



FEATURES

- Build-in Laser Trim ASIC
- Easy to change range
- ON-OFF or time proportional selectable
- Compact, only 65mm in depth
- Wide selection of control output option
- Wide selection of ranges
- Sensor break protection
- Alarm option (BTC-404, BTC-402 Only)
- Low cost
- Safety: UL, CSA
- EMC, LVD: CE

SPECIFICATIONS

INPUT

Thermocouple (T/C) : Type J, K
 RTD : 3-wires PT 100 ohms, DIN or JIS
 Range : See ordering information
 Accuracy : $\pm 2\%$ of span (BTC-402, BTC-401), $\pm 1\%$ of span (BTC-404)
 Cold Junction Compensation : $\pm 0.1^\circ\text{C}/1^\circ\text{C}$
 Rejection of RTD Lead Resistance =
 $(0.1^\circ\text{C} - 0.025\% \text{ of PV reading}) / \text{ohm}$
 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, 0-20A, max. load 500 ohms.
 Voltage : 0-10V, min. load 500k ohms
 Alarm : Relay output, 2A / 240VAC max. resistive load

ADJUSTMENT

Set point : Single turn wirewound potentiometer
 Alarm : Deviation alarm, adjustable $\pm 10\%$ of span
 Manual Reset : Adjustable 2.6% of span (BTC-404, 402 only)
 Resolution of set point : 0.2% of span
 Accuracy of set point : $\pm 2\%$ of span
 Repeatability of set point : $\pm 0.1\%$ of span

INDICATION

Process Indicator : BTC-402 : Deviation meter
 BTC-404: 0.5" red 3-1/2 digit LED display
 Status Indicator : ON (red) LED Lamp
 Alarm Indicator : ON (red) LED Lamp

POWER

Rating: BTC-402, BTC-401: 100-130VAC or 200-240VAC,
 50 / 60Hz
 BTC-404: 90-264VAC, 50 / 60 Hz
 Consumption: Less than 5VA

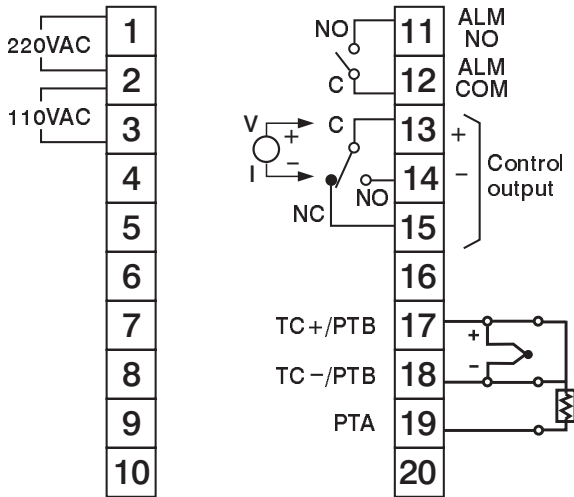
BTC-404, BTC-402, BTC-401

ENVIRONMENTAL & PHYSICAL

Operating Temperature : 0-50 °C
 Humidity : 0-90% RH (non-condensing)
 Insulation : 20M ohms min. (500VDC)
 Breakdown : AC 2000V, 50/60Hz, 1minute
 Vibration : 10-50Hz, amplitude 1mm
 Shock : 200M/S² (20g)
 Weight : BTC-404: 280 grams, BTC-402: 360 grams,
 BTC-401: 330 grams.
 Dimension: 96(W) X 96(H) X 53 mm (depth behind panel)
 Panel cutout: 92 X 92 mm

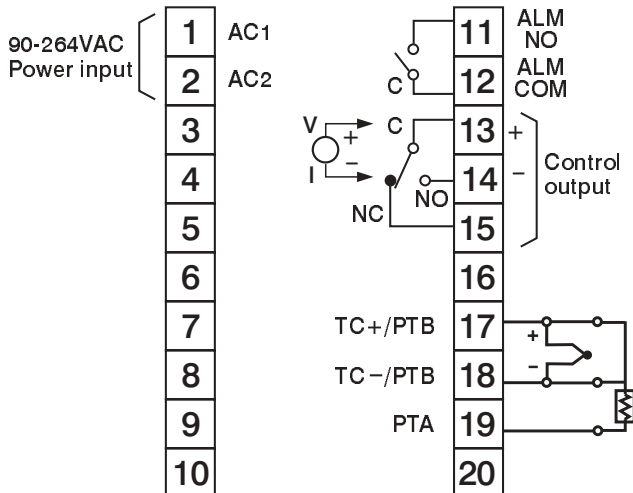
CONNECTION DIAGRAM

BTC-402, 401



Note: For 401 pin11 & pin12 are not used

BTC-404



ORDERING INFORMATION

Model No. —
 (1) (2) (3) (4) (5) (6) (7) (8)

(1) Power Input
 BTC-402, BTC-401

3	100-130VAC, 50/60Hz / 200-240VAC, 50/60Hz
9	Other

BTC-404

4	90-264 VAC
5	20-32 VDC/VAC
9	Other

(2) Signal Input

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

(3) Range Code

Code	Range	Code	Range	Selected Solder GAP
2	0 ~ 100 °C	A	50 ~ 20 °F	J3
3	0 ~ 200 °C	B	50 ~ 40 °F	J4
4	0 ~ 300 °C	C	50 ~ 55 °F	J5
5	0 ~ 400 °C	D	50 ~ 750 °F	J6
		E	50 ~ 850 °F	J7
6	0 ~ 600 °C	F	50 ~ 1100 °F	J8
7	0 ~ 800 °C	G	50 ~ 1400 °F	J9
8	0 ~ 1200 °C	H	*0 ~ 2200 °F	J10
9	Other	K	50 ~ 199.9 °F	
		L	0 ~ 99.9 °C	
		M	0 ~ 199.9 °C	

* Range K, L, M available for BTC-404 only

(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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* Please refer detailed conversion from full technical information

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