



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

<p>INPUTS</p> <p>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</p> <p>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 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</p> <p>Transmitter supply (V_{TX}) 22 V nominal, 30 mA max Range limits See Table 1 Accuracy See Table 1 Cold junction compensation Automatic Sensor break protection User programmable</p> <p>INDICATION</p> <p>Process variable 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</p> <p>Setpoint LEDs for relay status LED for auto/manual status</p> <p>OUTPUTS</p> <p>No. of relays 1 / 2 / 3 / 4 Relay contact type NO-C-NC (RLY1, RLY2) NO-C (RLY3, RLY4) Relay contact rating 5A / 230V AC, resistive SSR drive 12 V DC drive signal for external SSR</p> <p>No. of analog outputs 0 / 1 Current output 4~20 mA / 0~20 mA / 20~4 mA / 20~0 mA isolated from input Maximum load for current output 500 ohms Voltage output 0-10 V / user specified Load for voltage output >10 Kohms</p> <p>AUTO/MANUAL OPERATION</p> <p>Function Output power is increased / decreased by UP/DOWN keys in manual mode Bumpless</p> <p>Auto / Manual transfer</p>	<p>COMMUNICATION</p> <p>Port RS485 Protocol Modbus RTU Slave ID User programmable (1~256)</p> <p>PROGRAMMABLE PARAMETERS</p> <p>Setpoint Full range (See Table 1) Unit °C, °F, EU Resolution User selectable 0.01, 0.1 or 1 for linear input, 0.1 or 1 for temperature High scale Full range (See Table 1) Low scale Full range (See Table 1) Digital filter A (minimum) ~ F (maximum) Hysteresis (ONOFF control) 0~25% span Bias (for process variable) -50 to 50% of range limit Band (P) 0.1~999.9% Integral time (I) Off, 1~9999 seconds Derivative time (D) Off, 1~9999 seconds Cycle time for SP1/SP2 1~640 second Upper limit for output power 0~100% Lower limit for output power 0~100% Relay logic 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)</p> <p>Alarm types Self reset or latched and can be disabled at power on</p> <p>Alarm acknowledge Front panel function used to reset relay in alarm condition</p> <p>Level lock ON, OFF Relay action Reverse / direct</p> <p>OTHER</p> <p>Programming Through 3 tactile keys Dimensions (in mm) 96(H) x 48(W) x 100(D) Mounting Panel mount Panel cutout 44(+ 0.8 mm) x 92 mm Supply voltage a) 85~265 V AC, 50/60 Hz b) 20~35 V DC (optional)</p> <p>Power consumption 4 watts maximum Operating ambient temperature 0~50 °C Relative humidity Below 90%, non condensing</p>
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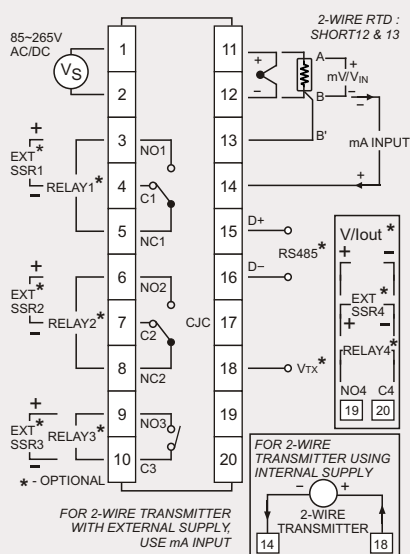
TABLE 1

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		
Input Group 1						
Pt - 6% Rh / Pt - 30% Rh (B)	400	1820	400	1820	± 3	± 5
Chromel / Constantan (E)	-270	850	0	850	± 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

CONNECTION DIAGRAM


STK-686

ORDERING INFORMATION

2004		A	B	C	D	E	F	G	H
A Input Group		1	Group1						
		2	Group2						
B Relay1		0	None						
		1	Relay, NO-C-NC						
		2	SSR drive						
C Relay2		0	None						
		1	Relay, NO-C-NC						
		2	SSR drive						
D Relay3		0	None						
		1	Relay, NO-C						
		2	SSR drive						
E Relay4 / Analog output		0	None						
		1	Relay, NO-C						
		2	SSR drive						
		3	0/4~20 mA						
		4	0~10 V DC						
		5	Other analog output *						
F Communication		0	Not provided						
		1	RS485						
G Supply voltage		0	85~265 V AC						
		1	20~35 V DC						
H Software type		0	PID, Standard						
		1	PID, VMD						

* Please specify