

Universal Alarm Indicator

Model PCA13

OVERVIEW

The PCA13 Universal Alarm Indicator is a large-display measurement device which enables selection between three types of input: thermocouple, resistance temperature element, and analog (1 to 5 V DC or 4 to 20 mA DC).

The high-performance, multifunction PCA13 has two standard outputs: a 4 to 20 mA DC isolation output and two relay contacts to be used as warning outputs.



FEATURES

- The PCA13 provides universal input selection between five types of thermocouple input, a resistance temperature element input, and an analog signal input.
- As a standard feature, two relay contacts are provided for warning outputs. The output can be set to H/L, H/HH, or L/LL.
- A 4 to 20 mA DC isolation output is a standard feature.
- For loop checking, it is possible to output 4-20 mA DC. Thus, there is no need to provide a separate constant current generator.
- This unit has a large, 15 mm LED display switchable between red and green.

APPLICATIONS

- As a pressure switch in combination with a pressure transmitter.
- As a flow switch in combination with a flowmeter.
- As a level switch in combination with a liquid level meter.
- As a temperature switch in combination with a thermocouple or resistance temperature element.
- As a 4 to 20 mA DC isolation output generator.
- As a warning device for input signal monitoring.
- As a constant current generator for loop checking.

SPECIFICATIONS**Input**

(1) 1 to 5 V DC or 4 to 20 mA DC input

Input resistance

1 M Ω (1 to 5 V DC)10 Ω (4 to 20 mA DC)

Scaling

-9999 to 9999

Measurement error

 \pm (0.1% indicated value + 5 digits)

(2) Thermocouple input

R sensor: 0 to 1749 °C (32 to 3180 °F)

K sensor: -199 to 1349 °C (-326 to 2460 °F)

J sensor: -199 to 899 °C (-326 to 1650 °F)

T sensor: -199 to 399 °C (-326 to 750 °F)

B sensor: 600 to 1799 °C (1112 to 3270 °F)

Measurement error: \pm (0.3% indicated value + 1 °C)

(3) Resistance temperature element

Pt100 $\frac{1}{2}$

-199.9 to 649.9 °C (-327.8 to 999.9 °F)

Measurement error

 \pm (0.2% indicated value + 0.3 °C)**Output**

(1) 4 to 0 mA DC (isolation output)

Load resistance : 0 to 600 $\frac{1}{2}$ Linear accuracy : \pm 0.1% of scale value

Scaling : -9999 to +9999

(2) Alarm output (relay contact, common)

Output contacts

2 contacts

Comparison methods

2 point independent setting (H/L, H/HH, or L/LL)

Contact capacity

125 V AC / 0.5A or 250 V AC / 0.1 A

Output delay

0 - 100s, divisible by 1s

Power Source

90 - 132 V AC or 180 - 264 V AC, 50 / 60 Hz

Switchable inside unit

Loop Check Function

Output

4 to 20 mA DC

Output settings

Division possible up to 0.1% from 0 to 100%

Outputs 4 to 20 mA DC corresponding to set %

Linear accuracy

 \pm 0.1% of scale value

Load resistance

0 to 600 Ω

Indication

E is displayed in the most significant digit position of the LED display when this function is chosen.

Reset Function

Returns to alarm comparison output

Hold Function

Saves alarm comparison output, measured data

Display

Main display

7-segment red or green LEDs

4-character display, LED/character height 15 mm

With open input

0000 (blinking)

Alarm display

two-point AL1 / AL2, red LEDs

Input / Function Switching

Switched using dip-switches

SW1: Pt100 $\frac{1}{2}$ / °C

SW2: R sensor / °C

SW3: K sensor / °C

SW4: J sensor / °C

SW5: T sensor / °C

SW6: B sensor / °C

SW7: Pt100 $\frac{1}{2}$ / °F

SW8: R sensor / °F

SW9: K sensor / °F

SWA: J sensor / °F

SWB: T sensor / °F

SWC: B sensor / °F

SWD: 1-5 V DC or 4-20 mA DC

SWE: loop check function

Sampling Frequency

2.5 times / sec

Indication Frequency

F 400 ms

M 800 ms (average of 2 sampled values)

S 2 s (average of 5 sampled values)

Ambient Temperature Range

0 to 50 °C

Storage Temperature Range

-20 to 70 °C

Case Material

ABS Resin

Data Setting

set using dip-switches inside front panel

Installation

Panel installation using special fasteners

Weight

approx. 500 g

Power Consumption

Approx. 5 VA

Insulation Resistance

500 V DC, 100 MΩ or greater

Dielectric strength

Between input terminals and relay terminals

1000 V AC, 1 min.

Between input terminals, relay terminals and outer box

1500 V AC, 1 min.

Between power supply terminals and relay terminals

1500 V AC, 1 min.

Between power supply terminals and ground, outer box

2100 V AC, 1 min.

Between input terminals and analog output terminals

500 V AC, 1 min.

Accessories

Unit seal

Shipment data setting when ex-factory

SW NO.	Range	Scaling or Output setting	Comparison Setting		Hysteresis	Output Delay	Display Frequency
			AL1	AL2			
0	—	—	—	—	—	—	—
1	Pt100	0.0~500.0	OFF	OFF	1	0	F (400 ms)
2	R	0~1000					
3	K	0~1000					
4	J	0~500					
5	T	0~200					
6	B	0~1000					
7	Pt100	32.0~932.0					
8	R	32~1832					
9	K	32~1832					
A	J	32~932					
B	T	32~392					
C	B	32~1832					
D	Input to receiver	0~4000					
E	Loop check	0					
F	—	—	—	—	—	—	—

MODEL SELECTION

Universal Alarm Indicator

PCA13 - (1) (2) (3) -Options

Basic model no

PCA13

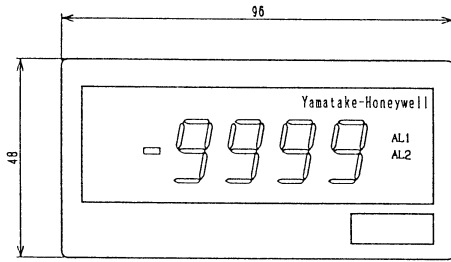
Selection

Option

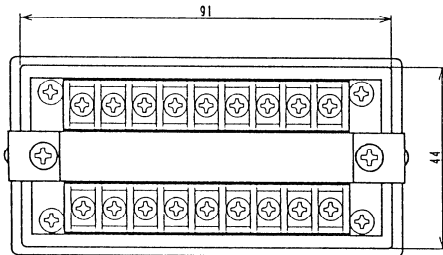
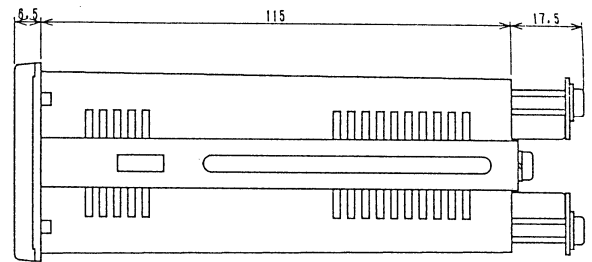
Basic model no			Selection		Option
PCA13			-		
(1)	Power supply	90 V to 132 V AC.	A		
		180 V to 264 V AC.	B		
(2)	Input	Universal Input (1 to 5 V DC, thermocouple, resistance temperature element)	V		
		Universal input (4 to 20 mA DC, thermocouple, resistance temperature element)	A		
(3)	Display color	Green LED	G		
		Red LED	R		
			-		
Options	Options	No option			X
	Test report	With test report			B
	Certification of traceability	With certification of traceability			C

DIMENSIONS

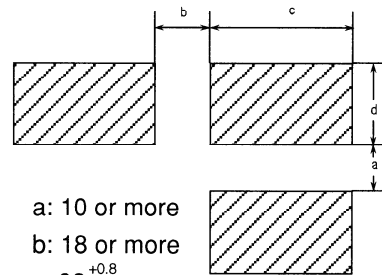
(Unit:mm)



(Rear view)



Dimensions for Panel Cutout



- a: 10 or more
- b: 18 or more
- c: $92^{+0.8}_0$
- d: $45^{+0.6}_0$

Terminal Layout

(Upper Row terminal)

Terminal Name	+	-	A	B	B	Hi	Lo	A. +	A. -
	1	2	3	4	5	6	7	8	9
Function	Thermocouple input		Resistance temperature Element input			1 to 5 Vdc or 4 to 20mAdc input		Analog output	

(Lower Row Terminal)

Terminal Name	AL1	AL2	ALCOM	HOLD	RESET	COM	GND	P2	P1
	1	2	3	4	5	6	7	8	9
Function	a contact output	A contact output	common	Hold	Reset	Common	Ground	Power Supply	
	Alarm contact output								

M3 Terminal screws

Note

Note

Please read the "Terms and Conditions" from the following URL before ordering or use:

<http://www.azbil.com/products/bi/order.html>

Specifications are subject to change without notice.

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