



Universal input : 8 thermocouples, Pt100, 0/4~20 mA

1 / 2 setpoints

Isolated 0/4~20 mA or 0~10 V DC control / retransmission output

85~265 V AC SMPS or 20~35 V DC

Functions : PID / Time proportional / ONOFF control (Relay 1), ONOFF control (Relay 2)

Autotuning for PID parameters

Accuracy : 0.1% of full scale 1 C, typical

Sensor break indication

Plug-in design

SPECIFICATIONS All specifications at ambient of 25 °C, unless specified otherwise

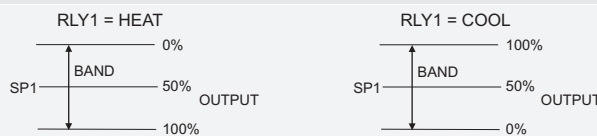
INPUT	
Input types	
Thermocouple	B, E, J, K, N, R, S, T
RTD	Pt100
Linear input	4~20 mA, 0~20 mA
Load resistance for 0/4~20 mA input	250 Ω, internally provided
Transmitter supply	22 V DC, nominal, 30 mA max
Range limits	See Table 1
Accuracy	See Table 1
Cold junction compensation	Automatic
Temperature coefficient of accuracy	0.5% of span / 25 °C
Unit	
Pt100, Thermocouple	°C (For °F, contact us)
Linear	EU
INDICATION	
Display	Upper : 4 digit, 7 segment 0.56" (14.2 mm) red LED display Lower : 4 digit, 7 segment 0.39" (9.9 mm) green LED display 2 LEDs for relay status
Status indication	
OUTPUTS	
No. of relays	1/2 electromagnetic relays
Relay contact type	NO-C-NC (RLY1) NO-C (RLY2)
Relay contact rating	5A / 230 V AC, resistive
SSR drive	12 V DC drive signal for external SSR
Control/Retransmission output	Current or voltage
Current output	4~20 mA / 0~20 mA isolated from input
Maximum load for current output	600 ohms
Voltage output	0~10 V DC isolated from input
Load for voltage output	>10 Kohms
Mutual isolation between input/output/supply	1 KV AC / 1 minute

PID CONTROL	
PID parameter values	Determined by 'Autotune' (value not available to user) For 'Heat' type of applications (single output)
PID control type	
PROGRAMMABLE PARAMETERS	
Setpoint	Full range (See Table 1)
Resolution	User selectable 0.1, 1
High scale	Full range (See Table 1)
Low scale	Full range (See Table 1)
Hysteresis / Band	0.1 to 99.9
Bias	-99.9 to 99.9
Current output	a) Retransmission b) Control
Control functions	PID / Time Proportional Control (TPC) / ONOFF Control (RLY1) ONOFF Control (RLY2)
Cycle time for TPC	1 ~ 99 seconds
Relay logic	a. Heat b. Cool c. Full scale high alarm d. Full scale low alarm
OTHER	
Keyboard	Tactile, 3 keys
Enclosure construction	Plug-in (circuit removable without affecting terminal wiring)
Dimensions (in mm)	72(W) x 72(H) x 100(D)
Mounting	Panel mount
Panel cutout	68 x 68 mm
Supply voltage	a) 85~265 V AC, 50/60 Hz b) 20~35 V DC c) 24 V AC 10%, 50/60 Hz
Power consumption	4 watts maximum
Operating ambient temperature	0 ~ 50°C
Relative humidity	Below 90%, non condensing

RELAY LOGIC



ONOFF CONTROL (Relay1, Relay2)



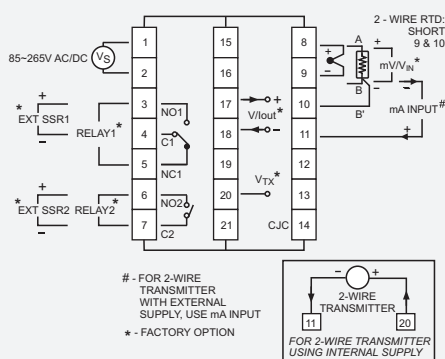
TIME PROPORTIONAL CONTROL (Relay1 only)

TABLE 1

SENSOR / INPUT	RANGE LIMITS (°C / EU)		RANGE IN WHICH ACCURACY IS SPECIFIED		TYPICAL ACCURACY AT 30 °C (°C / EU)	WORST CASE ACCURACY (°C / EU)
	LOW SCALE	HIGH SCALE	LOW SCALE	HIGH SCALE		
Iron / Constantan (J)	-99	760	0	760	± 1	± 3
Chromel / Alumel (K)	-99	1350	-50	1200	± 1	± 3
Pt / Pt - 13% Rh (R)	0	1760	0	1760	± 2	± 5
Pt / Pt - 10% Rh (S)	0	1760	0	1760	± 2	± 5
Copper / Constantan (T)	-99	400	-50	400	± 1	± 3
Nicrosil / Nisil (N)	-99	1300	-50	1200	± 1	± 3
Pt - 6% Rh / Pt - 30% Rh (B)	400	1820	400	1820	± 3	± 5
Chromel / Constantan (E)	-99	900	0	800	± 1	± 3
Pt100, 3-wire	-99	850	-50	850	± 0.5 *	± 2.0
Linear 0~20 mA, 4~20 mA	-1999	9999	-1999	9999	± 5 EU	± 20 EU

* ± 0.1°C in the range -50 to +400 °C

CONNECTION DIAGRAM



ORDERING INFORMATION

2180 A

A	Configuration		
	SSR drive	Relay	Analog output
00	0	2	0
01	0	2	1
02	1	1	0

The following ordering options are available on request. Minimum order quantity and/or minimum order value may apply.

Option	Details
1. Analog output	0~10 V DC
2. Supply voltage	24 V DC
3. Supply voltage	24 V AC

OTHER LOW COST PRODUCTS

TEMPERATURE CONTROLLER EC48

48x48x100 2 SETPOINTS



TEMPERATURE CONTROLLER TC48

48x48x100 2 SETPOINTS ANALOG OUTPUT



TEMPERATURE CONTROLLER TC96

96x96x100 2 SETPOINTS ANALOG OUTPUT



TEMPERATURE CONTROLLER EC96

96x96x100 2 SETPOINTS



PID CONTROLLER P96

96x96x100 2 SETPOINTS



radix[®]
AN ISO 9001:2008 COMPANY

INSTRUMENTS T : + 91 22 26730101 x 701 F : + 91 22 26731891 E : sales@radix.co.in
SENSORS T : + 91 22 26731826 x 732 F : + 91 22 26731826 x 732 E : sensors@radix.co.in
GAUGES T : + 91 22 26731826 x 733 F : + 91 22 66910029 E : gauges@radix.co.in
AUTOMATION C : 0-9322405471 F : + 91 22 66910029 E : automation@radix.co.in

SALES INQUIRIES

1800-22-radix
1800-22-7234

Radix Electrosystems Pvt Ltd, B-14, 2nd Floor, Ghanshyam Indl Estate, Veera Desai Road, Andheri (West), Mumbai - 400 053, India
Tel : + 91 22 26730101 Fax : + 91 22 26731891 Email : sales@radix.co.in www.radix.co.in

www.radix.co.in