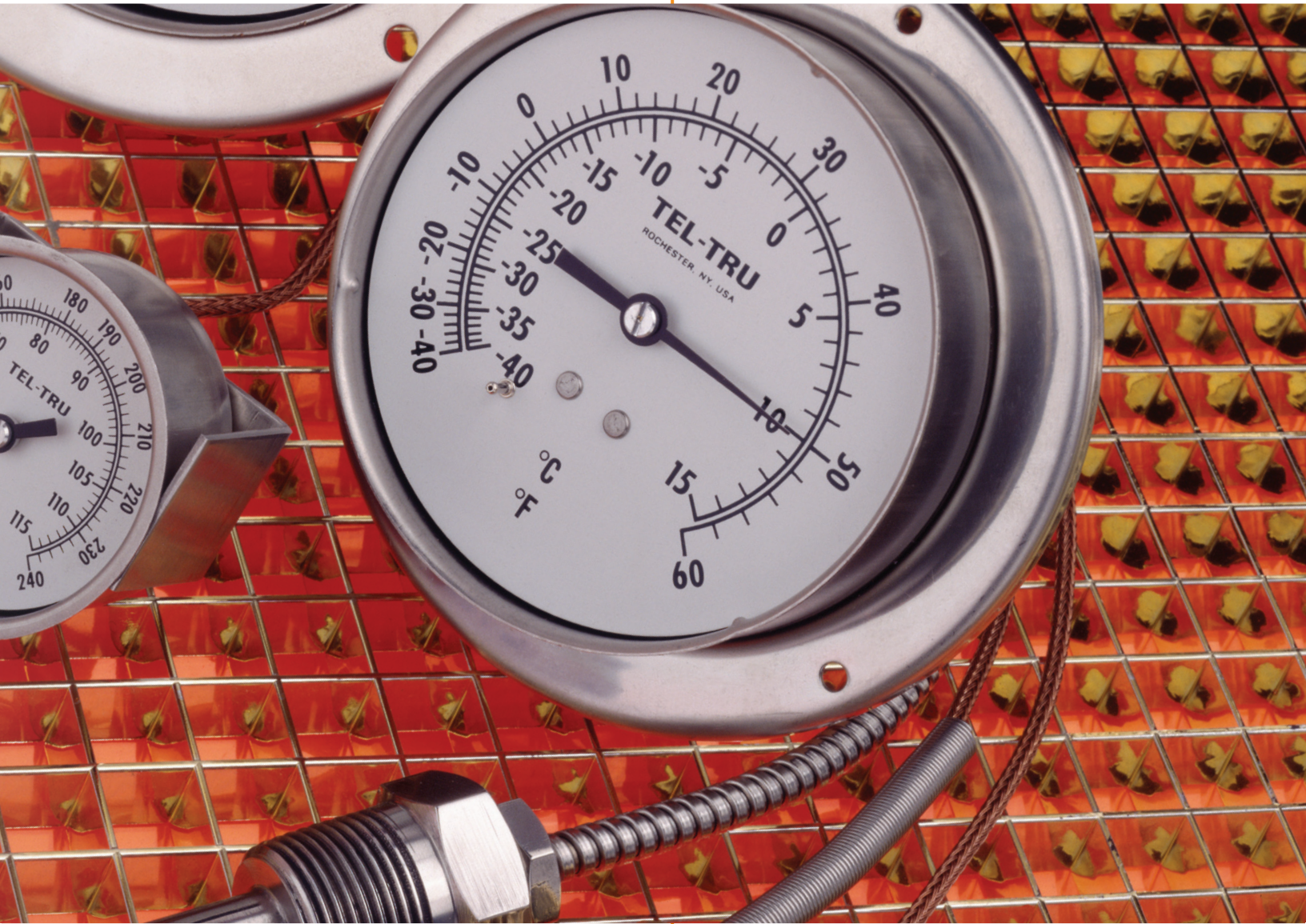




**TEL-TRU Manufacturing Co.**

# **VAPOR TENSION THERMOMETERS**



[www.teltru.com](http://www.teltru.com)

*World-Class Instruments* Since 1916

# Vapor Tension Thermometers



Tel-Tru Manufacturing Company, for many years recognized as a leader in the manufacturing of Bimetal Dial Thermometers for industrial, OEM and laboratory purposes, now offers a complete line of Vapor Tension Thermometers.

Tel-Tru Vapor Tension Thermometers provide an accurate indication of temperatures within the recommended working zones. Dial graduations are non-linear with the distance between graduations increasing as the temperature range increases.

Tel-Tru Vapor Tension Thermometers offer dependability, durability, high accuracy, low ambient error and are available in various case sizes and styles.

## Features

Case Sizes: 2", 2-1/2", 3-1/2", 4-1/2"

Case Type:

- Front flange
- U clamp
- Back flange
- Front flange, semi flush
- Adjustable bracket

Case Material: 304 Stainless Steel

Dial: White coated aluminum with large black numbers and graduations. Easy to read from any angle.

Bulb: Copper or Stainless Steel

Capillary: Copper – plain or with braided armor  
316 Stainless Steel – plain or with interlocking armor

Window: Glass or polycarbonate

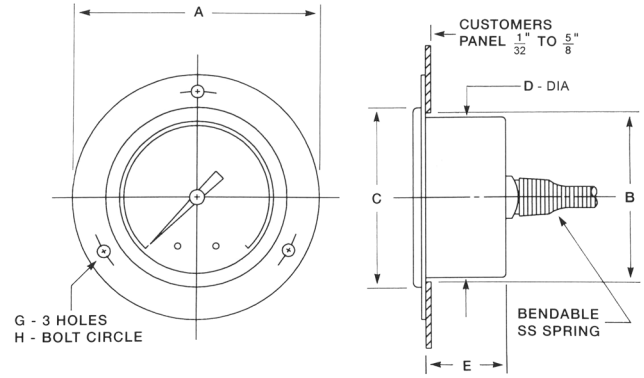
Pointer: Slotted type for field zero adjustment

Accuracy: Within one scale division in recommended working zone

Ranges: From -40°F (-40°C) to 350°F (175°C)

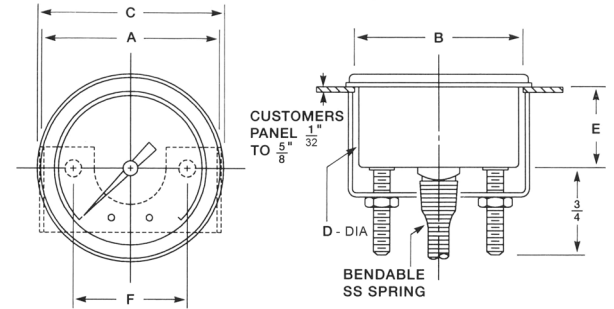
# Front Flange Case

Code	Case Size	Conn.	Panel Hole			D	E	G	H
			A	B	C				
V20 FB	2"	Back	2 <sup>15</sup> / <sub>16</sub> "	2 <sup>1</sup> / <sub>16</sub> "	2 <sup>11</sup> / <sub>64</sub> "	2 <sup>1</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>32</sub> "	9 <sup>9</sup> / <sub>64</sub> "	2 <sup>9</sup> / <sub>16</sub> "
V25 FB	2 1/2"	Back	3 <sup>11</sup> / <sub>16</sub> "	2 <sup>39</sup> / <sub>64</sub> "	2 <sup>7</sup> / <sub>8</sub> "	2 <sup>9</sup> / <sub>16</sub> "	1"	1 <sup>1</sup> / <sub>64</sub> "	3 <sup>5</sup> / <sub>16</sub> "



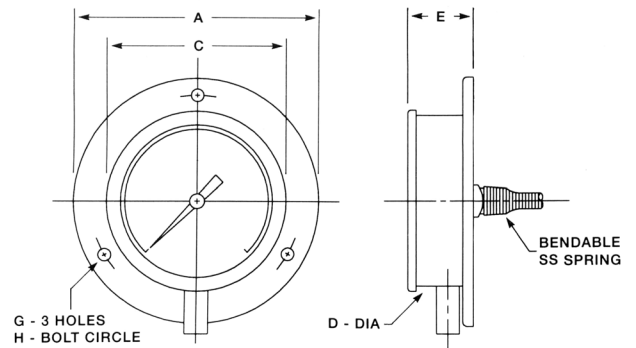
# U-Clamp Case

Code	Case Size	Conn.	Panel Hole			D	E	F
			A	B	C			
V20 UB	2"	Back	2 <sup>7</sup> / <sub>32</sub> "	2 <sup>1</sup> / <sub>16</sub> "	2 <sup>11</sup> / <sub>16</sub> "	2 <sup>1</sup> / <sub>32</sub> "	3 <sup>1</sup> / <sub>32</sub> "	1 <sup>3</sup> / <sub>8</sub> "
V25 UB	2 1/2"	Back	2 <sup>13</sup> / <sub>16</sub> "	2 <sup>39</sup> / <sub>64</sub> "	2 <sup>7</sup> / <sub>8</sub> "	2 <sup>9</sup> / <sub>16</sub> "	1"	2"
V35 QB	3 1/2"	Back	3 <sup>7</sup> / <sub>8</sub> "	3 <sup>5</sup> / <sub>8</sub> "	3 <sup>29</sup> / <sub>32</sub> "	3 <sup>19</sup> / <sub>32</sub> "	1"	3 <sup>1</sup> / <sub>16</sub> "



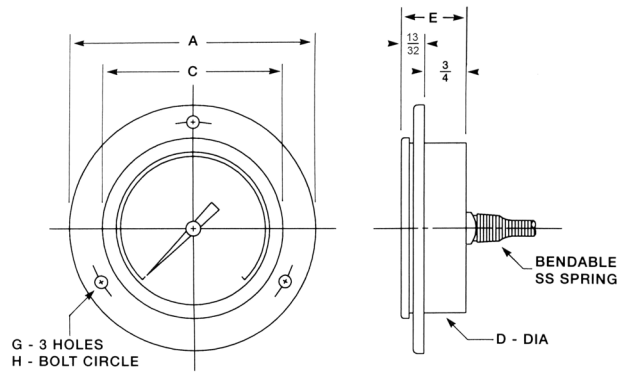
# Back Flange Case

Code	Case Size	Conn.	A	C	D	E	G	H
V35 BL	3 1/2"	Bottom	4 <sup>3</sup> / <sub>4</sub> "	3 <sup>11</sup> / <sub>16</sub> "	3 <sup>19</sup> / <sub>32</sub> "	1 <sup>13</sup> / <sub>32</sub> "	5 <sup>5</sup> / <sub>32</sub> "	4 <sup>5</sup> / <sub>16</sub> "
V45 BB	4 1/2"	Back	5 <sup>7</sup> / <sub>8</sub> "	4 <sup>11</sup> / <sub>16</sub> "	4 <sup>19</sup> / <sub>32</sub> "	1 <sup>13</sup> / <sub>32</sub> "	7 <sup>7</sup> / <sub>32</sub> "	5 <sup>3</sup> / <sub>8</sub> "
V45 BL	4 1/2"	Bottom	5 <sup>7</sup> / <sub>8</sub> "	4 <sup>11</sup> / <sub>16</sub> "	4 <sup>19</sup> / <sub>32</sub> "	1 <sup>13</sup> / <sub>32</sub> "	7 <sup>7</sup> / <sub>32</sub> "	5 <sup>3</sup> / <sub>8</sub> "



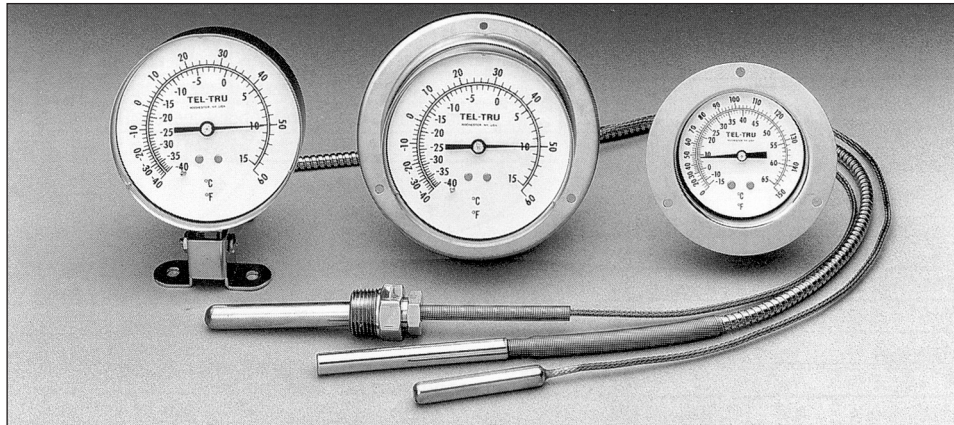
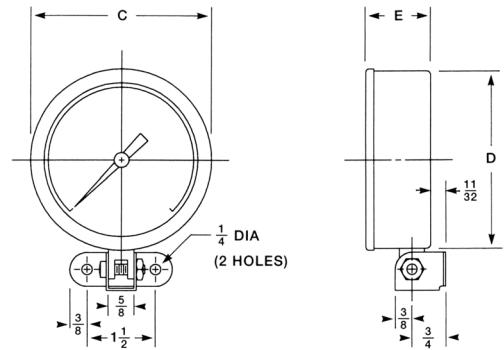
# Semi-Flush Case

Code	Case Size	Conn.	A	C	D	E	G	H	Panel Hole
V35 RB	3 1/2"	Back	4 3/4"	3 1/16"	3 19/32"	1 5/32"	5/32"	4 5/16"	3 5/8"
V45 RB	4 1/2"	Back	5 7/8"	4 1/16"	4 19/32"	1 5/32"	7/32"	5 3/8"	4 5/8"



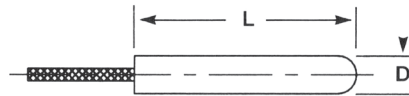
# Adjustable Bracket Case

Code	Case Size	Conn.	C	D	E
V35 ZL	3 1/2"	Bottom	3 1/16"	3 19/32"	1 1/4"
V45 ZL	4 1/2"	Bottom	4 1/16"	4 19/32"	1 1/4"

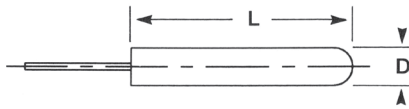


# Process Connection & Capillary

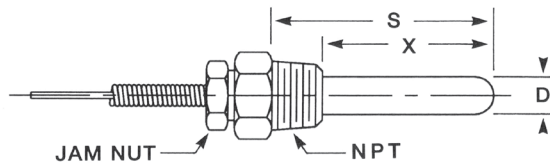
Braided Capillary with Plain Bulb



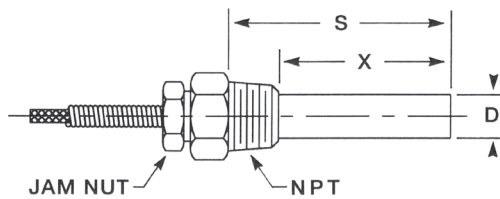
Plain Capillary with Plain Bulb



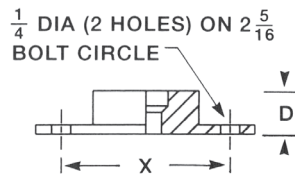
Armored Capillary with Union Connection



Armored Capillary with Thermowell



Flange Connection



## Bulb Dimensions

### WITH FITTING - UNION OR THERMOWELL

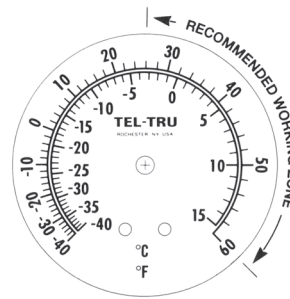
Table 4 Code	Union Connection			Thermowell Connection			Flange Connection	
	X	S	D	X	S	D	X	D
1	1 13/16"	2 3/8"	7/16"	1 15/16"	2 1/2"	9/16"	2 3/16"	7/16"
2	2 5/8"	3 3/8"	7/16"	2 5/8"	3 3/8"	9/16"	3"	7/16"
3	4 5/8"	5 3/8"	7/16"	4 5/8"	5 3/8"	9/16"	5"	7/16"
4	6 7/8"	7 3/8"	7/16"	6 5/8"	7 3/8"	9/16"	7"	7/16"

Note "X" for flange connection is the insertion length from the tip of the bulb to the face of the flange (not pictured)

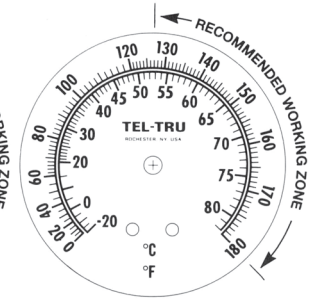
### NO FITTING - PLAIN BULB

Table 4 Code	Plain Bulb	
	L	D
6	2 1/2"	3/8"
2	3 7/16"	3/8"
3	4 7/8"	3/8"
4	7 7/8"	3/8"

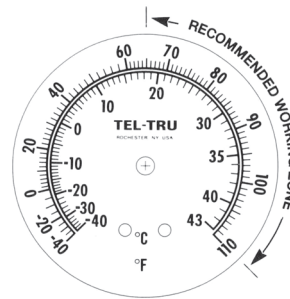
# Vapor Thermometer Dials



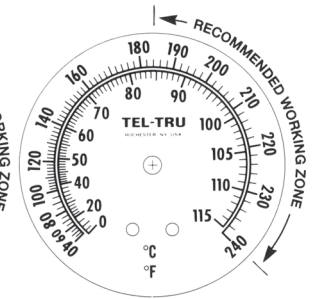
**Code** -40/60°F  
**DA** -40/15°C



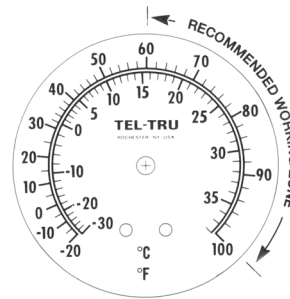
**Code** 0/180°F  
**DF** -20/82°C



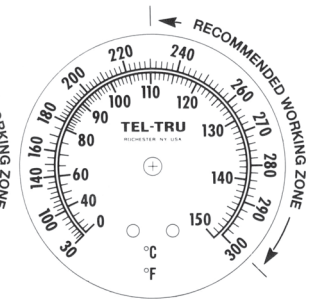
**Code** -40/110°F  
**DB** -40/43°C



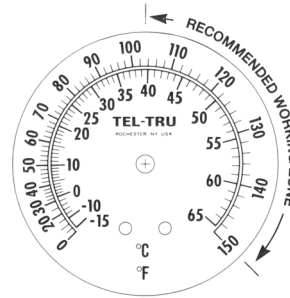
**Code** 40/240°F  
**DG** 0/115°C



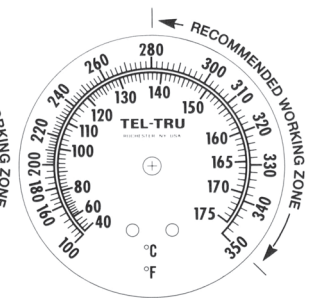
**Code** -20/100°F  
**DC** -30/38°C



**Code** 30/300°F  
**DH** 0/150°C



**Code** 0/150°F  
**DE** -15/65°C



**Code** 100/350°F  
**DJ** 40/175°C

Note: Accuracy is ± one graduation in the recommended working zone

# How to Order: WITH FITTING - UNION OR THERMOWELL

## HOW TO ORDER WITH FITTING - UNION OR THERMOWELL:

From each table select the dial size, case material/type, case front and window, process conn. and material, bulb & capillary, bulb dimension, capillary length, dual temperature range and options. Combine to complete your Vapor Tension Thermometer.

### EXAMPLE:

2½" SS U-clamp back connection, glass lens w/SS ring, union conn. ½" NPT 316SS, 316SS bulb & SS plain capillary, ⅞" x 2½", 5', 0/150°F and -15/65°C, vibration dampening

TABLE 1A and 1B Dial Size, Case Material/ Type Code		TABLE 2 Case Front & Window Code	TABLE 3 Process Conn. & Material Code	TABLE 4 Bulb & Capillary Code	TABLE 5 Bulb Dimension Code	TABLE 6 Capillary Length Code	TABLE 7 Temperature Range Code	TABLE 7 Options Code
V25UB		4	13	9	1	05	DE	1

## WITH FITTING - UNION OR THERMOWELL

Dial Size		TABLE 1A & 1B - DIAL SIZE, CASE MATERIAL/TYPE & CASE FRONT AND WINDOW								
Code										
2"	V20FB	SS Front flange, back conn.		3		Lexan snap in lens				
	V20UB	SS U-clamp, back conn.		4		Glass lens w/SS ring				
				8		Glass lens w/crimped SS ring, IP66 (U-clamp only)				
				9		Lexan threaded lens				
2½"	V25FB	SS Front flange, back conn.		3		Lexan snap in lens				
	V25UB	SS U-clamp, back conn.		4		Glass lens w/SS ring				
				8		Glass lens w/crimped SS ring, IP66 (U-clamp only)				
				9		Lexan threaded lens				
3½"	V35QB	SS U-clamp, back conn.		3		Lexan snap in lens				
	V35BB	SS Back flange, back conn.		5		Glass lens w/chrome/brass ring (U-clamp only)				
	V35BL	SS Back flange, lower conn.		9		Lexan threaded (U-clamp only)				
	V35RB	SS Front flange, semi-flush								
	V35ZL	SS Adjustable bracket, lower conn.								
4½"	V45BB	SS Back flange, back conn.		3		Lexan snap in lens				
	V45BL	SS Back flange, lower conn.								
	V45RB	SS Front flange, semi-flush, back conn.								
	V45ZL	SS Adjustable bracket, lower conn.								
TABLE 2 PROCESS CONN. & MATERIAL			TABLE 3 BULB & CAPILLARY			TABLE 4 BULB DIMENSION				
Code			Code			Code				
11	Union conn. ½" NPT, Brass		5	Copper bulb & copper braided capillary		1	⅞" x 2.5" (10' max. cap. length)			
12	Union conn. ½" NPT, 304SS		8	316SS bulb & SS armored capillary		2	⅞" x 3.4" (25' max. cap. length)			
13	Union conn. ½" NPT, 316SS		9	316SS bulb & SS plain capillary		3	⅞" x 5.4" (50' max. cap. length)			
21	Union conn. ¾" NPT, Brass							4	⅞" x 7.43" (99' max. cap. length)	
22	Union conn. ¾" NPT, 304SS									
23	Union conn. ¾" NPT, 316SS									
31	Thermowell ½" NPT, Brass									
32	Thermowell ½" NPT, 304SS									
33	Thermowell ½" NPT, 316SS									
41	Thermowell ¾" NPT, Brass									
42	Thermowell ¾" NPT, 304SS									
43	Thermowell ¾" NPT, 316SS									
75	Air duct flange union, alum.									
TABLE 5 CAPILLARY LENGTH IN FEET			TABLE 6 DUAL TEMPERATURE			TABLE 7 OPTIONS				
Code			Code	Fahrenheit °F	Celsius °C	Code				
XX	Use 2 digits - ex. 5 feet equals code 05		DA	-40/60	-40/15	0	NONE			
			DB	-40/110	-40/43					
			DC	-20/100	-30/38					
			DD	-20/120	-30/49					
			DE	0/150	-15/65					
			DF	0/180	-20/82					
			DG	40/240	0/115					
			DH	30/300	0/150					
	DJ	100/350	40/175		1	Vibration dampening				

# How to Order: NO FITTING - PLAIN BULB

## HOW TO ORDER PLAIN BULB - NO FITTING:

From each table select the dial size, case material/type, case front and window, process conn. and material, bulb and capillary, bulb dimension, capillary length, dual temperature range and options. Combine to complete your Vapor Tension Thermometer description.

### EXAMPLE:

2½" SS U-clamp back connection, glass lens w/SS ring, plain bulb, no fitting, copper bulb & copper braided capillary, ⅜" x 3.4", 5', 0/150°F & -15/65°C, None (options)

TABLE 1A & 1B Dial Size, Case Material/Type Code		Case Front & Window Code	TABLE 2 Process Conn. & Material Code	TABLE 3 Bulb & Capillary Code	TABLE 4 Bulb Dimension Code	TABLE 5 Capillary Length Code	TABLE 6 Temperature Range Code	TABLE 7 Options Code
V25UB		4	90	2	2	05	DE	0

## PLAIN BULB - NO FITTING

TABLE 1A & 1B DIAL SIZE, CASE MATERIAL/TYPE & CASE FRONT AND WINDOW				
Dial Size	Code		Code	
2"	V20FB	SS Front flange, back conn.	3	Lexan snap in lens
	V20UB	SS U-clamp, back conn.	4	Glass lens w/SS ring
			8	Glass lens w/crimped SS ring, IP66 (U-clamp only)
			9	Lexan threaded lens
2½"	V25FB	SS Front flange, back conn.	3	Lexan snap in lens
	V25UB	SS U-clamp, back conn.	4	Glass lens w/SS ring
			8	Glass lens w/crimped SS ring, IP66 (U-clamp only)
3½"	V35QB	SS U-clamp, back conn.	3	Lexan snap in lens
	V35BB	SS Back flange, back conn.	5	Glass lens w/chrome/brass ring (U-clamp only)
	V35BL	SS Back flange, lower conn.	9	Lexan threaded (U-clamp only)
	V35RB	SS Front flange, semi-flush		
	V35ZL	SS Adjustable bracket, lower conn.		
4½"	V45BB	SS Back flange, back conn.	3	Lexan snap in lens
	V45BL	SS Back flange, lower conn.		
	V45RB	SS Front flange, semi-flush, back conn.		
	V45ZL	SS Adjustable bracket, lower conn.		

TABLE 2 PROCESS CONN. & MATERIAL		TABLE 3 BULB & CAPILLARY		TABLE 4 BULB DIMENSION	
Code		Code		Code	
90	Plain bulb, no fitting	2	Copper bulb & copper braided capillary	6	⅜" x 2.5" (5' max. cap. length)
		3	316SS bulb & SS plain capillary	2	⅜" x 3.4" (25' max. cap. length)
				3	⅜" x 4.9" (50' max. cap. length)
				4	⅜" x 7.9" (99' max. cap. length)

TABLE 5 CAPILLARY LENGTH IN FEET		TABLE 6 DUAL TEMPERATURE			TABLE 7 OPTIONS	
Code		Code	Fahrenheit °F	Celsius °C	Code	
XX	Use 2 digits - ex. 5 feet equals code 05	DA	-40/60	-40/15	0	NONE
		DB	-40/110	-40/43		
		DC	-20/100	-30/38		
		DE	0/150	-15/65		
		DF	0/180	-20/82		
		DG	40/240	0/115		
		DH	30/300	0/150		
		DJ	100/350	40/175		
1	Vibration dampening					



## ADDITIONAL PRODUCTS AVAILABLE FROM TEL-TRU

Bimetal Thermometers

Industrial & Sanitary RTDs

Temperature Transmitters

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Thermowells

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Calibrators

Infrared Thermometers

Surface Thermometers

Pressure Transmitters

Pressure Gauges

HVAC Instruments

