

MC-5900 Series Micro Processor Temperature Module



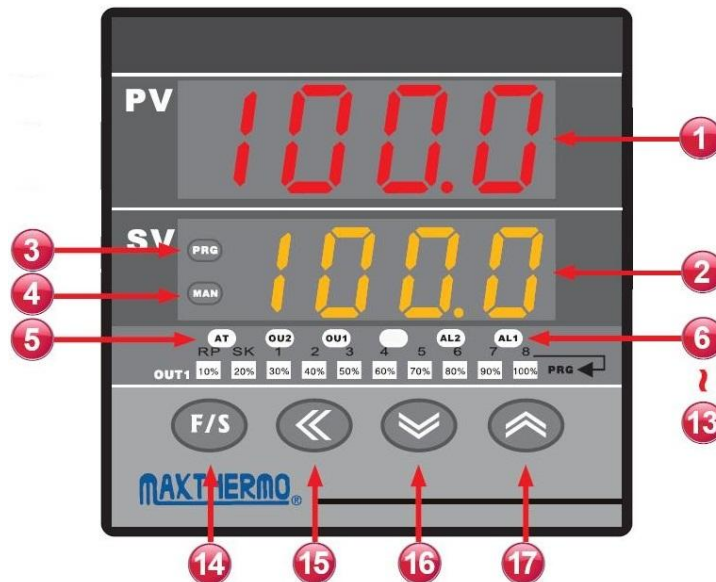
Application

Plastic, rubber, equipment	Semiconductor electronic components industry	Food related industry
Injection molding machinery Extruding machinery Mold temperature controllers Vacuum forming Blow molding (Thermo foaming)	Preheater Cleaning equipment Mold equipment Bonding machine Diffusion equipment	Refrigerating machine (General, for fishing vessel) Dryer Humidifier Bakery, confectionery equipment
Electric furnaces	Pottery manufacturing Ceramic and Glass industry	Packing machine industry
Baking furnace Heavy oil, gas furnaces Incinerator Aluminum, tin, lead, zinc melting furnace Vacuum furnace	Ceramic industry Glass industry Porcelain enameling Grind stone manufacturing	Bag-making machinery Filling packing machinery Hot blast sealing Shrinking packing machinery

Features

PID auto tuning	Self-diagnosis function.
Two PID control processes, with two individual outputs.	Free range voltage from AC 85V~265V or DC24V (option).
Multi range input (TC,RTD,mV), each 14 BIT resolution.	Optional Remote SV and transmitter output.
Relay output, SSR drive, 4~20mA changeable by a module.	8 segments programming procedure. (1 ramp + 1 sock = 1 segment)
Three-point alarm, with 13 alarm modes.	RS485 is available for remote monitoring.
Auto Zero and Auto Span circuit keep good accuracy.	Manual function

Panel Function



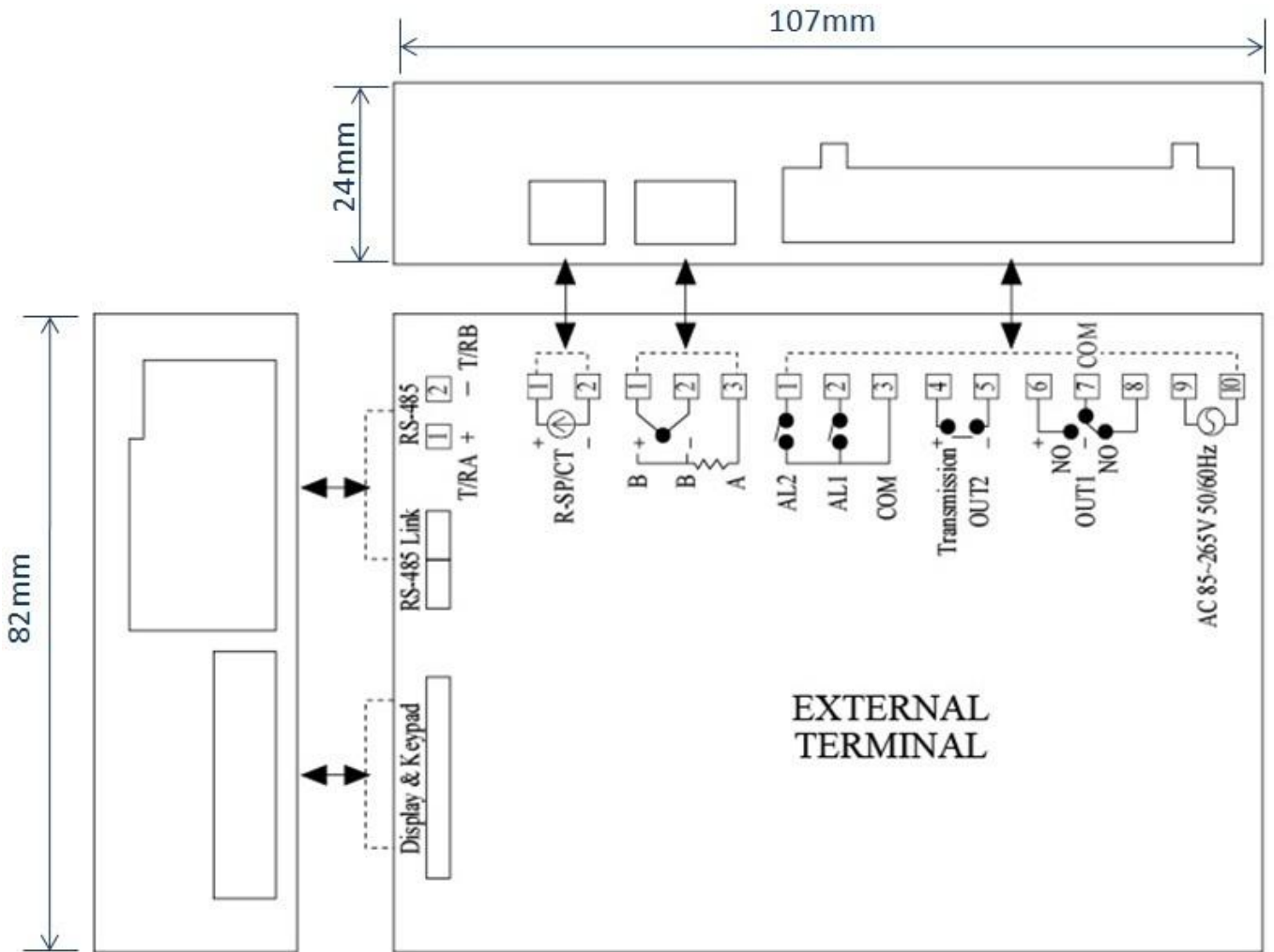
MARKS/DESCRIPTIONDESCRIPTION			MARKS/DESCRIPTIONDESCRIPTION		
1	PV	Measured value display	12	1~8	Segment-in-process display lamp
2	SV	Set value display	13	OUT1%	Manipulated output value display
3	PRG	Programmable mode lamp	14	F/S	Function & Set key
4	MAN	Manual mode lamp			
5	AT	Auto tuning lamp	15	⇐	Shift key
6	OUT1	Control output1 lamp			
7	OUT2	Control output2 lamp	16	⏴	Down key
8	AL1	Alarm1 output lamp			
9	AL2	Alarm2 output lamp	17	⏵	Up key
10	RP	Ramping mode lamp			
11	SK	Soaking mode lamp			

Standard Specification

Model	MC-5900																																																											
Dimension	48x48mm A059 (Optional)																																																											
Working voltage	AC85~265V, DC24C (Optional)																																																											
Frequency	50 / 60Hz																																																											
Power consumption	Approx 3.5VA																																																											
Input	Accuracy : 0.3%FS, Sample time : 300ms																																																											
(TC) (RTD) (mA DC) (Voltage DC)	<table border="1"> <thead> <tr> <th>Type</th> <th>Range</th> <th>Type</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>K1</td> <td>0~200</td> <td>r</td> <td>0~1700</td> </tr> <tr> <td>K2</td> <td>0~400</td> <td>E</td> <td>0~1000</td> </tr> <tr> <td>K3</td> <td>0~800</td> <td>S</td> <td>0~1700</td> </tr> <tr> <td>K4</td> <td>0~1000</td> <td>b</td> <td>0~1800</td> </tr> <tr> <td>K5</td> <td>0~1200</td> <td>n</td> <td>-200~1300</td> </tr> <tr> <td>j1</td> <td>0~200</td> <td>Pt1</td> <td>-50~50</td> </tr> <tr> <td>j2</td> <td>0~400</td> <td>Pt2</td> <td>0~100</td> </tr> <tr> <td>j3</td> <td>0~800</td> <td>Pt3</td> <td>0~200</td> </tr> <tr> <td>j4</td> <td>0~1000</td> <td>Pt4</td> <td>0~400</td> </tr> <tr> <td>j5</td> <td>0~1200</td> <td>Pt5</td> <td>-200~600</td> </tr> <tr> <td>t1</td> <td>-50~50</td> <td>jPt</td> <td>-200~500</td> </tr> <tr> <td>t2</td> <td>-100~100</td> <td>Lin</td> <td>-1999~9999</td> </tr> <tr> <td>t3</td> <td>-200~400</td> <td></td> <td></td> </tr> </tbody> </table>				Type	Range	Type	Range	K1	0~200	r	0~1700	K2	0~400	E	0~1000	K3	0~800	S	0~1700	K4	0~1000	b	0~1800	K5	0~1200	n	-200~1300	j1	0~200	Pt1	-50~50	j2	0~400	Pt2	0~100	j3	0~800	Pt3	0~200	j4	0~1000	Pt4	0~400	j5	0~1200	Pt5	-200~600	t1	-50~50	jPt	-200~500	t2	-100~100	Lin	-1999~9999	t3	-200~400		
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DP position	0000, 000.0, 00.00, 0.000 (Available for mA or voltage DC input)																																																											
Output1	Main control output (HEAT or COOL)																																																											
Relay	1C 5A/250VAC																																																											
Voltage pulse	For SSR drive, 20mA / DC20V																																																											
mA DC	0~20mA, 4~20mA, Maximum load resistance : 600Ω																																																											
Voltage DC	0~5V, 0~10V, 1~5V, 2~10V. Maximum load current : 20mA																																																											
Alarm1	1A 5A/250VAC (Standard)																																																											
Control algorithms	PID, P, PI, PD, ON/OFF(P=0)																																																											
PID range	P : 0.0~3000, I : 0~7200 sec., D : 0~1800 sec.																																																											
Ramp/Soak program	8 segments programming procedure. (1 ramp + 1 sock = 1 segment)																																																											
Humidity range	0~80%RH																																																											
Operating temperature	0~65°C / -10~50°C																																																											

Weight (approx)	Approx 190g
Optional specification	
Communication	Protocol : MODBUS RTU, Interface : RS-485
Output1	Motor Valve Control (Open loop)
Output2	Cool
Relay	1A 5A/250VAC
Voltage pulse	For SSR drive, 20mA / DC20V
Transmission	Available for PV and SV transmission
mA DC	0~20mA, 4~20mA, Maximum load resistance : 600Ω (Optional)
Voltage DC	0~5V, 0~10V, 1~5V, 2~10V. Maximum load current : 20mA
Remote SV	4~20mA, 0~5V, 0~10V, 1~5V, 2~10V are available
Alarm2	1A 5A/250VAC
CT	Heater broken alarm use (Optional)

External Dimension & Diagram



Special Functions

<h3>Remote SV</h3> <p>REMOTE SV</p> <p>Input Type : 0~20mA , 4~20mA , 0~5V , 0~10V , 1~5V , 2~10V , 0~1V</p>	<h3>Transmission</h3> <p>TRANSMISSION</p> <p>Signal Type : PV , SV Output Type : 0~20mA , 4~20mA , 0~5V , 0~10V , 1~5V , 2~10V , 0~1V</p>				
<h3>Dual Output (Heating and Cooling)</h3> <p>HEATING AND COOLING</p> <p>MC-2X38 Dual Output (Heating/Cooling)</p> <p>OUT1 (Heating) / OUT2 (Cooling)</p>	<h3>Motor Valve Control</h3> <p>MOTOR VALVE CONTROL</p> <p>Open / Close / GAS</p>				
<h3>Program</h3> <p>PROGRAM</p> <p>There are 2 patterns by 8 segments can be used in ramp/soak program.</p> <p>There are 2 patterns can be linked together as 16 segments can be used in ramp/soak program.</p>	<h3>Limit Setting</h3> <p>LIMIT SETTING</p> <p>Built in output limit function. Use this function to get different gradient output and set limit for output.</p> <p>OUTL=100% OUTL=80% OUTL=30%</p>				
<h3>Alarm Function</h3> <p>ALARM FUNCTION</p> <p>Alarm types list as below :</p> <table border="1"> <tr> <td> Deviation Deviation High Alarm Deviation Low Alarm Deviation High/Low Alarm Band Alarm </td> <td> System System Failed Alarm System Normal Alarm </td> </tr> <tr> <td> PV PV High Alarm PV Low Alarm </td> <td> Program Program Run Alarm Program End Alarm Segment End Alarm </td> </tr> </table> <p>※ Inhibit means alarm doesn't work at first time</p>	Deviation Deviation High Alarm Deviation Low Alarm Deviation High/Low Alarm Band Alarm	System System Failed Alarm System Normal Alarm	PV PV High Alarm PV Low Alarm	Program Program Run Alarm Program End Alarm Segment End Alarm	<h3>Delay Time</h3> <p>DELAY TIME</p> <p>Use this function can avoid alarm acts frequently or acts due to external disturbance.</p> <p>OFF / ON / Delay</p>
Deviation Deviation High Alarm Deviation Low Alarm Deviation High/Low Alarm Band Alarm	System System Failed Alarm System Normal Alarm				
PV PV High Alarm PV Low Alarm	Program Program Run Alarm Program End Alarm Segment End Alarm				

Application (System Integration)

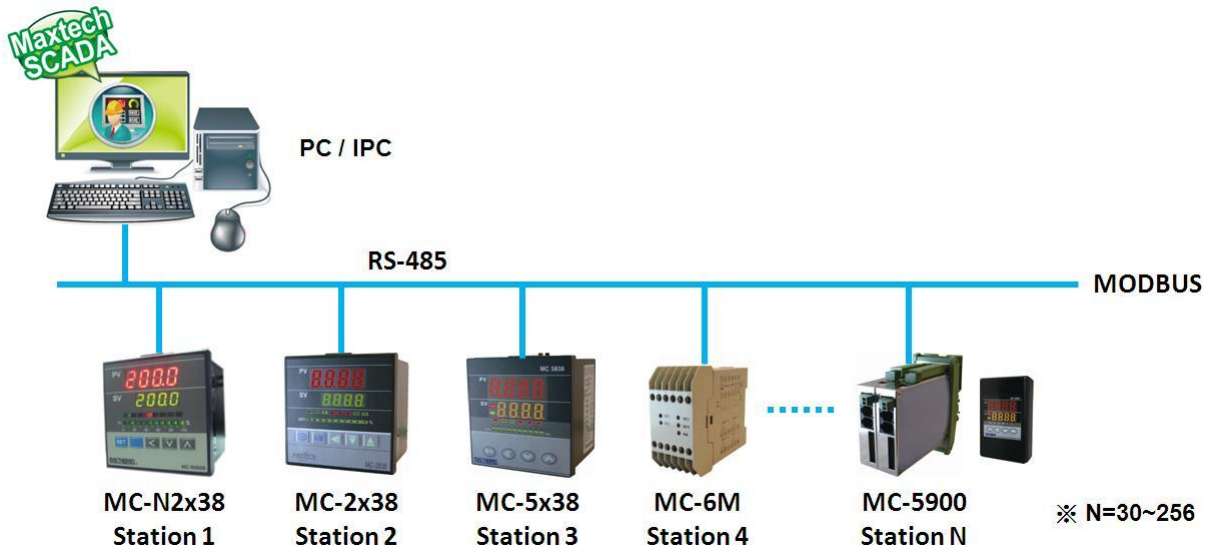
Temperature controller & graphical control application

* MC-2 / MC-5 Monitor software (free) Please to web site download www.maxthermo.com

Introduction : Maxtech SCADA + Maxtech temperature controllers or meters

(Communication : MODBUS)

Functions : Historic / Historic trend graph / Bar graph / Alarm logging / Operation logging ... etc.

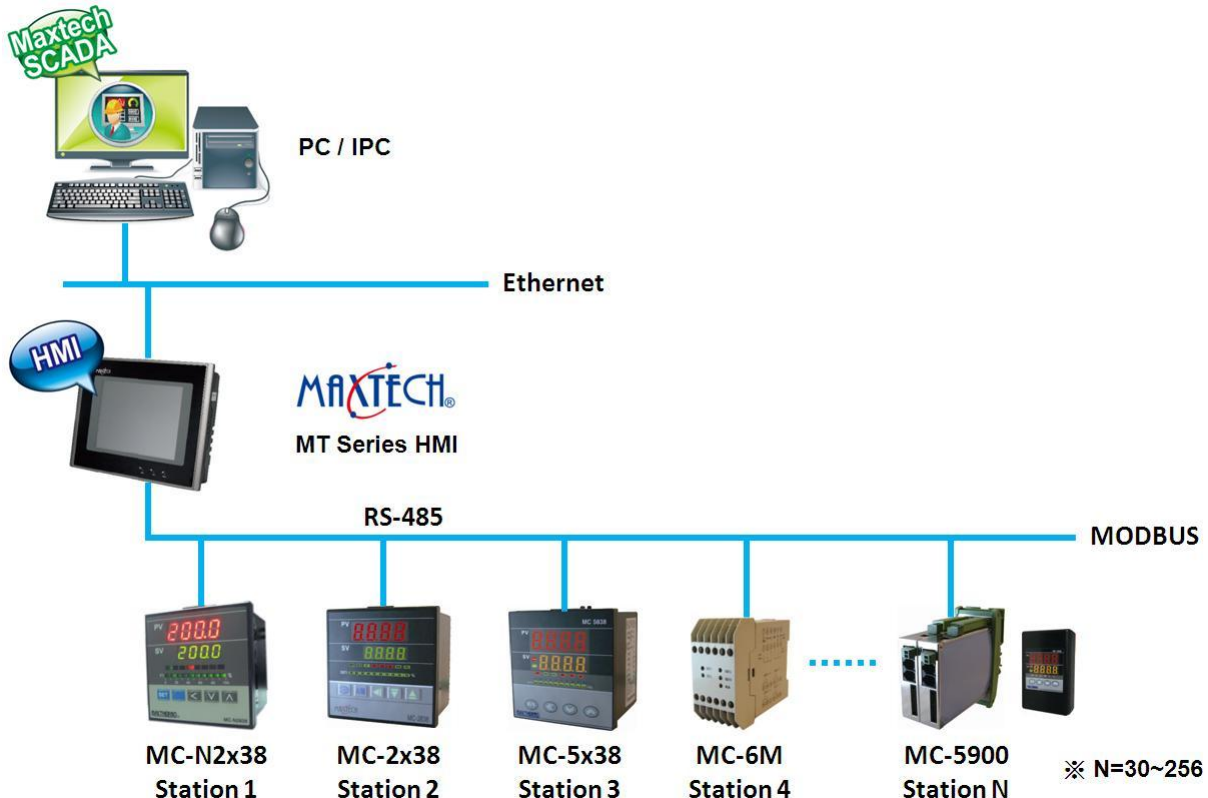


Temperature controller & HMI control application

Introduction : Maxtech HMI series + Maxtech temperature controllers or meters

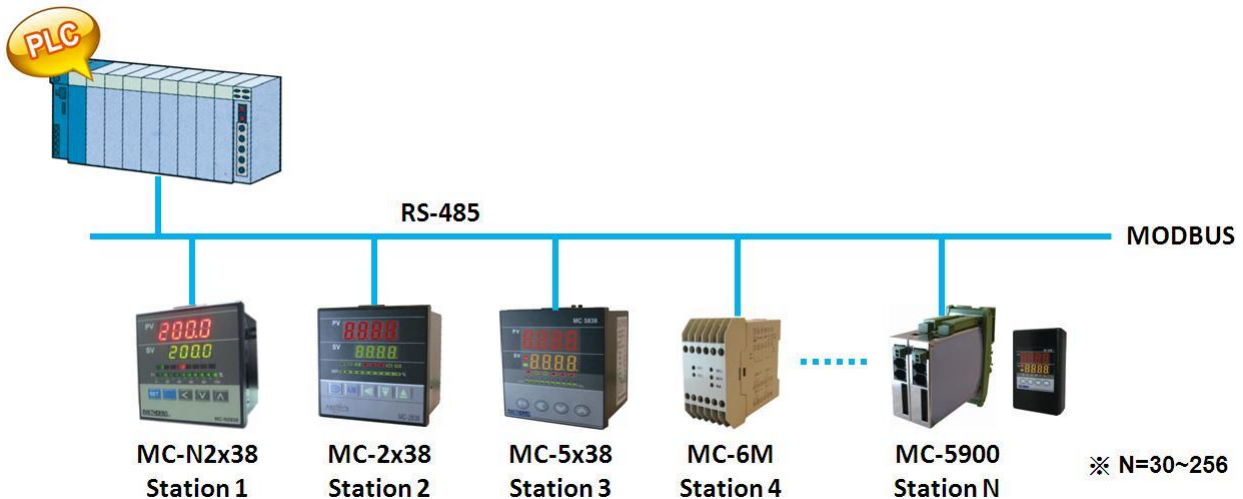
(Communication : MODBUS)

Functions : Historic / Historic trend graph / Bar graph / Alarm logging / Operation logging ... etc.



Temperature controller & HMI control application

Introduction : PLC + Maxtech temperature controllers or meters (Communication : MODBUS)



Order information

MC - **5900** - **101** - **002**
A **B C D** **E F G**

A-Model NO :

MC-5900 with size 82x107x24mm

B-Out 1 control output mode for heating or cooling :

- 0-None
- 1-Relay contact, SPDT 5A/240VAC
- 2-SSR Voltage pulse, 20VDC/20mA
- 3-Current, 4-20mA
- 4-Motor valve control (Open loop)
- A-0~5V
- B-0~10V
- C-1~5V
- D-2~10V

C-Out 2 control output mode for cooling :

- 0-None
- 1-Relay contact, SPDT 5A /240VAC
- 2-SSR Voltage pulse, 20VDC/20mA
- 3-Current, 4-20mA
- A-0~5V
- B-0~10V
- C-1~5V
- D-2~10V

D-Alarm :

- 0-None
- 1-One set alarm
- 2-Two set alarm

E-Transmitter :

- 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 :

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

G-Communication :

- 0-None
- 2-RS485

Accessory (Optional):

Panel: A059PANEL
 Portable Panel: A059WRT
 DIN rail: A059DIN2-2PCS use
 DIN rail: A059DIN4-4PCS use
 DIN rail: A059DIN8-8PCS use

Contact

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