



www.strongmac.cn
www.strongmc.com

GAUGES & TRANSMITTERS YOU NEED



SUMMARY

INTRODUCTION

Strong M&C Inc. was founded in 2003 in China. After years of efforts, it has earned the reputation as a leading manufacturer which specializes in designing and manufacturing various Pressure Gauges, Pressure Transmitters / Differential Pressure Transmitters, Pressure Switches / Differential Pressure Switches, Thermometer, Temperature Transducers (Sensors) / Transmitters, Level Transmitters, and other automation measuring and controlling products. As a well established manufacturer and exporter, we lay special attention to our manufacturing process and delivery of products. Quality is paramount to us and we adhere to the international norms of quality. We are known across the globe for our premium quality on the products we offer.

For many years, Strong M&C Inc. has covered a wide range of technologies and industries and had excellent experience of provide solutions at all stages of product development. You can find our products in various fields of the industries like petrochemical, oil and refineries, metallurgical, wastewater treatment facilities, medical applications, power plants, food processing plants, chemical manufacturing plants and supporting companies that serve these industries.

Strong M&C Inc. is committed to achieve the highest standards in engineering excellence by introducing and marketing superior quality products with international manufacturing standards. Our whole manufacturing process is aimed at achieving full satisfaction from the users end. The in-depth knowledge in the field ensures us of offering our clients with a customized range of products, which offers them complete customer satisfaction. We are dedicated to improve and upgrade the quality of our products by adopting latest quality management techniques that assure reliability and productivity of our products. We are and will be achieving higher customer satisfaction through reliability, quick reaction and products quality.

03/ Utility Pressure Gauge

05/ Stainless Steel Pressure Gauge

06/ Vibration-Proof Pressure Gauge

07/ Low pressure Capsule Pressure Gauge

08/ Diaphragm Seal Pressure Gauge

09/ Electric contact pressure gauge

10/ Special Pressure Gauge

11/ Digital Pressure Gauge

11/ Differential Pressure Gauge

12/ Pressure Transmitter

13/ Differential Pressure Transmitter

14/ Pressure Switch

14/ Differential Pressure Switch

15/ Thermometer

16/ Temperature Transmitter

17/ Level Transmitter

PRODUCTS



UTILITY PRESSURE GUAGE

A pressure gauge is a fluid intensity measurement device and is indispensable in industry system. Without pressure gauges, fluid power systems would be both unpredictable and unreliable. Pressure gauges help to ensure there are no leaks or pressure changes that could affect the operating condition of the hydraulic system which is designed to work in a set pressure range. The key part of pressure gauge is the spring tube sensor which is a pipe bending into a circle with an elliptical cross-section. The pressure of the measuring medium acts on the inside of the spring tube, so that the elliptical section of the spring tube tends to be circular. The magnitude of its deformation depends on the pressure of the measuring medium. The deformations of the spring tube are indirectly displayed by the pointer through the machine core to measure the pressure of the medium. The "C" type spring tube can be used to measure about 60 bar of pressure. For higher pressure, the spring tube uses multiple coils or spiral coils of the same horizontal plane.

Utility pressure gauge is widely used to measure the pressure of non-explosive, non-crystalline, non-solidified gas, liquid and other media in pipelines and containers conveying gases and liquids. Pressure gauges of special materials can directly measure the pressure of non-crystalline but corrosive gases and liquids, and can also be used in environments with mechanical vibration and medium pulsation.

BLACK STEEL
PRESSURE GUAGE



PRESSURE GUAGE EDGE
BACK CONNECTION



STAINLESS STEEL CASE
PRESSURE GUAGE



CHROMED STEEL CASE
PRESSURE GUAGE



PRESSURE GUAGE WITH
BACK CONNECTION



CRIMPED SS CASE
PRESSURE GUAGE



UTILITY PRESSURE GUAGE

TECHNICAL SPECIFICATION

- Nominal Size: 40, 50, 63, 75, 100, 150, 200, 250mm
- Accuracy Class: 40..75mm-Class 2.5; 100..250mm-Class 1.6
- Ingress Protection: IP32
- Connection Size: G1/8,G1/4,G1/2 or NPT or others
- Scale Range: Pressure 0..600 bar; Vacuum -1 bar..0; Compound -1..24 bar
- Tube Element Shape: $P \leq 100$ bar in C tube; $P > 100$ bar in helicoid
- Operating Temperature: Ambient temperature $-10^{\circ}\text{C}..+70^{\circ}\text{C}$; Medium temperature 70°C Max.
- Temperature Error: Additional error when pressure element temperature deviates from reference temperature $+20^{\circ}\text{C}$ ($+68^{\circ}\text{F}$), is $\pm 0.4\% / 10^{\circ}\text{C}$ (50°F) rising or falling
- Over Pressure Limit: 130% of F.S.P ≤ 100 bar; 115% of F.S.P > 100 bar
- Dial Graduation: Black graduation on white for single range; Black and red graduation on white for dual ranges

DUPLEX PRESSURE
GUAGE



RECTANGULAR
PRESSURE GUAGE



MINI PRESSURE
GUAGE



PLASTIC CASE
PRESSURE GUAGE



ABS PLASTIC CASE
GUAGE



STAINLESS STEEL PRESSURE GUAGE

*ALL STAINLESS STEEL
PRESSURE GAUGE*



*SS FLANGED PRESSURE
GAUGE*



*SS PRESSURE GAUGE
BACK CONNECTED*



*LASER WELDED SS
PRESSURE GAUGE*



*ALL SS CAPSULE
PRESSURE GAUGE*



*SAFETY PATTERN CASE
PRESSURE GAUGE*



*CANNER'S PRESSURE
GAUGE*



*HIGH PRECISION
PRESSURE GAUGE*



VIBRATION-PROOF PRESSURE GUAGE (LIQUID FILLED)

This is a premium design pressure gauge with liquid fillable and various option used in extreme corrosive, severe environment and especially for extreme vibration application. It is applicable for pneumatic and hydraulic systems, compressors, engines, pumps, sprinkles system, building automation system and processing unit where vibration is concern. It is widely used on pneumatic control system, control panel, pressure regulator, valve positioner, analyzer, pneumatic actuator etc. Industries coverage are as Oil & Gas, power plants, steel mining, process, pulp and paper water & sewage and petrochemical plants.

The mechanical pointer pressure gauge with filling fluid in the meter case and filling fluid in the meter case and damper. The instrument can withstand the vibration of V. H. 4 or V. H. 5 level stipulated by GB/T 17214.3-2000 and the requirement of pressure measurement on site.

TECHNICAL SPECIFICATION

- Nominal Size: 40, 50, 63, 75, 100 and 150mm
- Accuracy Class: Class 2.5, Class 1.6 ($\geq 100\text{mm}$)
- Ingress Protection: IP65
- Filling: Liquid filled

*VIBRATION PROOF
PRESSURE GAUGE*



*BACK CONNECTED
PRESSURE GAUGE*



*EDGED BACK CONNECTION
PRSSURE GAUGE*



*BACK MOUNTED
PRESSURE GAUGE*



LOW PRESSURE CAPSULE PRESSURE GAUGE

In capsule pressure gauge, the diaphragm box element consists of two diaphragms connected by circular waves. The pressure of the measuring medium acts on the inside of the diaphragm box, and the resulting deformation can be used to indirectly measure the pressure of the medium. The magnitude of pressure is shown by a pointer. Mainly used in pharmaceutical, heating, gas pipeline, food and laboratory industries, can only be used to measure micro-pressure.

TECHNICAL SPECIFICATION

- Nominal Size: 63, 75, 100, 160, 200, 250 mm
- Scale Range: Pressure 0..16 to 0..1000 mbar;
φ63,75mm min range 16 mbar;
Vacuum -600 mbar..0;
Compound -200..+400 mbar
- Filling: Dry type or oil filled

LOW PRESSURE CAPSULE GAUGE



EDGE BACK MOUNTED LOW PRESSURE GAUGE



ALL SS LOW PRESSURE GAUGE



SS CAPSULE PRESSURE GAUGE



BACK CONNECTED LOW PRESSURE GAUGE



DIAPHRAGM SEAL PRESSURE GAUGE

Diaphragm pressure gauge is composed of diaphragm isolation device and standard pressure gauge. The diaphragm sensor is a circular diaphragm with wave, and the diaphragm itself is located between two flanges. One side of the diaphragm is deformed by the pressure of the measuring medium. The pressure is transmitted to the measuring element of the standard pressure gauge connected with the diaphragm through the conducting fluid. The standard pressure gauge indirectly measures the pressure of the medium.

Compared with the standard pressure gauge, the diaphragm element has considerable mobility, and the clamping device with circular element is not affected by oscillation. When

FLANGE MOUNTED DIAPHRAGM SEAL



HIGH TEMPERATURE DIAPHRAGM SEAL



overload occurs, the diaphragm can be attached to the flange body, so the diaphragm device can withstand higher overload pressure.

It mainly measures the pressure of liquid medium with strong corrosiveness, high viscosity and easy crystallization, gas and liquid medium containing solid particulate matter, and can also be used in the environment with mechanical vibration and medium pulsation.

THREAD MOUNTED DIAPHRAGM SEAL



ANTI-CORROSIVE MOUNTED



HYGIENIC CLAMP MOUNTED



ELECTRIC CONTACT PRESSURE GAUGE

The electric contact pressure gauge is composed of a measuring system, an indicating device, a magnetically assisted electric contact device, a housing, a regulating device and a junction box. When the measured pressure acts on the spring tube, the elastic deformation at the end of the spring tube is shifted one bit. After amplification by transmission machinery, the indicating device indicates it on the dial. At the same time, the pointer drives the active contact of the electric contact device, and the contact on the setting pointer (upper/lower limit) instantaneously contacts, which causes the control system to be connected or disconnected, so as to achieve automatic control and communication.

BACK MOUNTED
ELECTRIC CONTACT



EDGE BACK MOUNTED
ELECTRIC CONTACT



ELECTRIC CONTACT
PRESSURE GAUGE



VIBRATION PROOF
ELECTRIC CONTACT



DIAPHRAGM SEAL
ELECTRIC CONTACT



SPECIAL PRESSURE GUAGE

NO OIL SS OXYGEN
PRESSURE GAUGE



ACETYLENE
PRESSURE GAUGE



REFRIGERANT MANIFOLD
PRESSURE GAUGE



BRASS FORGED MINING
PRESSURE GAUGE



THREE NEEDLE
PRESSURE GAUGE



DOUBLE NEEDLE
PRESSURE GAUGE



MEMORY PRESSURE
GUAGE



CAPILARY TYPE
PRESSURE GAUGE



THERMO-
MANOMETER



TYRE PRESSURE
GUAGE



DIGITAL PRESSURE GUAGE

**DIGITAL PRESSURE
GUAGE**



**EXPLOSION PROOF DIGITAL
PRESSURE GAUGE**



- Power: 3.6V battery; or AC220V; or DC24V;
- Accuracy: 0.1%; 0.25%
- Indicating pressure unit: MBar, Bar, kg/cm2, Psi, mmH2O, mmhg, MPa, KPa,
- Connection size: M20×1.5; G½"; ½" NPT or cusmized
- Wetted Material: 304 stainless steel (or customized)

Digital Pressure Gauge is an intelligent pressure gauge with high precision, tracking speed, simple operation and reliable self-protection function. The product applies whole electronic structure and silicon piezoresistive sensor chip, with powerful anti-jamming capability, fast sampling speed, digital filtering techniques to ensure its high accuracy, low drift, reliable performance, anti-corrosion, anti-vibration, long life, and self-protection function.

It can be applied to liquid, gaseous or vaporous media with optional ex-proof requirement. It is suitable for on-site pressure measurement or high-precision pressure measurement in laboratories. As an excellent alternative to mechanical pressure gauge with high precision, it also can be used to calibrate general pressure gauge.

TECHNICAL SPECIFICATION

■ Scale range: Pressure gauge (0 to 100 MPa), vacuum gauge (-0.1 to 0 MPa) and combined pressure gauge (-0.1 to 60MPa). Specific range should be selected in accordance with specific pressure requirement.

DIFFERENTIAL PRESSURE GAUGE

**ALL SS DIFFERENTIAL
PRESSURE GAUGE**



**CAST ALUMINUM DIFFERENTIAL
PRESSURE GAUGE**



Differential Pressure Gauges are widely utilized for measuring pressure of fan and blowing machine, resistance of filter, wind speed, furnace pressure, differential pressure of pore plate, the pressure of drum water level, liquid amplifier and hydraulic pressure system. Meantime, they are used to control the automatic valve and specific value of air-producer gas in combustion and they are used to test blood pressure and respiratory pressure in medical health care equipment. There are more than 90 models to suit your needs precisely.

PRESSURE TRANSMITTER

**MODEL MC20A COMPACT
TRANSMITTER**



**MODEL MC20E PRESSURE
TRANSMITTER**



**MODEL MC20B & MC20D
UNIVERSAL TRANSMITTER**



**MODEL MC20W SANITARY
(FLUSH DIAPHRAGM)**



**MODEL MC20AS ULTRA-SMALL
TRANSMITTER**



**MODEL 1151/3051P PRESSURE
TRANSMITTER**



**MODEL 1151/3051LT FLANGE
TRANSMITTER**



**MODEL 1151/3051PR REMOTE
DIAPHRAGM**



DIFFERENTIAL PRESSURE TRANSMITTER

MODEL 1151/3051DPR
REMOTE DIFF. TYPE



MODEL 1151/3051LT
FLANGE DIFF. TYPE



MODEL MC2070A DELICATE
DIFF. TYPE



MODEL 1151/3051DP
DIFF. TYPE



MC2070C COMPACT DIFF. PRESSURE
TRANSMITTER



MODEL MC2070B DIFF. PRESSURE
TRANSMITTER



PRESSURE SWITCH

MODEL MC2080 DIGITAL
PRESSURE SWITCH



MODEL MC2010 COMPACT
SWITCH



MODEL MC2020 UNIVERSAL
SWITCH



MODEL MC2081 SMART
PRESSURE SWITCH



MC2082 EXPLOSION-PROOF
SWITCH



DIFFERENTIAL PRESSURE SWITCH

MODEL MC2040 UNIVERSAL
DIFF. SWITCH



MODEL MC204B
DIFFERENTIAL SWITCH



MODEL MC204A AIR
DIFFERENTIAL SWITCH



MODEL MC3081 SMART
DIFFERENTIAL SWITCH



THERMOMETER

*BOTTOM MOUNTED
BIMETAL THERMOMETER*



*BACK MOUNTED BIMETAL
THERMOMETER*



*ARBITRARY MOUNTED
BIMETAL TYPE*



*VIBRANT PROOF
(OIL-FILED)*



*ELECTRIC CONTACT
BIMETAL TYPE*



*GAS EXPANSION
CAPILARY TYPE*



*DIGITAL
THERMOMETER*



*EX-PROOF
THERMOMETER*



TEMPERATURE TRANSMITTER

*MODEL MCT80Y INTEGRATED
TRANSMITTER*



*MODEL MCT80X INTEGRATED
TRANSMITTER*



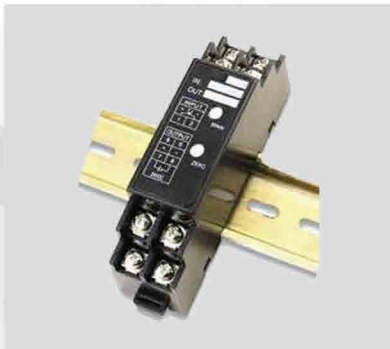
*MODEL MCT80S COMPACT
TRANSMITTER*



*MODEL MCT80A
TRANSMITTER*



*MODEL MCT80D
TRANSMITTER*



*MODEL MCT80B GENERAL
WALL-MOUNTED*



*MODEL MC-WZP/WZPK
RTD*



*MODEL MC-WR/WRK
TC*



LEVEL TRANSMITTER

A level Transmitter is simply an instrument that provides continuous level measurement. Level transmitters can be used to determine the level of a given liquid or bulk-solid at any given time. This is different to a level switch which only alarms when the level of material (liquid or bulk-solid) reaches a predetermined level. As per working principles, level transmitters can be sorted into ultrasonic level transmitter, pressure measurement level transmitter, float level transmitter, radar level transmitter etc. Don't hesitate to contact us now if you need more information on any of our level transmitters.

MODEL ML-8
ULTRASONIC TYPE



MODEL 1151/3051LT
FLANGE TYPE



MODEL MC20C
SUBMERSIBLE TYPE



MODEL 1151/3051LTR
REMOTE DIAPHRAGM



MODEL MC20CD GAS
CONDUCTION TYPE



CERTIFICATES & SERVICE



Our products are tested and certified by international standards.

STRONG M&C INC. has been certified by Quality Management System and the products are approved by many authority institutions. Our employees with the professional and skill will make sure to provide with high-quality products and superior services at any time and at any place.

For all of our products, STRONG M&C INC. would like to offer better discount and more favorable price to our customers. We are seeking for a strong, further and long period ties with our friends and customers around the globe. Should you have any inquiry or question, please don't hesitate to contact us. We expect to form long-term and friendly cooperation with customers through our professional design, production and reasonable quotations.

- All products carry 12 or 18 months warranty.
- All products can be delivered within 7 or 10 days.
- All products available for OEM production for customers.

ISO9001 CERTIFICATE



EX-PROOF CERTIFICATE



BUISNESS LICENSE



IMPORT & EXPORT LICENSE



Our facility where gauges and transmitters are tested and calibrated.



CONTACT US

WE ARE HAPPY TO SERVE YOU ROUND THE CLOCK



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Expert in Industrial Automation Instrumentations & Process Control

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An Expert in Industrial Instrumentations and Process Control

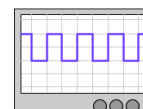
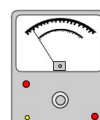
Xiamen Madincos Automation Co., Ltd is located in the Torch High-tech Development Zone in Xiamen, China, a hi-tech enterprise specializing in industrial automation instrumentations development, manufacturing and engineering technology service. Madincos can provide the users with instruments and meters, control systems and advanced control software. In the field of industrial automation, we are a leading provider of the advanced automation and information technology, excellent process instrumentations and professional automation solutions in China.



Madincos has professional and rich experience of researching, Development and production more than ten years and has gathered a group of outstanding technical experts in the fields of automation, electronics, machinery and computers. Based on the excellent technical talents and the solid technical strength, combined with the international advanced technology, we have developed a variety of high-precision, high-quality industrial automation instruments and meters. Different series of automatic instruments and meters can meet the individual needs of automation systems in different industries and different users. Madincos' instruments and meters are widely sold in many countries and regions around the world, widely used in petroleum, chemical, metallurgy, boiler, steel, paper, electricity, food, marine, HVAC and other industries.

Main Products:

- Paperless recorders, data logger
- Pressure transmitters, level transmitters, flowmeter
- Vibration transmitters, current & voltage transmitter
- Signal isolators, IO modules
- Process controllers, process indicators
- Temperature sensors & transmitters
- Temperature and humidity sensors
- Intelligent Distributed Control System



Since our establishment, Madincos has maintained rapid and stable development, providing OEM service for many domestic and foreign companies. Our products are exported to all over the world and are trusted by the domestic and foreign customers. In order to realize the strategic development plan of the enterprise, Madincos is always creating a development strategy goal for our own brand famous and popular in the world. We adhere to the active introduction of modern management concepts, strives to build a benign talent structure, continuously optimizes efficient work models, and constantly improves the service system to steadily enter the track of rapid development. Madincos is actively exploring a road to business cooperation with many partners to create a win-win situation.

PAPERLESS RECORDER SERIES

Universal input for display ,recording and curve analysis for process parameters,
Madcocs paperless recorder provides you a wealth of options



PROCESS INDICATOR & CONTROLLER

Universal Input for Different Process Measurement
Provides flexibility and variety in the handling of data reading and measurement



Pressure Transmitter Series

Concentrate on the process automation,
tailoring workshops to the specific needs of you.



Level Transmitter Series

High-precision. High stability. High pressure resistance.



Paperless Recorder

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Signal Isolator, I/O Module, Communication Converter

50



MPR5000ST is Universal Input color paperless recorder, max 32 channels, 180mm×150mm×150mm (Cutout size: 138x138mm) ,7" TFT LCD TOUCH SCREEN, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various application.

NEW, Intelligent, High Quality, Higher Memory, Powerful Screen

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handing of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 32 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Touch Screen

7" TFT color LCD Touch screen, wide view, high brightness

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Powerful Various Screen

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

16 relays output, NO+NC RS232 printing output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Long Time Memory

Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485/Ethernet Communication

Standard MODBUS-RTU/TCP/IP, configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



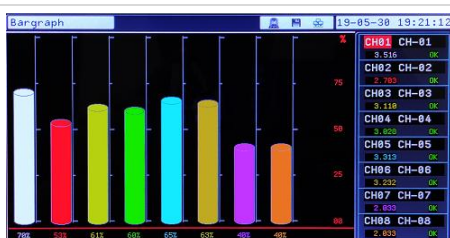
Digital Display 2 Channels/screen



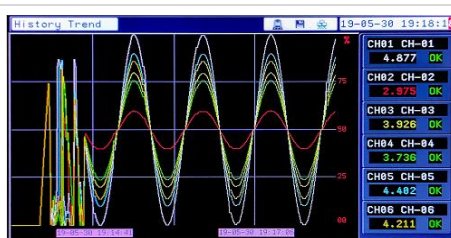
Digital Display 8 Channels/screen



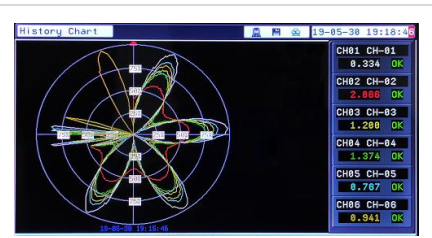
Digital Display 32 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

MPR5000S color paperless recorder (cutout size: 138x138mm)										Description
MPR5000S	-X	-X	-X	-X	-X	-X	-X	-X	-X	MPR5000S universal color paperless recorder
Screen	T									180X150X150mm, Touch screen 7inch LCD color
Channels No.	-01									1 channel
	-02									2 channels
	-XX									
	-32									32 channels
Communication Output										None
	-C1									photoelectric- isolated RS485 communication
	-C2									photoelectric- isolated RS232 communication
	-C3									photoelectric- isolated Ethernet communication
Flow Totalize, Math Function										None
	-F									Math, Flow totalizer Function
*Relay Output (*As below notes)										None
	-NOC									1 Relay output: NO+NC ,30VDC/3A, 220VAC/3A
										
	16NOC									16 Relays: NO+NC ,30VDC/3A, 220VAC/3A
*Retransmission Output (*As below notes)										None
	T									1 Channels' isolated 4-20mA, 0-10mA output
	..									
	16T									16 Channels' isolated 4-20mA ,0-10mA output
*Feed output: Auxiliary power supply for transmitter Output (*As below notes)										None
	2P3									2 channels feeds :24VDC output, max. 125mA
	2P2									2 channels feeds :12VDC output, max. 125mA
										
	16P3									16 channels feeds :24VDC output, max.125mA
	16P2									16 channels feeds :12VDC output, max.125mA
Print Output										None
								-P		RS232 Printing port for mini printer
Power Supply								-N		100-240VAC
								-D		24VDC

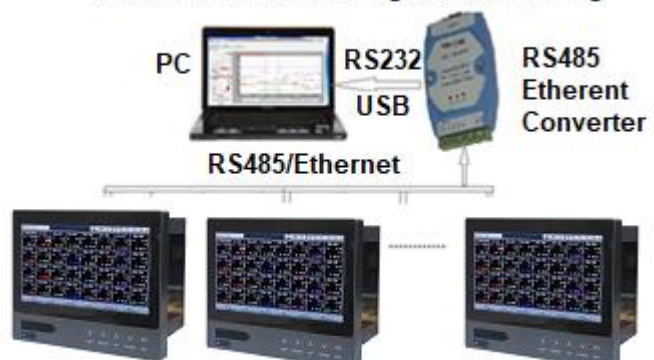
USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485 , Ethernet Communication for real time monitoring

USB Pen Driver for Data Transfer



Real Time Data Reading and Monitoring





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USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



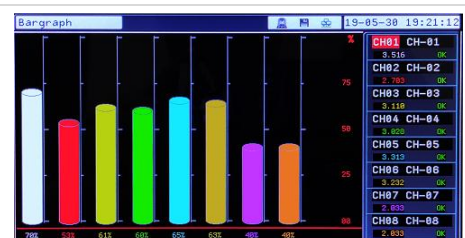
Digital Display 2 Channels/screen



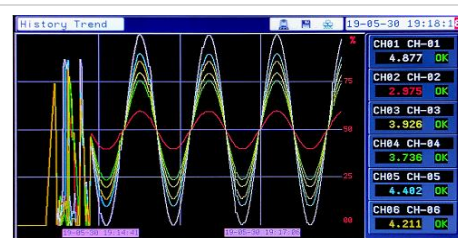
Digital Display 8 Channels/screen



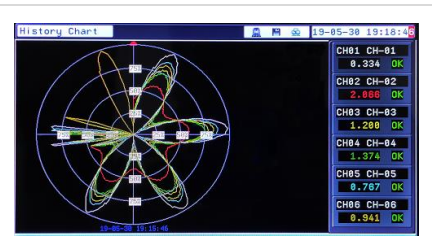
Digital Display 32 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

MPR5000SE Color paperless recorder, Cutouts size: 138X138mm								Description
MPR5000S	X	-X	-X	-X	-X	-X	-X	MPR5000S universal color paperless recorder
Size	E							180X150X50mm, 7-inch LCD Display, Touch Screen
Channel No.	01							1 channels input
	-02							2 channels input
								
	-06							6 channels input
Communication Output								None
		-C1						Photoelectric- isolated RS485 output, MODBUS
		-C3						Photoelectrical-isolated Ethernet output, MODBUS (Specified)
Flow Totalize, Math Function								None
		-F						Math, Flow totalize with Temperature, Pressure Compensation
OUT1								None
		-NOC						Relay alarm output: NO+NC ,30VDC/3A, 220VAC/3A
OUT2								None
		-NO						Relay alarm output: NC ,30VDC/3A, 220VAC/3A
Power Supply		-N						100-240VAC
		-D						24VDC

USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485, Ethernet Communication for real time monitoring





MPR800 is universal color paperless recorder, max 10 channels, 96x96MM, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various industry application.

NEW, HOT, Isolated, High Quality, Higher Memory, Faster Sampling

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handling of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 10 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

3.5" TFT LCD, wide view, high brightness, small size: 96x96mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chart data display for data reading

I/O Modular Outputs

Max.2 outputs: relay, 4-20mA, printing, 24VDC feed output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Higher & Longer Time Memory

Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485 Communication

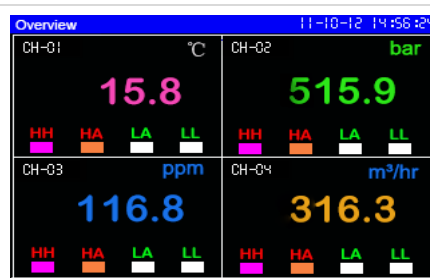
Standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



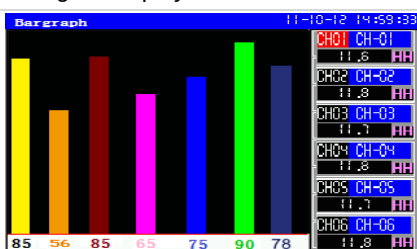
Digital Display 2 Channels/screen



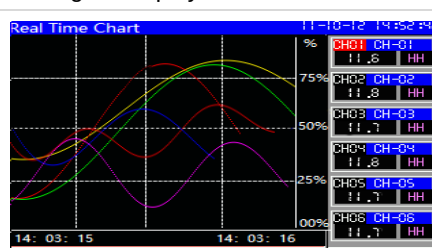
Digital Display 4 Channels/screen



Digital Display 8 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

MPR800 Color paperless recorder, 96x96x110mm								Description
MPR800	-X	-X		-X	-X	-X	-X	MPR800 universal paperless recorder, 96x96x110mm
Channels No.	-01							1 channels input
	-02							2 channels input
								
	-08							8 channels input
	-09							9 channels input
	-10							10 channels input
Frequency Input								None
		-F1						Frequency Input, 1 Channel,0-5KHZ
		-F1H						Frequency Input, 1 Channel,0-500HZ
		-F1N						Frequency Input, 1 Channel,0-50HZ
Communication Output								None
		-C1						photoelectric- isolated RS485 output, MODBUS-RTU
Flow Totalize, Math Function								None
			-F					Flow totalize, Math Function
OUT1								None
			-NO					Relay alarm output: NO ,30VDC/3A, 220VAC/3A
OUT2								None
				-NO				Relay alarm output: NO ,30VDC/3A, 220VAC/3A
				-P3				Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.40mA
				-P				RS232 Printing port for mini printer
				-T				Isolated 4-20mA retransmission output
Retransmission output (When input channels ≤5 channels)								None
				-T				1 channel Isolated 4-20mA retransmission output
				-2T				2 channel Isolated 4-20ma retransmission output
Power Supply				-N				100-240VAC
				-D				24VDC

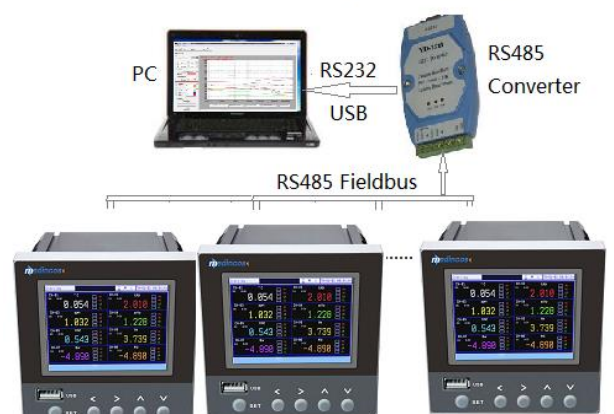
USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485 Communication for real time monitoring Configuration with SCADA, PLC, HMI, OP sever

USB Pen Driver for Data Transfer



Real Time Reading and Monitoring





MPR4200 is Universal Input color paperless recorder, max 12 channels, 144x144MM,5" TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various application.

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handling of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 12 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

5" TFT LCD, wide view, high brightness, 144x144mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

16 relays output, 6 channels 4-20mA, printing, 24VDC feed output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Long Time Memory

Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485, Ethernet Communication

Standard MODBUS-RTU, TCP/IP configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



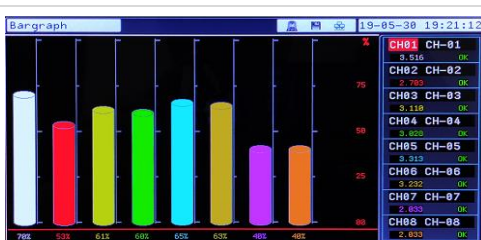
Digital Display 2 Channels/screen



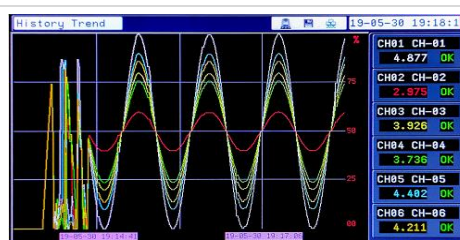
Digital Display 8 Channels/screen



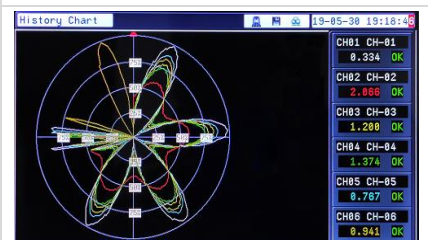
Digital Display 32 Channels/screen



Digital & Barograph Display



Digital & Curve Display

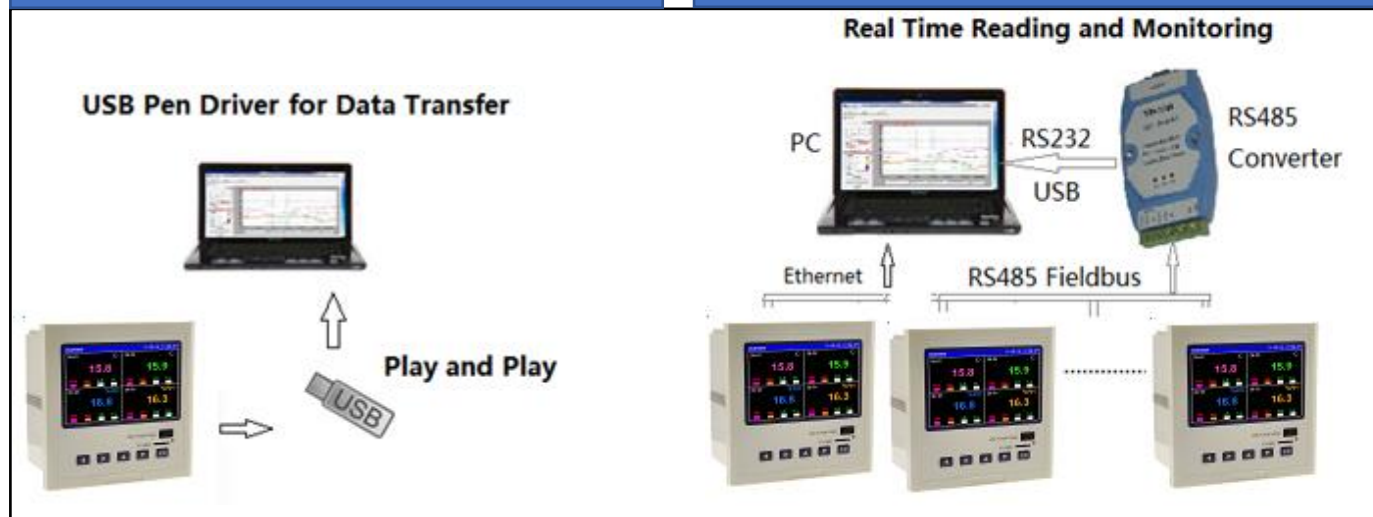


Digital & Circular Chart Display

MPR4200 color paperless recorder, 144X144X73mm								Description
MPR4200	-X	-X	-X	-X	-X	-X	-X	MPR4200 universal paperless recorder
Channels No.	-01							1 channel
	-02							2 channels
	-03							3 channels
	-XX							
	-12							12 channels
Frequency Input								None
	-FI							Frequency input, 0-5KHz, 1 Channel
Communication Output								None
	-C1							photoelectric- isolated RS485 communication output
	-C2							photoelectric- isolated RS232 communication output
	-C3							photoelectric- isolated Ethernet communication output
Flow Totalize, Math Function								None
	-F							Flow totalize with Temperature, Pressure Compensation; Math Function
Relay Output								None
	-NO							1 Relay output: NO ,30VDC/3A, 220VAC/3A
	-2NO							2 Relay output: NC ,30VDC/3A, 220VAC/3A
								
	8NO							8 Relays output: NO ,30VDC/3A, 220VAC/3A
Print Output								None
	-P							RS232 Printing port for mini printer
Power Supply						-N		100-240VAC
						-D		24VDC

USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485, Ethernet output for real time monitoring Configuration with SCADA, PLC, HMI, OP sever





MPR400 is Universal Input color paperless recorder, max 4 channels, 72X72MM,3.2" TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various application.

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handing of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 4 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

5"TFT LCD, wide view, high brightness, 144x144mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

16 relays output, 6 channels 4-20mA, printing, 24VDC feed output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Long Time Memory

Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485, Ethernet Communication

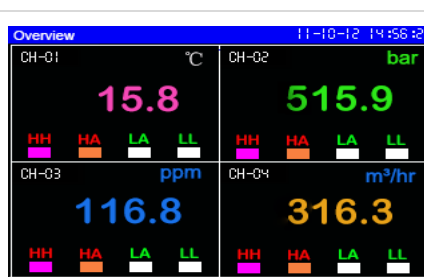
Standard MODBUS-RTU, TCP/IP configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



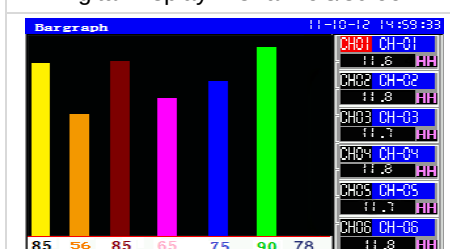
Digital Display 2 Channels/screen



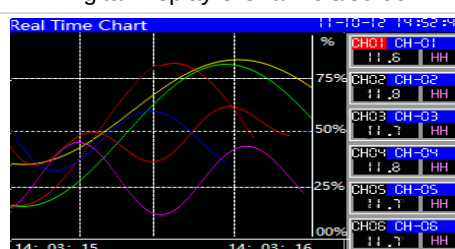
Digital Display 8 Channels/screen



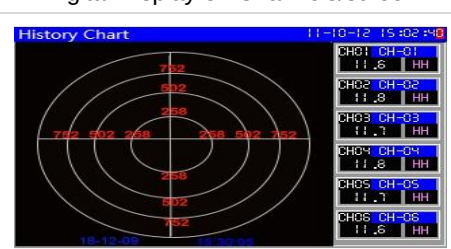
Digital Display 32 Channels/screen



Digital & Barograph Display



Digital & Curve Display

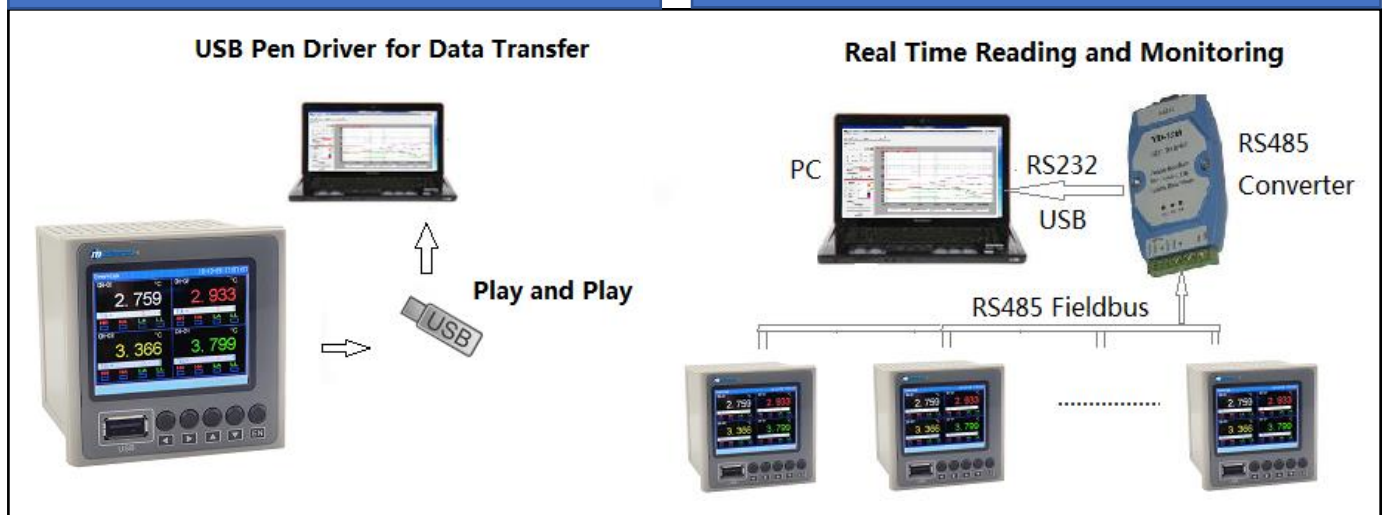


Digital & Circular Chart Display

MPR400 Color paperless recorder, 72x72x95mm								Description
MPR400	-X	-X	-X	-X	-X	-X	-X	MPR400 universal paperless recorder, 72x72x95mm
Channels No.	-01							1 channels input
	-02							2 channels input
	-03							3 channels input
	-04							4 channels input
Communication Output								None
		-C1						photoelectric- isolated RS485 output, MODBUS-RTU
Flow Totalize, Math Function								None
		-F						Flow totalize with Temperature, Pressure Compensation; Math Function
OUT1								None
			-NO					Relay alarm output: NO ,30VDC/3A, 220VAC/3A
			-NC					Relay alarm output: NC ,30VDC/3A, 220VAC/3A
			-P3					Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.40mA
			-T					Isolated 4-20mA retransmission output
OUT2								None
			-NO					Relay alarm output: NO ,30VDC/3A, 220VAC/3A
			-NC					Relay alarm output: NC ,30VDC/3A, 220VAC/3A
			-P3					Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.40mA
			-P					RS232 Printing port for mini printer
			-T					Isolated 4-20mA retransmission output
Power Supply			-N					100-240VAC
			-D					24VDC

USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485, Ethernet output for real time monitoring Configuration with SCADA, PLC, HMI, OP sever





MPR9800 is Universal Input portable paperless recorder, max 32 channels, 260mm×120mm×235MM, 7" TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various industry application.

Portable Type

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handing of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 32 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

7"TFT LCD, wide view, high brightness, 260×120×235mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

16 relays output, printing, Print, 24VDC feed output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Long Time Memory

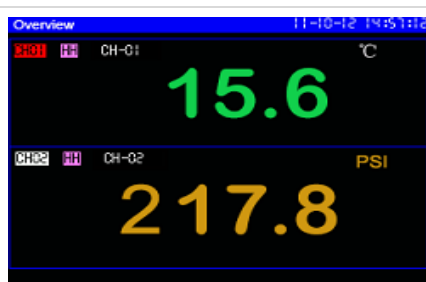
Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485 Communication

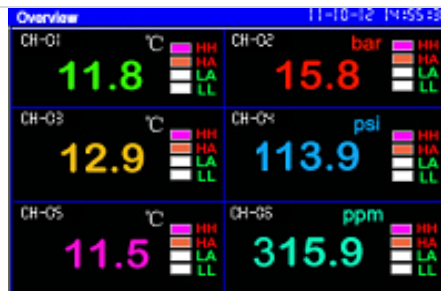
Standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

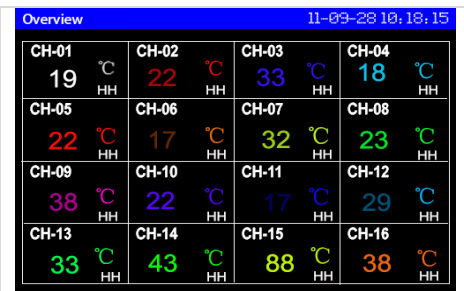
8GB USB pen driver for data transfer automatically, plug and play, user-friendly



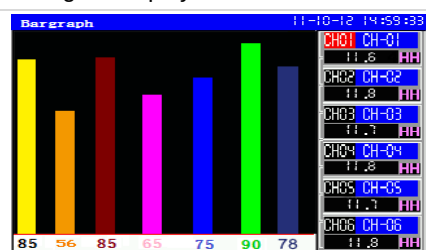
Digital Display 2 Channels/screen



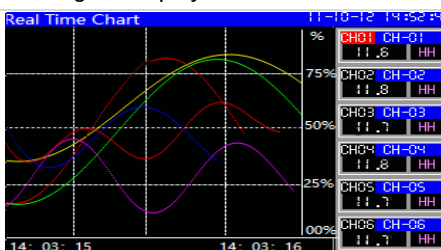
Digital Display 6 Channels/screen



Digital Display 16 Channels/screen



Digital & Barograph Display



Digital & Curve Display



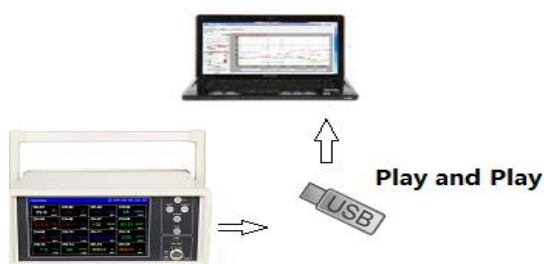
Digital & Circular Chart Display

Order Code								Description
MPR9800	-X	-X	-X	-X	-X	-X	-X	MPR9800 Portable paperless recorder, 260mm×120mm×235mm, max 32 channels
Channels No.	-01							1 channels input
	-02							2 channels input
	-03							3 channels input
								
	-32							32 channels input
Communication Output								None
	-C1							photoelectric- isolated RS485 output, MODBUS-RTU
	-C3							photoelectric- isolated Ethernet output, MODBUS-TCP/IP
Flow Totalize, Math Function								None
	-F							Flow totalize with Temperature, Pressure Compensation; Math Function
Relay Output (will occupy channel input terminals. When 1-16 inputs, can be with 1-16 relays output. If more than 16 channels, relay will be less than 16 output accordingly. e.g. 24 inputs, can be 1- 8 relay....32 inputs, cannot be with relays output								None
	-NO							Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-2NO							2Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-3NO							3Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-4NO							4Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-5NO							5Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-6NO							6Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-7NO							7Relay output: NO+NC ,30VDC/3A, 220VAC/3A
								
	-16NO							16Relay output: NC ,30VDC/3A, 220VAC/3A
Print Output								None
	-P							RS232 Printing port for mini printer
Auxiliary Power Supply Output								None
	-P3							Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.40mA
	-P4							Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.600mA
Power Supply							-N	100-240VAC

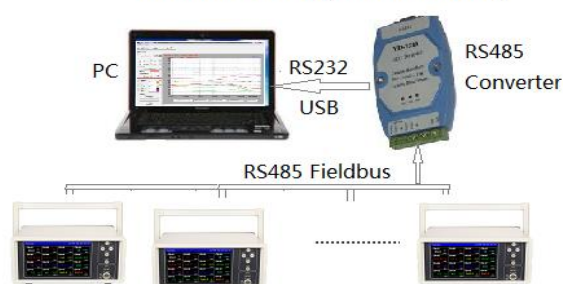
USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485 Communication for real time monitoring Configuration with SCADA, PLC, HMI, OP sever

USB Pen Driver for Data Transfer



Real Time Reading and Monitoring





MPR9600 is Universal Input portable paperless recorder, max 16channels, 210mm×90mm×230mm, 3.5" TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various industry application.

Mini Type, Portable Type

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handing of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 16 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

3.5"TFT LCD, wide view, high brightness, 210×90×230mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

8 relays output, printing, 24VDC feed output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x divide: ÷; average; Max.; Min;

Long Time Memory

Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485 Communication

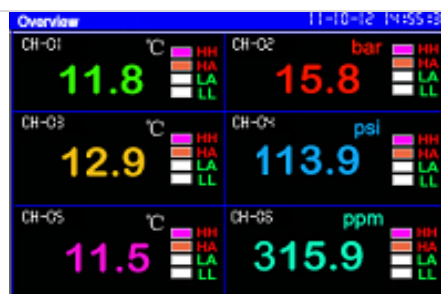
Standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

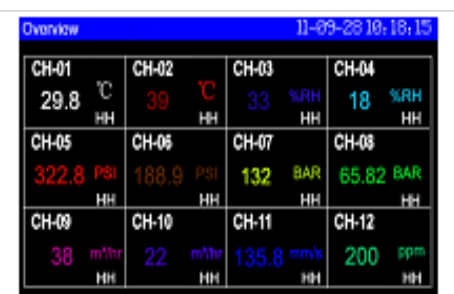
8GB USB pen driver for data transfer automatically, plug and play, user-friendly



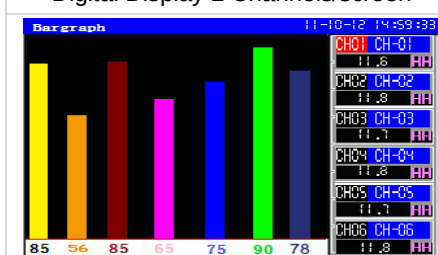
Digital Display 2 Channels/screen



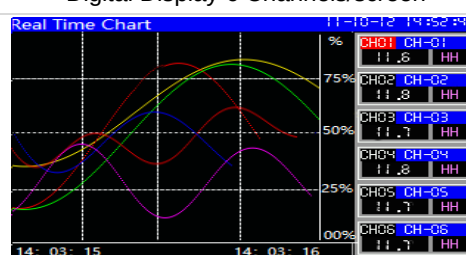
Digital Display 6 Channels/screen



Digital Display 16 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

Order Code								Description
MPR9600	-X	-X	-X	-X	-X	-X	-X	MPR9600 Portable paperless recorder, 205x90x230mm, max 16 channels
Channels No.	-01							1 channels input
	-02							2 channels input
								
	-16							16 channels input
Communication Output								None
	-C1							photoelectric- isolated RS485 output, MODBUS-RTU
Flow Totalize, Math Function								None
	-F							Flow totalize with Temperature, Pressure Compensation; Math Function
Relay Output (will occupy channel input terminals. When 1-8 inputs, can be with 1-8 relays output. If more than 8 channels, relay will be less than 8 output accordingly e.g. 1-8 inputs, can be 1- 8 relay....16 inputs, cannot be with relays output								None
	-NO							Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-2NO							2Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-3NO							3Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-4NO							4Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-5NO							5Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-6NO							6Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-7NO							7Relay output: NO+NC ,30VDC/3A, 220VAC/3A
	-8NO							8Relay output: NO+NC ,30VDC/3A, 220VAC/3A
Print Output								None
	-P							RS232 Printing port for mini printer
Auxiliary Power Supply Output								None
	-P1							Isolated auxiliary 12VDC power supply for transmitter, sensor and another device, max.100mA
	-P3							Isolated auxiliary 24VDC power supply for transmitter, sensor and another device, max.100mA
Power Supply	-N							100-240VAC

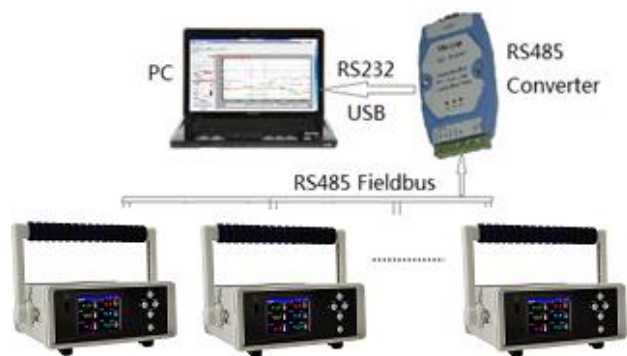
USB pen driver for data transfer automatically and data analysis in PC software, user-friendly

RS485 Communication for real time monitoring Configuration with SCADA, PLC, HMI, OP sever

USB Pen Driver for Data Transfer



Real Time Reading and Monitoring





MPR8000 is Universal Input color paperless recorder, max 48 channels, 288x288MM, 10.4" TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various application.

Portable hand or panel mounted optional

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handing of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 48 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

10.4" TFT LCD, wide view, high brightness, 288x288mm

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

I/O Modular Outputs

48 relays output, 12 channels
4-20Ma output, 24VDC feed output, Printing output

Flow Totalize

with temperature and pressure compensation; daily, monthly report

Math

Plus: +, subtract: -, multiple: x
divide: ÷; average; Max.; Min;

Long Time Memory

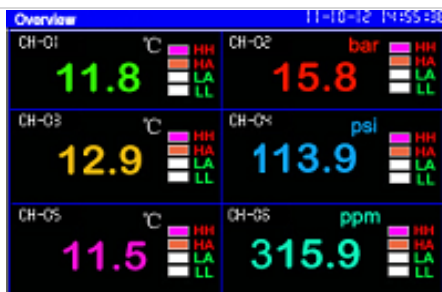
Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

RS485/Ethernet Communication

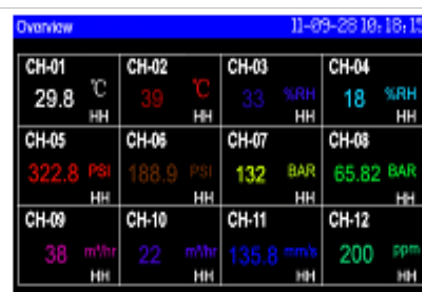
Standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring in PC

USB Driver Data Transfer

8GB USB pen driver for data transfer automatically, plug and play, user-friendly



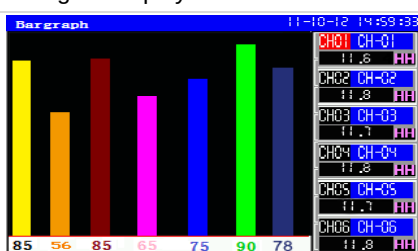
Digital Display 6 Channels/screen



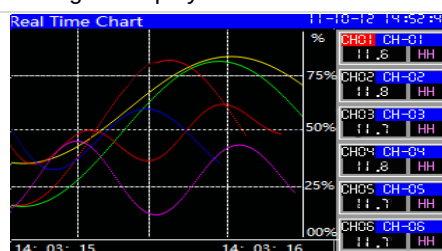
Digital Display 16 Channels/screen



Digital Display 48 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

Order Code										Description
MPR8000	-X	-X	-X	-X	-X	-X	-X	-X	-X	MPR8000 universal paperless recorder
Channel No.	-08									8 channels
	-16									16 channels
	-24									24 channels
	-32									32 channels
	-40									40channels
	-48									48 channels
Frequency Input										None
	-FI									Frequency input, 0-5KHz, 1 Channel
Communication Output										None
		-C1								photoelectric- isolated RS485 communication output
		-C2								photoelectric- isolated RS232 communication output
		-C3								photoelectric- isolated Ethernet TCP/IP communication
Flow Totalize, Math Function										None
		-F								Flow totalize with Temperature, Pressure Compensation; Math Function
Relay Output										None
		-NOC								Relay output: NO+NC ,30VDC/3A, 220VAC/3A
		-2NOC								2 Relays output: NC+NC ,30VDC/3A, 220VAC/3A
										
		48NOC								48 Relays output: NO+NC ,30VDC/3A, 220VAC/3A
Retransmission Output										None
		-T								1 Channels' isolated 4-20mA retransmission output
		-2T								2 Channels 'isolated 4-20mA retransmission output
		...								
		-12T								12 Channels 'isolated 4-20mA retransmission output
Aux. power supply Output										None
		-P3								1 isolated 24VDC/40mA output for transmitter
		-P4								1 isolated 24VDC/600mA output for transmitter
Print Output										None
		-P								RS232 Printing port for mini printer
Portable Hand										None, without portable hand for panel installation
		-H								Yes, with portable hand as portable type
Power Supply									-N	100-240VAC



MPR9000 is Universal Input color paperless recorder, max 8 channels, 226x117x97MM, 3.2' TFT LCD, high accuracy, universal use, easy operation, to be aimed to display, measure, record the processes parameters such as temperature, humidity, pressure, flow, vibration etc. in various industrial application.

Hand-Held Type

Application:

Petroleum, Chemical, Pharmaceutical, Metallurgy, Paper, Electricity, Nuclear power, Food, Cement, Building, aviation, Medical University lab, Marine, Sewage treatment etc.

Memory Flash Drive Data Saving,

Provides flexibility and variety in the handling of data memory and reading

Universal Input

Programmable universal input: RTD, mA, VDC, mV, frequency input up to 8 channels

Isolation

photoelectrical isolation among channels up to 400VAC; accuracy:0.2%

T.C. Compensation

Built in thermocouple automatic cold junction compensation

True Color LCD Screen

3.2"TFT LCD, wide view, high brightness, 226x117x97MM

Screensaver

Screensaver time: 0-30000 seconds set flexibly for low consumption

Various Screen Display

Digital, trend, barograph, circular chat data display for data reading

Long Time Memory

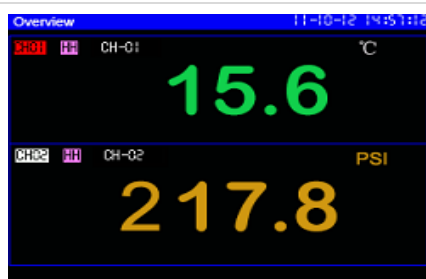
Huge capacity flash memory for long time data saving up to 10 years with power-off data protection

USB Driver Data Transfer

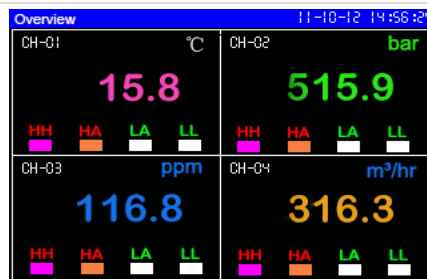
8GB USB pen driver for data transfer automatically, plug and play, user-friendly

Hand-Held Type

Hand-Held Type, easy-to-hold, read, and clean; comfortable to carry and use for extended periods of time



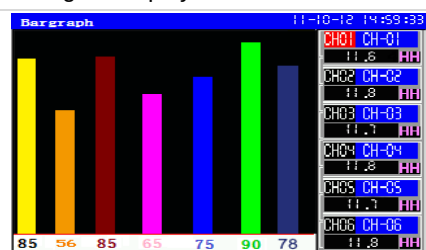
Digital Display 2 Channels/screen



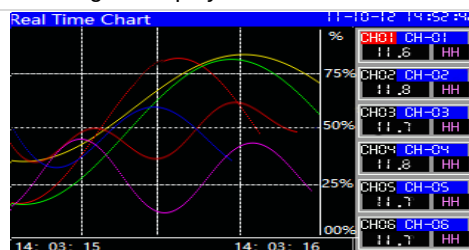
Digital Display 4 Channels/screen



Digital Display 8 Channels/screen



Digital & Barograph Display



Digital & Curve Display



Digital & Circular Chart Display

Universal Input for Different Process Measurement

Provides flexibility and variety in the handling of data reading and measurement



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:48x96mm, supports max. 4 modular outputs**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Modular output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MPD510 universal process indicator, 48x96x100mm							
Order Code						Description	
MPD510	-X	-X	-X	-X	-X	-X	MPD510 universal process indicator, 48x96mm
OUT1							None
	-NO						Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC						Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-T						4-20mA retransmission output, 2 wire
OUT2							None
	-NOC						Relay output: NO+NC, 30VDC/0.8A, 220VAC/0.8A
	-C1						photoelectric- isolated RS485 communication output
	-C2						photoelectric- isolated RS232 communication output
OUT3							None,
	-NO						Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC						Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-P1						Isolated 5VDC auxiliary power supply for sensor and transmitter, max. 100mA
	-P2						Isolated 12VDC auxiliary power supply for sensor and transmitter, max. 100mA
	-P3						Isolated 24VDC auxiliary power supply for sensor and transmitter, max. 100mA
OUT4							None
	-NOC						Relay output: NO+NC, 30VDC/0.8A, 220VAC/0.8A
	-S						SSR driving (DC 12V/50mA)
Power supply						-N	100-240VAC
						-D	24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handling of data reading and measurement



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:48x96mm, supports max. 4 modular outputs**
- **2 channels universal input**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Modular output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MPD520 universal process indicator, 48x96mm, 2 channels

Order Code						Description
MPD520	-X	-X	-X	-X		MPD520 universal process indicator, 2 channels input
OUT1	-NO					relay output, common or individual for channels, 3A, NO
	-NC					relay output, common or individual for channels,3A, NC
	-T					4-20mA retransmission output, 2 wire
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
OUT2						None,
	-NOC					Relay output, NO+NC, 3A
	-T					4-20mA retransmission output, 2 wire
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
	-C1					photoelectric- isolated RS485 communication output
	-C2					photoelectric- isolated RS232 communication output
OUT3						None
	-NOC					photoelectric- isolated RS485 communication output
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
Power Supply				-N		100-240VAC
				-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handling of data reading and measurement



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:96x96mm, supports max. 4 modular outputs**
- **4 channels universal input**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Modular output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Multi channels display in turn or fixed channel display
- With digital offset, digital filter setting function; 4 limits alarm output
- Wide power supply: 100-240VAC; 24VDC

MPD540 universal process indicator, 96x96x100mm, 4 channels						
Order Code						Description
MPD540	-X	-X	-X	-X	-X	MPD540 universal process indicator, 96x96x100mm
Channels No.	-02					2 channels input, universal input
	-04					4 channels input, universal input
OUT1	-NO					relay output, common or individual for channels, 3A, NO
	-NC					relay output, common or individual for channels, 3A, NC
	-T					4-20mA retransmission output, 2 wire
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
OUT2						None,
	-NOC					Relay output, NO+NC, 3A
	-T					4-20mA retransmission output, 2 wire
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
	-C1					photoelectric- isolated RS485 communication output
	-C2					photoelectric- isolated RS232 communication output
OUT3						None
	-NOC					photoelectric- isolated RS485 communication output
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
Power Supply				-N		100-240VAC
				-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handling of data reading and measurement



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:160x80mm, supports max. 8 or 4 modular outputs**
- **8,16,24,32,40,48 channels universal input**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Modular output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Multi channels display in turn or fixed channel display
- With digital offset, digital filter setting function; 4 limits alarm output
- Wide power supply: 100-240VAC; 24VDC

MPD580 universal process indicator, 160x80x105/125mm, 16 Channels

Order Code							Description
MPD580	-X	-X	-X		-X	-X	MPD580 universal process indicator, 160x80x105mm
Channels No.	-08						8 channels input, universal input
	-16						16 channels input, universal input
	...						
	48						48 channels input, universal input
Relay output no.	-1						1 relay output, common or individual for channels
	...						
	-8						8 relay outputs, common or individual for channels
Relay Output							None,
	-NO						Relay output (NO, 30VDC/0.8A,220VAC/0.8A)
	-NC						Relay output (NC, 30VDC/0.8A,220VAC/0.8A)
Retransmission output							None
	-T						4-20mA retransmission output, 2 wire, 1 channel only
Communication output							None
	-C1						photoelectric- isolated RS485 communication output
	-C2						photoelectric- isolated RS232 communication output
	-P						photoelectric- isolated RS232 print output
Isolation among input channels					-N		None, not isolated inputs for all channels
					-S		Yes, with isolated inputs for all channels
Power Supply					-N		100-240VAC
					-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handling of measuring and display data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- Size:80X160mm, supports max. 4 modular outputs
- barograph display of % PV value
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MPD510-86S universal process indicator, 80X160x100mm								Description
MPD510-86S	-X	-X	-X	-X	-X	-X	-X	MPD510-86S universal process indicator
Barograph display	-V							% Display of PV default
OUT1	-X							None
	-NOC							Relay: NO+NC, 30VDC/3A, 220VAC/3A
	-T							4-20mA retransmission output, 2 wire
OUT2	-X							None
	-NOC							Relay: NO+NC,30VDC/3A,220VAC/3A
	-P1							Isolated 5VDC auxiliary power supply for sensor and transmitter, max. 100mA
	-P2							Isolated 12VDC auxiliary power supply for sensor and transmitter, max. 100mA
	-P3							Isolated 24VDC auxiliary power supply for sensor and transmitter, max. 100mA
OUT3	-X							None
	-NOC							Relay: NO+NC,30VDC/3A,220VAC/3A
OUT4	-X							None
	-NOC							Relay: NO+NC,30VDC/3A,220VAC/3A
COM	-X							None
	-C1							photoelectric- isolated RS485 communication
	-C2							isolated RS232 communication output
Power supply	-N							100-240VAC
	-D							24VDC

0-10KHZ-30KHZ Frequency Input, Proxy Switch

Provides flexibility and variety in the handling of data display



- High accuracy: $\pm 0.2\%FS$
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:48x96mm, supports max. 4 modular outputs**
- **Input Signal:** frequency input, proximity switch
- Modular output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Multi channels display in turn or fixed channel display
- With digital offset, digital filter setting function; 4 limits alarm output
- Wide power supply: 100-240VAC; 24VDC

MPD510Q Digital Tachometer, Frequency meter, 48X96mm								Description
MPD510Q	-X		-X	-X	-X	-X	-X	MPD510Q Digital Tachometer, Frequency Meter,
Input Range	-F1							0-10Khz (5VDC $\leq$ voltage amplify $\leq$ 24VDC)
	-F2							Greater than 10Khz, max:30KHZ (5VDC $\leq$ voltage amplify $\leq$ 24VDC)
	-FX							Greater than 10Khz, max. 30Khz (voltage amplify < 5VDC, voltage amplify > 24VDC)
OUT1								None
	-NO							Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC							Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-T							4-20mA retransmission output, 2 wire
OUT2								None
	-NOC							Relay output: NO+NC,30VDC/0.8A,220VAC/0.8A
	-C1							photoelectric- isolated RS485 communication output
	-C2							photoelectric- isolated RS232 communication output
	-S							SSR driving (DC 12V/50mA)
OUT3								None
	-NO							Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC							Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-S							SSR driving (DC 12V/50mA)
OUT4								None
	-NOC							Relay output: NO+NC, 30VDC/0.8A, 220VAC/0.8A
	-S							SSR driving (DC 12V/50mA)
Auxiliary Powers supply output								None
	-P1							Isolated 5VDC feed for sensor and transmitter, max. 100mA
	-P2							Isolated 12VDC feed for sensor and transmitter, max. 100mA
	-P3							Isolated 24VDC feed for sensor and transmitter, max. 100mA
Power supply	-N							100-240VAC
	-D							24VDC

Single Phase AC Current/Voltage/Power Meter

Provides flexibility and variety in the handling of Single Phase Power data display



- High accuracy: $\pm 0.5\%FS$
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size: 48x96mm, supports max. 4 modular outputs**
- **Input Signal:** AC current, voltage
- **AC current:** 10mA to 50A AC,
- **AC voltage:** 0 to 380V AC
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Wide power supply: 100-240VAC; 24VDC

MPC100 DC/AC current or voltage sensor transmitter

- High accuracy: $\pm 0.5\%FS$ (DC)
- High accuracy: $\pm 0.25\%FS$ (AC)
- DC/AC current range: 0-30A
- DC/AC voltage range: 0-1000V
- Output: 4-20mA, 0-5VDC
- Power Supply: 24VDC



MPD510PS Intelligent Digital Power, Current, Voltage Meter					Description
MPD510PS	-X	-X	-X	-X	MPD510PS Digital Ammeter, Voltmeter, Power Meter
Input type and Range	-AA				AC current input, Eg. AA5: 5AAC input
	-AV				AC voltage input, Eg. AV100: 100V AC input
Display Type		-PV			Display active Power and Voltage
		-PA			Display active Power and Voltage
		-AV			Display Current and Voltage
Communication					None
			-C1		photoelectric- isolated RS485 communication output
			-C2		photoelectric- isolated RS232 communication output
Power supply			-N		100-240VAC
			-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:48x48mm, supports max. 2 modular outputs**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- **Control type: on-off, auto. PID self-tuning, manual PID control**
- Control output: Relay, SSR, SCR, 4-20mA
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR480 Universal Process Controller, 48x48mm					
Order Code					Description
MCR480	-X	-X	-X	-X	MCR480universal process Controller, 48x48mm (horizontal)
Control Type	-A				Auto. PID self-tuning; on-off Control
	-M				Auto. PID self-tuning; on-off, Manual PID Control
Control Output (PID or ON-Off control)		-NOC			Relay: NO+NC, 30VDC/0.8A, 220VAC/0.8A
		-S			SSR driving (DC12V/50mA output)
		-A			4-20ma control output
OUT1 (Auxiliary output)					None
		-NO			Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
		-NC			Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
		-T			4-20mA signal retransmission output, 2 wire
		-C1			photoelectric- isolated RS485 communication output
		-C2			photoelectric- isolated RS232 communication output
		-P1			Isolated 5VDC auxiliary power supply for sensor and transmitter, max. 100mA
		-P2			Isolated 12VDC auxiliary power supply for sensor and transmitter, max. 100mA
		-P3			Isolated 24VDC auxiliary power supply for sensor and transmitter, max. 100mA
Power Supply			-N		100-240VAC
			-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:72x72mm, supports max. 3 modular outputs**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- **Control type: on-off, auto. PID self-tuning, manual PID control**
- Control output: Relay, SSR, SCR, 4-20mA
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR720 Universal Process Controller, 72x72mm						
Order Code						Description
MCR720	-X	-X	-X	-X	-X	MCR720universal process controller 72x72x100mm
Control Type	-A					Auto. PID self-tuning; on-off Control
	-M					Auto. PID self-tuning; on-off, Manual PID Control
Control Output (PID, on-off Control)	-NOC					Relay output: NO+NC, 30VDC/3A, 220VAC/3A
	-S					SSR driving (DC 12V/50mA)
	-A					4-20mA current control output
OUT1						None
	-NO					Relay output: NO, 30VDC/3A, 220VAC/3A
	-NC					Relay output: NC, 30VDC/3A, 220VAC/3A
	-T					4-20mA retransmission output, 2 wire
	-P1					Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2					Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3					Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
OUT2						None
	-NOC					Relay output: NO+NC,30VDC/3A,220VAC/3A
	-C1					photoelectric- isolated RS485 communication output
	-C2					photoelectric- isolated RS232 communication output
Power supply	-N					100-240VAC
	-D					24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- **Size:48x96mm, supports max. 4 modular outputs**
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- **Control type: on-off, auto. PID self-tuning, manual PID control**
- Control output: Relay, SSR, SCR, 4-20mA
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR490 Universal Process Controller,48x96mm

Order Code							Description
MCR490	-X	-X	-X	-X	-X	-X	MCR490universal process Controller, 48x96mm (horizontal)
Control Type	-A						Auto. PID self-tuning; on-off Control
	-M						Auto. PID self-tuning; on-off, Manual PID Control
Control Output (PID, on-off Control)	-NOC						Relay output: NO+NC, 30VDC/0.8A, 220VAC/0.8A
	-S						SSR driving (DC 12V/50mA)
	-A						4-20mA current control output
OUT1							None
	-NO						Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC						Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-T						4-20mA retransmission output, 2 wire
OUT2							None
	-NOC						Relay output: NO+NC,30VDC/0.8A,220VAC/0.8A
	-C1						photoelectric- isolated RS485 communication output
	-C2						photoelectric- isolated RS232 communication output
OUT3							None,
	-NO						Relay output: NO, 30VDC/0.8A, 220VAC/0.8A
	-NC						Relay output: NC, 30VDC/0.8A, 220VAC/0.8A
	-P1						Isolated 5VDC aux. power supply for transmitter, max. 100mA
	-P2						Isolated 12VDC aux. power supply for transmitter, max. 100mA
	-P3						Isolated 24VDC aux. power supply for transmitter, max. 100mA
Power supply					-N		100-240VAC
					-D		24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- Size:96x96mm, supports max. 4 modular outputs
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Control type: on-off, auto. PID self-tuning, manual PID control
- Control output: Relay, SSR, SCR, 4-20mA
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR960 Universal Process Controller, 96x96mm

Order Coode							Description
MCR960	-X	-X	-X	-X	-X	-X	MCR960universal process controller 96x96mm
Control Type	-A						Auto. PID self-tuning; on-off Control
	-M						Auto. PID self-tuning; on-off, Manual PID Control
Control Output (PID, on-off)	-NOC						Relay output: NO+NC, 30VDC/3A, 220VAC/3A
	-S						SSR driving (DC 12V/50mA)
	-A						4-20mA current control output
OUT1							None
	-NO						Relay output: NO, 30VDC/3A, 220VAC/3A
	-NC						Relay output: NC, 30VDC/3A, 220VAC/3A
	-T						4-20mA retransmission output, 2 wire
OUT2							None
	-NOC						Relay output: NO+NC,30VDC/3A,220VAC/3A
	-C1						photoelectric- isolated RS485 communication output
	-C2						photoelectric- isolated RS232 communication output
OUT3							None,
	-NO						Relay output: NO, 30VDC/3A, 220VAC/3A
	-NC						Relay output: NC, 30VDC/3A, 220VAC/3A
	-P1						Isolated 5VDC auxiliary power supply for transmitter, max. 100mA
	-P2						Isolated 12VDC auxiliary power supply for transmitter, max. 100mA
	-P3						Isolated 24VDC auxiliary power supply for transmitter, max. 100mA
Power supply					-N	100-240VAC	
					-D	24VDC	

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Advanced SMT technology, modular outputs
- Size:80X160mm, supports max. 4 modular outputs
- barograph display of % PV value, Control output
- Control: Self-tuning PID controller, manual PID, on-off
- Built in thermocouple automatic cold junction compensation
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR860-S universal process controller, 80X160x100mm										Description
MCR860-S	-X	-X	-X	-X	-X	-X	-X	-X	-X	MCR860-S universal process controller
Control Type	A									Auto. PID self-tuning; on-off Control
	M									Auto. PID self-tuning; on-off, Manual PID Control
Barograph display type	P									% Display of PV default
	C									% Display of Control output
Control Output (PID, on-off)	-NOC									Relay output: NO+NC, 30VDC/3A, 220VAC/3A
	-S									SSR driving (DC 12V/50mA)
	-A									4-20mA current control output
OUT1	-X									None
	-NOC									Relay output: NO+NC, 30VDC/3A, 220VAC/3A
	-T									4-20mA retransmission output, 2 wire
OUT2	-X									None
	-NOC									Relay output: NO+NC,30VDC/3A,220VAC/3A
	-P1									Isolated 5VDC auxiliary power supply
	-P2									Isolated 12VDC auxiliary power supply
	-P3									Isolated 24VDC auxiliary power supply
OUT3	-X									None
	-NOC									Relay output: NO+NC,30VDC/3A,220VAC/3A
OUT4	-X									None
	-NOC									Relay output: NO+NC,30VDC/3A,220VAC/3A
COM	-X									None
	-C1									photoelectric- isolated RS485 communication
	-C2									isolated RS232 communication output
Power supply	-N									100-240VAC
	-D									24VDC

Universal Input for Different Process Measurement

Provides flexibility and variety in the handing of controlling data



- High accuracy: (0.2%FS+1) digit
- Dual 4-digit 7 segment LED display
- Size:96x96mm, supports max. 4 modular outputs
- barograph display of % PV value, Control output
- Control: Self-tuning PID controller, manual PID, on-off
- Control output: SSR, Relay ,4-20ma
- Programmable universal input: T.C., RTD, mA, VDC
- Built in thermocouple automatic cold junction compensation
- Auxiliary output: 4-20mA retransmission, relay, 24VDC feed output
- RS485, RS232 communication, standard MODBUS-RTU protocol, configurable with HMI, SCADA, OPC serve for real time monitoring
- Up to 4 limits alarm output per relay output
- With digital offset, digital filter setting function
- Wide power supply: 100-240VAC; 24VDC

MCR960-S universal process controller, 80X160x100mm								Description
MCR960-S	-X	-X	-X	-X	-X	-X	-X	MCR960-S universal process controller
Control Type	A							Auto. PID self-tuning; on-off Control
	M							Auto. PID self-tuning; on-off, Manual PID Control
Barograph display type		P						% Display of PV default
		C						% Display of Control output
Control Output (PID, on-off)			-NOC					Relay output: NO+NC, 30VDC/3A, 220VAC/3A
			-S					SSR driving (DC 12V/50mA)
			-A					4-20mA current control output
			-V					0-5VDC voltage control output (specified)
			-V2					0-10vdc voltage control output(specified)
OUT1			-X					None
			-NOC					Relay output: NO+NC, 30VDC/3A, 220VAC/3A
			-T					4-20mA retransmission output, 2 wire
OUT2			-X					None
			-NOC					Relay output: NO+NC,30VDC/3A,220VAC/3A
			-P1					Isolated 5VDC auxiliary power supply max. 100mA
			-P2					Isolated 12VDC auxiliary power supply max. 100mA
			-P3					Isolated 24VDC auxiliary power supply max. 100mA
OUT3			-X					None
			-NOC					Relay output: NO+NC,30VDC/3A,220VAC/3A
Power supply			-N					100-240VAC
			-D					24VDC

High Quality ,High Accuracy

Ideal solutions for different pressure range measurement



MPT910 Universal Pressure Transmitter

- **High accuracy and stability: $\pm 0.2\%$, 0.1%**
 - Gauge, absolute pressure measured
 - Range: -100Kpa to 60Mpa
 - 4-20mA, 2 wire ,0-10VDC 3 wire output
 - **Process temperature: -20 to 80°C, -20 to 300°C**
 - With anti- lightning, anti-RF interference
 - 316L stainless steel diaphragm, stainless steel material suitable for various complicated environment
 - Digital electrical board, water-proof, dust-proof, anti-interference
- With reversed polarity protection and instantaneous over current and over cross-voltage protection

MPT910R High Temperature Pressure Transmitter

- **High accuracy and stability: $\pm 0.2\%$, 0.1%**
 - Gauge, absolute pressure measured
 - Range: -100Kpa to 60Mpa
 - 4-20mA, 2 wire ,0-10VDC 3 wire output
 - **Process temperature: -20 to 120°C**
 - With anti- lightning, anti-RF interference
 - 316L stainless steel diaphragm, stainless steel material suitable for various complicated environment and over cross-voltage protection
 - Digital electrical board, water-proof, dust-proof, anti-interference
- With reversed polarity protection and instantaneous over current and over cross-voltage protection



MPT910S Sanitary Flush Pressure Transmitter

- **High accuracy and stability: $\pm 0.2\%$, 0.1%**
 - Gauge, absolute pressure measured
 - Range: -100Kpa to 60Mpa
 - 4-20mA, 2 wire ,0-10VDC 3 wire output
 - **Process temperature: -20 to 120°C**
 - With anti- lightning, anti-RF interference
 - 316L stainless steel diaphragm, stainless steel material suitable for various complicated environment and over cross-voltage protection
 - Digital electrical board, water-proof, dust-proof, anti-interference
- With reversed polarity protection and instantaneous over current and over cross-voltage protection

MPT910 Universal Pressure Transmitter								Description
MPT910	X	X	X	X	X	X	X	MPT910 Universal Pressure Transmitter
MPT910R								MPT910R Universal High Temperature Pressure Transmitter
MPT910S								MPT910S Universal Sanitary Pressure Transmitter
Type	-G							Gauge pressure measured
	-A							Absolute pressure measured
Process Temperature		T1						-20 to 80degC (MPT910)
		T2						-20 to 150degC (MPT910 with high temperature accessory)
		T3						-20 to 300degC (MPT910 with high temperature accessory)
Measured Range			01					0-10Kpa/ 0-0.1bar/0-100mbar
			02					0-20Kpa / 0-0.2bar/0-200mbar
			03					0-35Kpa/ 0-0.35bar/0-350mbar
			04					0-70Kpa/ 0-0.7bar/0-700mbar
			05					0-100Kpa/0-0.1Mpa/ 0-1bar
			06					0-160Kpa/0-0.16Mpa / 0-1.6bar
			07					0-250Kpa/0-0.25Mpa/0-2.5bar
			08					0-400kpa/0-0.4Mpa/0-4.0bar
			09					0-600kpa/0-0.6Mpa/0-6.0bar
			10					0-1Mpa/0-10bar
			11					0-1.6Mpa / 0-16bar
			12					0-2.5Mpa / 0-25bar
			13					0-4Mpa / 0-40bar
			14					0-6Mpa / 0-60bar
			15					0-10Mpa / 0-100bar
			16					0-16Mpa /0-160bar
			17					0-25Mpa /0-250bar
			18					0-40Mpa /0-400bar
			19					0-60Mpa /0-600bar
			20					0-100Mpa /0-1000bar
Output				A				4-20ma, 2 wire
				V				0-10VDC, 3 wire
				R				RS485 output, standard Modbus protocol
Process Connection				P1				G1/2", thread
				P2				1/2"NPT, thread
				P3				G1/4", thread
				P4				1/4"NPT, thread
				P5				M20X 15, thread
				P6				M14x1.5, thread
				X				Customized
Electrical Connector					S			Hirschman plug
					C			direct cable, 1.0m default
					A			Air Plug
Special Function					N			None
					A1			0.1% High Accuracy
					S			Lighten surge protection
					M			316SS material for housing and process connection

High Quality ,High Accuracy

Ideal solutions for Air differential pressure range measurement



MPT920A Air Differential Pressure Transmitter

- High accuracy and stability: $\pm 1\%$, $\pm 0.5\%$, $\pm 0.25\%$
- Range: 0 to 700Kpa, differential pressure
- 4-20mA, 0-10vdc, RS485, 4-20ma+RS485 output
- Process working temperature: -20 to 60°C
- Zero, full range adjustable with display version
- With anti- lightning, anti-RF interference, filter dealing
- Touch screen key for LCD version for configuration easily
- Digital electrical board, advanced chip with high stability
- low pressure measured for clean air & non-aggressive gas

MPT920A Differential Pressure Transmitter

Order Code: E.g.: MPT920A-D01AP8N							Description
MPT920A	-X	X	X	X	X	X	MPT920A Air Differential Pressure Transmitter
Indicator	-N						None
	-D						LCD display
Pressure Type							Standard
	N						Negative pressure
Measured Range		0A					0-100pa, $\pm 1\%$ FS
		0B					0-250pa, $\pm 1\%$ FS
		00					0-500pa, $\pm 1\%$ FS
		01					0-1Kpa, $\pm 0.5\%$ FS
		02					0-2kpa, $\pm 0.5\%$ FS
		03					0-4kpa, $\pm 0.5\%$ FS
		04					0-10kpa, $\pm 0.5\%$ FS
		05					0-35Kpa, $\pm 0.5\%$ FS
		06					0-100kpa, $\pm 0.5\%$ FS
		07					0-200kpa, $\pm 0.5\%$ FS
		08					0-400kpa, $\pm 0.5\%$ FS
		09					0-700kpa, $\pm 0.5\%$ FS
Output		A					4-20ma
		V					0-5VDC (Specified)
		V2					0-10VDC
		R					RS485 output, standard Modbus protocol
		AR					4-20ma+RS485 output, standard Modbus protocol
		V2R					0-10VDC+RS485 output, standard Modbus protocol
Process Connection (Transmitter Pagoda Connector)			P8				8mm diameter
			P6				6mm diameter
			P4				4mm diameter
			PX				others
Specified Function			N				None
			A2				0.25% high accuracy for range > 10kpa

High Quality ,High Accuracy, Smart LCD Display
Ideal solutions for different pressure range measurement



MPT2100, Smart Pressure Transmitter

MPT2100R Smart High Temperature Pressure Transmitter

- **High accuracy and stability: $\pm 0.2\%$, 0.1%**
- Gauge, absolute pressure measured
- Range: -100Kpa to 60Mpa
- **Process temperature: -20 to 80°C; -20 to 300°C**
- **4-20mA, 2 wire ,0-10VDC 3 wire output**
RS485, HART output
- **4-1/2 LCD digital smart display**
- **Zero and range can be set flexibly for indicator type**
- With anti- lightning, anti-RF interference
- 316L stainless steel diaphragm, stainless steel material suitable for various complicated environment
- Digital electrical board, water-proof, dust-proof, anti-interference
 With reversed polarity protection and instantaneous over current and over cross-voltage protection

MPT2300, Smart Pressure Transmitter

MPT2300R Smart High Temperature Pressure Transmitter

- **High accuracy and stability: $\pm 0.2\%$, 0.1%**
- Gauge, absolute pressure measured
- Range: -100Kpa to 60Mpa
- **4-20mA, 2 wire ,0-10VDC 3 wire output**
RS485, HART output
- **Process temperature: -20 to 80°C; -20 to 300°C**
- **4-1/2 LCD digital smart display**
- **Zero and range can be set flexibly for indicator type**
- With anti- lightning, anti-RF interference
- 316L stainless steel diaphragm, stainless steel material suitable for various complicated environment
- Digital electrical board, water-proof, dust-proof, anti-interference
 With reversed polarity protection and instantaneous



Order Code: E.g.: MPT2100-GDT101AP1N								Description
MPT2100	-X	X	X	X	X	X	X	MPT2100 Universal SMART Pressure Transmitter
MPT2300								MPT2100 Universal SMART Pressure Transmitter
MPT2100R								MPT2100R SMART High Temperature Pressure Transmitter
MPT2300R								MPT2300R SMART High Temperature Pressure Transmitter
Pressure Type	-G							Gauge
	-A							Absolute
Indicator	N							None, without indicator
	D							Yes, with LCD indicator
Process Temperature		T1						-20 to 80degC (MPT2100)
		T2						-20 to 150degC (MPT2100 with High Temperature Accessory)
		T3						-20 to 300degC (MPT2100 with High Temperature Accessory)
Range			01					0-10Kpa/ 0-0.1bar/0-100mbar
			02					0-20Kpa / 0-0.2bar/0-200mbar
			03					0-35Kpa/ 0-0.35bar/0-350mbar
			04					0-70Kpa/ 0-0.7bar/0-700mbar
			05					0-100Kpa/0-0.1Mpa/ 0-1bar
			06					0-160Kpa/0-0.16Mpa / 0-1.6bar
			07					0-250Kpa/0-0.25Mpa/0-2.5bar
			08					0-400kpa/0-0.4Mpa/0-4.0bar
			09					0-600kpa/0-0.6Mpa/0-6.0bar
			10					0-1Mpa/0-10bar
			11					0-1.6Mpa / 0-16bar
			12					0-2.5Mpa / 0-25bar
			13					0-4Mpa / 0-40bar
			14					0-6Mpa / 0-60bar
			15					0-10Mpa / 0-100bar
			16					0-16Mpa /0-160bar
			17					0-25Mpa /0-250bar
			18					0-40Mpa /0-400bar
			19					0-60Mpa /0-600bar
			20					0-100Mpa /0-1000bar
Output				A				4-20ma, 2 wire
				R				RS485 output, standard Modbus-RTU protocol
				AR				4-20mA+RS485 output
Process Connection				P1				G1/2", thread
				P2				1/2"NPT, thread
				P3				G1/4", thread
				P4				1/4"NPT, thread
				P5				M20X 15, thread
				P6				M14x1.5, thread
				X				Customized
Special Function					N			None
					A1			0.1% High Accuracy
					S			Lighten surge protection

High Quality ,High Accuracy, Smart LCD Display
Ideal solutions for different pressure range measurement



MDP3000M Smart Digital Differential Pressure Transmitter

- Industrial differential, pressure, level measurement
- Measuring liquid: gas, liquid, vapor
- **High performance and accuracy: ± 0.075 to $\pm 0.1\%$ FS**
- Updating time of output current in 200ms
- **Measured range: 100pa to 40Mpa**
- Range down ratio: 100:1
- Stability: 0.25%, 2 years
- Standard 4-20mA, RS485 output; Hart output, option
- Seal: Flush flange, flat flange, 316SS material
- Diagram material: 316LSS, Hastelloy, Monel, Tantalum
- **Automatic zero calibration by press button**
- Explosion proof and whether proof house, option

MDP3000MF Smart Digital Differential Pressure Transmitter

- Pressure: Differential, Level, Absolute, Gauge
- Range: Level: 0-1.2kpa-2.5Mpa
 (0-120mmH₂O to 0-25000mmH₂O)
 DP: 0-6kpa-2.5Mpa
 (0-600mmH₂O to 0-25000mmH₂O)
 AP/GP: 0-6kpa-10Mpa
 (0-600mmH₂O to 0-1000000mmH₂O)
- Output: 4-20mA ,2 wire; HART protocol
- Automatic zero tracking and temperature compensation
- Accuracy: **± 0.075 to $\pm 0.1\%$ FS**; 5 yeas stability of 0.25%
- Flange rate: PN10, PN16, PN25, PN40; ANSI 150lb, 300lb
- Flange size: DN25, DN50, DN65, DN80, DN100, 2", 3", 4"
- Capillary length: 1.5m to 13m, 316SS material
- Parameters setting by local key button
- Updating time of current time in 200ms
- Excellent anti-interference ability and zero stability
- Automatic zero calibration by local key button



MDP3000 Differential Pressure Transmitter													
MDP3000M	-X	X	X	-X	X	X	-X	-X	X	X	-X		Description
Pressure Type	-D												Differential Pressure Transmitter
	-G												Gauge pressure
	-A												Absolute pressure
Range	0												0-1kpa
	1												0-0.2kpa-6kpa (standard:0-1kpa- 6kpa)
	2												0-0.4kpa-40kpa(standard:0-1kpa- 40kpa)
	3												0-1.5kpa... 100KPa
	4												0-2.5kpa....250Kpa
	5												0-10kpa.....1.0Mpa
	6												0-30kpa.....3Mpa
Output	1												4-20mA, 2 Wire
	2												4-20 mA, +Hart Protocol output
Diaphragm Material	-S												Stainless Steel 316L, (default)
	-H												Hastelloy C
	-M												Monel
	-T												Tantalum
Process Flange adapter, Drains& Vents Material	S												Stainless Steel 316L(default)
	C												Carbon steel
Bolts &Nuts Material	C												Carbon steel (default)
	S												Stainless Steel 316
Wetted O- ring Material	-V1												Buna-N
	-V2												PTFE seal ring
	-V3												Metal seal ring (red cooper)
Fill Fluid	-N												Silicon Oil (default)
	-F												Fluorine Oil
Process connection	1												1/2"NPT (default)
	2												1/4"NPT
Electrical Connector	5												M20 X1.5 thread (Default)
	2												1/2-2"NPT
Max. Pressure Limit (static pressure)	1												2Mpa (low static pressure)
	2												3.5Mpa (low static pressure)
	3												7Mpa (low static pressure)
	4												16MPA (Normal Static Pressure)
	5												25MPA (medium Static pressure)
	7												40MPA (high stack pressure)
Option	-N												None
	-B1												Bent mount bracket for plate mounting
	-B2												Bent bracket for plate mounting
	-B3												Flat mount bracket for 2"pipe mounting
	-E												Explosion proof (ExdIICT5)
	-L												Lighten surge protection
	-G3												Integrated three-valve manifolds

MDP3000MF Differential Pressure Transmitter, Flange Direct, Remote Seal												Description
MDP3000MF	-X	X	X	-X	X	X	X	-X	X	X	X	
Pressure Type	-D											Differential Pressure Transmitter
	-L											Differential Pressure Level
Range	1											0-1kpa to 6kpa
	2											0-1kpa...40kpa
	3											0-1.5kpa...100KPa
	4											0-2.5kpa....250Kpa
	5											0-10kpa.....1.0Mpa
	6											0-30kpa.....3Mpa
Output	1											4-20mA, 2 Wire
	2											4-20 mA, +Hart Protocol output
Diaphragm Material	-S											Stainless Steel 316L (default)
	-H											Hastelloy C
	-M											Monel
	-T											Tantalum
Flange Material	C											Carbon Steel
	S0											Stainless Steel 304SS (Default)
	S											Stainless Steel 316SS
Bolts and Nuts	C											Carbon steel
	S0											Stainless Steel 304SS (default)
	S											Stainless Steel 316SS
Fill Fluid	-N											Silicon Oil (default)
	-F											Fluorine Oil
Flange Rating	0											PN6 (PN0.6Mpa)
	1											PN10 (PN1Mpa)
	2											PN16 (PN1.6Mpa)
	3											PN25 (PN2.5Mpa)
	4											PN40 (PN4Mpa)
	5											ANSI 150lb
	6											ANSI 300lb
	X											Others
Flange Size	2											2"
	3											3"
	4											4"
	5											DN50
	6											DN80
	7											DN100

Diaphragm Extension Length	0						Flush diaphragm
	2						2" (50mm)
	4						4" (100mm)
	6						6" (150mm)
High pressure side Process Connection		-D					Direct diaphragm seal mount
		-R					Remote Diaphragm seal mount
Low pressure side Process Connection			R				Remote Diaphragm seal mount
			P2				1/2"NPT
			P4				1/4"NPT (default)
Capillary Length				N			None
				C			1.5-13m please advise exact length
Electrical Connector					5		M20 X1.5 F (Default)
					2		1/2"NPT (F)
Option						N	None
						-B1	Bent mount bracket for 2"pipe mounting
						-B2	Bent bracket for plate mounting
						-B3	Flat mount bracket for 2"pipe mounting
						i	Intrinsically Safe (ExialICT5)
						E	Explosion proof (ExdIICT5)
						G3	Integrated three-valve manifolds
						X	Others

Measuring Range

Code	Pressure Range							
	Kpa		Bar		Psi		Kgf/cm2	
	Low Range	High Range	Low Range	High Range	Low Range	High Range	Low Range	High Range
2	0-1.2kpa	0--10kpa	0-12mbar	0-100mbar	0-0.174psi	0--1.450psi	0-0.122	0-0.1019
3	0-6.0kpa	0-40kpa	0-60mbar	0-400mbar	0-0.8702psi	0-5.80psi	0-0.6118	0-0.4079
4	0-30kpa	0-180kpa	0-0.3bar	0-1.8mbar	0-4.351psi	0-26.11psi	0-0.3059	0-1.835
5	0-0.16Mpa	0-1MPa	0-1.6bar	0-10bar	0-23.20psi	0-145psi	0-1.632	0-10.20
6	0-0.4Mpa	0-2.5Mpa	0-4bar	0-25bar	0-58.02psi	0-362.6psi	0-4.079	0-25.49
7	0-1.6Mpa	0-8.0Mpa	0-16bar	0-80bar	0-231.2psi	0-1160psi	0-16.32	0-81.58
8	0-4.0Mpa	0-25Mpa	0-40bar	0-250bar	0-580.15psi	0-3625.9psi	0-40.78	0-254.9

High Quality , High Accuracy, Smart LCD Display

Ideal solutions for different Level range measurement



MLT610 SUBMERGIBLE LEVEL TRANSMITTER

- Measuring liquid: pure water, corrosion liquids
- **High performance and accuracy: $\pm 0.2\%$, $\pm 0.5\%$**
- **Range: 0-0.5m to 0-170m**
- 4-20mA ,0-10Ma, 0-5VDC, RS485 output, 2 wire,3 wire
- **Diffusion silicon sensor, 0.2% high quality and stability**
- Lead cable: high quality Water-proof shield cable
- Protection: transmitter: IP68, Indicator: IP65
- With anti- lightning, anti-RF interference
- With reverse polarity protection and limit current protection
- Wide power supply: 12-36VDC

MLT6300 SUBMERGIBLE LEVEL TRANSMITTER

- Measuring liquid: pure water, corrosion liquids
- **High performance and accuracy: $\pm 0.2\%$, $\pm 0.5\%$**
- **Range: 0-0.5m to 0-170m**
- 4-20mA ,0-10Ma, 0-5VDC, RS485 output, 2 wire,3 wire
- **Diffusion silicon sensor, 0.2% high quality and stability**
- Lead cable: high quality water-proof shield cable
- **Digital Indicator: 4-1/2LCD digital display, option**
- **Process Connection: thread, flange**
- Protection: transmitter: IP68, Indicator: IP65
- With anti- lightning, anti-RF interference
- With reverse polarity protection and limit current protection
- Wide power supply: 12-36VDC



MLT6300S, MLT6300P SUBMERGIBLE LEVEL TRANSMITTER

- Measuring liquid: pure water, corrosion liquids
- **High performance and accuracy: $\pm 0.2\%$, $\pm 0.5\%$**
- **Range: 0-10m, 0-20mm**
- 4-20mA ,0-10mA, 0-5VDC, RS485 output, 2 wire,3 wire
- **Diffusion silicon sensor, 0.2% high quality and stability**
- Lead cable: stainless steel, PTFE cable, optional
- **Digital Indicator: 4-1/2LCD digital display, option**
- **Process Connection: thread, flange**
- Protection: transmitter: IP68, Indicator: IP65
- With anti- lightning, anti-RF interference
- With reverse polarity protection and limit current protection
- Wide power supply: 12-36VDC

MLT Series Submersible Throw-in Submersible Level Transmitter									
Order Code: E.g.: MLT6300-DT01ANN1-N							Description		
Model No.	X	X	X	X	-X	X	-X	MLT Series Submersible Throw-in Liquid Level Transmitter	
MLT610								MLT610 Submersible Throw-in Liquid Level Transmitter	
MLT6300								MLT6300 Series Intelligent Throw-in Liquid Level Transmitter	
MLT6300S								MLT6300S Series Intelligent Throw-in Liquid Level Transmitter	
MLT6300P								MLT6300P Series Intelligent Throw-in Liquid Level Transmitter	
Local Display	-N							None, without local indicator	
	-D							Yes, with local LCD indicator	
Installation	N							None	
	T							Thread installation, G1" default, if other size, please advise thread size	
	F							Flange installation, please advise flange size, such as DN25, DN32...	
Range								Range	
								Mini. Range	Max. Range
								Accuracy (Standard; Specified)	
	01							0-0.5m	0-1.0m
	02							0-1.0m	0-3.5m
	03							0-3.5m	0-10m
	04							0-10m	0-20m
	05							0-20m	0-70m
	06							0-70m	0-170m
	07							0-100m	0-200m
	X							Customized	
Output	A							4-20ma, 2 wire, default	
	R							RS485 output, standard MODBUS-RTU protocol	
	AR							4-20ma +RS485 output	
	AH							4-20ma +HART output	
Lightning Surge Protection					-N			None	
					-S			with Lighting surge protection	
Lead cable length					NX			Total Cable length, same as ex-work range; E.G. N3	
					LX			Total cable length: Sensor range+ external cable length, e	
Specified Function						-N		None	
						-A1		Accuracy: 0.1% (only for measured range: more than: 30m)	
						-A2		Accuracy: 0.2% (only for measured range: 50Kpa-100Kpa, E.g. the measured object: Water, range: 5m to 10m)	
						-C		customized	

Notes:

- Order code: MLT6300-DT01ANN1-N, MLT6300 level transmitter, with local indicator, throw-in type, water-proof cable, range: 0-1.0mm, lead cable total length: 1m, output: 4-20Ma, thread installation: G1", total cable length: 1m
- Please advise me the density of the fluid in measuring statue (except water), which should be compatible with the material of the contacting part of transmitter
- Standard Accuracy: 0-10m:0.5% standard; 10m above: 0.2%
Specified: 5-10m: 0.2%; 30m above, accuracy: 0.1%

High Quality ,High Accuracy,
Ideal solutions for Vibration measurement in Various Rotary Machine &Equipment



MVT100: Integrated Vibration Sensor Transmitter

MVT100-M: Integrated Mini Vibration Sensor Transmitter

- Vibration velocity, vibration displacement measured
- Frequency response: standard 10-500hz; high frequency:20-1000hz
- 4-20mA output, 2-wire, 3 wire
- Interface with DCS, PLC, 4-20ma monitor &device
- Process Connection: M8X1.0, M10X1.5; 1/2"NPT; 1/4"NPT, Magnetic
- With reversed polarity protection and instantaneous over current and over cross-voltage protection
- Electrical connector: air plug, water-proof plug
- Completely stainless-steel material for various complicated environment
- Used for various rotary machines: Pump, Motor, Fan etc.

MVT100-VT Integrated Temperature Vibration Transmitter

- Vibration velocity, vibration displacement measured
- 4-20mA output (Temperature and Vibration Output)
- Interface with DCS, PLC, 4-20ma monitor &device
- Probe diameter:4mm,6mm, 8mm,10mm etc
- Process Connection: M10*1.5, M8*10, 1/2"NPT; 1/4"NPT
- With reversed polarity protection and instantaneous over current and over cross-voltage protection
- Electrical connector: aviation plug, water-proof detachable cable
- Completely stainless-steel material for various complicated environment
- Used for various rotary machines: Pump, Motor, Fan etc.



MVT100A: Integrated Acceleration Vibration Sensor Transmitter

- Vibration velocity, vibration displacement measured
- 4-20mA output, 2-wire, advanced chip sensor
- Interface with DCS, PLC, 4-20ma monitor &device
- Process Connection: M8X1.0; M10.X1.5; 1/4"NPT
- Electrical connector: dischargeable water-proof shield cable
- Stainless steel material suitable for various complicated environment

MVT100S: Vibration Velocity Sensor

- Sensitivity :20mv/mm/s,25mv/mm/ etc
- Vibration velocity measured
- Interface with DCS, PLC, 4-20ma monitor &device
- Process Connection: M8X1.0; M10.X1.5; 1/4"NPT
- Electrical connector: dischargeable water-proof shield cable
- Stainless steel material suitable for various complicated environment



MVT100-VT Integrated Temperature Vibration Transmitter										
Order Code: E.g.: MVT100-VT-V2P112-NN									Description	
MVT100	X	X	X	X	X	X	X	X	X	MVT100 Integrated Vibration Sensor Transmitter
S										MVT100 vibration velocity sensor
-M										MVT100-VT Integrated Vibration Transmitter
A										MVT100A Integrated Acceleration Vibration Transmitter
-VT										MVT100-VT Integrated Temperature Vibration Transmitter
Frequency Response										10-500hz, standard
	F									Customized; please kindly advise the frequency you need High frequency: 20-1000hz ; eg:balancer low frequency: less than 10hz
Type										RMS Value
	P									Peak value
Range		-V1								Vibration velocity: 0-10mm/s
		-V2								Vibration velocity: 0-20mm/s
		-V3								Vibration velocity: 0-50mm/s
		-D1								Vibration displacement: 0-100um
		-D2								Vibration displacement: 0-200um
		-D3								Vibration displacement: 0-500um
		-X								Customized
Process Connection		P0								M8x1.0
		P1								M10x1.5
		P2								1/2"NPT
		P3								1/4"NPT
		PX								Customized
Electrical connector		1								Aviation plugs with 3m cable default, dust-proof
		2								direct integral undetachable 3m cable, water-proof
Output		2								4-20mA, 2 wire
		1								4-20mA, 3 wire
Explosion-proof		-N								None, standard
		-Ex								Exd IIB T4 Gb
Measurement and Installation Type (Only for -VT type)								N		with thread, cut a same size hole in measured point & screw on sensor
								S		With External insert probe, please kindly confirm the probe diameter and length as follows:
External Insert Stem Probe Diameter (Only for -VT type)								-D4		Φ4mm
								-D6		Φ6mm
								-D8		Φ8mm
								-D10		Φ10mm
								-D12		Φ12mm
								-DX		Customized
External Stem Probe' Insert Length								LX		External probe Diameter, e.g L100: 100mm insert length

High Quality ,High Accuracy, Ideal solutions for AIR Temperature Humidity measurement

MTH300 Wall Type Temperature Humidity Transmitter

- High Accuracy, High Stability; **With LCD indicator or not**
- High sealing technology and excellent coating protection
- Range: **T: -20 to 80°C, 0-50°C, -40 to 60°C; H: 0-100%**
- **Output: 4-20mA,0-5VDC,0-10VDC, RS485 output**
- Accuracy: T:±0.3°C, H:±3%;
- Resolution: T:0.1°C, H:0.1%RH
- Long-term stability: T: < 0.04/year, H: < 0.5%RH/year
- Response time: T_{6t} (63%): max=3s; H((90%): 5s
- Temperature Range can be set by DIN switch
- Wide power supply: 15-36VDC
- Used in building automation, hotel, library, room, clean room
dust-free workshop or plant, medical, warehouse, super-market



MTH300S Wall Type Temperature Humidity Transmitter

- High Accuracy, High Stability; **With LCD indicator, optional**
- High sealing technology and excellent three-proof coating protection
- Range: **T: -20 to 80°C, 0-50°C, -40 to 60°C; H: 0-100%**
- **Temperature range can be set by inner DIN switch**
- **With offset function by built-in keys**
- **Output: 4-20mA,0-5VDC,0-10VDC, RS485 output**
- Probe can be with dust-proof, water-proof type, optional
- **Accuracy: T:±0.3°C, H:±3%; Resolution: T:0.01, H:0.1%RH**
- Long-term stability: T: < 0.04/year, H: < 0.5%RH/year
- Wide power supply: 12-36VDC; 15-36VDC (4-20mA only)
- Used in High Humidity Environment: Agriculture: Greenhouse, mushroom, poultry house, organic factory; Warehouse, cold room; Medicinal, HAVC; Building Automation



MTH500S Duct Type Temperature Humidity Transmitter

- High Accuracy, High Stability; **With LCD indicator, optional**
- High sealing technology and excellent three-proof coating protection
- **Measure range: T: -20 to 80°C, 0-50°C, -40 to 60°C; H: 0-100%**
- **Temperature range can be set by inner DIN switch**
- **With offset function by built-in keys**
- **Output: 4-20mA,0-5VDC, 0-10VDC, RS485 output**
- Probe can be with dust-proof, water-proof type, optional
- **Accuracy: T:±0.3°C, H:±3%**
- Wide power supply: 12-36VDC; 15-36VDC (4-20mA only)
- Used in High Humidity Environment: HAVC, Central air conditioner; Greenhouse, integrated equipment, dryer industry.



High Quality , High Accuracy, Ideal solutions for AIR Temperature Humidity measurement

MTH100 Wall & Insert Type Temperature Humidity Transmitter



- Wall Type, Insert type; High Accuracy, High Stability, Excellent sealing.
- Measure range: T: **-20 to 80°C** , H: **0-100%**
- **Output: 0-5VDC,0-10VDC, RS485 output**
- Accuracy: T: $\pm 0.3^{\circ}\text{C}$, H: $\pm 3\%$; Resolution: T:0.1, H:0.1%RH
- Long-term stability: T: $< 0.04/\text{year}$, H: $< 0.5\%\text{RH}/\text{year}$
- Response time T: t_6t (63%): min=2s, max=5s; H(90%): 2s
- Size:115mm x16 (LXD)
- Wide power supply: 9-30VDC
- Used in air T & H measurement as the integrated part in equipment, machine

MTH800 Wall Type Remote Temperature Humidity Transmitter

- High Accuracy, High Stability; **With LCD indicator, optional**
- High sealing technology and excellent three-proof coating protection
- **Measure range: T: -20 to 80°C, 0-50°C, -40 to 60°C; H: 0-100%**
- **Temperature range can be set and configurable by keys**
- **With offset function by built-in keys**
- **Output: 4-20mA,0-5VDC, 0-10VDC, RS485 output**
- Probe can be with dust-proof, water-proof type, optional
- **Accuracy: T: $\pm 0.3^{\circ}\text{C}$, H: $\pm 3\%$**
- Wide power supply: 12-36VDC; 15-36VDC (4-20mA only)
- Used in High Humidity Environment: HAVC, Central air conditioner; Greenhouse, integrated equipment, dryer industry.



MTH500HS Corrosion-proof Temperature T&H Transmitter

- High Accuracy, High Stability;
- with Optional Display,316LSS or PVDF corrosion proof probe
- **Probe: Stainless Steel material, Head: aluminum alloy material**
- **Measure range: T: 0 to 200°C (programmable), RH: 0-100%**
- **Output: 4-20mA, RS485**
- Accuracy: T: $\pm 0.3^{\circ}\text{C}$, H: $\pm 3\%$; Resolution: T:0.1, H:0.1%RH
- Long-term stability: T: $< 0.04/\text{year}$, H: $< 0.5\%\text{RH}/\text{year}$
- Response time: T_6t (63%): max=3s; H((90%): 5s
- Temperature range can be set by inner DIN switch or by key directly
- With offset function by built-in keys
- Stem length, thread size can be customized as requirement
- Wide power supply: 12-36VDC

High Quality , High Accuracy

Ideal solutions for Different Temperature measurement



MTS100 Thermocouple, RTD temperature sensor with lead cable

- Measurement range:
K (-50 ~ 1300°C), S (-50 ~ 1700°C), T (-200 ~ 350°C),
E (0 ~ 800°C), J (0 ~ 1000°C), B (300 ~ 1800°C),
N (0 ~ 1300°C), pt100 (-200 to 500°C); CU50, C100 (-50 to 150°C)
- Accuracy: Class I, Class A
- Element diameter: Single: 2-8mm; Double: 3-8mm or customized
- Protection tube material: 304SS, 310SS, 316SSetc
- Element: B, S, N, K, E, T, J, R; PT100, CU50, CU100
- Cable material: PVC, fiber-glass, fiber-glass with braid, stainless steel over braid, silica gel and so on
- Installation: thread or flange
- thread: M12x1, M12x 1.5, M16x1, M22x1, M27x1, M33x1

MTS200 Thermocouple, RTD temperature sensor with head

- Measurement range:
K (-50 ~ 1300°C), S (-50 ~ 1700°C), T (-200 ~ 350°C),
E (0 ~ 800°C), J (0 ~ 1000°C), B (300 ~ 1800°C),
N (0 ~ 1300°C), pt100 (-200 to 500°C); CU50, C100 (-50 to 150°C)
- Class: Class II, Class A
- Element diameter: Single type: 2-8mm, 8-16mm
Double type: 3-8mm or customized
- Protection tube material: 304SS, 310SS, 316SSetc
- Mounting method: thread, flange or not
- Thread size: M12x1, M12x 1.5, M16x1, M22x1, M27x1, M33x1
- Head material: Aluminum Alloy
- Head type: water-proof type or others



MTR400 Thermocouple, RTD Temperature Transmitter

- Measurement range:
K (-50 ~ 1300°C), S (-50 ~ 1700°C), T (-200 ~ 350°C),
E (0 ~ 800°C), J (0 ~ 1000°C), B (300 ~ 1800°C), N (0 ~ 1300°C)
Pt100 (-200 to 500°C); CU50, C100 (-50 to 150°C)
- Accuracy: 0.1 C
- Element diameter: Single: 6,8,12,16mm, customized
- Protection tube material: 304SS, 310SS, 316SS
- Installation: thread or flange
- thread: M12x1, M12x 1.5, M16x1, M22x1, M27x1, M33x1
- Output: 4-20mA; 4-20mA+ Hart
- Power Supply: 24VDC



High Quality, High Accuracy, Ideal solutions for Temperature Signal Retransmission



MTR420, MTR420S Integrated PT100 Temperature Transmitter

- Accuracy: 0.5%FS
- Measure range: -50 to 200°C, -200 to 200°C
- Output: 4-20ma, 2 wire; RS485, 0-5VDC, 0-10V Output
- Reverse polarity & current limiting protection
- Tube Diameter: $\Phi 6\text{mm}$, $\Phi 8\text{mm}$, $\Phi 12\text{mm}$, $\Phi 16\text{mm}$
- Process Connector: 1/2"NPT, 1/4"NPT M27X2, M20X1.5
- Power supply: 24VDC

MTR430, MTR430S Digital Display Temperature Transmitter

- Accuracy: $\pm 0.5\%FS$, LED or LCD Display
- Measured Element: Thermocouple, PT100
- Built-in cold junction compensation, un-linear calibration circuit
- Measure range: Pt100: 0 to 100°C, -50 to 200°C, -200 to 500degC

Thermocouple: K (-50 ~ 1300°C), S (-50 ~ 1700°C),
T (-200 ~ 350°C), E (0 ~ 800°C), J (0 ~ 1000°C),
B (300 ~ 1800°C), N (0 ~ 1300°C),

- Output: 4-20ma, 2 wire; RS485, HART Output
- Reverse polarity & current limiting protection
- Tube Diameter: $\Phi 6\text{mm}$, $\Phi 8\text{mm}$, $\Phi 12\text{mm}$, $\Phi 16\text{mm}$
- Process Connector: 1/2"NPT, 1/4"NPT M27X2, M20X1.5
- Power supply: 10V to 30VDC, 24VDC as standard



MTR100 Infrared Temperature Transmitter

- Accuracy: $\pm 1\%$, $\pm 1.5^\circ\text{C}$
- Spectral range: 8~14um
- Measure temperature range: 0-300degC, 500degC
- Output: 4-20ma, 2 wire ; 0-5VDC, 10mv/°C
- Response time: 300ms (95%)
- Emissivity: 0.95 fixed (0.1-1.10)
- Power supply: 24VDC/20MA

High Quality, High Accuracy, Ideal solutions for Temperature Signal Isolation & Retransmission



MTR320, MTR330 Head Mount Universal Temperature Transmitter MTR320R Head Mount Resistor Transmitter (0-5-10-15-20Kohm)

- Universal temperature input, programmable flexibly
- Input signal: 10 types of thermocouples, 2 types of RTD
- Built-in cold junction compensation for thermocouple input
- Input type can be programmable flexibly by PC software
- Electrical isolation: 1500VAC (Input/output) (MTR330)
- Serial port with serial-USB cable configurable with PC software
- Output: 4-20mA, 2 wire
- Power supply: 24VDC

MTR360 Head Type Isolated Universal Temperature Transmitter

- Electrical isolation: 1500VAC (Input/output)
- Universal temperature input, programmable flexibly
- Input signal: 8 types of thermocouples, 2 types of RTD
- Built-in cold junction compensation for thermocouple input
- Input type can be programmable flexibly by PC software
- Hart communicator configurable with software
- Output: 4-20mA, 2 wire+ HART protocol
- Power supply: 24VDC



MSC80T DIN Type RTD/Thermocouple Temperature Transmitter

- 1 input 1 output, 1 input 2 outputs, 2 inputs 2 outputs
- Input: K, S, B, E, T, J, R, N, Wre325, Wre526; PT100 CU50, CU100, Resistor
- Transmission accuracy (20°C): 0.2%FS+1 digit; Resolution: 0.1°C
- Temperature shift: 0.0075%FS/°C; Cold junction compensation: ± 1°C
- Power-Input-Output isolation: 2KVrms, 1min, 50HZ
- Input /Output signal: 4-20mA, 0-20mA, 0-5VDC, 1-5VDC, 0-10VDC
- Standard 35mm Rail Installation with pluggable terminals
- Size: 108x121.2x13mm
- Independent DC power supply: 20-32VDC;



MSC90T DIN Rail Programmable RTD/Thermocouple Temperature Transmitter

- 1 input 1 output, 1 input 2 outputs, 2 inputs 2 outputs
- Input: K, S, B, E, T, J, R, N, Wre325, Wre526; PT100 CU50, CU100, Resistor, mV
- Transmission accuracy (20°C): 0.15%FS
- Temperature shift: 0.0075%FS/°C
- Power-Input-Output isolation: 1.5KVrms, 1min, 50HZ
- Input /Output signal: 4-20mA, 0-20mA, 0-5VDC, 1-5VDC, 0-10VDC
- Relay output; **RS485 MODBUS-RTU output**

- Input and range etc. can be programmable by our programmer
- Standard 35mm Rail Installation with pluggable terminals
- Size: 109x116.5x18.5mm
- Independent DC power supply: 20-32VDC, AC100-265V



High Quality, High Accuracy, Ideal solutions for Analog, MV, Frequency Signal Isolation and Retransmission



MSC80A Analog Current /Voltage Signal Isolator

- 1 input 1 output, 1 input 2 outputs, 2 inputs 2 outputs
- 24VDC power distributor to transmitter with 4-20mA, optional
- Transmission accuracy (20°C): 0.15%FS
- Temperature shift: 0.0075%FS/°C
- Power-Input-Output isolation: 2KVrms, 1min, 50HZ
- Input /Output signal: 4-20ma, 0-20ma, 0-5VDC, 1-5VDC, 0-10VDC
- Standard 35mm Rail Installation with pluggable terminals
- Size: 108x121.2x13mm
- Independent power supply :20-32VDC;

MSC90AS Programmable Digital LED Display Analog +MV Signal Isolator

- 1 input 1 output, 1 input 2 outputs, 2 inputs 2 outputs
- Isolated 24VDC power distributor to transmitter with 4-20mA, optional
- Transmission accuracy (20°C): 0.2%FS
- Temperature shift: 0.0075%FS/°C
- Power-Input-Output isolation: 1.5KVrms, 1min, 50HZ
- **Input Signal: 4-20ma, 0-20ma, 0-5VDC, 1-5VDC, 0-10VDC, $\pm 5v$, $\pm 10v$**
0-20mv, 0-40mv, 0-75mv, 0-100mv; $\pm 20mv$, $\pm 40mv$, $\pm 75mv$
- Output signal: 4-20ma, 0-20ma, 0-5VDC, 1-5VDC, 0-10VDC
Relay output; **RS485 MODBUS-RTU output**
- **Input and range etc can be programmable directly by key button**
- Standard 35mm Rail Installation with pluggable terminals
- Size: 175x111.4x121.2mm
- Independent Powerful power supply: **AC/DC 20V-265V**



MSC90F: Frequency Signal Isolator, range: 0-10000HZ

- Input signal: Sine wave, triangle wave, square wave, amplitude more than 200mV
- Output signal: 4-20ma, 0-20ma, 0-5VDC, 1-5VDC, 0-10VDC,
Relay output, RS485
- 12VDC, 24VDC power distributor to transmitter optional
- 1 input 1 output, 1 input 2 outputs;

MSC90S: Relay contact switch, proximity switch signal isolator

- Input signal: Sine wave, triangle wave, square wave, amplitude more than 200mV
- Output signal: Relay (AC220V/10A, DC30V/2A),
Transistor (Collector output): High Level VCC <30V, Low Level: <2.5V
Transistor (Emitter output): High Level VCC : -2.5V, Low Level: $\leq 0.5V$
- 1 input 1 output, 1 input 2 outputs; 2 inputs 2 outputs
- Transmission accuracy (20°C): 0.15%FS; Temperature shift: 0.0075%FS/°C
- Power-Input-Output isolation: 1.5KVrms, 1min, 50HZ
- Standard 35mm Rail Installation with pluggable terminals;
- Independent power supply :20-32VDC, AC100-265V

High Quality, High Accuracy, Isolated, Multi-Channel

Ideal solutions Universal Input for Signal Convert to RS485 Communication



MSC840 4 Channels Signal Converter, Input module, Isolated

MSC880 8 Channels Signal Converter, Input module, Isolated

- High accuracy, high stability, high performance
- Small size, supper-thin, 98.5x99x17mm, easy installation
- Universal input: analog input+ thermocouple input, programmable

Analog input: 4-20ma, 0-10ma, 0-5VDC, 1-5VDC

Thermocouple: K (-50 ~ 1300°C), S (-50 ~ 1700°C), T (-200 ~ 350°C), E (0 ~ 800°C), J (0 ~ 1000°C), B (300 ~ 1800°C), N (0 ~ 1300°C), WRe325 (0~2300°C, WRe526 (0~2300°C)

mV: 0-60mV, 0-100mv, 0-500mV

- 4,8 channels input, up to 400VAC opto- coupler relay isolation
- Standard RS485 MODBUS-RTU protocol communication
- Standard 35mm Rail Installation with pluggable terminals
- Independent wide power supply :9-36VDC,24VDC

MSC890 8 Channels Signal Converter, Input module, Isolated

- High accuracy, high stability, high performance
- Small size, supper-thin, 98.5x99x17mm, easy installation
- Universal input: analog input thermocouple+ PT100, programmable

Analog input: 4-20ma, 0-10ma, 0-5VDC, 1-5VDC

Thermocouple: K (-50 ~ 1300°C), S (-50 ~ 1700°C), T (-200 ~ 350°C), E (0 ~ 800°C), J (0 ~ 1000°C), B (300 ~ 1800°C), N (0 ~ 1300°C), WRe325 (0~2300°C, WRe526 (0~2300°C)

RTD input: pt100 (-200 to 500°C); CU50, C100 (-50 to 150°C)

mV: 0-60mV, 0-100mv, 0-500mV

- 8 channels input, up to 400VAC opto- coupler relay isolation
- Standard RS485 MODBUS-RTU protocol communication
- Standard 35mm Rail Installation with pluggable terminals
- Independent wide power supply :9-36VDC

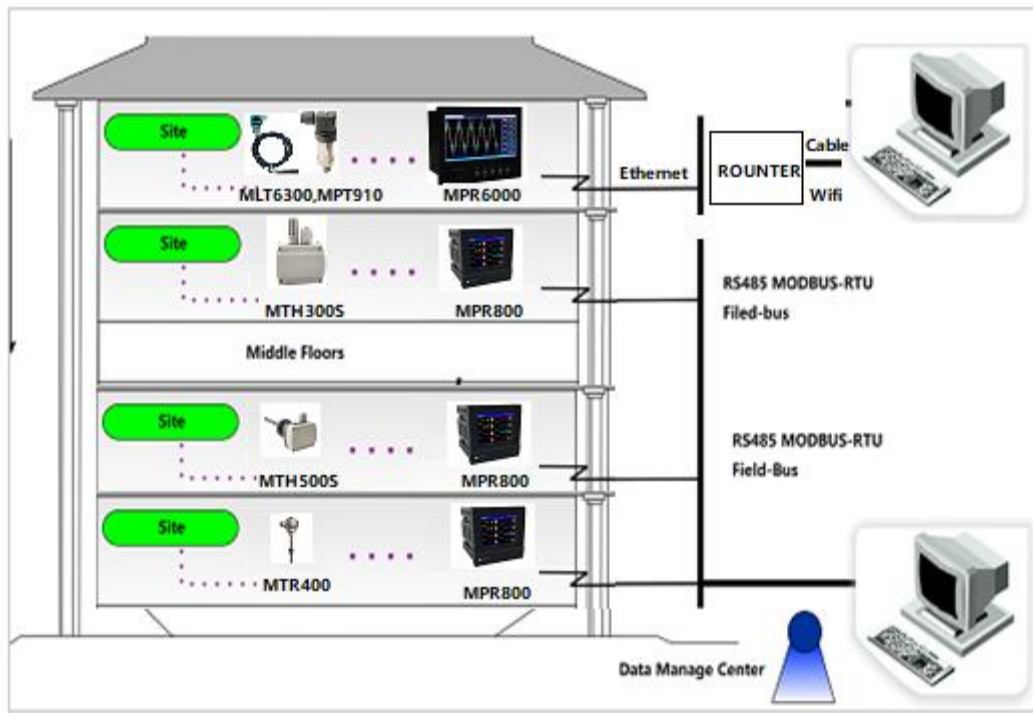


MSC820U: RS485/RS232 to RS232 communication converter

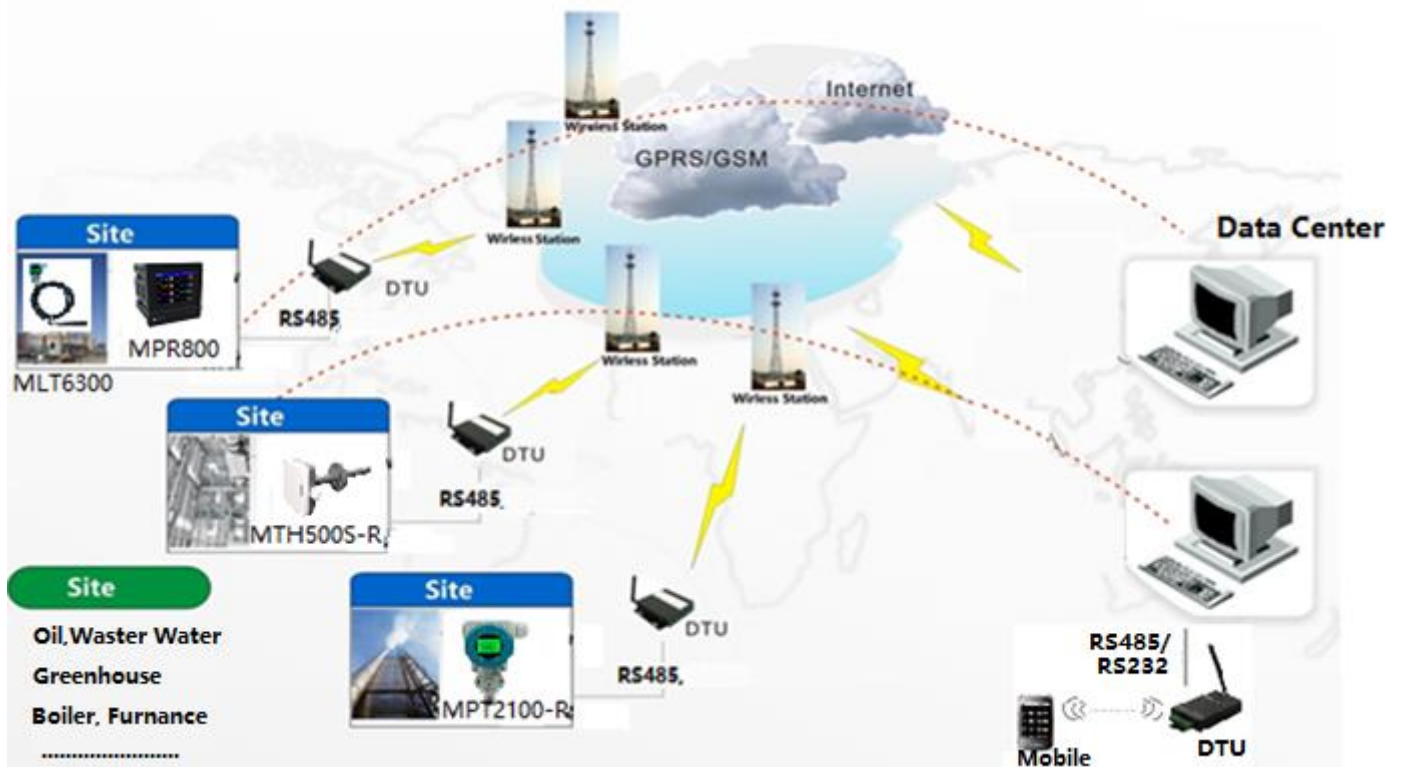
MSC820R: RS485/RS232 to USB communication converter

MSC820E: RS485 to Ethernet communication converter

- Sample rate: 0.5second
- Power supply: 9-32VDC
- Communication baud rate: up to 192000bps
- High safety: safe guider built-in to ensure system safety
- High performance: DC TO DC: 1000V isolation; RS485 with module:350V isolation; 450V isolation among channels
- RS485 communication, standard MODBUS-RTU protocol, Ethernet communication, standard MODBUS-TCP. /IP protocol configuration with DCS, SCADA, PLC, HMI etc. flexibly.



Wireless Application



TAIE

www.fa-taie.com

www.fa-taie.com.tw

FY

series

Digital PID
Temperature Controllers / Process Controllers

New Release
New LED Module

8888
8888

8888
8888

8.8.8.8
8.8.8.8

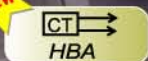
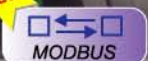
FY101

FY100



NEW

NEW



FY400

FY700

FY800

FY900

FY600

BEST CHOICE FOR PROCESS AND TEMPERATURE CONTROL

Application: Control temperature, humidity, pressure, flow and PH.

FY series controllers are microprocessor based controllers. Which have been designed with high accuracy input, various output selection, useful options and good reliability at a competitive price.

FY series use "PID+FUZZY" algorithm to implement excellent control. The output status is displayed on the built in "Bar-Graph" display.

FY series not only provide the basic control output selections but also plus advanced options such as "Motor Valve Control", "SCR/TRIAC Trigger", and "Programmable RAMP/SOAK".

FY series support MODBUS protocol. Communication with HMI is more convenient. New additional HBA function with competitive price, user can upgrade system safety easy.

Available in 7 sizes, the models and sizes are as below:

FY400:48X48mm (DIN 1/16)

FY600/800:48X96mm (DIN 1/8)

FY700:72X72mm (DIN 1/16)

FY900:96X96mm (DIN 1/4)

FY100:175X110mm

FY101:90X90mm



FY101

FY100

FY600

FY400

FY700

FY800

FY900

CE Approval & free power

All models get CE approval.
Operate on any voltage from AC 85~265V at 50/60Hz.
DC 24V is also available(optional function).

IP65 Proof



IP65 dust & water proof is available for all models(optional function).

Heater Break Alarm (HBA)



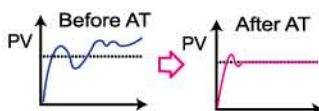
Heater current flowing through CT can be displayed on controller. If heater current is less than HBA set value, AL1 will be activated (optional function).

MODBUS Communication



FY series support both MODBUS RTU and MODBUS ASCII protocol. Communication between controller and HMI or other equipment is more convenient(optional function).

Autotuning (AT)



AT Function can calculate the optimize PID value for your control system, without trying and error manually.

Auto/Manual mode



Conveniently switched between auto/manual output mode by clicking "A/M" key(except "FY400").

Various Indication Lamps



Real time monitor the status of output(OUT1/OUT2), AT, alarm (AL1/AL2/AL3), manual output (MAN) and program(PRO).

Bar-Graph



Output percent displayed on the bar-graph in 10 LEDs resolution(except "FY400").

High Accuracy

Input with 14bit A/D resolution, 0.2% accuracy of FS.
Built in "AutoZero-AutoSpan" function keep good accuracy.

Data Lock Function

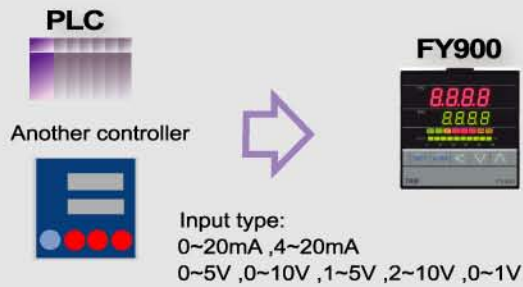
All parameters are separated in 3 operation levels. Each parameter can be hidden or locked to prevent unauthorized changes.

Various I/O Types

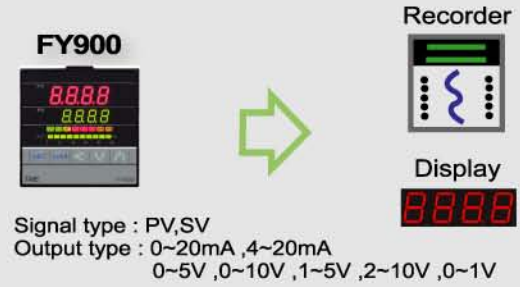


Peripheral Options

Remote SV

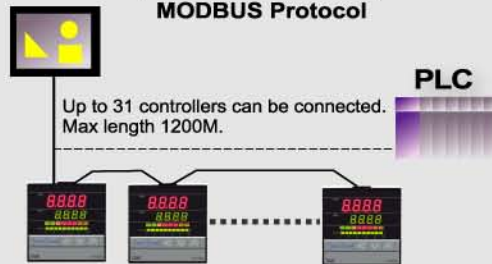


Transmission



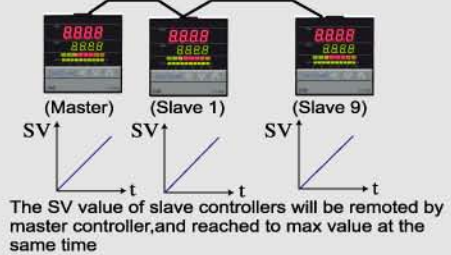
Communication

(RS485 Communication)
MODBUS Protocol



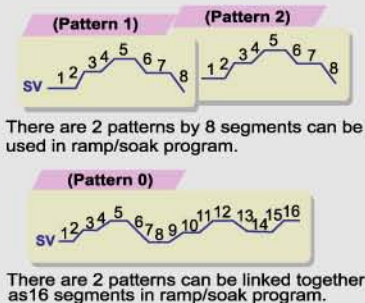
Communication

(TTL Communication)
Up to 10 controllers can be connected.
Max length 1M.

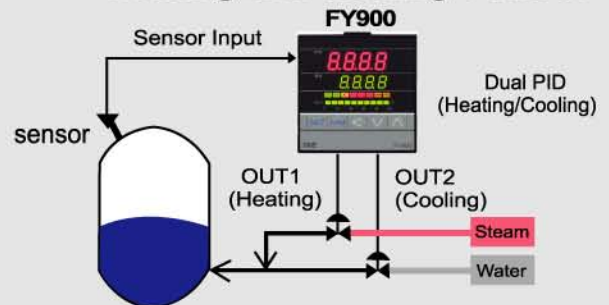


Special Application

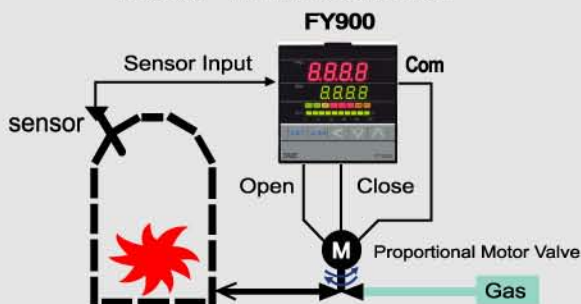
Ramp/Soak Program



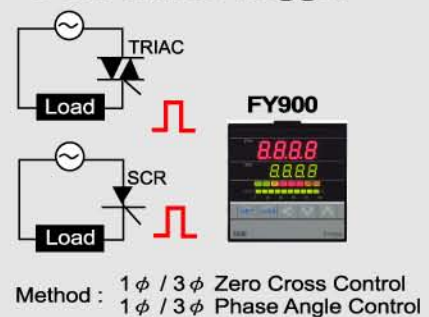
Heating and Cooling Control



Motor Valve Control

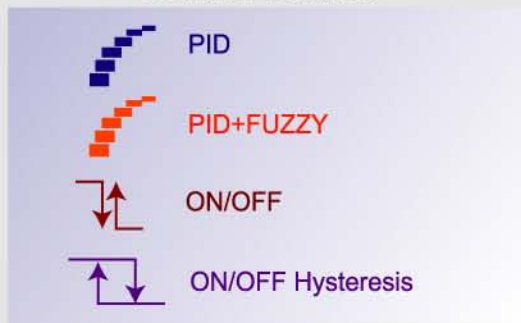


SCR/TRIAC Trigger

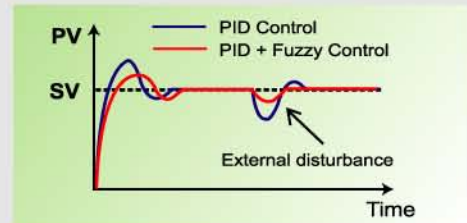


Excellent Control

Control Method

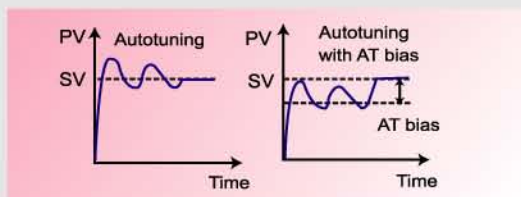


Fuzzy Logic



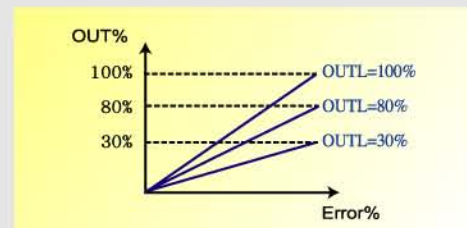
Built in fuzzy logic suppress the overshoot due to SV changes or external disturbance.

Autotuning (AT)



When autotuning acts, it will make PV hunting 1~2 cycle to calculate optimize PID value. To protect user's device, FY series controller can perform PV hunting below SV by setting AT bias value(ATVL).

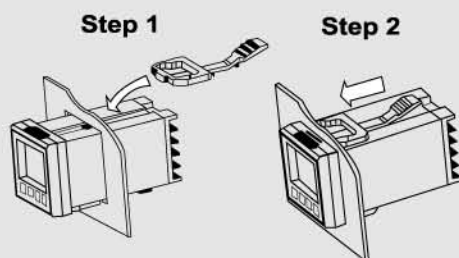
Limit Setting



Built in output limit function. Use this function to get different gradient output and set limit for output.

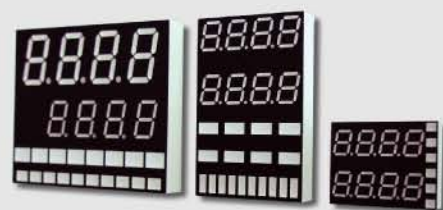
Convenient Installation

Easy Mounting



Just push the mounting bracket to panel. Without using any screws.

New Display Module



New display module design more clear display and easy to read

Alarm Function

Alarm Types

Maximum with 3 sets of alarm.

Alarm types list as below:

Deviation

Deviation High Alarm
Deviation Low Alarm
Deviation High/Low Alarm
Band Alarm

System

System Failed Alarm
System Normal Alarm

PV

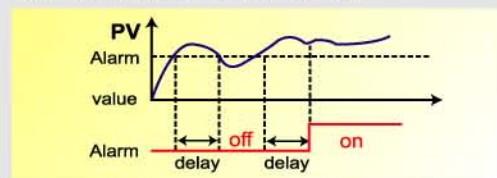
PV High Alarm
PV Low Alarm

Program

Program Run Alarm
Program End Alarm
Segment End Alarm

Delay Time

Use this function can avoid alarm acts frequently or acts due to external disturbance.



Hold Function

Use this function can avoid alarm acts at start-up. The alarm action is suppressed at start-up until PV enters the non-alarm range.

Parts Description



SYMBOL	NAME	FUNCTION	SYMBOL	NAME	FUNCTION
PV ①	Measured value (PV)display	Displays PV or various parameter symbols(Red)	OUT1 ⑧	OUT1 lamp	Lights when OUT 1 is on(Green)
SV ②	Setting value (SV)display	Displays SV or various parameter values(Green)	OUT2 ⑨	OUT2 lamp	Lights when OUT 2 is on(Green)
SET ③	Set Key	Used for parameter calling up and set value registration	AT ⑩	Autotuning lamp	Lights when Autotuning is activated(Orange)
A/M ④	Auto/Manual key	Switches between Auto(PID) output mode and Manual output	AL1 ⑪	Alarm 1 lamp	Lights when Alarm 1 is activated(Red)
< ⑤	Shift Key	Shift digits when settings are changed	AL2 ⑫	Alarm 2 lamp	Lights when Alarm 2 is activated(Red)
∨ ⑥	Down Key	Decrease numbers (*Only for programmable controller)	AL3 ⑬	Alarm 3 lamp	Lights when Alarm 3 is activated(Red)
∧ ⑦	Up Key (*Program Run)	Increase numbers (*Only for programmable controller)	MAN ⑭	Manual output lamp	Lights when manual output is activated (Orange)
			PRO ⑮	Program Running lamp	Flashes when program running (Only for programmable controller)
			OUT% ⑯	Output % Bar-Graph display	Output % is displayed on 10-dot LEDs

External Dimension

Unit : mm

FY400			
FY600			
FY700			
FY800			
FY900			
FY100 FY101			

Terminal Arrangement

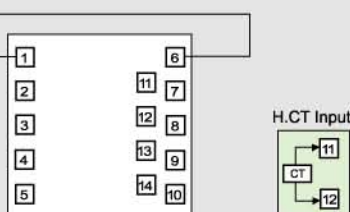
FY Series

Digital PID Controller

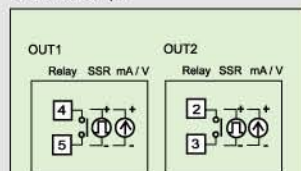
FY400

A.Power Supply

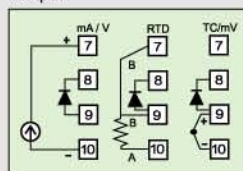
AC 85-265V
DC 15-50V(Optional)



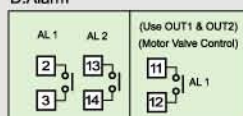
B.Control Output



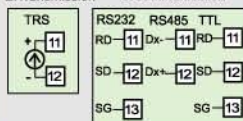
C.Input



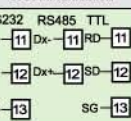
D.Alarm



E.Transmission



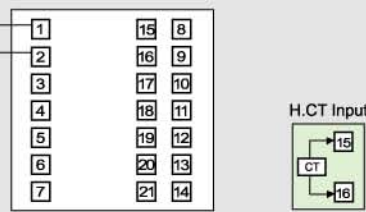
G.Communication



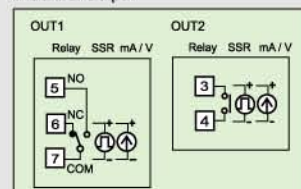
FY700

A.Power Supply

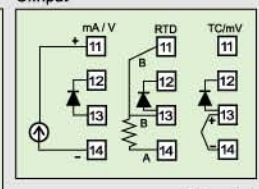
AC 85-265V
DC 15-50V(Optional)



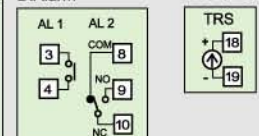
B.Control Output



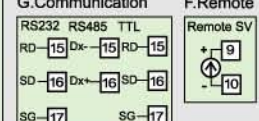
C.Input



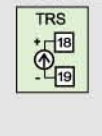
D.Alarm



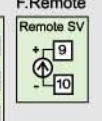
G.Communication



E.Transmission



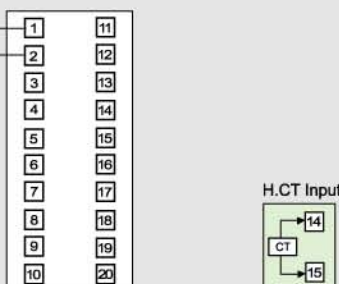
F.Remote



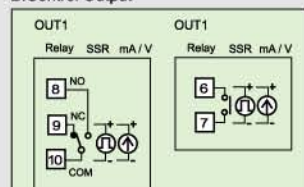
FY600/800

A.Power Supply

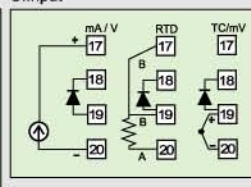
AC 85-265V
DC 15-50V(Optional)



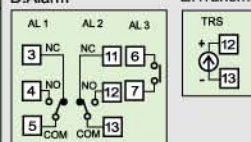
B.Control Output



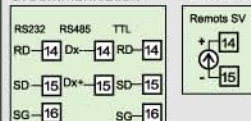
C.Input



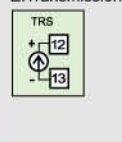
D.Alarm



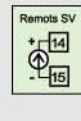
G.Communication



E.Transmission



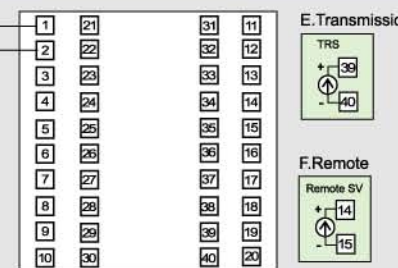
F.Remote



FY900

A.Power Supply

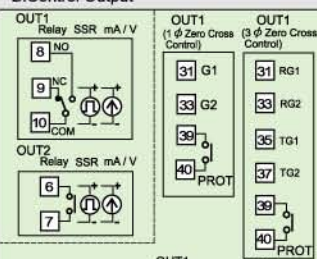
AC 85-265V
DC 15-50V(Optional)



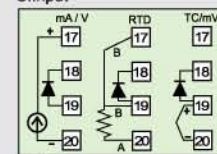
H.C.T Input



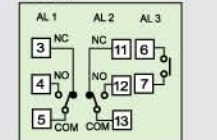
B.Control Output



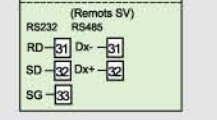
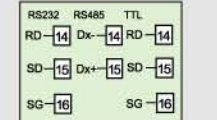
C.Input



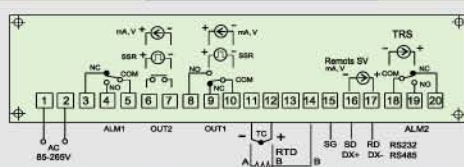
D.Alarm



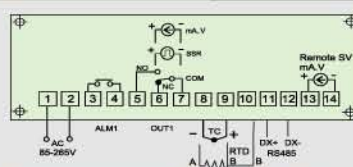
G.Communication



FY100



FY101



When AL3 Function enable, RS485 Function move to Alarm board.

Standard Spec.

Model	FY400	FY600	FY700	FY800	FY900	FY100	FY101
Dimension	48X48mm	96X48mm	72X72mm	48X96mm	96X96mm	175X110mm	90X90mm
Supply voltage	AC 85~265V , DC24V (Optional)					AC 85~265V	
Frequency	50/60 HZ						
Power Consumption	approx 3VA	approx 4VA	approx 3VA	approx 4VA	approx 4VA	approx 4VA	approx 3VA
Memory	Non-volatile memory E ² PROM						
Input	Accuracy : 0.2%FS,Sample time : 250ms						
TC	K , J , R , S , B , E , N , T , W5Re/W26Re , PL2 , U , L						
RTD	DPT100 , JPT100 , JPT50						
mA dc	4~20mA , 0~20mA						
Voltage dc	0~1V , 0~5V , 0~10V , 1~5V , 2~10V -10~10mV , 0~10mV , 0~20mV , 0~50mV , 10~50mV						
DP Position	0000 , 000.0 , 00.00 , 0.000 (available for mA or Voltage dc input)						
Output 1	Main control output						
Relay	SPST type	SPDT type	SPDT type	SPDT type	SPDT type	SPDT type	SPDT type
	3A , 220V , electrical life : 100,000 times or more(under the rated load).						
Voltage Pulse	For SSR drive. ON:24V , OFF:0V , maximum load current:20mA.						
mA dc	4~20mA , 0~20mA .Maximum load resistance:560 Ω						
Voltage dc	0~5V , 0~10V , 1~5V ,2~10V. Maximum load current:20mA.						
Alarm 1	SPST type	SPDT type	SPST type	SPDT type	SPDT type	SPDT type	SPST type
	3A , 220V , electrical life : 100,000 times or more(under the rated load).						
Control algorithms	PID , P , PI , PD , ON/OFF(P=0) , FUZZY						
PID range	P:0~200% , I:0~3600 Secs , D:0~900 Secs						
Isolation	Output terminal (control output , alarm ,transmission) and Input terminal are isolated separately.						
Isolated resistance	10M Ω or more between input terminals and case(ground) at DC 500V 10M Ω or more between output terminals and case(ground) at DC 500V						
Dielectric strength	1000V AC for 1 minute between input terminals and case(ground) 1500V AC for 1 minute between output terminals and case(ground)						
Operating temperature	0~50° C						
Humidity range	20~90% RH						
Weight (approx)	approx 150g	approx 225g	approx 225g	approx 225g	approx 300g	approx 130g	approx 80g
Display Height	PV:7mm SV:7mm	PV:7mm SV:7mm	PV:14mm SV:10mm	PV:7mm SV:7mm	PV:14mm SV:10mm	External Interface Unit.	External Interface Unit.

Optional Spec.

Model	FY400	FY600	FY700	FY800	FY900	FY100	FY101
RAMP/SOAK Program	2 Patterns with 8 segments each . The 2 patterns can be linked together as 16 segments use						
Output 2	For heating and cooling control use						
Relay	SPST type	SPST type	SPST type	SPST type	SPST type	SPST type	SPST type
Voltage Pulse	For SSR drive. ON:24V , OFF:0V , maximum load current:20mA.						
mA dc	4~20mA , 0~20mA .Maximum load resistance:560 Ω						
Voltage dc	0~5V , 0~10V , 1~5V , 2~10V. Maximum load current:20mA.						
Alarm 2	SPST type	SPDT type	SPDT type	SPDT type	SPDT type	SPDT type	SPST type
Alarm 3	None	SPST type	SPST type	SPST type	SPST type	SPST type	SPST type
Heater Break Alarm (HBA)	Display Range of Heater Current:0.0~99.9A , Accuracy : 1%FS Included CT :SC_80_T (5.8mm dia , 0.0~80.0A) or SC_100_T(12mm dia , 0.0~99.9A) Alarm Relay : AL1						
Transmission	Available for PV or SV transmission						
mA dc	4~20mA , 0~20mA. Maximum load resistance : 560 Ω						
Voltage dc	0~5V,0~10V,1~5V,2~10V. Maximum load current : 20mA.						
Remote SV Input	4~20mA , 0~20mA , 0~5V , 0~10V , 1~5V , 2~10V are available						
Communication	Protocol : MODBUS RTU,MODBUS ASCII, TAIE Interface : RS232 , RS485 , TTL Baudrate : 38400 , 19200 , 9600 , 4800 , 2400 bps. 8 bit , Start bit : 1 bit , Parity : Odd or Even , Stop bit : 1 or 2 bit						
WaterProof/DustProof	IP65					None	None

Model & Suffix codes

Model	Output1	Output2	Alarm	TRS	Remote SV	Comm- unication	Input Type	Power	Water/Dust Proof
FY400	1	0	1	0	0	0	02	A	N
FY400	48x48mm	0 None	0 None	0 None	0 None	0 None	See Input Codes	A AC 85~265V	N None
FY600	96x48mm	1 Relay	1 Relay	1 1 Set	1 4~20mA	1 4~20mA		D DC 24V	W IP65
FY700	72x72mm	2 Voltage Pulse (SSR Drive)	2 Voltage Pulse (SSR Drive)	2 2 Sets	2 0~20mA	2 0~20mA			
FY800	48x96mm	3 4~20mA	3 4~20mA	3 3 Sets	A 0~5V	A 0~5V	3 TTL		
FY900	96x96mm	4 0~20mA	4 0~20mA		B 0~10V	B 0~10V	A RS232_MODBUS		
Board Type							B RS485_MODBUS		
FY100	175x110mm	A 0~5V	A 0~5V	A HBA*	C 1~5V	C 1~5V			
FY101	90x90mm	B 0~10V	B 0~10V	B HBA+AL2	D 2~10V	D 2~10V			
(STANDARD)		C 1~5V	C 1~5V	C HBA+AL2+AL3					
PFY400	48x48mm	D 2~10V	D 2~10V						
PFY600	96x48mm	5 1 φ SCR zero cross control	5 1 φ SCR zero cross control						
PFY700	72x72mm	6 3 φ SCR zero cross control	6 3 φ SCR zero cross control						
PFY800	48x96mm	7 Motor valve control	7 Motor valve control						
PFY900	96x96mm	8 1 φ SCR phase angle control	8 1 φ SCR phase angle control						
Board Type		9 3 φ SCR phase angle control	9 3 φ SCR phase angle control						
FY100	175x110mm								
FY101	90x90mm								
(RAMP/SOAK Programmable)									

* : Block means optional functions with additional charge

* HBA : Heater Break Alarm(HBA must use AL1 as alarm relay)

Combination of options and models

Options	RAMP/SOAK PROGRAM	Output 1	Output2	Alarm2	Alarm3	HBA	Transmission	Remote SV	Communication	DC 24V Power
Model		1 φ SCR_Z	3 φ SCR_Z	Motor valve control	1 φ SCR_P	3 φ SCR_P				
FY400	○	○	—	○	—	—	○	○	○	○
FY600	○	—	—	○	○	—	○	○	○	○
FY700	○	○	—	○	○	—	○	○	○	○
FY800	○	—	—	○	○	—	○	○	○	○
FY900	○	○	○	○	○	○	○	○	○	○
FY100	○	—	—	○	○	—	○	○	○	—
FY101	○	—	—	○	—	—	○	○	○	—

○ Available — Not available

* Remote SV function is not available, if HBA Function has been specified.

Input type table

Type	Code	Range	Type	Code	Range	Type	Code	Range	Type	Code	Range
TC	K	K1 01	0.0~200.0°C(392.0°F)	K2 02	0.0~400.0°C(752.0°F)	K3 03	0~600°C(1112°F)		LINEAR	AN1	61 -10~10mV
		K4 04	0~800°C(1472°F)	K5 05	0~1000°C(1832°F)	K6 06	0~1200°C(2192°F)			62	-2~2V
	J	J1 07	0.0~200.0°C(392.0°F)	J2 08	0.0~400.0°C(752.0°F)	J3 09	0~600°C(1112°F)			63	-5~5V
		J4 10	0~800°C(1472°F)	J5 11	0~1000°C(1832°F)	J6 12	0~1200°C(2192°F)			64	-10~10V
	R	R1 13	0~1600°C(2912°F)	R2 14	0~1769°C(3216°F)					AN2	71 0~10mV
	S	S1 15	0~1600°C(2912°F)	S2 16	0~1769°C(3216°F)					76	0~20mV
	B	B1 17	0~1820°C(3308°F)							AN3	81 0~50mV
	E	E1 18	0~800°C(1472°F)	E2 19	0~900°C(1652°F)					82	0~20mA
	N	N1 20	0~1200°C(2192°F)	N2 21	0~1300°C(2372°F)					83	0~1V
	T	T1 22	-199.9~400.0°C(752.0°F)	T2 23	-199.9~200.0°C(392.0°F)	T3 24	0.0~350.0°C(662.0°F)			84	0~5V
	W	W1 25	0~2000°C(3632°F)	W2 26	0~2320°C(4208°F)					85	0~10V
	PLI	PL1 27	0~1300°C(2372°F)	PL2 28	0~1390°C(2534°F)					86	0~5K ohm
RTD	U	U1 29	-199.9~600.0°C(999.9°F)	U2 30	-199.9~200.0°C(392.0°F)	U3 31	0.0~400.0°C(752.0°F)			87	0~2V
	L	L1 32	0~400°C(752°F)	L2 33	0~800°C(1472°F)					AN4	91 10~50mV
	JPT	JP1 41	-199.9~600.0°C(999.9°F)	JP2 42	-199.9~400.0°C(752.0°F)	JP3 43	-199.9~200.0°C(392.0°F)			92	4~20mA
	100	JP4 44	0~200°C(392°F)	JP5 45	0~400°C(752°F)	JP6 46	0~600°C(1112°F)			93	1~5V
	PT	DP1 47	-199.9~600.0°C(999.9°F)	DP2 48	-199.9~400.0°C(752.0°F)	DP3 49	-199.9~200.0°C(392.0°F)			94	2~10V
	100	DP4 50	0~200°C(392°F)	DP5 51	0~400°C(752°F)	DP6 52	0~600°C(1112°F)				
	JPT	JP1 53	-199.9~600.0°C(999.9°F)	JP2 54	-199.9~400.0°C(752.0°F)	JP3 55	-199.9~200.0°C(392.0°F)				
	50	JP4 56	0~200°C(392°F)	JP5 57	0~400°C(752°F)	JP6 58	0~600°C(1112°F)				



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Digital PID

Temperature/Process Controllers

FU Series

Integrated Mold
Technology Leadership
High Light LED New feelings



Best comparison of price and function



Programmable



Fuzzy



Autotuning



MODBUS



Match to RoHS System

Patent No.: ZL200820301949.5 * M347604

BEST CHOICE FOR PROCESS AND TEMPERATURE CONTROL

Application: Control temperature , humidity , pressure , flow and PH.



FU series controllers are microprocessor based controllers. Which have been designed with high accuracy input , various output selection , useful options and good reliability at a competitive price.

FU series use "PID+FUZZY" algorithm to implement excellent control.

The output status is displayed on the built in "Bar-Graph" display.

FU series also provide "Programmable RAMP/SOAK" function and has 2 patterns by 8 segments, to elevate or decrease temperature.

FU series support MODBUS protocol. Communication with HMI is more convenient.

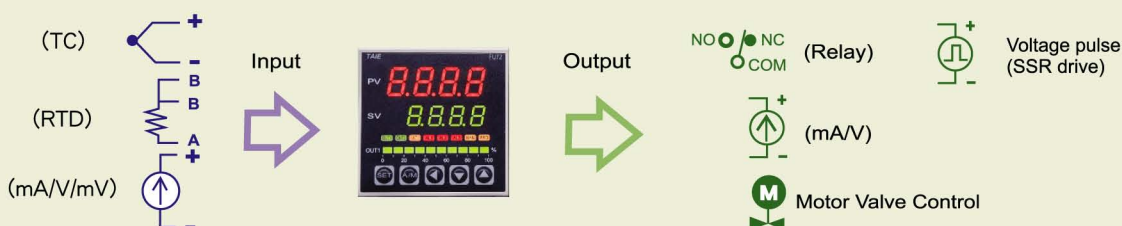
Available in 4 sizes, the models and sizes are as below:

FU48: 48X48mm (DIN 1/16) FU86: 48X96mm (DIN 1/8)

FU72: 72X72mm (DIN 3/16) FU96: 96X96mm (DIN 1/4)

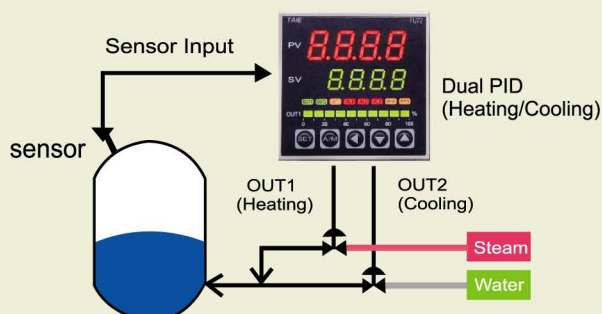
Multi-Option of input & output

- ◎ Completely correspond to any kinds of input signal like Thermo couple, RTD PT100, and DC4~20mA. 0~5V.etc.
- ◎ Satisfy any requests for output mode like DC4~20mA, 0~5V Voltage, Current & the relay output of capacity 8A
- ◎ It provides with 3 features of Controller, Signal converter and Alarm monitor. It can be changed the signal of mV, V, RTD to the output of Voltage & Current 4~20mA instead of the signal converter.
- ◎ Separately design for signal circuit and power circuit on PC board, effectively restrain the external interference of electric wave.



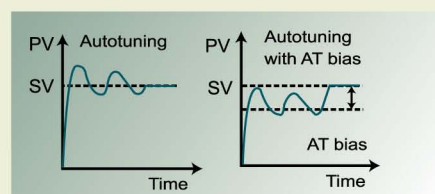
Optimize function

Heating and Cooling Control



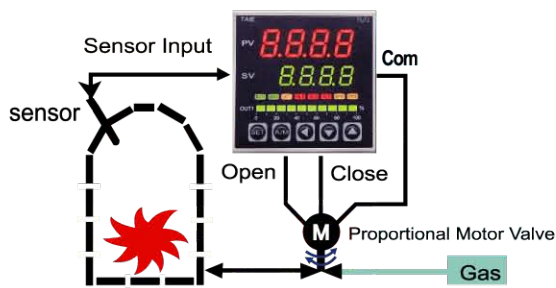
PID autotuning control

It will make to calculate optimize PID value.

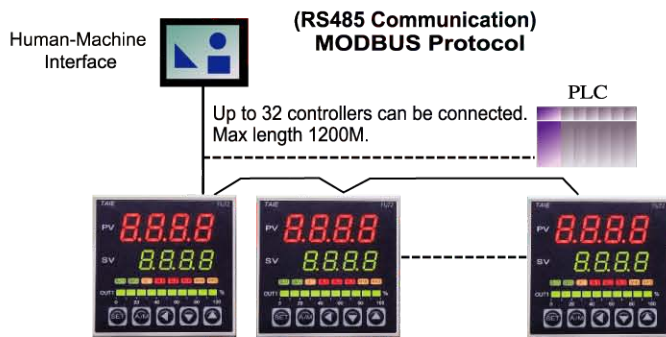


When autotuning acts ,it will make PV hunting 1~2 cycle to calculate optimize PID value. To protect user's device , **FU** series controller can perform PV hunting below SV by setting AT bias value(ATVL) .

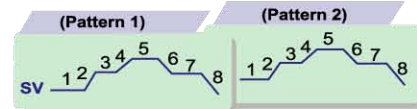
Motor Valve Control



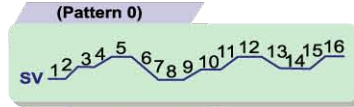
RS-485 Communication



Ramp/Soak Program



There are 2 patterns by 8 segments can be used in ramp/soak program.



There are 2 patterns can be linked together as 16 segments in ramp/soak program.

TTL Communication

(TTL Communication)

Up to 10 controllers can be connected. Max length 1M.



The SV value of slave controllers will be remoted by master controller, and reached to max value at the same time.

Operations

1.Power ON: Controller will display as the following



Light all LEDs and all 7 segment displays Display input type Display range (0.0 ~ 400.0) Ready for use

2.Change the Set Value(SV): Change SV from 0.0 to 100.0



Press (←) Key: The SV number started to flash. The flashing digit indicates which digit can be set.
Press (←) Key: To select the hundreds digit.
Press (▲) Key: To change the number to 1.
Press (SET) Key: To store the new set value.

3.Auto Tuning (AT):

Use AT function to automatically calculate and set the optimize PID value for your system.



Press (SET) Key: To display parameter AT.
Press (←) Key: To change AT setting.
Press (▲) Key: Change AT to 'YES'.
Press (SET) Key: Start Autotuning process (AT lamp will be lighted on).
AT light on: Auto Tuning started.
AT light off: Auto Tuning finished.

4.Change the Alarm value:

Change AL1 value to "5.0" (AL1 active, if PV exceeds SV over 5.0)



Press (SET) Key: To display parameter AL1.
Press (←) Key: To change AL1 value.
Press (▲) Key: Increase AL1 value.
Press (SET) Key: Store the new value of AL1.

* To change Alarm mode, press (SET) + (←) key 3 seconds to enter Level 3 (Input Level) and then change the value of ALD1/ALD2/ALD3.

Alarm Types

Alarm types list as below:

Deviation

Deviation High Alarm
Deviation Low Alarm
Deviation High/Low Alarm
Band Alarm

System

System Failed Alarm
System Normal Alarm

PV

PV High Alarm
PV Low Alarm

Program

Program Run Alarm
Program End Alarm
Segment End Alarm

5.Alarm mode type (Referenced for ALD1/ALD2/ALD3)

01	Deviation high alarm with hold action* OFF ON LOW HIGH PV
11	Deviation high alarm OFF ON LOW HIGH PV
02	Deviation high alarm with hold action* ON OFF LOW HIGH PV
12	Deviation low alarm ON OFF LOW HIGH PV
03	Deviation high/low alarm with hold action* ON OFF ON LOW HIGH PV
13	Deviation high/low alarm ON OFF ON LOW HIGH PV

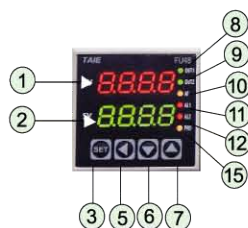
▲:SV △: Alarm set value

04	Band alarm OFF ON OFF LOW HIGH PV
14	Process high alarm with hold action* OFF ON LOW HIGH PV
05	Process high alarm OFF ON LOW HIGH PV
15	Process low alarm with hold action* ON OFF LOW HIGH PV
06	Process low alarm ON OFF LOW HIGH PV
16	Process low alarm ON OFF LOW HIGH PV

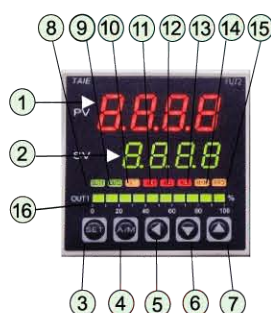
07	Segment End alarm (Only for Programmable controller) (1)ALD1~3, set 07 (2)ALD1~3=Alarm Segment (3)ALD1~3 defines as follows: = 0 = flicker alarm = 99, 59 = continued alarm = others = alarm ON Delay time
17	Program Run alarm (Only for Programmable controller) Run Stop ON OFF AL
08	System failed alarm*(ON) Normal Failed OFF ON AL
18	System failed alarm*(OFF) Normal Failed ON OFF AL
09	Heater Break Alarm (HBA)
00	No alarm

Parts Description

FU48



FU72



FU86



FU96



SYMBOL	NAME	FUNCTION
PV	① Measured value (PV)display	Displays PV or various parameter symbols(Red)
SV	② Setting value (SV)display	Displays SV or various parameter values(Green)
SET	③ Set Key	Used for parameter calling up and set value registration
A/M	④ Auto/Manual key	Switches between Auto(PID) output mode and Manual output
<	⑤ Shift Key	Shift digits when settings are changed
∨	⑥ Down Key	Decrease numbers (*Only for programmable controller)
∧	⑦ Up Key (*Program Run)	Increase numbers (*Only for programmable controller)

SYMBOL	NAME	FUNCTION
OUT1	⑧ OUT1 lamp	Lights when OUT 1 is on
OUT2	⑨ OUT2 lamp	Lights when OUT 2 is on
AT	⑩ Autotuning lamp	Lights when Autotuning is activated
AL1	⑪ Alarm 1 lamp	Lights when Alarm 1 is activated
AL2	⑫ Alarm 2 lamp	Lights when Alarm 2 is activated
AL3	⑬ Alarm 3 lamp	Lights when Alarm 3 is activated
MAN	⑭ Manual output lamp	Lights when manual output is activated
PRO	⑮ *Program Running lamp	*Flashes when program running (Only for programmable controller)
OUT1%	⑯ Output 1% Bar-Graph display	Output 1% is displayed on 10-dot LEDs

Unit : mm

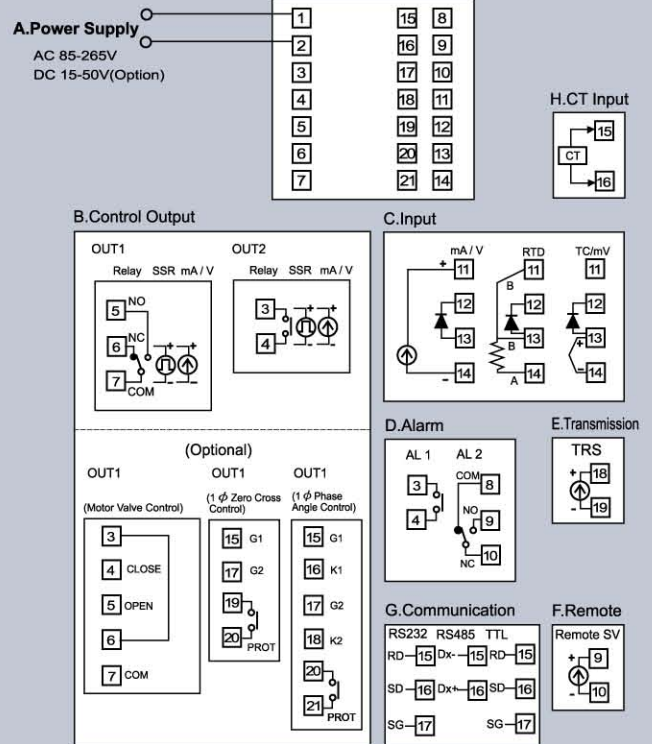
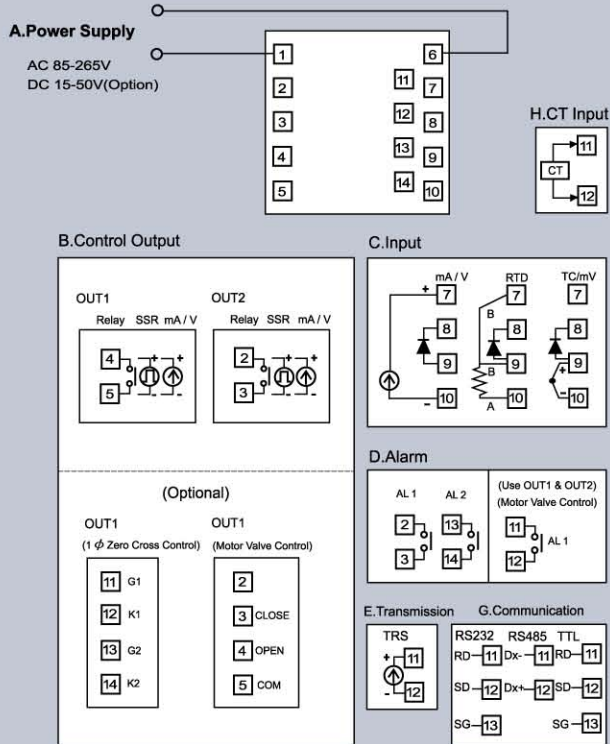
External Dimension

FU48			
FU72			
FU86			
FU96			

Terminal Arrangement

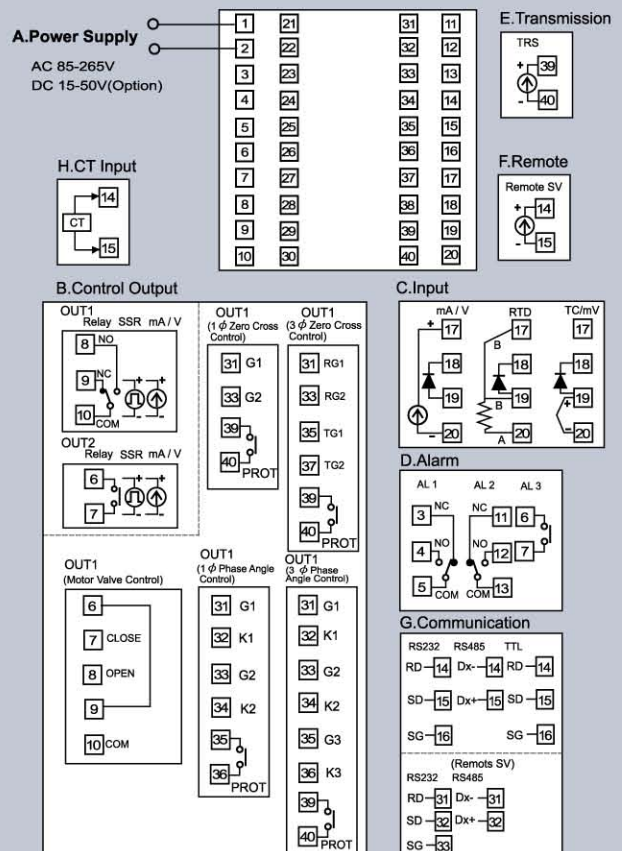
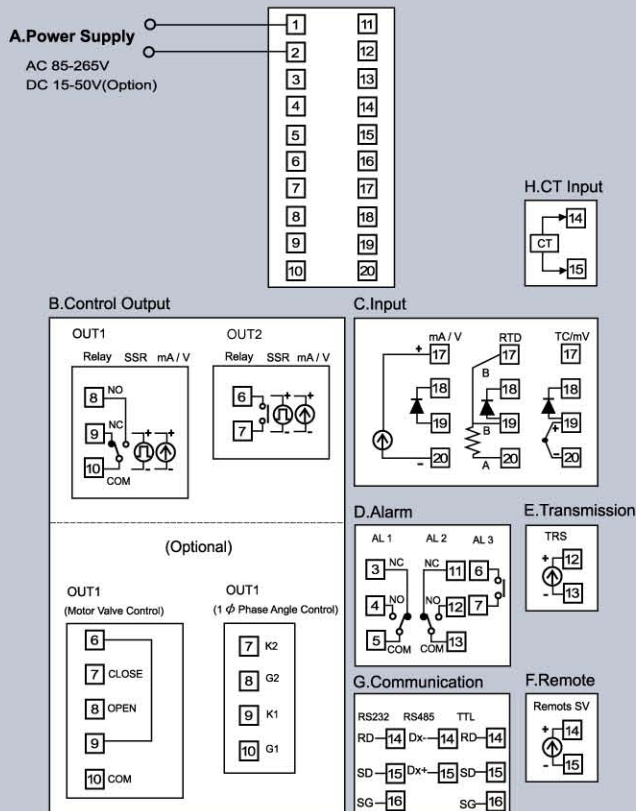
FU48

FU72



FU86

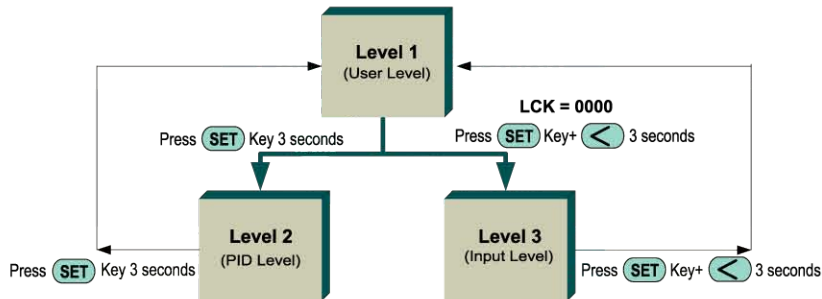
FU96



Levels Explanation

Levels Diagram

- When the power is on, it will stay at Level 1 (User Level) automatically.
 - The controller returns to Level 1 if there is no key operation within 60 seconds.
 - In any Level, press **A/M** key twice will return to Level 1.
- (FU48 don't have **A/M** key)



Level 1 (User Level)

Process Value	P.V.
Set Value	5.1
Output Limit	0.0
Autotuning	4.5/na
Alarm 1 set value	AL1
Alarm 2 set value	AL2
Alarm 3 set value	AL3

Return to "P.V."

Level 2 (PID Level)

P1	3.0	Proportional band 1 (For output 1)	Range : 0.0~200.0% ON/OFF control if set to 0 (0.0)
I1	240	Integral time 1 (For output 1)	Range : 0~3600 seconds PD control if set to 0
D1	60	Derivative time 1 (For output 1)	Range : 0~900 seconds PI control if set to 0
dbt	0	Dead-band time	FU don't have this function
Auto tuning offset value	0		
Output 1 cycle time	10		Range : 0~150 seconds Relay output : 10 Voltage pulse output : 1, mA output : 0
Hysteresis for output 1 ON/OFF control	1		Range : 0~1000 PV > (SV+HYS1), OFF PV ≤ (SV-HYS1), ON
P2	3.0	Proportional band 2 (For output 2)	The same with P1
I2	240	Integral time 2 (For output 2)	The same with I1
D2	60	Derivative time 2 (For output 2)	The same with D1
Output 2 Cycle time	10		The same with CYT1
Hysteresis for output 2 ON/OFF control	1		The same with HYS1
Control gap 1 (For output 1)	0		Set point of output 1 (Heating side) =SV - GAP1 (Set when it has duel display)
Control gap 2 (For output 2)	0		Set point of output 2 (Cooling side) =SV + GAP2 (Set when it has duel display)
Function lock	0000		

Return to "P.V."

Duel Output display
when it has heating
or cooling

Display
If P2=0

LCK	Levels entering available			Parameters can be changed or not
	Level 1 (User Level)	Level 2 (PID Level)	Level 3 (Input Level)	
0000	Yes	Yes	Yes	All parameters (Factory set value)
1111	Yes	Yes	No	All parameters except Level 3
0100	Yes	Yes	No	All parameters except Level 3
0110	Yes	Yes	No	Parameters in Level 1
0001	Yes	Yes	No	SV" and "LCK"
0101	Yes	Yes	No	Only "LCK"

Level 3 (Input Level)

Input type selection	INP1	
Analog input low limit calibration (Used for mA and V input)	RL1	Range : -1999 ~ 9999
Analog input high limit calibration (Used for mA and V input)	RH1	Range : 0 ~ 9999
Decimal point position (Available for mA and V input)	dP	0000, 000.0, 00.00, 0.000
Lower Set-Point Limit	LSP.L	Scaling Low Limit
Upper Set-Point Limit	USP.L	Scaling High Limit
Remote input low limit calibration (FU don't have this function)	RL2	
Remote input high limit calibration (FU don't have this function)	RH2	
Alarm mode of AL1	ALd1	Range: 00~18 Refer to "Alarm mode type"
Alarm time of AL1	ALt1	Range : 0~99 Min 59 Secs 0=Flicker Alarm, 99:59=Continued Others=On delay time (If ALD=07, ALT means alarm on time)
Alarm mode of AL2	ALd2	The same with ALd1
Alarm time of AL2	ALt2	The same with ALt1
Alarm mode of AL3	ALd3	(FU48 don't have AL3)
Alarm time of AL3	ALt3	(FU48 don't have AL3)
Hysteresis of all Alarm	HYS.A	Range : 0~1000
Output 1 low limit calibration (Used for mA and V output)	CLO1	Range : 0 ~ 9999
Output 1 high limit calibration (Used for mA and V output)	CHO1	Range : 0 ~ 9999
Output 2 low limit calibration (Used for mA and V output)	CLO2	The same with CLO1
Output 2 high limit calibration (Used for mA and V output)	CHO2	The same with CHO1
Retransmission low limit calibration (FU don't have this function)	CLO3	
Retransmission high limit calibration (FU don't have this function)	CHO3	
Full run time of proportional motor (Used for proportional motor valve control output)	rU.CY	Range : 5~200 seconds
Used for programmable controller to wait continued operation	Wait	0=Not wait Others=Wait value
Alarm forward / inverse action setting can force the use of a-contact into b-contact	SEtA	Level 4 setting please ask distributor
Communication Protocol Selection	PSL	MODBUS RTU / MODBUS ASCII / TAIE
Communication Bits Configuration	b.tS	O_81 / O_82 / E_81 / E_82
ID number	Id.NO	Range : 0 ~ 255
Baudrate	bAUd	2400 / 4800 / 9600 / 19200 / 38400 bps
SV compensation	SV'OS	Range : -1000~1000
PV compensation	PV'OS	Range : -100.0~500.0
Unit of PV & SV	UNIT	C(°C) / F(°F) / A(Analog)
PV Filter	PV'Ft	PV will response faster if PVFT is smaller.
Reserved	CRSC	FU don't use it
Action mode	OUd	Heat / Cool
Control algorithm	OPAd	PID / Fuzzy
Frequency	H=	50 / 60HZ

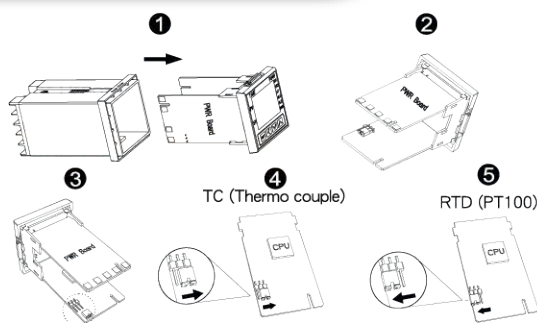
Return to "INP1"

Specifications

Standard Spec.	Model	FU48	FU72	FU86	FU96
	Dimension	48X48mm	72X72mm	48X96mm	96X96mm
	Supply voltage	AC 85~265V / DC 24V (option)			
	Frequency	50/60 HZ			
	Power Consumption	approx 4VA			
	Memory	Non-volatile memory E ² PROM			
	Input	Accuracy : 0.2%FS, Sample time : 250ms			
	TC	K, J, R, S, B, E, N, T, W5Re/W26Re, PL2, U, L			
	RTD	PT100, JPT100			
	mA dc	DC 4~20mA, 0~20mA			
	Voltage dc	DC 0~1V, 0~5V, 0~10V, 1~5V, 2~10V DC -10~10mV, 0~10mV, 0~20mV, 0~50mV, 10~50mV			
	DP Position	0000, 000.0, 00.00, 0.000 (available for mA or Voltage dc input) According to the input type, °C/°F can be displayed to one decimal			
	Output 1	Main control output to HEAT mode or COOL mode			
	Relay	SPST type	SPDT type	SPDT type	SPDT type
	Voltage Pulse	8A, 240V, electrical life : 100,000 times or more(under the rated load).			
	mA dc	For SSR drive. ON:24V, OFF:0V, maximum load current: DC 20mA.			
	Voltage dc	DC 4~20mA, 0~20mA ° maximum load resistance: 560Ω.			
	Alarm 1	SPST type	SPST type	SPDT type	SPST type
	Control algorithms	PID, P, PI, PD, ON/OFF(P=0), FUZZY			
	PID range	P : 0~200%, I : 0~3600 Secs, D : 0~900 Secs			
	Isolation	Output terminal (control output, alarm, transmission) and Input terminal are isolated separately.			
	Isolated resistance	10M Ω or more between input terminals and case(ground) at DC 500V 10M Ω or more between output terminals and case(ground) at DC 500V			
	Dielectric strength	1000V AC for 1 minute between input terminals and case(ground) 1500V AC for 1 minute between output terminals and case(ground)			
	Operating temperature	0~65°C			
	Humidity range	0~50°C / 20~90% RH			
	Weight (approx)	approx150g	approx 225g	approx 225g	approx300g
	LED Display(PAT.)	high light technology, Red/Green/Orange with in one Module			

Optional Spec.	RAMP/SOAK Program	2 Patterns with 8 segments each . The 2 patterns can be linked together as 16 segments use			
	Output 2	For heating and cooling control use			
	Relay	SPST type	SPST type	SPST type	SPST type
	Voltage Pulse	For SSR drive. ON:24V, OFF:0V, maximum load current: DC 20mA.			
	mA dc	DC 4~20mA, 0~20mA .Maximum load resistance:560 Ω			
	Voltage dc	DC 0~5V, 0~10V, 1~5V, 2~10V. Maximum load current: DC 20mA.			
	Alarm 2	SPST type	SPDT type	SPDT type	SPDT type
	Alarm 3	None	SPST type	SPST type	SPST type
	Heat Break Alarm (HBA)	Display Range of Heater Current:0.0~99.9A, Accuracy : 1%FS Included CT :SC.80.T (5.8mm dia, 0.0~80.0A) or SC.100.T(12mm dia, 0.0~99.9A) Alarm Relay : AL1			
	Transmission	Available for PV or SV transmission			
	mA dc	DC 4~20mA, 0~20mA. Maximum load resistance : 560 Ω			
	Voltage dc	DC 0~5V, 0~10V, 1~5V, 2~10V. Maximum load current : DC 20mA.			
	Remote SV	DC 4~20mA, 0~20mA, 0~5V, 0~10V, 1~5V, 2~10V are available			
	Communication	Protocol : MODBUS RTU, MODBUS ASCII, TAIE Interface : RS232, RS485, TTL Baudrate : 38400, 19200, 9600, 4800, 2400 bps. 8 bit, Start bit : 1 bit, Parity : Odd or Even, Stop bit : 1 or 2 bit			
	Water Proof	IP65			

Input Type Change of TC ↔ RTD



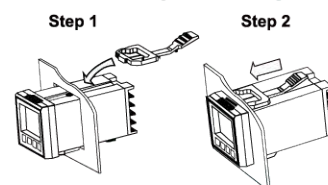
1. Take out the main body from outer case: adjust the jumper to the correct place
2. Start power after setting jumper to the correct place
3. Amend the input type from the front membrane to enter in Level 3 to set.
4. Please be sure to cut off power and start again after amending input type so that the new parameters could be effective.
5. To change input type of TC or RTD is available but linear input is unavailable. Please ask our local distributor for help.

New High Light LED Module Display



Brand-new one set of LED Module design provides more easy and clear reading.

To mount panel easily



To push the clamp of special structure design without using screw to the end can be smoothly fixed on the panel.

Model & Suffix codes

Model	Output1	Output2	Alarm	TRS	Remote SV	Communi- cation	Input Type	Power	Water/Dust Proof
FU48 (STANDARD) 48x48mm FU72 72x72mm FU86 48x96mm FU96 96x96mm	1	0	1	0	0	0	02	A	N
(RAMP/SOAK Programmable) PFU48 48x48mm PFU72 72x72mm PFU86 48x96mm PFU96 96x96mm									
	0 None 1 Relay 2 Voltage Pulse (SSR Drive) 3 4~20mA 4 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V 5 1 φ SCR zero cross control 6 3 φ SCR zero cross control 7 Motor valve control 8 1 φ SCR phase angle control 9 3 φ SCR phase angle control	0 None 1 Relay 2 Voltage Pulse (SSR Drive) 3 4~20mA 4 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V	0 None 1 1 Set 2 2 Sets 3 3 Sets A HBA* B HBA+AL2 C HBA+AL2+AL3	0 None 1 4~20mA 2 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V	0 None 1 4~20mA 2 0~20mA A 0~5V B 0~10V C 1~5V D 2~10V	0 None 3 TTL A RS232_MODBUS B RS485_MODBUS	See Input Codes	A AC 85~265V D DC 24V	N None W IP65

1. Block means optional functions with additional charge
2. Factory set value K2, code 02
3. TC Input(K, J, R, S, B, E, N, T, W, PLII, U, L...) setting, can be changed to any types by user
4. RTD(JPT 100, PT100) setting, can be changed to any type by user
5. TC, RTD, LINEAR can be changed each other but need to change the parts of hardware. For more details, please contact local agents.
6. HBA : Heater Break Alarm (HBA must use AL1 as alarm relay)

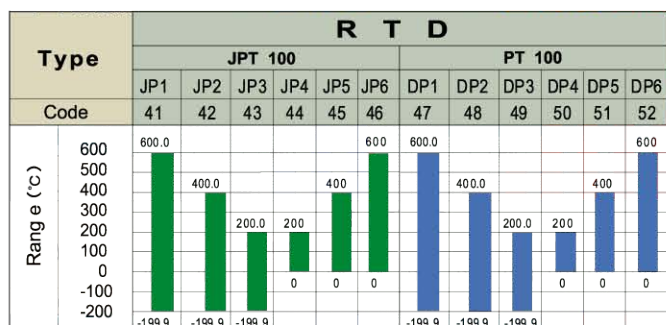
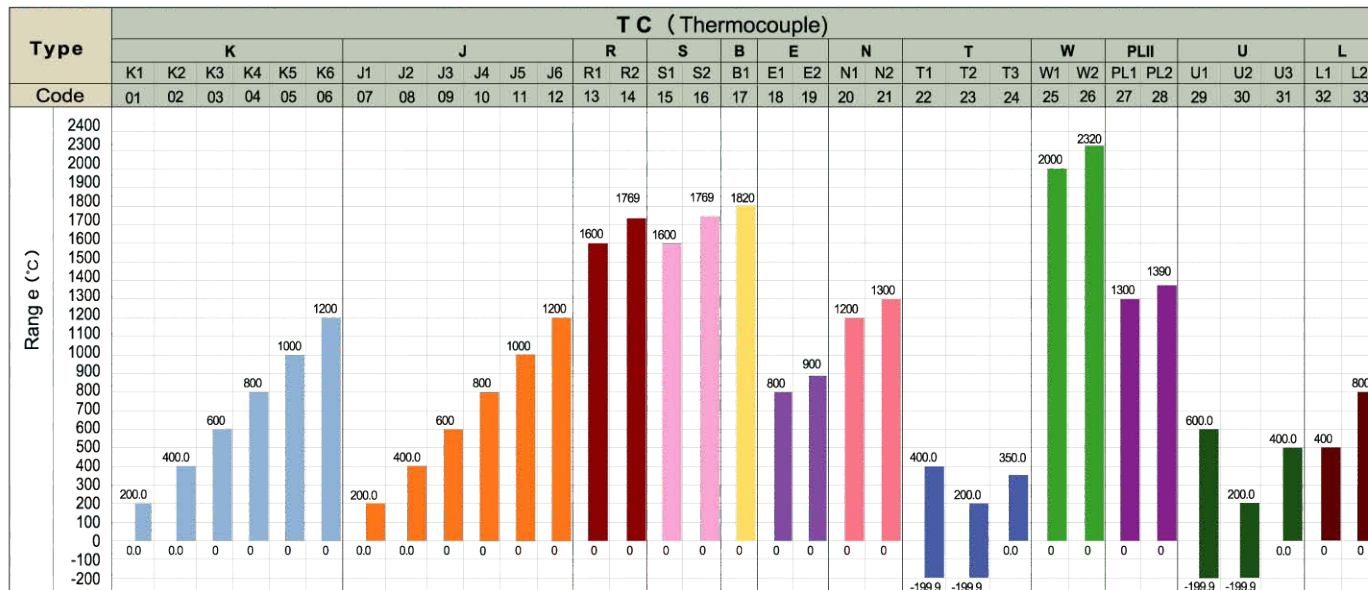
Combination of options and models

Options	RAMP/SOAK PROGRAM	Output 1					Output2	Alarm2	Alarm3	HBA	Transmission	Remote SV	Communication	DC 24V Power
Model		1 φ SCR_Z	3 φ SCR_Z	Motor valve control	1 φ SCR_P	3 φ SCR_P								
FU48	○	○	—	○	—	—	○	○	—	○	○	○	○	○
FU72	○	○	—	○	○	—	○	○	○	○	○	○	○	○
FU86	○	—	—	○	○	—	○	○	○	○	○	○	○	○
FU96	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○ Available — Not available

* Remote SV function is not available, if HBA Function has been specified.

Input Type



Type	DC LINEAR					
	AN1			AN2	AN3	
Code	61	62	63	64	71	76
Input Range	-10~10mV	-2~2V	-5~5V	-10~10V	0~10mV	0~20mV
Set Range	Four kinds	-199.9~999.9	-199.9~999.9	-19.99~99.99	-1.999~9.999	

Type	DC LINEAR					
	AN4			AN5		
Code	81	82	83	84	85	86
Input Range	0~50mV	0~20mA	0~1V	0~5V	0~10V	0~5KΩ
Set Range	Four kinds of choices:	-199.9~999.9	-199.9~999.9	-19.99~99.99	-1.999~9.999	



Taiwan Instrument & Control Co., Ltd.
Taitech Industry Co., Ltd.

www.fa-taie.com.tw
www.fa-taie.com



Features:

- DC to AC, AC to AC Single Phase Solid State Relay
- 3.2-32Vdc input for DC to AC, 90~280Vac input for AC to AC
- load amps, 10~120 amps
- Load 24~480Vac
- LED process indication
- Panel mount
- Zero-crossing trigger
- All models with the same physical size
- Fast response and no noise
 - Black housing
 - Terminal type
 - Compact size
 - Built-in RC Snubber for all amps
 - 10, 25, 40 use TRIAC, 60 and above use back to back SCR
 - Using top quality TRIAC and back to back SCR
 - Units completely sealed with resin to have maximum isolation

Technical Specifications

Ordering Information

MS- **1** - **2** - **3** - **4**

1: Type of solid state relay

1 Single phase solid state relay

2: Input configuration

DA DC input, range 3.2-32Vdc
AA AC input, range 90~280Vac

3: Load voltage

48 24~480Vac 50/60HZ

4: Load current

10 10 amps
25 25 amps
40 40 amps
60 60 amps
80 80 amps
100 100 amps
120 120 amps

eg: MS-1DA4840, for DC to AC 40 amps 480Vac relay
 MS-1AA48100, for AC to AC 100 amps 480Vac relay

Guidelines on the selection and usage of a solid state relay

- 1) Current rating, as a general rule consider using the relay at no more than **50%** of its rated current for resistive load such as a heater, considering using the relay at no more than **10%** of its rated current for inductive load, such as a motor, in this application, the relay only can be used to control the start and stop of the motor, not reverse of the motor
- 2) **Heatsinks** must always be installed together with the SSR regardless of the load amps, natural convection cooling might be sufficient in some cases depends on the site situation, force air cooling must be taken into consideration under harsh conditions (contact our sales team for more info)
- 3) Fast fuse must be installed in the system to protect overload on the SSR
- 4) Silicon rubber pad or silicon compound must be applied to the bottom of the SSR to help the heat radiation
- 5) Our SSR is 480Vac load type, this is suitable for multiple line voltage system including 110V/220V/380V to maximum 480Vac
- 6) This is a normally open SSR, with no control input, the relay output is non-conducting, some specific types of SSR have a normally closed output, this needs to be specified before order
- 7) Our relay can only be used for resistive load or inductive load, capacitive load is not suitable

Application

High-low temperature chamber, heaters, plastic machinery, incubation machine, Oiling machine, HVAC, Elevator control Lighting, Fountain controller

Electrical Technical Features (For DC to AC type)

Load Voltage	24~480Vac
Control Voltage	3.2-32Vdc
Minimum turn-on voltage	3.2Vdc
Minimum turn-off voltage	1Vdc
Maximum input current	25mA
Maximum turn-on time	10ms
Maximum turn-off time	10ms
Maximum Off-state Leakage Current [@ Rated Voltage]	5mA
Maximum On-state Voltage Drop [@ Rated Current]	1.6Vrms
Minimum Off-state dv/dt [@ Maximum Rated Voltage]	500V/μs
Dielectric Strength [50/60Hz]	input/output ≥ 3500Vrms
Dielectric Strength [50/60Hz]	input, output/base ≥ 2500Vrms
Transient Overvoltage	1200Vpk

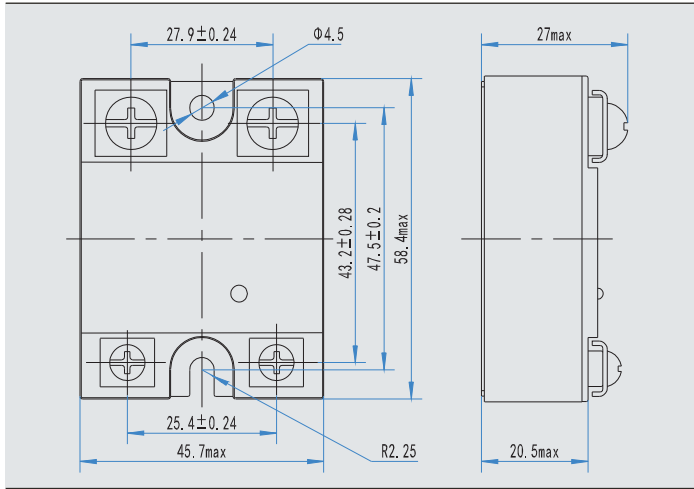
Electrical Technical Features (For AC to AC type)

Load Voltage	24~480Vac
Control Voltage	90~280Vac
Minimum turn-on voltage	90Vac
Minimum turn-off voltage	10Vac
Maximum input current	10mA
Maximum turn-on time	40ms
Maximum turn-off time	40ms
Maximum Off-state Leakage Current [@ Rated Voltage]	5mA
Maximum On-state Voltage Drop [@ Rated Current]	1.6Vrms
Minimum Off-state dv/dt [@ Maximum Rated Voltage]	500V/μs
Dielectric Strength [50/60Hz]	input/output ≥ 3500Vrms
Dielectric Strength [50/60Hz]	input, output/base ≥ 2500Vrms
Transient Overvoltage	1200Vpk

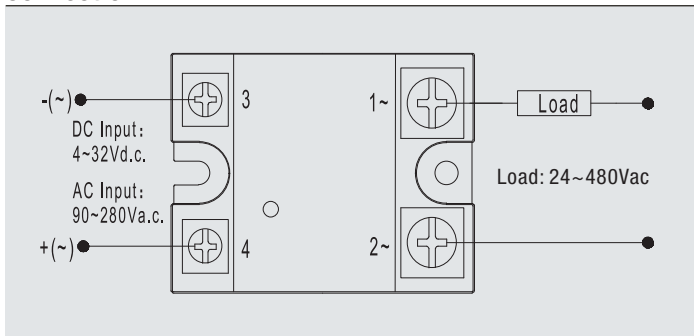
Mechanical and storage

Operating condition	-30°C ~ +75°C 35~85% RH
Storage condition	-30°C ~ +95°C
Weight	0.1kg
Housing material	Fire retardant ABS

Size



Connection



Certificates



Packing information

Individual box for each pcs
10 pcs in a secondary box
200 pcs per master carton

Accessories

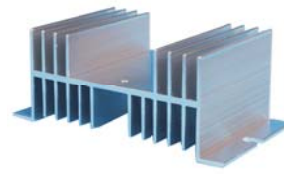
The primary supporting unit for solid state relay is heatsinks, heatsinks has a lot of options in terms of mounting method, size and shape, below is a reference table to help you select the suitable heatsink for your application, here we only discuss the heatsink for single phase SSR both DC to AC and AC to AC.

ITEM NO	SIZE(mm)	Compatible SSR	Mounting method
MW-I-50	60x50x50	10A/25A	Panel mount or direct Din rail mount
MW-W-70	70x100x50	40A	Panel mount only
MW-W-100	100x100x50	60A	Panel mount only
MW-H-55	55x80x80	40A	Panel mount or Din rail mount
MW-T-80	80x80x70	80A/100A/120A	Panel mount or Din rail mount
MW-DE-50	50x94x80	80A/100A/120A	Panel mount or Din rail mount
MW-E-52	52x74x40	40A	Panel mount or Din rail mount
MW-DT-50	50x100x96	60A	Panel mount or direct Din rail mount

Images and size



Model: MW-I-50
Size: 60mm*50mm*50mm
For 10 amps/25 amps SSR
Mounting method: Panel mount or din rail mount directly



MW-W-70 and MW-W-100 looks like the same only difference is the length

Model: MW-W-70
Size: 70mm*100mm*50mm
For 40 amps SSR
Mounting method: Panel mount

Model: MW-W-100
Size: 100mm*100mm*50mm
For 60 amps SSR
Mounting method: Panel mount



Model: MW-H-55
Size: 55mm*80mm*80mm
For 40 amps SSR
Mounting method: Panel mount or din rail mount with din rail adaptor



Model: MW-E-52
Size: 52mm*74mm*40mm
For 40 amps SSR
Mounting method: Panel mount or din rail mount with din rail adaptor



Din rail mount slot for direct din mount purpose

Model: MW-DT-50
Size: 50mm*100mm*96mm
For 60 amps SSR
Mounting method: Panel mount or din rail mount directly



Model: MW-T-80
Size: 80mm*80mm*70mm
For 80amps,100amps,120amps
Mounting method: Panel mount or din rail mount with din rail adaptor



Model: MW-DE-50
Size: 50mm*94mm*80mm
For 80amps,100amps,120amps
Mounting method: Panel mount or din rail mount with din rail adaptor



Model: CLM-1
Din rail clamp
Can be attached to below model and convert the unit to din rail mount type
MW-H-55
MW-T-80
MW-DE-50
MW-E-52



Features:

- DC to AC, three phase solid state relay for resistive load
- 5-32Vdc input
- load amps, 10 amps, 25 amps, 40 amps.
- Load 24~480Vac
- LED process indication
- Panel mount
- Zero-crossing trigger
- All models with the same physical size
- Fast response and no noise
 - Black housing
 - Terminal type
 - Compact size
 - Built-in **RC Snubber circuit** for all amps
 - 10,25,40 use TRIAC
 - Using top quality TRIAC
 - Units completely sealed with resin to have maximum isolation

Technical Specifications

Ordering Information

MS	1	2	3	4	5
----	---	---	---	---	---

1: Type of solid state relay

3	Three phase solid state relay
---	-------------------------------

2: Input configuration

DA	DC input, range 5-32Vdc
----	-------------------------

3: Load voltage

48	24~480Vac 50/60HZ
----	-------------------

4: Load amps

10	10 amps
25	25 amps
40	40 amps

5: Type of SSR

R	For resistive load, cost-effective
---	------------------------------------

eg: MS-3DA4840-R, for DC to AC 40 amps 480Vac relay

Guidelines on the selection and usage of a solid state relay

- 1) Current rating, as a general rule consider using the relay at no more than **50%** of its rated current for resistive load such as a heater, this item can only be used for resistive load
- 2) **Heatsinks** must always be installed together with the SSR regardless of the load amps, natural convection cooling might be sufficient in some cases depends on the site situation, force air cooling must be taken into consideration under harsh conditions (contact our sales team for more info)
- 3) Fast fuse must be installed in the system to protect overload on the SSR
- 4) Silicon rubber pad or silicon compound must be applied to the bottom of the SSR to help the heat radiation
- 5) This SSR is **480Vac** load type, this is suitable for multiple line voltage system including 110V/220V/380V to maximum 480Vac
- 6) This is a normally open SSR, with no control input, the relay output is non-conducting, some specific types of SSR have a normally closed output, this needs to be specified before order
- 7) This relay can only be used for resistive load

Application

High-low temperature chamber, heaters, plastic machinery, incubation machine, etc

Electrical Technical Features (For DC to AC type)

OUTPUT SPECIFICATIONS

Operating Voltage [VAC]	24-480Vac
Maximum Transient Overvoltage [Vpk]	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA]	Less 10m Ams
Maximum Surge Current [Adc] (10ms)	7*rated current
Maximum On-State Voltage Drop @ Rated Current [Vdc]	1.5
Maximum Off-State dv/dt [V/uSec]	1000

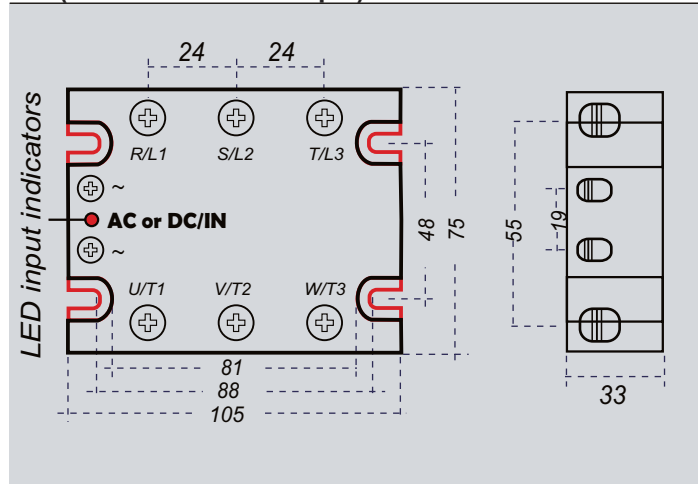
INPUT SPECIFICATIONS

Control Voltage Range	5-32VDC
Minimum Turn-on Voltage	5.2 VDC
Minimum Turn-off Voltage	1VDC
Leakage Current	15mA
Maximum Turn-on Time [msec]	Less 8.3m Sec
Maximum Turn-off Time [msec]	Less 1/2AC cycle

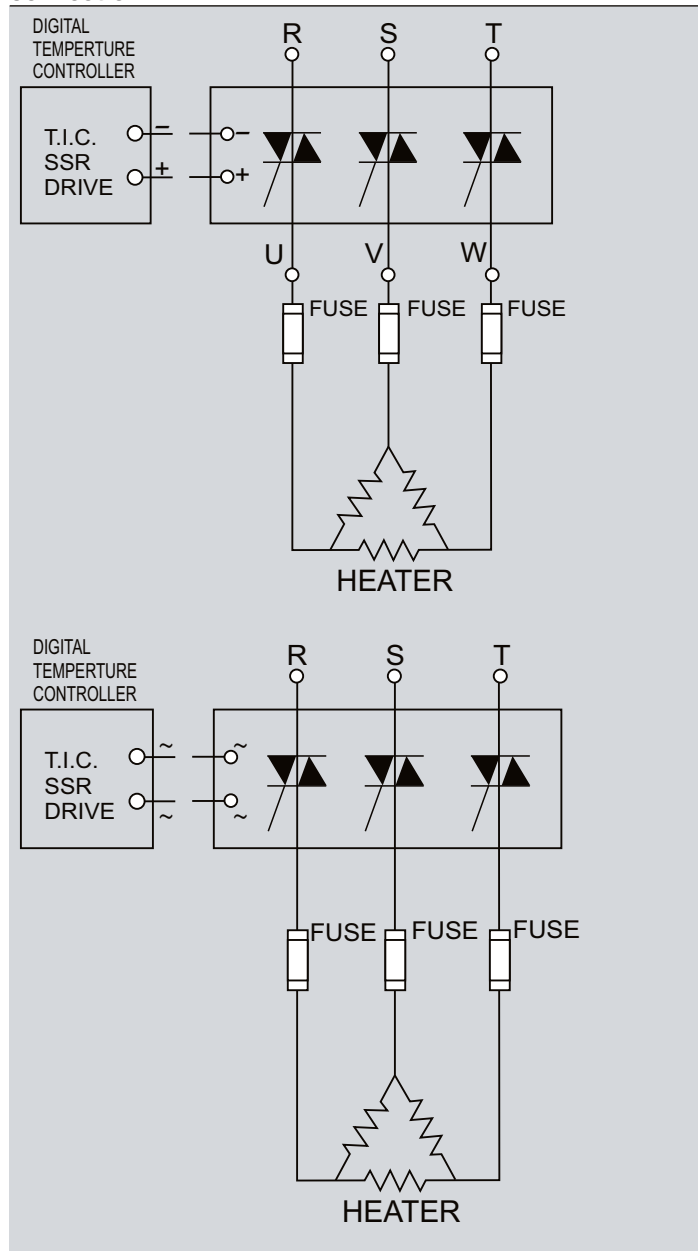
GENERAL SPECIFICATIONS

Dielectric Strength, Input-Output Base (50/60Hz)	3500
Dielectric Strength, Input-Output (50/60Hz)	3500
Minimum Insulation Resistance	10 ⁹ ohm
Ambient Operating Temperature Range	-20°C~+80°C
Ambient Storage Temperature Range	-40°C~+100°C
Switching Type	Zero-Crossing
Weight (g) +/- 50g	380g

Size(same for DC and AC input)



Connection



Certificates



Packing information

Individual box for each pcs
50 pcs per master carton

Accessories(heatsink and cooling fans)

The primary supporting unit for solid state relay is heatsinks, heatsinks has a lot of options in terms of mounting method, size and shape, below is a reference table to help you select the suitable heatsink for your application, here we only discuss the heatsink for three phase SSR both DC to AC and AC to AC.

ITEM NO	SIZE(mm)	Compatible SSR	Mounting method
MW-L-150	150x88x35	10A/25A	Panel mount only
MW-E-105	105x74x40	10A/25A	Panel mount or din rail mount
MW-H-110	110x80x80	40A	Panel mount or din rail mount
MW-H-150	150x80x80	60A	Panel mount or din rail mount
MW-Y-110	110x125x135	80A	Panel mount only
MW-Y-150	150x125x135	100A/120A	Panel mount only
MW-Y-170	170x125x135	150A/200A	Panel mount only
MW-DT-120	120x100x96	60A/80A/100A	Panel mount or direct Din rail mount
MW-F-120	120x130x93	80A	Panel mount only

Images and size



Model: MW-L-150
Size: 150mm*88mm*35mm
For 10 amps/25 amps SSR
Mounting method: Panel mount only



Model: MW-E-105
Size: 105mm*74mm*40mm
For 10 amps/25 amps SSR
Mounting method: Panel mount and din rail mount



Model: MW-H-110
Size: 110mm*80mm*80mm
For 40 amps SSR
Mounting method: Panel mount and din rail mount
Compatible with 8cm*8cm fans



Model: MW-H-150
Size: 150mm*80mm*80mm
For 60 amps SSR
Mounting method: Panel mount and din rail mount
Compatible with 8cm*8cm fans



Model: MW-Y-110
Size: 110mm*125mm*135mm
For 80 amps SSR
Mounting method: Panel mount only
Compatible with 12cm*12cm fans

Images and size



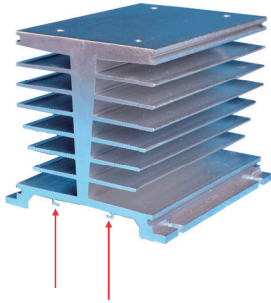
Model: MW-Y-150
Size: 150mm*125mm*135mm
For 100 /120 amps SSR
Mounting method: Panel mount only

Compatible with 12cm*12cm fans



Model: MW-Y-170
Size: 170mm*125mm*135mm
For 150/200 amps SSR
Mounting method: Panel mount only

Compatible with 12cm*12cm fans



Din rail mount slot

Model: MW-DT-120
Size: 120mm*100mm*96mm
For 60/80/100 amps SSR
Mounting method: Panel mount and
din rail mount directly with din rail
mount slot,check image to the left



Model: MW-F-120
Size: 120mm*130mm*93mm
For 80 amps SSR
Mounting method: Panel mount only

Compatible with 8cm*8cm fans



Model: CLM-1
Din rail clamp
Can be attached to below model and
convert the unit to din rail mount type
MW-E-105
MW-H-110
MW-H-150



110VAC

Model: MF-1-S-12-110
12cm*12cm
sleeve bearing fans
source:110Vac



220VAC

Model: MF-1-S-12-220
12cm*12cm
sleeve bearing fans
source:220Vac

Cooling fans



110VAC

Model: MF-1-S-8-110
8cm*8cm
sleeve bearing fans
source:110Vac

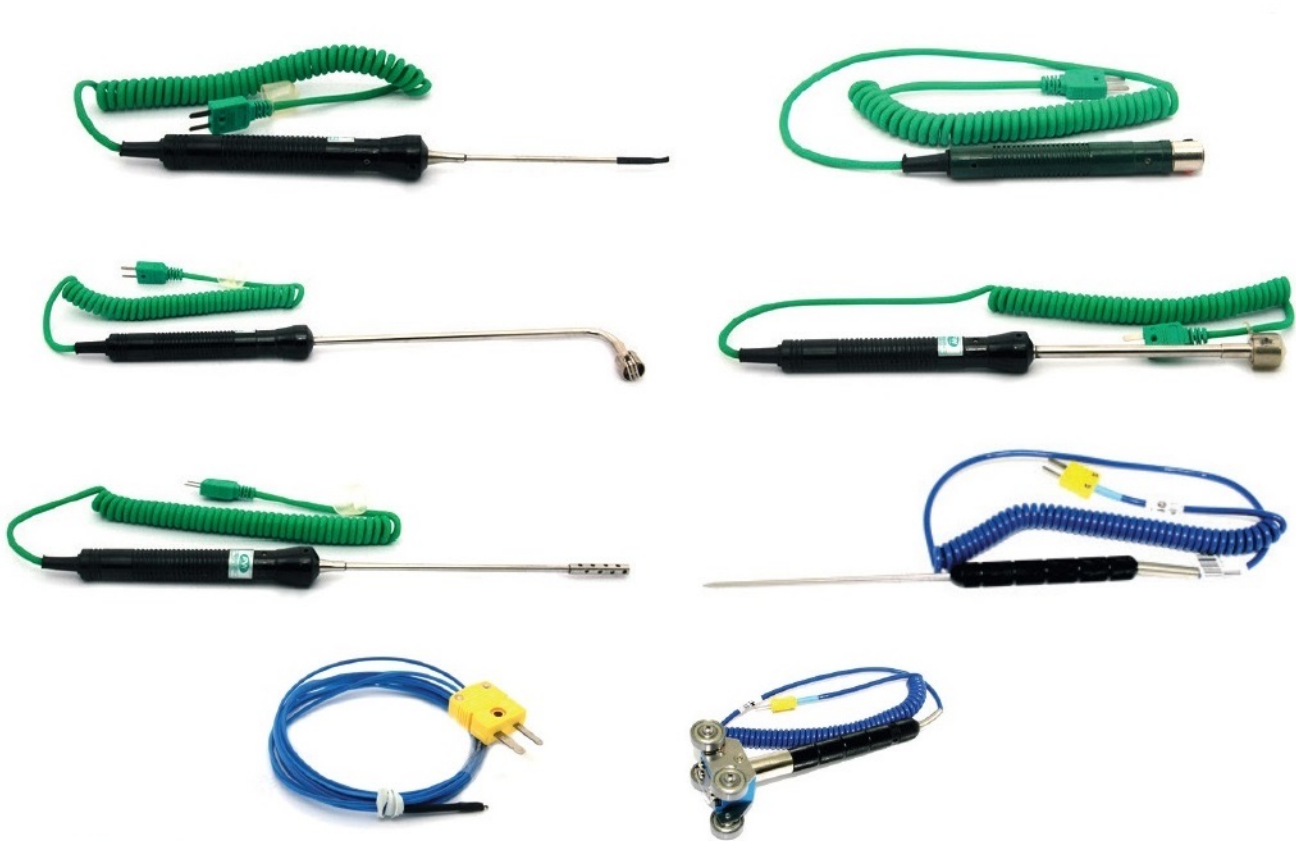


220VAC

Model: MF-1-S-8-220
8cm*8cm
sleeve bearing fans
source:220Vac

เทอร์โมคัปเปิลแบบพกพา (Hand-Held Thermocouple)

หัววัดอุณหภูมิสำหรับใช้กับมิเตอร์แบบพกพา หรือ เทอร์โมคัปเปิล โพรบ (Thermocouple Probe) เป็นเซ็นเซอร์วัดอุณหภูมิอากาศแบบมือถือ หลายหลายรูปแบบ ตามลักษณะการใช้งานดังนี้



เทอร์โมสตัท (Thermostat)

อุปกรณ์สำหรับควบคุมอุณหภูมิ อัตโนมัติ ซึ่งเหมาะสำหรับห้องควบคุมอุณหภูมิ, อุตสาหกรรมอาหาร, เตาอบ, โรงเรือนเพาะชำ, ตู้ฟักไข่ ฯลฯ ที่มีปัญหาในการควบคุมอุณหภูมิ เทอร์โมสตัทเราช่วยคุณได้ ที่ถูกคัดสรรมาเป็นอย่างดีสามารถช่วยให้ควบคุมอุณหภูมิความชื้นให้เป็นไปตามมาตรฐานการผลิต



คุณสมบัติทั่วไป (FEATURE)

- มีช่วงอุณหภูมิให้เลือกใช้งานกว้าง
- ประสิทธิภาพการใช้งานสูง และใช้งานง่าย
- มีความทนทานดีเยี่ยม ได้รับมาตรฐานเยอรมัน, สวิตเซอร์แลนด์, เนเธอร์แลนด์

ลักษณะการใช้งาน

- ควบคุมอุณหภูมิของเตาไฟฟ้า
- เครื่องล้างจาน, ตู้แช่
- เครื่องทำน้ำอุ่น
- อุตสาหกรรมอาหาร

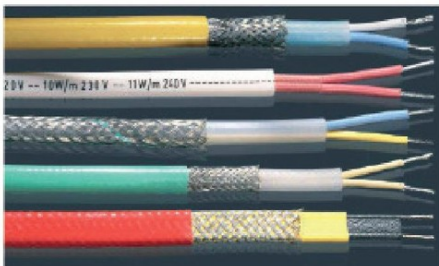
ฮีตเตอร์แบบเส้น (ROPE HEATER/TAPE HEATER)

ฮีตเตอร์เส้นเป็นฮีตเตอร์อีกชนิดหนึ่งที่มีใช้ในอุตสาหกรรม โดยมีลักษณะคล้ายสายไฟสามารถดัดงอไปมาได้ จึงเป็นที่นิยมนำมาใช้ในอุตสาหกรรมเครื่องเย็น หรือติดตามหลังคาเพื่อละลายน้ำแข็งและยังสามารถนำไปใช้ในอุตสาหกรรมอื่นได้อีกด้วย ใช้ทำละลายน้ำแข็งหรือให้ความร้อนกับวัตถุที่มีรูปร่างพิเศษ โดยการพันไว้โดยรอบ และเมื่ออุณหภูมิสูงขึ้นกำลังวัตต์จะลดลงโดยอัตโนมัติ (Self-Regulate)



คุณสมบัติทางเทคนิค (SPECIFICATIONS)

รุ่น	วัตต์/เมตร (230 VAC)	เหมาะสำหรับ
FKYC-25 W/M	25 W/M	รักษาอุณหภูมิของท่อในระบบอุตสาหกรรมต่างๆ อุตสาหกรรมห้องเย็น (เป็นชนิดอ่อนสีขาวใส ในการใช้งานต้องมีตัวควบคุมอุณหภูมิ และต้องตัดเฉพาะช่วงวงจรเท่านั้น)
FKYC-40 W/M	40 W/M	
FKYC-50 W/M	50 W/M	
DK-SRL 16-B	16 W/M	ป้องกันและรักษาอุณหภูมิไม่ให้จับตัวเป็นน้ำแข็งในสภาวะที่อุณหภูมิต่ำ (เป็นแบบธรรมดาไม่มีซิลิโคน) ในการใช้งานตัดได้ทุกระยะความยาว
DK-SRL 30-B	30 W/M	
DK-SRL 16-C	16 W/M	
DK-SRL 30-C	30 W/M	เป็นแบบเดียวกันกับชนิดแรก (มีซิลิโคนภายนอกป้องกันสัญญาณรบกวน) ในการใช้งานตัดได้ทุกระยะความยาว



ฮีตเตอร์เส้นแบบวัดตัดทั้งที่ 20,30,40 W/M



ฮีตเตอร์เส้นแบบเลือกค่าตามความต้านทาน
5-1,400 Ohm/M (110/220V) ให้กำลัง 5-35 W/M
0.21-10 Ohm/M (12/24V) ให้กำลัง 5-35 W/M

Arso temp equipment Co., Ltd.



เทอร์โมสตัท (Thermostat)

อุปกรณ์สำหรับควบคุมอุณหภูมิ อัตโนมัติ ซึ่งเหมาะสำหรับห้องควบคุมอุณหภูมิ, อุตสาหกรรมอาหาร, เตาอบ, โรงเรือนเพาะชำ, ตู้ฟักไข่ ฯลฯ ที่มีปัญหาในการควบคุมอุณหภูมิ เทอร์โมสตัทที่เราช่วยคุณได้ ที่ถูกคิดสรรมาเป็นอย่างดีสามารถช่วยให้ควบคุมอุณหภูมิความชื้นให้เป็นไปตามมาตรฐานการผลิต



Arso temp equipment Co., Ltd.



ฮีตเตอร์แท่ง (Cartridge Heater)

ฮีตเตอร์แท่ง (Cartridge Heater) มีแกนพื้นหลอดทำจากแมกนีเซียมออกไซด์ อัดขึ้นรูปเป็นแท่ง หลอดทำความร้อนถูกกันด้วยฉนวนแมกนีเซียมออกไซด์อัดแน่นอยู่รอบนอกอีกที ฮีตเตอร์กับตัวปลอกวางห่างกันเล็กน้อยช่วยให้การส่งผ่านความร้อนได้ดี เป็นฮีตเตอร์ที่ใช้ความร้อนกับวัสดุที่เป็นเหล็กโลหะต่างๆ และให้ความร้อนแม่พิมพ์หรือโมลด์เป็นฮีตเตอร์ที่ให้ความร้อนสูง ใช้สำหรับใส่ในช่องวัสดุโลหะที่มีรู โดยความร้อนจากฮีตเตอร์จะถูกถ่ายความร้อนไปยังแม่พิมพ์ หรือโมลด์ที่เป็นโลหะ ส่วนมากนิยมนำมาใช้ในงานอุตสาหกรรมพลาสติกงานขึ้นรูป เป็นต้น

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ฮีตเตอร์ครีบลูกและท่อกลม (Finned/Tubular Heater)

ฮีตเตอร์ครีบลูกทำจาก Tubular Heater ที่ดัดเป็นรูปต่างๆ และเพิ่มแผ่นครีบลูกติดกับท่อฮีตเตอร์อย่างต่อเนื่องจากปลายด้านหนึ่งไปอีกด้านหนึ่งของแผ่นครีบลูก ที่เพิ่มขึ้นจะทำให้ฮีตเตอร์ สามารถถ่ายเทความร้อนได้เร็วขึ้นส่วนฮีตเตอร์ท่อกลมคือ Tubular Heater ที่ใช้ให้ความร้อนโดยตรงโดยไม่ติดครีบลูก โครงสร้างของ Tubular Heater คือ มีหลอดทำความร้อนบรรจุอยู่ในท่อโลหะ ช่องว่างระหว่างหลอดทำความร้อนและท่อโลหะ จะอัดแน่นด้วยผงแมกนีเซียมออกไซด์และถูกอัดลงให้มีความหนาแน่นตามมาตรฐาน วัสดุที่ใช้ทำ Tubular Heater มีหลายชนิดต่างกันตามลักษณะการใช้งาน



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ฮีตเตอร์รัดท่อ (Band Heater)

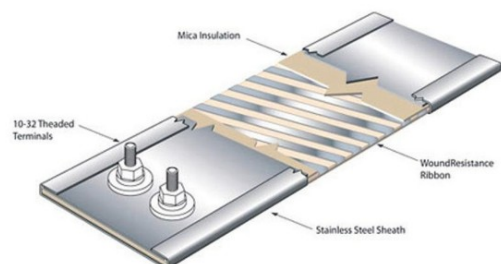
ได้รับการออกแบบสำหรับดึง หรือท่อรูปทรงกระบอกฉนวนของฮีตเตอร์ทำจากแผ่น Mica และ หลอดฮีตเตอร์แบบแบน (Ribbon Wire Heating Element) จึงทำให้ฮีตเตอร์ชนิดนี้ มีเส้นผ่าศูนย์กลางเล็ก ขนาด 25 mm. หรืออาจใหญ่ถึง 300 mm. ก็ได้ ส่วนความกว้างอยู่ระหว่าง 20-100 mm. ตัวถังด้านนอกจะเป็นแผ่นเหล็ก หรือสแตนเลส เหมาะสำหรับให้ความร้อนกับเครื่องฉีดพลาสติก

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ฮีตเตอร์แผ่น (Strip Heater)

ฮีตเตอร์แผ่นถูกนำไปใช้งานอุตสาหกรรมอย่างแพร่หลาย โดยจะนำไปใช้ในลักษณะงานติดตั้งบรรจุหีบห่อและแม่พิมพ์ และจะถูกใช้งานมากในงานอุตสาหกรรมพลาสติก อุตสาหกรรมอาหาร เครื่องบรรจุภัณฑ์และงานแม่พิมพ์ เป็นต้น



ฮีตเตอร์ฮอตรันเนอร์ (Hot runner heater)

ฮีตเตอร์ฮอตรันเนอร์ (Hot runner Heater) เป็นฮีตเตอร์ที่มีลักษณะ เหมาะสำหรับหัวฉีดฉีดพลาสติก ซึ่งติดอยู่กับโมลด์แม่พิมพ์ ฮีตเตอร์ฮอตรันเนอร์จะใช้งานอุตสาหกรรมพลาสติก เครื่องฉีดพลาสติก งานขึ้นรูปพลาสติก จะใช้สำหรับในการให้ความร้อนกระบอกระบายและหัวฉีดพลาสติก ซึ่งจะทำให้พลาสติกถูกหลอมเหลวสะดวกในการขึ้นรูปตามต้องการ ฮีตเตอร์ฮอตรันเนอร์ ผลิตขึ้นมาจากขดลวดนิเกิลคุณภาพสูง ซึ่งจะทำให้ฮีตเตอร์จะมีคุณภาพสูง มีอายุการใช้งานสูง และทนทานมีประสิทธิภาพ

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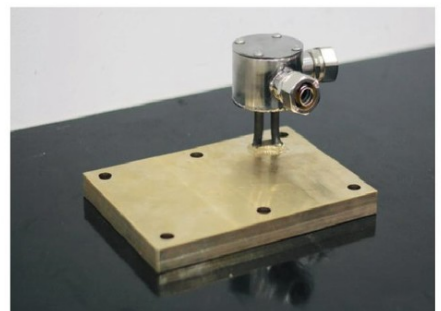
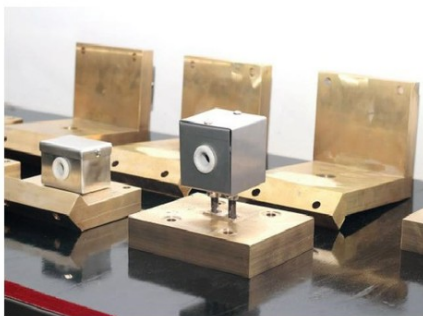
ฮีตเตอร์หล่อ (Cast-In Heater)

ฮีตเตอร์หล่อ (Cast-In Heater) เป็นอลูมิเนียม หรือทองเหลือง ที่ฝังฮีตเตอร์ทอกลมไว้ข้างใน จะใช้ในกรณีที่ต้องการอุณหภูมิสูง อายุการใช้งานจะยาว กว่าฮีตเตอร์ทั่วไป สามารถสั่งตามแบบที่ต้องการได้ มีทั้งฮีตเตอร์อลูมิเนียม Standard Aluminum และ หล่อทองเหลือง Pedestal Heater , ฮีตเตอร์หล่อเหล็ก ฯลฯ

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ตัวอย่างผลงาน ฮีตเตอร์หล่อ (Cast-In Heater)



ฮีตเตอร์ต้มน้ำ หรือ ฮีตเตอร์จุ่ม (Immersion Heater)

ฮีตเตอร์แบบจุ่ม เหมาะสำหรับทุกอุตสาหกรรมที่มีการต้มหรืออุ่นของเหลวหลากหลายชนิด เช่น ต้มน้ำและอุ่นน้ำมัน การติดตั้งสามารถทำได้โดยเชื่อมเกลียวตัวเมียติดกับถังแล้วใส่ฮีตเตอร์แบบเกลียวเข้า ทำจาก Tubular Heater ที่ตัดเป็นรูปตัวยู และเชื่อมติดกับเกลียวซึ่งมีขนาดเกลียวตั้งแต่ 1", 1", 1", 2" และ 2" ขนาดของเกลียวจะขึ้นอยู่กับจำนวนเส้นของฮีตเตอร์ จะมีตั้งแต่ 1U 2U 3U 6U ตามความเหมาะสมของกำลัง Watt และความยาวของตัวฮีตเตอร์



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ฮีตเตอร์บอบบี้ (Bobbin Heater)

ฮีตเตอร์แบบจุ่มอีกประเภทหนึ่ง ลักษณะการใช้งานโดยส่วนมากจะใช้งานกับของเหลว หรือ สารละลาย สามารถเลือกใช้วัสดุของท่อได้ตามการใช้งานของลูกค้า วัสดุที่ใช้จะมี SUS 304 / SUS 316L / Incoloy / Titanium แต่ละชนิดจะขึ้นอยู่กับการใช้งานของลูกค้า



ฮีตเตอร์แท่งแก้ว หรือฮีตเตอร์หลอดแก้ว (Quartz Heater)

ฮีตเตอร์แท่งแก้วหรือฮีตเตอร์หลอดแก้ว (Quartz Heater) เป็นฮีตเตอร์สำหรับจุ่มของเหลวอีกประเภทหนึ่ง สามารถทนกรดได้ทุกชนิด ภายในท่อแก้วจะมีขดลวดทำความร้อน ภายนอกจะมีท่อ PVC เป็นตัวป้องกันการกระแทกโดยตรงกับหลอดแก้ว

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ฮีตเตอร์ครีป แบบเหลี่ยม (Rectangular Shape)

ฮีตเตอร์ครีปแบบเหลี่ยม ใช้สำหรับให้ความร้อนกับอากาศ เป็นฮีตเตอร์ที่มีความทนทานสูง เพราะท่อฮีตเตอร์และครีปทำจากสแตนเลส 304 และยังมีครีปช่วยระบายความร้อนออกจากตัวฮีตเตอร์ทำให้สามารถใช้งานได้สูงกว่าแบบที่ไม่มีครีป



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ฮีตเตอร์อินฟราเรดแบบแผ่นเซรามิก (Ceramic Infrared Heater)

มีหลักการทำความร้อน คือ ให้กำเนิดแสงอินฟราเรดและส่งไปยังวัตถุ ซึ่งรังสีคลื่นยาวนี้จะทำให้โมเลกุลของวัตถุที่ได้รับรังสีนี้เข้าไปเกิดการสั่น ทำให้เกิดความร้อนขึ้น สามารถนำไปใช้สำหรับให้ความร้อนกับแม่พิมพ์ งานอบไล่ความชื้น เช่น อบสี, อบฟิล์มหัด, ใช้กับงานบรรจุหีบห่อ, อบขึ้นรูปพลาสติก, อบให้ความร้อนงานซิลิโคนรอบถังน้ำ เป็นต้น

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ฮีตเตอร์อินฟราเรดแบบหลอด/โคม (Infrared Heater)

มีหลักการทำความร้อน คือ ให้กำเนิดแสงอินฟราเรดและส่งไปยังวัตถุ โดยเป็นแสงคลื่นยาวไม่สามารถมองเห็นด้วยสายตามนุษย์ ซึ่งรังสีคลื่นยาวนี้ จะทำให้โมเลกุลของวัตถุที่ได้รับรังสีนี้เข้าไปเกิดการสั่น ทำให้เกิดความร้อนขึ้น หลักการนี้จะมีประสิทธิภาพมาก เมื่อนำไปประยุกต์ใช้กับวัตถุที่มีโครงสร้างโมเลกุลขนาดใหญ่เรียงกันเป็นแถวยาว เช่น สี, กาว, อาหาร, พลาสติก, แล็กเกอร์

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ฮีตเตอร์คอยล์ (Coil Heater)

เป็นฮีตเตอร์อีกชนิดหนึ่งที่มีความนิยมใช้ในงานอุตสาหกรรมต่างๆ การนำไปใช้งานจะคล้ายกับ FENNED HEATER โดยรูปแบบภายนอกจะมีขดลวดนำมาขดเป็นวงกลมยาวเป็นทรงกระบอกคล้ายสปริง ขนาดความโตของขดและความยาวขึ้นอยู่กับกำลังวัตต์ที่ใช้งานหรือรูปแบบที่จะติดตั้งร้อยผ่านรูเซรามิคหรือฉนวนเพื่อป้องกันการรั่วของไฟฟ้าหรือโดนโครงสร้างโดยนิยมใช้ขดลวดฮีตเตอร์แบบนิเกิลมาใช้ทำเพราะมีความทนต่อความร้อนได้สูงกว่าขดลวดชนิดธรรมดา

ตัวอย่างผลงาน

