

# Specifying Custom Assemblies

The standard assemblies in this section will fit a wide variety of installations. However, for more versatility you can create new assemblies from the probes, accessories, and transmitters in the pages listed.

## Follow these steps:

### 1. Choose a probe

Select an RTD or thermocouple from Section 2. The section includes tip-sensitive, high temperature, and fast response models. Some have integral fittings or bayonet lockcaps.

Factors to consider are:

- Temperature rating
- Compatibility with receiving instruments
- Probe style and diameter
- Accuracy vs. cost

### 2. Add a fitting

See Section 3 for probe mounting fittings. Adjustable fittings, combined with cut-to-length probes, allow instant fabrication of assemblies to any length required. Included are spring-loaded holders, pressure fittings, and bayonet-style fittings.

Factors to consider are:

- Temperature rating
- Probe diameter
- Correct NPT threads
- Pressure ratings
- Compatibility with environment

### 3. Select a thermowell

Thermowells protect sensors from the effects of fluid flow and pressure. See Section 3 for a variety of well styles and materials.

Factors to consider are:

- Pressure rating
- Compatibility with fluid media
- Insertion depth
- Correct NPT thread

### 4. Attach a connection head

Finish off your assembly with a connection head for termination to remote extension wires. See page 3-2 for specifications.

Factors to consider are:

- Connection head size
- Temperature rating
- Correct pipe threads for fitting and conduit
- Number of terminals or wire nuts
- Hazardous area requirements

### 5. Install a transmitter

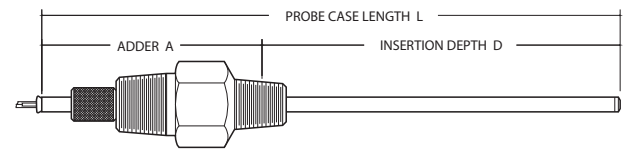
Transmitters convert sensor output to a 4 to 20 mA current signal, immune to leadwire resistance. See Section 4 for RTD and thermocouple transmitters.

Factors to consider are:

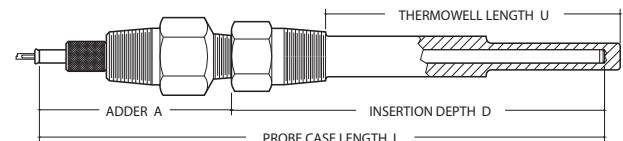
- Transmitter accepts sensor input
- Transmitter fits connection head
- Ambient temperature range acceptable

### 6. How to calculate probe length

All Minco fittings have probe length adders to help you determine total probe length. Total length  $L$  is the insertion depth  $D$  plus the adder  $A$ .



Thermowell drawings show an adder to convert thermowell length  $U$  to insertion depth  $D$ . Then use  $D$  plus the fitting adder  $A$  to find total probe length  $L$ .



▼ = STANDARD OPTIONS  
Specifications subject to change