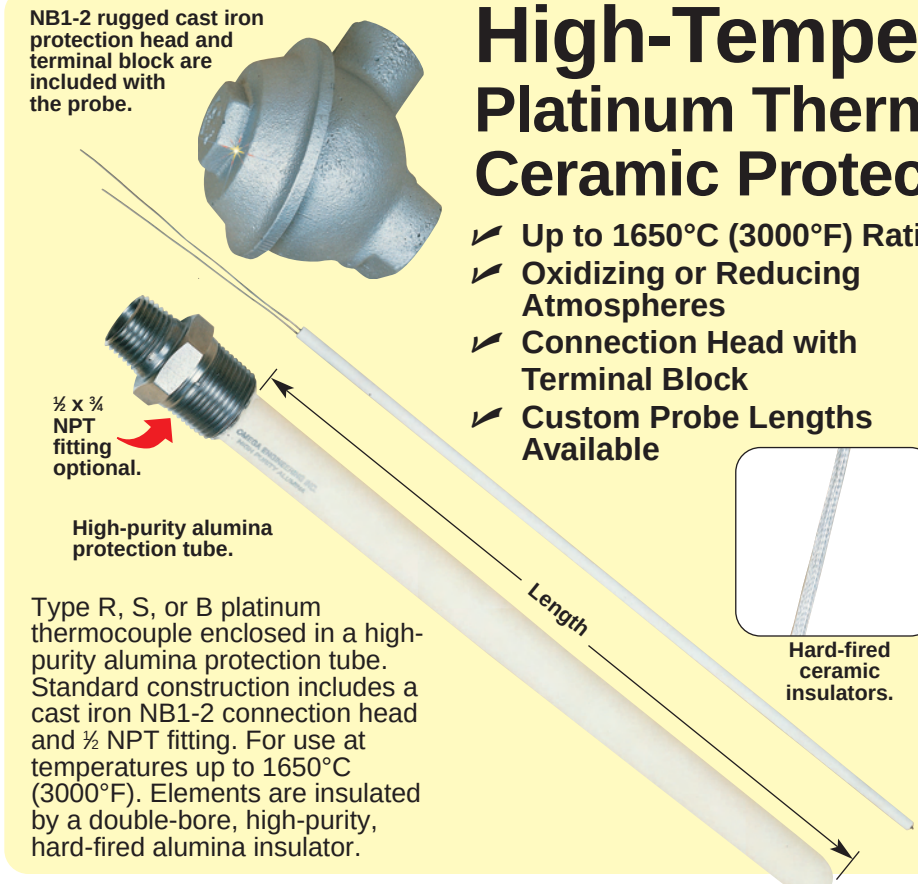
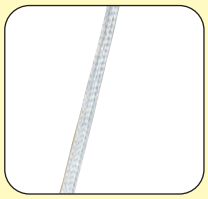
Thermocouple Assemblies

MADE IN USA

High-Temperature Platinum Thermocouples and Ceramic Protection Tubes

- Up to 1650°C (3000°F) Rating
- Oxidizing or Reducing Atmospheres
- Connection Head with Terminal Block
- Custom Probe Lengths Available





Hard-fired ceramic insulators.

Insulators are 25 mm (1") long.

12 x 12 mm (½ x ½") Standard

Type R, S, or B platinum thermocouple enclosed in a high-purity alumina protection tube. Standard construction includes a cast iron NB1-2 connection head and ½ NPT fitting. For use at temperatures up to 1650°C (3000°F). Elements are insulated by a double-bore, high-purity, hard-fired alumina insulator.

RAT-20-12

$2600

Price Includes Head, Insulated Element and Protection Tube

Complete Assemblies

MOST POPULAR MODELS HIGHLIGHTED!

To Order *(Specify Model Number)*

Model Number	Thermocouple Calibration	AWG Wire Size	Protection Tube OD mm (in.)	Insulator OD mm (in.)	Price/ 300 mm (12")	Price/add'l 150 mm (6")
RAT-30-12	Pt vs Pt 13% Rh	30	6.0 (¼)	3.0 (⅛)	**$425**	**$125**
RAT-24-12	Pt vs Pt 13% Rh	24	6.0 (¼)	3.0 (⅛)	**1100**	**425**
RAT-20-12	Pt vs Pt 13%Rh	20	9.5 (⅜)	4.5 (3/16)	**2600**	**930**
SAT-30-12	Pt vs Pt 10% Rh	30	6.0 (¼)	3.0 (⅛)	**425**	**125**
SAT-24-12	Pt vs Pt 10% Rh	24	6.0 (¼)	3.0 (⅛)	**1100**	**425**
SAT-20-12	Pt vs Pt 10% Rh	20	9.5 (⅜)	4.5 (3/16)	**2600**	**930**
BAT-30-12	Pt 6% Rh vs Pt 30% Rh	30	6.0 (¼)	3.0 (⅛)	**500**	**150**
BAT-24-12	Pt 6% Rh vs Pt 30% Rh	24	6.0 (¼)	3.0 (⅛)	**1350**	**550**
BAT-20-12	Pt 6% Rh vs Pt 30% Rh	20	9.5 (⅜)	4.5 (3/16)	**3100**	**1250**

Note: *Alumina tube shipped separately to avoid breakage. Shipped unassembled.*
Ordering Example: RAT-30-12, *30 AWG Type R thermocouple in a 300 mm (12") high-purity aluminum protection tube and a cast iron head,* ***$425.***

Wire Size Conversion

AWG	Actual Diameter	
6	4.1 mm	(0.162")
8	3.2 mm	(0.128")
10	2.5 mm	(0.102")
12	2.0 mm	(0.081")
14	1.6 mm	(0.064")
16	1.2 mm	(0.051")
18	1.0 mm	(0.040")
20	0.8 mm	(0.032")
22	0.6 mm	(0.0253")
24	0.5 mm	(0.0201")
26	0.41 mm	(0.0159")
30	0.25 mm	(0.0100")

Replacement Elements for Assemblies Shown Above

Type of Element	AWG Wire Size	Insulator 99.7% + Al_2O_3	Type S PT-PT/10%Rh	Type R PT-PT/13%Rh	Type B PT/6%Rh-PT/30%Rh	Price 300 mm (12")*	Price/add'l 25 mm (inch)
Bare wires (No Insulators)	20	N/A	**Bare-20-S-12**	**Bare-20-R-12**	**Bare-20-B-12**	**$2500**	**$200**
	24	N/A	**Bare-24-S-12**	**Bare-24-R-12**	**Bare-24-B-12**	**1000**	**90**
	30	N/A	**Bare-30-S-12**	**Bare-30-R-12**	**Bare-30-B-12**	**325**	**20**
Double-Hole Round Insulators	20	**XDH-20**	**XDH-20-S-12**	**XDH-20-R-12**	**XDH-20-B-12**	**$2525**	**$210**
	24	**XDH-24**	**XDH-24-S-12**	**XDH-24-R-12**	**XDH-24-B-12**	**1125**	**100**
	30	**XDH-30**	**XDH-30-S-12**	**XDH-30-R-12**	**XDH-30-B-12**	**400**	**30**

Replacement protection tubes available; see PTRA Series. For 300 mm (12") probe length: add 48 mm (1⅞") to length of tube to accommodate fitting.
PTRA-31614-137⁄8
[for 6 mm (¼") OD]
PTRA-1438-137⁄8
[for 9.5 mm (⅜") OD]

** Replacement elements include leads of sufficient length to reach terminals in head.*
Note: *Published price is based on market value at time of printing and is subject to change (more or less) due to precious-metal market fluctuations.*

Temperature and Pressure Test Plugs

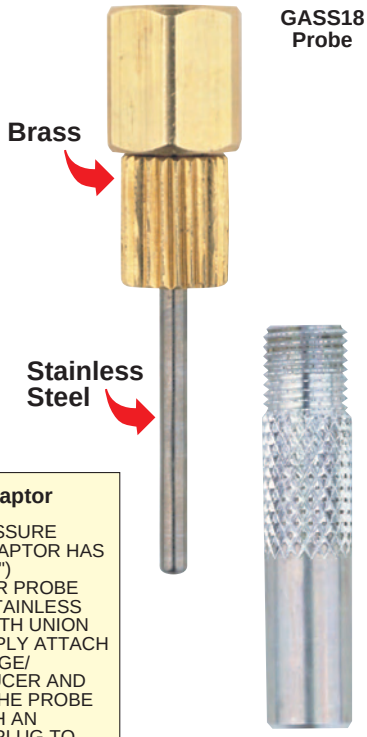
Self-Sealing Insert

- 3 mm (⅛") Diameter Probe
- Up to 1000 psig Between -30 and 60°C (-20 and 140°F)
- Up to 135°C (275°F)
- Two Self-Closing Valves
- Heavy-Duty Design

OMEGA® self-sealing plugs will allow you to take pressure and temperature readings quickly and eliminate the need for leaving costly gages or temperature indicators on the line. The OMEGA® plug is permanently installed in the line at recommended test points. The cap protects the valve and provides an additional positive seal. After the cap has been removed, either a test thermometer or a gage adaptor with the proper pressure gage attached can be inserted through the two self-closing valves in the plug. Readings are taken, adjustments or tests can be made, and when the probes are withdrawn, the two valves close. The protective cap is then reinstalled.

Neoprene is resistant to deterioration from waxes, oils, greases, fats, petroleum products, and most refrigerants. It can be operated at a maximum temperature of 95°C (200°F) at 500 psig.

Nordel gives excellent service in hot or cold water and in some applications of low pressure steam. Nordel is resistant to detergents, phosphates, esters, ketones, alcohols, and glycols. It is not suitable for petroleum products. It can be operated at a maximum temperature of 135°C (275°F) at 500 psig.

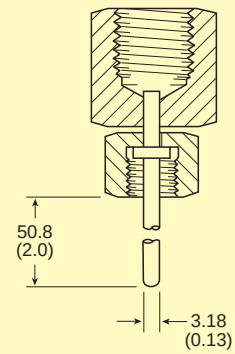


GASS18
$15
Each

Gage Adaptor

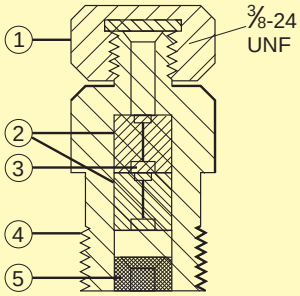
THE PRESSURE GAGE ADAPTOR HAS A 3 mm (⅛") DIAMETER PROBE OF 304 STAINLESS STEEL WITH UNION NUT. SIMPLY ATTACH YOUR GAGE/ TRANSDUCER AND INSERT THE PROBE THROUGH AN OMEGA® PLUG TO TAKE A READING.

Gage Adaptor



Protective Cover Included

Self Sealing Plug



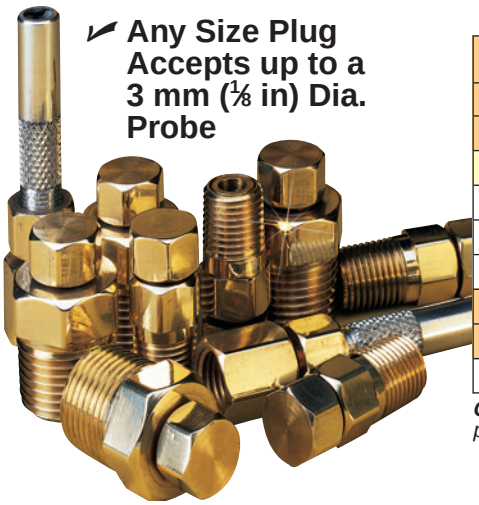
Dimensions: mm (in)

1. CAP & GASKET
2. TWO NEOPRENE OR NORDEL SELF-CLOSING VALVES
3. VALVE POCKET FOR ADDED PRESSURE PROTECTION
4. PROCESS THREAD
5. VALVE RETAINER

Brass

OPN Series Starts at
$9
Each

- Any Size Plug Accepts up to a 3 mm (⅛ in) Dia. Probe



MOST POPULAR MODELS HIGHLIGHTED!

To Order ***(Specify Model Number)***

OMEGA Plug			
Model No.	**Fitting**	**Valve Core Material**	**Price**
OPNE14	¼ NPT Male	NEOPRENE	**$9.00**
OPNO14	¼ NPT Male	NORDEL	**9.50**
OPNE12	½ NPT Male	NEOPRENE	**9.50**
OPNO12	½ NPT Male	NORDEL	**9.00**
Gage Adaptor			
Model No.	**Fitting**	**Probe Diameter**	**Price**
GASS18	¼ NPT Female	3.2 mm (⅛ ")	**$15.00**

Ordering Example: OPNE14, *¼ NPT male fitting with Neoprene core and* ***GASS18****, probe/gage adaptor, $9 + 15 =* ***$24.***

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