

183.9
W₇₄

 **BASF**

We create chemistry

Tungsten Rhenium
thermocouples

186.2
Re₇₅

183.9
W₇₄

Applications

- Biomedical research
- Ceramic sintering
- Vacuum degassing
- Hardening
- Brazing
- Diffusion bonding

Standard features:

- Evacuated and backfilled with research grade argon
- Insulation resistance of 1000 MEG OHMs at 50 VDC at room temperature
- Twisted and welded junctions to minimize brittle failures
- High quality epoxy seal, unless otherwise noted (See Termination Code 5)

The BASF advantage

- Quality – ISO 9002
- Precious metals expertise
- Lot calibration at no charge
- Technical expertise
- Advanced manufacturing capabilities
- Calibration services

Assemblies for heat processing industries

Tungsten-Rhenium thermocouple assemblies produced and developed by BASF permit ultra-high temperature measurements far in excess of conventional ISA standard letter designated thermocouples.

Traditional base metal thermocouple technology can be used to measure temperatures to approximately 1200°C. For higher temperature requirements the noble metal designs are reliable to 1800°C. For ultra-high temperature requirements, BASF offers the Tungsten-Rhenium assemblies for requirements to 2800°C.

Our many years of experience in high temperature technology has helped BASF to become a leading producer of Tungsten-Rhenium thermocouple assemblies. From annealing applications, to sintering, to heat treating applications, BASF provides the user consistent quality at competitive pricing. Proven products and proven performance are the result of the dedicated, professional people that produce and service your products.

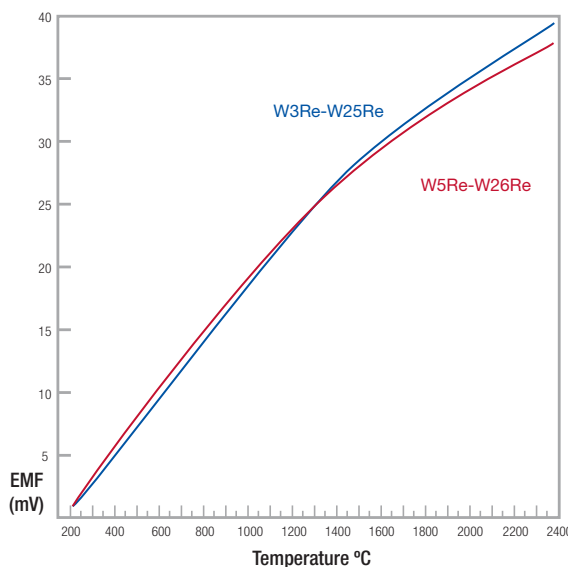
Combined with our engineering and technical expertise, BASF will help provide solutions to your ultra-high temperature applications.

This brochure illustrates only a small sampling of the products and capabilities BASF offers for temperature-sensing applications. Our technical specialists can help provide recommendations for your unique needs, including made-to-order, custom-designed thermocouple assemblies – our specialty.

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Calibration services

In addition to our superior manufacturing capabilities, BASF maintains world-class calibration labs in Fremont, California, and Rome, Italy. Experienced personnel work to ensure the highest level of calibration standards. All calibrations are NIST traceable, and BASF has the capability to calibrate your thermocouple to 1500°C.

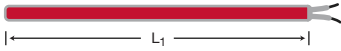


Characteristic EMF – Temperature relationship for BASF Tungsten Rhenium thermocouples

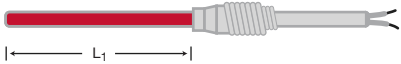
Ordering information:

Specify model number, length measurements (L), calibration code and termination options.

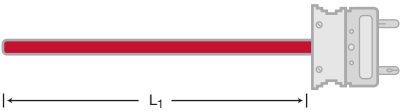
Termination codes:



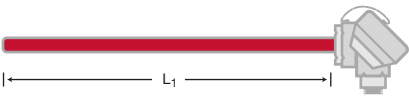
CODE 1 Bare Wire 3/4" stripped leads.



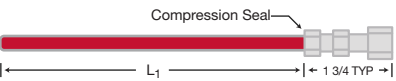
CODE 2 Transition splice of thermocouple wire to extension lead wire provided in a water resistant epoxy potting compound. 36" of 24 ga., solid lead wire with glass/glass insulation is standard. Longer lengths are available upon request.



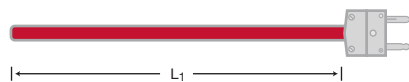
CODE 3 Standard size compensating plug for all sheath sizes.



CODE 4 Cast iron screw cover head especially recommended for use with .187" and .250" sheath dia. assemblies.

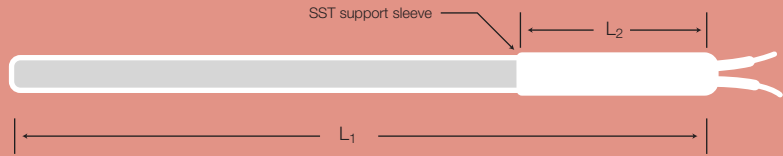


CODE 5 Compression gland for optimum sealing. Provides superior seal to assembly vs. standard epoxy seal. Various sealant options allow for use to higher temperatures, in excess of 400°C.



CODE 6 Miniature plug (used on .062" dia. and below).

07-4XXX Series Standard configuration recommended to 1800°C
Alumina insulation



Sheath Diameter

1 = .062" 4 = .156" A = 1.5 mm X = Special - please specify
2 = .093" 5 = .187" B = 3.0 mm
3 = .125" 6 = .250" C = 6.0 mm

Ordering Code No:



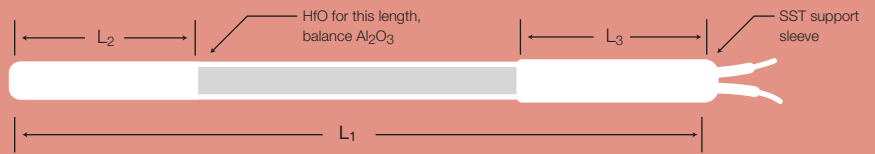
Sheath material
1 = Moly
2 = Tantalum
3 = Alumina
4 = Iridium
Y = Special - please specify

Termination option 1
Termination option 2
Select "0" if no additional termination options are required

Overall length* of assembly
Length* of SST support sleeve
Calibration Code
S = Pt Vs Pt10Rh
R = Pt Vs Pt13Rh
B = Pt6Rh Vs Pt30Rh
P = Platine®
P24 = Pt20Rh Vs Pt40Rh
Ir40 = Ir Vs Ir40Rh
C = W5Re Vs W26Re
D = W3Re Vs W25Re

Example: 07-43135-C-20-0 represents a thermocouple assembly that is .125" in diameter, with a moly sheath and a standard plug and compression seal. This thermocouple's calibration type is C (W5Re Vs W26Re) and the overall length of the assembly is 20" with no SST support sleeve.

07-5XXX Series High temperature configuration recommended to 2200°C
Alumina with Hafnium insulation



Sheath Diameter

1 = .062" 4 = .156" A = 1.5 mm X = Special - please specify
2 = .093" 5 = .187" B = 3.0 mm
3 = .125" 6 = .250" C = 6.0 mm

Ordering Code No:



Sheath Material
1 = Moly
2 = Tantalum
3 = Alumina
4 = Iridium
Y = Special - please specify

Termination option 1
Termination option 2
Select "0" if no additional termination options are required

Overall length* of assembly
Length* of Hafnium insulation Required for temperatures above 1800°C
Calibration Code
S = Pt Vs Pt10Rh
R = Pt Vs Pt13Rh
B = Pt6Rh Vs Pt30Rh
P = Platine®
P24 = Pt20Rh Vs Pt40Rh
Ir40 = Ir Vs Ir40Rh
C = W5Re Vs W26Re
D = W3Re Vs W25Re

Example: 07-53130-C-24-4-6 represents a thermocouple assembly that is .125" in diameter, with a moly sheath and a standard plug. This thermocouple's calibration type is C (W5Re Vs W26Re) and the overall length is 24" with 4" of HfO insulation (for temperatures over 1800°C), and a 6" SST support sleeve.

*Please specify dimensional units (i.e.; inches, millimeters, etc.) required for all length measurements.

Precious metals expertise

Metals – particularly those in the platinum group – are critical components of many products made by BASF such as contact thermocouples. Ensuring that those raw materials are where they need to be, when they need to be there, in the form they need to be and at the lowest possible cost is what BASF's Materials Services group is all about. Given our unique understanding of market fundamentals, such as current and future supply, technology changes and market risks, we help ensure that BASF and our customers have a cost-effective, reliable supply of the raw materials they need.

A fundamental understanding of precious metal and precious metal technologies is also critical. The experience of our research and development group in precious metal and precious metal technologies is unmatched. From Fibro® platinum to Platine!® thermocouple wire we have led the industry with breakthrough innovations. No one knows more about precious metals. We are the precious metal experts.

About us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

Americas

46820 Fremont Blvd.
Fremont, CA 94538
USA

Tel.: 510-490-2150
Fax: 510-252-1871

www.basf-catalysts.com

Europe

21 Via Lago dei Tartari
00012 Guidonia, Rome
Italy

Tel.: 39-0774-377-012
Fax: 39-0774-377-015

Asia

3 Raffles Place
#08-01 Bharat Building
Singapore

Tel.: 65-6533-5118
Fax: 65-6533-5118

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