HX series Multi input/output Digital temperature controller

Specification

Model		HX9	HX2	HX7	HX3	HX4
Appearance						
W×H×D (mm)		96 X 96 X 63	48 X 96 X 63	72 X 72 X 63	96 X 48 X 63	48 X 48 X 63
Power supply Voltage		100 – 240 V a.c. (±10 %), 50/60 Hz				
Power consumption		6 W max, 10 VA max				
Input	Type	Refer to "input code for input type and range"				
	Sampling cycle	62,5 ms				
	Accuracy	±0,5 % of FS (refer to "input code for input type and range")				
	Allowable voltage	Within ±20 V d.c. (VDC), within ±10 V d.c. (TC, RTD)				
	Reference junction compensation accuracy	±3,5 ℃ (0 ~ 50 ℃)				
	Operation after input break	TC: OFF, UP/DOWN RTD: UP				
Control output	Relay	NO : 5 A 250 V a.c., 5 A 30 V d.c. (resistive load), NC : 3 A 250 V a.c., 1 A 30 V d.c. (resistive load)				
	SSR (voltage pulse)	ON voltage : 12 V d.c. min, OFF voltage : 0.1 V d.c. max, Load resistance 600 Ω min				
	SCR (current)	range : 4 - 20 mA (±5%), accuracy : ±0,2 mA, Load resistance 600 Ω max				
Retransmission output		■ range : 4 - 20 mA (±5%), accuracy : ±0,2 mA Load resistance 600 Ω max ■ range : 0 - 20 mA (±5%), accuracy : ±0,2 mA Load resistance 600 Ω max				
Alarm output		5 A 250 V a.c., 5 A 30 V d.c. (Resistive load)				
Contact input		OFF resistance : 10 kΩ min, ON resistance : 1 kΩ max				
Control	Method	ON/OFF, PID control				
	Output operation	Reverse operation, Direct operation				
	Anti-reset windup	Auto(A=0), 0.1 ~ 100.0 %				
Interface	Standard	EIA RS485				
	Max connection unit	31 units (but, ADDRESS setting : 1 ~ 99)				
	Communication method	2 wire half duplex				
	Data transmission	asynchronous				
	Communication sequence	None				
	Communication distance	Within1,2 km				
	Communication Speed	2400, 4800, 9600, 14400, 19600 BPS (selectable by parameter)				
	Start bit	1 BIT				
	Data length	7 or 8 BIT				
	Parity bit	NONE, EVEN, ODD				
	Stop bit	1 or 2 BIT				
	Protocol	PC.LINK, PC.LINK SUM, MODBUS-ASCII, MODBUS-RTU				
	Response time	Processing time in receiving + (response time x 25 ms)				
Insulation resistance		20 MΩ min (primary terminal - secondary terminal)				
Dielectric strength		2,300 V a.c., for 1 minute (primary terminal - secondary terminal)				
Operating ambient temperature		0 ~ 50 ℃, (without condensation)				
Operating ambient humidity		35 ~ 85 % RH (without condensation)				

Suffix Code

Model	Code		Information
HX	□-	□ □	Multi-input and output digital temperature controller
Dimension	2		48(W) × 96(H) mm
	3		96(W) × 48(H) mm
	4		48(W) × 48(H) mm
	7		72(W) × 72(H) mm
	9		96(W) × 96(H) mm
Control output		0	Standard
		1	Heating/cooling control (simultaneous control)
HX2/3/9 option		0	None
		1	RS485 communication + Heater break alarm (HBA)
HX7 option		0	None
		1	RS485 communication + D.I 2 contacts (SV2, SV3)
		2	RS485 communication + Heater break alarm (HBA)
HX4 option		0	None
		1	RS485 communication + D.I 1 contact (SV2)
		2	RS485 communication + Heater break alarm (HBA)

Range and input code chart

Input signal	Input signal	Input type		Range (℃)	Accuracy	Note
Thermocouple (TC)	1	K	*1	–200 ~ 1370	±0,5 % of FS ±1 Digit	• FS is the measurable range from the maximum to the minimum for each range. • Digit is the minimum display value *1 below 0 ℃ : ±1,0 % of FS ± 1 digit *2 0 ~ 400℃ range : ±10 % of FS ± 1 digit *3 20 → KPt100 Ω (C1603) 21, 22 → Pt100 Ω(IEC751) *4 In case of using Current input, Resistor 250 Ω 0,1 % should be installed in the input terminal.
	2	K	*1	–199,9 ~ 999,9		
	3	J	*1	–100,0 ~ 999,9		
	4	E	*1	–100,0 ~ 999,9		
	5	T	*1	–199,9 ~ 400,0		
	6	R		0 ~ 1700		
	7	B	*2	0 ~ 1800		
	8	S		0 ~ 1700		
	9	L	*1	–100,0 ~ 900,0		
	10	N		–200 ~ 1300	±1,0 % of FS ±1 Digit	
	11	U	*1	–199,9 ~ 400,0	±0,5 % of FS ±1 Digit	
	12	W		0 ~ 2300		
	13	Platinel II		0 ~ 1390		
Resistance temperature detector (RTD)	20	KPt100 Ω	*3	–199,9 ~ 500,0	±0,5 % of FS ±1 Digit	
	21	Pt100 Ω	*3	–199,9 ~ 640,0		
	22	Pt100 Ω	*3	–200 ~ 640		
DC voltage (VDC / mV DC)	30	1,000 – 5,000 V DC		–1999 ~ 9999 Scaling function(SL–H/SL–L) necessary	±0,5 % of FS ±1 Digit	
	31	0,0 – 100,0 mV DC				
DC current	30	4 – 20 mA DC	*4			

UX100 Multi input/output digital temperature controller

Specification

Model	UX100
Appearance	
W×H×D (mm)	48 X 24 X 100
Function	• Fuzzy • Input correction • Interface (RS485) • Heating/Cooling control • Output limitation • Auto tuning • ARW • Input filter: OFF, 1 ~ 120 sec. • Universal-input • Heating/Cooling hysteresis • Alarm output
Input	Multi input a) T.C : K, J, E, T, R, B, S, L, N, U, W, PLII, b) R.T.D : Pt100(KS/IEC), KPt100(KS) c) DC Voltage input : 1 to 5 V, –10 to 20 mV, 0 to 100 mV, d) DC Current input : 4 to 20 mA(Connect a 250 Ω resistor to the input terminals)
Sampling cycle	250 ms
Input display resolution	Below decimal point of Input signal and Measuring range
Input impedance	TC and DC mV : Min 1 MΩ, DCV : Approx. 1 MΩ
Source tolerable resistance	Thermocouple: Max. 250 Ω, Voltage: Max. 2 kΩ
Lead wire tolerable resistance	RTD: Max. 10 Ω/wire
Input tolerable voltage	±10 V (TC, RTD, Voltage: mV d.c.), ±20 V (Voltage: V d.c.)
Scaling	According to setting Max. value(SH), Min. value(SL) of measuring range, scaling is available (–1999 ~ 9999)
Cold junction temp. compensation tolerance	±1,5 ℃ (15 ~ 35 ℃), ±2,0 ℃ (0 ~ 50 ℃)
Accuracy	±0,5 % (Full scale)

Suffix Code

Model	Code		Information
UX100–	□	□	Multi input/output temperature controller, 48(W) X 24(H) mm
Control type	0		Standard
	1		Heating/cooling control (but heating side cannot use relay)
Option		0	None
		1	Communication function (RS 485)