

EPP

El Paso Plumbing, Inc.

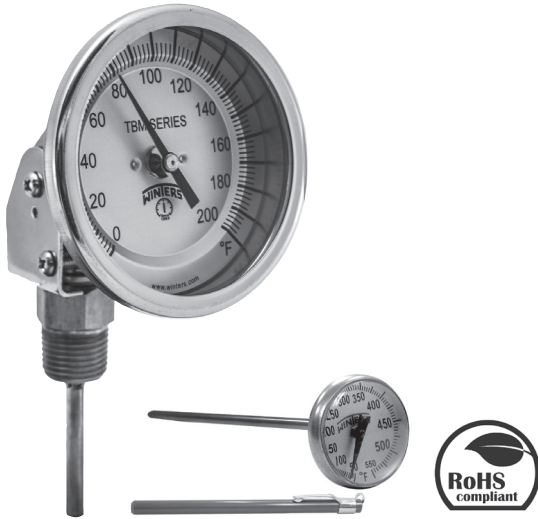
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**US AIR FORCE ACADEMY
GOLF COURSE CLUB HOUSE
PLUMBING PIPING SYSTEMS**

23 05 19

METERS AND GAGES



Description & Features:

- A general purpose, versatile 1" (25mm) to 6" (150mm) dial, 304 stainless steel thermometer
- Bi-metallic sensing element for reliable readings
- Back, bottom or adjustable angle connection
- Welded stem length from 2.5" (63mm) and up
- ±1% accuracy
- Anti-parallax dial that reduces operator reading errors (3" (75mm)-6" (150mm))
- Recalibrator screw is standard on all dial sizes
- ASME B40.200 compliant
- 5 year warranty

Applications:

- Industrial process, heating and air conditioning, ventilation and wastewater

Specifications

Dial	1" (25mm), 2" (50mm): Aluminum with black markings, flat dial 3" (75mm), 4" (100mm), 5" (127mm), 6" (150mm): Aluminum with black markings, anti-parallax dial
Case	AISI 304 SS
Stem	AISI 304 SS welded to socket, centre back, bottom or adjustable angle configurations (316 SS optional*) 1" (25mm), 2" (50mm) dial: Centre back connection only.
Recalibrator Screw	Standard
Lens	1" (25mm): Polycarbonate Others: Glass standard, hermetically sealed
Ring	AISI 304 SS
Connection	1" (25mm): None 2" (50mm): 1/4" NPT standard 3" (75mm), 4" (100mm), 5" (127mm), 6" (150mm): 1/2" NPT standard
Sensing Element	Bi-metallic coil
Pointer	Aluminum, painted black
Maximum Operating Pressure	125 psi (861 kPa)
Operating Temperature	75% of full scale value (recommended maximum)
Ambient Temperature	-58°F to 248°F (-50°C to 120°C)
Accuracy	±1% of full scale
Enclosure Rating	2" (50mm) to 6" (150mm): IP68

*Contact Winters for 316 SS requirements

Note: The use of a thermowell is recommended to protect the thermometer in corrosive or pressure applications, as well as to maintain a closed system during its removal from the process

Order Codes (products in bold are normally stock in North America)

1" (25mm) Dial, Fixed Centre Back	
Temperature Range	5" Stem Length Code
0°F to 250°F&C	TBM10050B8
-40°F to 160°F	TBM10050B15
200°F to 1,000°F&C	TBM10050B31

2" (50mm) Dial, Fixed Centre Back			
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code
-40°F to 120°F&C	TBM20025B2	-	-
0°F to 140°F&C	TBM20025B3	-	-
0°F to 200°F&C	TBM20025B6	-	-
0°F to 250°F&C	TBM20025B8	TBM20040B8	-
50°F to 300°F&C	TBM20025B9	-	TBM20060B9
50°F to 400°F&C	-	TBM20040B10	-
50°F to 500°F&C	TBM20025B11	-	-

3" (75mm) Dial, Fixed Centre Back				
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code	9" Stem Length Code
-40°F to 120°F&C	TBM30025B2	TBM30040B2	-	-
0°F to 140°F&C	TBM30025B3	-	-	-
-40°F to 160°F&C	TBM30025B4	-	TBM30060B4	-
0°F to 200°F&C	TBM30025B6	TBM30040B6	TBM30060B6	-
20°F to 240°F&C	TBM30025B7	TBM30040B7	-	-
0°F to 250°F&C	TBM30025B8	TBM30040B8	TBM30060B8	TBM30090B8
50°F to 300°F&C	TBM30025B9	TBM30040B9	TBM30060B9	TBM30090B9
50°F to 400°F&C	TBM30025B10	TBM30040B10	-	-
50°F to 500°F&C	TBM30025B11	TBM30040B11	TBM30060B11	TBM30090B11
150°F to 750°F&C	-	TBM30040B12	TBM30060B12	-
200°F to 1,000°F&C	-	TBM30040B13	-	-
-40°F to 120°F	-	TBM30040B14	-	-
0°F to 250°F	TBM30025B19	TBM30040B19	-	-

3" (75mm) Dial, Bottom		
Temperature Range	2.5" Stem Length Code	4" Stem Length Code
20°F to 240°F&C	TBM31025B7	TBM31040B7
0°F to 250°F&C	TBM31025B8	-
0°F to 200°F	TBM31025B17	-

3" (75mm) Dial, Adjustable Angle		
Temperature Range	2.5" Stem Length Code	4" Stem Length Code
0°F to 250°F&C	TBM32025B8	TBM32040B8

5" (127mm) Dial, Fixed Centre Back	
Temperature Range	4" Stem Length Code
0°F to 250°F&C	TBM50040B8

5" (127mm) Dial, Adjustable Angle			
Temperature Range	2.5" Stem Length Code	4" Stem Length Code	6" Stem Length Code
0°F to 140°F&C	TBM52025B3	TBM52040B3	-
20°F to 240°F&C	TBM52025B7	-	-
0°F to 250°F&C	TBM52025B8	TBM52040B8	TBM52060B8

Order Codes: To order, specify the code for each dial/stem length and the range: i.e. TBM20025 - B26

Dial Size	Stem Length	Fixed Centre Back	Bottom	Adjustable Angle
1" (25mm) pocket thermometer	5" (127mm)	TBM10050	-	-
2" (50mm) lab thermometer	8" (200mm)	TBM20080	-	-
2" (50mm)	2.5" (63mm)	TBM20025	-	-
	4" (100mm)	TBM20040	-	-
	6" (150mm)	TBM20060	-	-
	9" (230mm)	TBM20090	-	-
	12" (300mm)	TBM20120	-	-
3" (75mm)	15" (370mm)	TBM20150	-	-
	2.5" (63mm)	TBM30025	TBM31025	TBM32025
	4" (100mm)	TBM30040	TBM31040	TBM32040
	6" (150mm)	TBM30060	TBM31060	TBM32060
	9" (230mm)	TBM30090	TBM31090	TBM32090
4" (100mm)	12" (300mm)	TBM30120	TBM31120	TBM32120
	15" (370mm)	TBM30150	TBM31150	TBM32150
	2.5" (63mm)	TBM40025	TBM41025	TBM42025
	4" (100mm)	TBM40040	TBM41040	TBM42040
	6" (150mm)	TBM40060	TBM41060	TBM42060
5" (127mm)	9" (230mm)	TBM40090	TBM41090	TBM42090
	12" (300mm)	TBM40120	TBM41120	TBM42120
	15" (370mm)	TBM40150	TBM41150	TBM42150
	2.5" (63mm)	TBM50025	TBM51025	TBM52025
	4" (100mm)	TBM50040	TBM51040	TBM52040
6" (150mm)	6" (150mm)	TBM50060	TBM51060	TBM52060
	9" (230mm)	TBM50090	TBM51090	TBM52090
	12" (300mm)	TBM50120	TBM51120	TBM52120
	15" (370mm)	TBM50150	TBM51150	TBM52150
	2.5" (63mm)	TBM60025	TBM61025	TBM62025
6" (150mm)	4" (100mm)	TBM60040	TBM61040	TBM62040
	6" (150mm)	TBM60060	TBM61060	TBM62060
	9" (230mm)	TBM60090	TBM61090	TBM62090
	12" (300mm)	TBM60120	TBM61120	TBM62120
	15" (370mm)	TBM60150	TBM61150	TBM62150

°F & °C (Dual)	Code	°F only	Code	°C only	Code	°C & °F (Dual)	Code
-100°F to 150°F & -70°C to 70°C	B1	-40°F to 120°F	B14	-80°C to 50°C	B26	-30°C to 70°C & -20°F to 150°F	B75
-40°F to 120°F & -40°C to 50°C	B2	-40°F to 160°F	B15	-50°C to 50°C	B27	0°C to 120°C & 30°F to 250°F	B76
0°F to 140°F & -20°C to 60°C	B3	0°F to 140°F	B16	0°C to 50°C	B28	0°C to 300°C & 30°F to 570°F	B77
-40°F to 160°F & -40°C to 70°C	B4	0°F to 200°F	B17	-50°C to 100°C	B29	0°C to 200°C & 30°F to 400°F	B79
25°F to 125°F & -5°C to 50°C	B5	20°F to 240°F	B18	0°C to 100°C	B30	0°C to 250°C & 30°F to 480°F	B80
0°F to 200°F & -20°C to 90°C	B6	0°F to 250°F	B19	-20°C to 120°C	B31	0°C to 50°C & 30°F to 120°F	B81
20°F to 240°F & -5°C to 115°C	B7	50°F to 300°F	B20	0°C to 150°C	B32	-20°C to 60°C & -4°F to 140°F	B85
0°F to 250°F & -20°C to 120°C	B8	50°F to 400°F	B21	0°C to 200°C	B33	-	-
50°F to 300°F & 10°C to 150°C	B9	50°F to 550°F	B22	0°C to 300°C	B34	-	-
50°F to 400°F & 10°C to 200°C	B10	150°F to 750°F	B23	0°C to 450°C	B35	-	-
50°F to 500°F & 10°C to 260°C	B11	0°F to 800°F	B24	100°C to 550°C	B36	-	-
150°F to 750°F & 70°C to 400°C	B12	200°F to 1,000°F	B25	0°C to 500°C	B39	-	-
200°F to 1,000°F & 100°C to 550°C	B13	14°F to 140°F	B38	-10°C to 60°C	B40	-	-
14°F to 140°F & -10°C to 60°C	B37	-	-	100°C to 400°C	B41	-	-
32°F to 212°F & 0°C to 100°C	B52	-	-	100°C to 540°C	B42	-	-
32°F to 140°F & 0°C to 60°C	B84	-	-	-30°C to 70°C	B45	-	-
-60°F to 300°F & -50°C to 150°C	B86	-	-	20°C to 120°C	B46	-	-
-	-	-	-	-70°C to 170°C	B47	-	-
-	-	-	-	0°C to 120°C	B48	-	-
-	-	-	-	0°C to 400°C	B49	-	-
-	-	-	-	0°C to 250°C	B50	-	-
-	-	-	-	20°C to 60°C	B51	-	-
-	-	-	-	0°C to 60°C	B82	-	-

Other ranges, stem lengths and connection sizes available upon request. For glycerin fill, maximum temperature limit is 300°F (150°C).

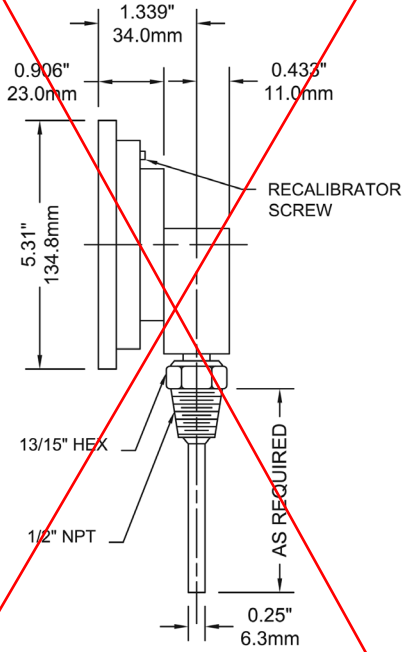
Silicone fill available.

Option suffix for above order code only:

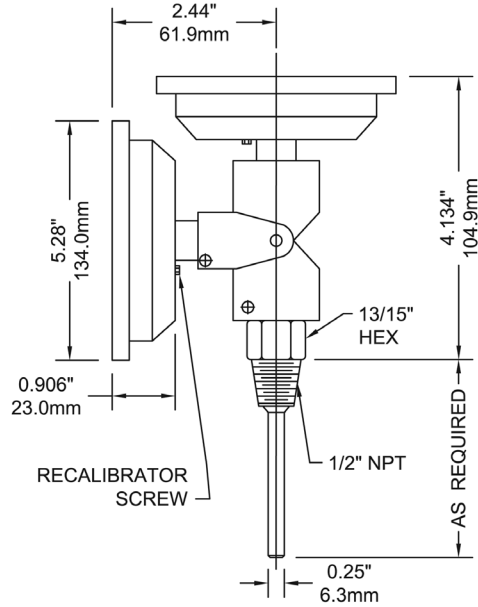
- | | | |
|----------------------------------|-----------------------------------|---|
| AP3 = 3" (75mm) acrylic lens | BG4 = 4" (100mm) glycerin filling | SPG3 = 3" (75mm) Shatterproof glass lens |
| AP4 = 4" (100mm) acrylic lens | BG5 = 5" (127mm) glycerin filling | SPG4 = 4" (100mm) Shatterproof glass lens |
| AP5 = 5" (127mm) acrylic lens | BG6 = 6" (150mm) glycerin filling | SPG5 = 5" (127mm) Shatterproof glass lens |
| AP6 = 6" (150mm) acrylic lens | DUCT = Aluminum duct flange | SPG6 = 6" (150mm) Shatterproof glass lens |
| BG3 = 3" (75mm) glycerin filling | SCK = Socket conversion kit | |

Note: The use of a thermowell is recommended to protect the thermometer from corrosive or damaging environments, as well as to maintain a closed system during its removal from the process

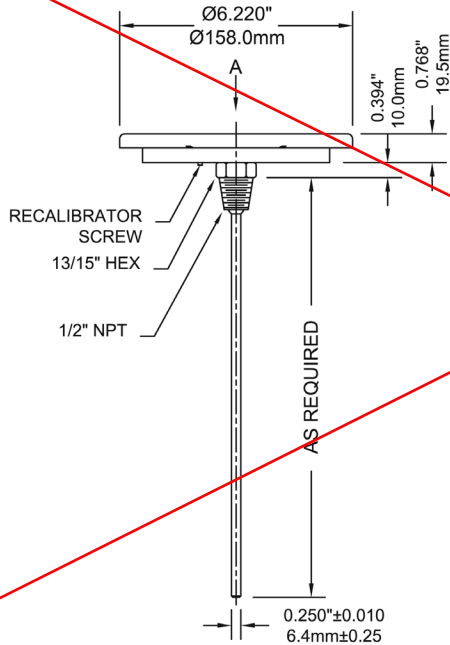
5" Bottom Connection



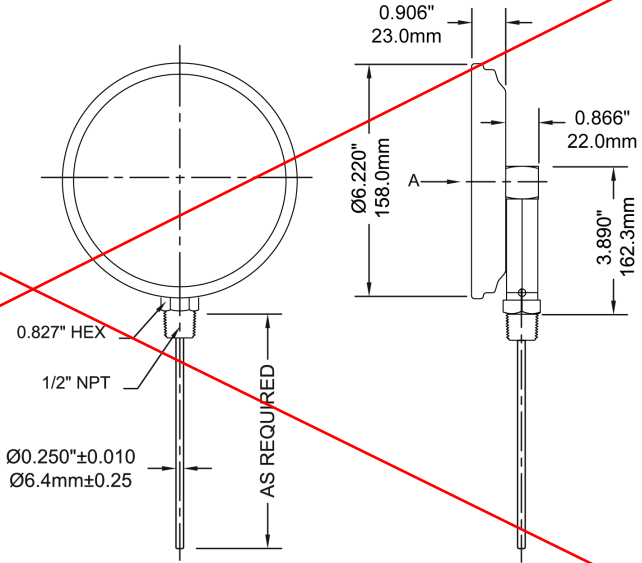
5" Adjustable Angle Connection



6" Back Connection



6" Bottom Connection





Description & Features:

- Widely specified in the industrial and commercial plumbing trade
- Includes a separable brass or lead free brass thermowell
- 3.5" (90mm) and 6" (150mm) stem
- Available in aluminum or Valox® (9") case
- Organic filled tube (magnifying)
- Dual scale (°F & °C)
- Adjustable angle connection and 360° case rotation for easy installation
- Graphite filled bulb chamber for maximum heat conduction
- ASME B40.200 and ASTM E2511 compliant
- CAN/CGSB-14.4-M88 compliant
- ±1% accuracy
- 5 year warranty

Applications:

- New construction, plumbing, water lines, boilers, heating, ventilation and air conditioning



Note: RoHS applies only to 304 SS and 316 SS thermowells

Specifications

Scale	9" (230mm) aluminum or Valox® case, impact resistant
Lens	Glass
Connection	3/4" NPT with thermowell 1 1/4" - 18 UNF swivel nut (no thermowell)
Scales	Aluminum, painted white with black markings
Bulb Chamber	Tapered cast aluminum with graphite fill
Tube and Sensing Liquid	Glass (magnifying), organic fluid
Adjustment	Fully adjustable
Thermowell	TIM: 3/4" Brass, separable socket (SS optional) TIM-LF: 3/4" Lead free brass, separable socket
Accuracy	±1%
Enclosure Rating	IP54

Note: For an Industrial Thermowell, please refer to the Industrial Thermowell product page

TIM Order Codes (products in bold are normally stock in North America)

Stem	Aluminum Case		Valox® Case	
	3.5" (90mm)	6" (150mm)	3.5" (90mm)	6" (150mm)
-40°F to 110°F & -40°C to 40°C	TIM101A	TIM101-6A	TIM101	TIM101-6
0°F to 120°F & -15°C to 50°C	TIM102A	TIM102-6A	TIM102	TIM102-6
0°F to 160°F & -15°C to 70°C	TIM103A	TIM103-6A	TIM103	TIM103-6
30°F to 180°F & 0°C to 80°C	TIM104A	TIM104-6A	TIM104	TIM104-6
30°F to 240°F & 0°C to 115°C	TIM100A	TIM100-6A	TIM100	TIM100-6
30°F to 300°F & 0°C to 150°C	TIM105A	TIM105-6A	TIM105	TIM105-6

Other ranges and connection sizes available upon request. Duct flange available upon request. Union connection available upon request.

Valox® is a registered trademark of the General Electric Company

TIM-LF Order Codes (products in bold are normally stock in North America)

Stem	Aluminum Case		Valox® Case	
	3.5" (90mm)	6" (150mm)	3.5" (90mm)	6" (150mm)
-40°F to 110°F & -40°C to 40°C	TIM101ALF	TIM101-6ALF	TIM101LF	TIM101-6LF
0°F to 120°F & -15°C to 50°C	TIM102ALF	TIM102-6ALF	TIM102LF	TIM102-6LF
0°F to 160°F & -15°C to 70°C	TIM103ALF	TIM103-6ALF	TIM103LF	TIM103-6LF
30°F to 180°F & 0°C to 80°C	TIM104ALF	TIM104-6ALF	TIM104LF	TIM104-6LF
30°F to 240°F & 0°C to 115°C	TIM100ALF	TIM100-6ALF	TIM100LF	TIM100-6LF
30°F to 300°F & 0°C to 150°C	TIM105ALF	TIM105-6ALF	TIM105LF	TIM105-6LF

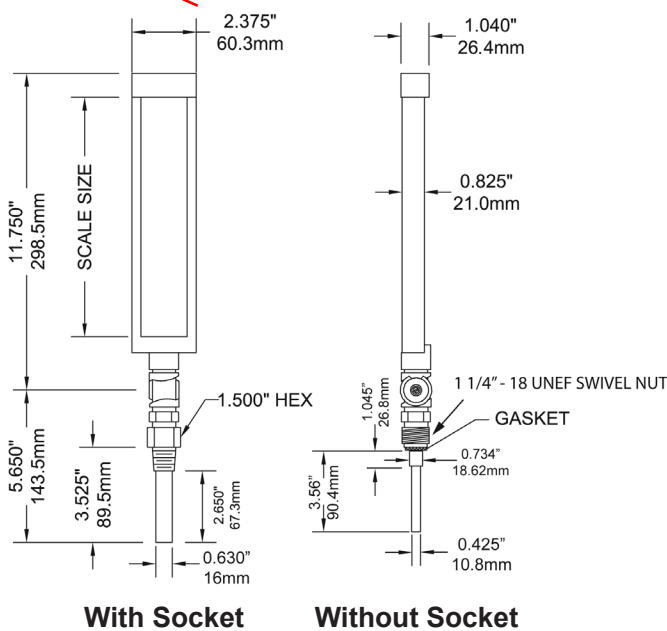
Other ranges available upon request.

Valox® is a registered trademark of the General Electric Company

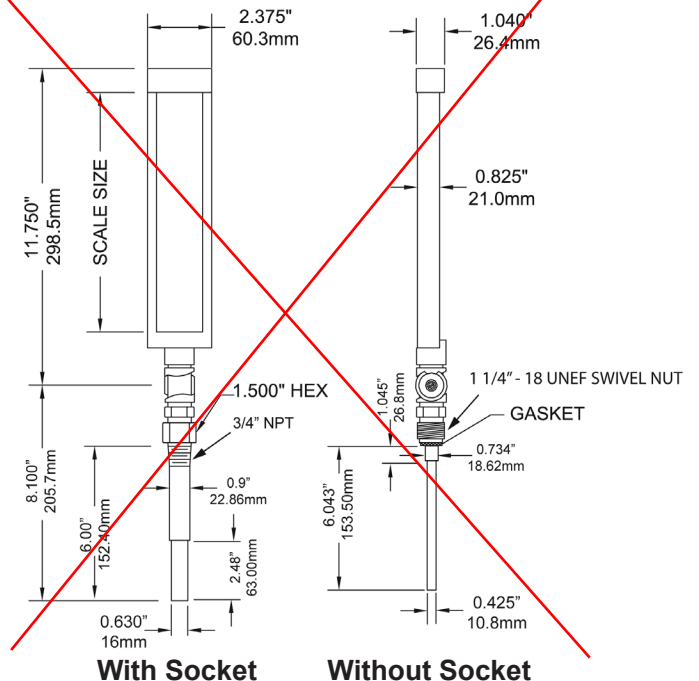
TIW-LF Thermowell Order Codes (products in bold are normally stock in North America)

Stem Length	Overall Length	Material	Insertion Length	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Lead Free Brass	2.5" (63mm)	TIW01LF
6" Without Lagging	6.75" (172mm)	Lead Free Brass	5" (127mm)	TIW04LF

3.5" Stem



6" Stem





Description & Features:

- Designed for use with all 9" (230mm) industrial thermometers to create a "sealed system"
- Allows the easy replacement of thermometers without the need to shut down or drain the system
- CAN/CGSB-14.4-M88 compliant
- CRN registered ←
- 1 year warranty

Applications:

- HVAC, pipes, chill water and hot water lines



Note: RoHS applies only to 304 SS and 316 SS thermowells

Specifications

Material	TIW: Brass, AISI 304 SS, AISI 316 SS TIW-LF: Lead free brass
Bore Diameter	7/16" tapered
Form	Stepped standard, straight available
Thermometer Connection	1-1/4" UNF
Process Connection	3/4" NPTM standard

TIW Thermowell Order Codes (products in bold are normally stock in North America)

Stem Length	Overall Length	Material	Insertion Length	Lagging Extension	1/2" NPT Connection	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Brass	2.5" (63mm)	-	-	TIW01
		304 SS			-	TIW01-1
		316 SS			-	TIW01-2
3.5" With Lagging	4.25" (108mm)	Brass	1.75" (44mm)	1" (25mm)	TIW02	TIW03
		304 SS			TIW02-1	TIW03-1
		316 SS			TIW02-2	TIW03-2
6" Without Lagging	6.75" (172mm)	Brass	5" (127mm)	-	-	TIW04
		304 SS			-	TIW04-1
		316 SS			-	TIW04-2
6" With Lagging	6.75" (172mm)	Brass	2.5" (63mm)	2.5" (63mm)	-	TIW07
		304 SS			-	TIW07-1
		316 SS			-	TIW07-2

TIW-LF Thermowell Order Codes (products in bold are normally stock in North America)

Stem Length	Overall Length	Material	Insertion Length	Lagging Extension	3/4" NPT Connection
3.5" Without Lagging	4.25" (108mm)	Lead Free Brass	2.5" (63mm)	-	TIW01LF
3.5" With Lagging		Lead Free Brass	1.75" (44mm)	1" (25mm)	TIW03LF
6" Without Lagging	6.75" (172mm)	Lead Free Brass	5" (127mm)	-	TIW04LF
6" With Lagging		Lead Free Brass	2.5" (63mm)	2.5" (63mm)	TIW07LF

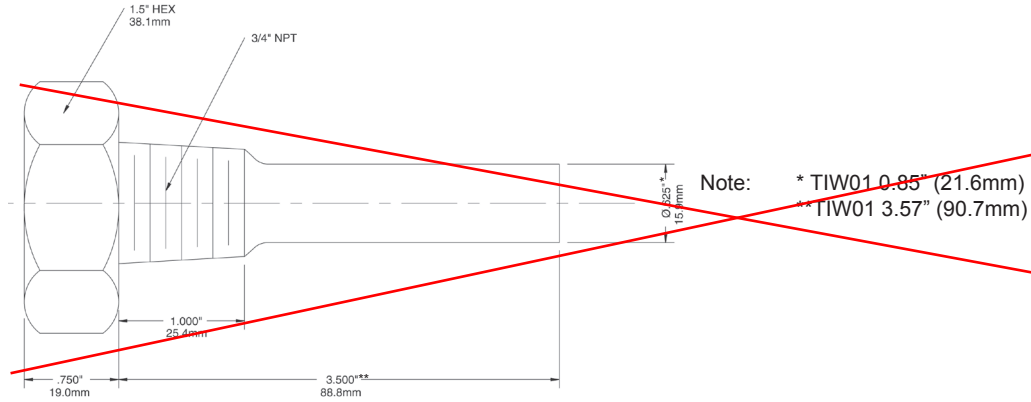
Other configurations available. Other threads available upon request. Longer thermowells available upon request. Other materials such as Monel®, Inconel®, Hastelloy® C and Titanium are available upon request.

Option suffix:

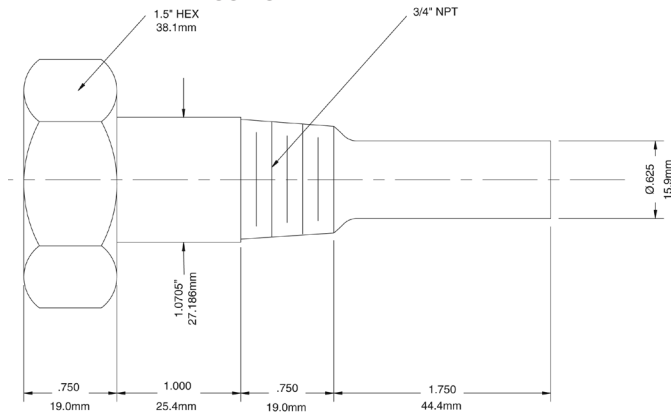
W61 = Brass cap and chain (1.25" UNF)
W61-1 = SS cap and chain (1.25" UNF)

Hastelloy® is a registered trademark of Haynes International, Inc.
Inconel® is a registered trademark of Special Metals Corporation
Monel® is a registered trademark of Inco Alloys International

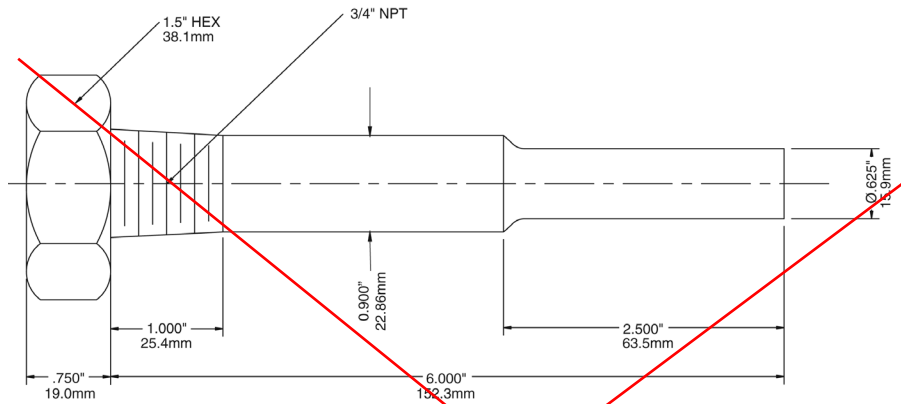
3.5" Stem Without Lagging



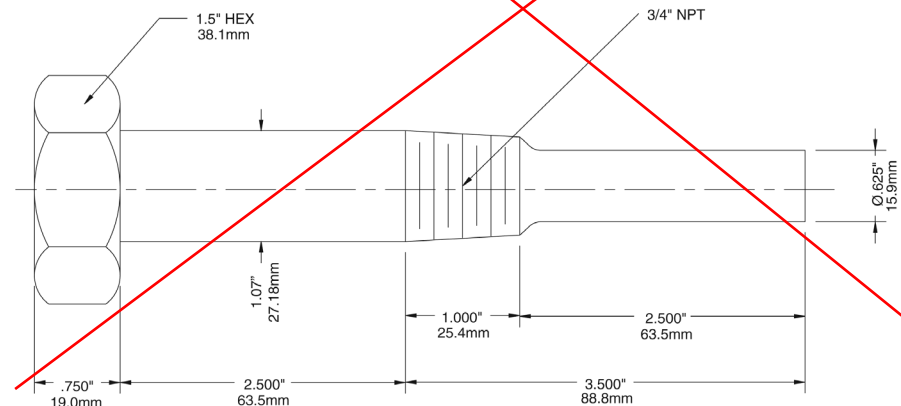
3.5" Stem With Lagging



6" Stem Without Lagging



6" Stem With Lagging



Contractor Gauge Lead Free Contractor Gauge

PCT, PCT-LF



Description & Features:

- Economical 4.5" (115mm) stainless steel case gauge
- Brass or lead free brass wetted parts
- ±1% accuracy
- Zero adjustment screw
- 1/4" NPT
- Restricted orifice
- ASME B40.100 compliant
- CRN registered
- 5 year warranty

Applications:

- Most commercial air, water and steam services that require a ±1% full-scale accuracy



Specifications

Dial	4.5" (115mm) white aluminum with black and red markings
Case	304 SS
Lens	Acrylic
Ring	304 SS
Socket	PCT: Brass PCT-LF: Lead free brass
Connection	1/4" NPT standard
Bourdon Tube	Phosphor bronze
Movement	Brass
Pointer	Aluminum, anodized black, recalibrator screw
Welding	Silver solder
Over-pressure Limit	25% for pressures up to 1,450 psi (9,998 kPa), 15% for pressures over 1,450 psi (9,998 kPa)
Working Pressure	Maximum 75% of full scale value
Ambient/Process Temperature	-40°F to 200°F (-40°C to 93°C)
Accuracy	±1% ANSI/ASME Grade 1A
Enclosure Rating	IP52

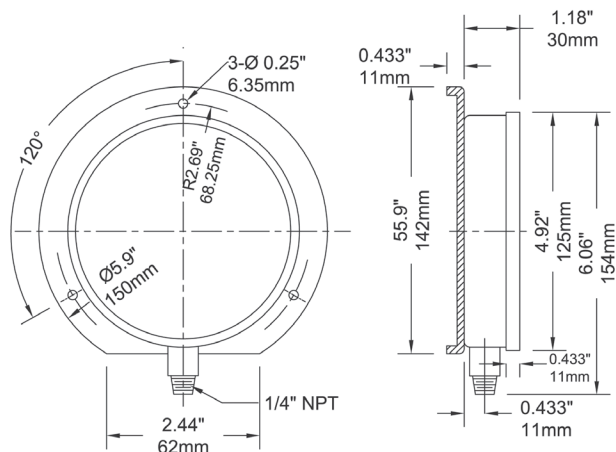
PCT Order Codes (products in bold are normally stock in North America)

Connection	1/4" Bottom
30" Hg Vac/kPa	PCT320
30"/0/30 psi/kPa	PCT329
30"/0/60 psi/kPa	PCT330
30"/0/100 psi/kPa	PCT328
30"/0/160 psi/kPa	PCT332
30"/0/200 psi/kPa	PCT333
30"/0/300 psi/kPa	PCT334
0/15 psi/kPa	PCT319
0/30 psi/kPa	PCT321
0/60 psi/kPa	PCT322
0/100 psi/kPa	PCT323
0/160 psi/kPa	PCT324
0/200 psi/kPa	PCT325
0/300 psi/kPa	PCT326
0/400 psi/kPa	PCT327
0/600 psi/kPa	PCT331
0/1,000 psi/kPa	PCT293
0/3,000 psi/kPa	PCT294
0/5,000 psi/kPa	PCT295

PCT-LF Order Codes (products in bold are normally stock in North America)

Connection	1/4" Bottom
30" Hg Vac/kPa	PCT320LF
30"/0/30 psi/kPa	PCT329LF
30"/0/60 psi/kPa	PCT330LF
30"/0/100 psi/kPa	PCT328LF
30"/0/160 psi/kPa	PCT332LF
30"/0/200 psi/kPa	PCT333LF
30"/0/300 psi/kPa	PCT334LF
0/15 psi/kPa	PCT319LF
0/30 psi/kPa	PCT321LF
0/60 psi/kPa	PCT322LF
0/100 psi/kPa	PCT323LF
0/160 psi/kPa	PCT324LF
0/200 psi/kPa	PCT325LF
0/300 psi/kPa	PCT326LF
0/400 psi/kPa	PCT327LF
0/600 psi/kPa	PCT331LF
0/1,000 psi/kPa	PCT293LF
0/3,000 psi/kPa	PCT294LF
0/5,000 psi/kPa	PCT295LF

4.5" Bottom Connection



Other ranges and connection sizes available upon request. For scale change, refer to How to Order Guide for scale codes. **For options, attach suffix to end of order code: i.e. PCT322-45BF for BACK FLANGE.**

Option suffix:

45BF = 4.5" (115mm) Back flange



Description & Features:

- Incorporates a sintered, porous 316 stainless steel snubbing element with a large surface area to ensure long term effectiveness
- Available in the three standard viscosity classifications of heavy oil, water and air
- Brass, lead free brass or stainless steel housings can be specified depending upon pressure media and operating pressure
- ASME B40.100 compliant
- CRN registered
- 1 year warranty

Applications:

- To significantly lessen the damaging effects of pulsation on gauges, transducers, transmitters, manometers and pressure switches



Note: RoHS applies only to 316 SS version

Specifications	SS	Brass
Operating Temperature	-320°F to 1,500°F (-195°C to 815°C)	-65°F to 650°F (-53°C to 343°C)
Operating Pressure	Maximum 20,000 psi (137,900 kPa)	Maximum 10,000 psi (68,950 kPa)
Burst Pressure	60,000 psi (413,700 kPa)	30,000 psi (206,850 kPa)
Housing	316 SS	SSN: Brass SSN-LF: Lead free brass
Snubbing Element	Sintered, porous type 316 SS	Sintered, porous type 316 SS
Retainer	300 series SS	300 series SS

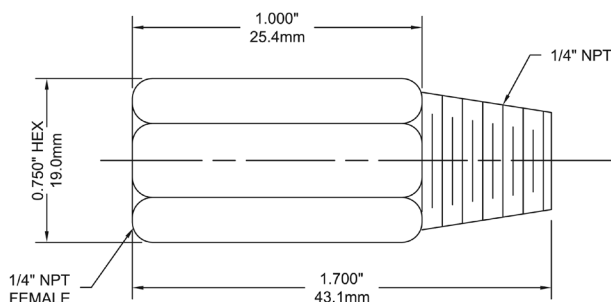
SSN Order Codes (products in bold are normally stock in North America)

Model	Heavy Oil	Water	Air
1/4" Brass	SSN517	SSN515	SSN516
1/4" SS	SSN520	SSN518	SSN519
1/2" Brass	SSN514	SSN512	SSN513
1/2" SS	SSN531	SSN529	SSN530

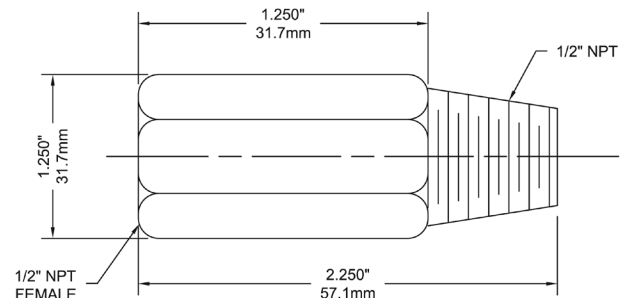
SSN-LF Order Codes (products in bold are normally stock in North America)

Model	Water
1/4" Brass	SSN515LF
1/2" Brass	SSN512LF

1/4" Snubber



1/2" Snubber



ARB® UTILITY MANAGEMENT SYSTEMS™


NEPTUNE
TECHNOLOGY GROUP

T-10 METER

 SIZES: 1 1/2" and **2"**


T-10 water meters are warranted for performance, materials, and workmanship.



Every T-10 water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.

The T-10 water meter consists of three major assemblies: a register, a lead free high copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant lead free high copper alloy maincase will withstand most service conditions: internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element protects the chamber from frost damage while the unique chamber seal extends the low flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Neptune provides a limited warranty with respect to its T-10 water meters for performance, materials, and workmanship.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

KEY FEATURES

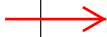
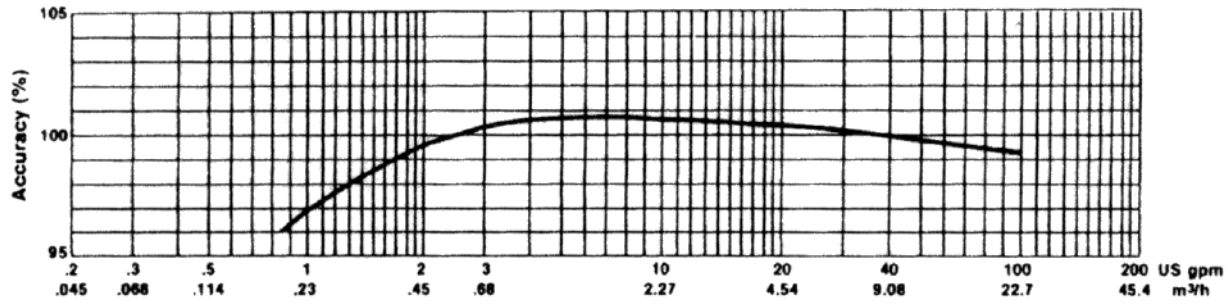
- Register
 - Magnetic drive, low torque registration ensures accuracy
 - Impact-resistant register
 - High resolution, low flow leak detection
 - Bayonet style register mount allows in-line serviceability
 - Tamperproof seal pin deters theft
 - Date of manufacture, size, and model stamped on dial face
- Lead Free Maincase
 - Made from lead free high copper alloy
 - NSF/ANSI 61 Certified, Annex G and Annex F compliant
 - Lifetime guarantee
 - Resists internal pressure stresses and external damage
 - Handles in-line piping variations and stresses
 - Lead free high copper alloy provides residual value vs. plastic
 - Electrical grounding continuity
- Nutating Disc Measuring Chamber
 - Positive displacement
 - Widest effective flow range for maximum revenue
 - Proprietary polymer materials maximize long term accuracy
 - Floating chamber design is unaffected by meter position or in-line piping stresses

SYSTEMS COMPATIBILITY

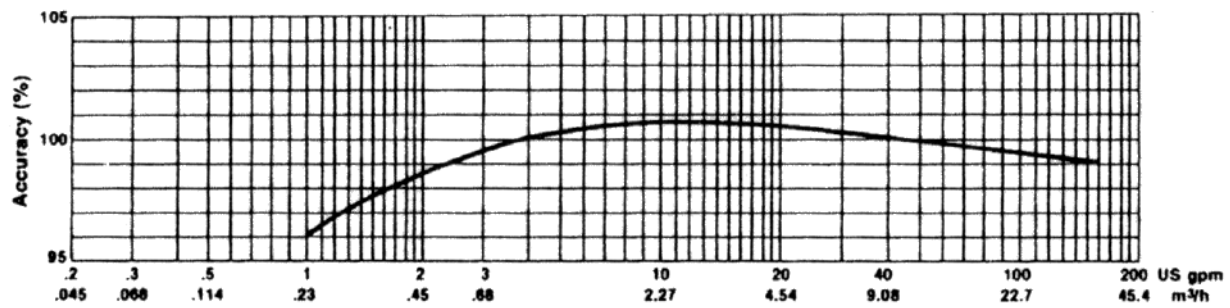
Adaptability to all present and future systems for flexibility is available only with Neptune's ARB® Utility Management Systems™.

CONSTRUCTION
WARRANTY

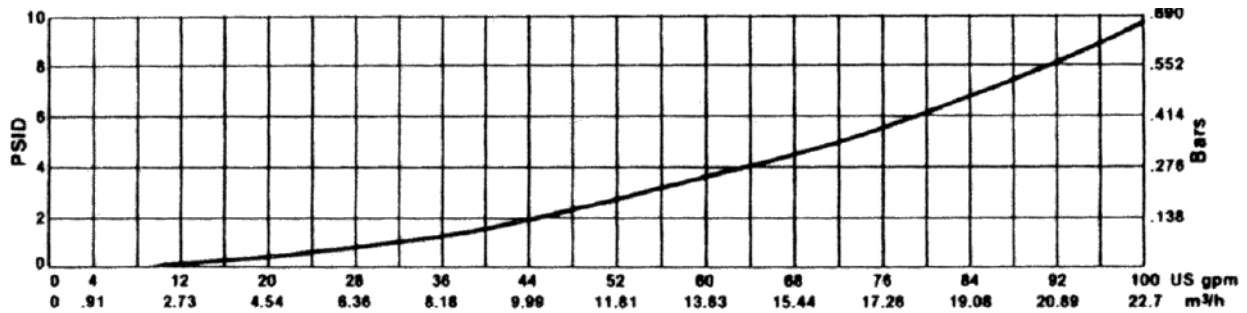
1 1/2" ACCURACY



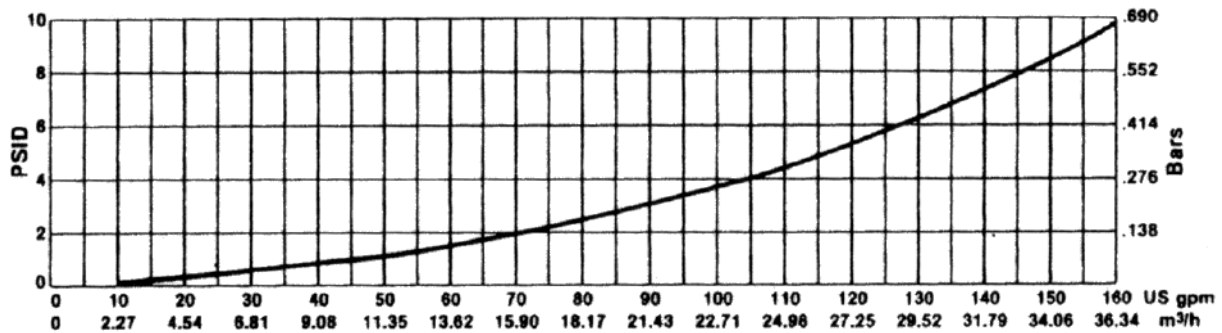
2" ACCURACY



1 1/2" PRESSURE LOSS



2" PRESSURE LOSS



These charts show typical meter performance. Individual results may vary.

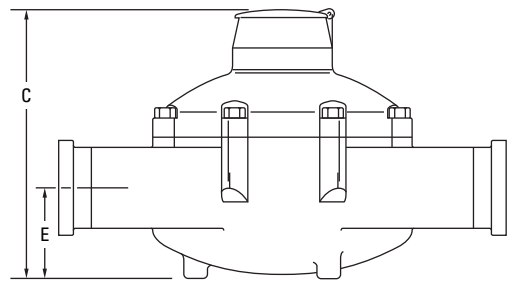
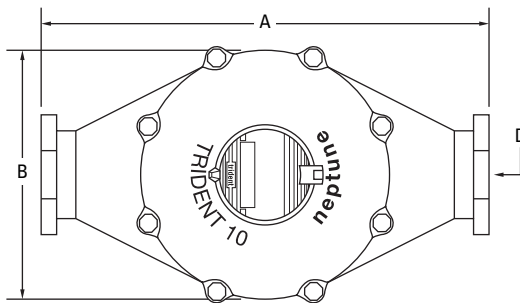
OPERATING CHARACTERISTICS

Meter Size	Normal Operating Range @100% Accuracy ($\pm 1.5\%$)	AWWA Standard	Low Flow @ 95% Accuracy
1 1/2"	2 to 100 US gpm 0.46 to 22.73 m ³ /h	5 to 100 US gpm 1.1 to 22.7 m ³ /h	3/4 US gpm 0.17 m ³ /h
2"	2 1/2 to 160 US gpm 0.57 to 36.36 m ³ /h	8 to 160 US gpm 1.8 to 36.3 m ³ /h	1 US gpm 0.23 m ³ /h

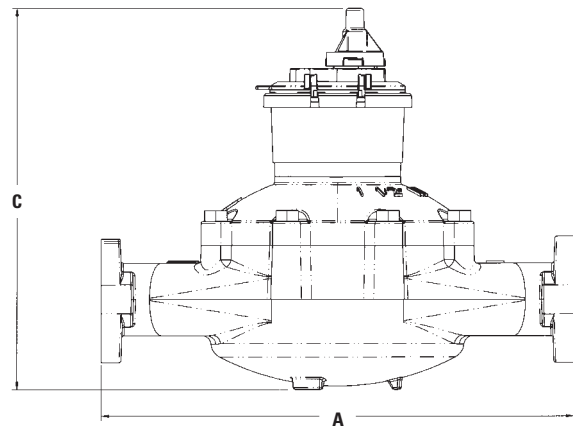
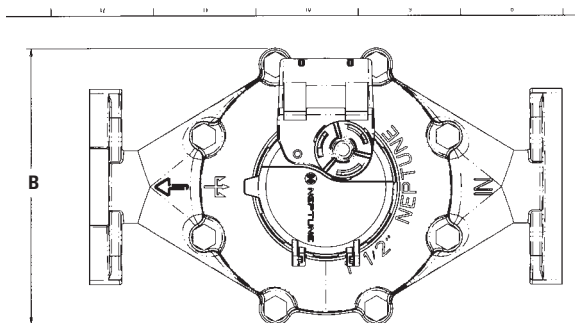
DIMENSIONS

Meter Size	A in/mm	B in/mm	C-Std. in/mm	C-ARB in/mm	C-E-Coder) R900i™	D-Threads per inch	D-Thread Type	E in/mm	Weight lbs/kg
1 1/2" Screw End	12 5/8 321	8 1/16 205	8 3/8 206	8 13/16 220.3	10 7/16 225.4	11 1/2	1 1/2 NPT	2 3/16 65	31 14.1
1 1/2" Flanged End	13 330	8 1/16 205	8 3/8 206	8 13/16 220.3	10 7/16 225.4	—	—	2 3/16 65	35 15.9
2" Screw End	15 1/4 387	9 7/16 240	9 3/8 237	9 15/16 248.4	11 3/16 289	11 1/2	2" NPT	3 3/8 79	40 18.1
2" Flanged End	17 432	9 7/16 240	9 3/8 237	9 15/16 248.4	11 3/16 289	—	—	3 3/8 79	44 20.0

T-10 WITH STANDARD REGISTER



T-10 WITH E-CODER)R900i PIT REGISTER



GUARANTEED SYSTEMS COMPATIBILITY

All T-10 meters are guaranteed adaptable to our ARB®V, ProRead™ (ARB VI), E-Coder® (ARB VII), E-Coder)R900i™, TRICON®/S, TRICON/E®3, and Neptune ARB Utility Systems without removing the meter from service.

REGISTRATION

ProRead Registration			
(per sweep hand revolution)		1 1/2"	2"
100	US Gallons	✓	✓
100	Imperial Gallons	✓	✓
10	Cubic Feet	✓	✓
1	Cubic Metre		✓
0.1	Cubic Metre	✓	
Register Capacity			
ProRead & E-Coder		1 1/2"	2"
100,000,000	US Gallons	✓	✓
100,000,000	Imperial Gallons	✓	✓
10,000,000	Cubic Feet	✓	✓
100,000	Cubic Metres	✓	✓
E-Coder High Resolution			
(8-digit reading)		1 1/2"	2"
1	US Gallons	✓	✓
1	Imperial Gallons	✓	✓
.01	Cubic Feet	✓	✓
0.001	Cubic Metres	✓	✓

SPECIFICATIONS

- Certification: NSF/ANSI 61, Annex G and Annex F
- Application: cold water measurement of flow in one direction
- Maximum operating water pressure: 150 psi (1034 kPa)
- Maximum operating water temperature: 80°F
- Measuring chamber: nutating disc technology design made from proprietary synthetic polymer

OPTIONS

- Sizes:
 - 1 1/2" flanged or threaded end
 - 2" flanged or threaded end
- Units of measure: U.S. gallons, imperial gallons, cubic feet, cubic metres
- Register types:
 - Direct reading: Bronze box and cover (standard)
 - Remote reading: ProRead Absolute Encoder, E-Coder, E-Coder)R900i, TRICON/S, TRICON/E3
 - Reclaim
- Measuring chamber: synthetic polymer
- Companion flanges: cast iron or lead free high copper alloy
- Environmental Conditions:
 - Operating temperature: 33°F to 149°F (0°C to 65°C)
 - Storage temperature: 33°F to 158°F (0°C to 70°C)
- Test Ports: 1"

Neptune engages in ongoing research and development to improve and enhance its products. Therefore, Neptune reserves the right to change product or system specifications without notice.

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NEPTUNE
TECHNOLOGY GROUP

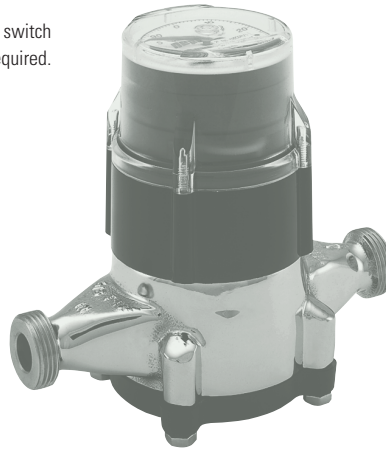
neptunetg.com



→ TRICON®/S REGISTER



The TRICON®/S can be used in applications where a switch closure that is proportional to the flow rate is required.



The TRICON/S register mounts on the meter maincase. The bayonet-type mount allows the TRICON/S to be easily retrofitted to many existing Neptune meters without interruption. The TRICON/S can be used in applications where a switch closure that is proportional to the flow rate is required. Several switch configurations are available.

Every Neptune meter and TRICON/S register meet or exceed the latest standards of the American Water Works Association ensuring accurate, dependable performance.

The TRICON/S register is ideally suited for controlling/monitoring total flow rate data such as:

- Water softening regeneration
- Demineralization reverse osmosis
- Chemical treatment/injection
- Batch processing
- Filtration
- Boiler feed water make-up
- Cooling tower water make-up
- Irrigation

KEY FEATURES

- Register
 - Reed switch technology
 - Large, easy-to-read numerals
 - Rugged thermoplastic housing
 - Monitoring capability permits locating registers up to 1,000 feet from controller
 - Wide variety of calibrated switch closures available
 - Tamperproof – only one seal wire screw to secure register and terminal cover
- Readily available for all Neptune meters:
 - T-10 Disc
 - HP Turbine
 - TRU/FLO® Compound
 - HP Fire Service Turbine
 - HP PROTECTUS® III

WARRANTY

Neptune provides a limited warranty with respect to its TRICON/S Register System for performance, materials, and workmanship.

ELECTRICAL CHARACTERISTICS (at 25°C unless specified)

Switch Ratings	Min	Typ	Max	Units
Operating Temperature	-40		125	°C
Open Circuit Resistance	10			MOhms
Closed Circuit Resistance			0.1	Ohms
Break Down Voltage (DC)	250			Volts
Capacitance		1.5		pF
Actuation Time	0.0005			sec
Shock With No Contact			100	G

AVAILABLE SWITCH CLOSURES (for T-10s and Turbines)

Gal, Imp. Gal, or Litres/ Contact	Cubic Feet/					Cubic Metres/							
	5/8-1" T-10	1 1/2-2" T-10	1 1/2-4" HPT	6"-12" HPT	16"-20" HPT	5/8-1" T-10	1 1/2-2" T-10	1 1/2-4" HPT	6"-12" HPT	16"-20" HPT	1/2-4" HPT	6"-12" HPT	16"-20" HPT
											0.1	✓	
1	✓					1	✓	✓	✓		1	✓	✓
10	✓	✓	✓			10	✓	✓	✓	✓	10	✓	✓
100	✓	✓	✓	✓		100	✓	✓	✓	✓	100	✓	✓
1000	✓	✓	✓	✓	✓	1000	✓	✓	✓	✓	1000	✓	✓
10,000		✓	✓	✓	✓	10,000			✓	✓	10,000		✓
100,000				✓	✓	100,000			✓	✓	100,000		

METER APPLICATION GUIDE

Meter/Size	Normal Flow Range (GPM)	Max Continuous Flow	Meter Length (in.)
T-10			
5/8"	1/2 - 20	10	7 1/2
5/8" x 3/4"	1/2 - 20	10	7 1/2
3/4"	3/4 - 30	15	9
3/4" x 1"	3/4 - 30	15	9
1"	1 - 50	25	10 3/4
1 1/2" Threaded End	2 - 100	50	12 5/8
1 1/2" Flanged End	2 - 100	50	13
2" Threaded End	2 1/2 - 160	80	15 1/4
2" Flanged End	2 1/2 - 160	80	17
Trident Turbine			
3"	5 - 450	450	12
4"	10 - 1000	1000	14
6"	20 - 2000	2000	18
8"	35 - 3500	3500	20
10"	50 - 5500	5500	26
HP Turbine			
1 1/2"	4 - 160	160	10
2"	4 - 160	160	10
3"	5 - 450	450	12
4"	10 - 1200	1200	14
6"	20 - 2500	2500	18
8"	35 - 4000	4000	20
10"	50 - 6500	6500	26
12"	120 - 8000	8000	19 11/16
16"	200 - 13500	13500	23 5/8
20"	300 - 22000	22000	31 1/2

SPECIFICATIONS

- Sizes:
 - T-10 (5/8"–2")
 - Trident Turbine (3"–10")
 - HP Turbine (1 1/2"–20")
 - TRU/FLO Compound (2"– 6"x8")
 - HP Fire Service (3"– 10")
 - HP PROTECTUS III (4"– 10")
- Units of measure:
 - U.S. gallons
 - Imperial gallons
 - Litres
 - Cubic feet
 - Cubic metres
- Connection wire:
 - Distances up to 300 feet (91 metres) – AWG #22
 - Distances from 300 to 500 feet (91–152 metres) – AWG #20
 - Distances 500–1000 feet* (152–304 metres) – AWG #18
- Electrical characteristics (at 25°C unless specified): Absolute maximums (not to be exceeded without possible damage)
 - Switch power: 10 watts (DC)
 - Switch current: 0.5 amps (DC)
 - Switch voltage: 200 volts (DC)

* Recommended installation: Register should be in an upright position. Not recommended for pit applications.

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