

PAMEL MEASURING PROBES

PSNP1 • PSNG1 • PSNPO1 • PSNP2 • PSNG2 • PSNPO2

One family - two connector standards

All probes described here use a digital DS18B20 sensor. Type 1 ends with an RJ45 connector, while the corresponding Type 2 uses D-SUB 9. Type 2 versions keep the same mechanical purpose as the corresponding Type 1 probes - only the connector standard changes.



PSNP1
Standard probe • RJ45

Universal temperature measurement in chambers, tanks and installations.



PSNG1
Threaded probe • RJ45

For permanent mounting in a fitting, tank, boiler, KEG or process installation.



PSNPO1
Pointed probe • RJ45

For measuring the temperature of products, meat and materials by direct insertion.



PSNP2
Standard probe • D-SUB 9

Equivalent to PSNP1 with a D-SUB 9 connector.



PSNG2
Threaded probe • D-SUB 9

Equivalent to PSNG1 with a D-SUB 9 connector.



PSNPO2
Pointed probe • D-SUB 9

Equivalent to PSNPO1 with a D-SUB 9 connector.

DS18B20 sensor range: -30...+125°C. This range applies to the sensing element; protect the cable, cable entry and connector from temperatures exceeding their operating limits.



Probe connectors and compatibility

IMPORTANT - a similar shape does not mean the same standard

The RJ45 used on a PAMEL probe is not an Ethernet port. The D-SUB 9 used on a PAMEL probe is not a standard computer RS-232/COM serial port. Connect probes only to compatible PAMEL probe inputs or through the intended hub/adaptor.

RJ45 - Type 1 probes

PSNP1 • PSNG1 • PSNPO1

- pin 3 = GND
 - pin 4 = DATA (1-Wire)
 - pin 6 = VCC
 - remaining pins - not connected for a standard DS18B20 probe
- Read the numbering according to the connector markings / controller documentation.*

D-SUB 9 - Type 2 probes

PSNP2 • PSNG2 • PSNPO2

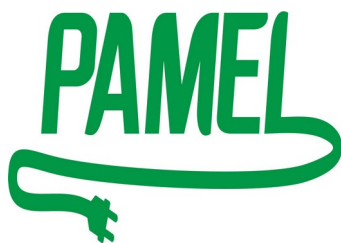
- pin 1 = GND
 - pin 2 = DATA (1-Wire)
 - pin 3 = VCC
 - pins 4-5 - may have additional functions in selected controllers; they are not part of the standard probe circuit
 - pins 6-9 - unused in a standard DS18B20 probe
- When making a cable, follow the pin numbers moulded or stamped on the connector. The solder-side view is mirrored relative to the pin-side view.*

PAMEL probe hubs and adapters

PAMEL uses and develops hubs and adapters for connecting different probe standards, splitting the bus and adapting an installation to a specific controller. Check the current PAMEL offer for availability of a particular version. A hub or adapter does not automatically increase the number of probes supported by the controller - the limit depends on the model and its software.

Choosing the connector

First choose the probe for the type of measurement (standard / threaded / pointed), then match it to the controller connector. If the standards differ, use the correct PAMEL hub or adapter instead of modifying the probe cable.



Safe use of probes

Most important rule

The probe is a measuring element. The cable and connector are not designed to carry mechanical loads. Do not pull the probe out by the cable, twist the cable around the probe or use the cable as a handle.

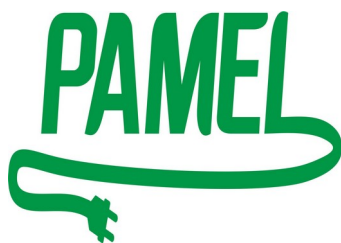
- Do not pull the cable or the point where it enters the metal sheath. Hold the probe body or the connector housing.
- After use at high temperature, wait until the metal part of the probe and the cable have cooled. Only then remove, coil, clean or store the probe.
- Do not route the probe cable together with 230/400 V power cables or cables for heaters, motors, inverters and contactors. Do not bundle them together over long runs.
- Do not pinch the cable with a door, lid, enclosure or sharp edge. Avoid tight bends and repeated bending at the same point.
- Keep the RJ45 and D-SUB 9 connectors and the cable entry into the connector dry and clean. Do not immerse connectors in water or cleaning agents.
- Keep the cable and connector away from flames, heaters, hot walls and components whose temperature could damage the insulation.
- Before START, check that the temperature reading is plausible. Treat an unusual, unstable or missing reading as a reason to inspect the probe and cable.

Notes for each probe design

STANDARD - PSNP1 / PSNP2	Place the metal sheath in a location representative of the measured temperature. Do not tension the cable and leave enough slack to remove the probe safely.
THREADED - PSNG1 / PSNG2	Mount using the thread and metal body; do not rotate the whole probe by the cable. Select the correct thread and seal for the installation. After installation, the cable must not be twisted or kept under continuous tension.
POINTED - PSNPO1 / PSNPO2	The tip is sharp. Insert and remove the probe while holding the metal part/handle, never the cable. Protect your hands and do not leave the sharp tip where children or bystanders can reach it.

Sensor temperature range versus cable

The -30...+125°C range applies to the DS18B20 sensor and the sensing element. It does not mean that the entire cable, potting and connector can operate continuously at the same temperature. Only the part of the probe intended for measurement should remain in the hot zone.



After use, maintenance and diagnostics

After measurement

- Stop the process or switch off the controller according to its manual.
- Wait for the probe and cable to cool. Do not rapidly cool a hot probe by pouring cold water over it.
- Remove the probe by holding its body, and unplug the connector by holding its housing - never by the cable.
- Clean the metal part with a soft damp cloth or a cleaner suitable for the application. Do not flood the connector or cable entry.
- Dry the probe and connector thoroughly before storage. Coil the cable loosely, without tight loops or strain on the ends.

If the reading is incorrect

No temperature / probe error	Check the correct socket, full seating of the plug, and the condition of the pins and cable. Connect a known-good probe to the same input.
Reading is unstable	Separate the probe cable from power cables and interference-generating components. Check for moisture in the connector and insulation damage.
Reading too low / too high	Compare with a second probe in the same location. Check that the metal tip is actually in the measured medium and that no correction/calibration is set in the controller.
Problem appears when the cable is moved	Stop using the probe. This usually indicates damage to the cable, connection or cable entry. Do not repair the cable by twisting exposed conductors together.

Common data and support

Common data • sensor: DS18B20 • sensing element range: -30...+125°C • Type 1: RJ45 • Type 2: D-SUB 9 • cable length, sheath length and thread: depend on the selected version	PAMEL Centre  Current manuals, support, accessories, hubs and adapters: https://serwer.pamel.pl/
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Note: always follow the manual of the controller to which the probe is connected. If the controller requirements are more restrictive, they take precedence.