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› Fluke 80PK-8 Pipe Clamp Temperature Probe User Manual

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Fluke 80PK-8 Pipe Clamp Temperature Probe User Manual

Model: 80PK-8

1. INTRODUCTION AND OVERVIEW

The Fluke 80PK-8 Pipe Clamp Temperature Probe is a specialized Type-K thermocouple designed for efficient and accurate temperature and superheat measurements on pipe surfaces. This probe is an essential tool for professionals requiring precise thermal readings in various industrial and commercial applications.

It features a 1-meter (39-inch) lead for flexible positioning and is capable of measuring temperatures within a range of -29 to 149 degrees Celsius. The clamp mechanism is engineered to accommodate pipe diameters from 6.4 mm to 34.9 mm (0.25 to 1.38 inches), ensuring versatility across different pipe sizes. The probe incorporates a durable ribbon sensor, which contributes to its repeatable and reliable measurement performance.

2. SAFETY INFORMATION

Always adhere to the following safety precautions when using the Fluke 80PK-8 Pipe Clamp Temperature Probe to prevent personal injury or damage to the equipment:

- **Read all instructions:** Familiarize yourself with the entire manual before operation.
- **Use with compatible equipment:** Ensure the probe is connected only to Type-K thermocouple compatible measuring devices.
- **Inspect before use:** Before each use, visually inspect the probe and its lead for any signs of damage, wear, or exposed wiring. Do not use if damaged.
- **Avoid electrical hazards:** Be aware of live electrical circuits. Do not use the probe on or near energized electrical systems unless specifically designed and rated for such applications and proper safety procedures are followed.
- **Temperature limits:** Do not expose the probe to temperatures outside its specified operating range (-29 to 149 °C).
- **Proper clamping:** Ensure the probe is securely clamped to the pipe surface to obtain accurate readings and prevent accidental dislodgement.
- **Cleaning:** Disconnect the probe from any measuring device before cleaning. Refer to the Maintenance section for cleaning instructions.

Failure to follow these safety guidelines may result in injury or damage to the product or other equipment.

3. PRODUCT FEATURES

The Fluke 80PK-8 Pipe Clamp Temperature Probe offers several key features designed for performance and reliability:

- **Type-K Thermocouple:** Standardized for broad compatibility with various temperature measuring instruments.
- **Fast Response:** Engineered for quick temperature and superheat measurements on pipe surfaces.
- **Wide Pipe Diameter Capacity:** Clamps onto pipes ranging from 6.4 mm (0.25 inches) to 34.9 mm (1.38 inches).
- **Broad Temperature Range:** Capable of measuring temperatures from -29 °C to 149 °C (-20 °F to 300 °F).
- **Durable Ribbon Sensor:** Ensures consistent and repeatable measurements over time.
- **Integrated Lead:** Comes with a 1-meter (39-inch) lead for convenient connection to your meter.



Figure 3.1: The Fluke 80PK-8 Pipe Clamp Temperature Probe, showing the clamp head, lead, and Type-K thermocouple connector.



Figure 3.2: A detailed view of the Fluke 80PK-8 clamp head, highlighting the pipe diameter capacity markings and the durable construction.



Figure 3.3: An alternative angle of the Fluke 80PK-8, illustrating the spring-loaded clamp mechanism and the robust cable connection.

4. SETUP

Setting up the Fluke 80PK-8 Pipe Clamp Temperature Probe is straightforward:

1. **Unpack the Probe:** Carefully remove the 80PK-8 probe from its packaging.
2. **Inspect for Damage:** Before first use, inspect the probe and its lead for any visible damage. If any damage is found, do not use the probe and contact Fluke customer support.
3. **Connect to Meter:** Locate the Type-K thermocouple input jacks on your compatible temperature measuring device (e.g., multimeter with temperature function, dedicated thermometer). The 80PK-8 has a standard mini-connector (yellow). Ensure the positive (+) and negative (-) terminals of the probe connector align with the corresponding jacks on your meter.
4. **Secure Connection:** Push the connector firmly into the meter's input jacks until it is fully seated. A secure connection is crucial for accurate readings.
5. **Prepare Measurement Area:** Ensure the pipe surface where the measurement will be taken is clean and free of debris, rust, or excessive paint, which could affect thermal contact.

5. OPERATING INSTRUCTIONS

Follow these steps to obtain accurate temperature measurements using the 80PK-8 Pipe Clamp Temperature Probe:

1. **Power On Meter:** Turn on your temperature measuring device and select the appropriate temperature measurement function (usually indicated by °C or °F, and often a 'K' for Type-K thermocouples).
2. **Open Clamp:** Squeeze the handles of the 80PK-8 probe to open the clamp jaws.
3. **Position on Pipe:** Place the open jaws around the pipe surface you wish to measure. Ensure the pipe diameter is within the probe's specified range (6.4 mm to 34.9 mm).
4. **Secure Clamp:** Release the handles, allowing the spring-loaded jaws to firmly clamp onto the pipe. Ensure the ribbon sensor makes good, direct contact with the pipe surface. Poor contact will result in inaccurate readings.
5. **Stabilize Reading:** Allow a few moments for the temperature reading on your meter to stabilize. The probe is designed for fast response, but stabilization time may vary depending on the temperature difference and pipe material.
6. **Record Measurement:** Once the reading is stable, record the temperature.
7. **Remove Probe:** Squeeze the handles again to release the clamp from the pipe.

Tips for Accurate Measurement:

- For best results, measure on a clean, uninsulated section of pipe.
- Avoid placing the clamp directly over welds or uneven surfaces.
- Ensure the ambient temperature around the probe is stable and not subject to drafts, which could affect readings.

6. MAINTENANCE

Proper maintenance ensures the longevity and accuracy of your Fluke 80PK-8 Pipe Clamp Temperature Probe:

- **Cleaning:**
 - Disconnect the probe from the measuring device before cleaning.
 - Wipe the probe body and clamp jaws with a damp cloth and mild detergent.
 - Pay special attention to the ribbon sensor area, ensuring it is free of dirt, grease, or residue that could impede thermal contact.
 - Do not use abrasive cleaners, solvents, or harsh chemicals.
 - Ensure the probe is completely dry before storage or next use.
- **Storage:**
 - Store the probe in a clean, dry environment, away from extreme temperatures and direct sunlight.
 - Avoid kinking or sharply bending the lead cable.
 - Keep the probe protected from physical impact.
- **Inspection:** Periodically inspect the lead cable for cuts, abrasions, or signs of wear. Check the integrity of the connector. Replace the probe if any damage is observed.

7. TROUBLESHOOTING

If you encounter issues with your Fluke 80PK-8 Pipe Clamp Temperature Probe, consider the following common problems and solutions:

Problem	Possible Cause	Solution
Inaccurate or fluctuating readings	Poor contact with pipe surface; Dirty sensor; Incorrect meter setting; Damaged probe.	Ensure firm, direct contact; Clean sensor; Verify meter is set to Type-K thermocouple; Inspect probe for damage.
No reading on meter	Probe not connected properly; Meter off or incorrect function selected; Damaged lead or connector.	Check probe connection to meter; Turn meter on and select correct function; Inspect lead and connector for breaks.
Probe does not clamp securely	Pipe diameter too large or too small; Clamp mechanism damaged.	Verify pipe is within 6.4 mm to 34.9 mm range; Inspect clamp for mechanical damage.

If the problem persists after attempting these solutions, contact Fluke customer support for further assistance.

8. SPECIFICATIONS

Specification	Detail
Product Type	Pipe Clamp Temperature Probe
Thermocouple Type	Type-K
Measurement Range	-29 °C to 149 °C (-20 °F to 300 °F)
Pipe Diameter Capacity	6.4 mm to 34.9 mm (0.25 inches to 1.38 inches)
Lead Length	1 meter (39 inches)
Product Dimensions	0.31 x 0.31 x 0.24 inches (approximate, as per product data)
Item Weight	5.6 ounces (0.16 kg)
Manufacturer	Fluke
Model Number	80PK-8

9. WARRANTY AND SUPPORT

Fluke Corporation stands behind the quality and performance of its products. While specific warranty details are not provided in this manual, Fluke typically offers a limited warranty on its test tools.

For detailed warranty information, technical support, service, or to purchase accessories, please visit the official Fluke website or contact their customer service department. You can often find support resources, FAQs, and contact information at:

www.fluke.com

When contacting support, please have your product model number (80PK-8) and any relevant purchase information ready.

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