

# 1551A Ex/1552A Ex

## *Immersion Characteristics*

### *Instruction Sheet*

#### **Introduction**

The 1551A Ex/1552A Ex Stik Thermometer (Thermometer) must be adequately immersed in the medium to make an accurate temperature measurement.

#### **Immersion Depth**

The minimum required immersion depth depends on the type of medium (whether wet or dry) as shown in Table 1. These figures should result in immersion errors of less than 0.005 °C in most cases. Actual results can vary depending on the type and form of the surrounding materials.

**Table 1. Immersion Depth**

<b>Medium</b>	<b>Minimum Immersion Depth</b>
Wet (liquid bath, thermowell with thermal compound)	7 cm (2.8 in.)
Dry (dry-well, thermowell without thermal compound)	12 cm (4.8 in.)

#### **Time Constant**

The different probe sizes of the Thermometer exhibit different settling time constants. This parameter describes the time it takes for the Thermometer to change 63 % toward its final temperature (see ASTM E 644). The time constant is primarily dependent on the diameter of the metal sheath of the Thermometer. Typical approximate time constants are given in the following table.

**Table 2. Time Constant**

<b>Sheath Diameter</b>	<b>Time Constant</b>
4.8 mm (3/16 in.)	14 seconds
6.35 mm (1/4 in.)	21 seconds

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