



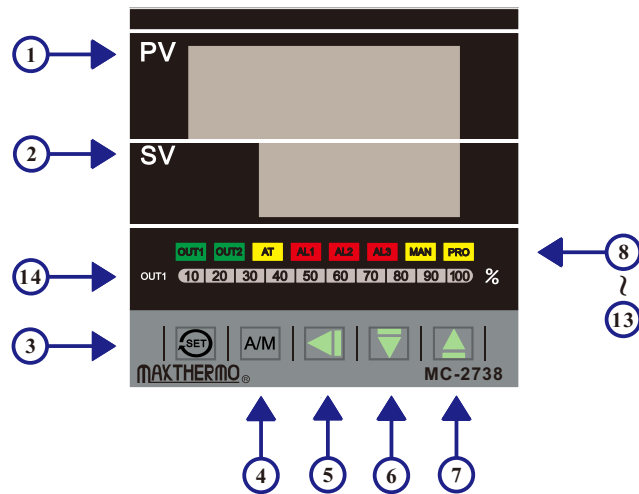
MC-2 Series Micro Processor Temperature Controller



Application

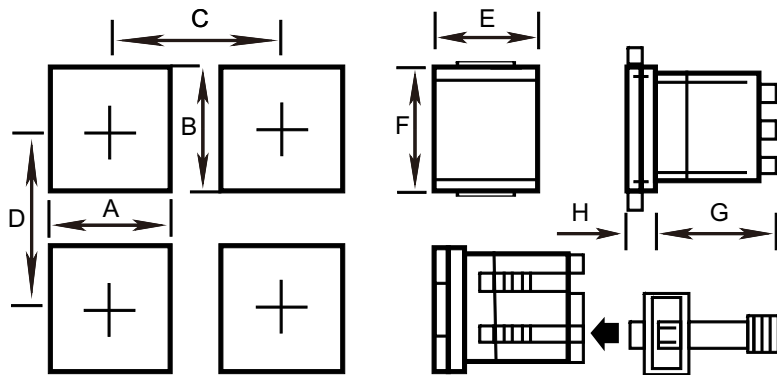
Plastic, rubber, equipment	Semiconductor electronic components industry	Food related industry
Injection molding machinery Extruding machinery Mold temperature controllers Vacuum forming Blow molding (Thermo foaming)	Preheater Cleaning equipment Mold equipment Bonding machine Diffusion equipment	Refrigerating 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

Panel Function



No.	Marks	Description	No.	Marks	Description
1	PV	Process value	8	OUT1	Output 1 lamp
2	SV	Set value	9	OUT2	Output 2 lamp
3	SET	Set key & enter key	10	AT	Auto tuning lamp
4	A/M	Manual / auto exchange key	11	AL1	Alarm 1 lamp
5	◀	Shift key	12	AL2	Alarm 2 lamp
6	▼	Down key	13	AL3	Alarm 3 lamp
7	▲	Up key	14	OUT1%	Output 1 percentage lamp



External Dimension



Unit: mm

Model	A	B	C	D	E	F	G	H
MC-2438	44.5 ^{+0.5} ₋₀	44.5 ^{+0.5} ₋₀	65	70	50	50	80	17
MC-2538	44.5 ^{+0.5} ₋₀	90.5 ^{+0.5} ₋₀	65	116	50	96	80	17
MC-2638	90.5 ^{+0.5} ₋₀	44.5 ^{+0.5} ₋₀	111	70	96	50	80	17
MC-2738	68.5 ^{+0.5} ₋₀	68.5 ^{+0.5} ₋₀	89	94	74	74	80	17
MC-2838	90.5 ^{+0.5} ₋₀	90.5 ^{+0.5} ₋₀	111	116	96	96	80	17

Standard Specification

Model		MC-2438	MC-2538	MC-2638	MC-2738	MC-2838
Appearance						
Size		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
Cut-Out		$44.5\text{mm}^{+0.5}_{-0} \times 44.5\text{mm}^{+0.5}_{-0}$	$44.5\text{mm}^{+0.5}_{-0} \times 90.5\text{mm}^{+0.5}_{-0}$	$90.5\text{mm}^{+0.5}_{-0} \times 44.5\text{mm}^{+0.5}_{-0}$	$68.5\text{mm}^{+0.5}_{-0} \times 68.5\text{mm}^{+0.5}_{-0}$	$90.5\text{mm}^{+0.5}_{-0} \times 90.5\text{mm}^{+0.5}_{-0}$
Accuracy		0.2% F.S.				
Control Action		PID, P, PI, PD, ON / OFF(P=0)				
Input	Sample time	250ms				
	TC	K, J, T, R, E, S, B, N				
	RTD	DIN PT100Ω, JIS PT100Ω				
	mA DC	0~20mA, 4~20mA				
	Voltage DC	0~20mV, 0~50mV, 0~5V, 0~10V, 1~5V, 1~10V, 2~10V				
Output 1	Relay	SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type
		3A, 220V, 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		SPST Type	SPDT Type	SPDT Type	SPST Type	SPDT Type
		3A, 220V, electrical life : 100,000 times or more(under the rated load)				
Temp. Setting Range		User Selection				
Supply Voltage		AC 85 ~ 265V 50/60 Hz, DC 15 ~ 50V				

■ Optional Spec

Model		MC-2438	MC-2538	MC-2638	MC-2738	MC-2838
Output 2	Relay	For heating and cooling control use				
		SPST Type	SPST Type	SPST Type	SPST Type	SPST Type
		3A, 220V, 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		SPST Type	SPDT Type	SPDT Type	SPDT Type	SPDT Type
		3A, 220V, electrical life : 100,000 times or more(under the rated load)				
Alarm 3	None	SPST Type	SPST Type	SPST Type	SPST Type	SPST Type
		3A, 220V, electrical life : 100,000 times or more(under the rated load)				

Standard Specification

■ Optional Spec

Model	MC-2438	MC-2538	MC-2638	MC-2738	MC-2838
Retransmission	All series				
	0~20mA(Adjustable), 4~20mA(Adjustable), 0~5V, 0~10V, 1~5V, 2~10V				
Remote SV Input	All series				
	0~20mA, 4~20mA, 0~5V, 0~10V, 1~5V, 2~10V				
Communication	Protocol : MODBUS RTU				
	RS232, RS485				
	Baud rate: 9600, 19200, 38400, 57600, 115200 bps				
	Data bits : 8, Stop bit : 1, Parity : None, Odd, Even				

■ Order Information

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

A. Model:

2438
2538
2638
2738
2838

B. Out 1 control output mode

(Heating/Cooling):

0 - None
 1 - Relay contact, SPDT 3A/240VAC
 (*MC-2438: Relay contact, SPST 3A/240VAC)
 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):

0 - None
 1 - Relay contact, SPST 3A/240VAC
 2 - SSR Voltage pulse, 24VDC/20mA
 3 - Current, 4-20mA
 A - 0~5V
 B - 0~10V
 C - 1~5V
 D - 2~10V

D. Alarm:

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

E. Retransmission :

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
 2 - 0~20mA
 3 - CT for heater break alarm
 A - 0~5V
 B - 0~10V
 C - 1~5V
 D - 2~10V

G. Communication:

0 - None
 1 - RS232
 2 - RS485

H. Input type:

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

I. Main power :

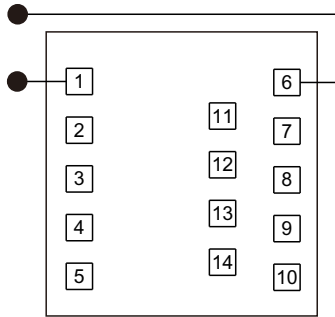
A - AC 85~265V
 D - DC 15~50V

Wiring Diagram

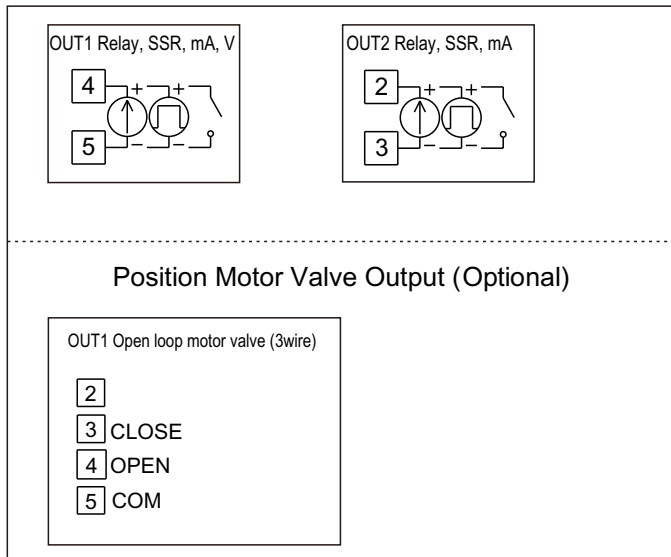
MC-2438

A. Power Supply

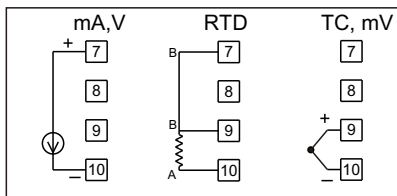
AC85~265V 50/60Hz
or DC15~50V (option)



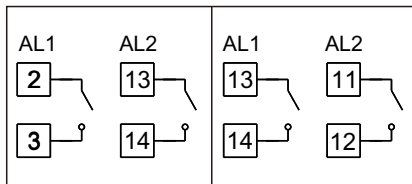
B. Control Output



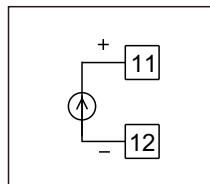
C. Input



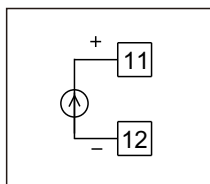
D. Alarm



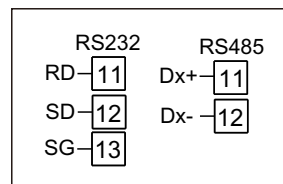
E. Retransmission



F. Remote SV



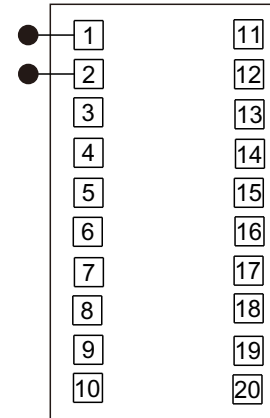
G. Communication



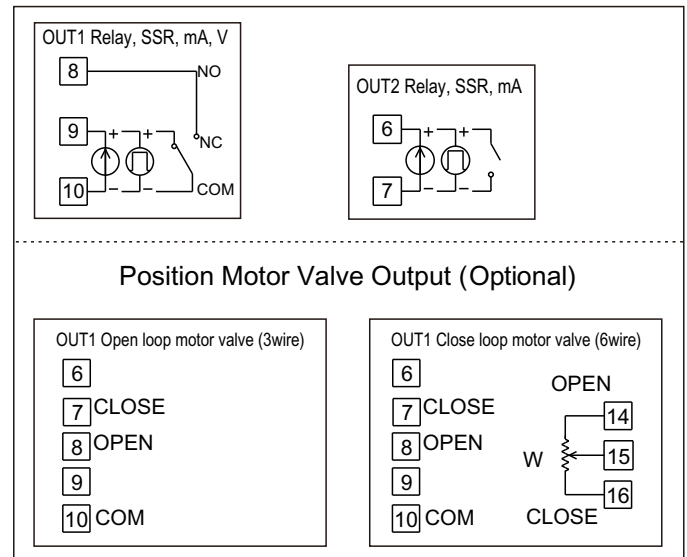
MC-2538 / MC-2638

A. Power Supply

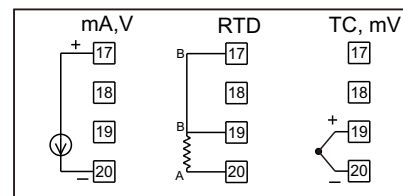
AC85~265V 50/60Hz
or DC15~50V (option)



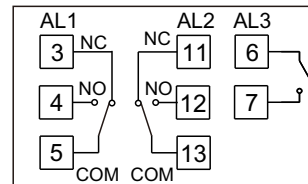
B. Control Output



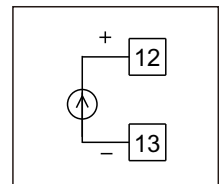
C. Input



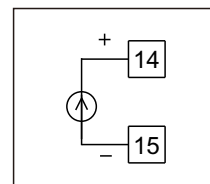
D. Alarm



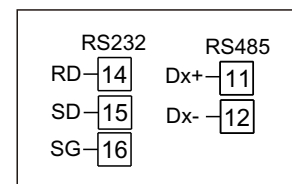
E. Retransmission



F. Remote SV



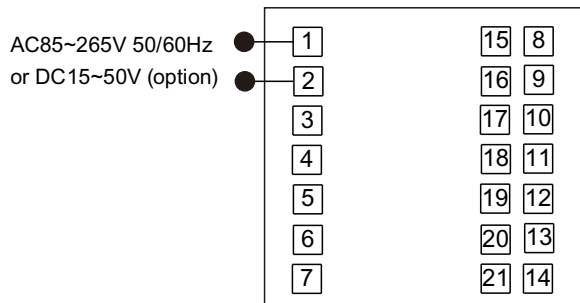
G. Communication



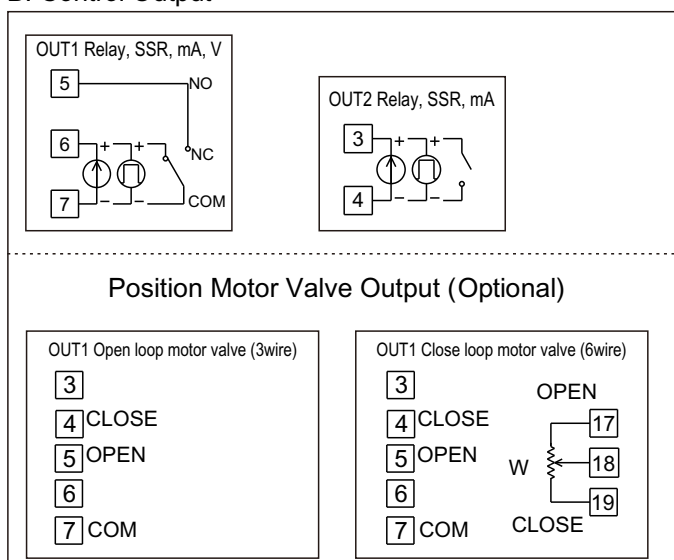
Wiring Diagram

MC-2738

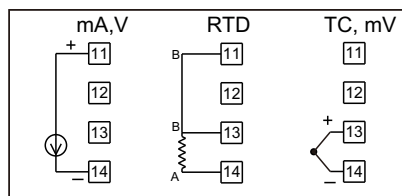
A. Power Supply



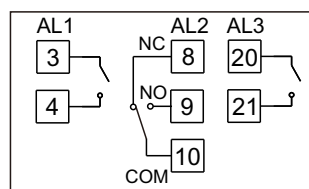
B. Control Output



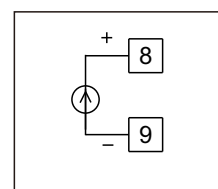
C. Input



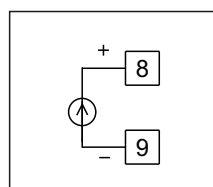
D. Alarm



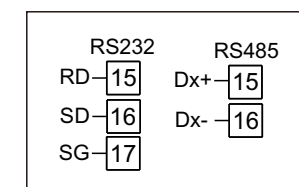
E. Retransmission



F. Remote SV

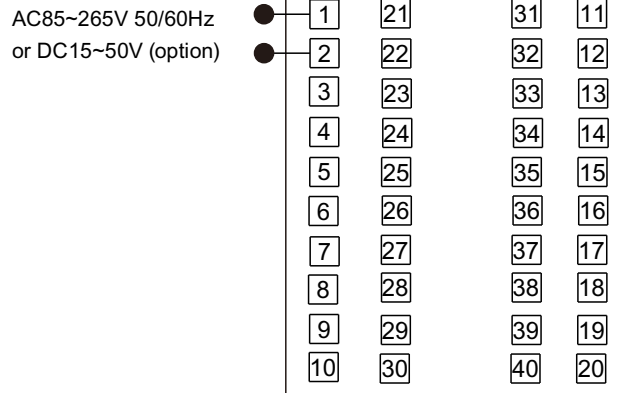


G. Communication

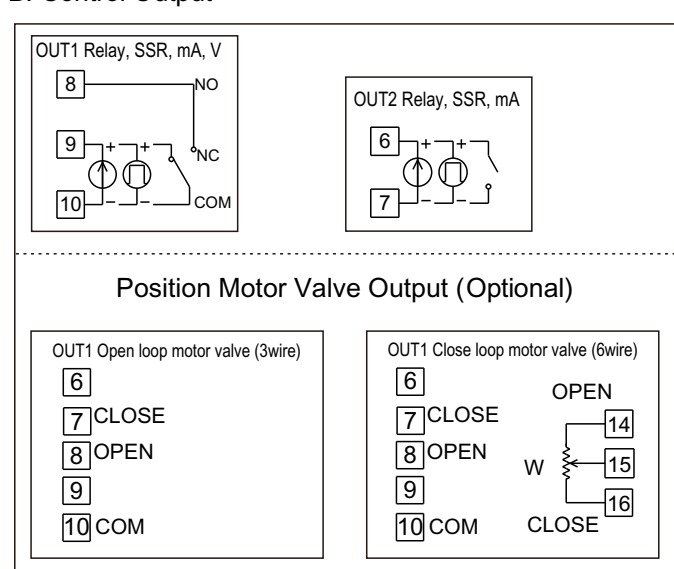


MC-2838

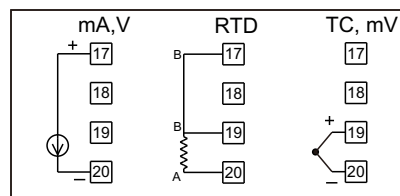
A. Power Supply



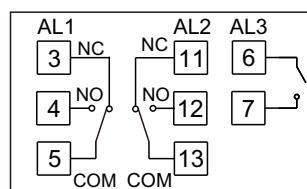
B. Control Output



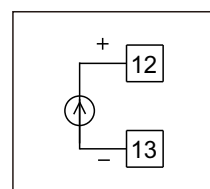
C. Input



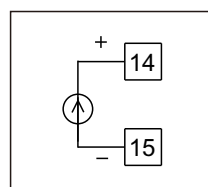
D. Alarm



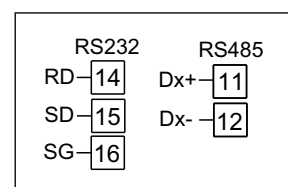
E. Retransmission



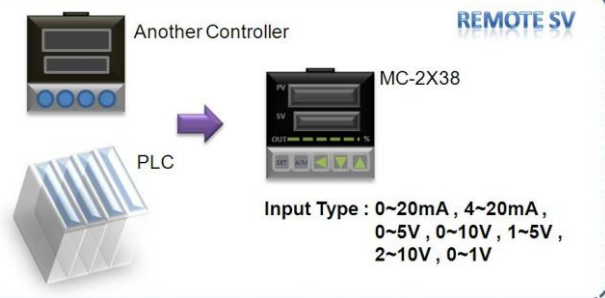
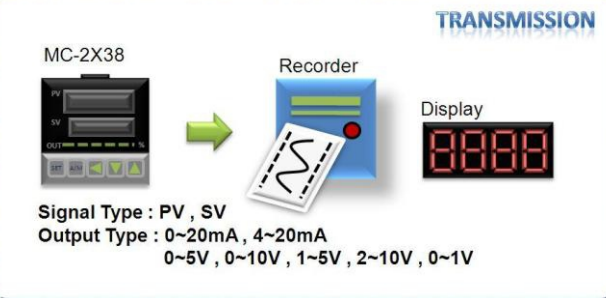
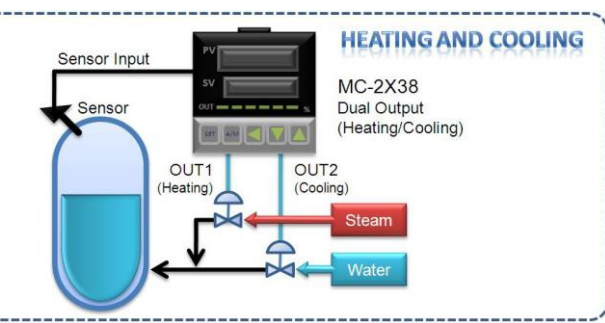
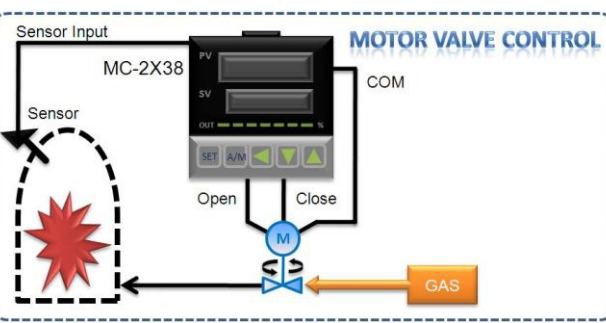
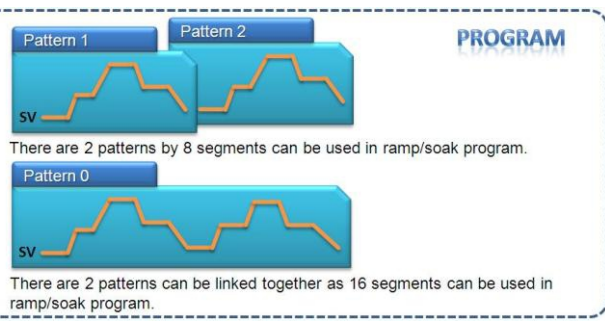
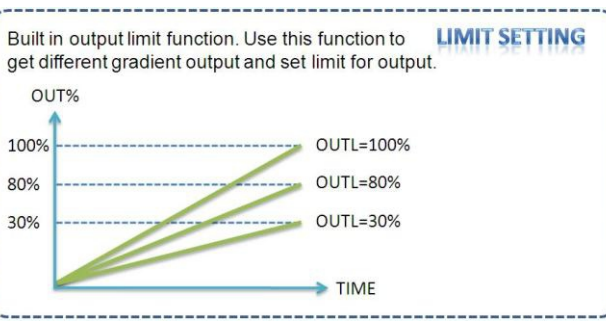
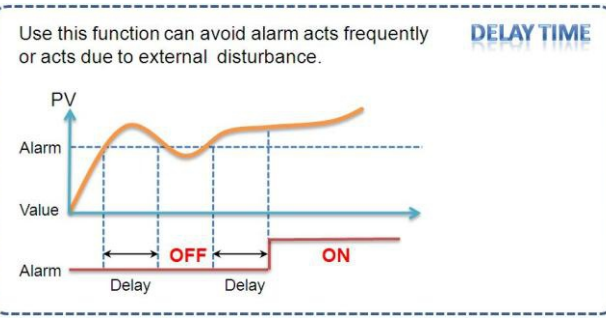
F. Remote SV



G. Communication



Special functions

<h3>Remote SV</h3>  <p>Input Type : 0~20mA , 4~20mA , 0~5V , 0~10V , 1~5V , 2~10V , 0~1V</p>	<h3>Transmission</h3>  <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>MC-2X38 Dual Output (Heating/Cooling)</p>	<h3>Motor Valve Control</h3>  <p>MC-2X38 MOTOR VALVE CONTROL</p>				
<h3>Program</h3>  <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>Built in output limit function. Use this function to get different gradient output and set limit for output.</p> 				
<h3>Alarm Function</h3> <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>Use this function can avoid alarm acts frequently or acts due to external disturbance.</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 Examples Of System Integration

Maxtech Temperature Controllers



PC / IPC

RS-485

MODBUS



MC-N2x38
Station 1



MC-2x38
Station 2



MC-5x38
Station 3



MC-6M
Station 4



MC-5900
Station N

※ N=30~256



PC / IPC

Ethernet



MAXTECH
MT Series HMI

RS-485

MODBUS



MC-N2x38
Station 1



MC-2x38
Station 2



MC-5x38
Station 3



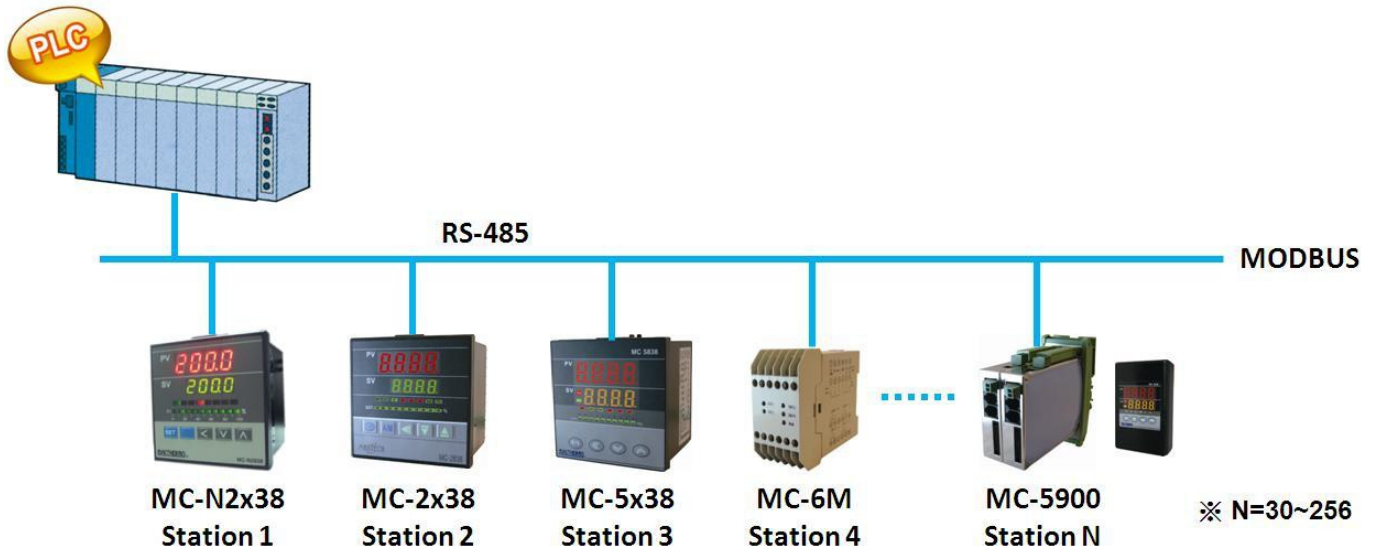
MC-6M
Station 4



MC-5900
Station N

※ N=30~256

Application Examples Of System Integration



Contact

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