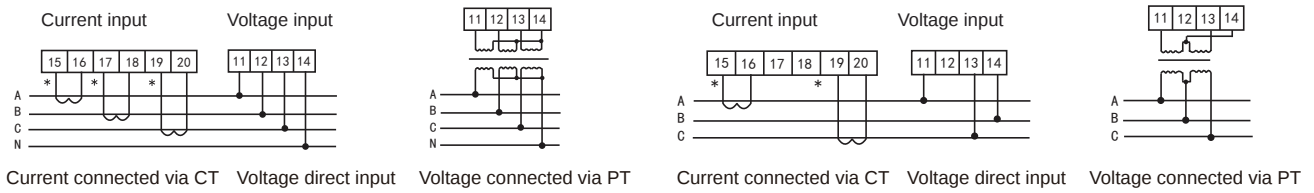


The wiring diagram should be based on the actual chassis

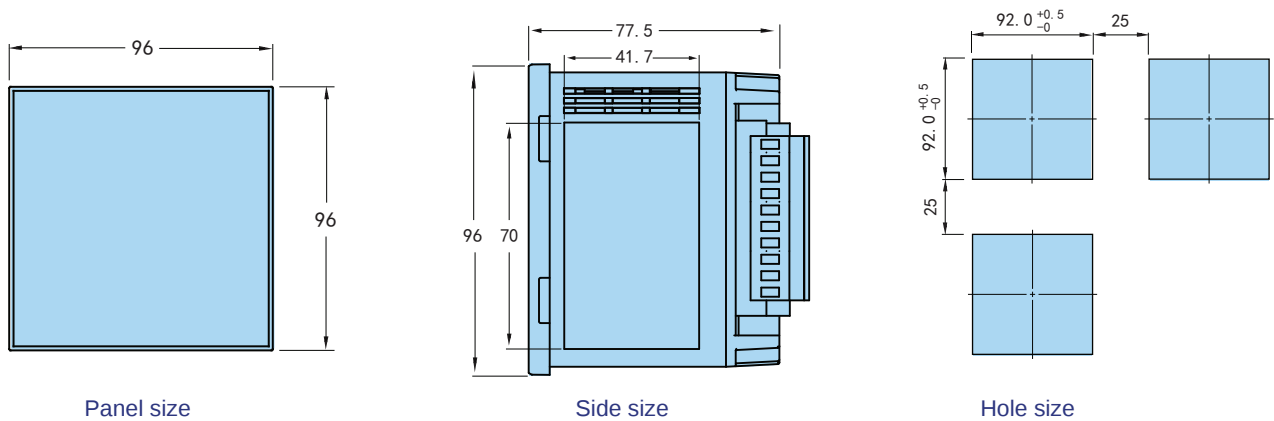
Remark: Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.

Method 1 (3 CTs): 3-phase 4-wire connection

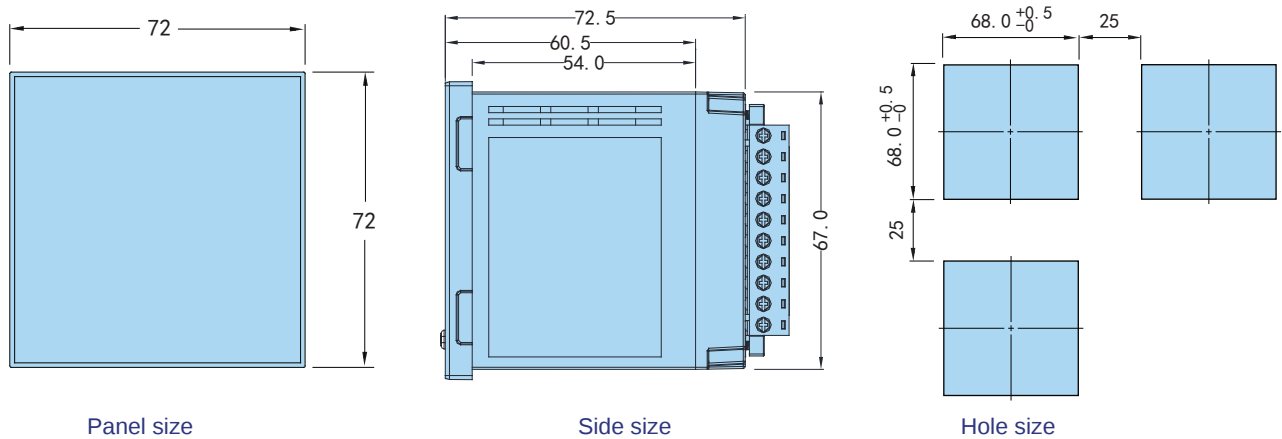
Method 2 (2 CTs): 3-phase 3-wire connection(Only for energy measurement occasions)



Installation And Hole Size(DS9L)



Installation And Hole Size(DS7L)





DS9E/DS7E Multi-function Power Meter

Product Introduction

DS9E/DS7E series network power meters are suitable for continuous monitoring and control of power distribution systems. They can measure various common power parameters. There are 2 switch outputs for alarm or remote control, and 2 DI digital inputs for monitoring switch status. In the intelligent power distribution system or enterprise process automation control, it can be used as the acquisition unit, all data is connected to the power monitoring system through the RS485 communication port to realize intelligent control.

Features

Basic Function

DS9E/DS7E has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: Three-phase phase voltage, line voltage
- Current I: Three-phase current
- Active power P: active power and total active power
- Reactive power Q: Reactive power and total reactive power
- Apparent power S: Apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: When the voltage signal exists, the frequency of the voltage can be measured

Application field

DS9E/DS7E can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Industrial test equipment
- Intelligent Building
- Schools, hospitals, airports
- Intelligent switch panel
- Rail transit
- Energy Management System

Communication Function

Support RS485 communication, ModBus-RTU protocol

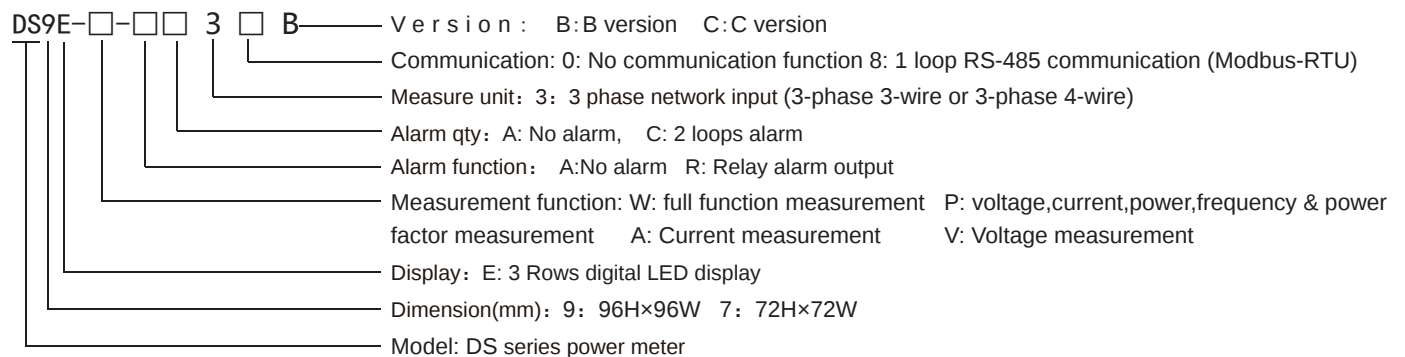
Over-limit Alarm

Users can select a parameter as the monitoring object, and set the high and low limits and time delay for it. When the parameter exceeds the set limit and the duration exceeds the set delay, the event alarm will be activated.

DI & DO Functions

DS9E/DS7E have 2 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Model Illustration



Function List

● Inherent function ○ Optional function Blank: means no such function

Function	Parameters	□-W	□-P	□-A	□-V
Phase voltage	Ua, Ub, Uc	●	●		●
Line voltage	Uab, Ubc, Ucb	●	●		●
Current	Ia, Ib, Ic	●	●	●	
Active power	Pa, Pb, Pc, P _{total}	●	●		
Reactive power	Qa, Qb, Qc, Q _{total}	●	●		
Apparent power	Sa, Sb, Sc, S _{total}	●	●		
Power factor	PFa, PFb, PFc, PF _{total}	●	●		
Frequency	F Hz	●	●		
Active energy	Total active energy	●	●		
Reactive energy	Total reactive energy	●	●		
Over-limit alarm	Phase loss, frequency, voltage of each phase, voltage of each line, current of each phase, active power, reactive power, apparent power, power factor, kWh, etc.	○	○	○	○
Telemetry & remote control functions	2DI, 2DO	○	○	○	○
RS485 port	Modbus®-RTU protocol	●	○	○	○

Ordering Information (DS9E)

Model	Alarm(DO)	DI	Communication	Function	Input	Code
DS9E-W-RC38 B	2 DO	2 DI	RS485	Full parameter measurement	10~480V (L-L) 0.02~6A	A0720DS9E03
DS9E-W-A38 B	NO	2 DI	RS485			A0680DS9E03
DS9E-W-A30 B	NO	NO	NO			A0600DS9E03
DS9E-P-RC38 B	2 DO	2 DI	RS485	Voltage, current, power, frequency, power factor, energy	10~480V (L-L) 0.02~6A	A0650DS9E03
DS9E-P-A38 B	NO	2 DI	RS485			A0610DS9E03
DS9E-P-A30 B	NO	无	NO			A0510DS9E03
DS9E-A-RC38 B	2 DO	2 DI	RS485	Current measurement	0.02~6A	A0540DS9E03
DS9E-A-A38 B	NO	2 DI	RS485			A0500DS9E03
DS9E-A-A30 B	NO	无	NO			A0430DS9E03
DS9E-V-RC38 B	2 DO	2 DI	RS485	Voltage measurement	10~480V (L-L)	A0540DS9E03
DS9E-V-A38 B	NO	2 DI	RS485			A0500DS9E03
DS9E-V-A30 B	NO	NO	NO			A0430DS9E03

Ordering Information (DS7E)

Model	Alarm(DO)	DI	Communication	Function	Input	Code
DS7E-W-RC38 B	2 DO	NO	RS485	Full parameter measurement	10~480V (L-L) 0.02~6A	A0720DS7E03
DS7E-W-A38 B	NO	2 DI	RS485			A0680DS7E03
DS7E-W-A30 B	NO	NO	NO			A0600DS7E03
DS7E-P-RC38 B	2 DO	NO	RS485	Voltage, current, power, frequency, power factor, energy	10~480V (L-L) 0.02~6A	A0650DS7E03
DS7E-P-A38 B	NO	2 DI	RS485			A0610DS7E03
DS7E-P-A30 B	NO	NO	NO			A0510DS7E03
DS7E-A-RC38 B	2 DO	NO	RS485	Current measurement	0.02~6A	A0540DS7E03
DS7E-A-A38 B	NO	2 DI	RS485			A0500DS7E03
DS7E-A-A30 B	NO	NO	NO			A0430DS7E03
DS7E-V-RC38 B	2 DO	NO	RS485	Voltage measurement	10~480V (L-L)	A0540DS7E03
DS7E-V-A38 B	NO	2 DI	RS485			A0500DS7E03
DS7E-V-A30 B	NO	NO	NO			A0430DS7E03

Note: Due to limited number of terminals for DS7E, -RC38 defaults to 2DO without DI function. If you want DI function, pls order -A38 model (-A38 has no DO function)

Technical Specifications

Input	
Current input	
Rated current	5 A ac/1 A ac (custmized)
Measurement range	0.01In~1.2In
Overload capacity	10 times In RMS for 1s, discontinuous
Loading	0.05VA (Typical value)
Start value	0.1% of the rated value
Accuracy	0.5%
Voltage input	
Rated voltage	400VacL-N, 480VacL-L
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Conduction Resistance	2MΩ/phase
Measured frequency range	45Hz~65Hz
Start value	2Vac
Accuracy	0.5%

I/O Module	
DI Input	
Input range	Passive dry contact
Relay output	
Load voltage	250Vac, 30Vdc
Load current	5A (resistive load), 2A (inductive load)
Mechanical life	1.5x10 ⁷
Environment	
Operating temperature	-25℃~55℃
Storage temperature	-40℃~70℃
Relative humidity	5%~95% (No condensation)

Note: When applied to 3-phase 4-wire or 3-phase 3-wire unbalanced load, the measured value of the parameter will have deviation.

Communication

RS485 (Standard)
Modbus®-RTU protocol
22-core shielded twisted pair wire
Speed: 4800~19200bps

Power Supply

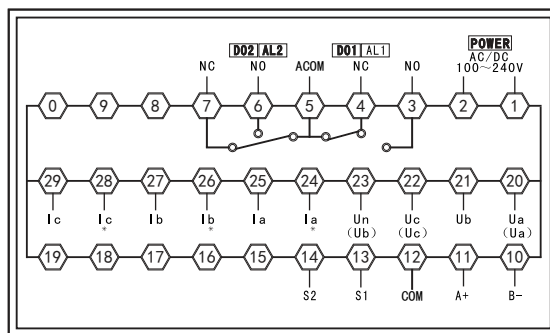
AC and DC power supply
Power Supply 100~240Vac, 50/60Hz
Power consumption 5W
Withstand voltage 2000Vac, 50/60Hz 1 minute

Standard compliance

Measurement standard IEC 62053-22, GB/T 17215.322-2008
Environmental standards IEC 60068-2
Safety standard IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard DIN 43700, ANSI C39.1

Wiring Diagram

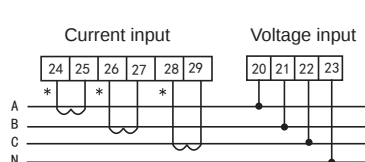
DS9E Wiring Diagram



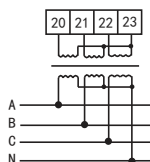
The wiring diagram should be based on the actual chassis

Remark: Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.

Method 1 (3 CTs): 3-phase 4-wire connection

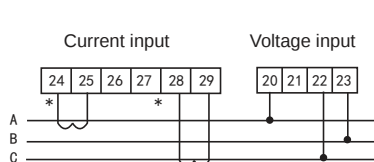


Current connected via CT Voltage direct input

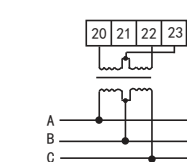


Voltage connected via PT

Method 2 (2 CTs): 3-phase 3-wire connection(Only for energy measurement occasions)

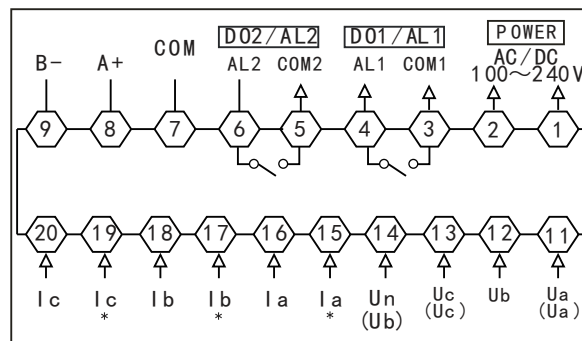
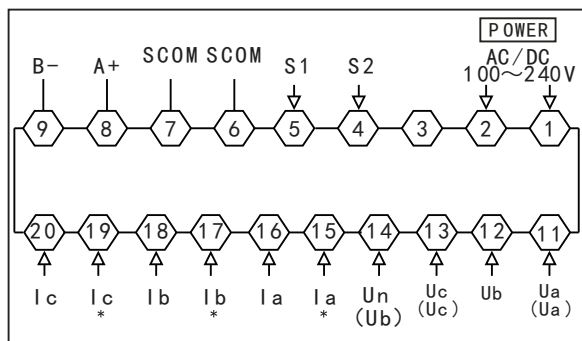


Current connected via CT Voltage direct input



Voltage connected via PT

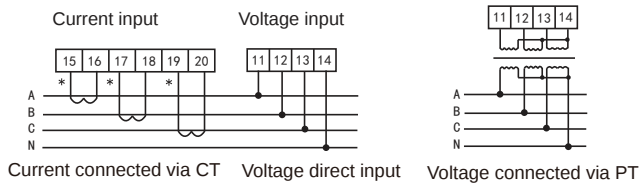
DS7E Wiring Diagram



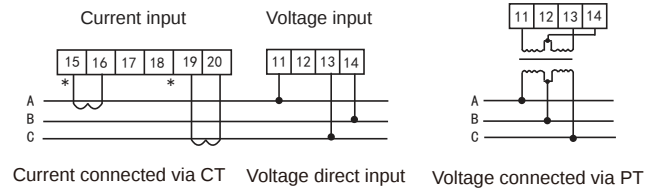
The wiring diagram should be based on the actual chassis

Remark: Voltage input terminal, the number in brackets means 3-phase 3-wire connection; if the wiring is changed, pls refer to the meter wiring.

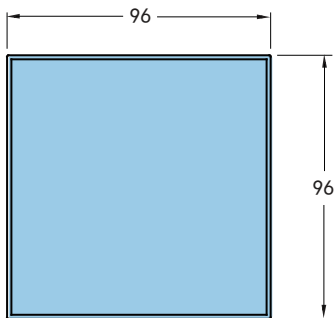
Method 1 (3 CTs): 3-phase 4-wire connection



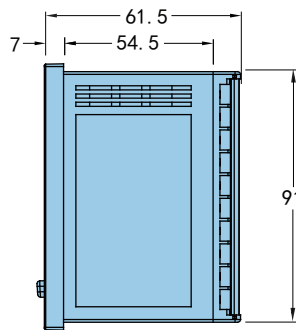
Method 2 (2 CTs): 3-phase 3-wire connection(Only for energy measurement occasions)



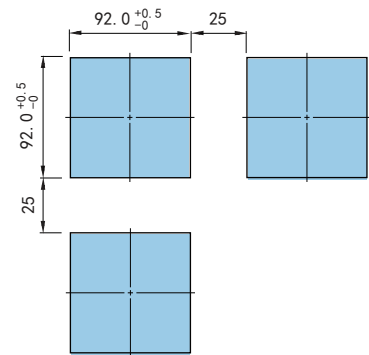
Installation And Hole Size(DS9E)



Panel size

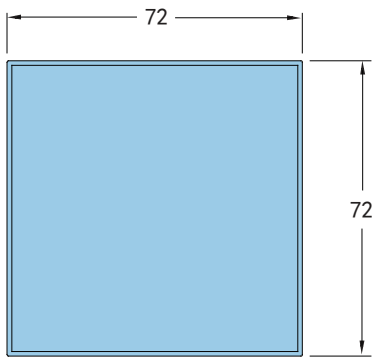


Side size

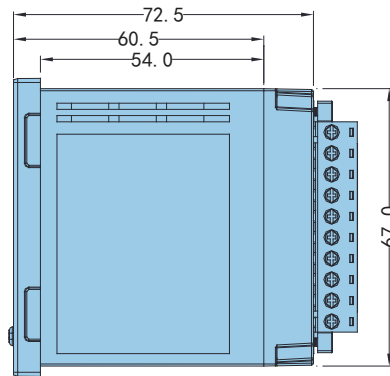


Hole size

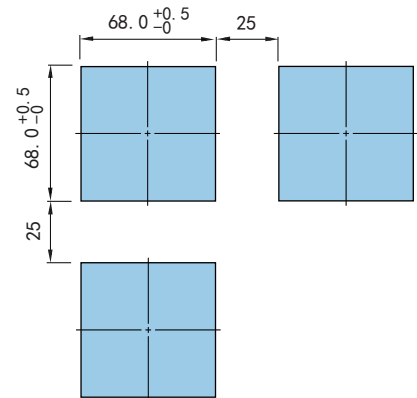
Installation And Hole Size(DS7E)



Panel size



Side size



Hole size



DS9L/DS7L Single Phase Power Meter

Product Introduction

DS9L/DS7L series network power meters are suitable for continuous monitoring and control of power distribution systems. They can measure various common power parameters. There are 2 switch outputs for alarm or remote control, and 2 channels of DI digital inputs for monitoring switch status. In the intelligent power distribution system or enterprise process automation control, it can be used as the acquisition unit, all data is connected to the power monitoring system through the RS485 communication port to realize intelligent control.

Features

Basic Function

DS9L/DS7L has a complete power parameter measurement function, providing real-time measurement of the following data:

- Voltage V: Single phase phase voltage, line voltage
- Current I: Single phase current
- Active power P: active power and total active power
- Reactive power Q: Reactive power and total reactive power
- Apparent power S: Apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: When the voltage signal exists, the frequency of the voltage can be measured
- Active energy, reactive energy

Model Illustration

DS9L-□-□□ 1 □ — Communication: 0: No communication function 8: 1 loop RS-485 communication (Modbus-RTU)

Measure unit: 1: Single phase network input

Alarm qty: Blank: No alarm C: 2 loops alarm

Alarm function: A: No alarm R: Relay alarm output

Measurement function: W: full function measurement

Display: L: Segment LCD display

Dimension(mm): 9: 96H×96W 7: 72H×72W

Model: DS series single phase power meter

Application field

DS9L/DS7L can be applied to data acquisition unit of intelligent power distribution system or power automation system. Main areas :

- Medium and low voltage power distribution system
- Factory Automation System
- Industrial test equipment
- Intelligent Building
- Schools, hospitals, airports
- Intelligent switch panel
- Rail transit
- Energy Management System

Communication Function

Support RS485 communication, ModBus-RTU protocol

Energy Measurement Function

DS9L/DS7L can measure energy: total active energy, total reactive energy, positive active power, negative active power, positive reactive power and negative reactive power.

Over-limit Alarm

Users can select a parameter as the monitoring object, and set the high and low limits and time delay for it. When the parameter exceeds the set limit and the duration exceeds the set delay, the event alarm will be activated.

DI & DO Functions

DS9L/DS7L have 2 channels of DI and 2 channels of DO. DI is a switch input, and DO is a switch output. The DI port information is read through RS485 communication to monitor the switch status of electrical appliances. The switch output of DO is controlled by communication commands to control the ON/OFF of equipment.

Function List

● Inherent function ○ Optional function Blank: means no such function

Function	Parameters	□-W
Voltage	Ua	●
Current	Ia	●
Active Power	Pa	●
Reactive Power	Qa	●
Apparent power	Sa	●
Power factor	PFa	●
Frequency	F Hz	●
Active energy	Total active energy	●
Reactive energy	Total reactive energy	●
Over-limit alarm	Phase loss, frequency, voltage,current,active power,reactive power,apparent power, power factor, kWh etc.	○
Telemetry & remote control functions	2DI、 2DO	○
RS485 port	Modbus®-RTU protocol	●

Ordering Information

Model	Alarm(DO)	DI	Communication	Function	Input	Code
DS9L-W-RC18	2 DO	2 DI	RS485	Single-phase voltage, current, active power, reactive power, apparent power, power factor, frequency,active energy, reactive energy	0.02~6A 10~277V	A0610DS03
DS9L-W-A18	NO	2 DI	RS485			A0570DS03
DS9L-W-A10	NO	NO	NO			A0500DS03
DS7L-W-RC18	2 DO	NO	RS485			A0610DS03
DS7L-W-A18	NO	2 DI	RS485			A0570DS03
DS7L-W-A10	NO	NO	NO			A0500DS03

Note: Due to limited number of terminals for DS7L, -RC18 defaults to models with 2DO no DI function. If you want DI function, pls order -A18 model (-A18 has no DO function).

Technical Specifications

Input	
Current input	
Rated current	5 A ac/1 A ac (custmized)
Measurement range	0.01In~1.2In
Overload capacity	10 times In RMS for 1s, discontinuous
Loading	0.05VA (Typical value)
Start value	0.1% of the rated value
Accuracy	0.5%

Voltage input	
Rated voltage	400VacL-N
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Conduction Resistance	2MΩ/phase
Measured frequency range	45Hz~65Hz
Start value	10Vac
Accuracy	0.5%

Communication	
RS485 (Standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~19200bps	

Power Supply	
AC and DC power supply	
Power Supply	100~240Vac, 50/60Hz
Power consumption	5W
Withstand voltage	2000Vac, 50/60Hz 1 minute

Energy Accuracy	
Active energy (in accordance with IEC 62053-22) level 1 (Comply with GB/T17215.322-2008) IEC 62053-23) level 2	
Reactive energy (in accordance with IEC 62053-23) level 2	

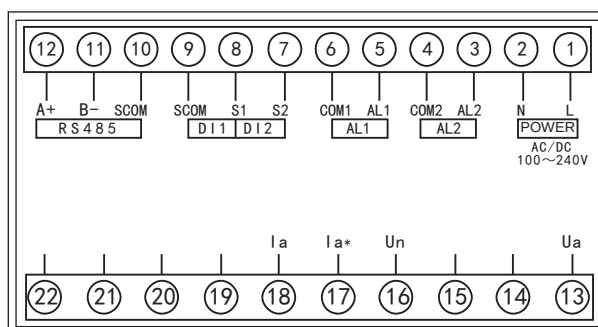
I/O Module	
DI input	
Input range	Passive dry contact
Relay output	
Load voltage	250Vac, 30Vdc
Load current	5A (resistive load), 2A (inductive load)
Mechanical life	1.5x10 ⁷

Environment	
Operating temperature	-25℃~55℃
Storage temperature	-40℃~70℃
Relative humidity	5%~95% (No condensation)

Standard compliance	
Measurement standard	IEC 62053-22, GB/T 17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSI C39.1

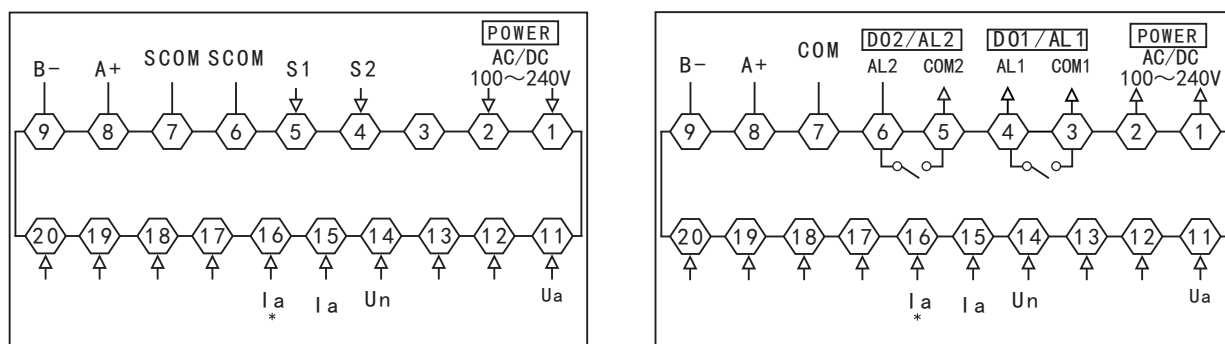
Wiring Diagram

DS9L Wiring Diagram



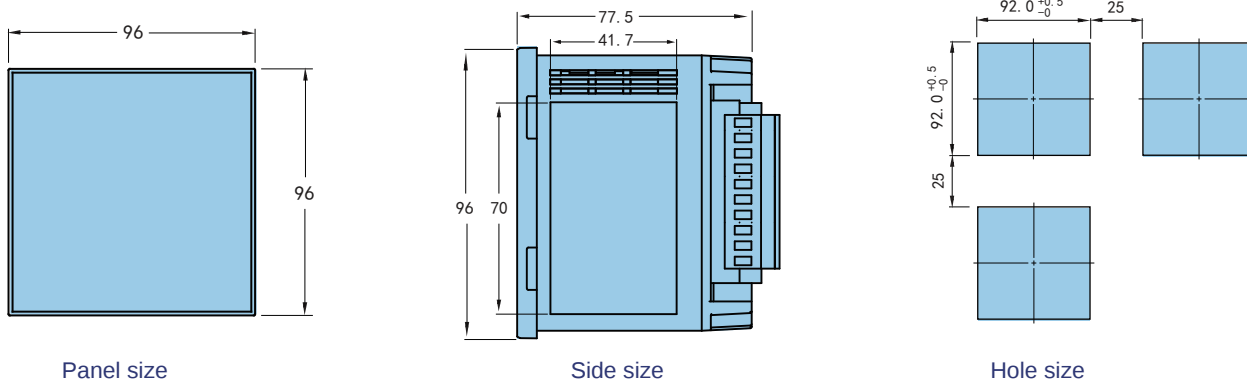
The wiring diagram should be based on the actual chassis

DS7L Wiring Diagram

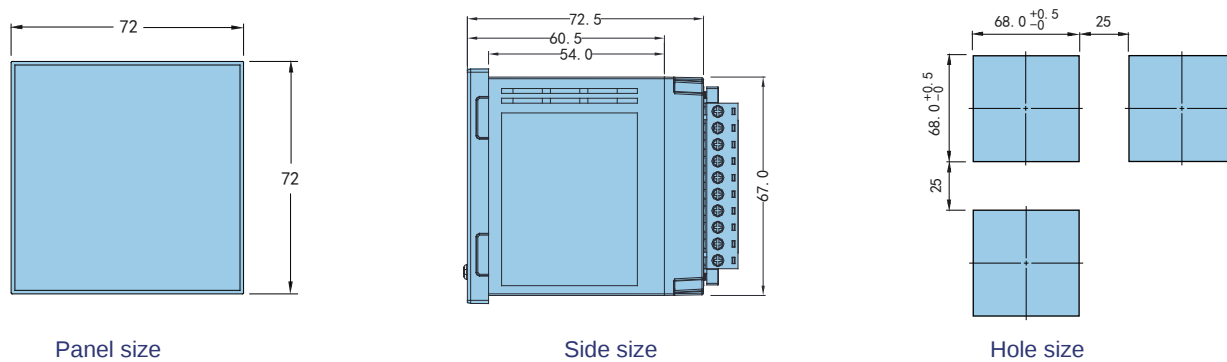


The wiring diagram should be based on the actual chassis

Installation And Hole Size (DS9L)



Installation And Hole Size (DS7L)





Din Rail Single Phase Multi-rate Electronic Energy Meter

Product Introduction

DSZY8080-L single phase electronic multi-function watt-hour meter are our company's new generation energy metering device which meet our National Grid Technical Standard. Technical index comply with "GB/T 17215.323-2008", "GB/T 17215.322-2008", "JJG 596—2012", "DL/T 614—2007", "DL/T 645—2007" and other national standards and industry standards. It has characteristics of high measurement accuracy, stable and reliable performance, long life, physical small size, light weight, low power consumption, simple operation, easy to realize management functions extension. It can be widely used in energy measurement & power automation management field.

Features

Basic function

DDZY8080-L has a complete power parameter measurement function, providing real-time measurement of the following data :

- Voltage V
- Current I
- Active power P
- Reactive power Q
- Apparent power S
- Power factor PF
- Frequency F

Application field

DDZY8080-L can be applied to data acquisition unit of intelligent power distribution system or power automation system.

The main application areas are:

- Factory automation system
- Smart switch cabinet
- Communication, data center
- Rail transit
- Intelligent Building
- Energy Management System
- Medium&low voltage power distribution system
- Schools, hospitals, airports

Energy metering parameters

With automatic recognition and indication of power direction (reverse electric energy is added to the total electric energy)

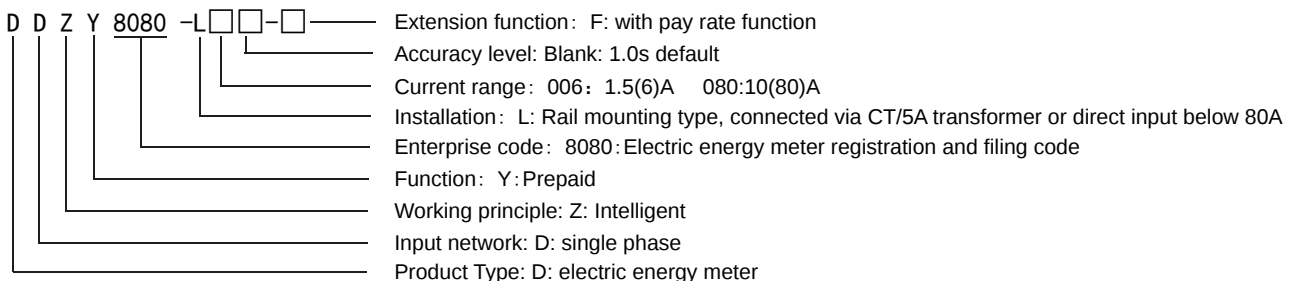
Rate measurement

Programmable 4 kinds of rates, sharp, peak, flat and valley, 12 time periods can be set every day, and the time interval is 15 minutes.

Other functions

- 1 loop active energy pulse output.
- Remote control: Centralized meter reading and remote control can be realized through the program system.

Model Illustration



Function list

● Inherent function; ○ Optional function; Blank: no such function

Function		Parameters	
Real-time measurement parameter	Phase voltage	Un	●
	Current	In	●
	Active power	P	●
	Reactive power	Q	●
	Apparent power	S	●
	Power factor	PF	●
	Frequency	Hz	●
Energy	Active energy	Positive active power, reverse active power	●
	Reactive energy	Positive reactive power, reverse reactive power	●
	Rate measurement	Programmable 4 rates of sharp, peak, flat and valley, 12 time periods	○
	Energy pulse output	Active energy pulse output, open-collector optocoupler output 6A:1200imp/kwh 80A:2400imp/kwh	●
Time	Real Time Clock	Year,Month,Day,Hour,Minute,Second	○
Comm.	RS485 port (standard)	Modbus®-RTU protocol	●
Display		Segment (LCD) display	●
Dimension		76L×88W×60Hmm Din rail mounting	●

Ordering Information

Model	Current range	Multiple rate	Voltage range	Communication port	Code
DDZY8080-L006	1.5（6）A	No	220V	MODBUS-RTU or DL/T645-2007	A0610DTSD1203
DDZY8080-L080	10（80）A				A0610DTSD1203
DDZY8080-L006-F	1.5（6）A	Yes			A0770DTSD1203
DDZY8080-L080-F	10（80）A				A0770DTSD1203

Measurement accuracy and range

Parameters	Accuracy	Resolution	Range	
Voltage	0.5%	0.1V	0.7~1.2Un	
Current	0.5%	0.001A	5mA~1.2In	
Active power	0.5%	1W	/	
Reactive power	0.5%	1Va	/	
Apparent power	0.5%	1VA	/	
Active demand	0.5%	1W	/	
Reactive demand	0.5%	1Va	/	
Apparent demand	0.5%	1VA	/	
Power factor	0.5%	0.001	-1.000~1.000	
Frequency	0.2%	0.01Hz	50.00~60.00Hz	
Active energy	0.1%	0.1kWh	Display 0~999999.9kWh	Communication 0.001~999999.999kWh
Reactive energy	2.0%	0.1kvar	Display 0~999999.9kVarh	Communication 0.001~999999.999kVarh

Technical Specifications

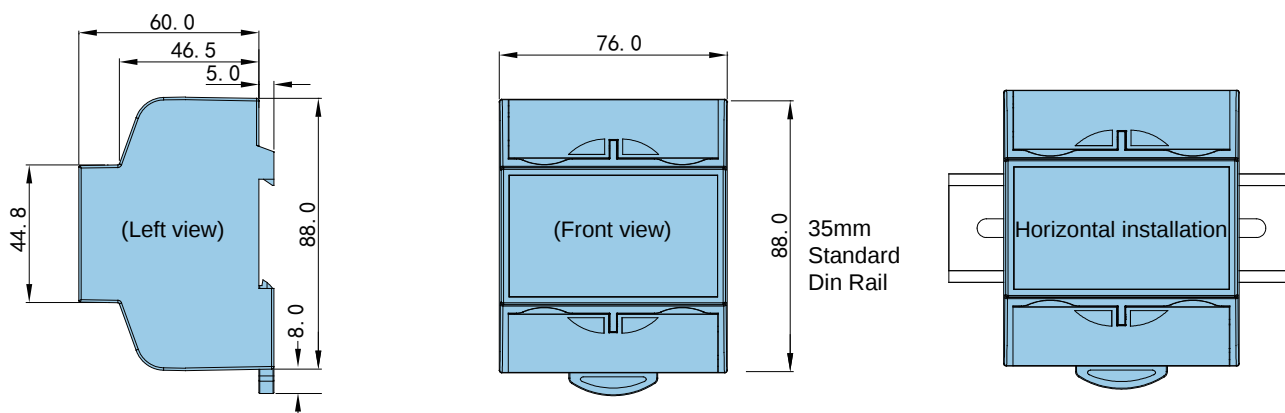
Input	
Current input	
Rated current	5 A ac/1 A ac
Measurement range	0.01In~1.25In
Overload capacity	10 times In RMS for 1s,discontinuous
Load	0.05VA (typical value)
Start value	0.1% of rated value
Accuracy	0.5%

Communication	
RS485 (standard)	
Modbus®-RTU protocol	
2-core shielded twisted pair wire	
Speed: 4800~9600bps	
Power supply	
AC/DC power supply	
Power range	100~240Vac,50/60Hz;
Power consumption	5W
Withstand voltage	2000Vac,50/60Hz 1min

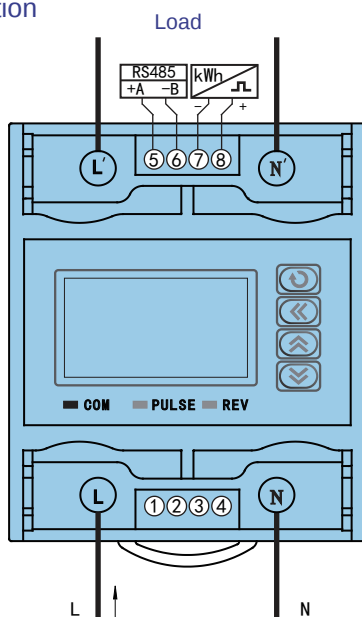
Voltage input	
Rated voltage	400Vac L-N, 690Vac L-L (+20%)
Overload capacity	1500Vac continuous 2500Vac, 50/60Hz 1 minute
Input resistance	2MΩ/phase
Measured frequency range	45Hz~65Hz
Start value	10Vac
Accuracy	0.5S 1.0S
Energy accuracy	
Active energy (Comply with IEC 62053-22) 0.2s, 0.5s, 1, (Comply with GB/T17215.322-2008)	
Reactive energy (Comply with IEC 62053-23) 2s	

Environment	
Operating temperature	-25°C~55°C
Storage temperature	-40°C~70°C
Relative humidity	5%~95% (No condensation)
Standard compliance	
Measurement standard	IEC62053-22, GB/T 17215.322-2008
Environmental standards	IEC 60068-2
Safety standard	IEC 61010-1, UL 61010-1
Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11, CISPR 22
Dimension standard	DIN 43700, ANSI C39.1

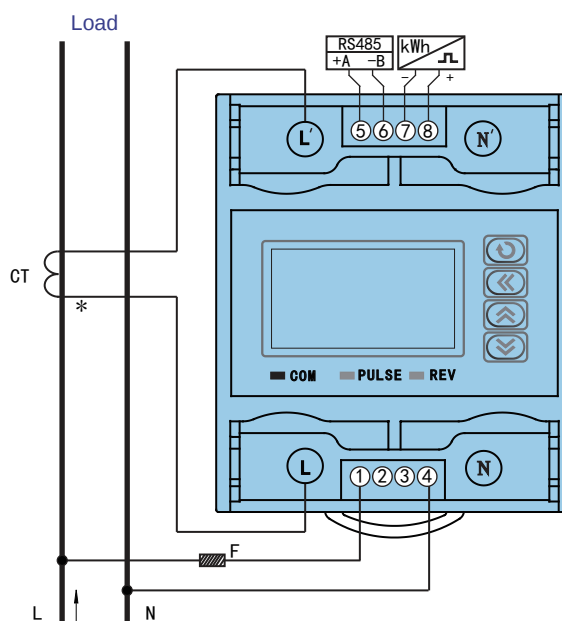
Installation & Dimension(unit:mm)



Connection



Single phase 2-wire direct input
(applicable to instruments with a maximum current of 80A)



Single phase 2-wire input via current transformer
(applicable to instruments with a maximum current of 6A)



Din Rail 3-Phase Multi-function Electronic Energy Meter

Product Introduction

DTSD8080-L 3-phase electronic multi-function watt-hour meter are our company's new generation energy metering device which meet our National Grid Technical Standard. Technical index comply with "GB/T 17215.323-2008", "GB/T 17215.322-2008", "JJG 596—2012", "DL/T 614—2007", "DL/T 645—2007" and other national standards and industry standards. It has characteristics of high measurement accuracy, stable and reliable performance, long life, physical small size, light weight, low power consumption, simple operation, easy to realize management functions extension. It can be widely used in energy measurement & power automation management field.

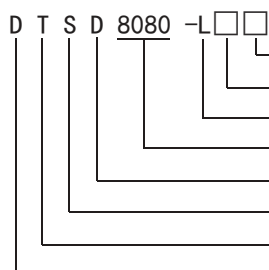
Features

Basic function

DTSD8080-L has a complete power parameter measurement function, providing real-time measurement of the following data :

- Voltage V: 3 phase phase voltage, line voltage
- Current I: 3 phase current
- Active power P: active power and total active power of each phase in the four quadrants
- Reactive power Q: reactive power and total reactive power of each phase in the four quadrants
- Apparent power S: apparent power of each phase and total
- Power factor PF: various power factors and total power factor
- Frequency F: the current voltage frequency
- Demand: current active demand, current reactive demand
- Power four-quadrant display

Model Illustration



- Accuracy level: Blank: 1.0s default, B: 0.5S (to be ordered)
- Current range: 006: 1.5(6)A 080: 10(80)A
- Installation: L: Rail mounting type, connected via CT/5A transformer or direct input below 80A
- Enterprise code: 8080: Electric energy meter registration and filing code
- Function: D: multi-function type
- Measurement method: S: electronic
- Input network: T: 3-phase 4-wire input
- Product Type: D: electric energy meter

Application field

DTSD8080-L can be applied to data acquisition unit of intelligent power distribution system or power automation system.

The main application areas are:

- Factory automation system
- Smart switch cabinet
- Communication, data center
- Rail transit
- Intelligent Building
- Energy Management System
- Medium&low voltage power distribution system
- Schools, hospitals, airports

Energy metering parameters

With forward active & reverse active energy measurement function. It can achieve to combined active power measurement, 4-quadrant reactive power measurement, combined reactive power 1 and combined reactive power 2 data measuring. Energy parameters can be cleared to zero with correct password. It also can measure forward/reverse harmonic energy and total harmonic energy.

Rate measurement

DTSD8080-L series has 20 time periods, 4 rates for sharp, peak, flat and valley, 13 sets of daily timetables, 14 time zones and 30 public holidays.

Other functions

- Demand statistics, bi-direction max demand, max demand by time period, store the max demand data in 12 settlement days.
- Load curve measurement: 4m capacity, can record voltage, current, power, power factor, energy data, etc. (time interval can be set).
- Event record, can record the last 10 events such as undervoltage, undercurrent, phase failure, reverse phase sequence, disconnection, programming, etc.

Function list

Function		Parameters
Real-time measurement parameter	Phase voltage	Ua, Ub, Uc
	Line voltage	Uab, Ubc, Uca
	Current	Ia, Ib, Ic
	Active power	Pa, Pb, Pc, P _{total}
	Reactive power	Qa, Qb, Qc, Q _{total}
	Apparent power	Sa, Sb, Sc, S _{total}
	Power factor	PFa, PFb, PFc, PF _{total}
	Frequency	F Hz
Energy	Active energy	Forward active energy, reverse active energy, total active energy, four-quadrant energy
	Reactive energy	Forward reactive energy, reverse reactive energy, total reactive energy, four-quadrant energy
	Harmonic energy	The total phase, split phase, forward and reverse harmonic energy of each loop
	Rate measurement	Programmable 4 rates of sharp, peak, flat and valley, 20 time periods, 13 sets of daily time tables, 14 time zones and 30 public holidays.
	Various freezing energy	Timed freezing, instantaneous freezing, agreed freezing, hourly freezing, daily freezing
	Energy demand	Bi-direction max demand, date/time of max demand by time period, store max demand data for 12 settlement days
	Demand freezing	Freeze the time and data of the maximum demand in a variety of freezing methods
	Energy pulse output	Active/reactive energy pulse output, open-collector optocoupler output, V≤48V, Iz≤50mA
Event record	Programming record	Energy clear, demand clear record
	Power on, power off records	Power on record, power off record, phase failure record, voltage qualification rate statistics
	Loss of voltage & current	Voltage loss, total voltage loss, overvoltage, undervoltage, current loss, current off & overcurrent
	Voltage,current	Voltage & current unbalance record, overload record, demand overrun record, low total power factor
	Reverse phase sequence	Current reverse phase sequence, voltage reverse phase sequence, current flow reverse record
	Load curve record	4M capacity, record interval can be set, voltage, current, power, power factor, energy & other data can be recorded
Time	Real Time Clock	Year,Month,Day,Hour,Minute,Second
Comm.	Infrared communication	1 infrared communication as standard
	RS485 port (standard)	Modbus®-RTU protocol Compatible with DL/T 645-2007 & DL/T 645-1997
	2nd RS485 port	Modbus®-RTU protocol Compatible with DL/T 645-2007 & DL/T 645-1997
Display	Segment (LCD) display	
Dimension	126L×88W×60Hmm Din rail mounting	

Ordering Information

Model	Accuracy	Rated voltage	Current	Input type	Multi-rate	Communication	Pulse constant	Code
DTSD8080-L006	1.0S	3×220V	1.5(6)A	Via CT	Yes	RS485	12800 imp/kWh	A01300PQ1203
DTSD8080-L080			10(80)A	Direct input	Yes	Modbus-RTU RS485	6400 imp/kWh	A01300PQ1203
DTSD8080-L006B	0.5S		1.5(6)A	Via CT	Yes	DL/T 645-2007	12800 imp/kWh	A01700PQ1203

Note: The 1.0 accuracy models are conventional inventory. For products with 0.5S accuracy, please specify when ordering.

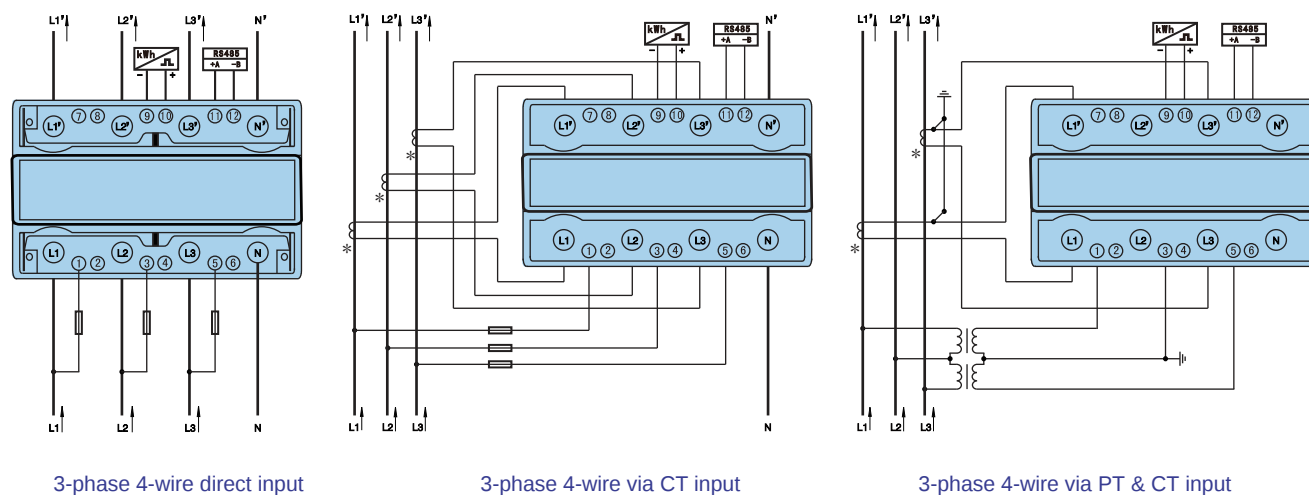
Measurement accuracy and range

Parameters	Accuracy		Resolution	Range
Voltage	0.5%	0.5%	0.1V	0.7~1.2Un
Current	0.5%	0.5%	0.001A	5mA~1.2In
Active power	1.0%	0.5%	1W	/
Reactive power	1.0%	0.5%	1Va	/
Apparent power	1.0%	0.5%	1VA	/
Active demand	1.0%	0.5%	1W	/
Reactive demand	1.0%	0.5%	1Va	/
Apparent demand	1.0%	0.5%	1VA	/
Power factor	1.0%	0.5%	0.001	-1.000~1.000
Frequency	0.5%	0.5%	0.01Hz	45.00~65.00Hz
Active energy	0.1%	0.5%	0.1kWh	0~999999.9kWh
Reactive energy	2.0%	2.0%	0.1kvar	0~999999.9kVarh

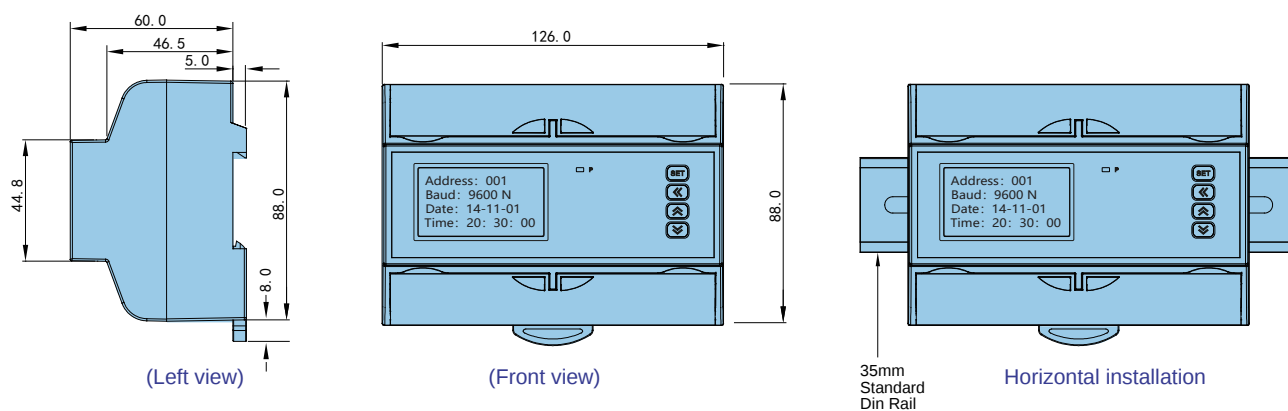
Technical Specifications

Input		Communication	
Current input		RS485 (standard)	
Rated current	1.5 (6) A 10 (80)A	Modbus®-RTU protocol	
Measurement range	0.01In~1.25In	2-core shielded twisted pair wire	
Overload capacity	10 times In RMS for 1s,discontinuous	Speed: 1200~19200bps	
Load	0.05VA (typical value)		
Start value	0.1% of rated value		
Accuracy	0.2%		
Voltage input		Power supply	
Rated voltage	400Vac L-N,690Vac L-L (+20%)	AC/DC power supply	
Overload capacity	1500Vac continuous	Power range	100~240Vac,50/60Hz;
	2500Vac,50/60Hz 1 min	Power consumption	5W
Input resistance	2MΩ/phase	Withstand voltage	2000Vac,50/60Hz 1 min
Measured frequency range	45Hz~65Hz	Environment	
Start value	10Vac	Operating temperature	-25℃~55℃
Accuracy	0.2%	Storage temperature	-40℃~70℃
Energy accuracy		Relative humidity	5%~95% (No condensation)
Active energy (Comply with IEC 62053-22) 0.5s,1s, (Comply with GB/T17215.322-2008)		Standard compliance	
Reactive energy (Comply with IEC 62053-23) 2s		Measurement standard	IEC62053-22,GB/T 17215.322-2008
Harmonic index		Environmental standards	IEC 60068-2
Measurement value	2~31 harmonics	Safety standard	IEC 61010-1,UL 61010-1
		Electromagnetic compatibility standards	IEC 61000-4/-2-3-4-5-6-8-11,CISPR 22
		Dimension standard	DIN 43700, ANSI C39.1

Connection



Installation & Dimension(unit:mm)





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We offer 3 years warranty period for all of our products.