



# MICRO PROCESSOR TEMPERATURE CONTROLLER

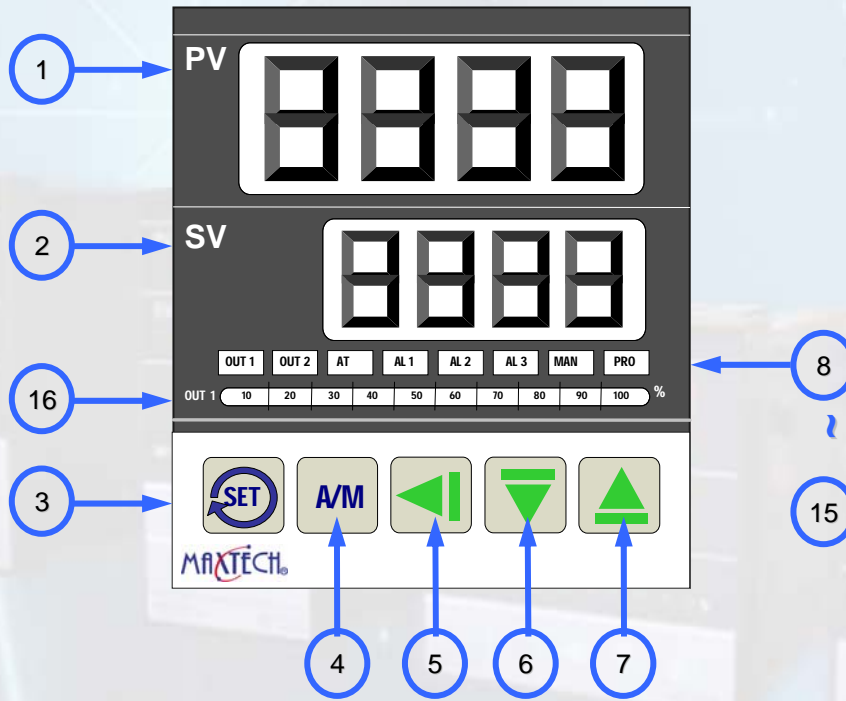





**Application** : Controlling temperature, humidity, pressure, flow, PH, detecting voltage, ampere, power, phase failure.



1. Panel Function :

MC-2438/MC-2538/MC-2638/MC-2738/MC-2838



MARKS/DESCRIPTION			MARKS/DESCRIPTION		
1	PV	Process value display	8	OUT 1	Output1 action indication
			9	OUT 2	Output2 action indication
2	SV	Set value	10	AT	Auto tuning action indication
			11	AL 1	Alarm1 action indication
3	SET	Set key & enter key	12	AL 2	Alarm2 action indication
4	A/M	Manual/auto exchange key	13	AL 3	Alarm3 action indication
5		Shift key	14	MAN	Manual action Indication
6		Down key and program suspending key	15	PRO	Programming action indication
7		Up key and Program starting key	16	OUT 1 %	Output percentage of out1

- 1).** PID auto tuning
- 2).** Two PID control processes, with two individual outputs.
- 3).** Multi range input (TC,RTD,mV), each 14 BIT resolution.
- 4).** Relay output, SSR drive, 4~20mA changeable by a module.
- 5).** Three-point alarm, with 19 alarm modes.
- 6).** Non-Volatile memory.
- 7).** Self-diagnosis function.
- 8).** Auto Zero and Auto Span circuit keep good accuracy.
- 9).** Free range voltage from AC 85V~265V or DC15~50V.
- 10).** Data lock function.
- 11).** Input 2 can be used in Remote SV.
- 12).** Optional transmitter output.
- 13).** With output percentage control, if sensor broken the controller automatically convert to manual operation to be controlled by heating power with output percentage.
- 14).** Standard type with 1 ramp and 1 sock available or 2 patterns each 8 segments programming procedure.
- 15).** RS232 or RS485 is available for remote monitoring.

### 3. Specification :

#### 1).Input (Main) :

- 1.T/C Thermocouple S, B, R, K, E, J, W, N, Cu or PT100,selectable.
- 2.DC V : -10~10mV, 0~10mV, 0~20mV, 0~50mV, 0~1V, 0~5V, 0~10V selectable.
- 3.DC mA : 0~20mA, 4~20mA, selectable or others to be ordered.
- 4.Input (Sub) :  
Remote set: -4~20mA, 0~10V to be ordered.

#### 2).Output :

- 1.Relay output : SPST, SPDT, 5A/240VAC.
- 2.SSR drive : 20mA/20VDC.
- 3.Current proportioning output : 4~20mA adjustable (Load max 800Ω).
- 4.3 wire system motor valve control 5A/240VAC (with feed back)
- 5.Alarm : SPST 5A/240VAC for MC-2438, 2738  
SPDT 5A/240VAC for other models.

#### 3).Control mode :

- 1.ON/OFF : sensitivity adjustable
- 2.P (Proportional) : 0~100% adjustable
- 3.I (Integral) : 0~3600 sec adjustable
- 4.D (Derivative) : 0~3600 sec adjustable
- 5.Proportioning cycle time : 0~150 sec adjustable  
(mA=1, SSR=3, RY  $\geq$  20)

#### 4).Electrical characters tics :

- 1.Working voltage : AC85~265V, DC15~50V
- 2.Power consumption : 2VA
- 3.Isolated resistance : 20MΩup
- 4.Dielectricity strength : AC2000V/50/60Hz 1min
- 5.Sampling time : 250m sec
- 6.Accuracy :  $\pm 0.2\%$  of full range  $\pm 1$  digit

#### 5).Mechanical characters tics :

- 1.Working temperature : -10~+50°C
- 2.Storage temperature : -10~+70°C
- 3.Working humidity : 50~+85%RH
- 4.Weight: :  
MC-2438 about 190g  
MC-2538 about 310g  
MC-2638 about 310g  
MC-2738 about 310g  
MC-2838 about 410g

**MC - 2438 - 101 - 001**  
**A BCD EFG**

**A-Model NO :**

- MC-2438 with size 48x48mm(DIN 1/16)
- MC-2538 with size 48x96mm(DIN1/8)
- MC-2638 with size 96x48mm(DIN1/8)
- MC-2738 with size 72x72mm
- MC-2838 with size 96x96mm(DIN1/4)

**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
- 4-3 wire system motor valve control 1a contact 5A/240VAC(with feed back)
- 5-1 phase zero cross SCR
- 6-3 phase zero cross SCR
- 8-1 phase SCR
- 9-3 phase SCR
- 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
- 3-Three set alarm
- \*(except MC-2438)

**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 :**

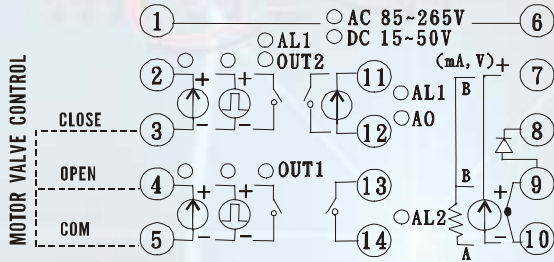
- 0-None
- 1-4~20mA remote set point
- 2-0~20mA remote set point
- A-0~5V remote set point
- B-0~10V remote set point
- C-1~5V remote set point
- D-2~10V remote set point

**G-Communication :**

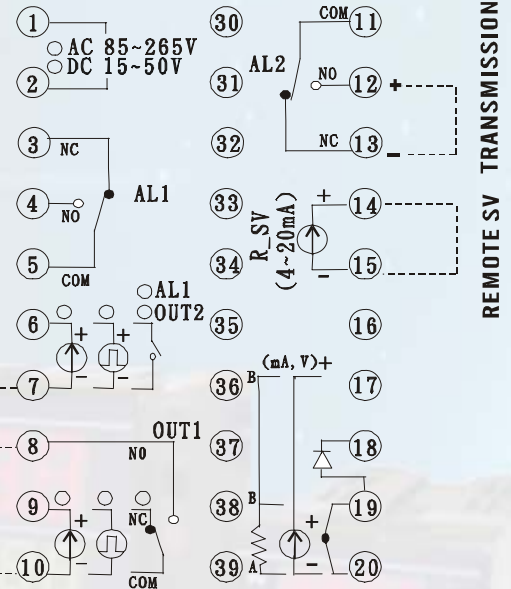
- 0-None
- 1-RS232
- 2-RS485
- 3-TTL communication (Master & Slave)

## 5. Hookup :

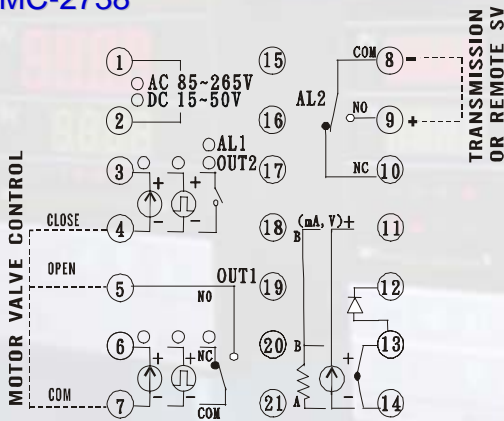
### MC-2438



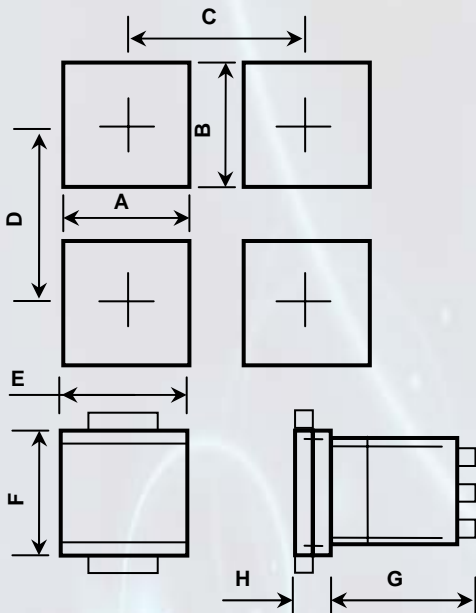
### MC-2538/MC-2638/MC-2838



### MC-2738

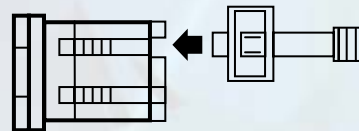


## 6. Dimension & Cut-Out :



Model	A	B	C	D	E	F	G	H
MC -2438	44.5 <sup>+0.5</sup> <sub>-0</sub>	44.5 <sup>+0.5</sup> <sub>-0</sub>	65	70	50	50	80	17
MC -2538	44.5 <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub>	111	116	50	96	80	17
MC -2638	90.5 <sup>+0.5</sup> <sub>-0</sub>	44.5 <sup>+0.5</sup> <sub>-0</sub>	65	70	96	50	80	17
MC -2738	68.5 <sup>+0.5</sup> <sub>-0</sub>	68.5 <sup>+0.5</sup> <sub>-0</sub>	89	94	74	74	80	17
MC -2838	90.5 <sup>+0.5</sup> <sub>-0</sub>	90.5 <sup>+0.5</sup> <sub>-0</sub>	111	116	96	96	80	17

Unit : mm



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