

**Example Order Number:**

1-0 1-1 1-2 1-3 1-4 2-0 3-0 4-0 5-0 6-0 6-1  
**K 4 8 U M8VS - 8-75 - 36 - SL - 815R133 - 31, I**

**1-0 Thermocouple Type**

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

**1-1 Sheath Diameter**

CODE	DESCRIPTION
4	1/4 inch
6	3/8 inch

**1-2 Sheath Material**

CODE	DESCRIPTION
8	316 Stainless steel
3	Alloy 600

**1-3 Junction Style**

CODE	DESCRIPTION
G	Grounded junction
U	Ungrounded junction

**1-4 Element Options**

CODE	DESCRIPTION
M	Special limits of error
8VS	316 Stainless steel vibration spacers (see table on GP12)

**2-0 Pipe Material and Size**

CODE	MATERIAL	MAX TEMP	CODE (INCHES)	
			1/2 INCH NPT	3/4 INCH NPT
6	Carbon steel	538 °C [1000 °F]	50	75
8	316 Stainless steel	927 °C [1700 °F]	50	75
5	446 Stainless steel	1093 °C [2000 °F]	50	75
3	Alloy 600	1149 °C [2100 °F]	50	75
7	Alloy 601	1260 °C [2300 °F]	50	75
41	HR 160	1204 °C [2200 °F]	50	75

**6-0 Head Terminations and Options**

CODE	DESCRIPTION
31	Aluminum screw-cover head
34	Cast iron screw-cover head
91	316 L Stainless steel screw-cover head
49	Aluminum flip-top head
93	Aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved
94	316L stainless steel explosion-proof/flame-proof head, NEC, IEC, Atex approved

**6-1 OPTIONS**

SB	1/2 inch NPT conduit reducer bushing
I	Stainless steel tag
GS	Ground screw
H	Adjustable steel mounting flange

**5-0 Optional Welded Fittings**

CODE		DESCRIPTION
STEEL	316 SS	
6D(U)	8D(U)	3/4 inch NPT welded bushing (50 tubes only)
6E(U)	8E(U)	1 inch NPT welded bushing
6F(U)	8F(U)	1 (1/4) inch NPT welded bushing
6G(U)	8G(U)	1 (1/2) inch NPT welded bushing
6H(U)	8H(U)	2 inch NPT welded bushing
610R1(U)	810R1(U)	1 inch 150# class raised-face flange
615R1(U)	815R1(U)	1 (1/2) inch 150# class raised-face flange
620R1(U)	820R1(U)	2 inch 150# class raised-face flange

Other sizes and materials available - consult factory.

**4-0 Element Options**

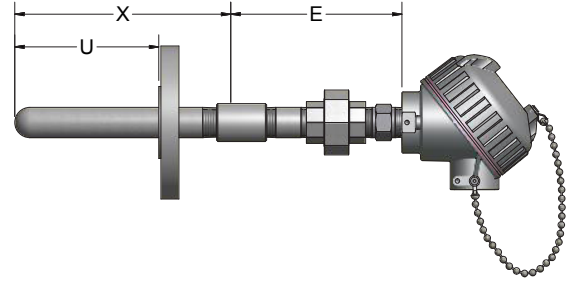
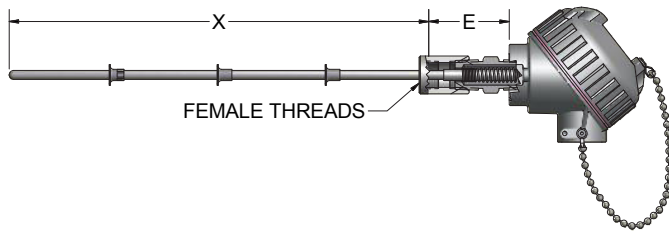
CODE	DESCRIPTION
SL	Spring-loaded element
LE	Loose element

**3-0 Protection Tube**

"X" LENGTH
Specify length in one inch increments. 4 inch minimum to 240 inch maximum.

# SENSORS WITH CONNECTION HEADS

## Configuration Code GP10 MgO Thermocouple Pipe Wells with Self-Contained, Spring-Loaded Elements and Optional Transmitters



**Example Order Number:**

1-0 1-1 1-2 1-3 1-4 2-0 3-0 4-0 5-0 6-0 7-0 7-1  
**K 4 8 U M8VS - 8-75 - 36 - 815R130 - PC - 8PU4 31, I**

### 1-0 Thermocouple Type

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

### 1-3 Junction Style

CODE	DESCRIPTION
G	Grounded junction
U	Ungrounded junction

### 1-4 Element Options

CODE	DESCRIPTION
M	Special limits of error
8VS	316 Stainless steel vibration spacers (see table on GP11)

### 2-0 Pipe Material and Size

CODE	MATERIAL	MAX TEMP	CODE (INCHES)	
			1/2 INCH NPT	3/4 INCH NPT
6	Carbon steel	538 °C [1000 °F]	50	75
8	316 Stainless steel	927 °C [1700 °F]	50	75
5	446 Stainless steel	1093 °C [2000 °F]	50	75
3	Alloy 600	1149 °C [2100 °F]	50	75
7	Alloy 601	1260 °C [2300 °F]	50	75
41	HR 160	1204 °C [2200 °F]	50	75
00 <sup>[1]</sup>	No protection tube	N/A	50	75

[1] Supplied with a female process connection.

### 3-0 Protection Tube

#### "X" LENGTH

Specify length in one inch increments. 4 inch minimum to 240 inch maximum.

### 4-0 Optional Welded Fittings

CODE		DESCRIPTION
STEEL	316 SS	
6D(U)	8D(U)	3/4 inch NPT welded bushing (50 tubes only)
6E(U)	8E(U)	1 inch NPT welded bushing
6F(U)	8F(U)	1 (1/4) inch NPT welded bushing
6G(U)	8G(U)	1 (1/2) inch NPT welded bushing
6H(U)	8H(U)	2 inch NPT welded bushing
610R1(U)	810R1(U)	1 inch 150# class raised-face flange
615R1(U)	815R1(U)	1 (1/2) inch 150# class raised-face flange
620R1(U)	820R1(U)	2 inch 150# class raised-face flange

Other sizes and materials available - consult factory

### 7-0 Head Terminations and Options

CODE	DESCRIPTION
22	3 inch individual leads with terminal pins
31	Aluminum screw-cover head
34	Cast iron screw-cover head
91	316 L Stainless steel screw-cover head
49	Aluminum flip-top head
93	Aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved
94	316L stainless steel explosion-proof/flame-proof head, NEC, IEC, Atex approved
35T-642A	(4 to 20) mA Isolated HART® field transmitter with general-purpose aluminum 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
75T-642C	(4 to 20) mA Isolated HART® field transmitter with explosion-proof aluminum housing, Group A
76T82-D10	(4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof housing, Group A
77T-662C	(4 to 20) mA HART® Field Transmitter with dual cavity explosion-proof aluminum housing, Group A

### 7-1 OPTIONS AND TRANSMITTERS

SB	1/2 inch NPT conduit reducer bushing
I	Stainless steel tag
GS	Ground screw
H	Adjustable steel mounting flange
T-441 <sup>[1]</sup>	(4 to 20) mA Isolated head-mounted transmitter
T-442 <sup>[1]</sup>	(4 to 20) mA Isolated HART® head-mounted transmitter
T82-00	(4 to 20) mA dual input HART® head-mounted transmitter

[1] Not available with option 71 or 81  
 See Transmitter section for transmitter ordering information

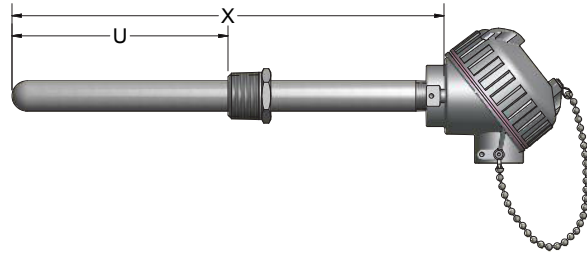
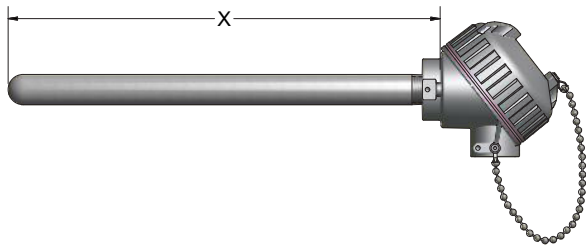
### 6-0 Head Mounting Fittings

CODE		DESCRIPTION
STEEL	316 SS	
6HN	8HN	1/2 inch X 1/2 inch NPT hex nipple 2 Inch "E" length
6PU_	8PU_	1/2 inch NPT union/hex nipple (specify "E" length)
6XU_	8XU_	1/2 inch NPT explosion-proof union/hex nipple (specify "E" length)

### 5-0 Element Options

CODE	DESCRIPTION
PC	Self-contained spring-loaded element





**Example Order Number:**

1-0 1-1 1-2 1-3 2-0 3-0 4-0 5-0 6-0 6-1  
**R1T185L 48 3 8VS - 8-75 - 36 - SL - 815R133 - 31, I**

**1-0 100 Ω Platinum RTD Elements  
α = 0.003 85 °C**

CODE		TOLERANCE <sup>(1)</sup>
<i>SINGLE</i>	<i>DUPLEX</i>	
<i>LOW RANGE WIRE WOUND (-200 to 200) °C</i>		
R1T185L	R1T285L	Grade B
R3T185L	R3T285L	Class AA
R5T185L	R5T285L	(1/5) Class B
<i>LOW RANGE THIN FILM (-50 to 200) °C</i>		
RBF185L	RBF285L	Class B
RAF185L	RAF285L	Class A
<i>HIGH RANGE WIRE WOUND (-200 to 600) °C</i>		
R1T185H	R1T285H	Grade B
RAT185H	RAT285H	Class A

**1-1 Sheath Diameters**

CODE	DIAMETER - 316 SS
48	1/4 Inch
68	3/8 Inch

**1-2 Element Connection**

CODE	DESCRIPTION
2	2-wire element
3	3-wire element
4	4-wire element

**1-3 Element Options**

CODE	DESCRIPTION
8VS	316 Stainless steel vibration spacers (see table on GP12)

**2-0 Pipe Material and Size**

CODE	MATERIAL	MAX TEMP	CODE	
			1/2 INCH NPT	3/4 INCH NPT
6	Carbon steel	538 °C [1000 °F]	50	75
8	316 Stainless steel	927 °C [1700 °F]	50	75

**6-0 Head Terminations and Options**

CODE	DESCRIPTION
31	Aluminum screw-cover head
34	Cast iron screw-cover head
91	316 L Stainless steel screw-cover head
49	Aluminum flip-top head
93	Aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved
94	316L stainless steel explosion-proof/flame-proof head, NEC, IEC, Atex approved

**6-1 OPTIONS**

SB	1/2 inch NPT conduit reducer bushing
I	Stainless steel tag
GS	Ground screw
H	Adjustable steel mounting flange

**5-0 Optional Welded Fittings**

CODE		DESCRIPTION
STEEL	316 SS	
6D(U)	8D(U)	3/4 inch NPT welded bushing (50 tubes only)
6E(U)	8E(U)	1 inch NPT welded bushing
6F(U)	8F(U)	1 (1/4) inch NPT welded bushing
6G(U)	8G(U)	1 (1/2) inch NPT welded bushing
6H(U)	8H(U)	2 inch NPT welded bushing
610R1(U)	810R1(U)	1 inch 150# class raised-face flange
615R1(U)	815R1(U)	1 (1/2) inch 150# class raised-face flange
620R1(U)	820R1(U)	2 inch 150# class raised-face flange

Other sizes and materials available - consult factory.

**4-0 Element Options**

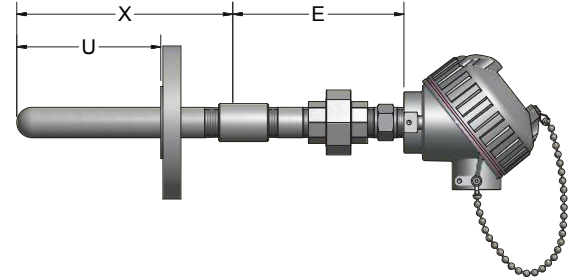
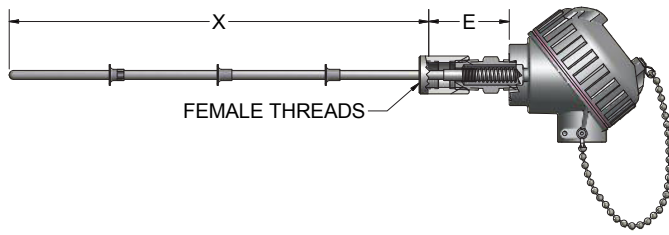
CODE	DESCRIPTION
SL	Spring-loaded element
LE	Loose element

**3-0 Protection Tube**

"X" LENGTH
Specify length in one inch increments. 4 inch minimum to 240 inch maximum.

# SENSORS WITH CONNECTION HEADS

## Configuration Code GP10 RTD Pipe Wells with Self-Contained, Spring-Loaded Elements and Optional Transmitters



**Example  
Order  
Number:**

1-0 1-1 1-2 1-3 2-0 3-0 4-0 5-0 6-0 7-0 7-1  
**R1T185L 48 3 M8VS - 8-75 - 36 - 815R130 - PC - 8PU4 31, I**

### 1-0 100 Ω Platinum RTD Elements $\alpha = 0.00385\text{ }^\circ\text{C}$

CODE		TOLERANCE <sup>[1]</sup>
<b>SINGLE</b>	<b>DUPLEX</b>	
LOW RANGE WIRE WOUND (-200 to 200) °C		
R1T185L	R1T285L	Grade B
R3T185L	R3T285L	Class AA
R5T185L	R5T285L	(1/5) Class B
LOW RANGE THIN FILM (-50 to 200) °C		
RBF185L	RBF285L	Class B
RAF185L	RAF285L	Class A
HIGH RANGE WIRE WOUND (-200 to 600) °C		
R1T185H	R1T285H	Grade B
RAT185H	RAT285H	Class A

### 1-1 Sheath Diameters

CODE	DIAMETER - 316 SS
48	1/4 Inch
68	3/8 Inch

### 1-2 Element Connection

CODE	DESCRIPTION
2	2-wire element
3	3-wire element
4	4-wire element

### 1-3 Element Options

CODE	DESCRIPTION
8VS	316 Stainless steel vibration spacers (see table on GP11)

### 2-0 Pipe Material and Size

CODE	MATERIAL	MAX TEMP	CODE	
			1/2 INCH NPT	3/4 INCH NPT
6	Carbon steel	538 °C [1000 °F]	50	75
8	316 Stainless steel	927 °C [1700 °F]	50	75
00 <sup>[1]</sup>	No protection tube	N/A	50	75

[1] Supplied with a female process connection.

### 3-0 Protection Tube

#### "X" LENGTH

Specify length in one inch increments. 4 inch minimum to 240 inch maximum.

### 4-0 Optional Welded Fittings

CODE		DESCRIPTION
STEEL	316 SS	
6D(U)	8D(U)	3/4 inch NPT welded bushing (50 tubes only)
6E(U)	8E(U)	1 inch NPT welded bushing
6F(U)	8F(U)	1 (1/4) inch NPT welded bushing
6G(U)	8G(U)	1 (1/2) inch NPT welded bushing
6H(U)	8H(U)	2 inch NPT welded bushing
610R1(U)	810R1(U)	1 inch 150# class raised-face flange
615R1(U)	815R1(U)	1 (1/2) inch 150# class raised-face flange
620R1(U)	820R1(U)	2 inch 150# class raised-face flange

Other sizes and materials available - consult factory

### 7-0 Head Terminations and Options

CODE	DESCRIPTION
22	3 inch individual leads with terminal pins
31	Aluminum screw-cover head
34	Cast iron screw-cover head
91	316 L Stainless steel screw-cover head
49	Aluminum flip-top head
93	Aluminum explosion-proof/flame-proof head, NEC, IEC, Atex approved
94	316L stainless steel explosion-proof/flame-proof head, NEC, IEC, Atex approved
35T-642A	(4 to 20) mA Isolated HART® field transmitter with general-purpose aluminum 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
75T-642C	(4 to 20) mA Isolated HART® field transmitter with explosion-proof aluminum housing, Group A
76T82-D10	(4 to 20) mA dual input HART® Field Transmitter with digital display and explosion-proof housing, Group A
77T-662C	(4 to 20) mA HART® Field Transmitter with dual cavity explosion-proof aluminum housing, Group A

### 7-1 OPTIONS AND TRANSMITTERS

SB	1/2 inch NPT conduit reducer bushing
I	Stainless steel tag
GS	Ground screw
H	Adjustable steel mounting flange
T-440	(4 to 20) mA head-mounted RTD transmitter
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

See Transmitter section for transmitter ordering information

### 6-0 Head Mounting Fittings

CODE		DESCRIPTION
STEEL	316 SS	
6HN	8HN	1/2 inch X 1/2 inch NPT hex nipple 2 Inch "E" length
6PU_	8PU_	1/2 inch NPT union/hex nipple (specify "E" length)
6XU_	8XU_	1/2 inch NPT explosion-proof union/hex nipple (specify "E" length)

### 5-0 Element Options

CODE	DESCRIPTION
PC	Self-contained spring-loaded element

