



Features

- Compact DIN size (24 x 48 mm) panel
- Displays up to 4+1/2 digits despite its compact size
- Measurement range can be changed by switching the input range

Ordering Code

A8 ① ② ③ - ④

Series	① Power supply	② Display	③ Input	④ Output option	Description
A8					A8000 series
	3				DC5 V (-5%) - 12 V (+10%)
	4				DC12 V-24 V $\pm$ 10%
		1			With switches
		2			Without switches *
			1		DC voltage measurement
			2		DC current measurement
			4		AC voltage measurement (True-RMS)
			5		AC current measurement (True-RMS)
			B		Process signal measurement
			C		Thermocouple measurement
			D		RTD measurement
				01	Display only (no BCD output, no external control)
				02	BCD output (TTL) + external control
				03	BCD output (Open collector) + external control

*When ordering, please specify the range, scaling, and other settings. The unit will be configured at the factory before shipment.

Input Specifications

■DC Measurement 1 2 B

Code	Range	Measurement range	Max. resolution	Input resistance	Max. input	Accuracy
1	11	±199.99 mV	10 μV	Approx. 100 MΩ	±50 V	±(0.1% rdg +2 digit)
	12	±1.9999 V	100 μV			
	13	±19.999 V	1 mV	Approx. 1 MΩ	±250 V	
	14	±199.99 V	10 mV			
2	22	±1.9999 mA	0.1 μA	Approx. 10 Ω	±50 mA	±(0.2% rdg +2 digit)
	23	±19.999 mA	1 μA			
	24	±199.99 mA	10 μA	Approx. 0.1 Ω	±3 A	
	25	±1999.9 mA	100 μA			
B	1V	1–5 V	1 mV	Approx. 1 MΩ	±50 V	±(0.1% rdg +3 digit)
	2A	4–20 mA	10 μA	Approx. 10 Ω	±50 mA	±(0.2% rdg +3 digit)

■AC Measurement 4 5

Code	Range	Measurement range	Max. resolution	Input resistance	Max. input	Accuracy
4	11	0–199.99 mV	10 μV	Approx. 100 MΩ	50 V	±(0.2% rdg +20 digit)
	12	0–1.9999 V	100 μV			
	13	0–19.999 V	1 mV	Approx. 1 MΩ	250 V	
	14	0–199.99 V	10 mV			
5	23	0–19.999 mA	1 μA	Approx. 10 Ω	50 mA	±(0.5% rdg +20 digit)
	24	0–199.99 mA	10 μA			
	25	0–1999.9 mA	100 μA	Approx. 0.1 Ω	3 A	

Frequency range 40 Hz to 1 kHz

Dead zone 0-99 digit (fixed at 0 display)

Response time Approx. 1 s

*Accuracy applies to sine waves of 5% or more of full scale.

■Thermocouple Measurement C

Code	Range	Input	Measurement / display range	Max. resolution	Accuracy
C	KA	K Thermocouple	-50.0 to +199.9°C	0.1°C	$\pm$ 0.5%fs
	KB	K Thermocouple	-50 to +1200°C	1°C	$\pm$ 0.2%fs
	J	J Thermocouple	-50 to +1000°C		$\pm$ 0.6%fs
	T	T Thermocouple	-50 to +400°C		$\pm$ 0.4%fs
	S	S Thermocouple	0 to +1700°C		
	R	R Thermocouple	-10 to +1700°C		
	B	B Thermocouple	+100 to +1800°C		

*Accuracy of B thermocouple applies at 500°C or above.

Cold junction compensation error $\pm$ 2°C

Burnout alarm Displays "----"

Internal resistance 50 Ω or less

*When ordering, please specify the range, scaling, and other settings. The unit will be configured at the factory before shipment.

■RTD Measurement D

Code	Range	Input	Measurement / display range	Max. resolution	Accuracy
D	PA	Pt100 Ω	-100.0 to +199.9°C	0.1°C	$\pm$ 0.15%fs
	JPA	JPt100 Ω		1°C	$\pm$ 0.3%fs
	PB	Pt100 Ω	-100 to +600°C		
	JPB	JPt100 Ω	-100 to +500°C		

External resistance RTD: 10 Ω or less per lead wire

Sensor current Approx. 1 mA

Burnout alarm Displays "----"

Common Specifications

Display	Red 7-segment LED (character height 10 mm)
Polarity display	"-" is displayed automatically when the result is negative
Display range	-19999 to 19999
Scaling	Offset: $\pm$ 19999, Full scale: $\pm$ 19999 (setting range) *Temperature input: fixed scaling (cannot be changed)
Over range display	Displays O.L. or -O.L.
Decimal point	Configurable *Temperature input is fixed per range
Zero display	Leading zero suppression
Operating temp. / humidity range	0 to +50°C, 35-85%RH (non-condensing)
Power supply	DC5 V (-5%)-12 V (+10%), DC12 V-24 V $\pm$ 10%
Power consumption	Approx. 1.5 W max.
Dimensions	24(H) x 48(W) x 89.1(D) mm
Weight	Approx. 70 g
Dielectric strength	Power-input terminal / each output terminal: DC500V for 1 min. Input-each output terminal: DC500V for 1 min. Case-each terminal: AC1500V for 1 min.
Insulation resistance	100 M Ω or more at DC500V between the above terminals
Sampling rate	DC/Process input: approx. 40 ms (25 times/s) to approx. 8 s (0.125 times/s). AC/Temperature input: approx. 80 ms (12.5 times/s) to approx. 16 s (0.0625 times/s)
Moving average count	Select from [None / 2 / 4 / 8 / 16 / 32]
Display update cycle	Approx. 40 ms (25 times/s) max.
Sensor power supply	None
Standard accessories	Unit sticker x3, BCD connector (with BCD output option)

Option Specifications

External Control

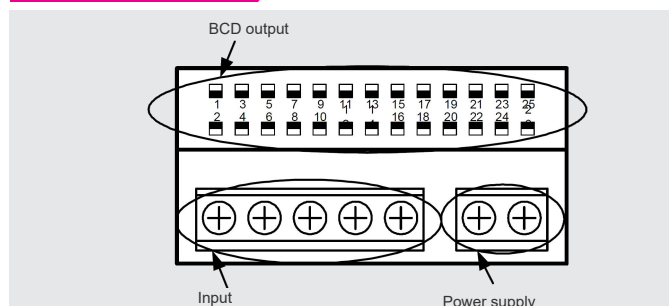
Start / Hold	Controls the start/stop of measurement at any timing
Digital zero	Sets the display to zero at any timing
Peak hold	Holds the [Max.] / [Min.] / [Max.-Min.] value

BCD Output

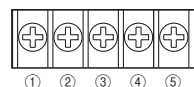
Output method TTL or open collector

- **TTL specifications:** Output logic: switchable.
Output signal: TTL level fan-out = 2, CMOS-compatible.
- **Open collector specifications:** Output logic: switchable.
Transistor output capacity: DC30V 10 mA.
Output saturation voltage: 1.2 V or less (at 10 mA).
- **ENABLE input specifications:** Function: shorting the ENABLE and D.COM terminals sets all BCD outputs to high impedance (TTL) or turns the transistor OFF.
Control signal HI level: 3.5–5 V relative to the D.COM terminal.
Control signal LO level: 0–1.5 V relative to the D.COM terminal. Input current: –0.5 mA.

Terminal Connections



Input

Applicable lead wire:
22–16 AWG

DC Voltage input 1		
No.	Name	Description
1	HI (13, 14)	Input terminal (+) 13, 14 range
2	HI (11, 12)	Input terminal (+) 11, 12 range
3	LO	Input terminal (–)
4	NC	No connection
5	NC	

DC Small Current input 2		
No.	Name	Description
1	HI (24, 25)	Input terminal (+) 24, 25 range
2	HI (22, 23)	Input terminal (+) 22, 23 range
3	LO	Input terminal (–)
4	NC	No connection
5	NC	

AC Voltage input 4		
No.	Name	Description
1	HI (13, 14)	Input terminal (+) 13, 14 range
2	HI (11, 12)	Input terminal (+) 11, 12 range
3	LO	Input terminal (–)
4	NC	No connection
5	NC	

AC Current input 5		
No.	Name	Description
1	HI (24, 25)	Input terminal (+) 24, 25 range
2	HI (23)	Input terminal (+) 23 range
3	LO	Input terminal (–)
4	NC	No connection
5	NC	

Process input B		
No.	Name	Description
1	HI (1V)	Input terminal (+) 1V range
2	HI (2A)	Input terminal (+) 2A range
3	LO	Input terminal (–)
4	NC	No connection
5	NC	

Thermocouple input C		
No.	Name	Description
1	HI (TC)	Input terminal (+) thermocouple
2	LO (TC)	Input terminal (–) thermocouple

*Terminals 3, 4, and 5 do not exist for thermocouple input.

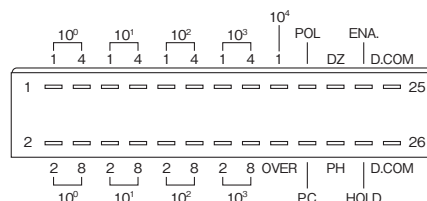
RTD input D		
No.	Name	Description
1	RTD (A)	Input terminal, resistance element lead wire
2	RTD (B)	Input terminal, resistance element lead wire
3	RTC (C)	Input terminal, lead-resistance cancel wire
4	NC	No connection
5	NC	

Power supply



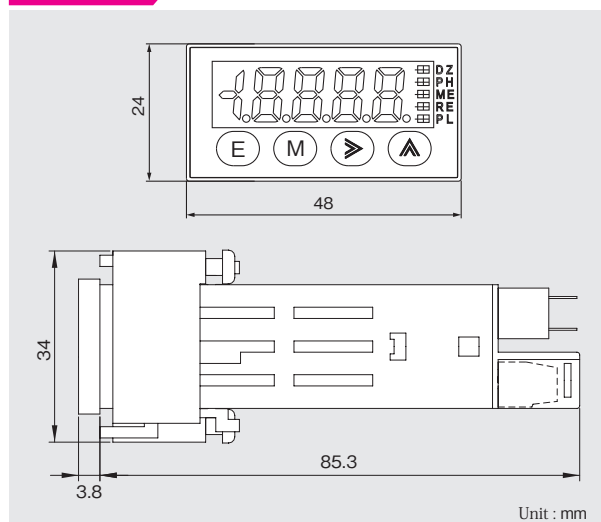
DC Power supply		
No.	Name	Description
6	POWER	Power supply terminal (–)
7	POWER	Power supply terminal (+)

BCD Output Connector



No.	Name	Description
1–4	10 ⁰ 1, 2, 4, 8	BCD 10 ⁰ digit, bit 1/2/4/8 output
5–8	10 ¹ 1, 2, 4, 8	BCD 10 ¹ digit, bit 1/2/4/8 output
9–12	10 ² 1, 2, 4, 8	BCD 10 ² digit, bit 1/2/4/8 output
13–16	10 ³ 1, 2, 4, 8	BCD 10 ³ digit, bit 1/2/4/8 output
17	10 ⁴ 1	BCD 10 ⁴ digit, bit 1 output
18	OVER	BCD overflow output
19	POL	BCD polarity output
20	P.C	BCD print command output
21	DZ	Digital zero terminal
22	PH	Peak hold terminal
23	ENABLE	BCD enable terminal
24	HOLD	Hold terminal
25, 26	D.COM	Common terminal for BCD output and external control

Dimensions



Panel Cutout

