

°C	<i>Series HT</i>
%RH	
HoTTemp	

# HoTTemp MICRO PROCESSOR TEMPERATURE CONTROLLER



## BASIC FEATURES

- Multi-input and multi-range performance
- Includes a new processing system, Expert PID, remarkably improved PID control efficiency; overshoot and undershoot are controlled effectively.
- The Keylock function can avoid erroneous operation resulting from set values or parameter settings.
- High/Low alarm available as basic features

## OPTION FUNCTION

- Programmable 2 patterns 8 segments.
- SSR zero cross & SCR phase angle gate trigger driver for single phase and three phase.
- Communication RS-232 / RS-485 for master to slave transmission.
- Retransmission & Remote SV.
- 3 wire open loop circuit servo motor control output.
- Timer keep setting 00.00Hr~99.59Hrs.  
For PV=SV point.

**Display**

Digital display: Process value (PV) / 7-segment red LED 4 digits  
Set value (SV) / 7-segment green LED 4 digits  
Parameter display: 7-segment LED for PV and SV  
Action display: Green LED for two points of output (OUT1, OUT2), Yellow LED 3 points For (AT, MAN, PRO)  
Red LED for two points of alarm (AL1, AL2, AL3)  
Display accuracy: Within 0.2% of display value +1digit  
Display accuracy range: Depends on measuring range (0.1,1)  
Display resolution: -10~110% (-210-680°C OR -200~600°C OF R.T.D. input)  
Measured display range: 250MS (0.25 Sec)  
Sampling cycle:

**Setting**

Setting: By 4 front key switches  
Setting range: Same as measuring range

**Power supply**

AC85V~265V 50/60Hz

**Power consumption**

About 4VA

**Memory element**

EEPROM

**Input**

Type of input: Multiple input of Thermocouple, R.T.D., PT100Ω & PT50Ω Voltage (mV), or voltage, or Current 4~20mA DC by ordering information. Refer to Measuring range code table.  
Thermocouple: B, R, S, K, E, J, T, N, W, PLI(L)(U, L (DIN 43710))  
External resistance: 100Ω max.  
Input impedance: 500kΩ min.  
Burnout: Standard feature (up scale)  
Cold junction temperature  
Compensation accuracy: ±2°C (5~45°C)  
(±5°C to the negative side of measuring range in case of T and U input)  
R.T.D.: JIS Pt100/JPt100 3-wire type, PT 50 JIS Approx. 0.25mA  
Amperage: Approx. 0.25mA  
Lead wire tolerable resistance: 5Ω max./wire (The 3 lead wires should have same resistance.)  
Voltage: 0~10, 10~50, 0~100mV DC or 0~1, 1~5, 0~10V DC  
Input impedance: 500kΩ min.  
Current: 4~20mA DC or 0~20mA  
Receiving impedance: 250Ω max 800Ω  
Input scaling function: Scaling possible for voltage(mV, V)  
Scaling range: -1999-9999 counts.  
Span: 10~5000 counts  
Position of decimal point: None, 0.0, 0.00, 0.000  
PV bias range: ±20.0 unit in case the decimal point is included in the measuring range. If not, ±200 unit.  
PV filter: 0~100 scc. (0=without filter)  
Isolation: Insulated between input and output (not insulated between input and system)

**Control**

Control mode: Auto tuning PID/On-Off control  
Proportional band (P): Off, 0~200 sec. FS (Off setting: On-Off action)  
Integral time (I): Off, 0~3600 sec. (Off setting: P or PD action)  
Manual reset (MR): -50.0~50.0% (Valid when P=OFF and I=OFF)  
On-Off hysteresis: 0~150 sec.  
Proportional cycle: Fixed to 0~150 sec. During SSR drive voltage output

**Control Output type/rating**

Contact output: Contact 240V AC 3.0A/resistive load: 1.5A/inductive load  
Motor Value Control Output 10A/240V AC  
Current output: 4~20mA DC/load resistance: 800Ω max.  
SSR drive voltage output: 20V DC (with load resistance at 1.5kΩ)/load current: 20mA max.  
Voltage output: 0~20V DC/load current: 20mA max.  
Isolation: Insulated between control output and system and input

**Alarm Output**

Number of alarm points: 2(AL1 and AL2) for common and normal open or normal close except HT-400,  
(AL3) for common and normal open (fro HT-900 only)  
Alarm Type: Selectable from combinations of the following 9 types (please refer to our manual for the rest types)  
0. Not assigned  
1. Higher limit deviation value + lower limit deviation value without inhibit action  
2. Higher limit absolute value + lower limit absolute value without inhibit action  
3. Higher limit deviation value + lower limit deviation value with inhibit action  
4. Higher limit absolute value + lower limit absolute value with inhibit action  
5. Segment end alarm (USE for program only)  
6. Program end alarm (USE for program only)  
7. System error alarm-ON or alarm-OFF  
8. Heater break alarm-ON (single phase only)  
9. PV=SV on delay timer 0~99.99 hours alarm.  
Alarm setting range: Higher limit and lower limit absolute value alarms: Within full scale of measuring range  
Deviation value: Higher limit: 0-9999 unit  
Lower limit: for input type low Range-1999  
In case SV is out of the measuring range, higher and lower limit values of the measuring range  
Become the action points.  
Alarm action: On-Off action  
Alarm action hysteresis: Fixed to 0.2% of the measuring range  
Alarm output/rating: Contact 1 (common)/240V AC 1.5A (resistive load)

**Others**

Date storage: By non-volatile memory (EEPROM)  
Operating ambient temperature /humidity range: -0~50 °C/90% RH max. (no dew condensation)  
Supply voltage: 85~265 AC ±10% (50/60Hz)  
Power consumption: Approx. 4VA  
Insulation resistance: Between input/output terminal and power supply terminal: 500V DC 20MΩ minimum  
Between input/output terminal and protective conductor terminal: 500V DC 20MΩ minimum  
Dielectric strength: 1 min. at 2300V AC between input/output terminal supply terminal  
1 min. at 1500V AC between power supply terminal and protective conductor terminal  
Protective structure: Only front panel has simple dust-proof and drip-proof structure  
Material: PPO resin molding (equivalent to UL94V-1)  
Weight: HT400: 300g  
HT600: 325g  
HT700: 310g  
HT800: 325g  
HT900: 325g

## ORDERING INFORMATION

Series HT

ITEMS	CODE	SPECIFICATIONS
SERIES	HT400-	H48 X W48 X D96 DIN size digital controller for auto tuning PID control
	HT600-	H48 X W96 X D96 DIN size digital controller for auto tuning PID control
	HT700-	H72 X W72 X D96 DIN size digital controller for auto tuning PID control
	HT800-	H96 X W48 X D96 DIN size digital controller for auto tuning PID control
	HT900-	H96 X W96 X D96 DIN size digital controller for auto tuning PID control
OUTPUT1	0	NONE
	1	Relay contact, SPPT 3A/240 VAC
	2	Volt, Voltage pulse, 20VDC/20MA
	3	MA, Current, 4--20MA
	4	SSR 1A
	5	1ø SSR Zero cross control Driver
	6	3ø SSR Zero cross control Driver
	7	3 wire Open loop circuit servo motor control 10A/240VAC
	8	1ø SCR Phase angle control Driver
	9	3ø SCR Phase angle control Driver
OUTPUT2	0	None
	1	Relay contact, SPDT 3A/240VAC
	2	Volt, Voltage pulse, 20VDC/20MA
	3	MA, Current, 4--20MA
Alarm	0	NONE
	1	ONE set alarm
	2	TWO set alarm
	3	THREE set alarm (fro HT900 only)
Transmitter	0	NONE
	1	0-20MA (Adjust table)
Second Input	0	NONE
	1	4-20MA remote set point 1 This function except HT 400
	2	0-20MA remote set point 2 This function except HT 400
Communication	0	NONE
	1	RS-232
	2	RS-485

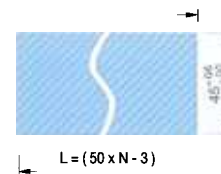
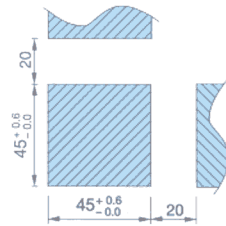
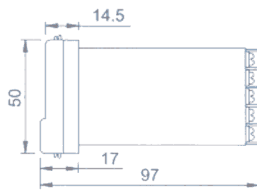
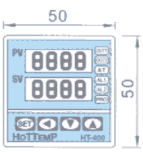
## MEASURING RANGE CODES

TYPE	CODE	RANGE	TYPE	CODE	RANGE
K	K1	0.0-200.0 C / 0.0-392.0 F	U	U1	-199.9-600.0 C / -199.9-999.9 F
	K2	0.0-400.0 C / 0.0-752.0 F		U2	-199.9-200.0 C / -199.9-392.0 F
	K3	0-600 C / 0-1112 F		U3	0.0-400.0 C / 0.0-752.0 F
	K4	0-800 C / 0-1472 F	L	L1	0-400.0 C / 0-752 F
	K5	0-1000 C / 0-1832 F		L2	0-800 C / 0-1472 F
	K6	0-1200 C / 0-2192 F		JIS Pt100	JP1
J	J1	0.0-200.0 C / 0.0-392.0 F	JP2	-199.9-400.0 C / -199.9-752.0 F	
	J2	0.0-400.0 C / 0.0-752.0 F	JP3	-199.9-200.0 C / -199.9-392.0 F	
	J3	0-600 C / 0-1112 F	JP4	0-200 C / 0-392 F	
	J4	0-800 C / 0-1472 F	JP5	0-400 C / 0-752 F	
	J5	0-1000 C / 0-1832 F	JP6	0-600 C / 0-1112 F	
	J6	0-1200 C / 0-2912 F	DIN Pt100	DP1	-199.9-600.0 C / -199.9-999.9 F
R	r1	0-1600 C / 0-2912 F		DP2	-199.9-400.0 C / -199.9-752.0 F
	r2	0-1769 C / 0-3216 F		DP3	-199.9-200.0 C / -199.9-392.0 F
S	s1	0-1600 C / 0-2912 F		DP4	0-200 C / 0-392 F
	s2	0-1769 C / 0-3216 F		DP5	0-400 C / 0-752 F
B	b1	0-1820 C / 0-3308 F		DP6	0-600 C / 0-1112 F
E	E1	0-800 C / 0-1472 F	JIS Pt50	JP1	-199.9-600.0 C / -199.9-999.9 F
	E2	0-1000 C / 0-1832 F		JP2	-199.9-400.0 C / -199.9-752.0 F
	E3	0-1200 C / 0-2192 F		JP3	-199.9-200.0 C / -199.9-392.0 F
T	t1	-199.9-400.0 C / -199.9-752.0 F		JP4	0-200 C / 0-392 F
	t2	-199.9-200.0 C / -199.9-392.0 F		JP5	0-400 C / 0-752 F
	t3	0.0-350.0 C / 0.0-662.0 F		JP6	0-600 C / 0-1112 F
W	w1	0.0-2000 C / 0.0-3632 F	AN1	Rh1	-10-10mV / -1999-9999
	w2	0.0-2320 C / 0.0-2372 F	AN2	Rh2	0-10mV / -1999-9999
	w3	0.0-1300 C / 0.0-2372 F	AN3	Rh3	0-20mV / -1999-9999
PLII	P1	0.0-1300 C / 0.0-2372 F	AN4	Rh4	0-50mV / -1999-9999
	P2	0.0-1390 C / 0.0-2534 F	AN5	Rh5	10-50mV / 1999-9999

• External Dimensions Unit: mm

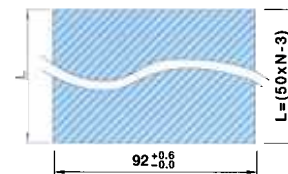
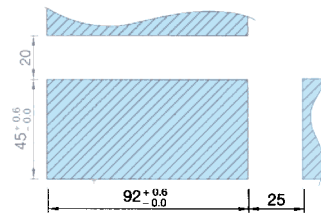
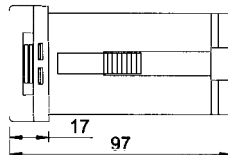
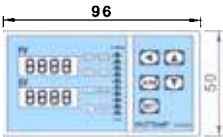
# Series HT

## HT-400



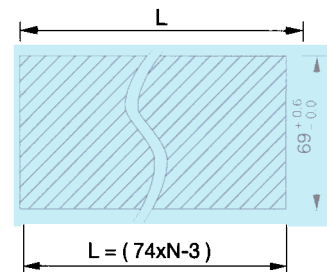
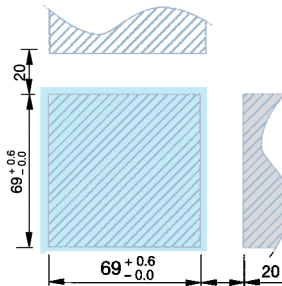
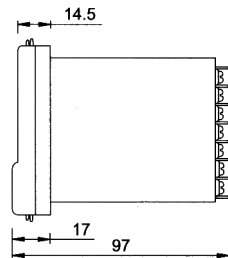
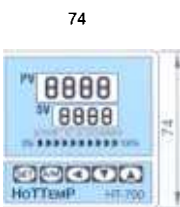
Panel Cutout

## HT-600



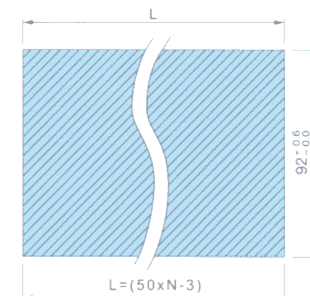
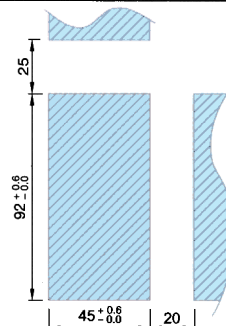
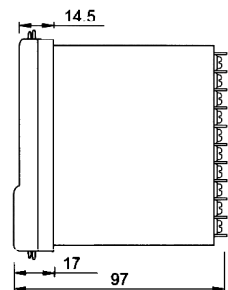
Panel Cutout

## HT-700



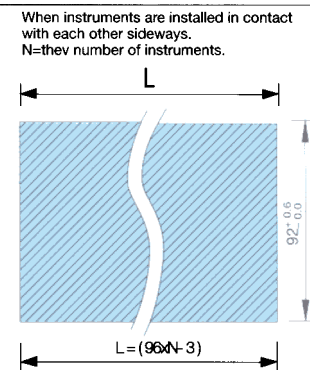
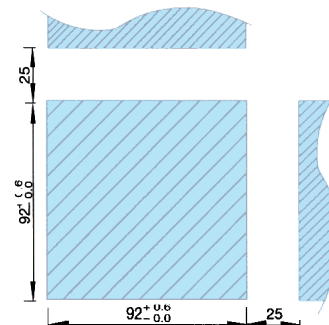
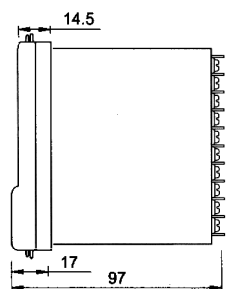
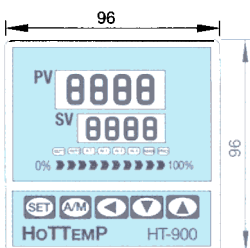
Panel Cutout

## HT-800



Panel Cutout

## HT-900



Panel Cutout

When instruments are installed in contact with each other sideways.  
N=the number of instruments.

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