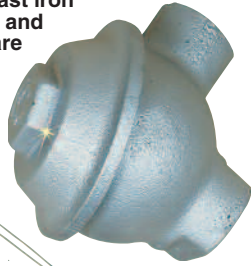


Thermocouple Assemblies



NB1-2 rugged cast iron protection head and terminal block are included with the probe.



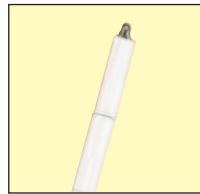
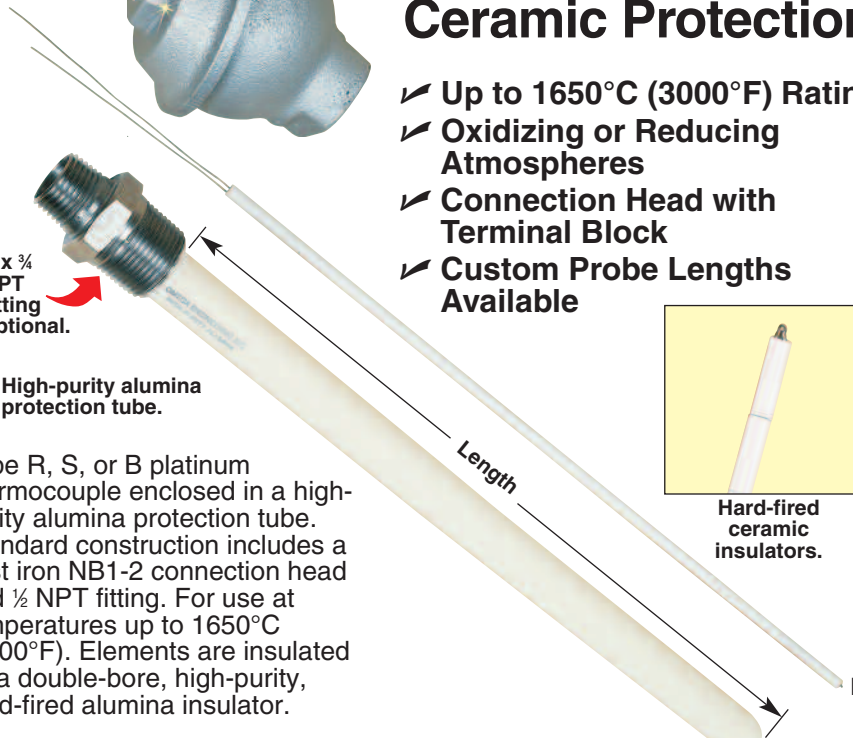
High-Temperature Platinum Thermocouples and Ceramic Protection Tubes

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

½ x ¾ NPT fitting optional.

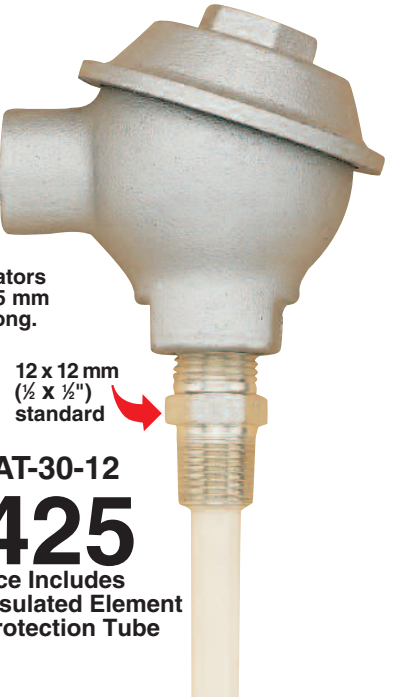
High-purity alumina protection tube.

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.



Hard-fired ceramic insulators.

Insulators are 25 mm (1") long.



12 x 12 mm (½ x ½") standard

RAT-30-12
\$425

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 (⅜)	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 (⅜)	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 (⅜)	3100	1250

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")

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.

Replacement Elements for Assemblies Shown Above

Type of Element	AWG Wire Size	Insulator 99.7% + Al ₂ O 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	1050	100
	30	XDH-30	XDH-30-S-12	XDH-30-R-12	XDH-30-B-12	400	30

Replacement protection tubes available; see PTR Series. For 300 mm (12") probe length: add 48 mm (1 7/8") to length of tube to accommodate fitting. **PTRA-31614-137/8-1** [for 6 mm (¼") OD] **PTRA-1438-137/8-1** [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

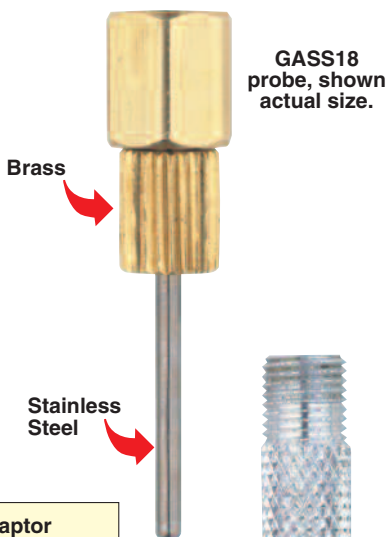
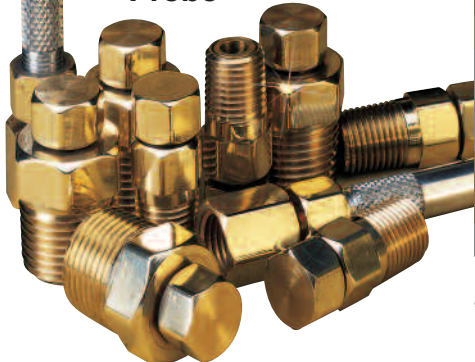
- ✓ 3 mm (1/8") Diameter Probe
- ✓ Up to 1000 psig Between -30 and 60°C (-20 and 140°F)
- ✓ Up to 135°C (275°F)
- ✓ Two Self-Closing Valves
- ✓ Heavy-Duty Design

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.

- ✓ Any Size Plug Accepts up to a 3 mm (1/8 in) Dia. Probe



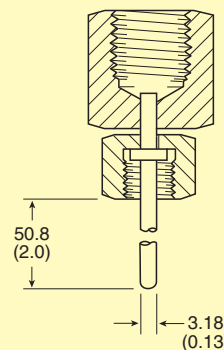
GASS18 probe, shown actual size.

GASS18
\$15
Each

Gage Adaptor

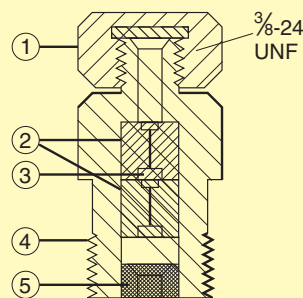
THE PRESSURE GAGE ADAPTOR HAS A 3 mm (1/8") DIAMETER PROBE OF 304 STAINLESS STEEL WITH UNION NUT. SIMPLY ATTACH YOUR GAGE/ TRANSDUCER AND INSERT THE PROBE THROUGH AN OMEGA® PLUG TO TAKE A READING.

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



Shown actual size.

OPN Series
Starts at
\$9
Each

MOST POPULAR MODEL HIGHLIGHTED!

To Order (Specify Model Number)

OMEGA Plug			
Model No.	Fitting	Valve Core Material	Price
OPNE14	1/4 NPT Male	NEOPRENE®	\$9.00
OPNO14	1/4 NPT Male	NORDEL®	9.50
OPNE12	1/2 NPT Male	NEOPRENE®	9.50
OPNO12	1/2 NPT Male	NORDEL®	9.00
Gage Adaptor			
Model No.	Fitting	Probe Diameter	Price
GASS18	1/4 NPT Female	3.2 mm (1/8")	\$15.00

Ordering Example: OPNE14, 1/4 NPT male fitting with Neoprene core and GASS18, probe/gage adaptor, \$9 + 15 = \$24.



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More than 100,000 Products Available!

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Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters