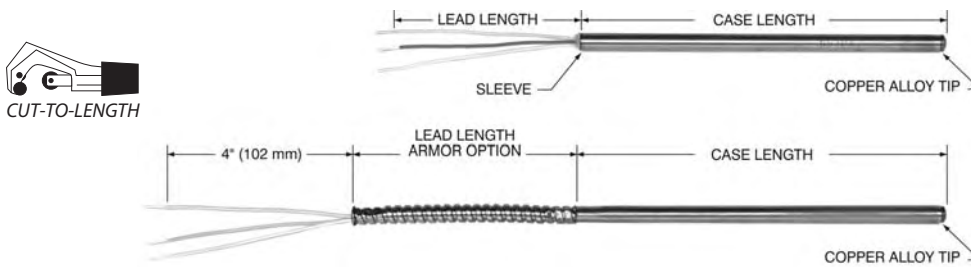


# Tip-sensitive RTDs



## Overview

The probe sensing tip is constructed of copper alloy which is twenty times more conductive than stainless steel. The sensors react more quickly to changes and indicate tip temperature instead of stem temperature which increases accuracy. Minco recommends 0.250" diameter probes for use in thermowells.

## Specifications

**Temperature range:** -50 to 260°C (-58 to 500°F).

**Case:** Stainless steel with copper alloy tip.

Minimum case length:

Single element probes: 2.8" (71.1 mm).

Dual element probes: 4.0" (101.6 mm).

Maximum case length:

48" (1220 mm), longer on special order.

**Leads:** 2, 3, or 4 leadwires, stranded copper with PTFE insulation. AWG 22, except 0.188" diameter dual probes AWG 24. For 2-lead RTDs add 0.03 Ω per foot (0.05 Ω per foot for 0.188" diameter dual probes) of combined case and lead length to element tolerance. Copper (CA, CC) models must have 3 leads.

**Time constant:** 2.0 seconds typical in moving water. 3.0 seconds for dual element models.

**Pressure rating:** 100 psi (6.9 bar).

**Insulation resistance:**

Single element probes: 1000 megohms min. at 500 VDC, leads to case.

Dual element probes: 100 megohms min. at 100 VDC, between elements and leads to case.

**Vibration:** Withstands 10 to 2000 Hz at 20 G's min. per MIL-STD-202, Method 204, Test Condition D.

**Shock:** Withstands 100 G's min. sine wave shock of 8 milliseconds duration.

## Specification and order options

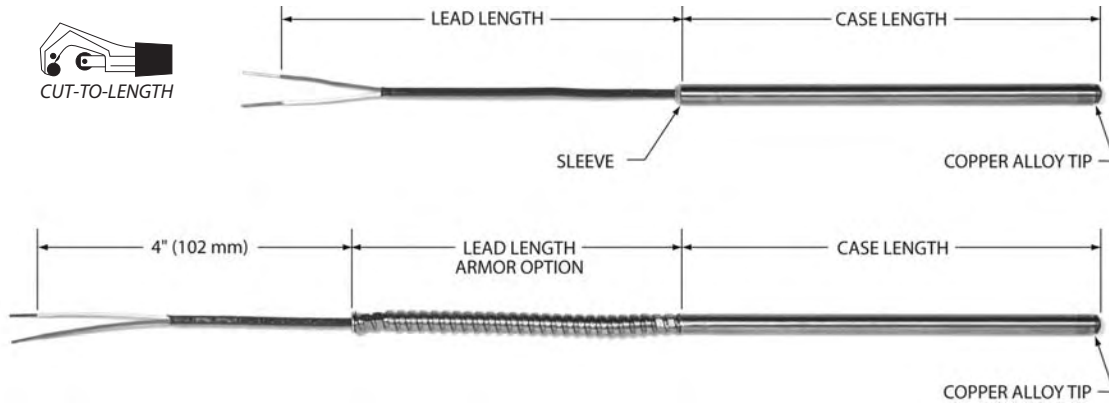
S56NA	Model number from table
125	Case length: Specify in 0.1" increments (Ex: 125 = 12.5 inches)
Y	Number of leads per sensing element: Y = 2 leads Z = 3 leads X = 4 leads (PD only)
36	Lead length in inches
S56NA125Y36 = Sample part number	

## Model numbers

Element	Model for probe diameter:		
	0.188" (4.8 mm)	0.215" (5.5 mm)	0.250" (6.4 mm)
<b>Single element RTDs: No armor over leads</b>			
Platinum (0.00392 TCR) 100 Ω ±0.5% at 0°C	S54PA	S51PA	S53PA
Platinum (0.00385 TCR) 100 Ω ±0.06% at 0°C (Meets EN60751, Class A)	S554PM	S551PM	S553PM
Platinum (0.00385 TCR) 100 Ω ±0.1% at 0°C (Meets EN60751, Class B)	S854PD	S851PD	S853PD
Platinum (0.00385 TCR) 100 Ω ±0.5% at 0°C	S884PE	S881PE	S883PE
Copper (0.00427 TCR) 10 Ω ±0.2% at 25°C	S54CA	S51CA	S53CA
Nickel (0.00672) 120 Ω ±0.5% at 0°C	S54NA	S51NA	S53NA
<b>Single element RTDs: With armor over leads</b>			
Add element code (Ex: S154__ = S154NA)	S154__	S151__	S153__
<b>Dual element RTDs: No armor over leads</b>			
Platinum (0.00392 TCR) 100 Ω ±0.5% at 0°C	S59PA	S56PA	S57PA
Platinum (0.00385 TCR) 100 Ω ±0.06% at 0°C (Meets EN60751, Class A)	S559PM	S556PM	S557PM
Platinum (0.00385 TCR) 100 Ω ±0.1% at 0°C (Meets EN60751, Class B)	S859PD	S856PD	S857PD
Platinum (0.00385 TCR) 100 Ω ±0.5% at 0°C	S889PE	S886PE	S887PE
Copper (0.00427 TCR) 10 Ω ±0.5% at 25°C		S56CC	S57CC
Nickel (0.00672) 120 Ω ±0.5% at 0°C	S59NA	S56NA	S57NA
<b>Dual element RTDs: With armor over leads</b>			
Add element code (Ex: S159__ = S159NA)	S159__	S156__	S157__

Specifications subject to change

# Tip-sensitive Thermocouples



PROBES

## Overview

The probe sensing tip is constructed of copper alloy which is twenty times more conductive than stainless steel. The sensors react more quickly to changes and indicate tip temperature instead of stem temperature. The result is better accuracy in thermowells, bearings, and other installations. Minco recommends 0.250" diameter probes for use in thermowells.

- Copper alloy tip for fast response
- Accurate sensing to 260°C (500°F)
- Non-armor models can be user-shortened

## Specifications

**Temperature range:** -184 to 260°C (-300 to 500°F).

**Case:** Stainless steel with copper alloy tip.  
 Minimum case length: 2.5" (63.5 mm).  
 Maximum case length: 48" (1220 mm), longer on special order.

**Leads:** Solid thermocouple wire, AWG 20 (except AWG 24 on model TC355). Specify PTFE insulation, stainless steel overbraid, or stainless steel armor.

**Time constant:** Typical value in moving water:  
 Grounded junction: 1.5 seconds.  
 Ungrounded junction: 7 seconds.

**Pressure rating:** 100 psi (6.9 bar).

**Insulation resistance:** 10 megohms minimum at 100 VDC, leads to case, ungrounded junctions only.

**Vibration:** Withstands 10 to 2000 Hz at 20 G's minimum per MIL-STD-202, Method 204, Test Condition D.

**Shock:** Withstands 100 G's min. sine wave shock of 8 milliseconds duration.

## Model numbers

	Model for probe diameter:		
	0.188" (4.8 mm)	0.215" (5.5 mm)	0.250" (6.4 mm)
Single junction	TC354	TC356	TC358
Dual junction	TC355	TC357	TC359

## Specification and order options

TC356	Model number from table
T	Junction type: E = Chromel-Constantan J = Iron-Constantan K = Chromel-Alumel T = Copper-Constantan
G	Junction grounding: G = Grounded U = Ungrounded
200	Case length: Specify in 0.1" increments: Ex: 200 = 20.0 inches
S	Covering over leadwires: T = PTFE only G = Glass braid only S = Stainless steel overbraid A = Stainless steel armor
24	Lead length in inches
TC356TG200S24 = Sample part number	

Specifications subject to change