

VX series

INSTRUCTION MANUAL

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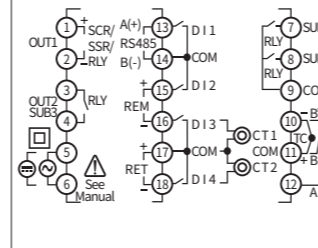
Thank you for purchasing Hanyoung Nux products. Please read the instruction manual carefully before using this product, and use the product correctly. Also, please keep this instruction manual where you can view it any time.

Specifications

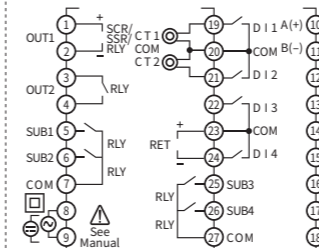
Table with columns: Classification, Input, Control output, Control, Memory, Display part, USB Loader, Option, Power, Approval. Rows include Thermocouple, RTD, Relay output, AC voltage type voltage pulse output, DC voltage type voltage pulse output, Current output, Control type, Output operation, Reverse action, Non-volatile memory life, Display method, PV character, SV character, MV character, Communication method, Protocol, Communication distance, Sub output, Digital input, Retransmission output, Remote input, Current detection input, Communic. method, Max. connections, Communic. sequence, Communic. distance, RS-485 Communic. speed, bit, Protocol, Response time, AC Power Supply Voltage, DC Power Supply Voltage, Voltage fluctuation rate, Insulation resistance, Dielectric strength, AC voltage type power consumption, DC voltage type power consumption, Ambient temperature & humidity, Storage temperature.

Connection diagrams

VX4

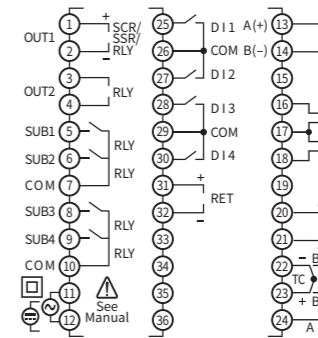


VX7

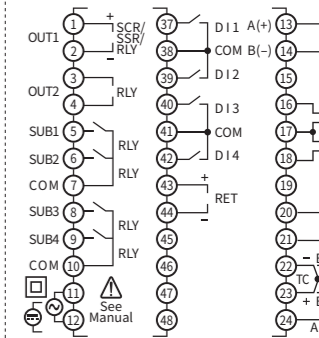


※ When using the input as DC current, it is recommended to connect 250 Ω (0.1% or less high precision) resistor in parallel to the outside of the terminal. The 250 Ω (1%) resistor included with the product is not a precision resistor.

VX2



VX9



Safety information

Please read the safety information carefully before the use, and use the product correctly. The alerts declared in the manual are classified into Danger, Warning and Caution according to their importance

Table with columns: Alert type (DANGER, WARNING, CAUTION), Description, and Action.

CAUTION: Please do not wipe the product with organic solvents such as alcohol, benzene, etc. (wipe it with neutral detergents). When water enters, short circuit or fire may occur, so please inspect the product carefully.

WARNING: If there is a possibility of a serious accident due to malfunction or abnormality of this product, install an appropriate protection circuit on the outside.

CAUTION: The power supply should be insulated and limited voltage/current or Class 2 SELV power supply device. To prevent electric shocks and malfunctions, do not supply power until the wiring is completed.

CAUTION: The product does not have an explosion-proof structure, so avoid using it in places with flammable or explosive gases.

CAUTION: Never disassemble, modify, process, improve or repair this product, as it may cause abnormal operations, electric shocks or fires.

CAUTION: Any use of the product other than those specified by the manufacturer may result in personal injury or property damage. Please use this product after installing it to a panel, because there is a risk of electric shock.

CAUTION: The contents of this manual may be changed without prior notification. Please make sure that there are no damages or product abnormalities occurred during shipment.

CAUTION: Use this product in the following environments: indoors, use it in the ambient temperature and humidity ranges indicated in the instruction manual, use it in locations where corrosive gases (especially harmful gases, ammonia, etc.) and flammable gases are not generated.

Suffix code

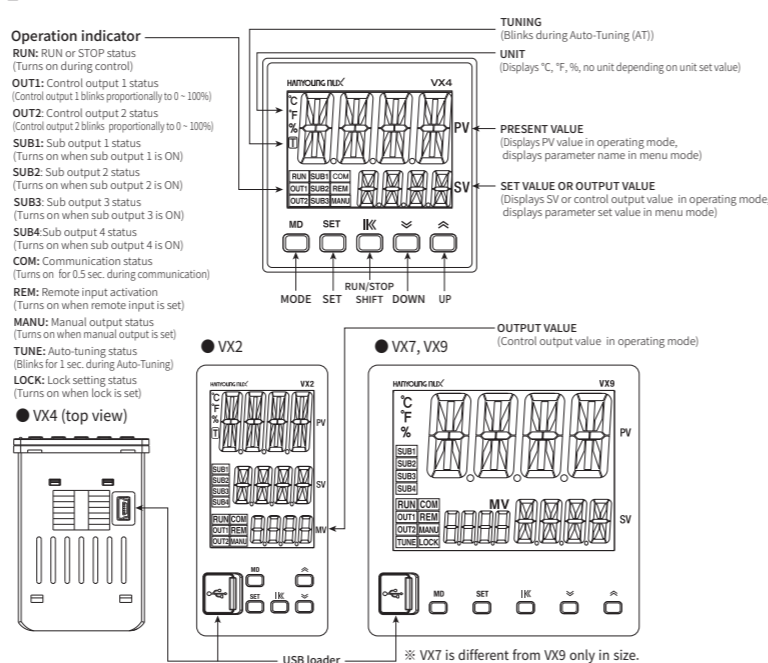
Table with columns: Model, Code, Content. Lists various options like size, sensor, output, power, sub output, communication, retransmission output, digital input, current detection input, and remote input.

* 1) You can select 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.

Basic key description

Table with columns: No., Key, Operation mode *1, Menu mode *1. Describes functions of keys like M, S, C, N, A, D, A1, A2, A4, C, T, H1, R.

Part names and functions



Function key description (Used in operation mode)

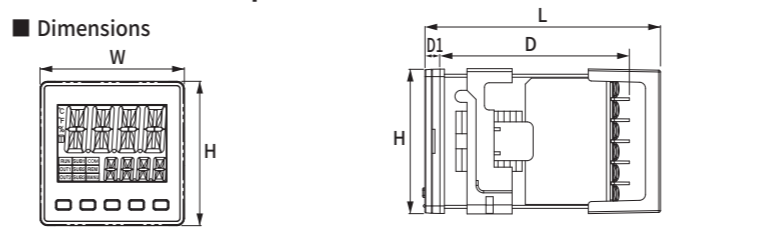
Table with columns: No., Combination, Description. Lists key combinations like SET + MD, SET + M, SET + A, MD + SET, MD + IK, and their corresponding actions.

Remote input

Table with columns: Input, Type, Range, Tolerance. Lists parameters for Direct current, Direct voltage, and Direct voltage (V d.c. / mV d.c.).

※ When direct current is used, it is recommended to connect 250 Ω (0.1% or less, high precision) resistor in parallel to the outside of the terminal. Please note that the 250 Ω (1%) resistor included with the product is not a precision resistor.

Dimensions and panel cutout



Panel cutout

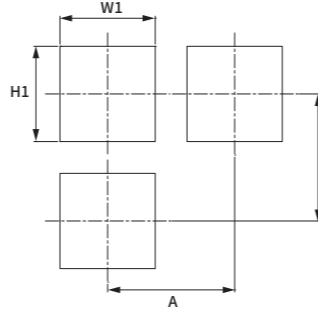
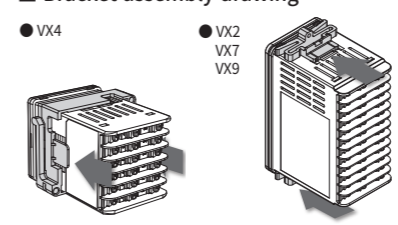


Table with columns: Classification, Type, VX2, VX4, VX7, VX9. Lists dimensions for Product dimensions (W, H, D, D1, L) and Panel cutout (W1, H1, B, W2, H2, D2).

Bracket assembly drawing

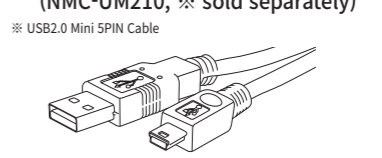


Current transformer (CT-70, sold separately)

※ Available with HBA option (current ratio: 1000 : 1, current detection range: 0.0 - 50.0 A)



USB Loader Cable (NMC-UM210, sold separately)



Protective cover (sold separately)

Table with columns: VX2, VX4, VX7, VX9 and corresponding cover types: TC2A-COV, TC4A-COV, TC7A-COV, TC9A-COV.

Alarm type (An.TY) and alarm operation description

※ Grey part: An.DB, △: SV set value, ▲: AL-n set value, the number indicated in parenthesis () has standby sequence
※ n indicates alarm numbers 1 ~ 4

Table with columns: Alarm type set value, Alarm type, Alarm operation, Absolute alarm, Deviation alarm. Lists 13 alarm types and their corresponding operations.

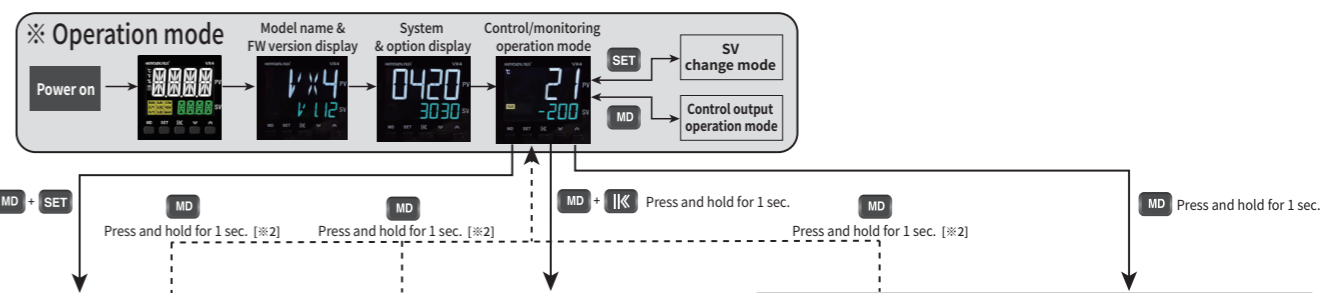
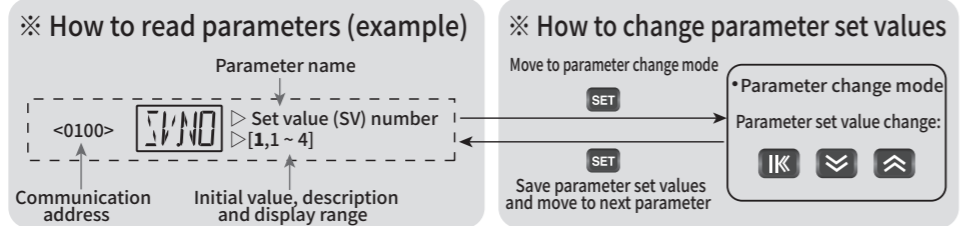
ERROR message display

Table with columns: No., Screen display, Content, Cause and Action. Lists 10 error messages like SYS.E, OPT.E, E2P.E, ADC.E, CAL.E, RJC.E, AT.E, B.OUT, OVR, -OVR.

※ Error messages are displayed on PV display window.

※ For further information, please visit our homepage(www.hanyoungnux.com) and refer to the user's manual in the archive.

Parameter configuration



Full Menu: press and hold MD + SET for 1 sec.

Basic Menu: press and hold MD + IKK for 1 sec.

Simple menu: press and hold MD for 1 sec.

Group	Parameter	Description	Range	
SV group	<0100> SVND	Set value (SV) number	[1,1 ~ 4]	
	<0101> SV-H	Set value (SV) high limit	[1370, refer to input range]	
	<0102> SV-L	Set value (SV) low limit	[-200, refer to input range]	
	<0103> SV-1	Set value 1 (SV 1)	[-200, refer to input range]	
	<0104> SV-2	Set value 2 (SV 2)	[-200, refer to input range]	
	<0105> SV-3	Set value 3 (SV 3)	[-200, refer to input range]	
	<0106> SV-4	Set value 4 (SV 4)	[-200, refer to input range]	
	<a+0> nP	n. proportional band (heating)	[EUS 5.0%, ※1]	
	<a+1> nI	n. integral time (heating)	[240, OFF or 1 ~ 6000]	
	<a+2> nD	n. derivative time (heating)	[60, OFF or 1 ~ 6000]	
CONTROL group	<0200> ATND	Auto-tuning mode	[STND, STND or LOW]	
	<0207> AT	Auto-tuning (AT)	[OFF, OFF or ON]	
	<0208> ARW	Anti-reset wind-up (ARW)	[Auto, Auto or 50.0 ~ 200.0]	
	<0209> ALPA	Alpha	[50, 0 ~ 100]	
	<a=0210> 1.PID	1.PID group		
	<a=0219> 2.PID	2.PID group		
	<a=0228> 3.PID	3.PID group		
	<a=0237> 4.PID	4.PID group		
	<0246> RMP	Ramp-up	[OFF, refer to input range]	
	<0247> UPTM	Ramp-up time	[01.00, 00.01 ~ 99.59]	
ALARM group	<0300+(n-1)x4> AL-n	Alarm n type	[※1, 0 ~ 13]	
	<0301+(n-1)x4> AL-n	Alarm n value	[※1]	
	<0302+(n-1)x4> AL-n	Alarm n deadband	[1, ※1]	
	<0303+(n-1)x4> AL-n	Alarm n output hold status	[RST, RST or SET]	
	<0316> LBTM	Loop break alarm time	[480, 0 ~ 7200]	
	<0317> LBSV	Loop break alarm set value	[2, EUS 0.0 ~ 5.0%]	
	<0318> LBD	Loop break alarm deadband	[2, EUS 0.0 ~ 5.0%]	
	<0319> LBS	Loop break alarm output hold status	[RST, RST or SET]	
	<0320> HB-1	Heater break alarm 1 set value	[OFF, 1.0 ~ 50.0]	
	<0321> HDB-1	Heater break alarm 1 deadband	[0.5, 0.1 ~ 50.0]	
TRANS group	<0400> RETT	Retransmission output type	[PV, PV/SV/MV]	
	<0401> T-SH	Retransmission output high limit	[1370, ※1]	
	<0402> T-SL	Retransmission output low limit	[-200, ※1]	
	<0403> T-AH	Retransm. output high adjust. value	[0, ※1]	
	<0404> T-AL	Retransm. output low adjust. value	[0, ※1]	
	<0405> REME	Enable remote input	[OFF, OFF or ON]	
	<0406> REMH	Remote input high limit	[5.000, 1.000 ~ 5.000]	
	<0407> REML	Remote input low limit	[1.000, 1.000 ~ 5.000]	
	<0408> R-SH	Remote input high scale value	[1370, ※1]	
	<0409> R-SL	Remote input low scale value	[-200, ※1]	
SUB group	<0500> SUB1	Sub 1 output type	[ALM1, ※1]	
	<0501> SUB2	Sub 2 output type	[ALM2, ※1]	
	<0502> SUB3	Sub 3 output type	[ALM3, ※1]	
	<0503> SUB4	Sub 4 output type	[ALM4, ※1]	
	<0504+(n-1)x4> AN-n	Alarm n ON delay time	[0, 0 ~ 999]	
	<0505+(n-1)x4> AN-n	Alarm n OFF delay time	[0, 0 ~ 999]	
	<0506+(n-1)x4> AN-n	Alarm n contact type	[N.O, N.O or N.C]	
	<0507+(n-1)x4> AN-n	Alarm n output hold	[OFF, OFF or ON]	
	<0520> LBN	Loop break alarm ON delay time	[0, 0 ~ 999]	
	<0521> LBO	Loop break alarm OFF delay time	[0, 0 ~ 999]	
INPUT group	<0900> INP	Input type	[K0, ※1]	
	<0901> UNIT	Unit	[°C, ※1]	
	<0904> DP-P	Decimal point position	[1, ※1]	
	<0905> SL-H	Scale high limit	[100.0, 1999 ~ 9999]	
	<0906> SL-L	Scale low limit	[0.0, 1999 ~ 9999]	
	<0907> RJC	Reference junction compensation	[ON, OFF or ON]	
	<0908> FILT	Input filter	[OFF, OFF or 1 ~ 120]	
	<0909> BIAS	Input bias	[0, ※1]	
	OUTPUT group	<0800> CNT1	OUT1 control mode	[PID, ON/OFF or PID]
		<0801> CNT2	OUT2 control mode	[PID, NONE/ON/OFF/PID]
<0802> OACT		Control direction	[REV, REV or DIR]	
<0803> CP		Control cycle (OUT1)	[※1]	
<0804> CPC		Control cycle (OUT2)	[※1]	
<0805> HYS1		ON/OFF control hysteresis (OUT1)	[1, ※1]	
<0806> HYS2		ON/OFF control hysteresis (OUT2)	[1, ※1]	
<0807> EO		Emergency output (OUT1)	[0, 0, ※1]	
<0808> EOC		Emergency output (OUT2)	[0, 0, ※1]	
<0809> QL-H		Control output high limit	[100, ※1]	
SET group	<0700> DTM	Digital input mode	[OFF, OFF or ON]	
	<0701> PDM	Operation mode after power on	[RUN, STOP or RUN]	
	<0702> PINT	Parameter initialization	[OFF, OFF or ON]	
	<0703> LOCK	Parameter set value lock	[0, 0 ~ 2]	
	<0704> E2PL	EEPROM lock during operation	[OFF, OFF or ON]	
	<0041> SVV	System data	[0000 ~ FFFF]	
	<0042> OPTD	Option data	[1, ※1]	
	<0045> FVER	Firmware version	[V0.00 ~ Vx.xx]	
	COMM group	<0600> PPS	Communication protocol	[PCK, ※1]
		<0601> BPS	Baud rate	[9.6K, ※1]
<0602> PRT		Parity bit	[NONE, ※1]	
<0603> STPB		Stop bit	[1, 1 or 2]	
<0604> DLEN		Data length	[8, 7 or 8]	
<0605> ADDR		Address	[1, 1 ~ 99]	
<0606> RPTM		Response delay time	[0, 0 ~ 10]	
<0701> PDM		Operation mode after power on	[RUN, STOP or RUN]	
<0703> LOCK		Parameter set value lock	[0, 0 ~ 2]	

※ 1 : Refer to the User's Manual

※ 2 : Key to move to operation mode screen
Press and hold **MD** in the parameter setting screen for 1 sec. to move to operation mode screen

※ 3 : Move to group name display
Press **MD** during parameter display to move to group name (but during parameter display in n.PID, it moves to n.PID).

※ The parameter display differs depending on suffix code options and parameter settings.