1-Channel Digital Temperature Indicators

KN-2000W Series

CATALOG

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
The specifications, dimensions, etc are subject to change without notice for product improvement Some models may be discontinued without notice.

Features

- High accuracy with 16 bit ADC (±0.2% F.S.)
- Max. display range: -19999 to 19999
- Multi-input
  - Thermometer 12 types
  - RTD 5 types
  - Analog: Current 2 types/voltage 6 types
- Auto display color change function
  - Selectable indicator colors when error occurs or alarm operates
- Various output options
  - Alarm output: 2 points/4 points
  - 4-20 mA transmission output (isolated), RS485 Communication output
- Various functions
  - High/Low peak input monitoring
  - Alarm output (upper/lower, sensor break)
  - Transmission output/display scale
  - Digital input (DI), etc.
- Built-in power supply for sensor/transmitter (24 VDC)

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website .

K	N	-	2	❶	❷	❸	W

❶ Alarm output
0: No (Option output: Transmission is not available)
2: 2 alarm
4: 2 alarm

❷ Option Output
0: No
1: PV transmission
4: Communication
5: PV transmission + Communication

❸ Power supply
0: 100-240 VAC~ 50/60 Hz
1: 24 VDC⎓

Product Components

- Product
- Instruction manual
- Bracket ×2

Software

Download the installation file and the manuals from the Autonics website.

■ DAQMaster

DAQMaster is comprehensive device management program. It is available for parameter setting, monitoring.

Specifications

Series		KN-2000W Series	
		AC voltage	DC voltage
Power supply		100 - 240 VAC~ 50/60 Hz	24 VDC⎓
Power consumption		≤ 8 VA	≤ 3 W
Sampling period		• Thermocouple, RTD: 250 ms • Analog: 100 ms	
Input specification		Refer to 'Input Type and Using Range'.	
Digital input	Contact	• ON: ≤ 2 kΩ • OFF: ≥ 90 kΩ	
	Non contact	• Residual voltage: ≤ 1.0 V • Leakage current: ≤ 0.03 mA	
	Outflow current	≈ 0.2 mA	
Option output	Alarm	• 2 point relay: 250 VAC~ 3 A 1c • 4 point relay: 250 VAC~ 1 A 1a	
	PV Transmission	ISOLATED DC 4-20 mA (Load resistance: ≤ 600 Ω)	
	RS485 comm.	Modbus RTU	
Display type		7 Segment (Red, Green, Yellow), LED type	
Alarm output Hysteresis		1 to 999 digit	
Relay life cycle	Mechanical	• 2 point: ≥ 10,000,000 operations • 4 point: ≥ 20,000,000 operations	
	Electrical	• 2 point: ≥ 100,000 operations(Load resistance: 250 VAC~ 3 A) • 4 point: ≥ 500,000 operations (Load resistance: 250 VAC~ 1 A)	
Dielectric strength		Between input terminal and power terminal: 2,000 VAC~ 50/60 Hz for 1 min	
Vibration		0.75 mm amplitude at frequency of 5 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours	
Insulation resistance		≥ 100 MΩ (500 VDC⎓ megger)	
Noise immunity		±2 kV square shaped noise (pulse width 1 μs) by noise simulator	
Memory retention		≈ 10 years (non-volatile semiconductor memory type)	
Ambient temperature		-10 to 50 °C, storage: -20 to 60 °C (no freezing or condensation)	
Ambient humidity		35 to 85%RH, storage: 35 to 85%RH (no freezing or condensation)	
Approval		CE EAC	
Unit weight (packaged)		≈ 200 g (≈ 332 g)	

Communication Interface

■ RS485

Comm. protocol	Modbus 1.1 RTU
Maximum connection	32 units
Synchronous method	Asynchronous
Comm. method	Two-wire half duplex
Comm. effective range	≤ 1,200 m (≤ 700 m recommended)
Comm. speed	1,200 / 2,400 / 4,800 / 9,600 (default) / 19,200 bps (parameter)
Data bit	8 bit (fixed)
Parity bit	None (fixed)
Stop bit	1 bit (fixed)

Input Type and Using Range

Input type			Display	Using range (°C)	Using range (°F)
Thermo-couple	K (CA)		tC-H	-200.0 to 1350.0	-328 to 2462
	J (IC)		tC-J	-200.0 to 800.0	-328.0 to 1472.0
	E (CR)		tC-E	-200.0 to 800.0	-328.0 to 1472.0
	T (CC)		tC-t	-200.0 to 400.0	-328.0 to 752.0
	R (PR)		tC-r	0.0 to 1750.0	32 to 3182
	B (PR)*		tC-b	400.0 to 1800.0	752 to 3272
	S (PR)*		tC-S	0.0 to 1750.0	32 to 3182
	N (NN)*		tC-n	-200.0 to 1300.0	-328 to 2372
	C (W5)*		tC-C	0 to 2300	32 to 4172
	L (IC)*		tC-L	-200.0 to 900.0	-328.0 to 1652.0
	U (CC)*		tC-U	-200.0 to 400.0	-328.0 to 752.0
	Platinel II*		tC-P	0.0 to 1390.0	32 to 2534
RTD	Cu50Ω*		CU50	-200.0 to 200.0	-328.0 to 392.0
	Cu100Ω*		CU10	-200.0 to 200.0	-328.0 to 392.0
	JPt100Ω		JPt.1	-200.0 to 600.0	-328.0 to 1112.0
	DPt50Ω		dPt.5	-200.0 to 600.0	-328.0 to 1112.0
	DPt100Ω		dPt.1	-200.0 to 850.0	-328.0 to 1530.0
Analog	Current	0.00 - 20.00mA	A.nA1	- 19999 to 19999 (Display range is variable according to decimal point position.)	
		4.00 - 20.00mA	A.nA2		
	Voltage	- 50.00 - 50.00mV	A.nu1		
		- 200.0 - 200.0mV	A.nu2		
		-1.0000 - 1.0000V	A-u1		
		- 1.000 - 10.000V	A-u2		

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

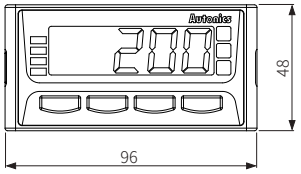
■ Display accuracy

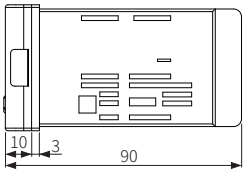
Input type	Using temperature	Display accuracy
Thermocouple	At room temperature (25 °C ±5 °C)	PV ±0.2% F.S. ±1 digit • Thermocouple below -100 °C: (PV ±0.4% F.S.) ±1digit
RTD	Out of room temperature range	PV ±0.3% F.S. ±1 digit

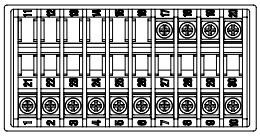
- In case of TC-T, TC-U, ±2.0 °C will be added to the degree standard.

Dimensions

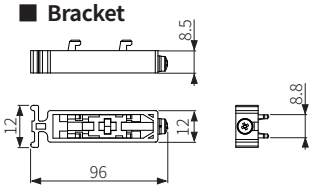
- Unit: mm, For the detailed drawings, follow the Autonics website.



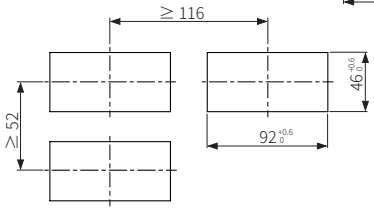




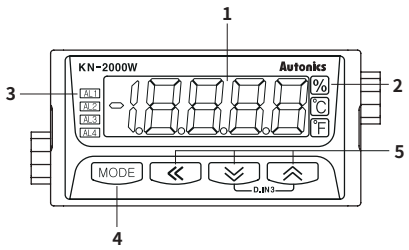
■ Bracket



■ Panel cut-out



Unit Descriptions



1. Display part(Red)
Run mode: Displays PV (Present value).
Setting mode: Displays parameter and setting value.

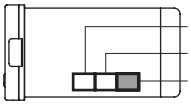
2. Unit Indicator
Displays the set unit.

3. Alarm output indicator
Turns ON when the alarm is ON

4. [MODE] key
Used to enter parameter set mode, move to parameters, save SV and return to RUN mode.

5. [◀], [▲], [▼] key
Used to enter and change parameter setting value.

6. Selection switch for input specification



RTD / TC / mV / ±1 V: Select it for RTD, Thermocouple, ±1 V, mV input
-1 - 10 V: Select it for -1 - 10 VDC⎓ input
0 - 20 mA: Select it for DC 0 (4) - 20 mA input (default)

- The setting of input type selection switch and the setting value of input type parameter should be same and it can display the proper measurement value.

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