Customer Service and Product
Quality Are Our No.1 Priority

Terwin MC Series PID/Fuzzy Logic/Auto Tune Temperature Controllers

Advantages:

- ✓ Two process outputs as standard (Heat and Cool)
- ✓ Two programmable alarms as standard.
- ✓ Fully Programmable.
- ✓ Auto Tune (on or off)
- ✓ Multi level P.I.D.
- ✓ Fuzzy Logic (on or off)
- ✓ Multi-Input.
- ✓ Interchangeable with most other brands.
- ✓ Accurate and reliable.
- ✓ Attractively priced

  £ - $ - €

Description:

The Terwin MC Series is the ultimate microprocessor based temperature controller for use on extruders, injection and blow moulding machines, ovens and furnaces.

Utilising the latest PID algorithms, the control loop is one of the most accurate available on the market to date.

The versatility of this product also means that it may be used for controlling humidity, pressure and flow etc.

Available with two process outputs and two alarms as standard.

Can be run fully automatically or in manual mode.

Terwin Instruments Ltd, Winterbeck Industrial Estate, Orston Lane, BOTTESFORD, Nottinghamshire, NG13 0AU – UK
Tel: +44 (0) 1949 84 2000 Fax: +44 (0) 1949 84 2004 E-mail: info@terwin.com www.terwin.com

Customer Service and Product
Quality Are Our No.1 Priority

Terwin MC Series PID/Fuzzy Logic/Auto Tune Temperature Controllers

Specifications

Display 7 segments:	Measure value (PV) RED LED 4 digits.		Set Value (SV) YELLOW LED 4 digits.			
Display Accuracy:	±0.3% F.S. + 1 digit @23.5°C. Refer to input measuring range codes in manual.					
Display Resolution:	(0.001, 0.01, 0.1 & 1) Depending upon measuring range set.					
Sample Rate:	0.3 seconds.					
Display Actions / Colours:	Control (OUT):	Green	Alarm:	Red	Auto Tuning (AT):	Red
	Manual Control (MAN):	Green	O/P %:	Green	Program (PRG):	Red

Users Settings:	By front membrane panel.		Setting Range:		As input range.	
Setting Limit:	Individual Low / High limits. Set as desired within measuring range.					
Inputs:	Thermocouple types: B, E, J, K, R, S, T, N		PT100		Linear voltage / current.	
External Resistance	100Ω max.		Input Impedance:		600KΩ minimum	
Burnout:	Standard Up-Scale Bias.		Cold Junction Compensation Accuracy		±1°C (-5° to +70°C)	
Amperage	Approx. 0.25mA		Lead Wire Tolerable Resistance:		5Ω max.	
Voltage Inputs:	-10~10, 0~10, 0~20, 0~50, 0~100mV DC or 0~1, 0~2, 0~5, 1~5, 0~10V DC Multi input, programmable range: Refer to Table Of Measurement Range Codes In Manual				**Input Impedance:**	500KΩ max.
Current Inputs:	4~20, 0~20mA DC. Multi input, programmable range: Refer to Table Of Measurement Range Codes In Manual				**Input Impedance:**	250Ω max.
Sampling Time:	0.3 seconds		PV Bias:	-2,000 ~ 2000 units	PV Filter:	0.001 ~ 1.000
Isolation:	Insulated between input and output.					
Control:	Control Mode	Auto-tuning PID		Proportional Band		0~3,000 units (0=On-Off Action)
	Integral Time (I)	0-3,600 sec (0=P. PD Action)		Derivative Time (D)		0~900 sec (0=P.PI Action
	On-Off Hysteresis	0.0~2,000 units		Proportional Cycle		0~150 sec
	Higher and Lower Output Limits			0.0~100.0% (lower limit < higher limit		
Control Output Type / Rating:	Contact	240V AC 6A / resistive load		Current		4~20mA DC / load resistance 600Ω max.
	SSR	24±2V DC / load current 20mA max.		Voltage		0~10V DC / load current 2mA max.
Manual Control:	Output Setting Range			0.0~100.0% (setting resolution 0.1%) Within range of higher / lower output limits.		
	Output Resolution			0.1%		

Alarm Outputs:	Method:	Individual setting and output. Higher and lower alarm limits			
	Type:	Deviation or absolute selectable.			
	Setting Range:	Deviation:	±2,000 units	Absolute:	0~2,000 units
	Action:	On-Off	Action Hysteresis	1~999 units (high and lower limits)	
	Inhibit Mode:	Selectable	Alarm Output Rating:	Contact 1A (common) / 240V AC 6A (resistive load)	

Environmental	-10~+50°C		90% RH Maximum (no condensation)
Supply Voltage:	100~240V AC ±10% 50/60Hz	Power Consumption:	Max. 3.5VA (AC)

Insulation Resistance	500V DC 4MΩ minimum	Dielectric Strength:	1 min. at 2.3KV AC
IP Rating	Front panel - IP65 (when panel mounted using watertight gasket between instrument and panel).		

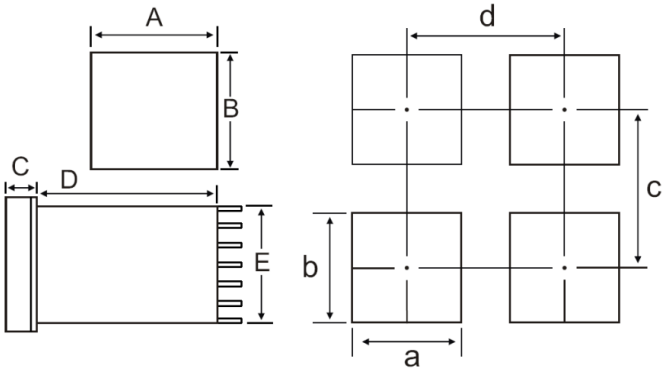
Terwin Instruments Ltd, Winterbeck Industrial Estate, Orston Lane, BOTTESFORD, Nottinghamshire, NG13 0AU – UK
Tel: +44 (0) 1949 84 2000 Fax: +44 (0) 1949 84 2004 E-mail: info@terwin.com www.terwin.com

Terwin MC Series PID/Fuzzy Logic/Auto Tune Temperature Controllers

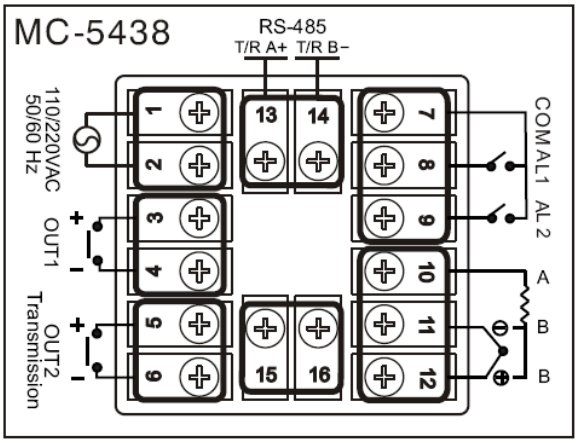
Customer Service and Product
Quality Are Our No.1 Priority

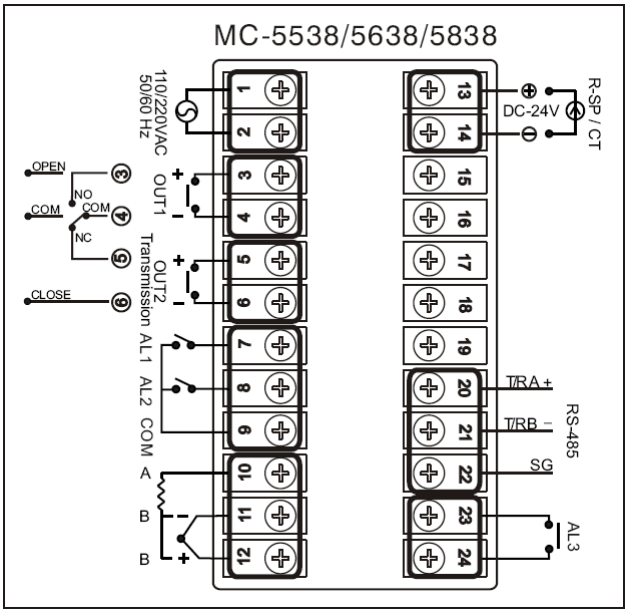
Dimensions :

Type	A	B	C	D	E	a	b	c	d
MC-5838	96	96	10.5	83	90	$91^{+0.5}_{-0}$	$91^{+0.5}_{-0}$	120	120
MC-5738	72	72	10.5	83	67	$68^{+0.5}_{-0}$	$68^{+0.5}_{-0}$	100	100
MC-5638	96	48	10.5	83	43	$91^{+0.5}_{-0}$	$46^{+0.5}_{-0}$	70	120
MC-5538	48	96	10.5	83	90	$46^{+0.5}_{-0}$	$91^{+0.5}_{-0}$	120	70
MC-5438	48	48	10.5	83	45	$46^{+0.5}_{-0}$	$46^{+0.5}_{-0}$	70	70



Wiring Information :

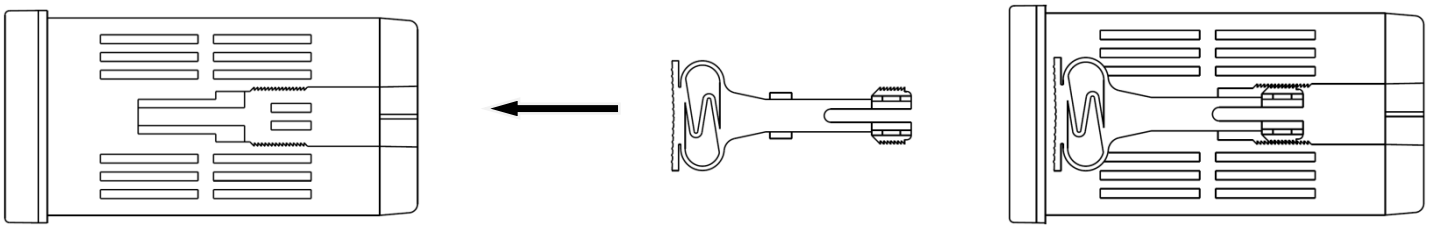




Panel Mounting Clips - Procedure:

Insert instrument through the front of the instrument panel. Once in place, push the fixing clips into the grooves provided.

To remove clips, squeeze ends of clips together and pull.



Terwin Instruments Ltd, Winterbeck Industrial Estate, Orston Lane, BOTTESFORD, Nottinghamshire, NG13 0AU – UK
Tel: +44 (0) 1949 84 2000 Fax: +44 (0) 1949 84 2004 E-mail: info@terwin.com www.terwin.com

Terwin MC Series PID/Fuzzy Logic/Auto Tune Temperature Controllers

Customer Service and Product Quality Are Our No.1 Priority

MC Series Part Numbers:

MC-5	438	1	1	2	0	0	J

Example:

Temperature Controller (48w x 48hmm bezel DIN 1/16), SPST 5amp/240VAC resistive heating process output, SPST 5amp/240VAC resistive cooling process output, two alarm relays 3A @ 240VAC (as standard), no transmission output, no secondary input, configured for type "J" I/C thermocouple input.

MC-5	438	1	1	2	0	0	J	Reserved for special options

Case Size	
438	1 / 16 DIN: 48 W x 48 H
538	1 / 8 DIN: 48 W x 96 H
838	1 / 4 DIN: 96 W x 96 H

Control Output 1 (Heat)	
0	None
1	Relay
2	SSR
3	4-20mA
4	0-5V
5	0-10V
6	1-5V
7	2-10V

Control Output 2 (Cool)	
0	None
1	Relay
2	SSR
3	4-20mA
4	0-5V
5	0-10V
6	1-5V
7	2-10V

Alarms	
0	None
1	One
2	Two (Standard)
4	Heater Break

Communications	
0	None
1	RS232
2	RS485
3	TTL

Second Input	
0	None (Standard)
?	Contact Factory

Transmission	
0	None (Standard)
1	4-20mA Adjustable
2	0-20mA Adjustable
3	0-5V
4	0-10V
5	1-5V
6	2-10V

Terwin Instruments Ltd, Winterbeck Industrial Estate, Orston Lane, BOTTESFORD, Nottinghamshire, NG13 0AU – UK
Tel: +44 (0) 1949 84 2000 Fax: +44 (0) 1949 84 2004 E-mail: info@terwin.com www.terwin.com