

Connecting Capillary, Sensing Bulbs, Separate Wells

For Robertshaw Self-Actuated Temperature Regulators

As cataloged, Robertshaw's RT-1001 through RT-1010 Series Temperature Regulators are supplied with 8 feet of copper connecting capillary tube with brass armor and type 12B copper sensing bulb fitted with a threaded brass bushing. The RT-1011 Series is supplied with 8 feet of stainless steel tubing. The sensing bulb size for a given combination of regulator series, valve type and size and setpoint adjustment range is detailed on the individual temperature regulator product specification sheets.

On special orders, at extra cost, variations in capillary tube length and/or material and in sensing type and/or material are available as indicated in the following paragraphs.

Separable wells are also available.

CONNECTING CAPILLARY TUBE

Length

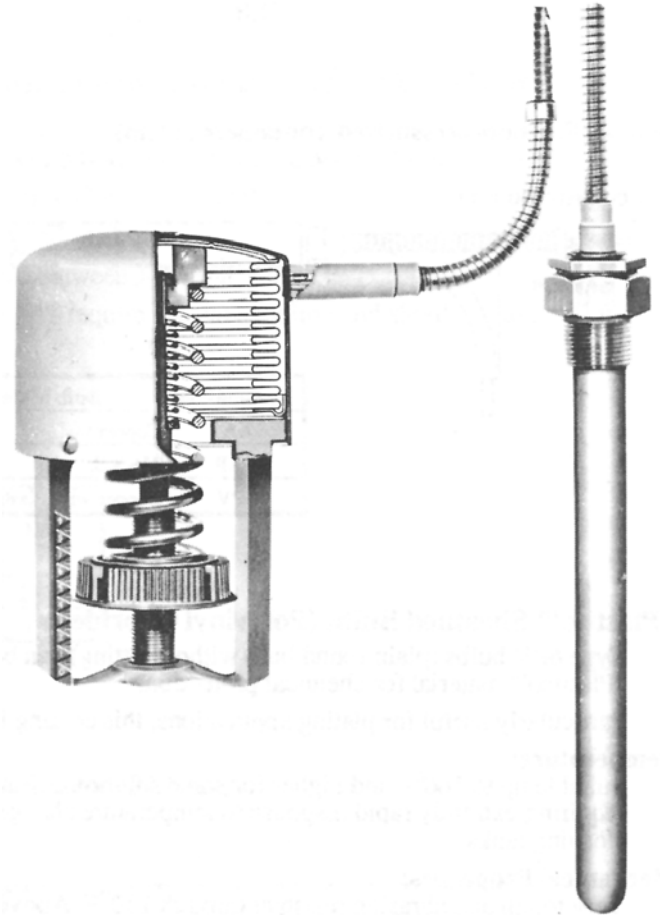
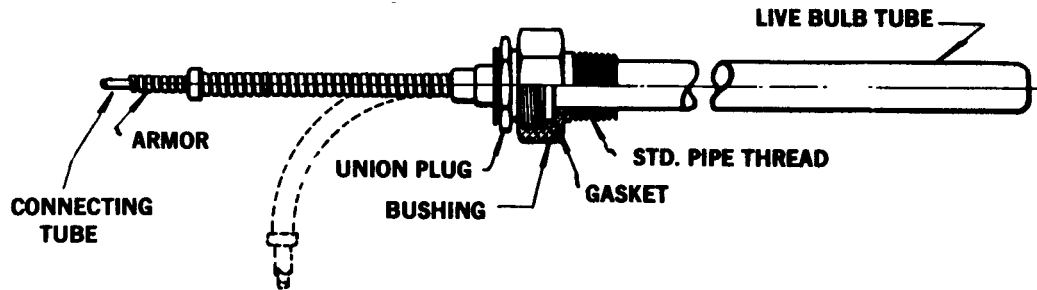
The cataloged capillary tube length is 8 feet. Other lengths from one foot to approximately 50 feet can be supplied.

Material

The cataloged capillary tube and armor materials are copper tube with brass armor except for RT-1011 Series on which type 304 stainless steel tube without armor is the cataloged material. Alternates include: 304 stainless steel tube with or without stainless steel braid and either a type 12B copper bulb or a type 12BP stainless steel bulb.

SENSING BULB TYPES

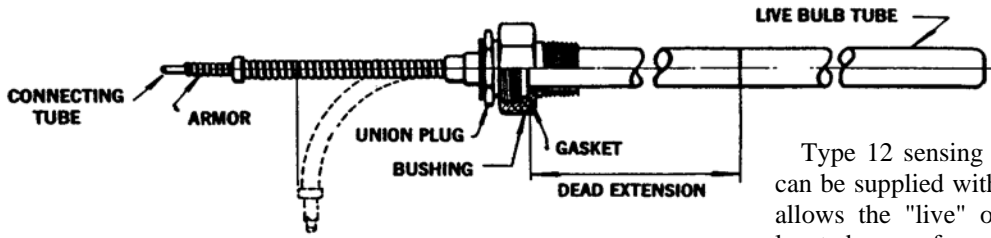
Type 12 - (with pressure fitting with threaded bushing)



Designation	Bulb Material	Bushing Material	Standard Capillary	Diameters Available
12B	Copper	Brass	Copper tube, Brass Armor	3/4", 1", 1-1/4", 1-1/2"
12BP	316 S.S.	316 S.S.	304 S.S. tube, no armor*	3/4", 1", 1-1/4", 1-1/2"
Hy-Speed	Copper	Brass	Copper tube, Brass armor	1", 1-1/4"

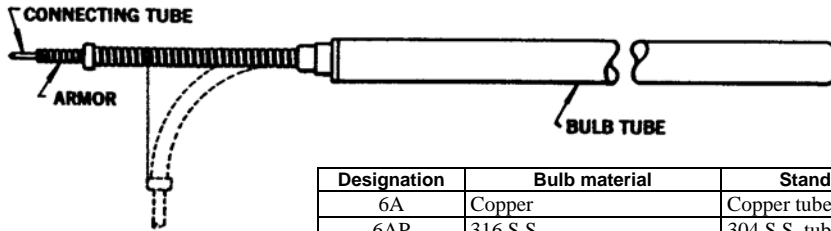
*Can be supplied with braided stainless steel armor.

Type 12 - (with threaded bushing and "Dead Extension")



Type 12 sensing bulbs in copper and 316 stainless steel can be supplied with a rigid "dead extension" feature which allows the "live" or "sensing" portion of the bulb to be located away from the pressure fitting and the containing wall. The length of the "dead extension" can vary from two inches to several feet.

Type 6 - For non-pressurized containers (plain)

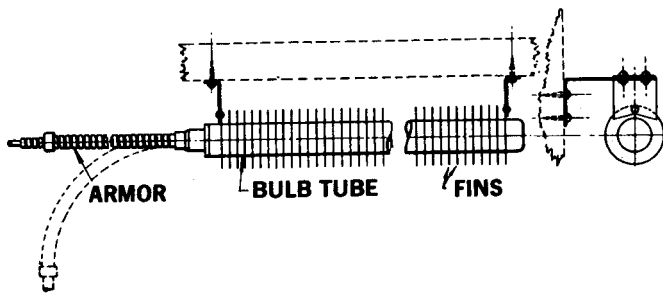


Designation	Bulb material	Standard Capillary	Diameters Available
6A	Copper	Copper tube, Brass armor	3/4", 1", 1-1/4", 1-1/2"
6AP	316 S.S.	304 S.S. tube, No braid armor	3/4", 1", 1-1/4", 1-1/2"

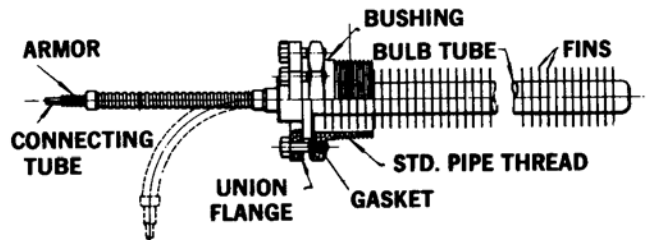
Type 54 - Externally finned for Air or Gases (315° F. Max.)

Bulb Material – Copper / Brass
Standard Capillary - Copper tube with brass armor.
Diameters Available – 1", 1-1/4" *

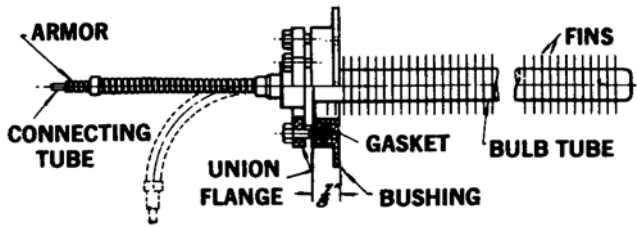
- * For all Type 54 bulbs:
 Fin O.D. for 1" diameter bulb is 1-3/4"; 2-1/4" for 1-1/4" diameter bulb. Lengths are: 14" for 1" diameter bulb; 16" or 24" for 1-1/4" diameter bulb.
- ** For Type 54J bulbs:
 Vessel connection is 2" NPT for 1" diameter bulb; 2-1/2" NPT for 1-1/4" diameter bulb.
- *** For Type 54K bulbs:
 Flange for 1" diameter bulb: 4-3/8" O.D. with 3-3/4" B.C.; for 1-1/4" diameter bulb flange is 4 7/8" O.D. with 4-1/4" B.C.



54A - with brackets for open space.



54J - with pressure fitting (threaded bushing)**



54K - with pressure fitting (flanged)***

Finned Type Bulbs

In the interest of production standardization, we produce only two diameters of 54A, 54J and 54K finned bulbs.

The 1" x 14" bulb size is used where the catalog calls for standard bulbs 1" x 14" or smaller.

The 1-1/4" x 16" bulb size is used where the catalog specifies 1-1/4" x 16" or shorter.

The 1-1/4" x 24" bulb size is used for any standard cataloged bulb size between 1-1/4" x 16" and 1-1/4" x 24".

Other bulb lengths can be supplied where absolutely necessary, but will require special handling and should be avoided if possible. The maximum finned bulb length is 48".

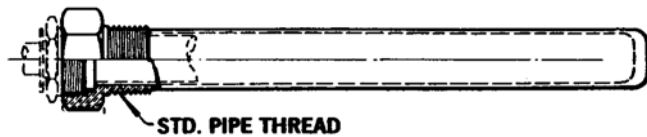
MOUNTING DIMENSIONS

Nominal Bulb Diameter	Fin Diameter	54J Male Pipe Thread on Bushing	54K Flan Bushing		54A Dim. P*
			Flange Dia.	Bolt Circle	
1"	1-3/4"	2"	4-3/8"	3-3/4"	2-29/64"
1-1/4"	2-1/4"	2-1/2"	4-7/8"	4-1/4"	2-9/16"

* Center line of bulb to top of bracket.

SEPARABLE WELLS - For use with Type 12 bulbs up to 30" long.

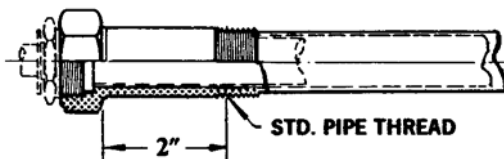
Type GA



Mounting thread is one size larger than nominal bulb diameter. Length is 1/2" longer than bulb length.

Well Material	Used with Bulb Material	Used with Bulb Diameter
316 S.S.	Copper or 316 S.S.	3/4", 1", 1-1/4", 1-1/2"

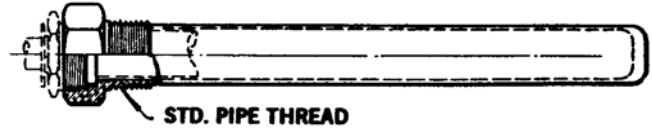
Type GA with 2" Lagging Extension*



Well Material	Used with Bulb Material	Used with Bulb Diameter
316 S.S.	Copper or 316 S.S.	3/4", 1", 1-1/4"

*A "dead extension" bulb is a prerequisite.

Type GB



Mounting thread is same size as nominal bulb diameter. Length is 1/2" longer than bulb length.

Well Material	Used with Bulb Material	Used with Bulb Diameter
316 S.S.	Copper or 316 S.S.	3/4", 1", 1-1/4"

PRESSURE/TEMPERATURE RATINGS

Type 12, 6, 54 Sensing Bulbs

Material	Max. External Pressure - PSI					at °F.
	1/2" O.D.	3/4" O.D.	1" O.D.	1-1/4" O.D.	1-1/2" O.D.	
Copper	400	700	700	600	600	250
	200	200	200	175	175	400
316 Stainless Steel		1100	1500	1200	700	600

Note: There is a relationship between pressure rating and temperature which allows the pressure rating to be increased as the temperature decreases, and vice versa.

Type GA and GB Separable Wells - 316 Stainless Steel

EXTERNAL PRESSURE RATING PER ASME BOILER AND PRESSURE VESSEL CODE, SECTION VIII				
SOCKET FOR		MAX. PRESSURE		HYDROSTATIC TEST PRESSURE
BULB DIAMETER	BULB LENGTH	AT 100°F	AT 400°F	
3/4"	UP TO 20"	835 PSIG	800 PSIG	1260 PSIG
1"	UP TO 30"	565 PSIG	500 PSIG	850 PSIG
1-1/4"	UP TO 40"	435 PSIG	390 PSIG	660 PSIG
1-1/2"	UP TO 50"	480 PSIG	425 PSIG	720 PSIG



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