


Temperature Sensor E52

CSM_E52_DS_E_13_1

A Wide Variety of High-precision Temperature Sensors












- New and improved E52 temperature sensor series. Wide selection of sensors compatible with M3 screws
- Ideal for the thermal input devices of Temperature Controllers.
- Select from a wide variety of Temperature Sensors according to the temperature to be measured, location, and environment, and also according to the type and shape of the terminal.

 Refer to *Safety Precautions for All Temperature Controllers*.



Ordering Information

List of Models

Classification	Description	Model and appearance	Temperature range (See note 3.)	Element type	Conductor type	Class	Protective tubing material	Terminal type	Page			
General-purpose Models	Sheathed platinum resistance thermometer	E52-P□AY 	-196°C to 450°C	Pt100	3-conductor system	B	SUS316	Exposed lead wires	5			
		E52-P□C-N 	-200°C to 450°C				ASTM316L	Enclosed terminals	6			
		E52-P□B-N 						Exposed terminals				
	Standard platinum resistance thermometer	E52-P□C-N 	0°C to 450°C				SUS316	Enclosed terminals	7			
	Sheathed thermocouple	E52-CA□AY E52-IC□AY 	E52-CA□B-N E52-IC□B-N 	0°C to 900°C	K (CA) J (IC)	Non-grounded type	2 (0.75)	ASTM316L	Exposed lead wires	9 to 12		
									Exposed terminals	13		
									Enclosed terminals			
Standard thermocouple		E52-CA□B-N E52-IC□B-N 	E52-CA□C-N E52-IC□C-N 	0°C to 900°C	K (CA) J (IC)	Non-grounded type	2 (0.75)	SUS316	Exposed terminals	14		
									Enclosed terminals	15		
									E52-PR□C-N 	0°C to 1,400°C	R (PR)	
Low-cost Models	Low-cost platinum resistance thermometer	E52-P10AEY	0°C to 250°C	Pt100	3-conductor system	B	SUS316 SUS304	Exposed lead wires	17			
		E52-P6DY	-50°C to 250°C									
		E52-P6FY										
	Low-cost thermocouple	E52-CA□ASY E52-IC□ASY 	E52-CA1DY E52-IC1DY 	0°C to 400°C	K (CA) J (IC)	Non-grounded type Grounded type Non-grounded type	2 (0.75)			18		
										19		
										20		

- Note:**
1. Exclusive models are provided on the following page.
 2. These tables provide general specifications only. Be sure to read the detailed specifications and precautions before use.
 3. The temperature range varies with the material, thickness, construction, and element type of the protective tubing.

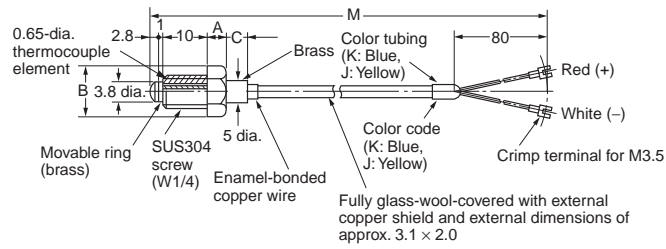
Exposed-lead Models with Screw

Specifications

Element type	K (CA), J (IC)
Element dia.	0.65 mm (single wire)
Class	Class 2 (0.75)
Protective tubing material	SUS304
Thermal contact	Grounded type
Temperature range	0°C to 400°C: K (CA) 0°C to 350°C: J (IC)
Lead wire	0°C to 180°C
Terminal shape	Y-type crimp terminal for M3.5

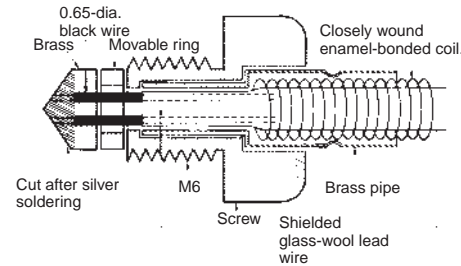
E52-CA1DY, E52-IC1DY

Dimensions



- Note:**
1. The thermocouple is a single wire from the tip to the terminal.
 2. Specify the type of screw (i.e., M6, M8, or W1/4) when ordering.
 3. The thermocouple is not of airtight construction.
 4. OMRON recommends that the tip of the thermocouple is touching the sensing object.

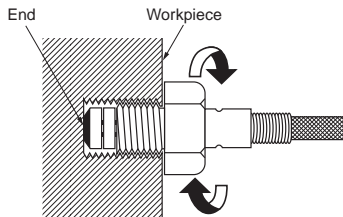
Internal Construction (E52-CA1DY)



Lead wire length (m)	Screw		
	W1/4	M6	M8
A (mm)	5	4	5.3
B (mm)	11.5	11	14
C (mm)	3	4	2.5

Installation Example

Cut a thread into the workpiece, and screw in the thermocouple while pushing in so that the tip makes complete contact.



Note: E52-CA1DY with the same shape and multiple element wires are also available (E52-CA1DY-40). Refer to page 26 for details.

Protective tubing length (mm)	Lead wire length (m)	Element type: K (CA)	Element type: J (IC)
		Model	
M6 screw	1	E52-CA1DY M6 1M	E52-IC1DY M6 1M
	2	E52-CA1DY M6 2M	E52-IC1DY M6 2M
	4	E52-CA1DY M6 4M	E52-IC1DY M6 4M
M8 screw	1	E52-CA1DY M8 1M	E52-IC1DY M8 1M
	2	E52-CA1DY M8 2M	E52-IC1DY M8 2M
	4	E52-CA1DY M8 4M	E52-IC1DY M8 4M
W1/4 screw	1	E52-CA1DY W1/4 1M	E52-IC1DY W1/4 1M
	2	E52-CA1DY W1/4 2M	E52-IC1DY W1/4 2M
	4	E52-CA1DY W1/4 4M	E52-IC1DY W1/4 4M