



Weed Instrument – The Only Name You Need to Know for Temperature Measurement

Whether you need a temperature sensor or a complete temperature measurement assembly, there's an easy way to solve your requirement, just contact Weed Instrument.

Think of us as an extension of your own team. From day one, we work with you to develop the best solutions for all your temperature sensing needs. For the most cost-efficient, volume-oriented applications or high performance, one-of-a-kind designs, Weed Instrument offers the engineering and manufacturing resources, and the product quality, performance and reliability you need.

### Manufacturing and Quality

Weed Instrument was formed in 1968 and is headquartered on the outskirts of Austin, Texas. The company operates from a purpose built 50,000 square foot (4,600 sq. m) facility.

Our Quality Program was established to meet the needs of a broad range of industries. In addition to being ISO 9001:2000 registered we are compliant with 10CFR50 Appendix B, 10CFR21, ANSI N45.2, ASME NQA-1, ASME NCA3800, CSA Can3-Z299.1 and AS 9100



We maintain an on-site, NIST traceable Metrology Laboratory that provides comparison temperature calibrations from -112 °F to 1112 °F (-80 °C to 600 °C) on the International Temperature Scale (ITS-90). Relative calibrations at the boiling point of liquid nitrogen are also performed. The Laboratory is fully equipped with fluidized baths and tube furnaces, standard platinum resistance thermometers, and thermocouples. Time response testing is in full compliance with ASTM E-644.

Many of our processes are propri-

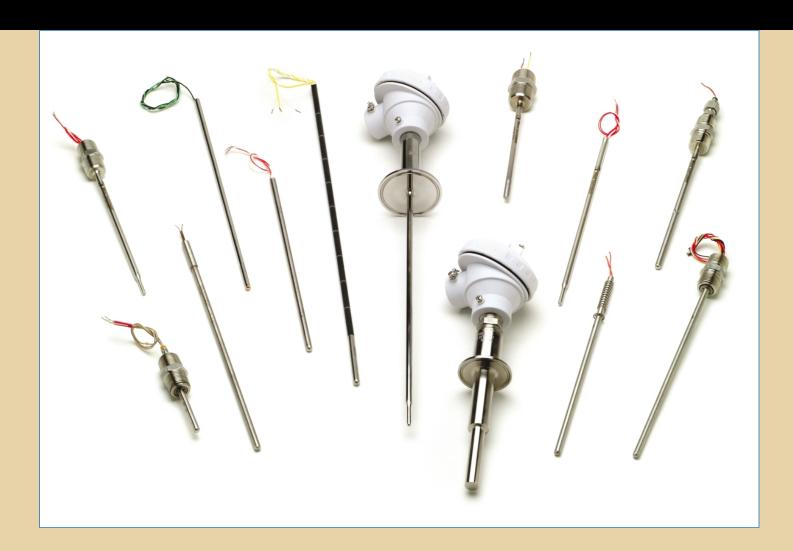
etary and are geared to assure that from initial concept to finished product, the integrity of the design is maintained. Each of our finely tuned manufacturing cells is configured to provide you with the highest quality product, while maintaining lead times that are among the shortest in our industry.

At Weed Instrument, we have the experience, resources and technology to meet and exceed your needs on time, every time – guaranteeing Total Customer Satisfaction!



#### **Catalog RTDs and Thermocouples**

Over 250,000 versions – and most can be shipped within 48 hours or less



Weed Instrument provides one of the world's largest selections of catalog RTDs and thermocouples.

Our RTDs can be found globally in thousands of industrial, process and OEM applications, wherever performance, reliability and economy are key considerations.

We offer thermocouples for virtually every high temperature process application, including smelting and melting, forging, heat treating, incineration and cogeneration, and utility & waste boilers. We also manufacture a wide

choice of Magnesium Oxide (MgO) insulated thermocouples, in all thermocouple element types, for various process and laboratory applications.

All our RTDs and thermocouples can be supplied with your choice of element materials, values, accuracies and element leadwire configurations, together with a variety of sheath materials, lengths and diameters. We also offer a wide selection of either screwed or flanged thermowells in various materials for most process fluids. In addition, all Weed Instrument

temperature measurement assemblies can be pre-configured with one of our economical, integral head mounted or DIN-rail temperature transmitters.

- RTDs: -320 °F to 1700 °F (-200 °C to 927 °C)
  - · Strain Free, Wire Wound Elements
  - Thin Film Elements
  - · Surface Mount Sensors
- Thermocouples: -320 °F to 2300 °F (-200 °C to 1260 °C)
  - Base Metal Types: J, K, T, E, N
  - · Noble Metal Types: R, S, B
  - Other Types: M

### Biopharmaceutical Temperature Measurement

#### Autoclave Temperature Measurement

#### Food & Beverage Temperature Measurement







Weed Instrument sanitary RTDs, thermocouples, thermowells and temperature transmitters have been designed to meet the environmental and performance requirements of pharmaceutical and biotech processing and sterilization applications. Most sensors feature enhanced performance specifications and 316L stainless steel materials and can be electropolished to a Ra of 0.2 microns (8 microinches). Also, permanently etched tagging information and calibration certificates can be provided.

A line of patented temperature sensors that can be removed for recalibration or replacement, without interrupting the process, is also available.

Thermowells can be specified as weld-in or clamp style, with all 316L stainless materials and electropolished finishes. Weld-in thermowells can be supplied with material certifications and permanently marked "heat numbers".

Weed Instrument manufactures a wide selection of RTDs for Autoclave sterilizer applications in the pharmaceutical, biotechnology and medical industries. These RTDs eliminate all of the problems associated with standard probes where the pressure and vacuum cycling of autoclaves forces moisture inside the probe, resulting in incorrect, low temperature readings and reduced life.

Our Autoclave RTDs are completely sealed. As a result, the entire sensor assembly of the Weed Instrument Autoclave RTD, including the probe and cables extending from the RTD, can be completely submerged in water without affecting accuracy or long-term stability.

We offer one of the broadest lines of 3A compliant RTDs, thermocouples, thermowells and temperature transmit-

ters for food and beverage applications. With a wide variety of sanitary process connections, chances are we have an "off the

shelf" model immediately available to meet your specific needs.

## Inventory Tank Gauging Temperature Measurement

# Aerospace, Marine and Military Vehicle Temperature Measurement

### **HVAC Temperature Measurement**







Precise temperature measurement is crucial for high accuracy monitoring of product contained in bulk storage tanks. Any fluctuation in temperature between two static measurements will directly result in a deviation of measured volume, causing uncertainty. To compensate for this, high accuracy temperature measurement must be performed to derive standard volumes.

Our products for this application include single point and multiple point temperature averaging sensors, providing the highest accuracy of temperature measurement over the entire height of the tank. Associated instrumentation includes microprocessor based analog and smart temperature transmitters and modular fiber optic converters for tank data transmission.

Typical applications include:

- Petroleum Storage
- Organic Liquids
- Thermal Energy Storage

For the Aerospace, Marine and Military markets, Weed Instrument designs and manufactures high reliability thermocouples and RTDs. We precision wind our own platinum and nickel sensing elements, which allows us to produce non-standard resistance curves and values - maximizing performance for our customers. All elements are calibrated to NIST standards, and packaged to provide exceptional accuracy, reliability, and design flexibility for the harshest environments

Designed for high reliability and to endure demanding shock, vibration and ambient environments, Weed Instrument RTDs and thermocouples can be found in these applications:

- Bleed Air
- Cabin Air
- Engine Oil
- Gear Boxes
- Fuel Systems
- Cylinder Heads
- Climate Control
- Hydraulic Systems

Whatever your HVAC application, the most efficient control solution always starts with the best sensors. Weed Instrument HVAC sensors have earned a global reputation for providing exceptional reliability, performance, fast response and excellent value.

With one of the widest selections available and over 35 years experience in the HVAC market, you can be sure Weed Instrument is your right temperature sensor partner. Our HVAC temperature measurement products include:

- Duct Averaging Sensors with Continuous Sensing Elements up to 50ft (15m)
- Room Air Sensors and Transmitters featuring Minimal Self-heating Error
- Bendable Area Averaging Sensors up to 100ft (30m) Length
- Spring Loaded Pipe Clamp Sensors
- Fluid Immersion Sensors
- Bolt-on Surface Sensors
- · Outside Air Sensors

### **Custom RTDs and Thermocouples** for **OEMs**

### **Temperature Transmitters**



Weed Instrument knows how to support OEMs – with strong applications engineering, world class quality and low cost manufacturing capability.

As a solutions company, we are committed to providing more than just catalog sensors and assemblies. Decades of application engineering provides the perspective and experience to quickly prototype, build and deliver your selection of custom quality temperature products.

Research and development teams simulate actual application environments, perform comprehensive environmental testing and evaluate all pertinent electrical factors.

Whether your requirement is for 10 or 100,000 units, you can count on Weed Instrument to provide you with accurate, reliable and economical sensors.

We also offer you the opportunity to streamline your temperature sensor sourcing through value-added assembly. To improve supply chain efficiency we can deliver you more complicated sub-assemblies instead of just temperature sensors. So, whether your customization requires a simple redesign of an RTD or thermocouple, or the design and manufacture of a complete housing and electronics, you can count on Weed Instrument to be a reliable partner for value-added assembly.

Typical applications include:

- Heat Tracing
- Waste Incinerators
- High Pressure Downhole Logging
- Fast Response Food Service Machines
- Rubber Compound and Aggregate Mixers
- High Pressure Hydraulic Line Temperature
- Filter Systems
- · Off-Road Vehicles



A full selection of economical, head mount and DIN-rail temperature transmitters is offered. Available certifications include FM, CSA, ATEX and GL (ship building approval). Features include:

- 0.08% Accuracy
- Full Input-Output Isolation
- Custom Input/Linearization Capability
- Configurable via a PC or HART Communicator
- T/C Inputs: B, C, D, R, S, E, J, K, L, N, T, U
- RTD Inputs: Pt100, Pt500, Pt1000, Ni100, Ni500, Ni1000.
- mV Inputs: -10 to 75mV/Ohm Inputs: 10 to 2000 ohms
- Outputs: 4-20mA or 20-4mA with Optional HART Signal Superimposed.

### Accessories and Connection Heads

### Nuclear Qualified and Safety Related Class 1E Temperature Products

### Plug and Play, IEEE 1451.4 Compatible Technology





Weed Instrument offers a broad selection of accessories to assist in the application of RTDs and thermocouples. Options include connection heads, thermowells, quick disconnect plugs and jacks, sensor mounting fittings and compensated terminal blocks.

Weed Instrument is the world's largest supplier of nuclear qualified RTDs, thermocouples and temperature transmitters. Today, 80% of North American nuclear power plants rely exclusively on our temperature measurement instrumentation for critical reactor coolant monitoring.

We manufacture products that are qualified for use in all of the leading reactor technologies, including PWR, BWR, CANDU (PHWR), and APWR

Our nuclear qualified temperature instrumentation includes a complete selection of sensors, thermowells and transmitters qualified to IEEE-344 (seismic) and IEEE-323 (environmental) standards.

Most Weed Instrument temperature



measurement products can be supplied with "plug and play" technology, providing compatibility with the new IEEE 1451.4 standard. As a result they are recognizable to standard based instrumentation and software. This means our sensors are instantly identified and automatically begin functioning in seconds.

In addition, everything you need to know about your sensor is immediately accessible...settings, calibration history, even location. So now you can be confident that the sensor's critical data is accurate. It can even store its own calibration certificate! The benefits of this technology include:

- Faster Set Up Time
- Increased Reliability
- Improved Accuracy
- Open Standard Interoperability

#### **Other Weed Instrument Products**

#### Nuclear Qualified Pressure Transmitters

Weed Instrument supplies one of the broadest ranges of pressure transmitters for nuclear qualified applications. Most of the instruments are qualified to IEEE-323/344 and versions are offered for virtually every installation from inside containment/harsh environment to applications requiring only seismic qualification or commercial grade.

Models are available for the measurement of gauge, absolute or differential pressure and output signals include 4-20 mA, 10-50mA, HART, FOUNDATION Fieldbus, Profibus and FoxCom.



### Fiber Optic Converters for Bus Systems and Serial Data Interfaces

Weed Instrument is a world leader in the supply of Fiber Optic Networking equipment for Industrial Control, Process Control and Automation applications. We have over three decades of experience in fiber optic networking technology and offer the world's largest selection of fiber optic converters for PLC's and Distributed Control Systems. Weed Instrument fiber optic networking products are now installed in over 150,000 loops worldwide.

Fiber optics offers numerous advantages over copper based data trans-



mission. Electrical noise, harsh environments, long distances, reliability/security, surge protection and corrosion issues are all easily overcome with the simple, rugged and easy to install technology of Weed Instrument fiber optic products.

They can be used in almost any network configuration, independent of topology, and versions are available for virtually every analog and digital communication protocol.



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