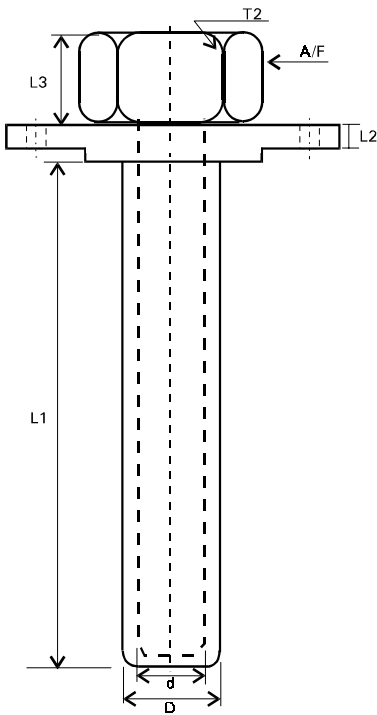
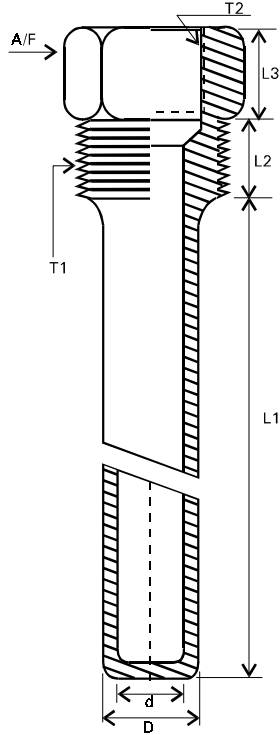


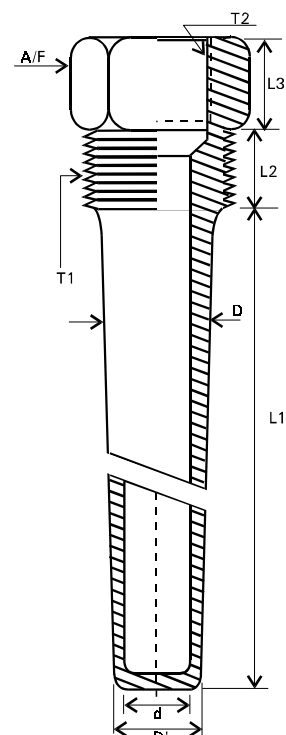
### Flange Type



### Straight Type



### Tapered Type



## Ordering Information

X	X	X	X	X	X	X	X	X	X
<b>Construction</b> F = Fabricated B = Barstock	<b>L1</b> 1=100 mm 2=150 mm 3=200 mm 4=250 mm 5=300 mm 6=350 mm 7=400 mm 8=450 mm 9=Other	<b>L3</b> 1=10 mm 2=15 mm 3=20 mm 4=25 mm 5=30 mm 6=40 mm 7=50 mm 8=70 mm 9=Other	<b>d</b> 1=7 mm 2=8 mm 3=10 mm 4=12 mm 5=14 mm 6=16 mm 7=18 mm 8=Other	<b>T2</b> 1=1/4" BSP(M/F) 2=1/2" BSP(M/F) 3=3/4" BSP(M/F) 4=1" BSP(M/F) 5=1/4" BSP(M/F) 6=1/2" BSP(M/F) 7=3/4" BSP(M/F) 8=1" BSP(M/F) 9=Other	<b>Type</b> F=Flange Type S=Straight Type T=Tapered Type (only in bar stock)	<b>L2</b> 1=10 mm 2=15 mm 3=20 mm 4=25 mm 5=30 mm 6=Other	<b>D</b> 1=10 mm 2=12 mm 3=16 mm 4=19 mm 5=21 mm 6=25 mm 7=Other	<b>T1</b> 1=1/4" BSP(M/F) 2=1/2" BSP(M/F) 3=3/4" BSP(M/F) 4=1" BSP(M/F) 5=1/4" BSP(M/F) 6=1/2" BSP(M/F) 7=3/4" BSP(M/F) 8=1" BSP(M/F) 9=Other	<b>Note :</b> 1. For Flange specify ISA table 2. Specify D' for Tapered type 3. Across Flat (A/F) will be suitably selected w.r.t. other dimensions.
<b>Material</b> 1=SS316 2=SS304 3=SS310 4=Mild Steel 5=Inconel									

For more details on other products please contact our customer support division

ESD reserves the right to change the specifications and other designs without prior notice for the betterment of its products.

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**ELECTRONICS  
SYSTEMS AND DEVICES**

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## Introduction

In process control systems normally metal sheaths are frequently used to protect temperature sensors. Although sheath materials have excellent pressure and temperature ratings a Thermowell is generally used in high pressure and high temperature applications.

A Thermowell is a tube designed to enclose a temperature sensing device and protect it from harmful effects of the environment. It may provide for attachment to a connection head but it is not primarily designed for pressure tight attachment to a vessel. A bushing or flange may be provided for the attachment of a thermowell to a vessel.

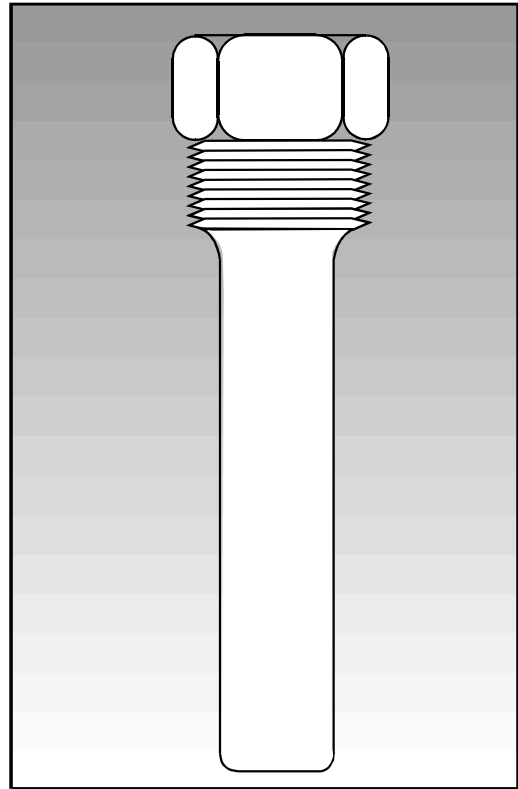
Replacement / Interchangeability of sensors without hampering a continuous process is possible with the help of thermowells.

ESD manufactures various types of Thermowells to suit various applications in process industry. These thermowells can be used as protective sheaths for Platinum Resistance Bulbs or Thermocouples.

**Types :** (1) Straight type Threaded  
(2) Tapered type Threaded  
(3) Flange type

The above three main types can be sub divided into :

(a) **Bar Stock** : Thermowell machined from a



single piece of material

(b) **Fabricated** : A Thermowell wherein the across flat nut, pipe and end bush or cap are machined separately, welded together and finished

### Material used :

S.S. 304	Mild Steel
S.S. 316	Brass
Inconel	

## Selection of Thermowells :

The following main factors are to be considered while selecting a suitable Thermowell for your application :

- **Corrosion Resistance** : Select the construction material to suit corrosion conditions of media of application.
- **Time Lag** : Consider the maximum allowable time lag for the process while deciding the outer and inner diameter of the Thermowell. Use appropriate conducting media between

sensor and thermowell to reduce time lag.

- **Pressure** : Operating pressure of the media is also an important factor to decide on bar stock or fabricated type and also the wall thickness.
- **Velocity** : Velocity of the fluid to consider taper type or straight type. Grade of polish which can cause minimum obstacle is to be considered.
- **Interchangability** : Selection of uniform bore and mounting threads can permit easy interchangability of sensor.