

PROGRAMMABLE ONOFF CONTROLLER ————— FLP TC96

UNIVERSAL INPUT, 2 SETPOINTS, I/V OUT



- **Universal input :**
 - 8 thermocouples, Pt100, 0/4~20 mA
 - 0/4~20 mA, 0~10 V DC
- 0 / 2 setpoints
- Isolated 0/4~20 mA or 0~10 V DC retransmission output
- 85~265 V AC SMPS or 20~35 V DC or 24 V AC (factory option)
- **Functions :** ONOFF and Time Proportional
- **Accuracy :** ± 0.1% of full scale ± 1 °C, typical
- **Sensor break indication**

SPECIFICATIONS

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

INPUTS

Input group 1	
Thermocouple	B, E, J, K, N, R, S, T
RTD	Pt100
Linear input	4~20 mA, 0~20 mA
Input group 2	
Linear input	4~20 mA, 0~20 mA, 0~10 V DC
Load resistance for 0/4~20 mA input	250 Ω, internally provided
Transmitter supply	22 V DC, Nominal, 30 mA max (17 V DC available across transmitter; for HART transmitter, please inquire) See Table 1
Range limits	See Table 1
Accuracy	See Table 1
Cold junction compensation	Automatic
Temperature coefficient of accuracy	± 0.02% of span / °C
Units	
Pt100, Thermocouple	°C (For °F, contact us)
Linear	EU

OUTPUTS

No. of relays	0/2 electromagnetic relays
Relay contact type	NO-C-NC
Relay contact rating	5A / 230V AC, resistive
SSR drive	12 V DC drive signal for external SSR
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

INDICATION

Display	Upper : 4 digit, 7 segment 0.56" (14.2 mm) red LED display Lower : 4 digit, 7 segment 0.52" (13.2 mm) green LED display
Status indication	2 LEDs for relay status

PROGRAMMABLE PARAMETERS

Setpoint	Full range (See Table 1)
Hysteresis / band	0.1 to 99.9 °C
Resolution	1 (for TC) 0.1, 1 (for Pt 100) 0.001, 0.01, 0.1, 1 (for Linear input)
Bias	-99.9 to 99.9
High scale	Full range (See Table 1)
Low scale	Full range (See Table 1)
Control functions	ONOFF, Time Proportional Control (TPC) (RLY1), ONOFF (RLY2)
Cycle time for TPC	1 ~ 99 seconds
Relay logic	a. Heat b. Cool c. Full scale high alarm d. Full scale low alarm
Proportional offset	-99.9 to 99.9 °C (RLY1)

ENCLOSURE

Keyboard	3 Pushbuttons
Enclosure	Certified flameproof for gas groups I, IIA & IIB Aluminium alloy
Material	
Dimensions (in mm)	352(H) x 190(W) x 170(D)
Protection	IP65
Mounting	Wall mount
Mounting accessories	Included
Cable entries*	5 x 3/4" ET
* Cable glands to be ordered separately	

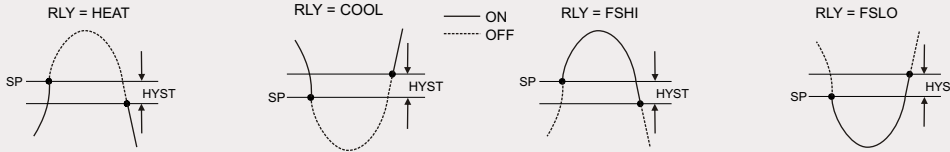
OTHER

Supply voltage	a) 85~265 V AC, 50/60 Hz b) 20~35 V DC c) 24 V AC ±10%, 50/60 Hz 4 watts maximum 0 ~ 50 °C
Power consumption	
Operating ambient temperature	
Relative humidity	Below 90%, non condensing

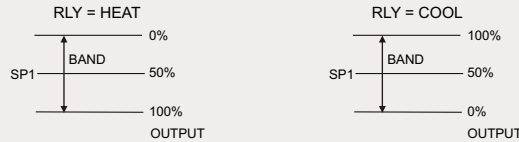
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RELAY LOGIC



ONOFF CONTROL (Relay1, Relay2)



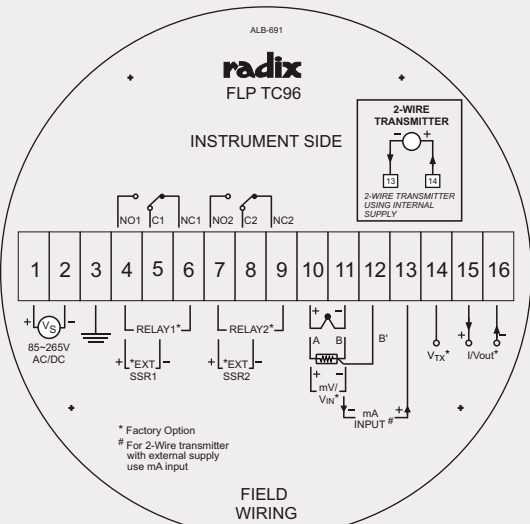
TIME PROPORTIONAL CONTROL (Relay1 only)

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	750	0	750	± 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, 0~10 V DC	-1999	9999	-1999	9999	± 5 EU	± 20 EU

* ± 0.2°C in the range -50 to +400 °C

CONNECTION DIAGRAM



ORDERING INFORMATION

ORDER CODE	
2197	A

A	Configuration	
	Relay	4~20 mA output
00	0	0
01	0	1
02	2	0
03	2	1

Ordering Options

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
4.	Input group 1	0~10 V DC, 0/4 ~ 20 mA
5.	SSR drive	For relay1, 2
6.	Unit	°F



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