

1/4 DIN Digital Setting Temperature Controller BTC-405



FEATURES

- Build-in Laser Trim ASIC
- Easy to change range
- ON-OFF or time proportional selectable
- Compact, only 53mm in depth
- Wide selection of control output option
- Wide selection of ranges
- Sensor break protection
- Alarm option
- Low Cost
- Safety : UL, CSA
- EMC, LVD: CE

SPECIFICATIONS

INPUT

Thermocouple (TIC) : Type J, K
RTD : 3-wires PT 100 ohms, DIN or JIS
Range : See ordering information
Accuracy : $\pm 1\%$ of span
Cold Junction Compensation : $\pm 0.1^\circ\text{C} / 1^\circ\text{C}$
Rejection of RTD Lead Resistance =
($0.1^\circ\text{C} - 0.025\%$ of PV reading) ohm
Sensor Break Protection : Upscale
External Resistance : 100 ohms max.
Normal Mode Rejection : 60 dB
Common Mode Rejection : 120 dB
Sample Rate : 3 times / second

CONTROL

Proportional Band : 2.2% of Span
On-off Hysteresis : 1% of Span
Cycle Time : 20 seconds for relay output, 1 second for pulsed voltage output, 0.02 second for linear current or voltage output.
Control Action : Reverse action

OUTPUT

Control : Relay : 5A / 240V max. resistive load
Pulsed voltage : 20mA / 32VDC max.
Current : 4-20mA, 0-20mA, max. load 500 ohms
Voltage: 0-10V, min. load 500k ohms
Alarm: Relay output, 2A / 240VAC max. resistive load

ADJUSTMENT

Set point : 3-digit or 4-digit switch
Alarm : Deviation alarm, adjustable 1 10% of span
Manual Reset : Adjustable 2.6% of span
Resolution of set point : 1 LSD (Least Significant Digit)
Accuracy of set point : $\pm 1\%$ of span
Repeatability of set point: ± 1 LSD

INDICATION

Process Indicator : 0.5" red 3-1 / 2 digit LED display
Status Indicator : ON red LED Lamp
Alarm Indicator : ON red LED Lamp

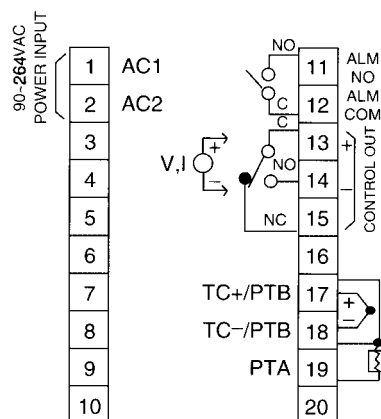
POWER

Rating : 90-240VAC, 50Hz / 60Hz
Consumption : Less than 5VA

ENVIRONMENTAL & PHYSICAL

Operating Temperature : $0-50^\circ\text{C}$
Humidity : 0-90% RH (non-condensing)
Insulation : 20M ohms min. 500VDC
Breakdown : AC 2000V, 50 / 60Hz, 1 minute
Vibration : 10-55Hz. amplitude 1mm
Shock : 200M/S^2 (20g)
Weight : 250grams
Dimension : 96(W) x 96(H) X 53mm (depth behind panel)
Panel cutout : 92 x 92mm

CONNECTION DIAGRAM



ORDERING INFORMATION

Model NO. ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
(1) (2) (3) (4) (5) (6) (7) (8)

(1) Power Input

4	90-240VAC, 50Hz/60Hz
5	12-36VAC, 50Hz/60Hz / 16-48VDC
9	Other

(2) Signal Input

1	Type J thermocouple	4	PT 100 ohm JIS
2	Type K thermocouple	9	Other
3	PT100 ohm DIN		

(3) Range Code

Code	Range	Code	Range
2	-199 ~ 199°C	K	-399~399°F
3	-99.9 ~ 99.9°C	L	-199 ~ 199°F
4	-99 ~ 99°C	M	-99.9 ~ 99.9°F
5	-49.9 ~ 49.9°C	N	-99 ~ 99°F
6	0 ~ 49.9°C	p	0 ~ 99°F
7	0 ~ 99°C	Q	0 ~ 99.9°F
8	0 ~ 99.9°C	R	0 ~ 199°F
A	0 ~ 199°C	S	0 ~ 399°F
B	0 ~ 199.9°C	T	0 ~ 599°F
C	0 ~ 299°C	U	0 ~ 799°F
D	0 ~ 399°C	V	0 ~ 999°F
E	0 ~ 499°C	W	0 ~ 1999°F
F	0 ~ 599°C		
G	0 ~ 799°C		
H	0 ~ 999°C		
J	0 ~ 1200°C		

(4) Control Mode

Code	Mode	J11
1	ON-OFF	Short
2	P (proportional)	Open

(5) Output I

1	Relay, rated 5A/240VAC resistive
2	Pulsed voltage to drive SSR, rated 20mA/24V
3	4-20mA linear, max. load 500 ohms
4	0-20mA linear, max. load 500 ohms
5	0-10V linear, min. load 500k ohms
9	Other

(6) Output II

0	None
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(7) Alarm

0	None
1	Deviation alarm relay output, rated 2A/240VAC max. resistive load

(8) Communication

0	None
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FUNCTION OF SOLDER GAP J1~J11

Location	Short	Open	Function
J1	o		T/C Type J or K
"		o	PT 100 ohms DIN or JIS
J2		o	Reverse Control
"	o		Forward control
J3	o		100°C span
J4	o		200°C span
J5	o		300°C span
J6	o		400°C span
J7	o		460°C span
J8	o		600°C span
J9	o		800°C span
J10	o		1200°C span
J11	o		ON-OFF control
"		o	Time proportional control

FUNCTION OF SOLDER GAP J12-J13

J12	J13	Cycle time	Function
Short	Short	20 Secs.	Relay output
Open	Short	1 Sec.	SSR drive
Open	Open	0.02 Sec.	Linear current or voltage output

FUNCTION OF SOLDER GAP J14-J15

J14	J15	Function
Short	Open	Positive Setting
Open	Open	Positive and Negative setting
Open	Short	Negative setting