

# INDUSTRIAL CONTROL INSTRUMENTS

## 工業控制儀器

MAXTHERMO®

MAXTECH®

SINCE 1978

**Maxthermo Touches Your Heart, Maxtech Services Your Mart**  
極大品質 永遠堅持，極大服務 全球遍佈

# 公司簡介

極大電機股份有限公司是由幾位台灣溫控器前輩創立於1978年(民國67年)專業生產工業用溫度控制器及熱電偶。產品除供應國內各界外並外銷世界50餘國榮獲顧客好評，1988年(民國77年)本公司鑑於國內熱電偶市場逐漸擴大乃成立茂祥電熱股份有限公司專業生產各種熱電偶及感溫棒並代理進口日本材料供應國內市場。次年(民國78年)並於泰國設廠生產溫控器及熱電偶供應及服務東南亞國家，深得當地工業界讚揚。

由於本公司產品種類陸續增加到相關工業用控制器材及冷凍器材工具等而且外銷國家也陸續增加，乃於1994年(民國83年)再成立極大國際貿易股份有限公司專門負責外銷業務，並於台北世界貿易中心設立永久性展示間展示產品。

極大公司能有今日的成就，是由於不斷提高品質，重視服務，價格公道三項原則，以及承蒙所有顧客的愛護。本公司一定秉持奉獻的心理繼續努力為國內外所有的客戶致最高的服務，使各界對極大公司有“極大”的信心。

MAXIMUM ELECTRONIC CO.,LTD. was founded in 1987 by several experts in Taiwan, professionally producing temperature controller and thermo-couple. Our production is highly value by our customers in Taiwan and in more than fifty countries all around the world. In 1988, because of the extension of the thermo-couple markets in Taiwan, our company had another branch, More Shine Electric Heat Co.,Ltd., not only professionally producing all kinds of thermo-couple and probe but also being an agent for Japanese material to supply the markets in Taiwan. The next year, our factory in Thailand was set, producing temperature controller and thermo-couple to provide our service to the Southeast Asia and is highly commented by local industrialists.

In 1994, because of the increasing of our production variety (now, including industrial control appliances, refrigeration and air conditioning parts & tools etc.) and our foreign customers, we set another branch, Maxthermo Gitta Group Corp., in charge of our exporting business and also has a showing room in Taipei World Trade Center.

“High quality, good service and low price” it's just the three principles that make what we are today. Also, it's because of your support. Our company will keep on providing you our best service and working hard for all our customers of the world. You'll surely trust us with your “MAXIMUM” confidence.

## MAIN PRODUCTS 主要產品

• MULTI-FUNCTION TEMP. INDICATOR & TEMP. INDICATOR 多功能溫度顯示器 & 溫度顯示器	P2	• 2 WIRE TEMPERATURE TRANSMITTER 兩線式溫度傳送器	P26
• ANALOG SETTING TEMP. CONTROLLER 旋鈕設定溫度控制器	P3	• DIGITAL THERMOMETER 攜帶式數字溫度表	P27
• DIGITAL SETTING TEMP. CONTROLLER 觸控設定溫度控制器	P4	• TEMPERATURE PROBES 溫度探棒	P29
• MICRO-PROCESSOR PROGRAMMABLE CONTROLLER 微電腦可程式控制器	P5	• THERMO-HYGROMETER 溫、溼度表	P30
• MICRO-PROCESSOR PID TEMP. CONTROLLER 微電腦PID溫度控制器	P7	• DIGITAL METER 微處理大型字幕顯示器	P31
• MICRO PROCESSOR TWO-CHALLENS PID TEMPERATURE CONTROLLER 微電腦雙迴路PID溫度控制器	P9	• MULTI-FUNCTIONAL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER 多功能溫溼度露點傳感器	P33
• MINIATURE TEMPERATURE CONTROLLER 迷你型溫度控制器	P10	• ECONOMIC MODEL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER 經濟型溫溼度露點傳感器	P35
• HOT-RUNNER CONTROL SYSTEM & MC-550 TEMP. CONTROLLER 熱澆道控制系統 & MC550 溫度控制器	P11	• INDOOR & PROBE TEMPERATURE AND HUMIDITY TRANSMITTER 室內型/測棒型溫溼度傳感器	P37
• INDUSTRIAL DATA GATEWAY 工業數據盒	P13	• LCD TEMP. & HUMIDITY TRANSMETER 壁掛式LCD雙顯示溫濕度傳送器	P39
• HUMAN MACHINE INTERFACE 人機介面	P14	• PRESSURE SENSOR 壓力感應器	P41
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• MDA Series MDA 系列	P18	• GENERAL THERMOCOUPLE 一般熱電偶	P43
• INFRARED HYGROMETER & THERMOMETER 紅外線溫度計	P22	• SHEATH THERMOCOUPLE 極速熱電偶	P44
• INFRARED THERMOCOUPLE 紅外線熱電偶-CM系列	P23	• DC TO DC/AC SOLID STATE RELAY(PCB Mount) DC TO DC/AC 機板式固態繼電器	P45
• CYLINDRICAL THERMOMETER 圓筒型溫度計	P23	• DC TO AC SOLID STATE RELAY DC TO AC 固態繼電器	P46
• DIAL THERMOMETER 隔測溫度計及雙金屬溫度計	P24	• MINIATURE S.C.R. POWER REGULATOR 小型化單相相位控制器(直推式)	P47
• BI-METAL DIAL THERMOMETERS 雙金屬溫度計	P25	• SOLID STATE RELAYS (S.S.R.) 固態繼電器	P48
• INDUSTRIAL THERMOSTATS 產業用溫度調整器	P25	• S.C.R. UNIT 矽控整流器	P49

# MULTI-FUNCTION TEMPERATURE INDICATOR

## 多功能溫度顯示器

Model 型號	MD-N2638
Appearance 產品圖	
Size 尺寸	96 mm x 48 mm
Cut-Out 開孔尺寸	90.5mm <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>
Accuracy 精度	0.5% F.S.
Input 輸入	TC 熱電偶 S, B, R, K, E, T, J, N
	RTD 白金電阻體 PT100Ω
	mA DC 電流信號 0~20mA, 4~20mA
	Voltage DC 電壓信號 0~50mV, 0~5V, 0~10V, 0~24V
Alarm 警報	SPDT Type
	3A, 250V, electrical life : 100,000 times or more (under the rated load)
Supply Voltage 電源電壓	AC 85~265V 50/60 Hz

### ■ Order Information 訂貨索引

MD - N 2 6 3 8 - 0 0 [4] - [1] 0 [2]  
 A B C D

#### A. Model 型號:

MD-N2638

#### B. Alarm 警報:

0 - None

4 - 4 sets

#### C. Transmission 傳送輸出:

0 - None

1 - 4~20mA(Adjustable)

2 - 0~20mA(Adjustable)

A - 0~5V(Adjustable)

B - 0~10V(Adjustable)

C - 1~5V(Adjustable)

D - 2~10V(Adjustable)

#### D. Communication 通訊:

0 - None

2 - RS-485

# TEMPERATURE INDICATOR

## 溫度顯示器

Model 型號	MC-3430	MC-3730	MC-3830
Appearance 產品圖			
Size 尺寸	48mm x 48mm	72mm x 72mm	96mm x 96mm
Cut-Out 開孔尺寸	44.5mm <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>	68.5mm <sup>+0.5</sup> <sub>-0</sub> x 68.5mm <sup>+0.5</sup> <sub>-0</sub>	90.5mm <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>
Accuracy 精度		0.5% F.S.	
Input 輸入	TC 热電偶 K, J, R		
	RTD 白金電阻體 PT100Ω		
Supply Voltage 電源電壓		AC 85~265V 50/60 Hz	

### ■ Order Information 訂貨索引

MC - [3 4 3 0] - [K]  
 A B

#### A. Model 型號:

3430

3730

3830

#### B. Input 輸出方式:

K - K type

J - J type

R - R type

P - PT100Ω

# ANALOG SETTING TEMPERATURE CONTROLLER

## 旋鈕設定溫度控制器

Model 型號	MC-3401	MC-3701	MC-3711	MC-3731	MC-3801	MC-3811	MC-3831										
Appearance 產品圖																	
Size 尺寸	48 mm x 48 mm	72 mm x 72 mm			96 mm x 96 mm												
Cut-Out 開孔尺寸	44.5mm <sup>+0.5</sup> <sub>-0</sub> X 44.5mm <sup>+0.5</sup> <sub>-0</sub>	68.5mm <sup>+0.5</sup> <sub>-0</sub> X 68.5mm <sup>+0.5</sup> <sub>-0</sub>			90.5mm <sup>+0.5</sup> <sub>-0</sub> X 90.5mm <sup>+0.5</sup> <sub>-0</sub>												
Accuracy 精度	0.3% F.S.																
Control Action 控制方式	PD, Optimal, ON / OFF(P=0)																
Input 輸入	TC 熱電偶	K, J	K, J, R														
	RTD 白金電阻體	PT100Ω															
Output 輸入	Relay 繼電器	SPDT Type 3A , 250V , electrical life : 100,000 times or more(under the rated load)															
	SSR	ON:24V , OFF:0V , Maximum load current:20mA															
Alarm 警報	None	SPDT Type			SPST Type												
		3A , 250V , electrical life : 100,000 times or more(under the rated load)															
Temp. Setting Range 溫度設定範圍	0~100°C, 0~200°C, 0~400°C, 0~600°C, 0~800°C, 0~1000°C																
Supply Voltage 電源電壓	AC 85 ~ 265V 50/60Hz																

### ■ Order Information 訂貨索引

MC - **3 8 3 1** - **2 1 K 4-0 X °C X °C**  
 A      B      C      D      E      F      G      H

#### A. Model 型號:

- 3401 - Non-indicating
- 3701 - Non-indicating
- 3711 - Deviation indicating with LED
- 3731 - Full indicating with digit
- 3801 - Non-indicating
- 3811 - Deviation indicating with LED
- 3831 - Full indicating with digit

#### B. Control Action 控制方式:

- 1 - ON / OFF
- 2 - PD
- 3 - Optimal

#### C. Output 輸出:

- 1 - Relay
- 2 - SSR Drive DC 24V

#### D. Input 輸入:

- K - K type
- J - J type
- R - R type (Except MC-3401)
- P - PT100Ω

#### E. Temp. Setting Range

#### 溫度設定範圍:

- 1 - 0~100°C
- 2 - 0~200 °C
- 4 - 0~400 °C
- 6 - 0~600 °C
- 8 - 0~800 °C
- A - 0~1000 °C

#### F. Alarm Mode 警報模式:

- 0 - No alarm
- 1 - Deviation high alarm
- 2 - Deviation low alarm
- 3 - Absolute high alarm
- 4 - Absolute low alarm
- 5 - Deviation high / low alarm
- 6 - Band alarm

#### G. Alarm High Limit Set Value

#### 上限警報設定值

- A - Deviation high alarm + Inhibit
- B - Deviation low alarm + Inhibit
- C - Absolute high alarm + Inhibit
- D - Absolute low alarm + Inhibit
- E - Deviation high / low alarm + Inhibit
- F - Band alarm + Inhibit

#### H. Alarm Low Limit Set Value

#### 下限警報設定值

# DIGITAL SETTING TEMPERATURE CONTROLLER

## 觸控設定溫度控制器

Model 型號	MC-3408	MC-3438	MC-3518	MC-3538	MC-3718	MC-3738	MC-3818	MC-3838
Appearance 產品圖								
Size 尺寸	48 mm x 48 mm		48 mm x 96 mm		72 mm x 72 mm		96 mm x 96 mm	
Cut-Out 開孔尺寸	44.5mm <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>		44.5mm <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>		68.5mm <sup>+0.5</sup> <sub>-0</sub> x 68.5mm <sup>+0.5</sup> <sub>-0</sub>		90.5mm <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>	
Accuracy 精度					0.3% F.S.			
Control Action 控制方式					PD, Optimal, ON / OFF(P=0)			
Input 輸入	TC 熱電偶				K, J, R			
	RTD 白金電阻體				PT100Ω			
Output 輸入	Relay 繼電器	SPST Type	SPDT Type	SPDT Type	SPDT Type			
		3A , 250V , electrical life : 100,000 times or more(under the rated load)						
	SSR		ON:24V , OFF:0V , Maximum load current:20mA					
Alarm 警報			SPST Type					
		3A , 250V , electrical life : 100,000 times or more(under the rated load)						
Temp. Setting Range 溫度設定範圍		-99~99°C (PT100Ω only), 0.0~99.0°C, 0~199°C, 0~299°C, 0~399°C, 0~499°C, 0~599°C, 0~699°C, 0~799°C, 0~899°C, 0~999°C						
Supply Voltage 電源電壓		AC 85 ~ 265V 50/60Hz						

### ■ Order Information 訂貨索引

MC - **3 5 3 8** - **2 1 P 0-5 10 °C 3 °C 1**

A      B      C      D      E      F      G      H      I

#### A. Model 型號:

3408 (Non-indicating with PV)

3438

3518

3538

3718

3738

3818

3838

#### B. Control Action 控制方式:

1 - ON / OFF

2 - PD

3 - Optimal

#### C. Output 輸出:

1 - Relay

2 - SSR Drive DC 24V

#### D. Input 輸入:

K - K type

J - J type

R - R type

P - PT100Ω

#### E. Temp. Setting Range

##### 溫度設定範圍:

0 - -99~99 °C (PT100Ω Only)

1 - 0.0~99.9 °C

2 - 0~199 °C

3 - 0~299 °C

4 - 0~399 °C

5 - 0~499 °C

6 - 0~599 °C

7 - 0~699 °C

8 - 0~799 °C

9 - 0~899 °C

A - 0~999 °C

#### F. Alarm Mode 警報模式:

0 - No alarm

1 - Deviation high alarm

2 - Deviation low alarm

3 - Absolute high alarm

4 - Absolute low alarm

5 - Deviation

high / low alarm

6 - Band alarm

A - Deviation high alarm + Inhibit

B - Deviation low alarm + Inhibit

C - Absolute high alarm + Inhibit

D - Absolute low alarm + Inhibit

E - Deviation high / low alarm + Inhibit

F - Band alarm + Inhibit

#### G. Alarm High Limit Set Value

##### 上限警報設定值

#### H. Alarm Low Limit Set Value

##### 下限警報設定值

#### I. Power Function 電源開關功能:

0 - No function

1 - SV (On / Off)

2 - PV & SV (On / Off)

# MICRO-PROCESSOR PROGRAMMABLE CONTROLLER

## 微電腦可程式控制器

Model 型號	MCP-2438	MCP-2538	MCP-2638	MCP-2738	MCP-2838	MCP-2038	
Appearance 產品圖							
Size 尺寸	48 mm x 48 mm	48 mm x 96 mm	96 mm x 48 mm	72 mm x 72 mm	96 mm x 96 mm	90 x 80x40mm	
Cut-Out 開孔尺寸	44.5 <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>	44.5 <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>	68.5 <sup>+0.5</sup> <sub>-0</sub> x 68.5mm <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>	None	
Accuracy 精度	0.2% F.S.						
Ramp soak function 可程式功能	16 ramp / soak segments, 6 program pattern recipes						
Control Action 控制方式	PID, P, PI, PD, ON / OFF(P=0)						
Input 輸入	TC 熱電偶	K, J, T, R , E, S, B, N					
	RTD 白金電阻體	DIN PT100Ω , JIS PT100Ω					
	mA DC 電流信號	0~20mA, 4~20mA					
	Voltage DC 電壓信號	0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V					
Output 第一組 輸出	Relay 繼電器	SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type	SPST Type
		3A , 250V , electrical life : 100,000 times or more(under the rated load)					
	SSR	ON:24V , OFF:0V , Maximum load current:20mA					
		4~20mA					
	0~5V, 0~10V, 1~5V, 2~10V	Maximum load resistance 300Ω					
Alarm 1 第一組警報	SPST Type	SPDT Type	SPDT Type	SPST Type	SPDT Type	SPST Type	SPST Type
		3A , 250V , electrical life : 100,000 times or more(under the rated load)					
Temp. Setting Range 溫度設定範圍	User Selection						
Supply Voltage 電源電壓	AC 85 ~ 265V 50/60Hz, DC 15 ~ 50V						AC 85 ~ 265V 50/60Hz

### ■ Optional Spec 追加附屬功能規格

Model 型號	MCP-2438	MCP-2538	MCP-2638	MCP-2738	MCP-2838	MCP-2038		
Output 第二組 輸出	Relay 繼電器	For heating and cooling control use					None	
		SPST Type	SPST Type	SPST Type	SPST Type	SPST Type		
		3A , 250V , electrical life : 100,000 times or more(under the rated load)						
	SSR	ON:24V , OFF:0V , Maximum load current:20mA						
	4~20mA	Maximum load resistance 300Ω						
Alarm 2 第二組警報	SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type	SPST Type	None	
		3A , 250V , electrical life : 100,000 times or more(under the rated load)						
Alarm 3 第三組警報	None	SPST Type	SPST Type	SPST Type	SPST Type	SPST Type		
		3A , 250V , electrical life : 100,000 times or more(under the rated load)						

## ■ Optional Spec 追加附屬功能規格

Model 型號	MCP-2438	MCP-2538	MCP-2638	MCP-2738	MCP-2838	MCP-2038
Retransmission 傳送輸出	0~20mA(Adjustable), 4~20mA(Adjustable), 0~5V, 0~10V, 1~5V, 2~10V					None
Communication 通訊功能	Protocol : Modbus RTU, Master Slave Only for RS485					
	Interface: RS232, RS485					
	Baud rate: 9600, 19200, 38400, 57600, 115200 bps					
	Data bits : 8, Stop bit : 1, Parity : None, Odd, Even					

## ■ Order Information 訂貨索引

**MCP - 2 4 3 8 - 1 0 1 - 0 0 1 - U A**

A      B      C      D      E      G      H      I

**MCP - 2 0 3 8 - 1 0 2 - 0 0 1 - U A**

B      G      H

## A. Model 型號:

2438  
2538  
2638  
2738  
2838

## B. Out 1 control output mode (Heating/Cooling)

第一組輸出(加熱或冷卻):

- 0 - None
- 1 - Relay contact, SPDT 3A/250VAC  
(\*MCP-2438 & MCP-2038: Relay contact, SPST 3A/250VAC)
- 2 - SSR Voltage pulse, 24VDC/20mA
- 3 - Current, 4-20mA
- 4 - Open loop motor valve (3wire)
- 7 - Close loop motor valve (6wire)
- A - 0~5V
- B - 0~10V
- C - 1~5V
- D - 2~10V

## C. Out 2 control output mode (Cooling)

第二組輸出(冷卻):

- 0 - None
- 1 - Relay contact, SPST 3A/250VAC
- 2 - SSR Voltage pulse, 24VDC/20mA
- 3 - Current, 4-20mA
- A - 0~5V
- B - 0~10V
- C - 1~5V
- D - 2~10V

## D. Alarm 警報:

0 - None  
1 - 1 set  
2 - 2 sets  
3 - 3 sets

## E. Retransmission 傳送輸出:

- 0 - None
- 1 - 4~20mA (Adjustable)
- 2 - 0~20mA (Adjustable)
- A - 0~5V
- B - 0~10V
- C - 1~5V
- D - 2~10V

## G. Communication 通訊功能:

- 0 - None
- 1 - RS232
- 2 - RS485

## H. Input type 輸入:

U - TC/RTD	G - 4~20mA+DC24V
A - 4~20mA	H - 0~20mA+DC24V
B - 0~20mA	I - 0~5V+DC24V
C - 0~5V	J - 0~10V+DC24V
D - 0~10V	K - 1~5V+DC24V
E - 1~5V	L - 2~10V+DC24V
F - 2~10V	

## I. Main power 電源電壓:

- A - AC 85~265V
- D - DC 15~50V

# MICRO-PROCESSOR PID TEMPERATURE CONTROLLER

## 微電腦PID溫度控制器

Model 型號	MC-2438	MC-2538	MC-2638	MC-2738	MC-2838	MC-2038
Appearance 產品圖						
Size 尺寸	48 mm x 48 mm	48 mm x 96 mm	96 mm x 48 mm	72 mm x 72 mm	96 mm x 96 mm	90 x 80x40mm
Cut-Out 開孔尺寸	44.5 <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>	44.5 <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub> x 44.5mm <sup>+0.5</sup> <sub>-0</sub>	68.5 <sup>+0.5</sup> <sub>-0</sub> x 68.5mm <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>	None
Accuracy 精度				0.2% F.S.		
Control Action 控制方式			PID, P, PI, PD, ON / OFF(P=0)			
Input 輸入	TC 熱電偶		K, J, T, R , E, S, B, N			
	RTD 白金電阻體		DIN PT100Ω , JIS PT100Ω			
	mA DC 電流信號		0~20mA, 4~20mA			
	Voltage DC 電壓信號		0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V			
Output 第一組 輸出	Relay 繼電器	SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type
		3A , 250V , electrical life : 100,000 times or more(under the rated load)				
	SSR			ON:24V , OFF:0V , Maximum load current:20mA		
	4~20mA			Maximum load resistance 300Ω		
	0~5V, 0~10V, 1~5V, 2~10V			Maximum load current 20mA		
Alarm 1 第一組警報	SPST Type	SPDT Type	SPDT Type	SPST Type	SPDT Type	SPST Type
	3A , 250V , electrical life : 100,000 times or more(under the rated load)					
Temp. Setting Range 溫度設定範圍			User Selection			
Supply Voltage 電源電壓			AC 85 ~ 265V 50/60Hz, DC 15 ~ 50V			AC 85 ~ 265V 50/60Hz

### ■ Optional Spec 追加附屬功能規格

Model 型號	MC-2438	MC-2538	MC-2638	MC-2738	MC-2838	MC-2038	
Output 第二組 輸出	Relay 繼電器	For heating and cooling control use					
		SPST Type	SPST Type	SPST Type	SPST Type	SPST Type	None
		3A , 250V , electrical life : 100,000 times or more(under the rated load)					
	SSR			ON:24V , OFF:0V , Maximum load current:20mA			
	4~20mA			Maximum load resistance 300Ω			
Alarm 2 第二組警報	SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type	SPST Type	
	3A , 250V , electrical life : 100,000 times or more(under the rated load)						
Alarm 3 第三組警報	None	SPST Type	SPST Type	SPST Type	SPST Type	None	
		3A , 250V , electrical life : 100,000 times or more(under the rated load)					

# MICRO-PROCESSOR PID TEMPERATURE CONTROLLER

## 微電腦PID溫度控制器

### ■ Optional Spec 追加附屬功能規格

Model 型號	MC-2438	MC-2538	MC-2638	MC-2738	MC-2838	MC-2038
Retransmission 傳送輸出	0~20mA(Adjustable), 4~20mA(Adjustable), 0~5V, 0~10V, 1~5V, 2~10V					
Remote SV Input 遙控輸入	0~20mA, 4~20mA, 0~5V, 0~10V, 1~5V, 2~10V					None
Communication 通訊功能	Protocol : Modbus RTU, Master Slave Only for RS485					
	Interface: RS232, RS485					
	Baud rate: 9600, 19200, 38400, 57600, 115200 bps					
	Data bits : 8, Stop bit : 1, Parity : None, Odd, Even					

### ■ Order Information 訂貨索引

MC - **2 4 3 8** - **1 0 1** - **0 0 1** - **U A**  
 A      B      C      D      E      F      G      H      I

MC - **2 0 3 8** - **1 0 2** - **0 0 1** - **U A**  
 B      G      H

#### A. Model 型號:

2438  
2538  
2638  
2738  
2838

#### B. Out 1 control output mode (Heating/Cooling)

第一組輸出(加熱或冷卻):  
 0 - None  
 1 - Relay contact, SPDT 3A/250VAC  
 (\*MC-2438 & MC-2038: Relay contact, SPST 3A/250VAC)  
 2 - SSR Voltage pulse, 24VDC/20mA  
 3 - Current, 4-20mA  
 4 - Open loop motor valve (3wire)  
 7 - Close loop motor valve (6wire)  
 A - 0~5V  
 B - 0~10V  
 C - 1~5V  
 D - 2~10V

#### C. Out 2 control output mode (Cooling)

第二組輸出(冷卻):  
 0 - None  
 1 - Relay contact, SPST 3A/250VAC  
 2 - SSR Voltage pulse, 24VDC/20mA  
 3 - Current, 4-20mA  
 A - 0~5V  
 B - 0~10V  
 C - 1~5V  
 D - 2~10V

#### D. Alarm 警報:

0 - None  
1 - 1 set  
2 - 2 sets  
3 - 3 sets

#### E. Retransmission 傳送輸出:

0 - None  
1 - 4~20mA (Adjustable)  
2 - 0~20mA (Adjustable)  
A - 0~5V  
B - 0~10V  
C - 1~5V  
D - 2~10V

#### F. Second Input 遙控輸入:

0 - None  
1 - 4~20mA  
2 - 0~20mA  
3 - CT for heater break alarm  
A - 0~5V  
B - 0~10V  
C - 1~5V  
D - 2~10V

#### G. Communication 通訊功能:

0 - None  
1 - RS232  
2 - RS485

#### H. Input type 輸入:

U - TC/RTD	G - 4~20mA+DC24V
A - 4~20mA	H - 0~20mA+DC24V
B - 0~20mA	I - 0~5V+DC24V
C - 0~5V	J - 0~10V+DC24V
D - 0~10V	K - 1~5V+DC24V
E - 1~5V	L - 2~10V+DC24V
F - 2~10V	

#### I. Main power 電源電壓:

A - AC 85~265V  
D - DC 15~50V

# MICRO PROCESSOR TWO-CHANNELS PID TEMPERATURE CONTROLLER

微電腦雙迴路PID溫度控制器

Model 型號	MC-2938									
Appearance 產品圖										
Size 尺寸	96 mm x 96 mm									
Cut-Out 開孔尺寸	90.5mm <sup>+0.5</sup> <sub>-0</sub> x 90.5mm <sup>+0.5</sup> <sub>-0</sub>									
Accuracy 精度	0.2% F.S.									
Control Action 控制方式	PID, P, PI, PD, ON / OFF(P=0)									
Input 輸入	<table border="0"> <tr> <td>TC 熱電偶</td> <td>K, J, T, R, E, S, B, N</td> </tr> <tr> <td>RTD 白金電阻體</td> <td>DIN PT100Ω, JIS Pt100Ω</td> </tr> <tr> <td>mA DC 電流信號</td> <td>0~20mA, 4~20mA</td> </tr> <tr> <td>Voltage DC 電壓信號</td> <td>0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V</td> </tr> </table>	TC 熱電偶	K, J, T, R, E, S, B, N	RTD 白金電阻體	DIN PT100Ω, JIS Pt100Ω	mA DC 電流信號	0~20mA, 4~20mA	Voltage DC 電壓信號	0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V	
TC 熱電偶	K, J, T, R, E, S, B, N									
RTD 白金電阻體	DIN PT100Ω, JIS Pt100Ω									
mA DC 電流信號	0~20mA, 4~20mA									
Voltage DC 電壓信號	0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V									
Output 輸出	<table border="0"> <tr> <td rowspan="2">Relay 繼電器</td> <td>SPDT Type</td> </tr> <tr> <td>3A, 250V, electrical life : 100,000 times or more(under the rated load)</td> </tr> <tr> <td>SSR</td> <td>ON:24V, OFF:0V, Maximum load current:20mA</td> </tr> <tr> <td>4~20mA</td> <td>Maximum load resistance 300Ω</td> </tr> <tr> <td>0~5V, 0~10V, 1~5V, 2~10V</td> <td>Maximum load current 20mA</td> </tr> </table>	Relay 繼電器	SPDT Type	3A, 250V, electrical life : 100,000 times or more(under the rated load)	SSR	ON:24V, OFF:0V, Maximum load current:20mA	4~20mA	Maximum load resistance 300Ω	0~5V, 0~10V, 1~5V, 2~10V	Maximum load current 20mA
Relay 繼電器	SPDT Type									
	3A, 250V, electrical life : 100,000 times or more(under the rated load)									
SSR	ON:24V, OFF:0V, Maximum load current:20mA									
4~20mA	Maximum load resistance 300Ω									
0~5V, 0~10V, 1~5V, 2~10V	Maximum load current 20mA									
Alarm 警報	<table border="0"> <tr> <td rowspan="2">SPDT Type</td> <td>3A, 250V, electrical life : 100,000 times or more(under the rated load)</td> </tr> </table>	SPDT Type	3A, 250V, electrical life : 100,000 times or more(under the rated load)							
SPDT Type	3A, 250V, electrical life : 100,000 times or more(under the rated load)									
	Temp. Setting Range 溫度設定範圍	User Selection								
Supply Voltage 電源電壓	AC 85 ~ 265V 50/60Hz, DC 15 ~ 50V									

## ■ Order Information 訂貨索引

**SET 1**                    **SET 2**  
**MC - 2 9 3 8 - 4 1 0 1 1 - 4 1 0 2 0**  
**A B C D E                F G H I J**

A. Input Signal 輸入信號:		B. Output1 第一組輸出:		C. Output2 第二組輸出:		D. Alarm 警報:		E. Additional Function 附加功能:	
1 - S	A - PT100Ω	0 - None		0 - None		0 - None		0 - None	
2 - B	B - 0~20mV	1 - Relay, contact SPDT		1 - Relay, contact SPST		1 - 1 set		0 - None	
3 - R	C - 0~50mV	3A/250VAC		3A/250VAC		2 - 2 sets		1 - RS485	
4 - K	D - 0~5V	2 - Volt, voltage pulse, SSR	(24VDC/20mA)	2 - Volt, voltage pulse, SSR	(24VDC/20mA)	3 - 3 sets		A - 4~20mA(Retransmission)	
5 - E	E - 0~10V							B - 0~20mA(Retransmission)	
6 - T	F - 4~20mA	3 - mA Current, 4~20mA		3 - Current, 4-20mA				C - 0~5V(Retransmission)	
7 - J		A - 0~5V		A - 0~5V				D - 0~10V(Retransmission)	
8 - N		B - 0~10V		B - 0~10V				E - 1~5V(Retransmission)	
		C - 1~5V		C - 1~5V					
		D - 2~10V		D - 2~10V					
F. Input Signal 輸入信號:		G. Output1 第一組輸出:		H. Output2 第二組輸出:		I. Alarm 警報:		J. Additional Function 附加功能:	
1 - S	A - PT100Ω	0 - None		0 - None		0 - None		0 - None	
2 - B	B - 0~20mV	1 - Relay, contact SPDT		1 - Relay, contact SPST		1 - 1 set		0 - None	
3 - R	C - 0~50mV	3A/250VAC		3A/250VAC		2 - 2 sets		1 - RS485	
4 - K	D - 0~5V	2 - Volt, voltage pulse, SSR	(24VDC/20mA)	2 - Volt, voltage pulse, SSR	(24VDC/20mA)	3 - 3 sets		A - 4~20mA(Retransmission)	
5 - E	E - 0~10V							B - 0~20mA(Retransmission)	
6 - T	F - 4~20mA	3 - mA Current, 4~20mA		3 - Current, 4-20mA				C - 0~5V(Retransmission)	
7 - J		A - 0~5V		A - 0~5V				D - 0~10V(Retransmission)	
8 - N		B - 0~10V		B - 0~10V				E - 1~5V(Retransmission)	
		C - 1~5V		C - 1~5V					
		D - 2~10V		D - 2~10V					

# MINIATURE TEMPERATURE CONTROLLER

## 迷你型溫度控制器



AUM Seris

AUM-KNA/2KND

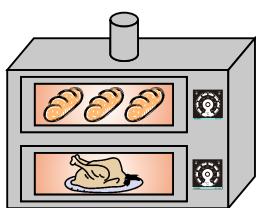
Model 型號	Range(°C)範圍	Sensor 感應器	Relay 繼電器	Power 電源	Trans 變壓器	Applications 應用	Remarks 備註
AUM-140N	-40.0~100.0	NTC5.0 x 1ea	Null	230VAC	Installed	Display Only	White/black body all possible
AUM-1000N	-40.0~100.0	NTC5.0 x 1ea	1ea	12VAC/DC	Seperated	Heater/Cooler	W/Transformer
AUM-1000NA	-40.0~100.0	NTC5.0 x 1ea	2ea	12VAC/DC	Seperated	Heater/Cooler + Alarm	W/Transformer
AUM-2000ND	-40.0~100.0	NTC5.0 x 1ea	2ea	12VAC/DC	Seperated	Cooler + Defroster (Time Control)	W/Transformer
AUM-2000NM	-40.0~100.0	1 x 4~20mA	2ea	12VAC/DC	Seperated	Cooler + Mixer by time	W/Transformer
AUM-3000RH	0~100%	Option	1ea	12VAC/DC	Seperated	Humid/De-humid + Alarm	Probe Option
AUM-5000PA	-50~500	PT-100Ω	2ea	12VAC/DC	None	Heater/Cooler + Alarm W/O Transformer	Sensor 2P/Option ,12VAC/DC
AUM-500PD	0~300	PT-100Ω	2ea	12VAC/DC	None	Heater + Heater	W/O Sensor & Transformer
AUM-KNA	-40.0~99.9	NTC5KΩ x 1ea	2ea	220VAC	Installed	Heater/Cooler + Alarm	-
AUM-2KND	-40.0~99.9	NTC5KΩ x 1ea	2ea	220VAC	Installed	Cooling Control	-

## APPLICATIONS STORY

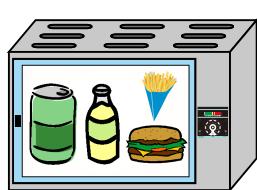
### 應用模式

Temperature control is widely applied in industrial control systems. For example in ceramic industry (ceramic, glass production), heat treatment, industrial drying equipment, incinerator, food processing, medical equipment, baking industry and other types of equipment which requires thermostatic control.

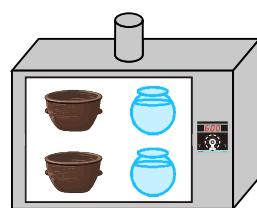
溫度控制在工業控制應用非常廣泛，舉凡窯業(陶瓷玻璃製造)、熱處理、大型工業乾燥設備、焚化爐、食品加工、醫療設備、烘焙業以及各種需要恆溫控制的設備都可發現它的使用蹤跡。



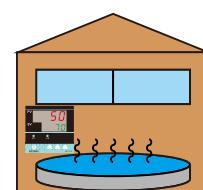
Oven 烤箱



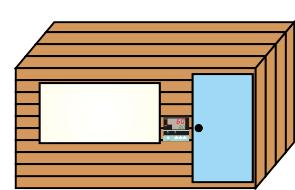
Constant temperature cabinet  
恒溫箱



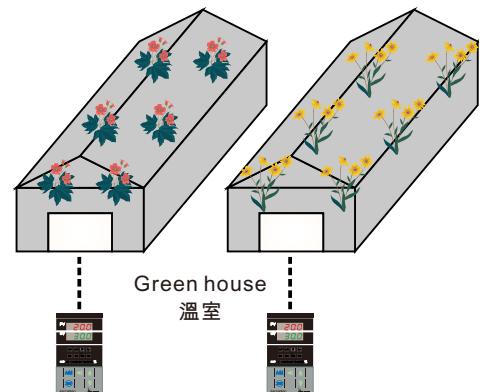
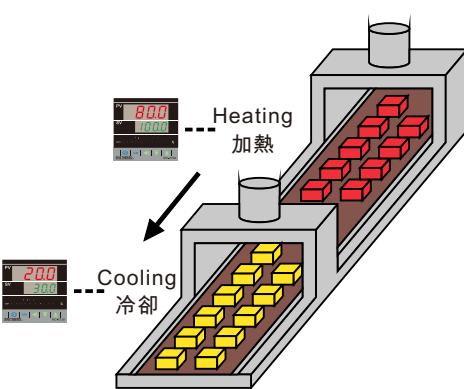
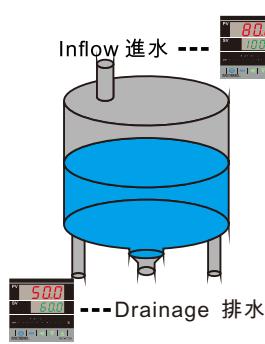
Ceramic, glass production  
陶瓷、玻璃等等製造



Hot spring 溫泉



Sauna 三溫暖



Green house 溫室

# HOT-RUNNER CONTROL SYSTEM & MC-550 TEMP. CONTROLLER

## 熱澆道控制系統 & MC-550 溫度控制器

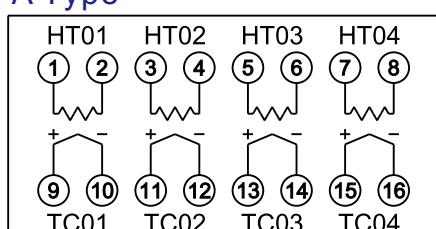
### ■ Specifications 規格

Model 型號	MHR-503	MHR-504	MHR-506	MHR-508	MHR-512
Appearance 產品圖					
Output Wattage 輸出功率	240V, 3600W, 15AMPS				
Output 輸出	TRIAC Single phase				
Output Plug 輸出插座	16 Pins X 1	24 Pins X 1	16 Pins X 2	24 Pins X 2	
Protection 保護跳脫	Quick Break Fuse				
Breaker Capacity 斷路器容量	—	400V 3P 50A	400V 3P 63A		
Fans 散熱風扇	—	220V 4" 1 Set	220V 4" 2 Set	220V 4" 2 Set	220V 4" 3 Set
Power Cable 電源纜線	3.5mm <sup>2</sup> x3C x3M	5.5mm <sup>2</sup> x5C x4M	8.0mm <sup>2</sup> x5C x4M		
Output Cable 輸出纜線	3M Double 16P plug X 1	3M Double 16P plug X 1	3M Double 24P plug X 1	3M Double 16P plug X 2	3M Double 24P plug X 2
Dimension 尺寸	180x280 x230(mm)	360x290x230 (mm)	460x290x230 (mm)	560x290x230 (mm)	760x290x230 (mm)
Weight 重量	6Kgs	11Kgs	14Kgs	17Kgs	21Kgs

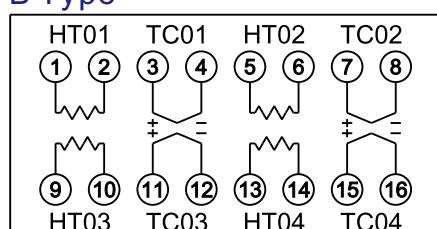
Connector Type 連接器型式	Single Hook & Single Button 單鈎 & 單扣	Dual Hook & Dual Button 雙鈎 & 雙扣	Dual Button & Dual Hook 雙扣 & 雙鈎
	 	 	 

### ■ Wiring Diagram 配線圖

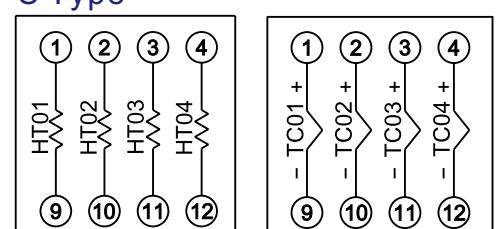
A Type



B Type



C Type



# HOT-RUNNER CONTROL SYSTEM & MC-550 TEMP. CONTROLLER

## 熱澆道控制系統 & MC-550 溫度控制器



### ■ Specifications 規格

Supply Voltage 電源電壓	AC 85~265V 50/60 Hz
負載電流(A) Load Current(A)	15A, 1650W(110V), 3300W(220V)
Input 輸入	K, J
Output 輸出	TRIAC
Temp. Setting Range 溫度設定範圍	100°C~400°C / 212°F~752°F
Control Mode 控制模式	PID
Accuracy 精度	≥ ±0.5% F.S. ±1dig
Temp. / Humidity 工作溫 / 濕度	-10°C~50°C / 10%~80%RH
Weight 重量	470g

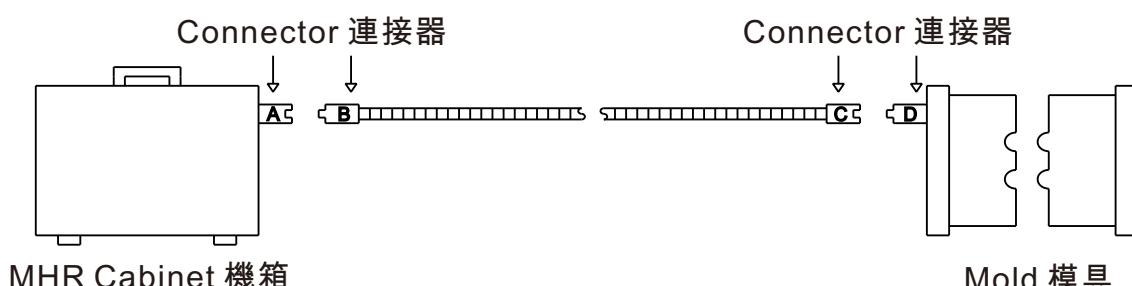
### ■ 特色：

- 自動偵測故障顯示功能
- 自動/ 等待/ 手動三種模式可選擇
- 自動演算功能/ 預先自動演算功能
- 可選擇熱電偶J或K
- 上/ 下偏差警報
- 溫度設定範圍: 100°C~400 °C/ 212~752 °F
- 軟啟動功能
- PID控制

### ■ Features

- Auto Detection Of Fault Display
- Auto / Manual / Standby Control Mode
- Auto Tuning / Self Tuning
- Selectable J or K Thermocouple
- Deviation High & Low Alarm
- Temperature Setting Range : 100~400 °C/ 212~752 °F
- Soft Start Function
- PID Control

### ■ Mold Connector 模具連接器



### ■ Order Information 訂貨索引

A    B    C    D    E    F  
MHR- 506 - 2 1 2 2 1

#### A. Cabinet 機箱 :

MHR-501 = 1 zone    MHR-504 = 4 zones  
 MHR-502 = 2 zones    MHR-506 = 6 zones  
 MHR-503 = 3 zones    MHR-508 = 8 zones  
 (1~3 zones only  
 MHR-503 cabinet)

#### B. Power Supply 電源系統 :

- 1 - Single phase 3 wire 200~242VAC (MHR-501, 502, 503 only)
- 2 - 3 phase 4 wire 200~242VAC
- 3 - 3 phase 5 wire 380~415VAC

#### C. Terminal Assignment 連接器配線 :

- 1 - A Type
- 2 - B Type
- 3 - C Type

#### D. Housing 連接器座端型式 :

- 1 - Single Hook
- 2 - Dual Hook
- 3 - Dual Button

#### E. Hoods 連接器線端型式 :

- 1 - Single Button
- 2 - Dual Button
- 3 - Dual Hook

#### F. Thermocouple Type 热電偶類型

- 1 - K Type
- 2 - J Type

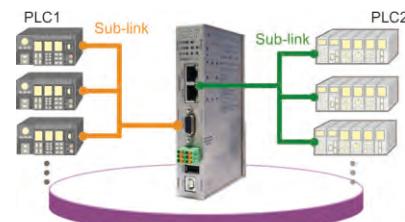
# INDUSTRIAL DATA GATEWAY

## 工業數據盒

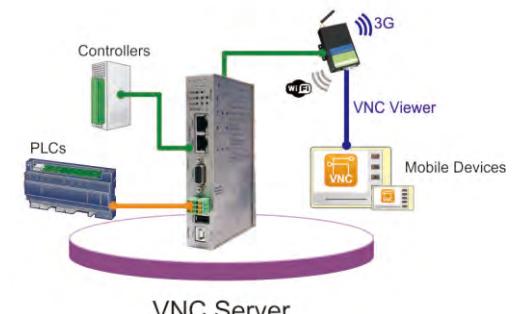
Model Name		MG32-G2D-U1R1
CPU & Memory 處理器 & 記憶體		
CPU 中央處理器	RISC ARM9 32Bit	
Battery Backup SRAM 電池備份記憶體	128KB	
Working Memory 工作記憶體	64MB	
Build-in Storage Memory 備份記憶體	8MB	
RTC 萬年曆	Yes	
Serial Communications 串列埠通訊		
Serial Signals 串列埠信號支援	RS-232: TXD, RXD, SG	
	RS-422: TXD+, RXD+, TXD-, RXD-	
	RS-485: Data+, Data-, SG	
Serial Connector 串列埠類型	9Pin-female D-Sub Connector & 3Pin Terminal Blocks	
Data Rate 資料數率	Up to 187.5Kbps	
Isolation 訊號隔離	Yes	
USB Ports		
USB Host	USB 1.1	
USB Client	USB 2.0	
Ethernet Communications 乙太網路通訊		
Compatibility 相容性	IEEE 802.3, IEEE 802.3u	
Speed 速度	10/100 Mbps	
Port Connector 乙太接口	8-Pin RJ45	
Isolation 訊號隔離	Yes	
Software 軟體		
OS Support 作業系統	RTOS (Real-time O.S.)	
Software Version 軟體版本	PM Designer v2.1.2.00 or higher	
Reboot Trigger 重啟觸發	Watchdog Timer	
Power Supply 電源		
Source 來源	External	
Input Voltage 輸入電壓	12-30 VDC, 5W	
Connector 電源端子	6Pin-Terminal Blocks	
Relay Output Current Carry Capacity 接點可承受電流	1A@24 VDC	
Isolation 訊號隔離	Yes	
Environment 工作環境		
Operating Temperature 操作溫度	-20°C~70°C	
Storage Temperature 儲藏溫度	-25C~75°C	
Humidity 相對溼度	10%~90%	
Shock(operation) 耐震性(操作)	10 ~ 55Hz(X,Y,Z direction, 1G, 30 minutes shock test)	
Mechanical 機構		
LED Indicators LED指示燈	PWR1/PWR2/COM1/COM2/COM3/ RUN/STATUS1 /STATUS2	
Switches 模式切換	Battery Switch / Mode Switch	
SD Slot SD卡槽	Yes	
Dimensions(WxHxD) 尺寸	29 x 150.3 x 98.6 mm	
Enclosure 外殼	Metal	
Weight 重量	0.4 Kg	
Mounting 安裝方式	DIN-Rail Mounting/Panel Mounting	
Certifications 認證		
Certificate 證書	CE, FCC	



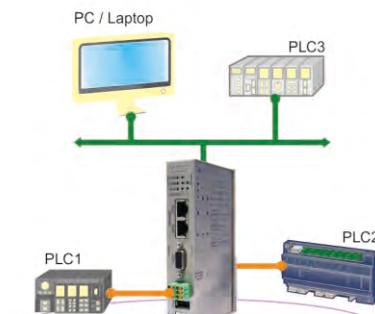
### Application 應用:



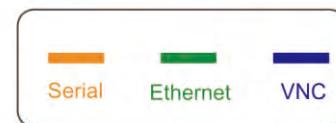
Data Exchange



VNC Server



Gateway Service



# COMPACT HUMAN MACHINE INTERFACE

## 精簡型人機介面

Model Name	MA2043	MA2070	MA2100
Products			
Sub-models	20ST / 20FT	30ST / 30FT	30ST / 30FT
View Size	4.3" diagonal	7.0" diagonal	10.2" diagonal
Display Type	TFT LCD with LED Backlight , 16-bit Colors		
Backlight Life (hr)	20000		
Display Luminance	350 (cd/m²)	350 (cd/m²)	250(cd/m²)
Max. Resolution	480*272	800*480	1024*600
CPU	RISC ARM9 32Bit		
Touch Panel	4-wire Analog Resistive Type		
Backup SRAM	128KB (optional: 1MB)		
Working Memory	64MB		
AP Max Size for Memory	20MB		
Data File Memory	64MB		
Real-Time Clock (RTC)	YES (Unchargeable Battery type, 3 years battery life)		
Quantity for SCADA	Maximum: 30 Pages		
Quantity for Macro Commands	Maximum: 100 Lines		
Micro SD Slot	N/A		
USB Client	YES (USB 2.0)		
USB Host	YES (USB 2.0)		
COM1	RS232		
COM2	N/A	RS422/485	
COM3	RS485 (5Pin Terminal)	RS485 (DB9)	
Ethernet	N/A		
Front Function Keys	20ST: N/A, 20FT: YES (F1 ~ F5)	30ST: N/A, 30FT: YES (F1 ~ F6)	30ST: N/A, 30FT: YES (F1 ~ F7)
Front USB Host Port	N/A (optional)		
Power Supply Voltage	12~24VDC ±10%		
Power Consumption	2W	3W	3.5W
Operating Temp.	-10°C~50°C (Optional: -30°C~70°C )		
Relative Humidity	10%~90%		
Shock (Operation)	10 ~ 55Hz (X, Y, Z direction, 1G, 30 Mins shock testing)		
EMI	FCC Part 15 Class A		
CE	EN61000-6-2, EN61000-6-4		
Ingress Protection	IP65		
Cooling	Natural Cooling		
Dimensions (WxHxD)Unit : mm	129.0 x 103.0 x 26.3	203.5 x 149.0 x 33.0	270.1 x 212.1 x 42.5
Cutout Dimensions (WxH)Unit : mm	119.0 x 93.0	192.0 x 138.5	259.5 x 201.5
Net Weight (kg)	0.35	0.65	1.2

# HUMAN MACHINE INTERFACE

## 人機介面

Model Name	MK043-WST	MK070-WST	MK100-WST	MT043-WSP	MT043-WST	MT070-WST				
Products										
Sub-models	10 / 30	20 / 40	20 / 40	1	1 / 4	2 / 4				
View Size	4.3" diagonal	7.0" diagonal	10.1" diagonal	4.3" diagonal	4.3" diagonal	7.0" diagonal				
Display Type	TFT LCD with LED Backlight			TFT LCD with LED Backlight						
Max. Colors	16-bit			16-bit						
Backlight Life (hr)	20000	20000	20000	20000	20000	20000				
Display Luminance	250 (cd/m <sup>2</sup> )	250(cd/m <sup>2</sup> )	150 (cd/m <sup>2</sup> )	280 (cd/m <sup>2</sup> )	400 (cd/m <sup>2</sup> )	300 (cd/m <sup>2</sup> )				
Max. Resolution	480*272	800*480	1024*600	480*272	480*272	800*480				
Display Contrast	500	500	500	500	500	500				
CPU	RISC ARM9 32Bit			RISC ARM9 32Bit						
Touch Panel	4-wire Analog Touch Panel			4-wire Analog Resistive Type						
Backup SRAM	128KB (optional: 1MB)			128KB (optional: 1MB)						
Working Memory	32MB			32MB		64MB				
Built-in Storage Memory	8MB	8MB+128MB (NAND Flash)		8MB	Sub-Model 1: 8MB Sub-Model 2/4: 8MB+128MB (NAND Flash)					
Real-Time Clock (RTC)	YES			YES						
Micro SD Slot	N/A			N/A	Sub-Model 2/4: YES					
USB Client	YES (USB 1.1)			YES (USB 2.0)						
USB Host	YES (USB 1.1)			YES (USB 1.1)						
COM1 / COM3	COM1: RS232/RS422/RS485, COM3: RS232 (optional: RS485)			COM1: RS232/422/485; COM3: RS232 (optional: RS485)						
COM2	N/A			RS422/485	A-RS422/485 B-RS232/485 C-RS232 with RTS&CTS					
COM4	N/A			N/A						
Ethernet	Sub-Model 30: YES	Sub-Model 40: YES	Sub-Model 40: YES	N/A	Sub-Model 4: YES					
Front Function Keys	N/A			23-keys	N/A					
Audio out (optional)	N/A			N/A						
Video in (optional)	N/A			N/A						
Front USB Host Port	N/A			N/A		USB 1.1 (optional)				
Power Connector	24VDC±10% Isolated			24VDC±10% Isolated						
Power Consumption	10W	20W		10W	20W					
Operating Temp.	0°C~50°C			-10°C~60°C						
Relative Humidity	10%~90%			10%~90%						
Shock (Operation)	10 ~ 55Hz(X,Y,Z direction, 1G, 30 Mins shock testing)			10 ~ 55Hz(X,Y,Z direction, 1G, 30 Mins shock testing)						
EMI	FCC Part 15 Class A			FCC Part 15 Class A						
CE	EN61000-6-2, EN61000-6-4			EN61000-6-2, EN61000-6-4						
UL Certification	N/A			N/A	YES					
Ingress Protection	IP65			IP66						
Cooling	Natural Cooling			Natural Cooling						
Dimensions (WxHxD)Unit : mm	130.0 x 106.2 x 39.0	203.5 x 149.0 x 33.0	270.1 x 212.1 x 42.5	172.0 x 102.0 x 30.0	130.0 x 106.2 x 39.0	188.0 x 143.3 x 36.0				
Cutout Dimensions (WxH)Unit : mm	119.0 x 93.0	192.0 x 138.5	259.5 x 201.5	160.5 x 89.5	119.0 x 93.0	175.0 x 132.5				
Net Weight (kg)	0.35	0.65	1.1	0.33	0.35	0.6				

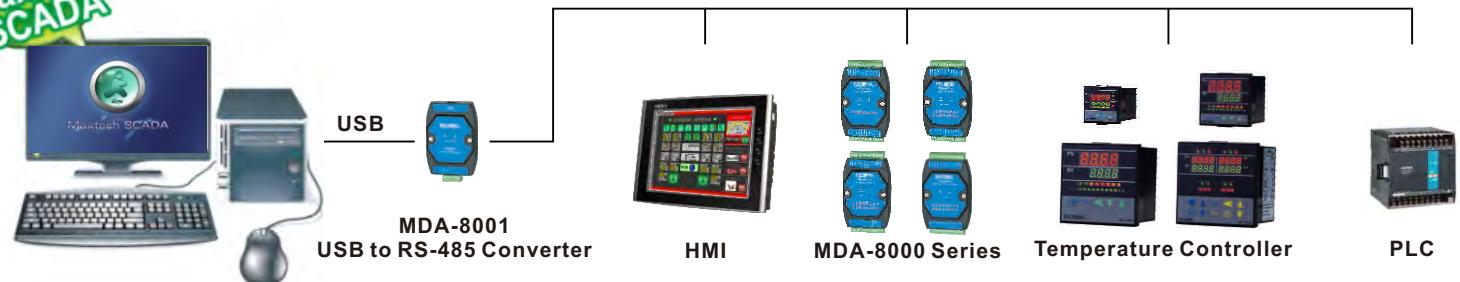
# HUMAN MACHINE INTERFACE

## 人機介面

Model Name	MT080-TST	MT100-WST	MT104-TST	MT121-TST	MT150-XSD				
Products									
Sub-models	2 / 4	2 / 4	2 / 4	4	4				
View Size	8.0" diagonal	10.1" diagonal	10.4" diagonal	12.1" diagonal	15" diagonal				
Display Type	TFT LCD with LED Backlight								
Max. Colors	16-bit								
Backlight Life (hr)	20000	20000	20000	50000	50000				
Display Luminance	250 (cd/m²)	150 (cd/m²)	400(cd/m²)	450 (cd/m²)	350 (cd/m²)				
Max. Resolution	800*600	1024*600	800*600	800*600	1024*768				
Display Contrast	500	500	400	700	700				
CPU	RISC ARM9 32Bit								
Touch Panel	4-wire Analog Resistive Type				5-wire Analog Resistive Type				
Backup SRAM	128KB (optional: 1MB)								
Working Memory	64MB								
Built-in Storage Memory	Sub-Model 2/4: 8MB+128MB (NAND Flash)								
Real-Time Clock (RTC)	YES								
Micro SD Slot	YES								
USB Client	YES (USB 2.0)								
USB Host	YES (USB 1.1)								
COM1 / COM3	COM1: RS232/RS422/RS485, COM3: RS232 (optional: RS485)								
COM2	A-RS422/485 B-RS232/485 C-RS232 with RTS&CTS								
COM4	N/A								
Ethernet	Sub-Model 4: YES								
Front Function Keys	N/A								
Audio out (optional)	N/A								
Video in (optional)	N/A								
Front USB Host Port	N/A	USB 1.1 (optional)		N/A					
Power Connector	24VDC±10% Isolated								
Power Consumption	20W								
Operating Temp.	-10°C~60°C								
Relative Humidity	10%~90%								
Shock (Operation)	10 ~ 55Hz(X,Y,Z direction, 1G, 30 Mins shock testing)								
EMI	FCC Part 15 Class A								
CE	EN61000-6-2, EN61000-6-4								
UL Certification	YES			N/A	YES				
Ingress Protection	IP66								
Cooling	Natural Cooling								
Dimensions (WxHxD)Unit : mm	231.5 x 174.5 x 42.5	270.1 x 212.1 x 42.5	270.1 x 212.1 x 42.5	335.4 x 245.9 x 54.8	399.1 x 297.6 x 55.0				
Cutout Dimensions (WxH)Unit : mm	221.0 x 164.0	259.5 x 201.5	259.5 x 201.5	301.5 x 228.0	384.5 x 283.0				
Net Weight (kg)	0.93	1.2	1.2	1.9	2.68				



Maxtech  
SCADA



極大圖控(Maxtech SCADA)是一個基於微軟視窗作業系統的人機介面運行程式。有了它，您可以利用PC的豐富資源，如運算速度，儲存空間，多媒體，周邊設備，和較大的螢幕等來實現高階複雜的人機介面。它的規劃軟體與MT系列人機介面產品相同，都是採用觸控大師(Maxtech Designer)。為了極大設計的人機介面應用，能由極大圖控執行。反之，為了極大圖控設計的人機介面應用，除去PC上特有功能，也能在MT系列人機介面上運行。這個跨平台的彈性，對於因功能或成本考量必須轉換硬體種類時，提供了快速有效的解決方案。

### ■ 特色

- 低成本微軟視窗版人機介面運行程式
- 為數眾多的畫面物件，滿足全方位人機介面操作與察看需求
- 最多同時連結16種不同的通訊物件
- 內部規劃點數沒有上限，外部點數5000點以上
- 免費提供100種以上經過實例驗証的通訊驅動程式
- 支持數據收集，警報監視，配方處理與操作記錄
- 巨集命令易學實用，巨集程式可嵌入在部份物件，畫面，和全局程序中
- 實用可靠的HMI引擎，實際安裝數量已超過100,000套
- 支援完整軟體貼牌功能

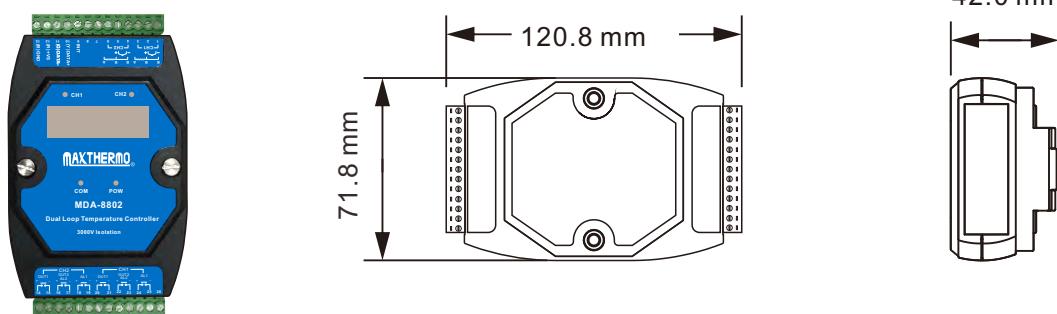
Maxtech SCADA is a Windows based HMI runtime. It enables you to utilize the resources of a PC, such as computation power, multimedia, and bigger screen, to realize a high-end sophisticated HMI. Its configuration software, Maxtech Designer, is also the development tool for MT series RTOS based HMI products. Thanks to the cross platform flexibility offered by Maxtech Designer, switching hardware for the consideration of cost and performance becomes an easy job.

### ■ Features

- Low cost Windows based HMI runtime
- 50 kinds of screen objects can fulfill almost all types of HMI operating and viewing needs for machine automation
- Supports up to 16 communication links
- No limitation on the number of I/O points used in an application
- Over 100 field proven communication drivers are provided for free
- Supports data collection, alarm monitoring, recipe handling, and operation logging
- Provides a complete set of useful macro commands. Macro programs can be embedded in objects, screens, and the global process
- The reliable HMI engine has over 100,000 installation sites
- Brand labeling possible

# DUAL LOOP TEMPERATURE CONTROLLER

## 雙迴路溫度控制器



### MDA-8802 Dual Loop Temperature Controller

Communication 通訊		Display 顯示	
Interface 通訊介面	RS-485	7-segment LED Display 七段顯示器	Blue 0.4" 4 digit display
Protocol 通訊協議	Modbus RTU	Status LED Indicator LED 指示燈	Power, Communication, CH1, CH2
Format 通訊格式	N, 8, 1		
Baud Rate 通訊速率	9600 ~ 115200 bps	Power 電源	
Control 控制		Input Range 輸入範圍	24V DC ±10%
Method 控制方式	PID, P, PI, PD, ON/OFF(P=0)	Consumption 功率	Approx. 3.6W
Proportional Band 比例帶	0 ~ full scale	Reverse Polarity Protection 反向極性保護	Yes
Integral Time 積分時間	0 ~ 7200 sec	Isolation 隔離電壓	
Derivative Time 微分時間	0 ~ 7200 sec	Voltage 電壓	3000V DC
Cycle Time 週期時間	1 ~ 150 sec	Input 輸入	
Action 動作方式	Heat, Cool, Heat/Cool	Sensor Inputs 感測器輸入	Thermocouple: K, J, T, R, RTD: PT100Ω
Output 輸出種類	Relay contact, SPST 3A/250VAC Voltage pulse, 24VDC/20mA (for SSR driven)	Input Filter 濾波器	First order lag digital filter 0.001 to 1.000
Alarm 警報		Sampling Time 取樣時間	500ms
Modes 警報模式	Deviation High, Low, High/Low, Band, Process High, Low	Environment 工作環境	
		Operating Temp. 工作溫度	-25 ~ +75 °C
Output 輸出種類	Relay contact, SPST 3A/250VAC Voltage pulse, 24VDC/20mA (for SSR driven)	Storage Temp. 儲存溫度	-40 ~ +85 °C
		Humidity 濕度	10 ~ 95% RH, Non-condensing

### ■ Order Information 訂貨索引

MDA-8802- A B C - D E F

A.CH1 Out1 control output mode

CH1 第一組輸出

1: Relay contact output

2: Voltage pulse output

C.CH1 AL1 control output mode

CH1 第一組警報

1: Relay contact output

2: Voltage pulse output

E.CH2 Out2/AL2 control output mode

CH2 第二組輸出/第二組警報

1: Relay contact output

2: Voltage pulse output

B.CH1 Out2/AL2 control output mode

CH1 第二組輸出/第二組警報

1: Relay contact output

2: Voltage pulse output

D.CH2 Out1 control output mode

CH2 第一組輸出

1: Relay contact output

2: Voltage pulse output

F.CH2 AL1 control output mode

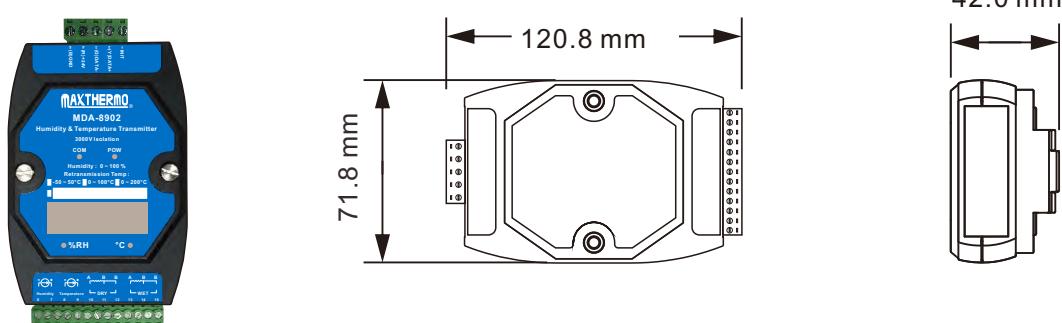
CH2 第一組警報

1: Relay contact output

2: Voltage pulse output

# HUMIDITY & TEMPERATURE TRANSMITTER

## 溫濕度傳送器



### MDA-8902 Humidity & Temperature Transmitter

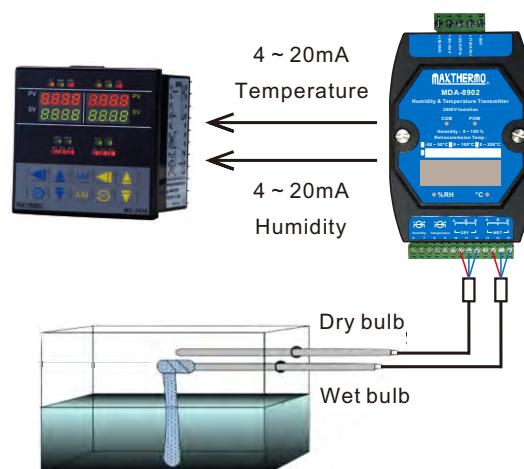
Communication 通訊		Accuracy 精度	
Interface 通訊介面	RS-485	Temperature 溫度	Within converted temperature $\pm 0.4^\circ\text{C}$
Protocol 通訊協議	Modbus RTU	Humidity 濕度	Within $\pm 3\%$ of full scale
Format 通訊格式		Power 電源	
Baud Rate 通訊速率	9600 ~ 115200 bps	Input Range 輸入範圍	24V DC $\pm 10\%$
Isolation 隔離電壓		Consumption 功率	Approx. 2W
Voltage 電壓	3000V DC	Reverse Polarity Protection 反向極性保護	Yes
Input 輸入		Display 顯示	
Wet bulb 濕球溫度	RTD, PT100Ω 3 wire system, 0 to 200°C	7-segment LED Display 七段顯示器	Blue 0.4" 4 digit display
Dry bulb 乾球溫度	RTD, PT100Ω 3 wire system, -100 to 200°C	Status LED Indicator LED 指示燈	Power, Communication, Temperature, Humidity
Sampling Time 取樣時間	500ms	Environment 工作環境	
Output 輸出		Operating Temp. 工作溫度	-25 ~ +75 °C
Temperature 溫度	4 to 20mA DC, Maximum load resistance 300Ω	Storage Temp. 儲存溫度	-40 ~ +85 °C
Humidity 濕度		Humidity 濕度	10 ~ 95% RH, Non-condensing

### ■ Order Information 訂貨索引

MDA-8902- [A]

#### A.Dry Bulb Setting Range 乾球溫度設定範圍

- 1: -50°C ~ 50°C
- 2: 0°C ~ 100°C
- 3: 0°C ~ 200°C
- 4: By order (-100°C ~ -200°C)



# CONVERTER & REPEATER

## 轉換器 & 中繼站



MDA-8001



MDA-8002



MDA-8011

USB to RS-485 Converter

USB to RS-232/422/485 Converter

RS-485 Repeater

Model 型號	MDA-8001	MDA-8002	Model 型號	MDA-8001	MDA-8002
Communication 通訊	Isolation 隔離電壓				
Serial Interface 串列通訊 介面	RS-232	TXD, RXD, GND  TXD+, TXD-, RXD+, RXD-	Voltage 電壓	3000V DC	
	RS-422		LED Indicator LED 指示燈		
	RS-485		Power Indicator 電源指示燈	1	
Connector 連接端子	RS-232/422/485	5-Pin Terminal Block	10-Pin Terminal Block	Power 電源	
		Type B, USB 1.1 and 2.0 standards		Input Range 輸入範圍	+5V DC from USB
	USB			Consumption 功率	Approx. 0.4W
Baud Rate 通訊速率	300 ~ 115200 bps		Reverse Polarity Protection 反向極性保護	Yes	
Transfer Distance 傳輸距離	Max. 1,200 m at 9.6 kbps Max. 400 m at 115.2 kbps		Environment 工作環境		
			Operating Temp. 工作溫度	-25 ~ +75 °C	
Max. Devices Supported 最大連接數量	256		Storage Temp. 儲存溫度	-40 ~ +85 °C	
			Humidity 濕度	10 ~ 95% RH, Non-condensing	

### MDA-8011 RS-485 Repeater

Communication 通訊	Isolation 隔離電壓		
RS-485 Input	Data+, Data-	Voltage 電壓	3000V DC
	10-Pin Terminal Block	Power 電源	
RS-485 Output	Data+, Data-	Input Range 輸入範圍	24V DC ±10%
	5-Pin Terminal Block	Consumption 功率	Approx. 2W
Baud Rate 通訊速率	300 ~ 115200 bps	Reverse Polarity Protection 反向極性保護	Yes
Transfer Distance 傳輸距離	Max. 1,200 m at 9.6 kbps Max. 400 m at 115.2 kbps	Environment 工作環境	
		Operating Temp. 工作溫度	-25 ~ +75 °C
LED Indicator LED 指示燈		Storage Temp. 儲存溫度	-40 ~ +85 °C
Power Indicator 電源指示燈	1	Humidity 濕度	10 ~ 95% RH, Non-condensing
Communication Indicator 通訊指示燈	1		

# REMOTE I/O MODULE

## 遠端I/O 模組



MDA-8508

Digital Input & Output Module



MDA-8316

Digital Input Module



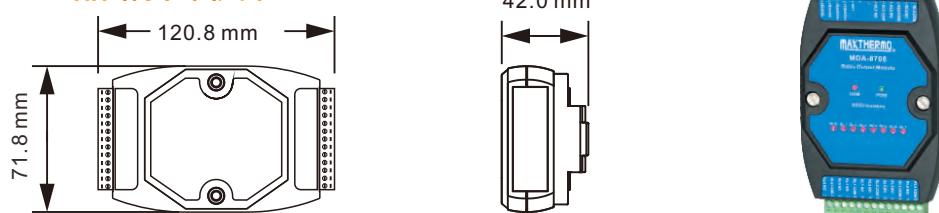
MDA-8416

Digital Output Module

Model 型號	MDA-8508	MDA-8316	MDA-8416	
Communication 通訊				
Interface 通訊介面	RS-485			
Protocol 通訊協議	Modbus RTU			
Format 通訊格式	N, 8, 1			
Baud Rate 通訊速率	9600 ~ 115200 bps			
LED Indicator LED指示燈				
Power Indicator 電源指示燈	1			
Communication Indicator 通訊指示燈	1			
I/O Indicator I/O指示燈	16			
Isolation 隔離電壓				
Voltage 電壓	3000V DC			
Power 電源				
Input Range 輸入範圍	24V DC ±10%			
Consumption 功率	Approx. 1W			
Reverse Polarity Protection 反向極性保護	Yes			
Environment 工作環境				
Operating Temp. 工作溫度	-25 ~ +75 °C			
Storage Temp. 儲存溫度	-40 ~ +85 °C			
Humidity 濕度	10 ~95% RH, Non-condensing			
Digital Input 數位輸入				
Channels 輸入點數	8 (Sink / Source)	16 (Sink / Source)		
Input Type 輸入類型	Isolated with Common Power or Ground			
Off Voltage Level 輸入 Off 電壓	+1V Max.			
On Voltage Level 輸入 On 電壓	+4 to +30 V			
Input Impedance 輸入阻抗	3KΩ			
Digital Output 數位輸出				
Channels 輸出點數	8 Sink		16 Sink	
Output Type 輸出類型	Open Collector (NPN)		Open Collector (NPN)	
Load Voltage 負載電壓	+3.5V~ +50 V		+3.5V~ +50 V	
Max Load Current 最大負載電流	100mA per channel		100mA per channel	
Surge Protection 突波保護	±3kV for Power Input		±3kV for Power Input	

## REMOTE RELAY OUTPUT MODULE

### 遠端繼電器輸出模組



MDA-8708 Relay Output Module / 繼電器輸出模組

Communication 通訊		Isolation 隔離電壓		
Interface 通訊介面	RS-485	Voltage 電壓		3000V DC
Protocol 通訊協議	Modbus RTU	Environment 工作環境		
Format 通訊格式	N, 8, 1	Operating Temp. 工作溫度		-25 ~ +75 °C
Baud Rate 通訊速率	9600 ~ 115200 bps	Storage Temp. 儲存溫度		-40 ~ +85 °C
LED Indicator LED指示燈		Humidity 濕度	10 ~ 95% RH, Non-condensing	
Power Indicator 電源指示燈	1	Digital Output 數位輸出		
Communication Indicator 通訊指示燈	1	Channels 繼電器點數	RL0~RL2	RL3~RL7
I/O Indicator I/O指示燈	8	Contact Type 接點類型	1 Form C	1 Form A
Power 電源		Rated Voltage 額定電壓	250V AC	250V AC
Input Range 輸入範圍		Rated Current 額定電流	5A	3A
Consumption 功率		Mechanical Endurance 機械耐久性	$15 \times 10^6$ ops.	$10 \times 10^6$ ops.
Reverse Polarity Protection 反向極性保護		Electrical Endurance 電氣耐久性	$10^5$ ops.	$10^5$ ops.

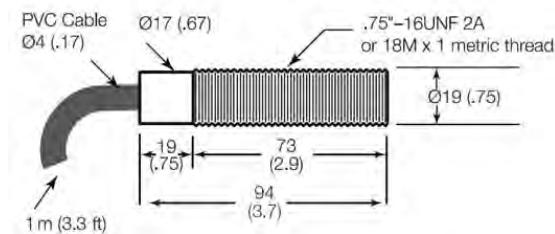
## INFRARED HYGROMETER & THERMOMETER

### 紅外線溫度計

Model 型號	MD-526	TN400L	610LC	611	621LC
Appearance 產品圖					
Temp. 溫度	Range 範圍 -20°C~500°C (-4°F~932°F)	-60°C~500°C (-76°F~932°F)	-20°C~260°C	-20°C~550°C	-20°C~100°C
	Accuracy 精度 ±2% or ±2°C	±1.0°C (±1.8°F)	±3% or ±3°C		±0.5°C for 0°C~50°C. ±1°C for -20°C~0°C, and 50°C~100°C
RH 濕度	Range 範圍 —	—	—	—	0%~100% RH
	Accuracy 精度 —	—	—	—	±2.5%RH(10%~90%RH) ±5%RH(<10%, >90%RH)
D:S	8:1	12:1	100mm Ø at 1000mm		—
Emissive 放射率	0.17~1.0	0.95	0.95	0.10~1.00	—
Response Time 反應時間	Once per second	1 sec	1 sec	1 sec	60 sec typical

## INFRARED THERMOCOUPLE

### 紅外線熱電偶-CM系列



The Raytek CM noncontact infrared pyrometer is compact and easy to install. Designed for easy integration, the CM sensor can easily replace traditional contact probes with a J-type or K-type thermocouple output, or with a user scalable 0-5 volt output.

CM系列高品質低價位的非接觸式紅外線測溫計CM能輸出J和K熱電偶信號，並具有極低的輸出阻抗，可直接取代熱電偶，因為不需接觸到物體，所以CM永不磨損而無須定期更換偵測頭，CM可承受70°C的工作溫度，CM除了提供J和K熱電偶信號輸出也可輸出MV的信號。

Temp. Range 測溫範圍	-20~500°C
Resolution 解析度	0.1°C
Emissivity 放射率	0.1 ~ 1.10
Output Signal 輸出訊號	Fixed (J ; K Type ; 10mV/°C)
D:S 距離目標比	13:1
Response time 反應時間	150ms (95% 反應)
Protection Level 保護等級	IP65 ( NEMA 4 )

Power 電源	24 VDC ± 20% @20mA
Accuracy 精確度	mV : 讀值±1.5 % 或 ± 2 °C J , K : 讀值±1.5 % ± 2 °C 或 ± 4 °C
Size 尺寸	1.9cm Φ X 9.4cm L

#### ■ Output Signal 輸出信號

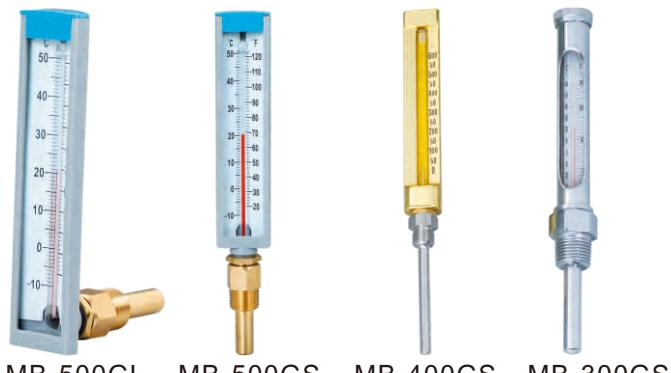
J Type : CMLT - J

K Type : CMLT - K

10mV/°C : CMLT - V

## CYLINDRICAL THERMOMETER

### 圓筒型溫度計



#### ■ Specifications 規格:

Type : GL for angle type, GS for straight type

型號 : GL為垂直型，GS為直型

Material Of Case : Plastic(MB-500) or chromium plated brass case

外殼材質 : 塑膠 (MB-500)或鋁合金鑄造，表面烤漆處理

Material Of Sensitive Stem : SUS304

感溫棒材質 : 不鏽鋼 #304

Filling Material : Below 200°C with organic liquid only  
above 200°C mercury available

充填材質 : 200°C以下僅酒精填充  
200°C以上可選水銀填充

Temp. Range : ±50°C~600°C

溫度範圍 : ±50°C~600°C

#### ■ Size 尺寸:

A : Body 本體

MB-300 : 18mm(Dia) X 100mm(L)

MB-400 : a.38mm(W) X 100mm(L)

b.38mm(W) X 150mm(L)

MB-500 : 38mm(W) X 163mm(L)

B : Sensor 本感溫部分

MB-300, MB-400 : 10mm(Dia) X 63mm(L)

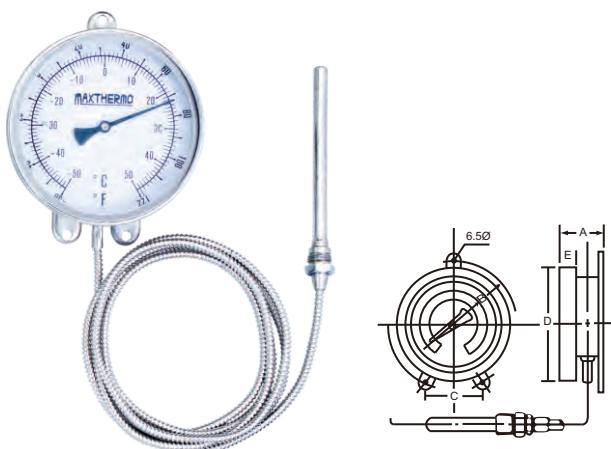
MB-500 : 10mm(Dia) X 50mm(L)

C : Thread Connection 螺牙

1/2" NPT

# CAPILLARY THERMOMETER

## 隔測溫度計及雙金屬溫度計



Unit:mm

D	A	B	C	E
4"	50	122	120°	15
6"	60	185	50°	18

### CAPILLARY THERMOMETER

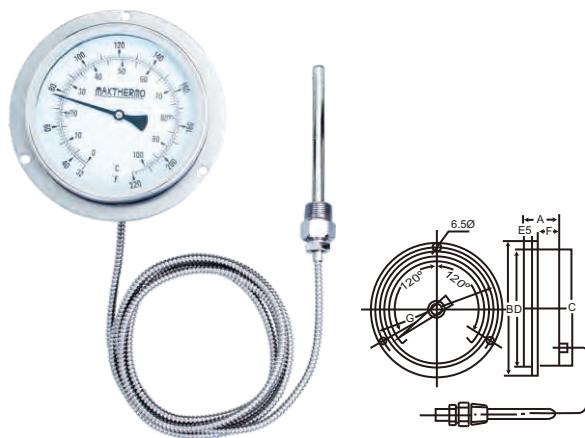
(MERCURY FILLED)

MA-102H (HANGING TYPE)

隔測溫度計 (壁掛型)

Material of Case : Stainless Steel

材質 : 外殼及感溫管 SUS304



Unit:mm

D	A	B	C	E	F	G
4"	53	136	103	17	25	124
6"	60	204	155	15	34	185

### CAPILLARY THERMOMETER

(MERCURY FILLED)

MA-102M (MOUNTING TYPE)

隔測溫度計 (埋入型)

Material of Case : Stainless Steel

材質 : 外殼及感溫管 SUS304

Accuracy 精度 : Within  $\pm 1\%$  of full scale.

Range 溫度範圍 :  $\pm 50^{\circ}\text{C}/\text{F}$  to  $0\text{-}500^{\circ}\text{C}/\text{F}$ .

Length of Spiral 毛細管長度 : Standard 3M, longest 10M.

Length of Sensor 感溫管長度 : Standard 12mm dia X 150mm  
or be ordered.

Electric Contactor 0.3A/110V can be produced by order.

可附加電氣接點 0.3A/110V.

With a 1 / 2" PT screw nut for 4" dial 附4分牙.

With a 3 / 4" PT screw nut for 6" dial 附6分牙.



BS型



BL型

Thread Connection : 2" to 3" dial with 1/4" PT,  
4" to 6" dial with 1/2" PT.

Accuracy : Within  $\pm 1\%$  of Full Scale.

Material : Stainless Steel (304) Cases And Stems.

Anti-Parallax Sealed Glass Windows, White Dials  
With Black Numerals.

Dual Scale (both  $^{\circ}\text{F}$  and  $^{\circ}\text{C}$ ) and External  
Adjustment to be Ordered.

Ranges :  $\pm 50^{\circ}\text{C}/\text{F}$  to  $0\text{-}500^{\circ}\text{C}/\text{F}$

Standard Length of Stem : 6", longer to be ordered.

面板 2"~3" 附 1/4" 牙, 4"~6" 附 1/2" PT牙。

精度 :  $\pm 1\%$

材質 : 不鏽鋼 SUS304

溫度範圍 :  $\pm 50^{\circ}\text{C}/\text{F}$  ~  $0\text{-}500^{\circ}\text{C}/\text{F}$

感溫棒標準長度 6" 加長價格另計。

BIMETAL THERMOMETER  
(BS TYPE)  
MB-200 雙金屬溫度計

BIMETAL THERMOMETER  
(BL TYPE)  
MB-201 雙金屬溫度計

# BI-METAL DIAL THERMOMETERS

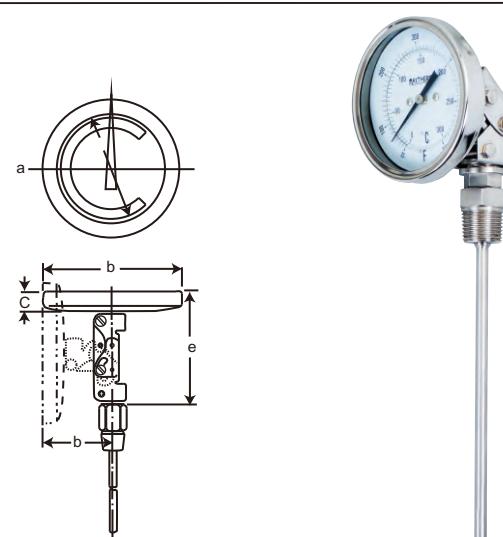
## 雙金屬溫度計

### ■ Specifications :

Dial	: 4", 5"
Case & Cover	: Material-304 stainless steel (SUS304)
Part of connection	(316 stainless steel is also available if required)
Sensitive stem	: Resin or glass
Dial scale plate	: Aluminum White background with black figures & marks
Temp. range	: -50~+500°C/F
Outside dia. of stem	: 6.35~8mmΦ
Length of stem	: 2½"~40" by orders
Indicating accuracy	: ±1% for full scale
Application	: Transformer, petrochemicals, driers, foods, air conditioning equip, boilers & other general industrial uses.

### ■ 規格:

外殼及蓋	: 材質 - 不鏽鋼#304 (316可特別訂製)
可調角部分	
接頭	
感溫棒	
計面	: 玻璃或耐熱樹脂
刻盤	: 鋁質,白底黑字
溫度範圍	: -50~+500°C
感溫棒直徑	: 6.35~8mmΦ
感溫棒長	: 依顧客需要,最短 2½"
精度	: ±1%
用途	: 變壓器、石油、乾燥器、空調、鍋爐, 食品及其他一般工業用途



Adjustable Angle 可調角式

(mm)

Size 尺寸	Diameter 直徑	a	b	c	d	e
2"	-	-	-	-	-	-
3"	72	83	16	1/4"PT	85	
4"	100	115.5	20	1/2"PT	89	
5"	110	127	18	1/2"PT	86.5	
6"	138.5	158.5	17.5	1/2"PT	85	

### 備註 :

- \*可調角式訂購時請告知
- (1) 型號
- (2) 製作溫度
- (3) 感溫棒徑及磅長
- (4) 若有其他特殊規格

### NOTE :

- \*When ordering specify
- (1) Type No.
- (2) Temperature range
- (3) Dial & length of stem
- (4) Other specifications as need

# INDUSTRIAL THERMOSTATS

## 產業用溫度調整器

### ■ Specifications 規格 :

型號 Model	溫度設定範圍 (°C) Temp. Range	設定溫度差 Differential	端子方式 Terminal	電器定格 Electrical Rating 16 (2) A 250/380V	毛細管 Capillary	
					Length	Material
TS-030S	-30~30	4±2	單極雙投 S.P.D.T	1000mm	SUS	
TS-050S	0~50				SUS	
TS-080S	0~80				SUS	
TS-120S	0~120				SUS	
TS-320S	50~320				SUS	

• 毛細管長度可另計 \*Other Capillary length available upon request.

### Ordering Information :

TS-030S R-C

→ with screw

→ knob type R or B

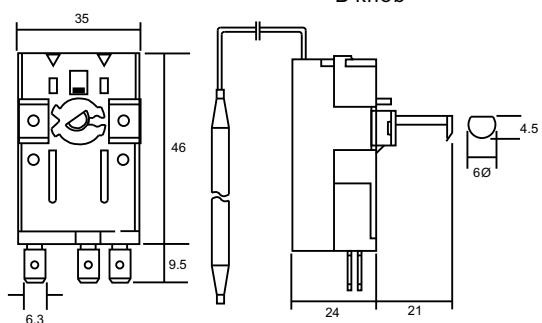


### ■ Application :

- Commercial Freezers & Refrigerators
- Ice Maker, Water Cooler, Vending Machine
- Electric & Gas Oven
- Electric Heaters
- Agricultural/Factorial Equipment

### ■ 用途 :

- 商業用冷凍冷藏庫
- 製冰機, 冷溫水機, 自動販賣機
- 電氣/瓦斯乾燥箱
- 農場/工廠用加熱設備



# 2 WIRE TEMPERATURE TRANSMITTER

## 兩線式溫度傳送器

### ■ FEATURES 產品特點

- Accuracy: 0.1% F.S. (PT-100), 0.2% F.S. ± 0.5 °C, cold junction compensation  
精確度 : 0.1% F.S.(Pt-100), 0.2%, F.S. ± 0.5°C 冷接點補償
- Measuring sensor type: PT-100 / J / K / T / E / R / S / B  
測量傳感器類型: PT-100 / J / K / T / E / R / S / B
- Temperature units (°C, °F) programmable 溫度單位(°C, °F)可任意規劃
- Field range power supply: 10~30Vdc 寬範圍電源輸入範圍直連10~30伏特
- Low cost and high stability 高可靠度與安裝簡單



MGW

### ■ Specifications 規格

Accuracy 精確度	0.1% F.S. (PT-100)/ 0.2% F.S.± 0.5°C(CJC)(Thermocouple)
CJ Compensation 冷接點補償精確度	<±0.5°C(0~70°C)
Sensor Exciting Current 感應器電流	<1mA(RTD)
Zero Range 最低輸出對應顯示範圍	-1999~9999
Span Range 最高輸出對應顯示範圍	-1999~9999
Output Capability 輸出負載能力	RL(max.)=(V supply-9V)/20mA(up to 750 ohms at 24VDC)
O/P Response Time 輸出反應時間	<250ms(0~90%)
Zero Adjustment 歸零微調範圍	0~± 99
Span Adjustment 最高值微調範圍	0~± 99
Temperature Coefficient 溫度係數	50ppm/°C(0~50°C)
Reverse Volt Protection 逆向電壓保護	Included as standard
Parameters Setting 參數設定方式	Touch switches
Housing Material 外殼材質	PBT (UL94-VO)
Burnout Protection 斷線保護	Upscale the output current limit of approximately 21mA
Power Supply 電源	DC4~20mA(DC10~30V(<21mA))
Output Ripple 輸出漣波	<0.1% F.S.
Display Screen 顯示器	7-segment LCD character high 5.5mm
Back Up Memory 記憶型式	Non-volatile EEPROM memory
Insulation withstand voltage 絶緣耐壓能力	2KVac/1min. (input/case)
RFI Protection RFI 保護	2W-150MHz at 2 meter causes less than 0.5% change in output.
Operating Temperature 工作環境溫度	-5~60°C(20 to 90% RH non-condensed)
Storage Temperature 儲存環境溫度	-10~70°C(20 to 90% RH non-condensed)
Installation 安裝方式	Head-mounting(DIN type B head)

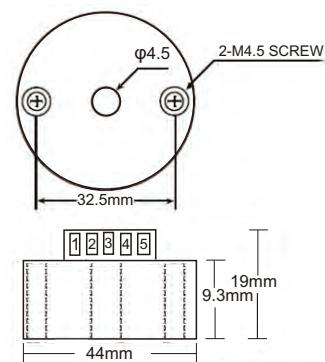
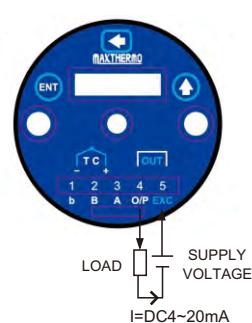
### ■ Order Information 訂貨索引

### ■ Wiring Connection 接線圖

### ■ Dimension 尺寸

MGW - Code 1	
Code 1	Input Type
P	Pt-100(-200~850°C)
B	B(200~1800°C)
E	E(-185~990°C)
J	J(-200~760°C)

Code 1	Input Type
K	K(-200~1360°C)
R	R(0~1760°C)
S	S(0~1760°C)
T	T(-200~395°C)



# DIGITAL THERMOMETER

## 攜帶式數字溫度表



### ■ Specifications 規格

Model 型號	305P
Temp. Range 溫度範圍	-50°C~1300°C, -58°F~2000°F
Resolution (Auto-range) 解析度	1°C or 0.1°C , 1°F or 0.1°F
Accuracy ( $T_{AMB} = 23 \pm 5^\circ C$ ) 精確度	Accuracy is specified for operating temperatures over the range of 18°C to 28°C (64°F to 82°F) $\pm (0.3\% \text{ rdg} + 1^\circ C)$ 50°C to 1000°C $\pm (0.5\% \text{ rdg} + 1^\circ C)$ 1000°C to 1300°C $\pm (0.3\% \text{ rdg} + 2^\circ F)$ 58°F to 2000°F
Input (Type of sensor) 輸入	Thermocouple type K
Temp. Coefficient 溫度係數	0.1x(specified accuracy) per °C. (0°C ~ 18°C, 28°C ~ 50°C).
Sampling Time 取樣時間	2.5 times per second.
Display 顯示器	3 1/2 digit liquid crystal display (LCD) with maximum reading of 1999
Operating Functions 操作功能	1. °C/°F Selectable. 2. 0.1°C/1°C Selectable. 3. Value HOLD function. 4. MAX./MIN. Value record. 5. Auto Power-off selectable.
Auto-Check Functions 自動檢查功能	Open sensor (red LED stays ON ) Out of range Low battery alarm (display appeared “+”)
Power Supply 電源	One 9V 006P Battery. (IEC 6F22, NEDA 1604)
Battery Life 電池壽命	Approx. 200 hours. (Alkaline battery)
Operating/Ambient, Range 操作環境範圍	0°C ~ 35°C (32°F ~ 95°F), below 80% RH 35°C ~ 50°C (95°F ~ 122°F), below 70%RH
Dimensions 尺寸	184 X 62 X 35 mm
Weight 重量	300 g (10.6 oz) approx.
Input Connector 輸入接頭	Miniature TC plug.
Accessories 附件	9V battery Temperature probe (cable 4.0 meter), Max. 260°C (500°F)

※ Specifications are subject to change without notice.

# DIGITAL THERMOMETER

## 攜帶式數字溫度表



### ■ Specifications 規格

Model 型號	S-506
Temp. Range 溫度範圍	-180°C.....+1372°C, -292°F.....+1999°F
Resolution (Auto-range) 解析度	0.1° From -199.9 to 199.9°, 1° Elsewhere
Accuracy ( $T_{AMB} = 23 \pm 5^\circ C$ ) 精確度	$\pm 0.1\%$ of reading +0.3°C, -100 to +1000°C (-150 to +1832°F), Above elsewhere $\pm 0.2\% + 1^\circ C (1.8^\circ F)$
Input (Type of sensor) 輸入	Thermocouple type K (CA).J.T.E.optional.
Temp. Coefficient 溫度係數	$\pm (0.015\% \text{ of reading} + 0.03^\circ C) / ^\circ C (1.8^\circ F)$
Sampling Time 取樣時間	Approx. 1.5 times per second.
Display 顯示器	Digital LCD display, with multi-function signal.
Operating Functions 操作功能	°C/°F Selectable Value HOLD function. MAX./MIN. Value record. Automatic resolution range selectable. Auto Power-off selectable. (Approx. 7minutes of no key operation)
Auto-Check Functions 自動檢查功能	Open sensor (display show "----") Out of range Low battery alarm (display appeared "  ")
Power Supply 電源	One 9V 006P Battery. (IEC 6F22, NEDA 1604)
Battery Life 電池壽命	Approx. 200 hours. (Alkaline battery)
Operating/Ambient, Range 操作環境範圍	-5 to +50°C, 23 to 122°F, below 90% RH
Dimensions 尺寸	150 X 78 X 27 mm (5.9 X 3.1 X 1.1 inch)
Weight 重量	145 gms. (5.1 OZS) approx.
Input Connector 輸入接頭	Miniature TC plug.
Accessories 附件	9V battery Temperature probe (3.8Ø X 86 mm, cable 1.0 meter)

\* Specifications are subject to change without notice.

# TEMPERATURE PROBES

## 溫度探棒



### SP-51

Made with a special small diameter element in a rugged 1.0~8mm O.D for fast, accurate measurements.  
Length : 100mm standard, longer to be ordered.  
Below dia. 2mm Max : 650°C Response time : 2 sec.  
Above dia. 3.2mm Max : 900°C Response time : 5 sec.  
外徑由 1.0~8mm , 快速反應 , 測量水、油 , 各種液體之溫度。

### SP-52

For checking air, gas, freezers, ovens, fans etc.  
Max : 500°C Response time : 3 sec. (5m/sec.air)  
測量空氣、瓦斯、冷凍室等溫度。  
最高 500°C , 反應時間3秒。

### SP-53

Rugged surface sensor for moving or stationary surface, stainless steel band protects the temperature sensor. O.D. 15mm  
Max : 250°C ( 800°C model is available for selection )  
Response time : 5 sec.  
測量表面溫度 , 堅固耐用。最高 250°C , 高溫款可到800°C , 反應時間5秒。

### SP-56

Ideal for measuring the surface of mold and inside temperature.  
Max : 250°C ( 800°C model is available for selection )  
Response time : 5 sec.  
測量模具及內部之溫度。最高 250°C , 高溫款可到800°C , 反應時間5秒。

### SP-57

Moving surface probe. Use on moving smooth roller of up to 20 inches dia-meter or plates.  
Max : 250°C Response time : 5 sec.  
測量轉動之滾筒表面溫度。最高 250°C , 反應時間5秒。

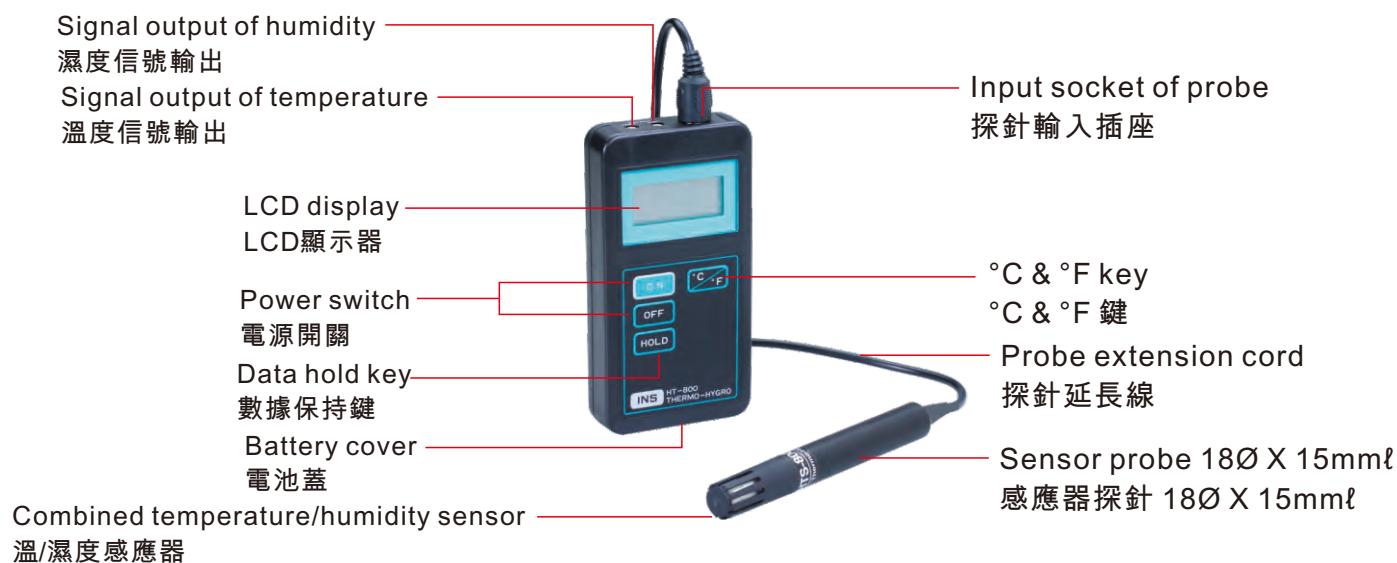
### SP-58

Magnetic probe for measuring equipment surface temperature.  
Max : 250°C Response time : 5 sec.  
測量機械設備表面溫度 , 附磁鐵。最高 250°C , 反應時間5秒。

- Probes include 1meter of PVC overbraided extension wire  
探棒附 1M PVC 補償導線
- With 100mm length handle for portable thermometer  
手把長度 100mm

# THERMO-HYGROMETER

## 溫、溼度表



### ■ Specifications 規格

Model 型號	HT-800			
Measurement Range 測量範圍	Humidity	5 to 98.0%RH	Temperature	-15.0 to +60.0°C, 5.0 to +150.0°F
Accuracy ( $T_{\text{AME}} = 25^{\circ}\text{C}$ ) 精確度	Humidity	$\pm 2.5\%$ RH	Temperature	$\pm 0.2^{\circ}\text{C}$ , $\pm 0.4^{\circ}\text{F}$
Resolution 解析度	Humidity	0.1%RH	Temperature	0.1°C, 0.1°F
Sensors 感應器	Combined humidity/temperature probe Humidity : High precision MACROMOLECULE HUMIDITY SENSOR Temperature : PT100Ω platinum thermo-resistance.			
Signal Output 輸出信號	Humidity : DC 0~1V, 10mV/%RH, impedance 600Ω Temperature : DC 0~1V, 10mV/°C, 10mV/°F, impedance 600Ω			
Display 顯示器	TWIN digital LCD display for temperature and humidity reading in the mean-time without switching.			
Over Range Alarm 超出範圍警報	Automatic, when humidity value out of the measurement range.			
Measuring Rate. 測量速度	2.5 per second.			
Data Memory 資料記憶	Last value memory by "HOLD" switch.			
Power Supply 電源	One 9V 006P or IEC 6F22 battery.			
Battery Life 電池壽命	Approx. 120 hours. (continuous operation)			
Low Power Alarm 電力不足顯示	Automatic.  lights up on alarm.			
Storage Ambient Range(Meter) 保存條件	$-20$ to $+60^{\circ}\text{C}$ (-5 to $150^{\circ}\text{F}$ ) Below 85% RH.			
Dimensions 尺寸	Meter : 15 X 7.8 X 2.8cm (5.9 X 3.1 X 1.1 inch) Probe : 18Φ X 150mm, cable length 1.0 meter.			
Weight 重量	280gms, (9.8 OZS) including probe.			

※ All specifications are subject to change without prior notice.

### ■ Accessories 附件

- Combined humidity / temp. probe Model : HTS-8001
- Leather carrying case Model : HTC-8002
- 9V battery
- Signal output connector

# DIGITAL METER

## 微處理大型字幕顯示器



### ■ Features 特色：

- Microprocessor based meter The display can be set according to different sensors. 微處理電錶，顯示值依 Sensor 不同，可任意設定顯示值
- Input signal 輸入信號 : DC V/A, RS-485, RTD(PT100), Pulse, Time
- Display size 顯示器尺寸 : 4"(10cm) / 2.3"(5.8cm) / 7"(17.78cm)
- Display digits 顯示位數 : 3~8 Digits can be selected by user.
- Mounting 固定方式 : 1. PC board type, 2. Aluminum case type
- Relay x2 group or DC 24V output (Can order). 繼電器(Relay)x2組或 DC 24V 輸出(可訂製)
- Analog input and temperature input can set upper and lower limits, exceeds or falls below the set value, the display will flash (Can order). 類比輸入及溫度輸入可設定上下限，超過或低於設定值時，顯示器會閃爍(可訂製)

### ■ Temperature (RTD) Input / 溫度(RTD)輸入：

LC Series

HC Series (high bright)

Rang	Sensor	Accuracy
-100.0~100.0°C	PT-100	±0.2%
0~100.0°C	DIN---Standard	±2 digits
0~99.9°C	(JIS---Option)	
0~400°C		

### ■ Order Information 訂貨索引

BP - **3** - **4** **2** **1** **1** **N**  
**A**      **B**      **C**      **D**      **E**      **F**

- |                  |             |                       |                           |                        |                        |
|------------------|-------------|-----------------------|---------------------------|------------------------|------------------------|
| A. Digits 位數:    | B. Size 尺寸: | C. Input Signal 輸入信號: | D. Power Supply 工作電源:     | E. Relay Output 繼電器輸出: | F. DC24V (0.5A)Output: |
| 3-3 Digits       | 2-2.3"      | 1-0~99.9°C            | 1-DC 24V                  | N-None                 | Y-Yes                  |
| 4-4 Digits(5000) | 4-4.0"      | 2- -100~+100°C        | 2-AC 100~240V,<br>50/60Hz | 1-1 Group<br>2-2 Group | N-None                 |

### ■ Analog Input / 類比輸入：

LA Series

HA Series(high bright)

Range	Input Impedance	Input Protection	Max. display	Accuracy
4~20mA	10Ω	200mA	5000	±0.1% ±2 digits
0~10mA	20Ω	100mA		
0~10V	1MΩ	600V		
0~5V	1MΩ	600V		
1~5V	1MΩ	600V		

### ■ Order Information 訂貨索引

BP - **4** - **2** **1** **1** **N** **Y**  
**A**      **B**      **C**      **D**      **E**      **F**

- |                  |             |                            |                           |                        |                        |
|------------------|-------------|----------------------------|---------------------------|------------------------|------------------------|
| A. Digits 位數:    | B. Size 尺寸: | C. Input Signal 輸入信號:      | D. Power Supply 工作電源:     | E. Relay Output 繼電器輸出: | F. DC24V (0.5A)Output: |
| 3-3 Digits       | 2-2.3"      | 1-0~99.9°C                 | 1-DC 24V                  | N-None                 | Y-Yes                  |
| 4-4 Digits(5000) | 4-4.0"      | 2- -100~+100°C<br>Y-Option | 2-AC 100~240V,<br>50/60Hz | 1-1 Group<br>2-2 Group | N-None                 |

# DIGITAL METER

## 微處理大型字幕顯示器

### ■ RS-485 Output / RS-485輸入：

LR Series Address : 1~FF  
 HR Series(high bright) Baudrate : 19200, 9600, 4800, 2400 Frame : N.8.2, E.8.1, O.8.1, N.8.1  
 Protocol : Modbus RTU Mode

### ■ Order Information 訂貨索引

**BP - 4 - 7 2 P**  
 A B C D

A. Digits 位數:	B. Size 尺寸:	C. Power Supply 工作電源:	D. Case 外殼:
3-3 Digits 6-6 Digits	2-2.3"	1-DC 24V	C-Shell
4-4 Digits 7-7 Digits	4-4.0"	2-AC 100~240V, 50/60Hz	P-PC board
5-5 Digits 8-8 Digits	7-7.0"(4 Digits)		

### ■ Contact (Pulse) Input / 接點(Pulse)輸入：

LP Series

### ■ Order Information 訂貨索引

**BP - 5 - 4 2 1 N**  
 A B C D E

A. Digits 位數:	B. Size 尺寸:	C. Input Signal 輸入信號:	D. Relay Output 繼電器輸出:	E. DC24V (0.5A)Output:
3-3 Digits 5-5 Digits	2-2.3"	1-Contacts	1-DC 24V	Y-Yes
4-4 Digits 6-6 Digits	4-4.0"	2-NPN	2-AC 100~240V, 50/60Hz	N-None
		3-PNP		

### ■ Time / 時間:

LH Series

HT Series(high bright)

### ■ Order Information 訂貨索引

**BP - 6 - 4 2 Y**  
 A B C D

A. Digits 位數:	B. Size 尺寸:	C. Power Supply 工作電源:	D. DC24V (0.5A)Output:
4-4 Digits(H.M)	2-2.3"	1-DC 24V	Y-Yes
6-6 Digits(H.M.S)	4-4.0"	2-AC 100~240V, 50/60Hz	N-None

### ■ Temperature and humidity display (with Sensor) / 溫濕度顯示器(含Sensor) :

LCH Series

HCH Series(high bright)

Rang	Sensor	Accuracy
-30~100.0°C 0~99.9%	Fully calibrated, digital output	±0.2°C, ±1.8%

### ■ Order Information 訂貨索引

**BP - 6 - 4 1 2**  
 A B C D

A. Digits 位數:	B. Size 尺寸:	C. Sensor:	D. Power Supply
4-4 Digits	2-2.3"	1-3 meters	工作電源:
6-6 Digits	4-4.0"	Y-ordered	1-DC 24V
		N-built	2-AC 100~240V, 50/60Hz

### ■ Overall dimensions (including unit length 100mm) / 外型尺寸(包含單位長度100mm):

- 4"(10cm) : 3 Digits, (W) 375mm X (H) 150mm X (D) 60mm
  - 4 Digits, (W) 465mm X (H) 150mm X (D) 60mm
  - 5 Digits, (W) 555mm X (H) 150mm X (D) 60mm
  - 7 Digits, (W) 735mm X (H) 150mm X (D) 60mm
  - 8 Digits, (W) 835mm X (H) 150mm X (D) 60mm
  - 2.3"(5.8cm) : 5 Digits, (W) 375mm X (H) 150mm X (D) 60mm
  - 7"(17.78cm) : 5Digits, (W) 840mm X (H) 230mm X (D) 60mm
- ※The left side of the display panel to increase chinese fonts need to increase the length of 100mm※
- ※顯示器面板左側增加中文字體長度需增加100mm※

# MULTI-FUNCTIONAL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER

## 多功能溫溼度露點傳感器



Wall mount type 室內型



Duct type 風管型



Remote probe type 分離型

### ■ Features 產品特點

- Metal probe to withstand harsh environments and avoid electromagnetic interference.  
全系列金屬測棒，有效阻隔惡劣環境中的電磁干擾
- Configure adaptor available for setting. 溫濕度傳感器首創觸控按鍵，現場規劃器
- Energy saving with 4mA single channel available for micro processor + display + push button + sensor element.  
省電設計業界第一，單通道 4mA 電量足夠推動 微處理器 + 顯示器 + 觸控按鍵 + 溫濕度感測元件
- 128X64 LCD monitor for maximum up to 3 measurement display.  
128X64 顯示器，提供單一，兩行或三行顯示，搭配觸控按鍵，所有功能全部齊全
- One channel 4~20mA two wire with selectable physical quantity.  
兩線式 4~20mA 支援單通道，可變量輸出
- Dew point, wet-bulb temperature and enthalpy output available.  
露點，濕球溫度，焓值輸出
- With sensing element module for easy replacement and repair.  
感測元件模組化，可更換設計，降低維護成本
- RS485 Modbus data with integer and floating type. Support metric and imperial unit.  
RS485 Modbus 支援浮點數及整數雙格式，公制和英制雙單位
- Alarm output with more flexibility. 警報輸出，靈活控制

### ■ Order Information 訂貨索引

#### MHT Series

MHT - 120 - 3 M D R  
A B C D E F

#### MDP Series

MDP - 110 - 2 2 D R  
G B C H E F

A. Model 型號:

C. Output 輸出信號:

D. Psychometric calculations(Option)

F. Alarm(Option)

H. Dew point Scale

MHTA

2 - 4 ~ 20mA

多物理量選擇(選配):

警報(選配):

露點量程範圍:

MHT

3 - 0 ~ 10V

M - Yes

R - Yes

1 - -20 ~ 60°C

MHTB

5 - 0 ~ 5V

X - No

X - No

2 - -40 ~ 60°C

B. Installation 安裝型態:

6 - 0 ~ 1V  
4 - RS485

E. Display with touch button(Option)

G. Model 型號:

3 - -40 ~ 20°C

110 - Wall mount 室內型

顯示器+觸控按鍵(選配):

MDPA

4 - -60 ~ 20°C

120 - Duct 風管型

D - Yes

MDP

S - By order

130 - Remote probe 分離型

X - No

X - No

X - No

# MULTI-FUNCTIONAL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER

## 多功能溫溼度露點傳感器

### ■ Specifications 規格

Model Name 型號		MHTA	MHT	MHTB	MDPA	MDP			
Humidity 濕度	Measurement range 量測範圍	0 ~ 100 %RH	0 ~ 100 %RH	0 ~ 100 %RH	-60 ~ 60°C Td	-40 ~ 60°C Td			
	Accuracy(including non-linearity, hysteresis, and repeatability) 精度 (包含非線性誤差, 遲滯誤差, 和非重複性誤差)	±1.5%RH@25°C (20~80%RH)	±2%RH@25°C (20~80%RH)	±3%RH@25°C (20~80%RH)	±3°C Td@25°C	±3°C Td@25°C			
		±2%RH@25°C (0~20%RH)/ (80~100%RH)	±3%RH@25°C (0~20%RH)/ (80~100%RH)						
	Temperature coefficient 溫度係數	typ. ±0.02%RH/°C (from 0°C to 80°C)							
	Humidity Hysteresis 遲滯誤差	±1%RH							
	Recovery time after 150 hours of condensation 回復時間, 在150小時結露之後	10 second							
	Long term drift 長時間飄移	0.5%RH/year							
Temperature 溫度	Response Time from 33 to 75%RH 反應時間從33 到 75%RH	10 second (at 1m/s air flow)							
	Measurement range 量測範圍	-40 ~ 120 °C							
	Accuracy (including non-linearity, hysteresis, and repeatability) 精度	±0.7°C (-40 ~ 5°C) / ±0.3°C (5 ~ 60°C) / ±0.9°C (60 ~ 120°C)							
	Long term drift 長時間飄移	0.04°C/year							
Psychrometric calculations(Option) 濕度單位選擇(選配)	Response Time (at 63% of signal) from 15 to 45°C 反應時間從15 到 45°C	1 minute (at 1m/s air flow)							
	(Td) dew point temperature, (Tf) frost point temperature, (A) absolute humidity, (Tw) wet bulb temperature, (E) water vapor pressure, (S) enthalpy, (R) mixing ratio	(Td) dew point temperature, (Tf) frost point temperature, (V) PPMv, (W) PPMw							
Analog output 類比輸出	Current output 電流輸出	2-wire, 4 ~ 20mA							
	Voltage output 電壓輸出	3-wire, 0 ~ 1 V / 0 ~ 5 V / 0 ~ 10 V							
	Accuracy @25°C 精度	±0.1% full scale							
	Temperature dependence 溫度係數	±0.005%/°C full scale							
	External loads 輸出負載	current outputs RL < 500 ohm/ voltage output 0 ~ 1 V output RL > 2K ohm 0 ~ 5 V and 0 ~ 10 V outputs RL > 10K ohm							
Digital output 數位輸出	RS485	meet the standards TIA/EIA-485-A							
	Protocol	MODBUS RTU							
Alarm (option) 警報輸出		Relay type: Electromagnetic / Contact: SPDT / 8A / 277 VAC (resistive load) / Latch on/off							
Display (option) 顯示器	LCD	128 x 64 dots without backlight							
	Lines(顯示行數)	1,2 or 3							
	Buttons (按鈕)	capacitive *3							
Power supply 電源供應	Current output 電流輸出	11 ~ 35VDC RL<50 ohm / 20 ~ 35 VDC RL<500 ohm							
	Voltage output 電壓輸出	15 ~ 35 VDC, 12~ 29 VAC							
	RS485	15 ~ 35 VDC, 12~ 29 VAC							
Mechanics 機構	Housing material 外殼材質	PC, POLYCARBONATE							
	Housing classification 保護等級	IP 65							
	Probe pressure 測棒耐壓	10bar							
	Cable of remote probe version	2m, shield PVC							
Probe material 測棒材質	Wall mount version 壁掛型	brass nickel-plated							
	Duct version 風管型	aluminum							
	Remote probe version 分離型	brass nickel-plated							
Temperature range 工作溫度		Without display -40 ~ 80°C (-40 ~ 176°F) / With display -20 ~ 70°C (-4 ~ 158°F)							
Probe temperature range 標測工作溫度		Duct and remote probe version -40 ~ 120 °C (-40 ~ 248 °F)							
Electromagnetic compatibility 電磁干擾防護		Complies with EMC standard EN61326-1, Industrial Environment							

# ECONOMIC MODEL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER

## 經濟型溫溼度露點傳感器



Wall mount type 室內型

Duct type 風管型

Remote probe type 分離型

### ■ Features 產品特點

- Configure adaptor available for setting. 溫濕度傳感器首創現場規劃器
- Single channel with selectable physical quantity. 支援單通道，可變量輸出
- With sensing element module for easy replacement and repair. 感測元件模組化，可更換設計，降低維護成本
- RS485 Modbus data with integer and floating type. Support metric and imperial unit. RS485 Modbus 支援浮點數及整數雙格式，公制和英制雙單位
- 3 models for industrial applications. 三種產品型式，適應各種環境安裝需求
- 0 ~ 100%RH measurement, temperature range up to +120°C (248 °F) 全範圍 0 ~ 100%RH 量測，溫度量測範圍最高+120°C (248 °F)
- Excellent quality and stable measurement 優異的品質，穩定量測
- IP-65 housing IP-65 防護等級

### ■ Applications 應用領域

- Semiconductor and microelectronics industry 半導體及微電子工業
- Pharmaceutical industry, paper industry 製藥工業，造紙工業
- Environmental chambers, drying equipment, spraying equipment 環境試驗箱，乾燥設備，噴塗設備
- Agriculture, farms 農業，養殖場
- Greenhouse, storage room, cooling chamber 溫室，儲藏室，冷卻室
- Building Automation 樓宇自動控制
- Environment and ventilation control 環境和通風控制

### ■ Order Information 訂貨索引

#### MEHT Series

MEHT – 120 – 3 M D D2

A

B

C

D

E

F

#### MEDP Series

MEDP – 130 – 2 2 D1

G

B

C

H

F

#### A. Model 型號:

MEHTAA	2 - 4 ~ 20mA	1 - 0 ~ 50°C
MEHTA	3 - 0 ~ 10V	2 - 0 ~ 100°C
MEHT	5 - 0 ~ 5V	S - By order
	6 - 0 ~ 1V	X - No
	4 - RS485	

#### B. Installation 安裝型態:

110 - Wall mount 室內型	多物理量選擇(選配):	G. Model 型號:
120 - Duct 風管型	M - Yes	MEDPAA
130 - Remote probe 分離型	X - No	MEDPA

X - No MEDP

#### C. Output 輸出信號:

MEHTAA	2 - 4 ~ 20mA	1 - 0 ~ 50°C
MEHTA	3 - 0 ~ 10V	2 - 0 ~ 100°C
MEHT	5 - 0 ~ 5V	S - By order
	6 - 0 ~ 1V	X - No
	4 - RS485	

#### D. Temperature Scale 溫度量程範圍:

MEHTAA	2 - 4 ~ 20mA	1 - 0 ~ 50°C
MEHTA	3 - 0 ~ 10V	2 - 0 ~ 100°C
MEHT	5 - 0 ~ 5V	S - By order
	6 - 0 ~ 1V	X - No
	4 - RS485	

#### F. LED Display(Option) 顯示器(選配):

D1 - Forward	1 - -20 ~ 60°C
D2 - Reverse	2 - -40 ~ 60°C
X - No	3 - -40 ~ 20°C
	4 - -60 ~ 20°C
	5 - -80 ~ 20°C

#### H. Dew point Scale: 露點量程範圍:

D1 - Forward	1 - -20 ~ 60°C
D2 - Reverse	2 - -40 ~ 60°C
X - No	3 - -40 ~ 20°C
	4 - -60 ~ 20°C
	5 - -80 ~ 20°C

# ECONOMIC MODEL TEMPERATURE & HUMIDITY / DEW POINT TRANSMITTER

## 經濟型溫溼度露點傳感器

### ■ Specifications 規格

Model Name 型號		MEHTAA	MEHTA	MEHT	MEDPAA	MEDPA	MEDP			
Humidity 濕度	Measurement range 量測範圍	0 ~ 100 %RH	0 ~ 100 %RH	0 ~ 100 %RH	-60 ~ 60°C Td	-40 ~ 60°C Td	-20 ~ 60°C Td			
	Accuracy(including non-linearity, hysteresis, and repeatability) 精度 (包含非線性誤差, 遲滯誤差, 和非重複性誤差)	±1.5%RH@25°C (20~80%RH)	±2%RH@25°C (20~80%RH)	±3%RH@25°C (20~80%RH)	±3°C Td@25°C		±5°C Td @25°C			
	Temperature coefficient 溫度係數	typ. ±0.05%RH/°C (from 0°C to 80°C)								
	Humidity Hysteresis 遲滯誤差	±1%RH								
	Recovery time after 150 hours of condensation 回復時間, 在150小時結露之後	10 second								
	Long term drift 長時間飄移	0.5%RH/year								
Temperature 溫度	Response Time from 33 to 75%RH 反應時間從33 到 75%RH	10 second (at 1m/s air flow)								
	Measurement range 量測範圍	-40 ~ 120 °C								
	Accuracy (including non-linearity, hysteresis, and repeatability) 精度	±0.7°C (-40 ~ 5°C) / ±0.3°C (5 ~ 60°C) / ±0.9°C (60 ~ 120°C)								
	Long term drift 長時間飄移	0.04°C/year								
Analog output 類比輸出	Response Time (at 63% of signal) from 15 to 45°C 反應時間從15 到 45°C	1 minute (at 1m/s air flow)								
	Current output 電流輸出	3-wire, 4 ~ 20mA								
	Voltage output 電壓輸出	3-wire, 0 ~ 1 V / 0 ~ 5 V / 0 ~ 10 V								
	Accuracy @25°C 精度	±0.1% full scale								
	Temperature dependence 溫度係數	±0.005%/°C full scale								
Digital output 數位輸出	External loads 輸出負載	current outputs RL < 500 ohm/ voltage output 0 ~ 1 V output RL > 2K ohm 0 ~ 5 V and 0 ~ 10 V outputs RL > 10K ohm								
	RS485	meet the standards TIA/EIA-485-A								
	Protocol	MODBUS RTU								
Psychrometric calculations(Option) 濕度單位選擇(選配)		(Td) dew point temperature, (R) mixing ratio, (A) absolute humidity, (Tw) wet bulb temperature, (E) water vapor pressure, (S) enthalpy, (Tf) frost point temperature			(Td) dew point temperature, (Tf) frost point temperature, (V) PPMv, (W) PPMw					
LCD Display (option) LCD 顯示器	Number of bits 位數	3-digit, 0.4 "7-segment display								
Power supply 電源供應	Display method 顯示方式	OUT1 stable, OUT2 flash 3 time, alternate								
	View direction 顯示方向	Forward or Reverse								
Mechanics 機構	DC Voltage 直流電壓	15 ~ 35VDC								
	AC Voltage 交流電壓	12~ 29 VAC								
	Housing material 外殼材質	PC, POLYCARBONATE								
	Housing classification 保護等級	IP 65								
Probe material 測棒材質	Probe pressure 測棒耐壓	10bar								
	Cable of remote probe version	2m, shield PVC								
	Wall mount version 壁掛型	brass nickel-plated								
	Duct version 風管型	aluminum								
	Remote probe version 分離型	brass nickel-plated								
Temperature range 工作溫度		Without display -40 ~ 80°C (-40 ~ 176°F)/ With display -25 ~ 80°C (-13 ~ 176°F)								
Probe temperature range 棒測工作溫度		Duct and remote probe version -40 ~ 120 °C (-40 ~ 248 °F)								
Electromagnetic compatibility 電磁干擾防護		Complies with EMC standard EN61326-1, Industrial Environment								

# INDOOR & PROBE TEMPERATURE AND HUMIDITY TRANSMITTER

## 室內型/測棒型溫溼度傳感器

### ■ Features 產品特點

- Configure adaptor available for setting. 溫濕度傳感器首創觸控按鍵，現場規劃器
- 128X64 LCD monitor for maximum up to 2 measurement display.
- 128X64 顯示器，提供單一，兩行顯示，搭配觸控按鍵，所有功能全部齊全
- Analog dual channel with selectable physical quantity. 類比兩通道，可變量輸出
- RS485 Modbus data with integer and floating type. Support metric and imperial unit.
- RS485 Modbus 支援浮點數及整數雙格式，公制和英制雙單位
- Resistor alarm output ( PNP or NPN based on the connection ). 電晶體警報輸出，PNP或NPN由接線方式決定



### ■ Order Information 訂貨索引

MRTH - 

2	1	M	D	R
A	B	C	D	E

#### A. Output 輸出信號:

- 2 - 4 ~ 20mA
- 3 - 0 ~ 10V
- 5 - 0 ~ 5V
- 6 - 0 ~ 1V

#### B. Temperature Scale 溫度量程範圍:

- 1 - 0 ~ 50°C
- 2 - 0 ~ 100°C
- S - By order

#### C. Psychometric calculations(Option) 多物理量選擇(選配):

- M - Yes
- X - No

#### D. LCD Display With touch buttons (Option) LCD顯示器+觸控按鍵(選配)

- D - Yes
- X - No

#### E. Transistor output(Option) 電晶體輸出(選配):

- R - Yes
- X - No



### ■ Features 產品特點

- Metal probe to withstand harsh environments and avoid electromagnetic interference. 全系列金屬測棒，有效阻隔惡劣環境中的電磁干擾
- 0 ~ 100%RH measurement, temperature range up to +120°C (248 °F) 全範圍 0 ~ 100%RH 量測，溫度量測範圍最高+85°C (185 °F)
- RS485 Modbus data with integer and floating type. Support metric and imperial unit. RS485 Modbus 支援浮點數及整數雙格式，公制和英制雙單位
- Probe pressure up to 10 bar 測棒壓力範圍，最高10 bar
- Analog dual channel with selectable physical quantity. 類比兩通道，可變量輸出

### ■ Applications 應用領域

- Semiconductor and microelectronics industry 半導體及微電子工業
- Pharmaceutical industry, paper industry 製藥工業, 造紙工業
- Environmental chambers, drying equipment, spraying equipment 環境試驗箱，乾燥設備，噴塗設備
- Agriculture, farms 農業，養殖場
- Greenhouse, storage room, cooling chamber 溫室，儲藏室，冷卻室
- Building Automation 樓宇自動控制
- Environment and ventilation control 環境和通風控制

### ■ Order Information 訂貨索引

MS - 

8001	4	2	M	1M
A	B	C	D	E

#### A. Model 型號:

- 8001
- 8001A
- 8001B

#### B. Output 輸出信號:

- 4 - RS485
- 6 - 0 ~ 1V

#### C. Temperature Scale

- 溫度量程範圍:  
1 - 0 ~ 50°C  
2 - 0 ~ 80°C  
S - By order

#### D. Psychometric calculations(Option)

- 多物理量選擇(選配):  
M - Yes  
X - No

#### E. Cable length 電纜長度:

- 1M - 1 Meter
- 2M - 2 Meter
- 5M - 5 Meter

# INDOOR & PROBE TEMPERATURE AND HUMIDITY TRANSMITTER

## 室內型/測棒型溫溼度傳感器

### ■ Specifications 規格

Model Name 型號		MRTH	MS-8001A	MS-8001	MS-8001B			
Humidity 濕度	Measurement range 量測範圍	0 ~ 95 %RH	0 ~ 100 %RH	0 ~ 100 %RH	0 ~ 100 %RH			
	Accuracy (including non-linearity, hysteresis, and repeatability) 精度	±3%RH@25°C (20~80%RH)	±1.5%RH@25°C(20~80%RH) ±2%RH@25°C (0~20%RH)/ (80~100%RH)	±2%RH@25°C ±3%RH@25°C (0~20%RH)/ (80~100%RH)	±3%RH@25°C (20~80%RH)			
	Temperature coefficient 溫度係數	typ. ±0.05%RH/°C (from 0°C to 80°C)	typ. ±0.02%RH/°C (from 0°C to 80°C)					
	Humidity Hysteresis 遲滯誤差	±1%RH						
	Recovery time after 150 hours of condensation 回復時間, 在150小時結露之後	10 second						
	Long term drift 長時間飄移	0.5%RH/year						
Temperature 溫度	Response Time from 33 to 75%RH 反應時間從33 到 75%RH	10 second (at 1m/s air flow)						
	Measurement range 量測範圍	-20 ~ 80 °C						
	Accuracy (including non-linearity, hysteresis, and repeatability) 精度	±0.7°C (-40 ~ 5°C) / ±0.3°C (5 ~ 60°C) / ±0.9°C (60 ~ 120°C)						
	Long term drift 長時間飄移	0.04°C/year						
Analog output 類比輸出	Response Time from 15 to 45°C 反應時間從15 到 45°C	1 minute (at 1m/s air flow)						
	Current output 電流輸出	3-wire, 4 ~ 20mA	----					
	Voltage output 電壓輸出	3-wire, 0 ~ 1V/ 0 ~ 5V/0 ~ 10V	0 ~ 1V					
	Accuracy @25°C 精度	±0.1% full scale						
	Temperature dependence 溫度係數	±0.005%/°C full scale						
Digital output 數位輸出	External loads 輸出負載	current outputs RL < 500 ohm/ voltage output 0 ~ 1 V output RL > 2K ohm 0 ~ 5 V and 0 ~ 10 V outputs RL > 10K ohm (only for MRTH)						
	RS485	meet the standards TIA/EIA-485-A						
Protocol		MODBUS RTU						
Psychrometric calculations(Option) 濕度單位選擇(選配)		(Td) dew point temperature, (Tf) frost point temperature, (Tw) wet bulb temperature, (A) absolute humidity, (R) mixing ratio, (E) water vapor pressure, (S) enthalpy						
Transistor outputs (option) 電晶體輸出	Isolation 訊號隔離	YES (only for MRTH)						
	Current capacity 電流容量	50mA sink/ source (only for MRTH)						
	Operating Voltage 工作電壓	DC 30V max. (only for MRTH)						
	Circuit connection 電路接法	PNP/ NPN (only for MRTH)						
	Parameter setting 參數設定	Set-point -9999 to 9999 / hysteresis 0 to 9999/ delay 0 to 3600 second/ locking ON/OFF (only for MRTH)						
LCD Display (option) LCD 顯示器	LCD	128 x 64 dots without backlight (only for MRTH)						
	Lines(顯示行數)	1,2 or 3 (only for MRTH)						
	Buttons (按鈕)	capacitive *3 (only for MRTH)						
Power supply 電源供應	DC Voltage 直流電壓	15 ~ 35VDC	5 VDC ±10%					
	AC Voltage 交流電壓	12~ 29 VAC	----					
Mechanics 機構	Housing material 外殼材質	ABS	brass nickel-plated					
	Connection 端子抬連接線徑	12 AWG ~ 24 AWG	----					
	Housing classification 保護等級	IP 20	IP 24					
	Probe pressure 測棒耐壓	-----	10bar					
	Cable length/material 電纜長度/材質	-----	2 Meter/ shield PVC					
Temperature range 工作溫度		MRTH: Without display -40 ~ 80 °C (-40 ~ 176°F)/ With display -20 ~ 70°C (-4 ~ 158°F)						
		MS-8001 & MS8001A/ MS-8001B: -40 ~ 85 °C (-40 ~ 185°F)						
Electromagnetic compatibility 電磁干擾防護		Complies with EMC standard EN61326-1, Industrial Environment						

# LCD TEMP. & HUMIDITY TRANSMITTER

## 壁掛式LCD雙顯示溫濕度傳送器



CE



CE

RCH-1 LCD Temp. & Humidity Transmitter

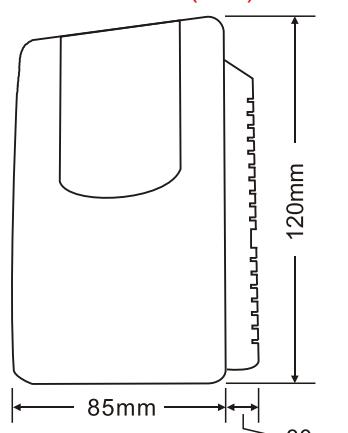
### ■ Specifications 規格

Temp. Range 溫度範圍	: 0~50°C, 0~100°C, -50~+50°C, 32~122°F, 32~212°F, -58~122°F
Free Range 設定範圍	: Low value -30~0°C free setting : High value 50~100°C free setting °C value and °F value can use jump change
Humidity Range 濕度範圍	: 0~100%RH
Power Supply 電源	: DC 18~30V
Humidity Accuracy 濕度精度	: ±3%
Temp. Accuracy 溫度精度	: ±0.4°C
Operating Temp. 工作溫度	: -20~+80°C/Below 90%RH
Storage Temp. 儲存溫度	: -20~+60°C/Below 90%RH
Response Time 反應時間	: >1 sec.
Output 輸出	: 4~20mA, 2-wire loop powered, RS-485
Load Resistance 負載電阻	: ≤ 500Ω
Dimensions 尺寸	: 85(W) X 120(H) X 30(D)mm

### ■ Temp. & Humidity Sensor 溫 / 濕度感應器

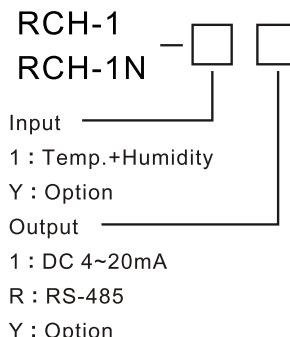
- Range 範圍 : -30~130°C, 0~100%RH
- Fully calibrated, digital output 數位輸出
- Excellent long-term stability 優異的長期穩定性
- No external components required 無需外部元件
- Ultra low power consumption 超低功耗
- Surface mountable or 4-pin fully interchangeable 表面安裝或4pin互換安裝
- Small size 體積小
- Automatic power down 自動斷電

### ■ Dimensions 尺寸 (mm)



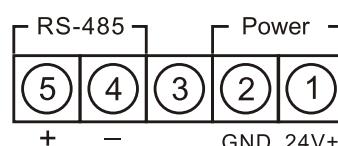
RCH-1N Temp. & Humidity Transmitter

### ■ Order Information 訂貨索引

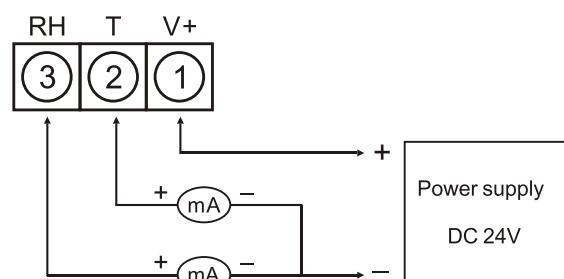


### ■ Connection Diagram 接線圖

RS-485



DC 4~20mA



# LCD TEMP. & HUMIDITY TRANSMITTER

## 壁掛式LCD雙顯示溫濕度傳送器



Model : WCH Series

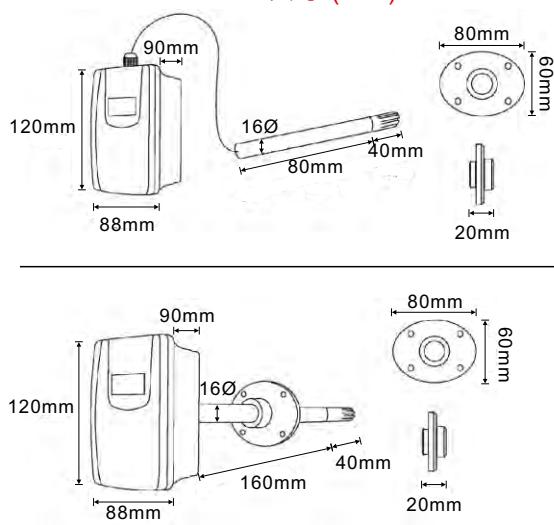
### ■ Specifications 規格

Temp. Range 溫度範圍	: 0~50°C, 0~100°C, -50~+50°C, 32~122°F, 32~212°F, -58~122°F
Free Range 設定範圍	: Low value -30~0°C free setting : High value 50~100°C free setting °C value and °F value can use jump change
Humidity Range 濕度範圍	: 0~100%RH
Power Supply 電源	: DC 18~30V
Humidity Accuracy 濕度精度	: ±1.8%
Temp. Accuracy 溫度精度	: ±0.2°C
Operating Temp. 工作溫度	: -20~+80°C/Below 90%RH
Storage Temp. 儲存溫度	: -20~+60°C/Below 90%RH
Response Time 反應時間	: >1 sec.
Output 輸出	: 4~20mA, 2-wire loop powered, RS-485
Load Resistance 負載電阻	: ≤ 500Ω (4~20mA)

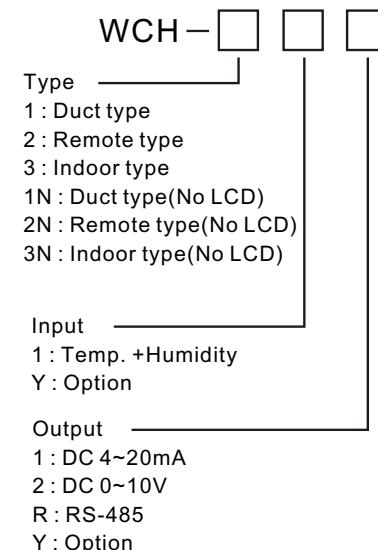
### ■ Temp. & Humidity Sensor 溫 / 濕度感應器

- Range 範圍 : -30~130°C, 0~100%RH
- Fully calibrated, digital output 數位輸出
- Excellent long-term stability 優異的長期穩定性
- No external components required 無需外部元件
- Ultra low power consumption 超低功耗
- Surface mountable or 4-pin fully interchangeable 表面安裝或4pin互換安裝
- Small size 體積小
- Automatic power down 自動斷電

### ■ Dimensions 尺寸 (mm)

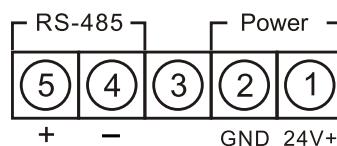


### ■ Order Information 訂貨索引

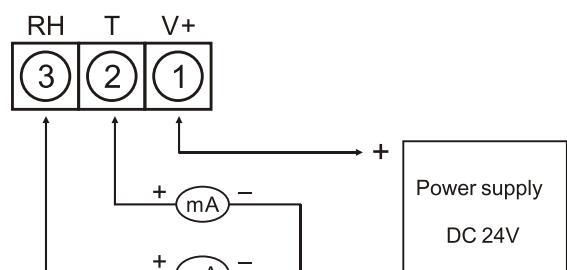


### ■ Connection Diagram 接線圖

RS-485



DC 4~20mA



# IMPORT PRESSURE SENSOR

## 進口壓力感應器



## 30.600G

### OEM Pressure Transmitter

#### ■ Application 用途 :

- mechanical and plant engineering
- general industrial applications

#### ■ Features 特色 :

- ceramic sensor
- accuracy 1% FSO according to IEC 60770
- nominal pressure ranges from 0 ... 1.6 bar up to 0 ... 250 bar

## Technical Data 技術資料



Input Pressure Range 輸入壓力範圍																																					
Nominal pressure gauge 額定壓力表[bar]	1.6	2.5	4	6	10	16	25	40	60	100	160	250																									
Over pressure 超出壓力 [bar]	5	5	12	12	20	50	50	120	120	200	400	400																									
Burst pressure 爆破壓力 [bar]	7	7.5	15	18	30	70	75	150	180	300	500	750																									
Vacuum resistance 真空電阻	unlimited																																				
Output Signal / Supply 輸入信號 / 電源																																					
Standard 標準	2-wire :		4 ... 20mA			/ Vs = 8 ... 32V DC																															
Options 選項	3-wire :		0 ... 10V			/ Vs = 14 ... 30V DC																															
	3-wire ratiometric :		10 ~ 90% of Vs			/ Vs = 2.7 ... 5V DC																															
Performance 性能																																					
Accuracy 精度	$\leq \pm 1\% \text{ FSO}$																																				
Permissible load 容許負載	2-wire :		$R_{max} = [(Vs - V_{s min}) / 0.02A] \Omega$																																		
	3-wire :		$R_{min} = 10k\Omega$																																		
Influence effects 影響因素	supply :		0.05% FSO / 10V																																		
	load :		0.05% FSO / kΩ																																		
Response time 反應時間	2-wire :		$\leq 10 \text{ msec}$																																		
	3-wire :		$\leq 3 \text{ msec}$																																		
Long term stability 長期穩定性	$\leq \pm 0.3\% \text{ FSO} / \text{year}$ at reference conditions																																				
Measuring rate 檢測速度	1 kHz																																				
Accuracy according to IEC 60770-limit point adjustment (non-linearity, hysteresis, repeatability)																																					
Thermal Effects (Offset and span) / Permissible Temp. 热效應(偏差和補償) / 工作溫度																																					
Thermal error 溫度偏差	$\leq \pm 5\% \text{ FSO} / 10K$ (typ.)		in compensated range : -25 ... 85°C																																		
Permissible temp. 工作溫度	medium : -25 ... 125°C		electronics / environment : -25 ... 85°C storage : -40 ... 85°C																																		
Electrical Protection 電器保護																																					
Short-circuit protection 短路保護	permanent		3-wire ratiometric : none																																		
Reverse polarity protection 極性反接保護	no damage, but also no function																																				
Electromagnetic protection 電磁保護	emission and immunity according to EN 61326																																				
Mechanical Stability 機械穩定性																																					
Vibration 振盪	10g, 25Hz ... 2 kHz		according to DIN IEC 60068-2-6																																		
Shock 衝擊	500g / 1msec		according to DIN IEC 60068-2-27																																		

# ECONOMIC TYPE VACUUM / PRESSURE SENSOR

## 壓力傳送器

### ■ FEATURES 產品特點

- Accuracy :  $\pm 0.5\%$ F.S. ;  $\pm 1\%$ F.S. (-1 ~ 0 bar , 0 ~ 1 bar) 精確度 :  $\pm 0.5\%$ F.S. ;  $\pm 1\%$ F.S.(-1 ~ 0 bar , 0 ~ 1 bar)
- Measuring range: 10, 100, 250 bar... 壓力範圍: 10, 100, 250 bar...
- Measuring absolute or gauge pressure 測量絕對壓力及錶壓
- Robust package, all laser-welded stainless steel design 結構堅固, 採用雷射焊接技術, 不銹鋼隔離封裝
- Proof pressure range: 3 x Full Scale 過載壓力: 3 x Full Scale
- Compact size and excellent price 體積小價格優惠
- Power supply: DC 8~30V; Output: 4~20 mA 工作電壓: DC 8~30V; Output: 4~20 mA



MDC51

### ■ Specifications 規格

Accuracy 精確度	$\pm 0.5\%$ F.S.; $\pm 1\%$ F.S. (-1~0/0~1 bar)
Thermal Error 溫度飄移	<0.5% F.S.
Total Error 誤差值	<0.5% F.S.
Stability 穩定度	<0.25% F.S. / Year
Zero Pressure Offset 零點輸出	4 mA
Full Scale Output 高點輸出	20 mA
Proof Pressure 過載壓力	3 x F.S.
Burst Pressure 破壞壓力	Absolute Pressure: 10 x F.S. / Gauge Pressure: 5 x F.S.
Pressure Cycles 壓力週期	8Hz
Response Time 反應時間	<1 msec
Vibration 震動率	10~2050Hz, 20 sinusoidal, 3 axes
Thermal Shock 溫度線性補償	-40~105°C, 0.5hr soaks at Temp.
Temperature Coefficient 溫度係數	100ppm / °C (0~60°C)
Operating Temperature 工作環境溫度	-20~80°C
Operating Humidity 工作環境溼度	<95% RH (non-condensing不結露)
Storage Temperature 儲存環境溫度	-40~105°C
Storage Humidity 儲存環境溼度	<95% RH (non-condensing 不結露)
Power Supply 電源輸入	DC 18~30V (2 wire loop)
EMC Compatibility 抗干擾保護等級	80 MHz ~ 1 GHz
Wetted materials 壓力接口材質	316L stainless steel
Pressure Connection 壓力接頭	1/4" PT
Electrical Connection 電氣接頭	Mini DIN 43650

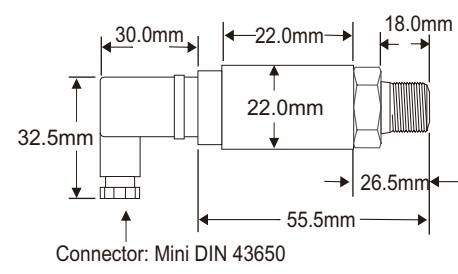
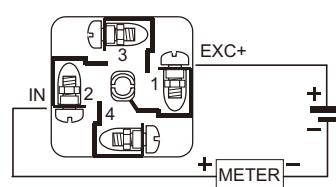
### ■ Order Information 訂貨索引

### ■ Wiring Connection 接線圖

### ■ Dimension 尺寸

MDC51 - [Code 1] - [Code 2] - [Code 3]

Code 1	Input Range	Code 2	Connection	Code 3	Analog Output
N01	-1~0 bar	S	1/4" PT	A	4~20 mA
001	0~1 bar	O	Option	O	Option
006	0~6 bar				
010	0~10 bar				
016	0~16 bar				
025	0~25 bar				
100	0~100 bar				
250	0~250 bar				



# COMPENSATING LEAD WIRE

## 熱電偶補償導線



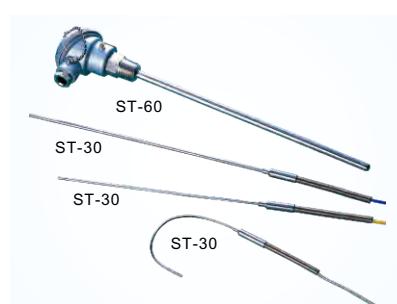
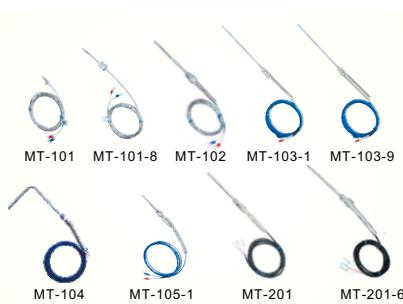
Code 代號	Specification 規格	Description 說明	Description 說明	Color 顏色
TC-CA-H(OS)	0.65 X 2	玻璃纖維 Glass Fiber, Copper Wire Outside Insulation 銅網外隔離	0-150°C	銀色 Silver
TC-CA-H(SOS)	0.65 X 2	玻璃纖維 Glass Fiber Outside Insulation, SUS 304 外隔離	0-150°C	銀色 Silver
TC-IC-H(SOS)	0.65 X 2	玻璃纖維 Glass Fiber Outside Insulation, SUS 304 外隔離	0-150°C	銀色 Silver
WIC-H	4/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	黃色 Yellow
WIC-H(SOS)	4/0.65 X 2	玻璃纖維 Glass Fiber Outside Insulation, SUS 304 外隔離	0-150°C	銀色 Silver

Code 代號	Specification 規格	Description 說明	Description 說明	Color 顏色
WIC-H	7/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	黃色 Yellow
TC-CA-H(SOS)	4/0.32 X 2	玻璃纖維 Glass Fiber Outside Insulation, SUS 304 外隔離	0-150°C	銀色 Silver
WCA-H	7/0.32 X 2	玻璃纖維 Glass Fiber	0-150°C	藍色 Blue
WCA-H	4/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	藍色 Blue
WCA-H	7/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	藍色 Blue
W-CA-H(OS)	4/0.32 X 2	玻璃纖維 Glass Fiber Outside Insulation, SUS 304 外隔離	0-150°C	銀色 Silver
WCA-H	4/0.32 X 2	玻璃纖維 Glass Fiber	0-150°C	藍色 Blue
WPR-H	7/0.32 X 2	玻璃纖維 Glass Fiber	0-150°C	黑色 Black
WPR-H	4/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	藍色 Blue

Code 代號	Specification 規格	Description 說明	Description 說明	Color 顏色
WPR-H	7/0.65 X 2	玻璃纖維 Glass Fiber	0-150°C	黑色 Black
WCA-G	7/0.32 X 2	PVC	0-150°C	銀色 Silver
WCA-G	4/0.65 X 2	PVC	0-150°C	藍色 Blue
WCA-G	7/0.65 X 2	PVC	0-150°C	藍色 Blue
WCA-G(SOS)	7/0.65 X 2	PVC SUS 304 outside Insulation 外隔離	0-150°C	銀色 Silver
WCA-G	4/0.32 X 2	PVC	0-150°C	藍色 Blue
WIC-G	7/0.32 X 2	PVC	0-150°C	黃色 Yellow
WIC-G	7/0.65 X 2	PVC	0-150°C	藍色 Blue

# GENERAL THERMOCOUPLE

## 一般熱電偶

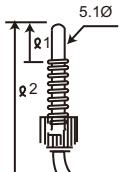
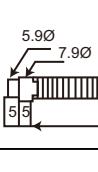
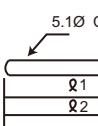
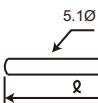
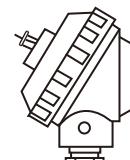
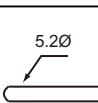
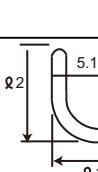
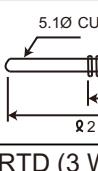
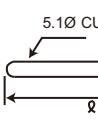
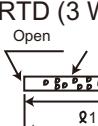


極速熱電偶 (直徑小且可彎曲)

# GENERAL THERMOCOUPLE SPECIFICATION

## 一般熱電偶

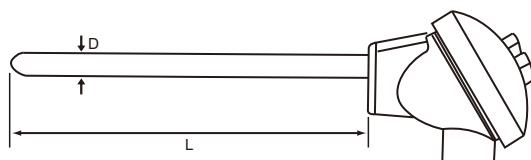
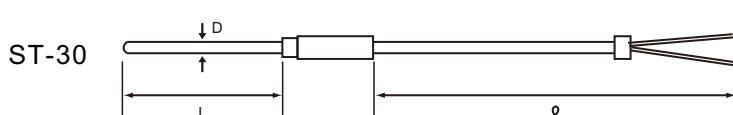
SPECIFICATION REQUIREMENT AVAILABLE 特殊規格歡迎訂做

	MT-101 (IC. CA) under 350°C 以下		MT-105-2 (IC. CA)
	MT-101-8 (IC. CA) under 350°C 以下		MT-106 (IC. CA) 9.50~under 600°C 12.70~under 700°C 15.90~under 800°C 17.30~under 900°C 21.70~under 1,000°C
	MT-102 (IC. CA) under 600°C 以下		MT-107 (IC. CA) 9.50~under 600°C 12.70~under 700°C 15.90~under 800°C 17.30~under 900°C 21.70~under 1,000°C
	MT-103-1 (IC. CA) under 600°C 以下		MT-109 (PR) under 1600°C 以下
	MT-103-9 (IC. CA) under 600°C 以下		MT-206 (PT 100Ω) RTD (3 Wire System) under 300°C 以下
	MT-104 (IC. CA) under 600°C 以下		MT-207 (PT 100Ω) RTD (3 Wire System) under 300°C 以下
	MT-105-1 (IC. CA) under 600°C 以下		
<b>RTD (3 Wire System)</b> 	MT-201-1 (PT 100Ω) under 300°C 以下		
<b>RTD (3 Wire System)</b> Open 	MT-201-6 (PT 100Ω) under 300°C 以下		

## SHEATH THERMOCOUPLE

## 極速熱電偶

ST-60 WITH THREAD CONNECTION  
ST-70 WITHOUT THREAD CONNECTION



Thermocouple Wire 熱電偶材質	Sheath Material 保護管材質	Sheath Outer Dia 外徑					
		1.0Φ	1.6Φ	3.2Φ	4.8Φ	6.4Φ	8.0Φ
C-A	INCONEL 600	500°C	700°C	900°C	1000°C	1050°C	1100°C
C-A	SUS-316	450	600	700	800	850	900
I-C	SUS-316	250	350	450	500	Max. Working Temp.	

# DC TO DC/AC SOLID STATE RELAY(PCA Mount)

## DC TO DC/AC 機板式固態繼電器

Model 型號	MS2402DZ-5	MS2402DZ-12	MS2402DZ-24	MD0604-05	MD0604-12	MD0604-24
Input Specifications 輸入端特性規格						
Control Voltage range (Vdc) 控制電壓範圍(Vdc)	5、12、24V					
Operating range Voltage 操作範圍	5V : 4.5V - 5.5V, 12V : 11V - 13V, 24V : 22V - 27V					
Current 輸入電流	6mA(Max.)		17mA (Max.)			
Output Specifications 輸出端特性規格						
Voltage range 工作電壓	70-240 Vrms			3-60VDC		
Peak voltage 最大耐壓	600Vdc(t=1min.)			60VDC		
Maximum current 最大工作電流	2A			2A		
Max.1-cycle surge (50Hz) 最大耐衝擊電流 (50Hz一週)	120A					
$I^2t$ (t=10ms) $A^2s$	72A <sup>2</sup> s					
Max. on-state voltage drop at I <sub>max</sub> and T=25°C 閉路殘餘電壓 (最大工作電流, 25°C時)	1.5V			0.14V		
Thermal Resistance 熱阻				3.75		
on-state Resistance 導通電阻				70mR		
Current(pulsed)(10mS) 最大瞬間電流(10ms)				96A		
Response time (Trun On) 最大反應時間 (Trun On)				<1m Sec		
Response time (Trun Off) 最大反應時間 (Trun Off)				<1m Sec		
General Characteristics 一般參數						
Response time 回應時間	½ cycle + 1mSec					
Input to output dielectric strength 輸入至輸出端絕緣阻抗	> 10 <sup>8</sup> ohms			> 10 <sup>8</sup> ohms		
Input to output isolation voltage 輸入至輸出端隔離耐電壓	2500 Vrms			2500 Vrms		
Input/Output to baseplate isolation voltage 輸入、輸出端至鋁片隔離耐電壓	2500 Vrms					
Operating temperature 動作溫度範圍	-20°C to +80°C			-20°C to +80°C		
Storage temperature 保存溫度範圍	-40°C to +100°C			-40°C to +100°C		

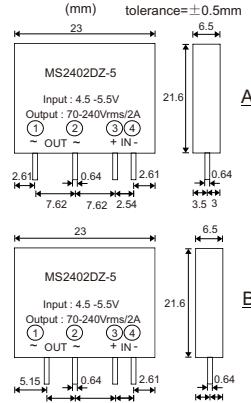
Order message 訂購訊息：

MS2402DZ-□-□  
 └─ OUT pitch(A, B) OUT間距(A, B)  
 └─ Control Voltage (5, 12, 24V)  
 控制電壓(5, 12, 24V)

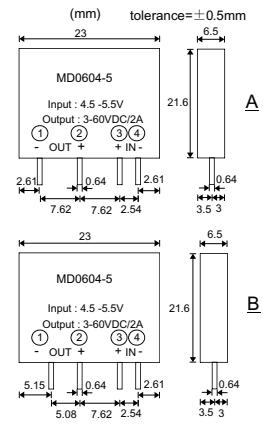


Order message 訂購訊息：

MD0602-□-□  
 └─ OUT pitch(A, B) OUT間距(A, B)  
 └─ Control Voltage (5, 12, 24V)  
 控制電壓(5, 12, 24V)



B



A

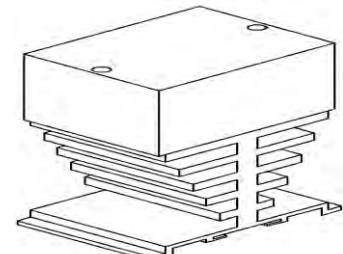
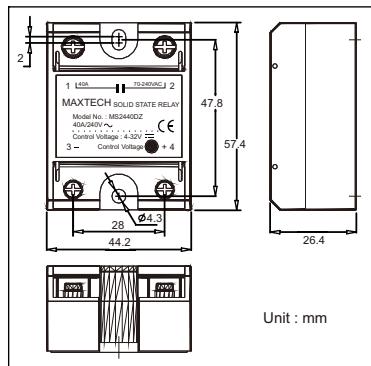
B

# DC TO AC SOLID STATE RELAY

## DC TO AC 固態繼電器

Model 型號	MS 2410DZ	MS 2415DZ	MS 2420DZ	MS 2425DZ	MS 2440DZ	MS 4810DZ	MS 4815DZ	MS 4820DZ	MS 4825DZ	MS 4840DZ
<b>Input Specifications 輸入端特性規格</b>										
Control Voltage range (Vdc) 控制電壓範圍(Vdc)	4-32V									
Current 輸入電流	5mA(at 4V), 15 mA(at 32V)									
Maximum pickup voltage ON-OFF 最大電壓(動作)	4V									
Minimum dropout voltage OFF-ON 最小電壓(復歸)	2V									
<b>Output Specifications 輸出端特性規格</b>										
Voltage Range (Vac) 使用電壓範圍(Vac)	70-340 Vrms					70-560 Vrms				
Peak voltage (t=1min.) 最大峰值耐電壓 (一分鐘)	600 V					800 V				
Maximum current (Arms) 最大工作電流 (有效值)	10 A	15 A	20 A	25 A	40 A	10 A	15 A	20 A	25 A	40 A
Max.1-cycle surge (50Hz) 最大耐衝擊電流 (50Hz一週)	100 A	160 A	210 A	260 A	410 A	100 A	160 A	210 A	260 A	410 A
I <sup>2</sup> t (t=10ms)A <sup>2</sup> s	78A <sup>2</sup> S	144A <sup>2</sup> S	200A <sup>2</sup> S	340A <sup>2</sup> S	880A <sup>2</sup> S	78A <sup>2</sup> S	144A <sup>2</sup> S	200A <sup>2</sup> S	340A <sup>2</sup> S	880A <sup>2</sup> S
Maximum off-state leakage (T=25°C) 開路洩漏電流(T=25°C)	1.8mA rms (at 120VAC), 3.5 mA rms (at 240VAC) 5mA rms (at 340VAC)					3.9mA rms (at 380VAC), 5mA rms (at 480VAC) 5.8mA rms (at 560VAC)				
Max. on-state voltage drop at I <sub>max</sub> and T=25°C 閉路殘餘電壓 (最大工作電流, 25°C時)	1.5V (at I <sub>max</sub> and T=25°C)					1.5V (at I <sub>max</sub> and T=25°C)				
Thermal resistance (junction to baseplate) 熱阻值 (功率元件至鋁片)	2.1	2.05	0.9	0.9	0.9	2.1	2.05	0.9	0.9	0.9
<b>General Characteristics 一般參數</b>										
Response time 回應時間	½ cycle + 1mSec									
Input to output dielectric strength 輸入至輸出端絕緣阻抗	> 10 <sup>8</sup> ohms									
Input to output isolation voltage 輸入至輸出端隔離耐電壓	2500 Vrms									
Input/Output to baseplate isolation voltage 輸入、輸出端至鋁片隔離耐電壓	2500 Vrms									
Operating temperature 動作溫度範圍	-20°C to +80°C									
Storage temperature 保存溫度範圍	-40°C to +10°C									

### ■ Dimension 尺寸



80 x 50 x 50 (mm)

# MINIATURE S.C.R. POWER REGULATOR

小型化單相相位控制器(直推式)

SCR



MP

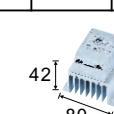
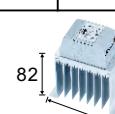
Heat Sink : Aluminum



(42)



(82)

Model 型號	MP																												
	2415D	2430D	2450D	2465D	3815D	3830D	3850D	—	—	—	—	—	—	—															
Dimensions 尺寸 (Unit:mm)	  																												
Load Current Rating 額定負載電流 (A)	15A	30A	50A	65A	15A	30A	50A	15A	30A	50A	65A	15A	30A	50A															
Load Voltage 負載電壓 (V)	100~260V				—			100~260V				—																	
Pressure 壓力	1200			800			1200			1200			800		1200														
Ambient Temp. 環境溫度	Operating : 0~50°C, Storage : -10~70°C																												
RH 濕度	0~90%																												
Frequency Range 頻率範圍	50Hz/60Hz																												
Control Type (Input) 控制方式 (輸入)	4~20mA							1~5V																					
Strength of Press-resisted 壓力抵抗強度	2500 VAC/1 Min between power & external cover																												
Isolation Resistance 耐壓絕緣	1000 VAC/1 Min between power & input signal																												
	Over 20 MΩ (power & external cover)							Over 20 MΩ (input signal & external cover)																					
Alarm 警報	—																												
Notation 符號	Single phase 1 pole																												
Net Weight 淨重(g)	Approx. 125																												
Features 特色	1. Single phase 1 pole, zero cross control. 2. Miniature size as "SSR" most suitable for small ampere and miniature equipment use to less the cost but increase the value of equipment. 3. Input signal can be ordered with 4~20mA/1~5VDC/VR100K 4. CE Approval.																												

# SOLID STATE RELAYS (S.S.R.)

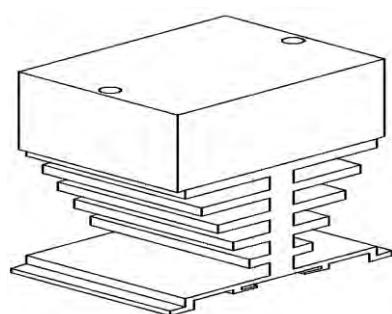
## 固態繼電器



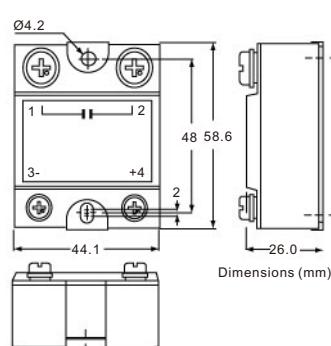
### ■ Specification 規格

Model 型號	Control Voltage (IN) 控制電壓	Working Voltage (OUT) 工作電壓	Current 電流
SSR-210B (10A)	3-32VDC	24-380VAC	10A
SSR-210B (20A)	3-32VDC	24-380VAC	20A
SSR-10DA	3-32VDC	24-380VAC	10A
SSR-10DA-H	3-32VDC	90-480VAC	10A
SSR-25DA	3-32VDC	24-380VAC	25A
SSR-25DA-H	3-32VDC	90-480VAC	25A
SSR-40DA	3-32VDC	24-380VAC	40A
SSR-40DA-H	3-32VDC	90-480VAC	40A
SSR-60DA	3-32VDC	24-380VAC	60A
SSR-75DA	3-32VDC	90-480VAC	75A
SSR-90DA	3-32VDC	24-380VAC	90A
SSR-10DD (DC)	3-32VDC	5-60VDC	10A
SSR-30DD (DC)	3-32VDC	5-60VDC	30A
SSR-10AA (AC)	80-250VAC	24-380VAC	10A
SSR-25AA (AC)	80-250VAC	24-380VAC	25A
SSR-40AA (AC)	80-250VAC	24-380VAC	40A
SSR-75AA (AC)	80-250VAC	24-380VAC	75A
SSR-10VA ADJUSTABLE	1/4W 500KΩ VR	24-380VAC	10A
SSR-10VA-H ADJUSTABLE	1/4W 500K35Ω VR	90-480VAC	10A
SSR-25VA ADJUSTABLE	1/4W 500KΩ VR	24-380VAC	25A
SSR-25VA-H ADJUSTABLE	1/4W 500KΩ VR	90-480VAC	25A
SSR-40VA ADJUSTABLE	1/4W 500KΩ VR	24-380VAC	40A
SSR-40VA-H ADJUSTABLE	1/4W 500KΩ VR	90-480VAC	40A
SSR-75VA ADJUSTABLE	1/4W 500KΩ VR	24-380VAC	75A
SSR-75VA-H ADJUSTABLE	1/4W 500KΩ VR	24-380VAC	75A
SSR-40LA (4~20mA)	DC 4~20mA	24-380VAC	40A
SSR-40VA-H (0~5VDC)	0~5VDC	24-380VAC	40A

### ■ Dimension 尺寸



80 x 50 x 50 (mm)



58.6 x 44.1 x 26.0 (mm)



MPT under 120A



TMPT



MS 30A



TMPS 30A

### ■ 特色 (Features) :

- 小型設計節省空間  
Small : size, takes small space
- 解析度高，反應快能有效維持恆溫  
High accuracy and fast response, be able to keep steady temperature very well.
- 採用 P.W.M. 設計，確保良好線性控制  
P.W.M. system provides very good linear control.
- 採用耐高壓晶片，壽命長，且無機械磨損  
High voltage rating contactless and long product life.
- 無機械動作，安靜無噪音  
Non-mechanic motion, no noise.
- 附加安全蓋，無處電之虞  
With isolation cover, preventing from electric shock.
- 輸出端壓降低，功率耗損少  
Low voltage drop, low power lose.
- 零位相位控制供客戶選擇，可適應各種環境使用  
Both phase control and zero cross control are available.
- 內藏式自動/手動切換開關，使用便利  
With auto/manu. switch, convenient for user.

### ■ 形式說明 (Model Naming) :

PROPORTIONAL TYPE INPUT: 4~20mA or 1~5VDC		ON-OFF TYPE INPUT: DC 12~32V	
MPS 050 2	MS-3 050 S		
控制方式 Control Type MP : 相位控制 Phase Control MO : 零位控制 Time Base Control (Zero Voltage Cross)	使用電壓 Load Voltage 1:110V 3: 380V 2: 220V 4: 440V	相位 Phase Type 1: 單相 Single Phase 2: 三相二極 Three Phase Two Pole 3: 三相三極 Three Phase Three Pole	使用電壓 Load Voltage L: 220V H: 40V
相式 Phase Type S : 單相 Single Phase T : 三相 Three Phase	負載通電電流 Load Current Rating 020:20A 100:100A 030:30A 160:160A 050:50A 200:200A 070:70A 300:300A	負載通電電流 Load Current Rating 030:30A 050:50A 070:70A 100:100A 120:120A 160:160A 200:200A 250:250A 300:300A	
※ each unit with heat sink			

MPT																							
Model	0202	0204	0302	0304	0502	0504	0702	0704	0802	0804	1002	1004	1202	1204	1602	1604	2002	2004	2502	2504	3002	3004	
Load Current Rating	20A	30A	50A	70A	80A	100A	120A	160A	200A	250A	300A												
Load Voltage (V)	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500	150~260	240~500			
L X W X H (mm) (Include heat sink)	283 X 126 X 115		318 X 126 X 170		330 X 140 X 200		468 X 140 X 200		648 X 190 X 215														
Net Weight (g) (Include heat sink)	1900		4400		6600		9400		16500														
Auxiliary Power	AC 220V ±10%																						
Min Load Current	0.6A																						
Off State Leakage Current	15mA (Max)																						
Power Consumption	5W (Max)																						
Frequency Range	50Hz/60Hz (option)																						
Control Type	DCA (4~20mA)/DCV (0~5V/1~5V/0~10V)																						
Input Resistance	DCA (250Ω)/DCV (10kΩ)																						
Isolation Voltage	AC 2500V (1min input & output to ground)																						
Alarm	2.0A																						
Notation	3 Phase 3 Fuse																						

※ MPT : 1. It is best for using in IR heating, high speed heating and slightly light heating.

2. It is suitable for using in requirement of multi-protected connection.

3. Fuse is separated in all models. A fan is attached when SCR is 50A up.

		MP1									TMPS																		
Model		0304L	0504L	0704L	1004L	1204L	1604	2004	2504	3004	0302L	0502L	0702L	1002L	1202L	1602	2002	2502	3002										
Load Current Rating		30A	50A	70A	100A	120A	160A	200A	250A	300A	30A	50A	70A	100A	120A	160A	200A	250A	300A										
Load Voltage (V)		4:100~500V									2 : 180~260V 4 : 330~500V																		
L X W X H (mm) (Include heat sink)		202 X 126 X 115			202 X 126 X 170	237 X 126 X 170	330 X 140 X 200			202 X 126 X 115			202 X 126 X 170	237 X 126 X 170	330 X 140 X 200														
Net Weight (g) (Include heat sink)		1400		1500	3300	6775			1400			1500	3300	6775															
Auxiliary Power		NO																											
Min Load Current		0.6A																											
Off State Leakage Current		0.25mA under (R.C Filter)									8mA under (R.C Filter)																		
Power Consumption		0.15W (Max)									3.2W (Max)																		
Frequency Range		50Hz/60Hz ±5%																											
Control Type		DCA (4~20mA)									DCA (4~20mA, 0~20mA)/DCV (0~5V/1~5V/2~10V/0~10V)																		
Input Resistance		Over 20MΩ(power & external cover)									Over 20MΩ(input signal & external cover)																		
Isolation Voltage		-									AC 2000V (1min input & output to ground)																		
Alarm		No																											
Notation		Single phase 2poles																											

### Economic Type S.C.R.

		TMPT									TMOT													
Model		0304L	0504L	0804L	1004L	1204L	1604	2004	2504	3004	0304L	0504L	0704L	1004L	1204L	1604	2004	2504	3004					
Load Current Rating		30A	50A	80A	100A	120A	160A	200A	250A	300A	30A	50A	70A	100A	120A	160A	200A	250A	300A					
Load Voltage (V)		4:100~500V									88~264V (50Hz/60Hz)													
L X W X H (mm) (Include heat sink)		202 X 110 X 155	237 X 110 X 155	237 X 126 X 170	208 X 140 X 200			468 X 140 X 200	648 X 190 X 215	202 X 101 X 155	237 X 110 X 155	237 X 126 X 170	248 X 140 X 200	350 X 140 X 200			468 X 140 X 200	468 X 140 X 200						
Net Weight (g) (Include heat sink)		1800	2200	3475	5400			9400	16500			1800	2200	3475	5400	7000	9400							
Auxiliary Power		88~264V (50Hz/60Hz)																						
Min Load Current		0.6A																						
Off State Leakage Current		8mA(R.C Filter)																						
Power Consumption		3.2W (Max)									50Hz/60Hz ±5%													
Frequency Range		50Hz/60Hz ±5%																						
Control Type		DCA (4~20mA, 0~20mA)/DCV (0~5V/1~5V/2~10V/0~10V)									DCA (250Ω)/DCV (4.7Ω or 10KΩ)													
Input Resistance		DCA (250Ω)/DCV (4.7Ω or 10KΩ)									AC 2000V (1min input & output to ground)													
Isolation Voltage		AC 2500V (1min, input to ground)									No													
Alarm		None / With (220 VAC / 0.1A open normally)									None / With (220 VAC / 0.1A open normally)													
Notation		TMPT : 3 Phase 3 Fuse. TMOT : 3 Phase 2 Fuse.																						

\* TMPT : 1. It is best for using in small size, low spread heating and general heating. 2. It is suitable for using in short time heating system.

		MS1																				
Model		050L	070L	080L	100L	120L	050H	070H	080H	100H	120H											
Load Current Rating		50A	70A	80A	100A	120A	50A	70A	80A	100A	120A											
Load Voltage (V)		100~260V																				
L X W X H (mm) (Include heat sink)		98.5 X 126 X 170			140 X 126 X 170			98.5 X 126 X 170			140 X 126 X 170											
Net Weight (g) (Include heat sink)		1500			2100			1500			2100											
DC working current		10mA (Min)																				
Input Voltage (V)		DC 7~32V																				
Off State Leakage Current		8mA (MAX)																				
Frequency Range		50Hz/60Hz VAC																				
Control Type		DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC	DC									
Isolation Voltage		AC 2500V (1min, input to ground)																				
Alarm		No																				
Response time		1/2 Cycle (max)																				
Capacitance		0.4nF																				
Notation		Single Phase																				

		MS-2/MS-3											
Model		030L	030H	050L	050H	070L	070H	100L	100H	120L	120H	160L	160H</

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