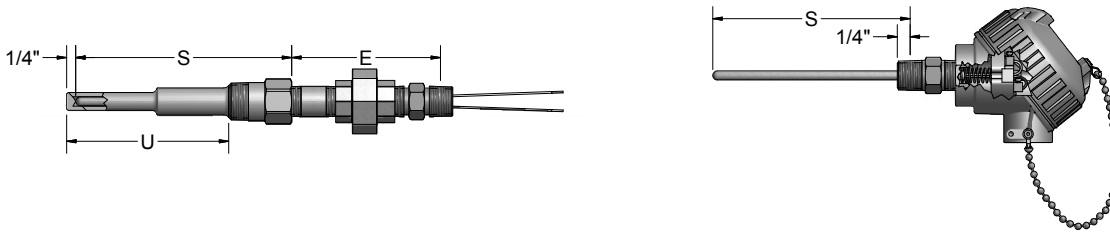


# SENSORS WITH CONNECTION HEADS

## Configuration Code GP04 Spring-Loaded MgO Thermocouple/Thermowell Assemblies with General-Purpose Connection Heads

Spring-Loaded MgO Thermocouple/Thermowell Assemblies with General-Purpose Connection Heads are designed for use with various thermowell types. Complete assemblies can be ordered by selecting the MgO assembly below, the thermowell from the thermowell section of this catalog, and a temperature transmitter from the back of this section. Assemblies without a thermowell can be ordered by selecting the sensor assembly from this page and inserting the "S" length in table 2-0. These sensors are supplied with a 316 stainless steel sheath and as standard limits of error.



### ORDER CODES

**Example Order Number:** **J 48 U** - **SL** - **8PU4 31, T-**

1-0 1-1 1-2      2-0      3-0      4-0 4-1 4-2

Select Thermowell Part # or Insert 3 Digit Length Code      Select Type and Range from back of section

#### 1-0 Thermocouple Types

| CODE   |        |         |
|--------|--------|---------|
| SINGLE | DUPLEX | TRIPLEX |
| E      | EE     | -       |
| J      | JJ     | JJJ     |
| K      | KK     | KKK     |
| T      | TT     | -       |

#### 1-1 Sheath Diameters

| CODE | DIAMETERS (inches) 316 SS |
|------|---------------------------|
| 38   | 3/16                      |
| 48   | 1/4                       |

#### 1-2 Measuring Junction

| CODE | DESCRIPTION         |
|------|---------------------|
| G    | Grounded junction   |
| U    | Ungrounded junction |

#### 2-0

Select thermowell part number from Thermowell Section, or specify 3 digit "S" length in inches if no thermowell is required.

#### 3-0 Element Options

| CODE              | DESCRIPTION  |
|-------------------|--|
| SL <sup>[1]</sup> | Spring-loaded element  |
| SC                | Self-contained spring-loaded element   |
| SN                | Self-contained spring-loaded element with Buna-N oil seal 121°C [250°F] 100 PSI Max. |

[1] Not available with option 35T, 36T, or 37T

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#### 4-0 Head Mounting Fittings

| CODE                           | DESCRIPTION  |
|--------------------------------|--|
| <b>STEEL FITTINGS</b>          |  |
| 6HN                            | 1/2" x 1/2" NPT hex nipple 1" "E" length             |
| 6PN_                           | 1/2" NPT pipe nipple (specify "E" length in inches)  |
| 6PU_ <sup>[1]</sup>            | 1/2" NPT union/nipple (specify "E" length in inches) |
| <b>316 SS FITTINGS</b>         |  |
| 8HN                            | 1/2" x 1/2" NPT hex nipple 1" "E" length             |
| 8PN_                           | 1/2" NPT pipe nipple (specify "E" length in inches)  |
| 8PU_ <sup>[1]</sup>            | 1/2" NPT union/nipple (specify "E" length in inches) |
| [1] 4" Minimum length required |  |

#### 4-1 Head and Sheath Terminations

| CODE      | DESCRIPTION  |
|-----------|--|
| 22        | 3" Individual fluoropolymer leads with terminal pins   |
| 31        | Aluminum screw-cover head  |
| 34        | Cast iron screw-cover head   |
| 35T-642A  | (4 to 20) mA HART® Field Transmitter with aluminum general-purpose housing   |
| 36T82-D10 | (4 to 20) mA dual input HART® transmitter with digital display and general-purpose aluminum housing with glass lid |
| 37T-662A  | (4 to 20) mA HART® dual cavity field temperature transmitter with general-purpose aluminum housing                 |
| 49        | Flip-top aluminum head   |
| 63        | White polypropylene screw-cover head   |
| 91        | 316 L stainless steel screw-cover head   |

#### 4-2 Options

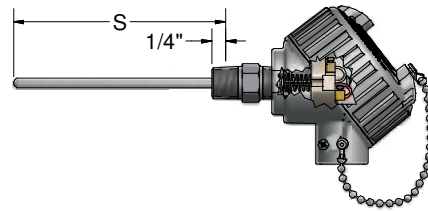
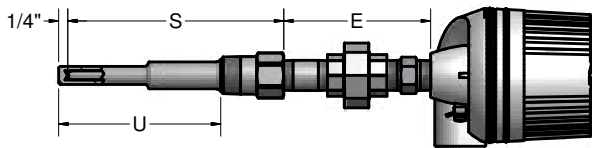
|   |  |
|---|--|
| W <sup>[1]</sup>  | Epoxy Coating  |
| GS  | Ground screw   |
| I   | Stainless tag  |
| NB  | 1/2" NPT nylon conduit reducer bushing                 |
| SB  | 1/2" NPT conduit reducer bushing                       |
| T-441   | (4 to 20) mA isolated head-mounted transmitter         |
| T-442   | (4 to 20) mA isolated HART® head-mounted transmitter   |
| T82-00  | (4 to 20) mA dual input HART® head-mounted transmitter |
| <b>See transmitter ordering information in back of section.</b> |  |
| [1] Available with option 31 only.                              |  |



# SENSORS WITH CONNECTION HEADS

## Configuration Code GP04 Spring-Loaded MgO Thermocouple/Thermowell Assemblies with Explosion-Proof Connection Heads

Spring-Loaded MgO Thermocouple/Thermowell Assemblies with Explosion-Proof Connection Heads are designed for use with various thermowell types. Complete assemblies can be ordered by selecting the MgO assembly below, the thermowell from the thermowell section of the catalog, and a temperature transmitter from the back of this section. Assemblies without a thermowell can be ordered by selecting the sensor assembly from this page and inserting the "S" length in table 2-0. These sensors are supplied with a 316 stainless steel sheath and as standard limits or error.



### ORDER CODES

**Example Order Number:**

1-0 1-1 1-2 2-0 3-0 4-0 4-1 4-2  
**J 48 U** - Select Thermowell Part # or Insert 3 Digit Length Code - **SL** - **8XU4 93, T** - Select Type and Range from back of section

#### 1-0 Thermocouple Types

| CODE   |        |         |
|--------|--------|---------|
| SINGLE | DUPLEX | TRIPLEX |
| E      | EE     | -       |
| J      | JJ     | JJJ     |
| K      | KK     | KKK     |
| T      | TT     | -       |

#### 1-1 Sheath Diameters

| CODE | DIAMETERS (inches) 316 SS |
|------|---------------------------|
| 38   | 3/16                      |
| 48   | 1/4                       |

#### 1-2 Measuring Junction

| CODE | DESCRIPTION         |
|------|---------------------|
| G    | Grounded junction   |
| U    | Ungrounded junction |

#### 2-0

Select thermowell part number from Thermowell Section, or specify 3 digit "S" length in inches if no thermowell is required.

#### 3-0 Element Options

| CODE              | DESCRIPTION  |
|-------------------|--|
| SL <sup>[1]</sup> | Spring-loaded element  |
| SC                | Self-contained spring-loaded element   |
| SN                | Self-contained spring-loaded element with Buna-N oil seal 121°C [250°F] 100 PSI Max. |

[1] Not available with option 75T, 76T, or 77T

#### 4-0 Head Mounting Fittings

| CODE                               | DESCRIPTION  |
|------------------------------------|--|
| <b>STEEL FITTINGS</b>              |  |
| 6HN                                | 1/2" x 1/2" NPT hex nipple 1" "E" length             |
| 6PN_                               | 1/2" NPT pipe nipple (specify "E" length in inches)  |
| 6XU_ <sup>[1]</sup>                | 1/2" NPT union/nipple (specify "E" length in inches) |
| <b>316 SS FITTINGS</b>             |  |
| 8HN                                | 1/2" x 1/2" NPT hex nipple 1" "E" length             |
| 8PN_                               | 1/2" NPT pipe nipple (specify "E" length in inches)  |
| 8XU_ <sup>[1]</sup>                | 1/2" NPT union/nipple (specify "E" length in inches) |
| [1] 3 1/2" Minimum length required |  |

#### 4-1 Head Terminations

| CODE      | DESCRIPTION   |
|-----------|---|
| 74        | Dual conduit DIN form B aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved                |
| 75T-642C  | (4 to 20) mA HART® field transmitter with aluminum explosion-proof housing                                |
| 76T82-D10 | (4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof aluminum housing |
| 77T-662C  | (4 to 20) mA HART® Field Transmitter with dual cavity explosion-proof aluminum housing                    |
| 93        | Aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved  |
| 94        | 316L stainless steel explosion-proof/flame-proof head, NEC, IEC, Atex approved                            |

#### 4-2 Options

|        |  |
|--------|--|
| SB     | 1/2" NPT conduit reducer bushing                                 |
| I      | Stainless tag  |
| T-441  | (4 to 20) mA isolated head-mounted transmitter                   |
| T-442  | (4 to 20) mA isolated HART® head-mounted transmitter             |
| T82-00 | (4 to 20) mA Dual input, isolated HART® head-mounted transmitter |

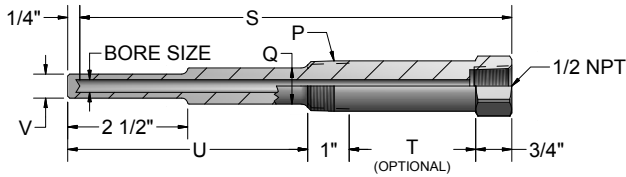
**See transmitter ordering information in back of section.**

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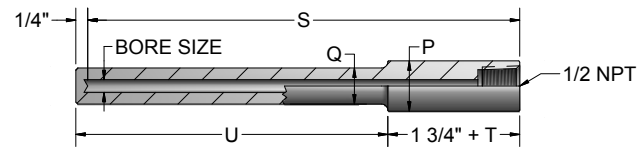


The drilled thermowells listed below are those most commonly found in process applications. Other types and styles are listed later in this section. The thermowells listed below are available as separate component wells and can be ordered by the code numbers listed below. They can also be ordered as a part of a complete sensor assembly. Consult factory for wells with different mounting threads, lengths, and materials.

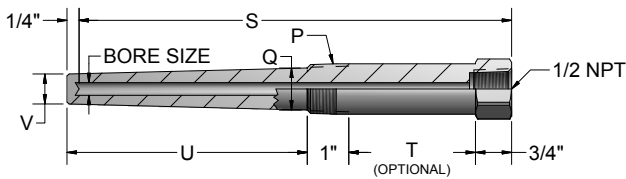
### STANDARD-DUTY WELLS



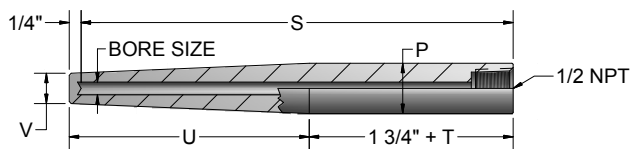
### STRAIGHT-SHANK, SOCKET-WELD



### HEAVY-DUTY WELLS



### WELD-IN WELLS



## ORDER CODES

**Example Order Number:**

1-0 1-1 1-2 1-3 1-4 1-5 1-6  
**S 4 D 06 08 T2 S**

#### 1-0 Well Type

| CODE | DESCRIPTION                  |
|------|------------------------------|
| S    | Standard-duty threaded (NPT) |
| H    | Heavy-duty threaded (NPT)    |
| SW   | Straight-shank, socket-weld  |
| WI   | Weld-in                      |

#### 1-1 Bore Size

| CODE | DESCRIPTION     |
|------|-----------------|
| 4    | 0.260 Dia. Bore |

#### 1-2 Pipe Size "P"

| CODE | DESCRIPTION              |
|------|--------------------------|
| C    | 1/2" Pipe <sup>[1]</sup> |
| D    | 3/4" Pipe                |
| E    | 1" Pipe                  |

[1] Only available with well type S or H

#### 1-3 Length Dimensions (inches)

| CODE | "S" DIMENSIONS | "U" DIMENSIONS |                   |
|------|----------------|----------------|-------------------|
|      |                | NO LAG         | WITH STANDARD LAG |
| 04   | 4              | 2(1/2)         | N/A               |
| 06   | 6              | 4(1/2)         | 2(1/2)            |
| 09   | 9              | 7(1/2)         | 4(1/2)            |
| 12   | 12             | 10(1/2)        | 7(1/2)            |
| 15   | 15             | 13(1/2)        | 10(1/2)           |
| 18   | 18             | 16(1/2)        | 13(1/2)           |
| 24   | 24             | 22(1/2)        | 19(1/2)           |

#### 1-6 Well Options

| CODE | DESCRIPTION  |
|------|--|
| C8   | 316 stainless steel well cap and chain                                       |
| C22  | Brass well cap and chain   |
| S    | Customer specified part number marked on the thermowell - (10 digit maximum) |

#### 1-5 Optional "T" Lag Dimension

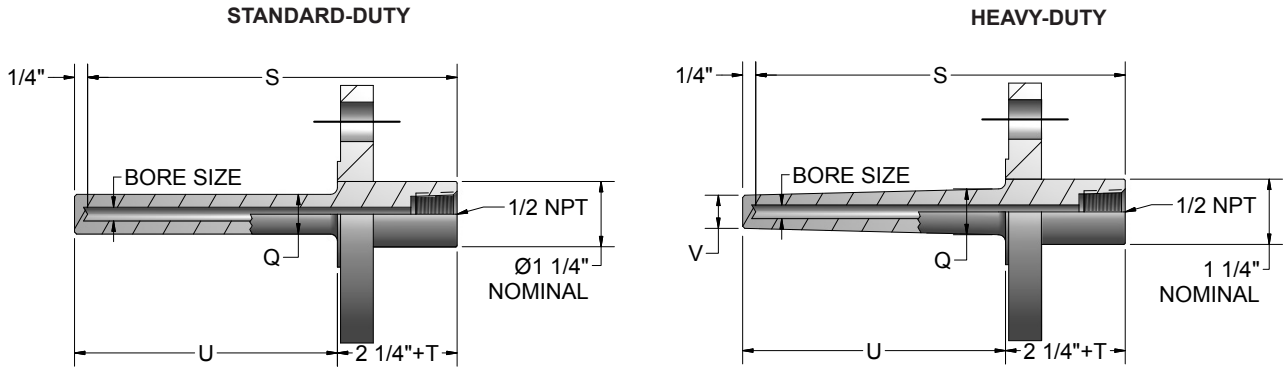
| CODE                              | DESCRIPTION                                 |
|-----------------------------------|---|
| Leave blank if No Lag is required |   |
| T2                                | 2" Lag standard on 6" well                  |
| T3                                | 3" Lag standard on 9, 12, 15, 18, 24" wells |
| T__                               | Special Lag specify "T" dimension in inches |

#### 1-4 Material

| CODE | DESCRIPTION         |
|------|---------------------|
| 08   | 316 stainless steel |
| 09   | 304 stainless steel |

The flanged thermowells described on this page are those commonly found in most process applications. These wells are supplied as standard- or heavy-duty with raised-faced flanges. Other types and styles are listed later in this section. Consult factory for wells with different flange sides, lengths, and materials.

## FLANGED THERMOWELLS



## ORDER CODES

**Example Order Number:**

1-0 1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8  
**SF 4 15 R 3 12 08 T2 C8**

### 1-0 Well Type

| CODE | DESCRIPTION           |
|------|-----------------------|
| SF   | Standard-duty flanged |
| HF   | Heavy-duty flanged    |

### 1-1 Bore Size

| CODE | DESCRIPTION |
|------|-------------|
| 4    | 0.260 Bore  |

### 1-2 Flange Size

| CODE | DESCRIPTION |
|------|-------------|
| 10   | 1"          |
| 15   | 1 1/2"      |
| 20   | 2"          |

### 1-3 Flange Type

| CODE | DESCRIPTION |
|------|-------------|
| R    | Raised face |

### 1-4 Pressure Rating

| CODE | DESCRIPTION |
|------|-------------|
| 1    | 150 class   |
| 3    | 300 class   |

### 1-8 Well Options

| CODE | DESCRIPTION  |
|------|--|
| C8   | 316 stainless steel well cap and chain                                 |
| C22  | Brass well cap and chain   |
| S    | Customer specified part number marked on thermowell (10 digit maximum) |

### 1-7 Optional "T" Lag Dimension

| CODE | DESCRIPTION                       |
|------|-----------------------------------|
|      | Leave blank if no lag is required |
| T__  | Specify "T" dimension in inches   |

### 1-6 Well Material

| CODE | DESCRIPTION         |
|------|---------------------|
| 08   | 316 Stainless steel |
| 09   | 304 Stainless steel |

### 1-5 Well Length (inches)

| CODE | DESCRIPTION   |               |
|------|---------------|---------------|
|      | "S" DIMENSION | "U" DIMENSION |
| 06   | 6             | 4             |
| 09   | 9             | 7             |
| 12   | 12            | 10            |
| 15   | 15            | 13            |
| 18   | 18            | 16            |
| 24   | 24            | 22            |