Temperature Controllers
MC 5438/MC5538/MC5638
MC5738/MC5838

$C\!E$

FREE ARRANGEMENT FOR EVERY PARAMETER
MODBUS RTU COMMUNICATION OPTIONAL
8 STEPS OF RAMP & 8 STEPS OF SOAK
HEATER BROKEN ALARM OPTIONAL
MULTI FUNCTION OF ALARM
TRANSMISSION OPTIONAL
MOTOR VALVE OPTIONAL
DUAL OUTPUT OPTIONAL
SOFT START OPTIONAL
REMOTE SV OPTIONAL
MULTI LEVEL PID

MAXTHERMO-GITTA GROUP CORP

Display:

Digital display:	7 segments / Measured value (PV) Red LED 4 digits, Set value (SV) Yellow LED 4 digits
Display accuracy:	$\pm$ (0.3% FS+1 digit) at 23$\pm$5 ℃ Refer to Table of Measuring Range Codes.
Display resolution:	Depends on measuring range (0.001,0.01,0.1,1)
Sampling cycle:	0.3 sec
Action display / colors:	LED lamp indication:
	Control output (OUT) / Green, alarm / Red, Auto tuning (AT) / Red, Manual control (MAN) / Green, Output percentage / Green, Program (PRG) / Red.

Setting

Setting:	By 4 font key switches
Setting range:	Same as measuring range
Setting limit:	Higher / lower limits indIvidual setting as desired within measuring range (lower limit value < higher limit value)

Input

	K.J.T.R.E.S.B.N.RTD.Linear (Multi-input, multi-range: Refer to Table of Measuring Range Codes.)
External resistance:	100 Ω max.
Input impedance:	600k Ω min.
Burnout:	Standard feature (upscale)
Cold junction temperature Compensation accuracy:	$\pm$1℃ (-5 ~70℃)
Amperage:	Approx. 0.25mA
Lead wire tolerable resistance:	5 Ω max.
Voltage:	-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 Measuting Range Codes.)
Input impedance:	500k Ω min.
Current:	4~20, 0~20mA DC (Multi input, programmable range: Refer to Table of Measuting Range Codes.)
Receiving impedance:	250 Ω
Sampling cycle:	0.3 sec
PV bias:	-2000~2000 unit
PV filter:	0.001~1.000
Isolation:	Insulated between input and output (not insulated between input and system, SV bias and CT input)

Control

Control mode:	Auto-tuning PID
Proportional band (P):	0-3000 unit (0=On-Off action)
Integral time (I):	0-3600 sec (0=P. PD action)
Derivative time (D):	0-900 sec (0=P. PI action)
On-Off hysteresis:	0.0~2000 unit
Proportional cycle:	0~150 sec
Higher and lower output limit:	0.0~100.0% (lower limit < higher limit)

Control output type / rating

Contact output	240V AC 6A / resistive load
Current output	4-20mA DC / load resistance: 600 Ω max.
SSR drive voltage output	24$\pm$2V DC / load current: 20mA max.
Voltage output	0~10V DC / load current: 2mA max.
Isolation:	Insulated between control output and system and input (not insulated between control output, P.V and analog output)

Manual control

Output setting range:	0.0~100.0% (setting resolution: 0.1%)
	Within range of higher / lower output limits
Output resolution:	0.1%

Additional Functions (Optional)

Alarm output

Alarm method:	Individual setting and individual output. higher and lower limit alarms
Alarm type:	Deviation value alarm or absolute value alarm is selectable.
Alarm setting range:	Deviation value: $\pm$2000unit
	Absolute value: 0~2000 unit
Alarm action:	On-Off action
Action hysteresis:	1~999 unit (both higher and lower limits)
Inhibit mode:	Selectable (both higher and lower limits)
Alarm output / rating:	Contact 1a (common) / 240V AC 6A (resistive load)

Heater break alarm (optional)

Alarm action:	Heater amperage detected by externally attached CT (CT provided)
	Alarm output On upon detection of heater break while output is On.
	Alarm output On upon detection of heater loop alarm while output is Off.
Current setting range:	0.1~100.0A (Alarm action stops when Hba is disabled)
Setting resolution:	0.1A
Amperage display:	0.0~100.0A
Display accuracy:	1%FS
Minimum time for action confirmation:	On time: 250 msec. Minimum
Alarm output / rating:	Contact 1a / 240V AC 6A (resistive load)
Sampling cycle:	0.3 sec
Isolation:	Insulated between CT input and output (not insulated between CT input and system and other inputs)

Analog output

Number of analog outputs:	1 point
Analog output type:	Selectable between process value (PV), set value (SV), Manipulated output value (MV), and absolute value of " PV-SV "
Analog output:	0~10mV DC, Output resistance:10 Ω
	0~10V DC, Load current: 2mA max.
	4~20 mA DC, Load resistance: 300 Ω max.
Output accuracy:	$\pm$0.3% (of displayed value)
Output resolution:	Approx. 0.1%
Output updating cycle:	0.2 sec
Output scaling:	Within measuring range
Isolation:	Insulated between analog output and system and input (not insulated between analog output and control output I)

Set value bias

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Setting range:	-2000~2000 unit
Setting resolution:	Same as display resolution
Isolation:	Insulated between set value bias input and output (not insulated between set value bias input and system and other inputs)

Others

Data storage:	By non-volatile memory (EEPROM)
Operating ambient temperature / humidity range:	-10~50°C / 90% RH maximum (no dew condensation)
Supply voltage:	100~240V AC $\pm$10% (50 / 60Hz),
Power consumption:	Max. 3.5VA (AC)
Insulation resistance:	Between input / output terminal and power supply terminal: 500V DC 4MΩ minimum
Dielectric strength:	1 min, at 2.3KV AC between input / output terminal and power supply terminals
Protective structure:	Only front panel has simple dust-proof and drip-proof structure.
Material:	ABS+PC
External dimensions:	MC-5438: H48×W48×D83mm
	MC-5538: H96×W48×D83mm
	MC-5638: H48×W96×D83mm
	MC-5738: H72×W72×D83mm
	MC-5838: H96×W96×D83mm
Panel cutout:	MC-5438: 46×46mm
	MC-5538: 46×91mm
	MC-5638: 91×46mm
	MC-5738: 68×68mm
	MC-5838: 91×91mm
Weight:	MC-5438: Approx. 170g, MC-5538: Approx. 240g, MC-5638: Approx. 240g, MC-5738: Approx. 260g, MC-5838: Approx. 330g

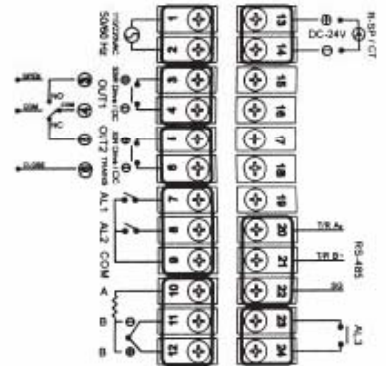**MC 5438** CE 48*48mm(DIN 1/6)

CONNECTING DIAGRAM
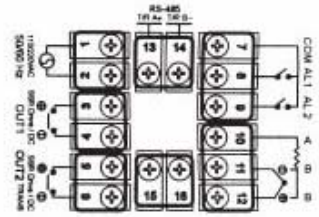
CUTOUT DIMENSION 46*46mm

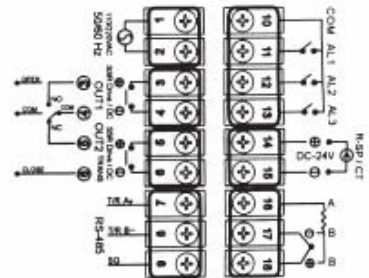**MC 5538** CE 96*48mm(DIN 1/8)

CONNECTING DIAGRAM

CUTOUT DIMENSION 46*91mm

MC 5738 CE 72*72mm(DIN 1/6)
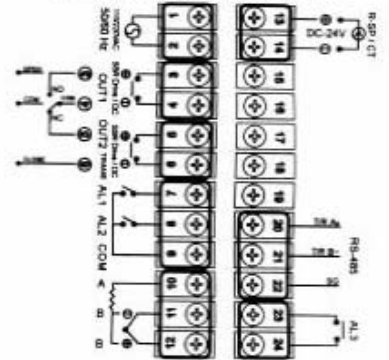
CONNECTING DIAGRAM

CUTOUT DIMENSION 68*68mm

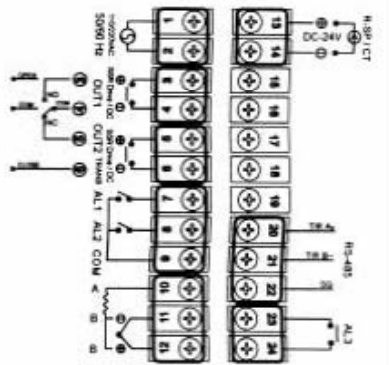**MC 5638** CE
96*48mm(DIN 1/8)

CONNECTING DIAGRAM
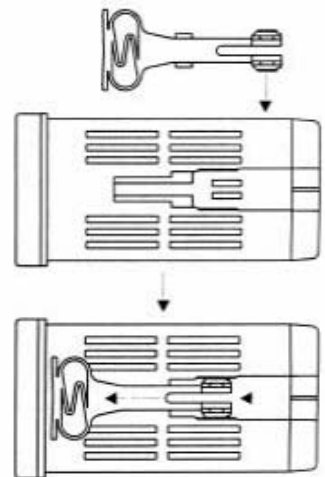
CUTOUT DIMENSION 91*46mm

MC 5838 CE
96*96mm(DIN 1/4)

CONNECTING DIAGRAM

CUTOUT DIMENSION 91*91mm

MODEL FUNCTIONS	MC-5438	MC-5538 MC-5638	MC-5738	MC-5838
REMOTE SV		✓	✓	✓
HEATER BROKEN ALARM		✓	✓	✓
MOTOR VALVE		✓	✓	✓
SOFT START	✓	✓	✓	✓
DUAL OUTPUT	✓	✓	✓	✓
ALARM NUMBER	2	3	3	3
TRANSMISSION	✓	✓	✓	✓
PROGRAMMABLE	✓	✓	✓	✓
RS-485/RS-232	✓	✓	✓	✓

How to Fix

ORDER INFORMATION

M C - 5 4 3 8 - 1 0 1 - 0 0 0
A   B C D   E F G

A: Model No:

MC-5438 for **48 X 48mm** (DIN 1/16), MC-5538 for 48×96mm (DIN 1/8),
MC-5638 for 96×48mm (DIN 1/8), MC-5838 for 96×96mm (DIN 1/4),
MC-5738 for 72×72mm

B: Out 1 control output mode
0-None
1-Relay,contact,SPDT 3A/240VAC
2-Volt,voltage pulse, 20VDC/20mA
3-mA Curent,4~20mA
4-Open loop circuit servo motor control
A- 0~5V
B- 0~10V
C- 1-5V
D- 2~10V

C: Out 2 control output mode
0-None
1-Relay,contact,SPDT 3A/240VAC
2-Volt,voltage pulse, 20VDC/20mA
3-mA Curent,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

E: Transmission
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
1-RS232
2-RS485

*C & E are used the same terminal so one function is available only but
C & E & F one function is available only in MC-5438

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