

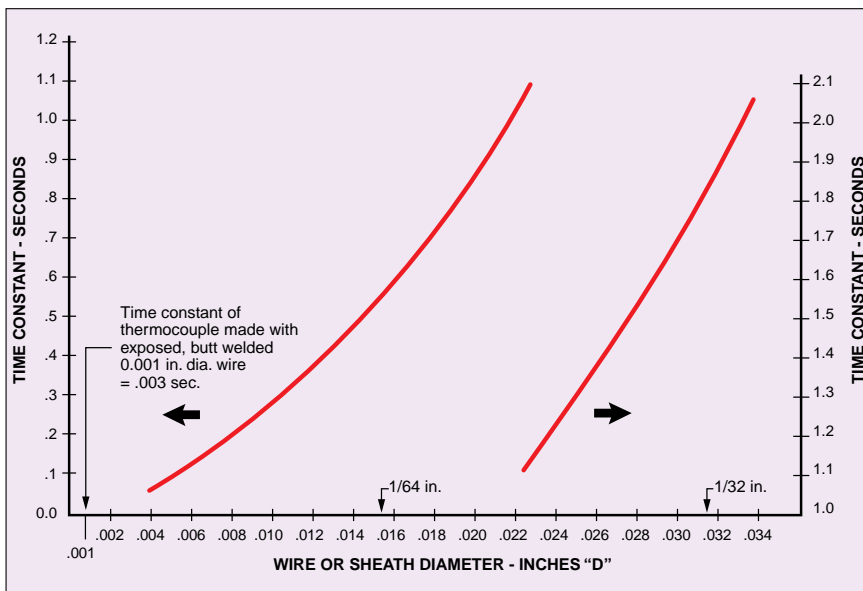
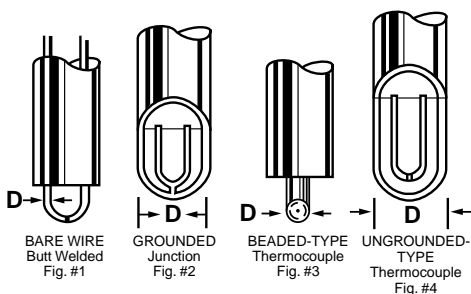
# Comparison of Time Constant\* vs. Overall Outside Diameter of Bare Thermocouple Wires or Grounded Junction Thermocouples In Air

Time constants calculated for air at room temperature and atmospheric pressure moving with velocity of 65 feet per second for thermocouples shown in Figures #1 and #2.

For beaded-type and ungrounded junctions (Figures #3 or #4), multiply time constants by 1.5.

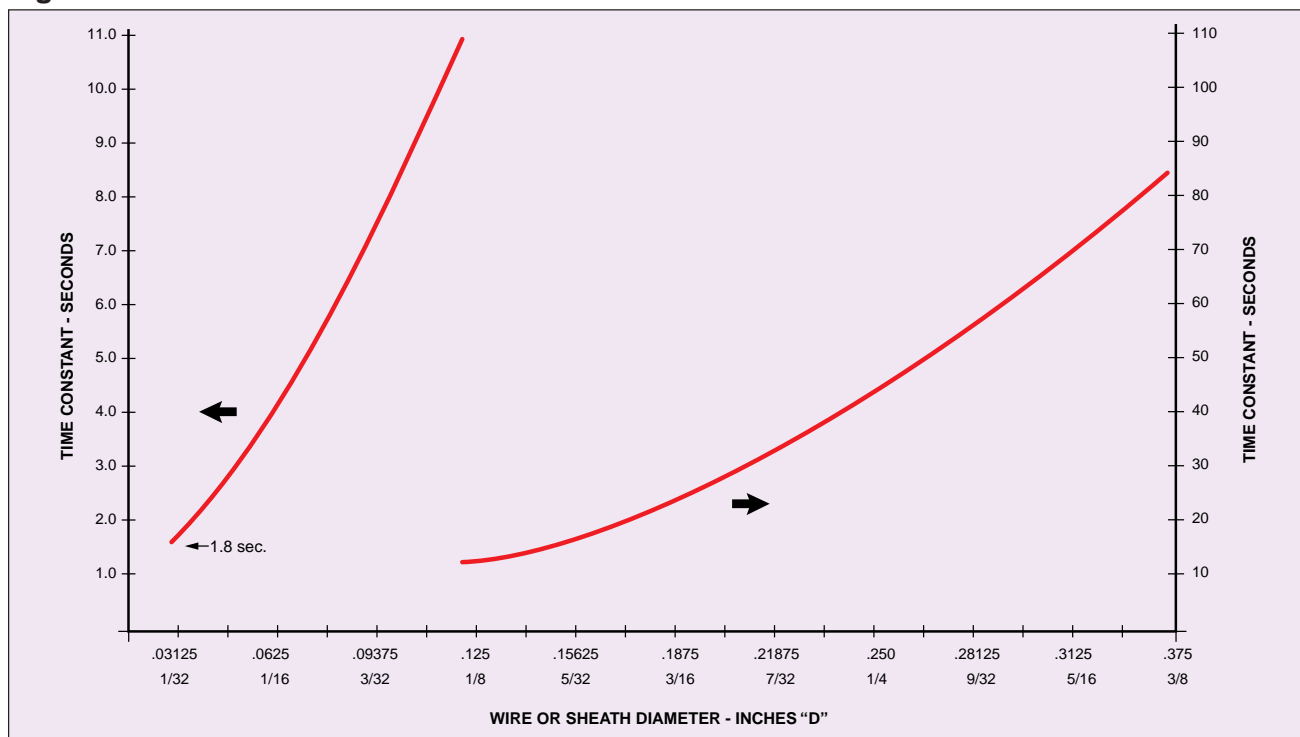
Time constant of thermocouple made with exposed butt welded 0.001 inch dia. wire = .003 sec.

\* The "Time Constant" or "Response Time" is defined as the time required to reach 63.2% of an instantaneous temperature change.



Because of space limitations, time constant curve is divided into 4 separate curves.

Figure M Sheath Diameter 1/32" to 3/8"



**Note:**

These comparisons apply to either bare "butt-welded" or "grounded" junction thermocouples. If the thermocouples are the "beaded" type or "ungrounded," the time constant is longer. These times are only approximate and are provided for comparison purposes only. Multiply values from Time Constants by 1.5 for junctions shown in Fig. #3 and Fig. #4.