



- Universal input
- 1 / 2 / 3 / 4 setpoints
- Isolated 0/4~20 mA or 0-10 V DC for control / retransmission output
- RS485 / MODBUS RTU
- 85~265 V AC SMPS
- Autotuning : From cold start  
At setpoint
- Auto / Manual selection
- PID, Proportional and ONOFF control
- PID versions
  - Standard - relay or analog control output
  - VMD open + close relay outputs

**SPECIFICATIONS**

**INPUT**

**Input group 1**

Thermocouple B, E, J, K, N, R, S, T  
 RTD Pt100, 3-wire  
 Voltage 0~50 mV  
 Current 0~20 mA, 4~20 mA

**Input group 2**

Thermocouple B, C, D, E, G, J, K, N, R, S, T  
 RTD Pt100, 3-wire, Cu53  
 Current 0~20 mA, 4~20 mA, Square root  
 Voltage 0~50 mV

**Transmitter supply (V<sub>TX</sub>)**

**Range limits**

**Accuracy**

**Cold junction compensation**

**Sensor break protection**

Through DIP selection following voltage inputs are available :  
 0~1 V, 0~5 V, 0~10 V, 0~10 mV, 0~100 mV, 0~200 mV  
 22 V nominal, 30 mA max  
 See Table 1  
 See Table 1  
 Automatic  
 User programmable

**INDICATION**

**Process variable**

**Setpoint**

**Status indication**

Upper : 4 digit, 7 segment  
 0.3" (7.6 mm) red LED display  
 Lower : 4 digit, 7 segment  
 0.3" (7.6 mm) green LED display  
 LEDs for relay status  
 LED for auto/manual status

**OUTPUTS**

**No. of relays**

**Relay contact type**

**Relay contact rating**

**SSR drive**

**No. of analog outputs**

**Current output**

**Maximum load for current output**

**Voltage output**

**Load for voltage output**

1 / 2 / 3 / 4  
 NO-C-NC (RLY1, RLY2)  
 NO-C (RLY3, RLY4)  
 5A / 230V AC, resistive  
 12 V DC drive signal for external SSR  
 0 / 1  
 4~20 mA / 0~20 mA / 20~4 mA / 20~0 mA isolated from input  
 500 ohms

**AUTO/MANUAL OPERATION**

**Function**

**Auto / Manual transfer**

Output power is increased / decreased by UP/DOWN keys in manual mode  
 Bumpless

**COMMUNICATION**

**Port**

**Protocol**

**Slave ID**

RS485  
 Modbus RTU  
 User programmable (1~256)

**PROGRAMMABLE PARAMETERS**

**Setpoint**

**Unit**

**Resolution**

Full range (See Table 1)  
 °C, °F, EU  
 User selectable  
 0.01, 0.1 or 1 for linear input,  
 0.1 or 1 for temperature

**High scale**

**Low scale**

**Digital filter**

**Hysteresis (ONOFF control)**

**Bias (for process variable)**

**Band (P)**

**Integral time (I)**

**Derivative time (D)**

**Cycle time for SP1/SP2**

**Upper limit for output power**

**Lower limit for output power**

**Relay logic**

Full range (See Table 1)  
 -50 to 50% of range limit  
 A (minimum) ~ F (maximum)  
 0~25% span  
 Off, 1~9999 seconds  
 Off, 1~9999 seconds  
 1~640 second  
 0~100%  
 0~100%

**Alarm types**

**Alarm acknowledge**

**Setpoint lock**

**Level lock**

**Relay action**

a. Heat  
 b. Cool  
 c. Fullscale high alarm  
 d. Full scale low alarm  
 e. Deviation high alarm  
 f. Deviation low alarm  
 g. Inband alarm  
 h. Outband alarm  
 (e. to h. available for SP2, SP3, SP4 only)  
 Self reset or latched and can be disabled at power on  
 Front panel function used to reset relay in alarm condition  
 ON, OFF  
 ON, OFF  
 Reverse / direct

**OTHER**

**Programming**

**Dimensions (In mm)**

**Mounting**

**Panel cutout**

**Supply voltage**

Through 3 tactile keys  
 48(H) x 96(W) x 115(D)  
 Panel mount  
 44(+ 0.8 mm) x 92 mm  
 a) 85~265 V AC, 50/60 Hz  
 b) 20~35 V DC (optional)  
 4 watts maximum

**Power consumption**

**Operating ambient temperature**

**Relative humidity**

0~50 °C  
 Below 90%, non condensing

**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		
<b>Input Group 1</b>						
Pt - 6% Rh / Pt - 30% Rh (B)	400	1820	400	1820	± 3	± 5
Chromel / Constantan (E)	-270	1000	0	1000	± 1	± 3
Iron / Constantan (J)	-210	760	0	760	± 1	± 3
Chromel / Alumel (K)	-270	1372	-50	1200	± 1	± 3
Nicrosil / Nisil (N)	-270	1300	-50	1200	± 1	± 3
Pt / Pt - 13% Rh (R)	0	1760	400	1760	± 2	± 5
Pt / Pt - 10% Rh (S)	0	1760	400	1760	± 2	± 5
Copper / Constantan (T)	-270	400	-200	400	± 1	± 3
Pt100, 3-wire	-200	850	-200	600	± 0.3	± 1.0
Linear (0~50 mV, 0~20 mA, 4~20 mA)	-1999	9999	-1999	9999	± 5 EU	± 20 EU

**Input Group 2**

The following inputs are available in Input Group 2 in addition to inputs of Input Group 1.

Tungsten - 5% Rh / Tungsten - 26% Rh (C)	0	2320	0	2320	± 3	± 5
Tungsten - 3% Rh / Tungsten - 25% Rh (D)	0	2310	0	2310	± 3	± 5
Tungsten / Tungsten - 26% Rh (G)	0	2310	0	2310	± 3	± 5
Cu53	0	180	0	180	± 0.3	± 0.5
Linear (0~10 mV, 0~100 mV, 0~200 mV, 0~1 V, 0~5 V, 0~10 V)	-1999	9999	-1999	9999	± 5 EU	± 20 EU
Linear (4~20 mA) with square root	0	9999	0	9999	± 10 EU	± 40 EU

**ORDERING INFORMATION**

2004 A B C D E F G H

<b>A Input Group</b>	<b>F Communication</b>
1 Group1	0 Not provided
2 Group2	1 RS485
<b>B Relay1</b>	<b>C Relay2</b>
0 None	0 None
1 Relay, NO-C-NC	1 Relay, NO-C-NC
2 SSR drive	2 SSR drive
<b>D Relay3</b>	<b>E Relay4 / Analog output</b>
0 None	0 None
1 Relay, NO-C	1 Relay, NO-C
2 SSR drive	2 SSR drive
	3 0/4~20 mA
	4 0~10 V DC
	5 Other analog output *
	* Please specify
<b>G Supply voltage</b>	<b>H Software type</b>
0 85~265 V AC	0 PID, Standard
1 20~35 V DC	1 PID, VMD

**CONNECTION DIAGRAM**
