

CÔNG TY CỔ PHẦN CÔNG NGHỆ HỢP LONG

LCD Digital Temperature controllers

VX series

High-performance temperature controller
with wide LCD angle,
convenient and excellent control performance



Increased visibility



Durable ABS keys



short body size



Fast tuning



High - Accuracy



High-speed sampling cycle



Configurable by PC



Loader cable



Communication

HANYOUNG NUX

Hotline: 1900.6536 - Website: HOPLONGTECH.COM

01 Visibility

**Wide angle, Various colors,
Increased visibility with large character size**

- ▶ PV: 14 segment display(17% increased from existing products)
- ▶ SV: 11 segment, MV: 7 segment value display(VX2,7,9)
- ▶ MV display: Available for only VX2, VX7, VX9 (VX4: Press the MD key to check MV value in RUN status)
- ▶ Improved visibility by characters in white, green, yellow color
- ▶ Control status, communication status and function fault can be checked immediately by various indicators



▶ Bright Environment

▶ Dark Environment



▶ Previous model

▶ VX



02 Superior control performance

High precision & high speed sampling

- ▶ Realization of high precision control(display accuracy $\pm 0.2\%$ of FS ± 1 digit)
- ▶ Applicable to fast control system by high-speed sampling cycle
- ▶ Optimized for environments requiring high-speed response
- ▶ Heating & cooling simultaneous control



▶ 0.2 %

Display accuracy

▶ 50 ms

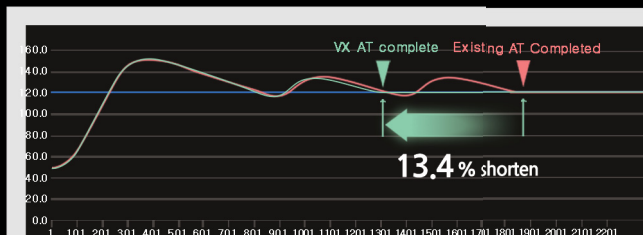
High-speed sampling

▶ Heating & Cooling

control

**Reduced tuning time
Optimal Control**

- ▶ Fast tuning time of 1.5 cycle(existing tuning time: 2.25 cycle)



▶ Comparison of Hanyoung products ■ VX (PV) ■ Existing Model (PV) ■ SV

Various options

- ▶ Thermocouple, RTD, Analog Input
- ▶ Standard Control, Heating Cooling Control, Ramp Control
- ▶ 4 PID groups, 4 SV settings, 4 auxiliary outputs(VX4: max 3 outputs)
- ▶ Various alarm function and high capacity relay(5A, 220VAC)
- ▶ Loop Break Alarm(LBA), Retransmission output (RET), Digital Input(DI) Remote Input(REM), Heater Break Alarm(HBA)
- ▶ RS485 communication(Modbus RTU) (PC-Link, PC-Link SUM, ModbusASCII)



03 Convenience

Space saving, Front panel protection structure, Improved button operation

- ▶ 63 mm depth short body
(78.4 mm depth with additional protective cover)
- ▶ Front panel protection(VX4:IP66, VX2,7,9:IP65)
- ▶ Easy to maintain/repair with front separation structure
- ▶ Smooth touch and durability with tact switch (ABS material)



▶ 63mm short body size



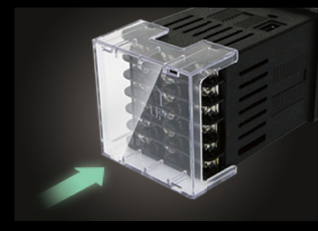
▶ Safe use in dust and waterproof environments



▶ Easy replacement without re-wiring through front detachment



▶ Improved durability using ABS tact switch



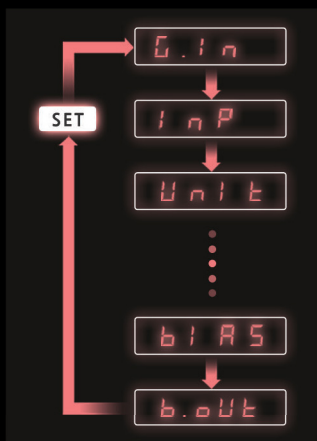
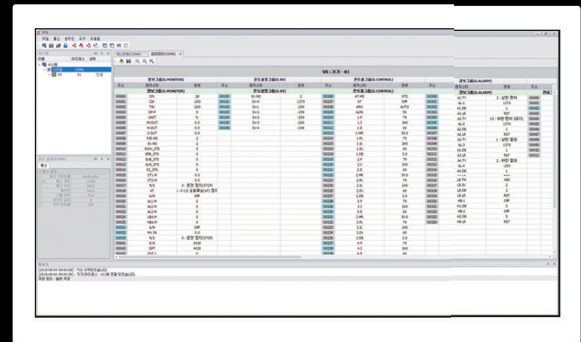
▶ Protective cover can be attached (Sold separately)

Easy menu settings

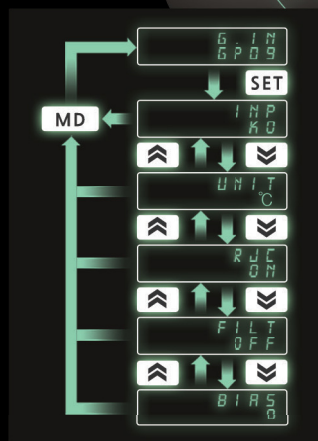
- ▶ Convenient and time saving setting by up/down key
- ▶ Easy operation through full/basic/easy menu
- ▶ Front function key(RUN/STOP, AT, MANUAL/AUTO output, Lock)

Parameter setting on PC

- ▶ Hanyoung Nux total communication software(TCS)
- ▶ Real time monitoring / recording / parameter setting by TCS
- ※ TCS freeware download at eng.hynux.com



▶ Existing parameter setting method (One-way movement)



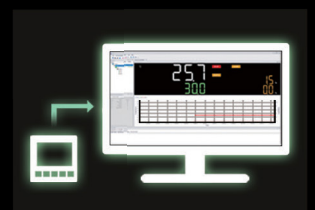
▶ VX parameter setting method (Two-way movement)

USB Loader Function

- ▶ MINI USB 2.0 cable(NMC-UM210)/ Sold separately
- ▶ Easy parameter value backup
- ▶ Can be set in non-power source



▶ Simply connecting USB cable



▶ VX and TCS Connection with USB cable

Specifications

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Classification		VX2	VX4	VX7	VX9	
Input	Thermocouple	K, J, E, T, R, B, S, L, N, U, W, PLII				
	Reference junction compensation accuracy	±1.5 °C (within -10 ~ 50 °C)				
	RTD	JPT100, PT100				
	Allowable line resistance	Each 3 wire within 10 Ω (but the resistance among 3 lines should be same)				
	DC voltage / current	1 ~ 5 V (4 ~ 20 mA), 5 V (0 ~ 20 mA), 0 ~ 10 V, 0 ~ 50 mV, 0 ~ 100 mV				
Sampling cycle		50 ms				
Control output	Relay output	▶Rated switching capacity: 5A 250 VAC, 5 A 30 VDC ▶Max. switching power: 750 VA, 90 W ▶Max. switching voltage: 250 VAC, 110 VDC ▶Max. switching current: 5 ▶Mechanical life: 20 million times (at 180 CPM)				
	Voltage pulse output	12 VDC ± 1 VDC pulse voltage (load resistance min. 600 Ω)				
	Current output	4 ~ 20 mA ± 0.2% of FS ± 1 digit, load resistance: max. 600 Ω				
Control	Control type	ON/OFF, PID control, 2DOF PID control				
	Output operation	Reverse action, direct action				
Memory	Non-volatile memory life	▶EEPROM unlocked: when setting E2PL: OFF in G.SET group (EEPROM life: 1 million times write guaranteed) ▶EEPROM locked: when setting E2PL: ON in G.SET group (store in RAM)				
Display part (H*W) mm	Display method	Wide viewing angle LCD				
	PV character	20.5 x 6.9	15.2 x 6.8	19.8 x 9.3	29.0 x 13.6	
	SV character	12.8 x 5.9	7.4 x 3.9	10.2 x 4.9	15.0 x 7.2	
	MV character	9.3 x 4.4	7.4 x 3.9	7.5 x 3.3	11.0 x 4.8	
USB Loader	Communication method	USB 2.0				
	Protocol	Protocol : PC-LINK	Baudrate : 38400 bps	Start bit : 1 bit	Data bit : 8bit Parity bit : None Stop bit : 1bit	
	Communication distance	Within 5 m				
Option	Sub output	Relay 1 ~ 4 outputs, rated switching capacity: 5A 250 VAC, 5 A 30 VDC 2 points or 4 point				
	Digital input	▶Contact input ON : 1 KΩ max. ▶OFF: 100 KΩ min. ▶Non-contact input ON : 1.5 V max. ▶OFF: 0.1 mA max. ▶Current Flow : approx. 2 mA per contact ▶Voltage at open : Approx. 5 V DC				
	Retransmission output	1 output, 4 ~ 20 mA ± 0.2% of FS ± 1 digit, load resistance: max. 600 Ω				
	Remote input	1 input, 4 ~ 20 mA (1 ~ 5 V)				
	Current detection input	1 input or 2 inputs, 0.0 ~ 50.0 A, CT-70 current transformer (sold separately)				
	RS-485	Communic. method	EIA RS485 standard, 2-wire half-duplex			
		Max. connections	31 (address setting 1~99 available)			
		Communic. sequence	No sequence			
		Communic. distance	Within 1.2 km			
		Communic. speed	4800, 9600, 14400, 19200, 38400, 57600 BPS			
bit		▶Start bit : 1 bit ▶Data bit : 7 or 8 bit ▶Parity bit : NONE / EVEN / ODD ▶Stop bit : 1 or 2 bit				
Protocol	PC-LINK STD, PC-LINK WITH SUM, MODBUS-ASCII, MODBUS-RTU					
Response time	Actual response time = processing time + (response time X 50 ms)					
Power	Power voltage	100 ~ 240 VAC, 50/60 Hz				
	Voltage fluctuation rate	±10 % of power voltage				
	Insulation resistance	Min. 20 MΩ, 500 VDC				
	Dielectric strength	3,000 VAC, 50/60 Hz for 1 minute (between 1st and 2nd terminal)				
	Power consumption	Max. 8.5 VA	Max. 8.5 VA	To be announced	To be announced	
	Ambient temperature & humidity	-10 ~ 50 °C, 35 ~ 85 % RH (without condensation)				
Storage temperature		-25 ~ 65 °C				
Approval	CE		UL		To be announced	
	▶Electrostatic discharge (ESD) : KN61000-4-2		▶EFT(RS) : KN61000-4-3		▶Conductive RF (CS) : KN61000-4-6 ▶SURGE : KN61000-4-5	
	IP65 (front panel)	IP66 (front panel)	To be announced		To be announced	
Weight (g)	202	120	To be announced		To be announced	
Basic components		Main body, Bracket, 250 Ω resistor (1%), Rubber packing, Instruction manual				

Suffix code

Model	Code	Content
VX	<input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	LCD Digital Temperature Controller
Size	2	48(W) × 96(H) × 63(D) mm
	4	48(W) × 48(H) × 63(D) mm
	7	72(W) × 72(H) × 63(D) mm
	9	96(W) × 96(H) × 63(D) mm
Sensor	U	Universal input
OUT 1 (control output 1)	M	Relay output
	S	Voltage pulse output (voltage pulse output for SSR drive)
	C	Current output (4-20 mA current output for SCR drive)
OUT 2 (control output 2)	N	None
	M	Relay output
Power	A	100 ~ 240 VAC 50/60 Hz
Sub output	A1	1 relay output (VX4 basic option)
	A2	2 relay outputs (VX2, VX7, VX9 basic option)
	A3	3 relay outputs (※ *1,*2)
	A4	4 relay outputs (※ *2)
Communication		None
	C	RS-485 communication
Retransmission output (RET)		None
	T	Retransmission output (4 ~ 20 mA)
Digital input (DI)		None
	D2	2 digital inputs (DI 1 ~ 2)
	D4	4 digital inputs (DI 1 ~ 4)
Current detection input (CT)		None
	H1	Current detection input (CT) 1 contact
	H2	Current detection input (CT) 2 contacts
Remote input (REM)		None
	R	1 input, 4 ~ 20 mA (1 ~ 5 V)

※ * 1) Not available for VX4. However, when OUT2 is selected as 'M', SUB3 can be used according to the parameter setting.
 ※ * 2) Selectable from VX2, VX7, VX9 (VX4 is excluded)
 ※ Please refer to our user's manual, catalog or homepage for the model names of VX available for order.
 ※ Sold separately
 - Current detector: CT-70
 - USB loader cable: NMC-UM210
 - Terminal protection cover

VX2	VX4	VX7	VX9
TC2A-COV	TC4A-COV	TC7A-COV	TC9A-COV

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