

Temperature Sensor

E52 (for M3 Screws)

A Wide Variety of High-precision Temperature Sensors

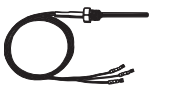
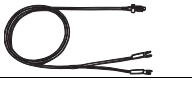
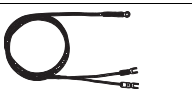
- Ideal for the thermal input devices of Temperature Controllers.
- Select from a wide variety of Temperature Sensors according to the temperature to be measured, location, and environment.
- General-purpose, low-cost, and exclusive models are available.



⚠ Refer to *Safety Precautions for E5CC/E5EC Digital Temperature Controller Datasheet (H177)*.

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	3
	Sheathed thermocouple	E52-CA□AY E52-IC□AY 	0°C to 900°C	K (CA) J (IC)	Non-grounded type	2 (0.75)	ASTM316L	Exposed lead wires	4 to 6
Low-cost Models	Low-cost platinum resistance thermometer	E52-P6DY 	−50°C to 250°C	Pt100	3-conductor system	B	SUS304	Exposed lead wires	8
	Low-cost thermocouple	E52-CA1DY E52-IC1DY 	0°C to 400°C	K (CA) J (IC)	Grounded type	2 (0.75)			
Exclusive Models	Silicone-covered Lead wires	E52-CA1DY-40 	0°C to 300°C	K (CA)	Grounded type	2 (0.75)	SUS304	Exposed lead wires	9
	Crimping Terminal	E52-CA1GTY E52-IC1GTY 	0°C to 300°C	K (CA) J (IC)			---		
	Silicone-covered Lead wires	E52-CA1GTY-14 	0°C to 200°C	K (CA)			---		

Note: 1. These tables provide general specifications only. Be sure to read the detailed specifications and precautions before use.
2. The temperature range varies with the material, thickness, and construction of the protective tubing.

General-purpose Models

The type of resistance thermometer, protective tubing length, and lead length can be specified as shown below.

Model Number Legend

Platinum Resistance Thermometers

E52-□□□Y D=□□□M
 1 2 3 4 5 6 7

1. Element type

P: Pt100

2. Protective tubing length (L)

Specify the length in centimeters within the following range:
 Unit (cm)

Diameter (D)	Length (L)
3.2	7 to 100
4.8	10 to 600
6.4	13 to 1,300

3. Terminal

A: Exposed lead wires

4. Terminal processing

Y: Forked crimped terminals for M3.5

• Examples

Element: Pt100, protective tubing length: 420 mm, exposed leads, protective tubing dia.: 4.8 mm, heat resistive, lead length: 10 m
 E52-P42AY D=4.8 NETU 10M

5. Diameter

3.2: 3.2-mm dia. (Protective tubing construction: Sheathed)
 4.8: 4.8-mm dia. (Protective tubing construction: Sheathed)
 6.4: 6.4-mm dia. (Protective tubing construction: Sheathed)

6. Heat resistance

Code	Temperature range	Lead type
---	-20°C to 70°C Sleeve: 0°C to 70°C	Vinyl-covered
NETU	0°C to 180°C Sleeve: 0°C to 100°C	Glass-wool-covered, externally shielded

7. Lead length (M)

Specify the length in meters within the following range.
 Range: 0.5 and 1 to 100 m

Sheathed Platinum Resistance Thermometers

Refer to Model Number Legend above for the Pt100.

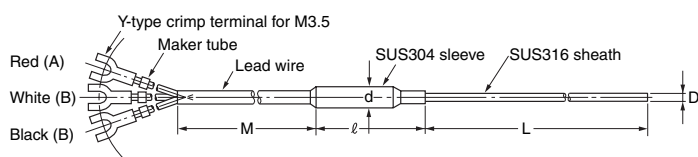
Specifications

Element type	Pt100
Class	JIS class B
Sheath material	SUS316
Sheath outer diameter	3.2 dia., 4.8 dia., 6.4 dia.
Conductor type	3-conductor system
Temperature range	-196°C to 450°C (in dry air)
Terminal shape	Forked crimped terminals for M3.5

● Exposed-lead Models

E52-P□AY

• Dimensions



Unit (mm)

D	d	L
3.2 dia.	8	40
4.8 dia.	8	40
6.4 dia.	8	40

Lead Wire

- Standard (–20°C to 70°C): Fully vinyl-covered with twelve 0.18-dia conductors (0.3 mm thick) and 4.8 mm in outer dia. The sleeve resists a temperature range between 0°C and 70°C.
- Heat Resistive (0°C to 180°C): Fully glass-wool-covered with thirty 0.12-dia. conductors (0.3 mm thick) externally shielded with stainless steel, 4 mm in outer dia. The sleeve resists a temperature range between 0°C and 100°C.
- Lead Wire Length (M): 1, 2, 4, or 8 m

Model Information

Custom-made models are available on request. Refer to *Model Number Legend* on page 2 for details.

Terminal type	Protective tubing diameter D (mm)	Protective tubing length L (cm)	Lead wire type	Lead wire length M (m)			
				1	2	4	8
				Model			
Exposed-lead Models	3.2 dia.	15	Standard	E52-P15AY D=3.2 1M	E52-P15AY D=3.2 2M	E52-P15AY D=3.2 4M	E52-P15AY D=3.2 8M
			Heat resistive	E52-P15AY D=3.2 NETU 1M	E52-P15AY D=3.2 NETU 2M	E52-P15AY D=3.2 NETU 4M	E52-P15AY D=3.2 NETU 8M
		20	Standard	E52-P20AY D=3.2 1M	E52-P20AY D=3.2 2M	E52-P20AY D=3.2 4M	E52-P20AY D=3.2 8M
			Heat resistive	E52-P20AY D=3.2 NETU 1M	E52-P20AY D=3.2 NETU 2M	E52-P20AY D=3.2 NETU 4M	E52-P20AY D=3.2 NETU 8M
		35	Standard	E52-P35AY D=3.2 1M	E52-P35AY D=3.2 2M	E52-P35AY D=3.2 4M	E52-P35AY D=3.2 8M
			Heat resistive	E52-P35AY D=3.2 NETU 1M	E52-P35AY D=3.2 NETU 2M	E52-P35AY D=3.2 NETU 4M	E52-P35AY D=3.2 NETU 8M
	4.8 dia.	20	Standard	E52-P20AY D=4.8 1M	E52-P20AY D=4.8 2M	E52-P20AY D=4.8 4M	E52-P20AY D=4.8 8M
			Heat resistive	E52-P20AY D=4.8 NETU 1M	E52-P20AY D=4.8 NETU 2M	E52-P20AY D=4.8 NETU 4M	E52-P20AY D=4.8 NETU 8M
		35	Standard	E52-P35AY D=4.8 1M	E52-P35AY D=4.8 2M	E52-P35AY D=4.8 4M	E52-P35AY D=4.8 8M
			Heat resistive	E52-P35AY D=4.8 NETU 1M	E52-P35AY D=4.8 NETU 2M	E52-P35AY D=4.8 NETU 4M	E52-P35AY D=4.8 NETU 8M
		50	Standard	E52-P50AY D=4.8 1M	E52-P50AY D=4.8 2M	E52-P50AY D=4.8 4M	E52-P50AY D=4.8 8M
			Heat resistive	E52-P50AY D=4.8 NETU 1M	E52-P50AY D=4.8 NETU 2M	E52-P50AY D=4.8 NETU 4M	E52-P50AY D=4.8 NETU 8M
	6.4 dia.	20	Standard	E52-P20AY D=6.4 1M	E52-P20AY D=6.4 2M	E52-P20AY D=6.4 4M	E52-P20AY D=6.4 8M
			Heat resistive	E52-P20AY D=6.4 NETU 1M	E52-P20AY D=6.4 NETU 2M	E52-P20AY D=6.4 NETU 4M	E52-P20AY D=6.4 NETU 8M
		35	Standard	E52-P35AY D=6.4 1M	E52-P35AY D=6.4 2M	E52-P35AY D=6.4 4M	E52-P35AY D=6.4 8M
			Heat resistive	E52-P35AY D=6.4 NETU 1M	E52-P35AY D=6.4 NETU 2M	E52-P35AY D=6.4 NETU 4M	E52-P35AY D=6.4 NETU 8M
		50	Standard	E52-P50AY D=6.4 1M	E52-P50AY D=6.4 2M	E52-P50AY D=6.4 4M	E52-P50AY D=6.4 8M
			Heat resistive	E52-P50AY D=6.4 NETU 1M	E52-P50AY D=6.4 NETU 2M	E52-P50AY D=6.4 NETU 4M	E52-P50AY D=6.4 NETU 8M

Model Number Legend

The type of resistance thermometer, protective tubing length, and lead length can be specified as shown below.

Thermocouples

E52-□□□Y D=□□□M

1 2 3 4 5 6 7

1. Element type

CA: K

IC: J

2. Protective tubing length (L)

Specify the length in centimeters in the following range: Unit (cm)

Diameter (D)	Length (L)
1	2 to 200
1.6	3 to 500
3.2	5 to 2,000
4.8	8 to 2,300
6.4	10 to 1,200
8	12 to 1,000

3. Terminal

A: Exposed lead wires (element type: K, J)

4. Terminal processing

Y: Forked crimped terminals for M3.5

5. Diameter

Code	Diameter (D)	Protective tubing construction	Protective tubing material
1	1 mm	Sheathed	ASTM316L
1.6	1.6 mm	Sheathed	ASTM316L
3.2	3.2 mm	Sheathed	ASTM316L
4.8	4.8 mm	Sheathed	ASTM316L
6.4	6.4 mm	Sheathed	ASTM316L
8	8 mm	Sheathed	ASTM316L

6. Heat resistance

Code	Temperature range	Lead type
---	-20°C to 70°C Sleeve: 0°C to 70°C	Vinyl-covered
NETU	0°C to 150°C Sleeve: 0°C to 100°C	Glass-wool-covered with external shield

7. Lead length (M)

Specify the length in meters in the following range.

Range: 0.5 and 1 to 100 m

Examples

Element: K, protective tubing length: 420 mm, exposed leads, protective tubing dia.: 4.8 mm, heat resistive, lead length: 10 m

E52-CA42AY D=4.8 NETU 10M

Sheathed Thermocouples

Specifications

Element type	K (CA), J(IC)
Class	JIS class 2 (0.75)
Thermal contact	Non-grounded type
Sheath material	CA: ASTM316L IC: ASTM316L
Terminal shape	Forked crimped terminals for M3.5

Permissible Temperature in Dry Air

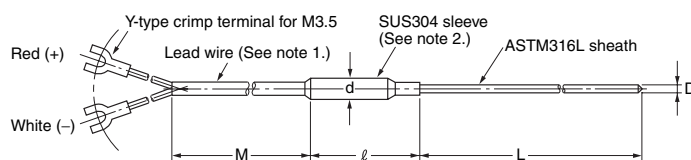
D	Element wire	
	K (CA) ASTM316L	J (IC) ASTM316L
1 dia.	650°C	450°C
1.6 dia.	650°C	450°C
3.2 dia.	750°C	650°C
4.8 dia.	800°C	750°C
6.4 dia.	800°C	750°C
8.0 dia.	900°C	750°C

Note: For details on the permissible temperature, refer to page D-5 of Introduction of Temperature Controllers (Cat. No. H900).

● Exposed-lead Models

E52-CA□AY

• Dimensions



Note: 1. Lead Wire (Compensating Conductor)

- Standard (-20°C to 70°C): Fully vinyl-covered with seven 0.3-dia. conductors (0.5 mm thick) and external dimensions of 2.4 × 4.1.
 - Heat Resistive (0°C to 150°C): Fully glass-wool-covered with seven 0.3-dia. conductors (0.5 mm thick) with external shield of stainless steel and external dimensions of 2.8 × 4.6. The heat-resistive lead wires cannot be used in locations exposed to water or other liquids.
 - Lead Wire Length (M): 1, 2, 4, or 8 m
2. The sleeve resists temperatures ranging between -20°C and 70°C for standard models and 0°C and 100°C for heat-resistive models.

Unit (mm)

D	d	l
1 dia.	8	55
1.6 dia.	8	55
3.2 dia.	8	55
4.8 dia.	8	55
6.4 dia.	11	55
8 dia.	11	55

Permissible Temperature in Dry Air

D	Element wire	
	K (CA) ASTM316L	
1 dia.	650°C	
1.6 dia.	650°C	
3.2 dia.	750°C	
4.8 dia.	800°C	
6.4 dia.	800°C	
8.0 dia.	900°C	

E52

K (CA) Model Information (E52-CA□AY)

• Model Information

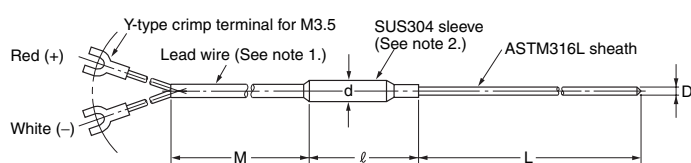
Custom-made models are available on request. Refer to *Model Number Legend* on page 4 for details.

Terminal type	Protective tubing diameter D (mm)	Protective tubing length L (cm)	Lead wire type	Lead wire length M (m)			
				1	2	4	8
				Model			
Exposed-lead Models	1 dia.	15	Standard	E52-CA15AY D=1 1M	E52-CA15AY D=1 2M	E52-CA15AY D=1 4M	E52-CA15AY D=1 8M
			Heat resistive	E52-CA15AY D=1 NETU 1M	E52-CA15AY D=1 NETU 2M	E52-CA15AY D=1 NETU 4M	E52-CA15AY D=1 NETU 8M
		20	Standard	E52-CA20AY D=1 1M	E52-CA20AY D=1 2M	E52-CA20AY D=1 4M	E52-CA20AY D=1 8M
			Heat resistive	E52-CA20AY D=1 NETU 1M	E52-CA20AY D=1 NETU 2M	E52-CA20AY D=1 NETU 4M	E52-CA20AY D=1 NETU 8M
		35	Standard	E52-CA35AY D=1 1M	E52-CA35AY D=1 2M	E52-CA35AY D=1 4M	E52-CA35AY D=1 8M
			Heat resistive	E52-CA35AY D=1 NETU 1M	E52-CA35AY D=1 NETU 2M	E52-CA35AY D=1 NETU 4M	E52-CA35AY D=1 NETU 8M
	1.6 dia.	15	Standard	E52-CA15AY D=1.6 1M	E52-CA15AY D=1.6 2M	E52-CA15AY D=1.6 4M	E52-CA15AY D=1.6 8M
			Heat resistive	E52-CA15AY D=1.6 NETU 1M	E52-CA15AY D=1.6 NETU 2M	E52-CA15AY D=1.6 NETU 4M	E52-CA15AY D=1.6 NETU 8M
		20	Standard	E52-CA20AY D=1.6 1M	E52-CA20AY D=1.6 2M	E52-CA20AY D=1.6 4M	E52-CA20AY D=1.6 8M
			Heat resistive	E52-CA20AY D=1.6 NETU 1M	E52-CA20AY D=1.6 NETU 2M	E52-CA20AY D=1.6 NETU 4M	E52-CA20AY D=1.6 NETU 8M
		35	Standard	E52-CA35AY D=1.6 1M	E52-CA35AY D=1.6 2M	E52-CA35AY D=1.6 4M	E52-CA35AY D=1.6 8M
			Heat resistive	E52-CA35AY D=1.6 NETU 1M	E52-CA35AY D=1.6 NETU 2M	E52-CA35AY D=1.6 NETU 4M	E52-CA35AY D=1.6 NETU 8M
	3.2 dia.	15	Standard	E52-CA15AY D=3.2 1M	E52-CA15AY D=3.2 2M	E52-CA15AY D=3.2 4M	E52-CA15AY D=3.2 8M
			Heat resistive	E52-CA15AY D=3.2 NETU 1M	E52-CA15AY D=3.2 NETU 2M	E52-CA15AY D=3.2 NETU 4M	E52-CA15AY D=3.2 NETU 8M
		20	Standard	E52-CA20AY D=3.2 1M	E52-CA20AY D=3.2 2M	E52-CA20AY D=3.2 4M	E52-CA20AY D=3.2 8M
			Heat resistive	E52-CA20AY D=3.2 NETU 1M	E52-CA20AY D=3.2 NETU 2M	E52-CA20AY D=3.2 NETU 4M	E52-CA20AY D=3.2 NETU 8M
		35	Standard	E52-CA35AY D=3.2 1M	E52-CA35AY D=3.2 2M	E52-CA35AY D=3.2 4M	E52-CA35AY D=3.2 8M
			Heat resistive	E52-CA35AY D=3.2 NETU 1M	E52-CA35AY D=3.2 NETU 2M	E52-CA35AY D=3.2 NETU 4M	E52-CA35AY D=3.2 NETU 8M
		50	Standard	E52-CA50AY D=3.2 1M	E52-CA50AY D=3.2 2M	E52-CA50AY D=3.2 4M	E52-CA50AY D=3.2 8M
			Heat resistive	E52-CA50AY D=3.2 NETU 1M	E52-CA50AY D=3.2 NETU 2M	E52-CA50AY D=3.2 NETU 4M	E52-CA50AY D=3.2 NETU 8M
	4.8 dia.	20	Standard	E52-CA20AY D=4.8 1M	E52-CA20AY D=4.8 2M	E52-CA20AY D=4.8 4M	E52-CA20AY D=4.8 8M
			Heat resistive	E52-CA20AY D=4.8 NETU 1M	E52-CA20AY D=4.8 NETU 2M	E52-CA20AY D=4.8 NETU 4M	E52-CA20AY D=4.8 NETU 8M
		35	Standard	E52-CA35AY D=4.8 1M	E52-CA35AY D=4.8 2M	E52-CA35AY D=4.8 4M	E52-CA35AY D=4.8 8M
			Heat resistive	E52-CA35AY D=4.8 NETU 1M	E52-CA35AY D=4.8 NETU 2M	E52-CA35AY D=4.8 NETU 4M	E52-CA35AY D=4.8 NETU 8M
		50	Standard	E52-CA50AY D=4.8 1M	E52-CA50AY D=4.8 2M	E52-CA50AY D=4.8 4M	E52-CA50AY D=4.8 8M
			Heat resistive	E52-CA50AY D=4.8 NETU 1M	E52-CA50AY D=4.8 NETU 2M	E52-CA50AY D=4.8 NETU 4M	E52-CA50AY D=4.8 NETU 8M
	6.4 dia.	20	Standard	E52-CA20AY D=6.4 1M	E52-CA20AY D=6.4 2M	E52-CA20AY D=6.4 4M	E52-CA20AY D=6.4 8M
			Heat resistive	E52-CA20AY D=6.4 NETU 1M	E52-CA20AY D=6.4 NETU 2M	E52-CA20AY D=6.4 NETU 4M	E52-CA20AY D=6.4 NETU 8M
		35	Standard	E52-CA35AY D=6.4 1M	E52-CA35AY D=6.4 2M	E52-CA35AY D=6.4 4M	E52-CA35AY D=6.4 8M
			Heat resistive	E52-CA35AY D=6.4 NETU 1M	E52-CA35AY D=6.4 NETU 2M	E52-CA35AY D=6.4 NETU 4M	E52-CA35AY D=6.4 NETU 8M
		50	Standard	E52-CA50AY D=6.4 1M	E52-CA50AY D=6.4 2M	E52-CA50AY D=6.4 4M	E52-CA50AY D=6.4 8M
			Heat resistive	E52-CA50AY D=6.4 NETU 1M	E52-CA50AY D=6.4 NETU 2M	E52-CA50AY D=6.4 NETU 4M	E52-CA50AY D=6.4 NETU 8M
	8 dia.	20	Standard	E52-CA20AY D=8 1M	E52-CA20AY D=8 2M	E52-CA20AY D=8 4M	E52-CA20AY D=8 8M
			Heat resistive	E52-CA20AY D=8 NETU 1M	E52-CA20AY D=8 NETU 2M	E52-CA20AY D=8 NETU 4M	E52-CA20AY D=8 NETU 8M
		35	Standard	E52-CA35AY D=8 1M	E52-CA35AY D=8 2M	E52-CA35AY D=8 4M	E52-CA35AY D=8 8M
			Heat resistive	E52-CA35AY D=8 NETU 1M	E52-CA35AY D=8 NETU 2M	E52-CA35AY D=8 NETU 4M	E52-CA35AY D=8 NETU 8M
		50	Standard	E52-CA50AY D=8 1M	E52-CA50AY D=8 2M	E52-CA50AY D=8 4M	E52-CA50AY D=8 8M
			Heat resistive	E52-CA50AY D=8 NETU 1M	E52-CA50AY D=8 NETU 2M	E52-CA50AY D=8 NETU 4M	E52-CA50AY D=8 NETU 8M

● Exposed-lead Models

E52-IC□AY

• Dimensions



Note: 1. Lead Wire (Compensating Conductor)

- Standard (–20°C to 70°C):
Fully vinyl-covered with seven 0.3-dia. conductors (0.5 mm thick) and external dimensions of 2.4 × 4.1.
 - Heat Resistive (0°C to 150°C):
Fully glass-wool-covered with seven 0.3-dia. conductors (0.5 mm thick) with external shield of stainless steel and external dimensions of 2.8 × 4.6
The heat-resistive lead wires cannot be used in locations exposed to water or other liquids.
 - Lead Wire Length (M): 1, 2, 4, or 8 m
2. The sleeve resists temperatures ranging between –20°C and 70°C for standard models and 0°C and 100°C for heat-resistive

Unit (mm)

D	d	l
1 dia.	8	55
1.6 dia.	8	55
3.2 dia.	8	55
4.8 dia.	8	55
6.4 dia.	11	55
8 dia.	11	55

Permissible Temperature in Dry Air

D	Element wire J (IC) ASTM316L
1 dia.	450°C
1.6 dia.	450°C
3.2 dia.	650°C
4.8 dia.	750°C
6.4 dia.	750°C
8.0 dia.	750°C

J (IC) Model Information (E52-IC□AY)

• Model Information

Custom-made models are available on request. Refer to *Model Number Legend* on page 4 for details

Terminal type	Protective tubing diameter D (mm)	Protective tubing length L (cm)	Lead wire type	Lead wire length M (m)			
				1	2	4	8
				Model			
Exposed-lead Models	1 dia.	15	Standard	E52-IC15AY D=1 1M	E52-IC15AY D=1 2M	E52-IC15AY D=1 4M	E52-IC15AY D=1 8M
			Heat resistive	E52-IC15AY D=1 NETU 1M	E52-IC15AY D=1 NETU 2M	E52-IC15AY D=1 NETU 4M	E52-IC15AY D=1 NETU 8M
		20	Standard	E52-IC20AY D=1 1M	E52-IC20AY D=1 2M	E52-IC20AY D=1 4M	E52-IC20AY D=1 8M
			Heat resistive	E52-IC20AY D=1 NETU 1M	E52-IC20AY D=1 NETU 2M	E52-IC20AY D=1 NETU 4M	E52-IC20AY D=1 NETU 8M
		35	Standard	E52-IC35AY D=1 1M	E52-IC35AY D=1 2M	E52-IC35AY D=1 4M	E52-IC35AY D=1 8M
			Heat resistive	E52-IC35AY D=1 NETU 1M	E52-IC35AY D=1 NETU 2M	E52-IC35AY D=1 NETU 4M	E52-IC35AY D=1 NETU 8M
	1.6 dia.	15	Standard	E52-IC15AY D=1.6 1M	E52-IC15AY D=1.6 2M	E52-IC15AY D=1.6 4M	E52-IC15AY D=1.6 8M
			Heat resistive	E52-IC15AY D=1.6 NETU 1M	E52-IC15AY D=1.6 NETU 2M	E52-IC15AY D=1.6 NETU 4M	E52-IC15AY D=1.6 NETU 8M
		20	Standard	E52-IC20AY D=1.6 1M	E52-IC20AY D=1.6 2M	E52-IC20AY D=1.6 4M	E52-IC20AY D=1.6 8M
			Heat resistive	E52-IC20AY D=1.6 NETU 1M	E52-IC20AY D=1.6 NETU 2M	E52-IC20AY D=1.6 NETU 4M	E52-IC20AY D=1.6 NETU 8M
		35	Standard	E52-IC35AY D=1.6 1M	E52-IC35AY D=1.6 2M	E52-IC35AY D=1.6 4M	E52-IC35AY D=1.6 8M
			Heat resistive	E52-IC35AY D=1.6 NETU 1M	E52-IC35AY D=1.6 NETU 2M	E52-IC35AY D=1.6 NETU 4M	E52-IC35AY D=1.6 NETU 8M
	3.2 dia.	15	Standard	E52-IC15AY D=3.2 1M	E52-IC15AY D=3.2 2M	E52-IC15AY D=3.2 4M	E52-IC15AY D=3.2 8M
			Heat resistive	E52-IC15AY D=3.2 NETU 1M	E52-IC15AY D=3.2 NETU 2M	E52-IC15AY D=3.2 NETU 4M	E52-IC15AY D=3.2 NETU 8M
		20	Standard	E52-IC20AY D=3.2 1M	E52-IC20AY D=3.2 2M	E52-IC20AY D=3.2 4M	E52-IC20AY D=3.2 8M
			Heat resistive	E52-IC20AY D=3.2 NETU 1M	E52-IC20AY D=3.2 NETU 2M	E52-IC20AY D=3.2 NETU 4M	E52-IC20AY D=3.2 NETU 8M
		35	Standard	E52-IC35AY D=3.2 1M	E52-IC35AY D=3.2 2M	E52-IC35AY D=3.2 4M	E52-IC35AY D=3.2 8M
			Heat resistive	E52-IC35AY D=3.2 NETU 1M	E52-IC35AY D=3.2 NETU 2M	E52-IC35AY D=3.2 NETU 4M	E52-IC35AY D=3.2 NETU 8M
		50	Standard	E52-IC50AY D=3.2 1M	E52-IC50AY D=3.2 2M	E52-IC50AY D=3.2 4M	E52-IC50AY D=3.2 8M
			Heat resistive	E52-IC50AY D=3.2 NETU 1M	E52-IC50AY D=3.2 NETU 2M	E52-IC50AY D=3.2 NETU 4M	E52-IC50AY D=3.2 NETU 8M

Terminal type	Protective tubing diameter D (mm)	Protective tubing length L (cm)	Lead wire type	Lead wire length M (m)			
				1	2	4	8
				Model			
Exposed-lead Models	4.8 dia.	20	Standard	E52-IC20AY D=4.8 1M	E52-IC20AY D=4.8 2M	E52-IC20AY D=4.8 4M	E52-IC20AY D=4.8 8M
			Heat resistive	E52-IC20AY D=4.8 NETU 1M	E52-IC20AY D=4.8 NETU 2M	E52-IC20AY D=4.8 NETU 4M	E52-IC20AY D=4.8 NETU 8M
		35	Standard	E52-IC35AY D=4.8 1M	E52-IC35AY D=4.8 2M	E52-IC35AY D=4.8 4M	E52-IC35AY D=4.8 8M
			Heat resistive	E52-IC35AY D=4.8 NETU 1M	E52-IC35AY D=4.8 NETU 2M	E52-IC35AY D=4.8 NETU 4M	E52-IC35AY D=4.8 NETU 8M
		50	Standard	E52-IC50AY D=4.8 1M	E52-IC50AY D=4.8 2M	E52-IC50AY D=4.8 4M	E52-IC50AY D=4.8 8M
			Heat resistive	E52-IC50AY D=4.8 NETU 1M	E52-IC50AY D=4.8 NETU 2M	E52-IC50AY D=4.8 NETU 4M	E52-IC50AY D=4.8 NETU 8M
	6.4 dia.	20	Standard	E52-IC20AY D=6.4 1M	E52-IC20AY D=6.4 2M	E52-IC20AY D=6.4 4M	E52-IC20AY D=6.4 8M
			Heat resistive	E52-IC20AY D=6.4 NETU 1M	E52-IC20AY D=6.4 NETU 2M	E52-IC20AY D=6.4 NETU 4M	E52-IC20AY D=6.4 NETU 8M
		35	Standard	E52-IC35AY D=6.4 1M	E52-IC35AY D=6.4 2M	E52-IC35AY D=6.4 4M	E52-IC35AY D=6.4 8M
			Heat resistive	E52-IC35AY D=6.4 NETU 1M	E52-IC35AY D=6.4 NETU 2M	E52-IC35AY D=6.4 NETU 4M	E52-IC35AY D=6.4 NETU 8M
		50	Standard	E52-IC50AY D=6.4 1M	E52-IC50AY D=6.4 2M	E52-IC50AY D=6.4 4M	E52-IC50AY D=6.4 8M
			Heat resistive	E52-IC50AY D=6.4 NETU 1M	E52-IC50AY D=6.4 NETU 2M	E52-IC50AY D=6.4 NETU 4M	E52-IC50AY D=6.4 NETU 8M
	8 dia.	20	Standard	E52-IC20AY D=8 1M	E52-IC20AY D=8 2M	E52-IC20AY D=8 4M	E52-IC20AY D=8 8M
			Heat resistive	E52-IC20AY D=8 NETU 1M	E52-IC20AY D=8 NETU 2M	E52-IC20AY D=8 NETU 4M	E52-IC20AY D=8 NETU 8M
		35	Standard	E52-IC35AY D=8 1M	E52-IC35AY D=8 2M	E52-IC35AY D=8 4M	E52-IC35AY D=8 8M
			Heat resistive	E52-IC35AY D=8 NETU 1M	E52-IC35AY D=8 NETU 2M	E52-IC35AY D=8 NETU 4M	E52-IC35AY D=8 NETU 8M
		50	Standard	E52-IC50AY D=8 1M	E52-IC50AY D=8 2M	E52-IC50AY D=8 4M	E52-IC50AY D=8 8M
			Heat resistive	E52-IC50AY D=8 NETU 1M	E52-IC50AY D=8 NETU 2M	E52-IC50AY D=8 NETU 4M	E52-IC50AY D=8 NETU 8M

Low-cost Models

Low-cost Platinum Resistance Thermometers

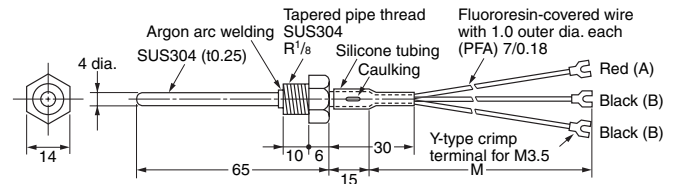
● Exposed-lead Models with Screws

Specifications

Element type	Pt100
Conductor type	3-conductor system
Class	Class B
Protective tubing material	SUS304
Sensor length	30 mm
Max. detectable temperature	250°C
Temperature range	-50°C to 250°C
Lead wire	-50°C to 150°C
Terminal shape	Forked crimped terminals for M3.5

E52-P6DY

• Dimensions



Note: The protective tubing is of pipe construction, which must not be bent.

Lead wire length (m)	Model
1	E52-P6DY 1M
2	E52-P6DY 2M
4	E52-P6DY 4M

Low-cost Thermocouples

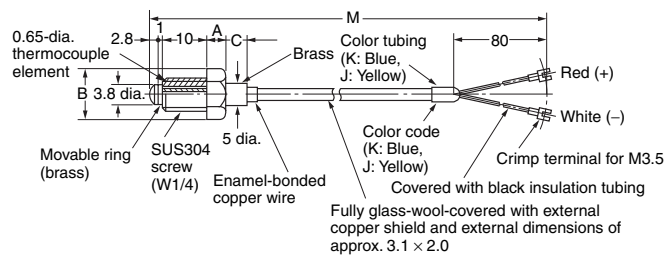
● Exposed-lead Models with Screw

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	Forked crimped terminals for M3.5

E52-CA1DY, E52-IC1DY

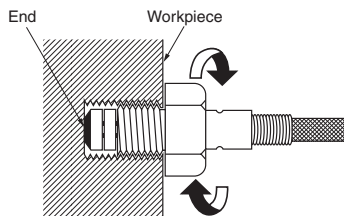
• Dimensions



- 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.

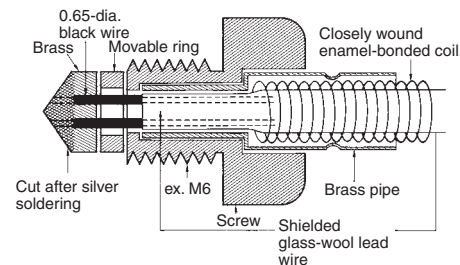
Installation Example

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 9 for details.

Internal Construction (E52-CA1DY)



Length	Screw		
	W1/4	M6	M8
A (mm)	5	4	5.3
B (mm)	11.5	11	14
C (mm)	3	4	2.5

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

E52

Exclusive Models

Thermocouples

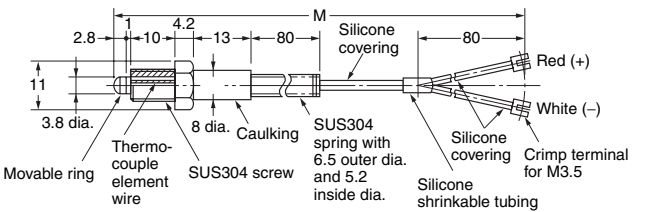
● Exposed-lead Models with Screws (Silicone-covered Lead Wires)

Specifications	
Element type	K (CA)
Class	Class 2 (0.75)
Screw material	SUS304
Thermal contact	Grounded type
Temperature range	0°C to 300°C
Lead wire	Silicone-covered (0.1/30): 0°C to 150°C
Terminal shape	Forked crimped terminals for M3.5

Note: Refer to the installation example for the E52-CA1DY.

E52-CA1DY-40

Dimensions



Model	Screw pitch	Lead wire length (m)
E52-CA1DY-40 M6 1M	M6	1
E52-CA1DY-40 M6 2M	M6	2
E52-CA1DY-40 M6 4M	M6	4

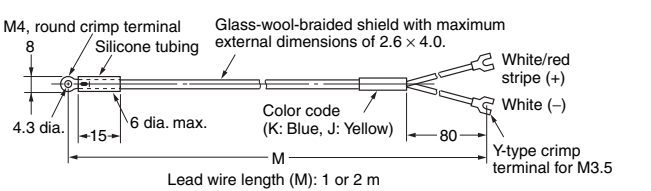
● Thermocouples with Crimp Terminals

Specifications	
Element type	K (CA), J (IC)
Element diameter	0.65 mm (single wire)
Class	Class 2 (0.75)
Thermal contact	Grounded type
Temperature range	0°C to 300°C
Lead wire	0°C to 150°C
Terminal shape	Forked crimped terminals for M3.5

Note: The E52-CA1GTY is also available with double elements.
Refer to page 9 for details.

E52-CA1GTY, E52-IC1GTY

• Dimensions



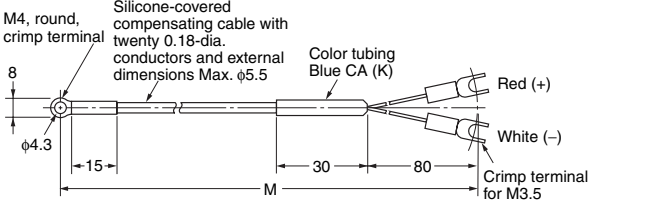
Lead wire length (m)	Element type: K (CA)	Element type: J (IC)
	Model	
1	E52-CA1GTY 1M	E52-IC1GTY 1M
2	E52-CA1GTY 2M	E52-IC1GTY 2M

● Thermocouples with Crimp Terminals (Silicone-covered Lead Wires)

Specifications	
Element type	K (CA)
Class	Class 2 (0.75)
Thermal contact	Grounded type
Temperature range	0°C to 200°C
Lead wire	Silicone-covered: 0°C to 150°C
Terminal shape	Forked crimped terminals for M3.5

E52-CA1GTY-14

Dimensions



Lead wire length (M): 1 or 2 m

Model	Lead wire length (m)
E52-CA1GTY-14 1M	1
E52-CA1GTY-14 2M	2

Read and Understand this Catalog

Please read and understand this catalog before purchasing the product. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the product in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used.

Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your OMRON representative at any time to confirm actual specifications of purchased product.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

Note: Do not use this document to operate the Unit.

OMRON Corporation Industrial Automation Company
Tokyo, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69-2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC

One Commerce Drive Schaumburg,
IL 60173-5302 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor:

© OMRON Corporation 2012 All Rights Reserved.
In the interest of product improvement,
specifications are subject to change without notice.

CSM_1_1_0412
Cat. No. H183-E1-01