1/16 DIN Microprocessor Based PID Controller BTC-9090

The BTC-9090 is a new generation miniature controller using the latest SMD technology. Assembly is fully automatic and the units are checked and configured by computer. Software has been refined over several years and offers a very logical menu structure and high noise immunity. Using an unique command called SEL, the user has some flexibility in which parameters are accessible in level 2 of the menu. This is of great value for users as it is easy to limit access to suit the application specifically.

With 4 digit resolution and fully programmable decimal point, the 9090 can be configured for linear voltage and current inputs and with the addition of a single module, with 4-20mA
control output. This is one of the most versatile units available.

Manual control of the output is possible and Offset and Shift functions allow process values to be readily corrected for instinct offsets and in-site calibrations.

FEATURES

- Full 4 digit display.
- Autotune PID.
- Input user selectable.
- 90-240 VAC supply.
- Ramp rate function.
- Timer function.
- SEL function.
- Optional 4-20 mA input.
- 4-20 mA control output version.
- Three level software access.
- Safety: UL, CSA
- EMC, LVD: CE

KEYPAD OPERATION

TOUCHKEYS	FUNCTION	DESCRIPTION
	Scroll Key	Advance the index display to the desired position. indexes advanced continuously and cyclically by pressing this keypad.
	Up Key	Increased the parameter.
	Down Key	Decreased the parameter.
	Return Key	Resets the controller to its normal status. Also stops auto-tuning, output percentage monitoring and manual mode operation.
Press longer than 6 secs.	Long Scroll	Allows more parameters to be inspected or changed.
Press longer than 6 secs.	Auto-tuning	Executes auto-tuning function.
Press and	Output Percentage Monitoring	Allows the set point display to indicate the control output value.
Press and longer than 6 secs.	Manual Mode Execution	Allows the controller to enter the manual mode.

RANGE AND ACCURACY OF INPUTS

IN	Sensor	Input Type	Range (°F)	Accuracy (°F)	Range (°C)	Accuracy
0	J	Iron-Constantan	-58 to 1830°F	±3.6°F	-50 to 999°C	±2°C
1	K	Chromel-Alumel	-58 to 2500°F	±3.6°F	-50 to 1370°C	±2°C
2	T	Copper-Constantan	-454 to 752°F	±3.6°F	-270 to 400°C	±2°C
3	E	Chromel-Constantan	-58 to 1382°F	±3.6°F	-50 to 750°C	+2°C
4	B	Pt30%RH/Pt6%RH	572 to 3272°F	±5.4°F	300 to 1800°C	±3°C
5	R	Pt13%RH/Pt	32 to 3182°F	±3.6°F	0 to 1750°C	±2°C
6	S	Pt10%RH/Pt	32 to 3182°F	±3.6°F	0 to 1750°C	±2°C
7	N	Nicrosil-Nisil	-58 to 2372°F	±3.6°F	-50 to 1300°C	±2°C
8	RTD	PT100 ohms (DIN)	-328 to 752°F	±0.72°F	-200 to 450°C	±0.4°C
9	RTD	Pt100 ohms (JIS)	-328 to 752°F	±0.72°F	-200 to 450°C	±0.4°C
10	Linear	-10mV to 60mV	-1999 to 9999	±0.05%	-1999 to 9999	±0.05%

SPECIFICATIONS

INPUT

Thermocouple (T/C):	type J, K, T, E, B, R, S, N.
RTD:	PT100 ohm RTD (DIN 43760/BS1904 or JIS)
Linear:	-10 to 60mV, configurable input attenuation.
Range:	User configurable, refer to Table above.
Accuracy:	Refer to Table above
Cold Junction Compensation:	0.1°C / °C ambient typical.
Sensor Break Protection:	Protection mode configurable.
External Resistance:	100 ohms max.
Normal Mode Rejection:	60dB
Common Mode Rejection:	120dB
Sample Rate:	3 times / second

CONTROL

Proportion Band.	0-100% of SPAN
Rest (Integral):	0-3600 seconds
Rate (Derivative):	0-1000 seconds
Ramp Rate:	0-2000°C / Hour (0-3600°F / Hour)
Dwell:	0-3600 minutes
Anti-Reset Windup:	Inhibit integral action outside P band
ON-OFF:	With adjustable hysterisis (0-20% of SPAN)
Cycle Time:	0-120 seconds
Control Action:	Direct (for cooling) and reverse (for heating)

INDICATION

Process Display:	0.4” red LED, 4 digits
Setpoint Display:	0.3” green LED, 4 digits
Status Indicator:	Control-green LED, Alarm-red LED

POWER

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

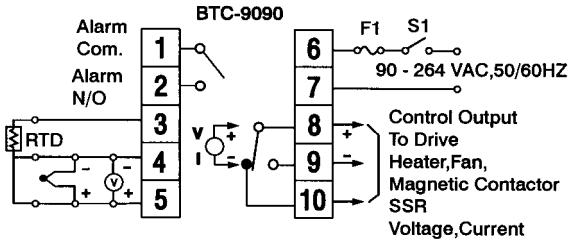
ENVIRONMENTAL & PHYSICAL

Operating Temperature:	-10 to 50°C
Humidity:	0 to 90% RH (non-codensing)
Insulation:	20M ohms min. (500VDC)
Breakdown:	AC2000V, 50/60Hz, 1 minute
Vibraton:	10-55Hz, amplitude 1mm
Shock:	200 m/s^2 (20g)
Weight:	170 grams

DIMENSIONS

H 48mm (1.89”)
W 48mm (1.89")
D 94mm (3.7")
Depth behind panel 86mm (3.4")
Panel cutout 45 X 45mm (1.77" x 11.77")

CONNECTION DIAGRAM



ORDERING INFORMATION

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

(1) Power Input

4	90-240VAC
5	20-32VAC-VDC
9	Other

(2) Signal Input

1	0 - 5V	3	PT100 DIN	5	TC	7	0 - 20mA
8	0 - 10V						

(3) Range Code

1	Configurable
9	Other

(4) Control Mode

3	PID / ON-OFF Control

(5) Output 1 Option

0	None
1	Relay rated 3A / 240VAC resistive
2	SSR Drive rated 20mA / 24V
3	4~20mA linear, max load 500 ohms (Module OM93-1)
4	0~20mA, linear, max. load 500 ohms (Module OM93 -2)
5	0-10V linear, min. impedance 500K ohms (Module OM93-3)
9	Other

(6) Output 2 Option

0	None

(7) Alarm Option

0	None
1	Relay rated 2A / 240VAC resistive
9	Other

(8) Communication

0	None