

Multi Indicator KN-2000W SERIES

MANUAL



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

- Please keep these instructions and review them before using this unit.
- Please observe the cautions that follow;
 - Warning** Serious injury may result if instructions are not followed.
 - Caution** Product may be damaged, or injury may result if instructions are not followed.
- The following is an explanation of the symbols used in the operation manual.
 - Caution:** Injury or danger may occur under special conditions.

Warning

- In case of using this unit with machinery(Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device. It may cause a fire, human injury or damage to property.
- Install this unit on a panel. It may cause electric shock.
- Do not connect, repair, or inspect this unit when power is ON. It may cause electric shock.
- Do not disassemble the case. Please contact us if it is required. It may cause electric shock or a fire.
- Wire properly after checking terminal numbers. It may cause a fire.

Caution

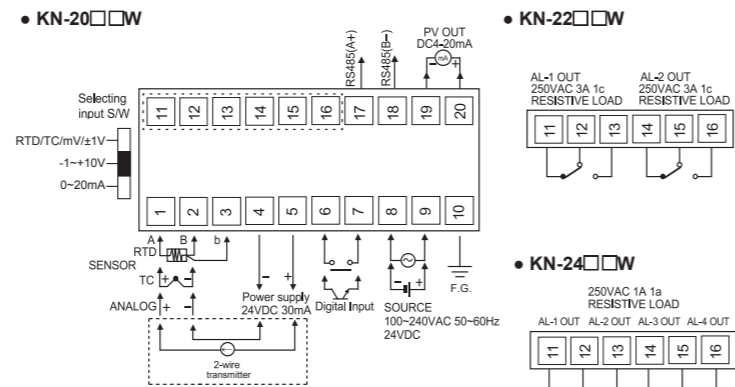
- This unit shall not be used outdoors. It might shorten the life cycle of the product or cause electric shock.
- Please observe the rated specifications. It might shorten the life cycle of the product or cause a fire.
- In cleaning this unit, do not use water or organic solvent. And use dry cloth. It may cause electric shock or a fire.
- Do not use this unit where there are flammable or explosive gas, humidity, direct ray of the sun, radiant heat, vibration and impact etc. It may cause a fire or explosion.
- Do not inflow dust or wire dregs into the unit. It may cause a fire or malfunction.
- Wire it properly after checking terminal numbers when connecting power cable and measuring input. It may cause a fire or explosion.

Ordering information

KN-2	0	0	0	W	
Size	W	DIN W96×H48 mm			
Power supply	0	100-240 VAC 50 to 60 Hz			
	1	24 VDC			
Option output	0	No option			
	1	Transmission output (4-20 mA)			
	4	RS485 communication output			
	5	Transmission output (4-20 mA) + RS485 communication output			
Alarm output	0	No alarm output			
	2	2EA alarm output			
	4	4EA alarm output			
Item	KN-2	Multi Indicator			

* The above specifications are subject to change without notice.

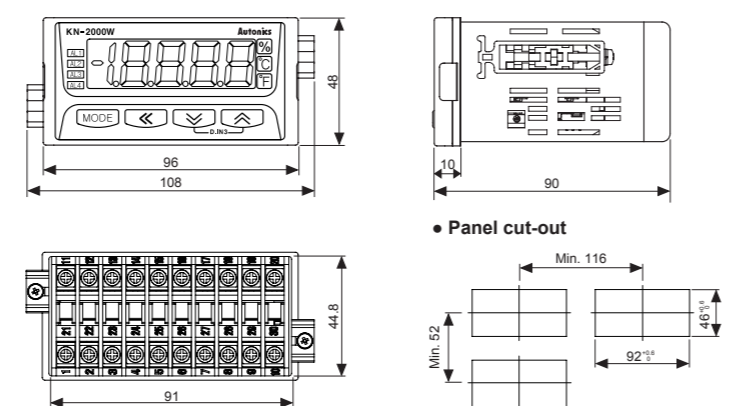
Connections



Part descriptions

- Display part (red)**
 - Run mode: Displays current measurement value.
 - Parameter set mode: Displays parameter and SV.
- Unit indicator:** Displays the set unit.
- Alarm output indicator** : Turns ON when the alarm is ON.
- MODE key** : Used to enter parameter set mode, move to parameters, save SV and return to RUN mode.
- Navigation keys** : Used to change parameter SV.
- D.IN3** : Press the **MODE** and **Navigation** keys for 3 sec. at the same time, it operates the set function (alarm clear, display hold, zero-point adjustment) at [dI - E] at program mode.

Dimensions



Input type and range

Input type	Parameter	Input range(°C)	Input range(°F)	
Thermo-couple	K(CA)	E C - P	-200.0 to 1350.0	-328 to 2462
	J(IC)	E C - J	-200.0 to 800.0	-328.0 to 1472.0
	E(CR)	E C - E	-200.0 to 800.0	-328.0 to 1472.0
	T(CC)	E C - E	-200.0 to 400.0	-328.0 to 752.0
	R(PR)	E C - r	0.0 to 1750.0	32 to 3182
	B(PR)*	E C - b	400.0 to 1800.0	752 to 3272
	S(PR)*	E C - S	0.0 to 1750.0	32 to 3182
	N(NN)*	E C - n	-200.0 to 1300.0	-328 to 2372
	C(W5)*	E C - C	0 to 2300	32 to 4172
	L(IC)*	E C - L	-200.0 to 900.0	-328.0 to 1652.0
	U(CC)*	E C - U	-200.0 to 400.0	-328.0 to 752.0
	Platinel II*	E C - P	0.0 to 1390.0	32 to 2534
RTD	Cu50Ω*	C U 5 0	-200.0 to 200.0	-328.0 to 392.0
	Cu100Ω*	C U 1 0	-200.0 to 200.0	-328.0 to 392.0
	JPt100Ω	J P E . 1	-200.0 to 600.0	-328.0 to 1112.0
	DPt50Ω	d P E . 5	-200.0 to 600.0	-328.0 to 1112.0
	DPt100Ω	d P E . 1	-200.0 to 850.0	-328.0 to 1530.0
Analog	Current	0.00 - 20.00 mA	R A A 1	-19999 to 19999 (display range is variable depending on decimal point position)
		4.00 - 20.00 mA	R A A 2	
		-50.00 - 50.00 mV	R A U 1	
	Voltage	-200.0 - 200.0 mV	R A U 2	
		-1.0000 - 1.0000 V	R A U 1	
		-1.000 - 10.000 V	R A U 2	

*Above input types which have the * mark are not displayed.
To display the above input types, supply the power with pressing the **MODE** key.

Specification

Series	KN-2000W
Power supply	AC voltage 100-240 VAC 50 to 60 Hz DC voltage 24 VDC
Allowable voltage range	90 to 110% of rated voltage
Power consumption	AC voltage Max. 8 VA DC voltage Max. 3 W
Display method	4 1/2 digit; 7 Segment LED Display (red, green, yellow, character size: W10 × H17mm)
Input type	RTD JPt100Ω, DPt100Ω, DPt50Ω, Cu50Ω, Cu100Ω (5 types) Thermocouple K, J, E, T, R, B, S, N, C (W5), L, U, PLII (12 types)
Digital input	• Voltage : ±1.0000 V, ±50.00 mV, ±200.0 mV, -1.000 V-10.000 V (4 types) • Current : 4.00-20.00 mA, 0.00-20.00 mA (2 types)
Sub output	Alarm output 2-point : Relay contact capacity 250 VAC 3 A 1c, 4-point : Relay contact capacity 250 VAC 1 A 1a Transmission output ISOLATED DC 4-20 mA (PV transmission) load resistance max. 600 Ω (accuracy: ±0.2%F.S., resolution: 8000) Com. output RS485 (Modbus RTU)
Display accuracy	±0.2% F.S. ±1digit (25±5 °C) ±0.3% F.S. ±1digit (-10 to 20 °C, 30 to 50 °C) In case of thermocouple and below -100 °C input, [±0.4% F.S.] ±1digit ×TC-T, TC-U is min. ±2.0 °C
Setting method	Set by front keys or RS485 communication
Alarm output hysteresis	Set ON/OFF interval (1 to 999 digit)
Sampling cycle	Analog input : 100 ms, Temperature sensor input : 250 ms
Dielectric voltage	200 0VAC 50/60 Hz for 1 min. (between input terminal and power terminal)
Vibration	0.75 mm amplitude at frequency of 5 to 55 Hz (for 1 min.) in each of X, Y, Z directions for 2 hours
Relay life cycle	2-point Mechanical: Min. 10,000,000, Electrical: Min. 100,000 (250 VAC 3 A resistance load) 4-point Mechanical: Min. 20,000,000, Electrical: Min. 500,000 (250 VAC 1 A resistance load)
Insulation resistance	Min. 100 MΩ (at 500VDC megger)
Noise resistance	Square shaped noise by noise simulator (pulse width 1 μs) ±2 kV
Memory retention	Approx. 10 years (non-volatile semiconductor memory type)
Environment	Ambient temp. -10 to 50 °C, storage: -20 to 60 °C Ambient humi. 35 to 85%RH, storage: 35 to 85%RH
Approval	CE
Unit weight	Approx. 200 g

*Environment resistance is rated at no freezing or condensation.

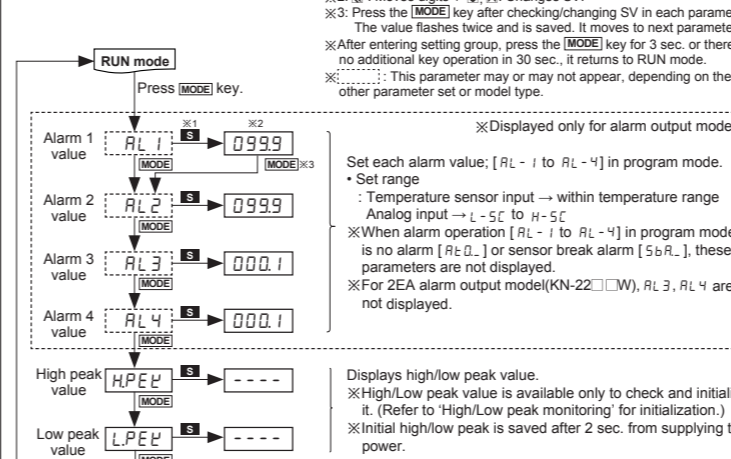
Communication

- Communication set [Program mode: Addr, bAUd]**
You can set communication address [Addr] and communication speed [bAUd] for RS485 communication.
- Communication write enable/disable [Program mode: CoNw]**
You can set to enable [EnR] or disable [dI 5R] or writing parameter setting by RS485 communication.
- Communication manual**
Refer to communication manual for RS485 communication. Visit our web site (www.autonics.com) to download communication manual and software [Integrated device management program: DAQMaster].
- Software [Integrated device management program: DAQMaster]**
Integrated device management program, DAQMaster, is able to set and monitor parameters. It is available only for RS485 communication models.
- Communication specifications**

Item	Specifications
Com. method	RS485 2-wire half duplex
Com. speed(BPS)	9600, 4800, 2400, 1200
Converter	Converter built in RS232
Max. connections	32 units
Com. distance	Max. 1200m (within 700m recommended)
Protocol	MODBUS 1.1 RTU
Parity	None
Hard disk	Stop Bit 1Bit
Data length	8Bit
- Minimum requirements**

Item	Minimum requirements
System	IBM PC compatible computer with Intel Pentium III or above
Operating system	Microsoft Windows 98/NT/XP/Vista/7
Memory	256MB or more
Hard disk	More than 1GB of free hard disk space
VGA	1024×768 or higher resolution display
Others	RS-232 serial port(9-pin), USB port

Monitoring mode



Program mode

