



- Universal input
- 1 / 2 / 3 setpoints
- Isolated 0/4~20 mA or 0-10V 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

<b>INPUT</b>	
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	22 V nominal, 30 mA max
Range limits	See Table 1
Accuracy	See Table 1
Cold junction compensation	Automatic
Sensor break protection	User programmable
<b>INDICATION</b>	
Process variable	Upper : 4 digit, 7 segment 0.3" (7.6 mm) red LED display
Setpoint	Lower : 4 digit, 7 segment 0.3" (7.6 mm) green LED display
Status indication	LEDs for relay status LED for auto/manual status
<b>OUTPUTS</b> (See ordering information)	
No. of outputs	1 / 2 / 3
No. of relays	1 / 2 / 3
Relay contact type	NO-C-NC (RL1) NO-C (RL2, RL3)
Relay contact rating	5A / 230V AC, resistive
SSR drive	12 V DC drive signal for external SSR
No. of analog outputs	0 / 1 (current or voltage)
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
<b>AUTO/MANUAL OPERATION</b>	
Function	Output power is increased / decreased by UP/DOWN keys in manual mode
Auto / Manual transfer	Bumpless
<b>COMMUNICATION</b>	
Port	RS485
Protocol	Modbus RTU
Slave ID	User programmable (1~256)

<b>PROGRAMMABLE PARAMETERS</b>	
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
Offset	-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. Full scale 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 only)
Alarm types	Self reset or latched and can be disabled at power on
Alarm acknowledge	Front panel function used to reset relay in alarm condition
Setpoint lock	ON, OFF
Level lock	ON, OFF
Relay action	Reverse / direct
<b>OTHER</b>	
Programming	Through 3 tactile keys
Dimensions (in mm)	48(H) x 48(W) x 100(D)
Mounting	Panel mount
Panel cutout	44 x 44 mm
Supply voltage	a) 85~265 V AC, 50/60 Hz b) 20~35 V DC (optional)
Power consumption	4 watts maximum
Operating ambient temperature	0~50 °C
Relative humidity	Below 90%, non condensing

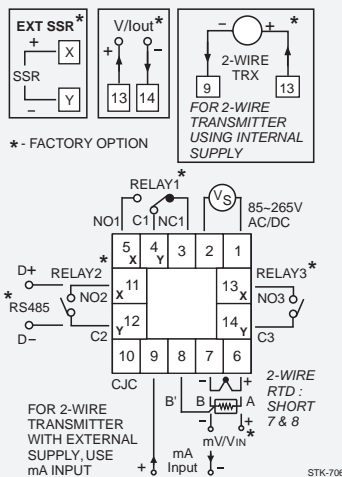
**TABLE 1**

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	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 (4~20 mA) with square root	0	9999	0	9999	± 10 EU	± 40 EU

**CONNECTION DIAGRAM**

**ORDERING INFORMATION**

2001	A	B	C	D	E	F	G
	<b>Input Type Group</b>	<b>Relay1</b>	<b>Relay2/RS485</b>	<b>Relay3 / Analog output</b>	<b>Software version</b>	<b>Transmitter supply</b>	<b>Supply voltage</b>
	1 Group 1	0 None	0 None	0 None	0 PID, Standard	0 None	0 85~265 V AC
	2 Group 2	1 Relay, NO-C-NC	1 Relay, NO-C	1 Relay, NO-C	1 PID, VMD	1 22 V DC/30 mA (nominal)	1 20~35 V DC
		2 SSR drive	2 SSR drive	2 SSR drive			
			3 RS485	3 0/4~20 mA			
				4 0~10 V DC			
				5 Other Analog output			

Note 1 : Transmitter supply can be given only if D = 0  
 Note 2 : For 20~35 V DC power supply relay3 can not be provided.  
 i.e. G=1, D=0/3/4/5

**OTHER PRODUCTS**
**PID CONTROLLER • X96P**

96x96x100 • 4 SETPOINTS • 2 ANALOG OUTPUTS


**PID CONTROLLER • P96**

96x96x100 • 2 SETPOINTS • ANALOG OUTPUT


**PID CONTROLLER • P48**

48x48x100 • 2 SETPOINTS • ANALOG OUTPUT


**SALES INQUIRIES**

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AN ISO 9001:2008 COMPANY

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