

Data Sheet

PLHD-PLCB-DSPS

Temperature Sensors
for Thermal Energy Meters
with MID004 Certification



Disposal



At the end of their service life, the sensors must be disposed of through separate collection systems for Waste Electrical and Electronic Equipment (WEEE). Strictly comply with all applicable local disposal regulations.

Maintenance

Please observe the nationally prescribed calibration intervals. At the end of the calibration period, the Maximum Permissible Error (MPE) shall be verified by means of metrological verification. **Do not modify the temperature sensors or alter the cable length, either by extending or shortening it, as this may compromise the accurate measurement of temperature and temperature difference and affect compliance with periodic verification requirements.** Defective or damaged temperature sensors must be taken out of service and replaced.

Product Description

The temperature sensors are platinum resistance thermometers (RTDs), suitable for either direct immersion or installation in thermowells. Connection is provided either by a direct silicone-insulated cable or through an IP67-rated watertight connection head. The platinum sensing elements comply with DIN EN 60751 and are available as Pt100, Pt500, or Pt1000 types. The PLHD series (connection head type), PLCB, and DSPS series (cable-connected type) are approved for paired installation, either directly immersed or fitted in immersion sleeves (thermowells), in compliance with MID Annex MI-004 requirements.

International standards and regulatory compliance

Reference	Title/ Description
EN 1434	Heat meters – Parts 1 to 6: General requirements, metrological and technical requirements, and test methods (EN 1434 series)
EN 60751	Industrial platinum resistance thermometers and platinum temperature sensors (IEC 60751)
2014/32/UE	Directive 2014/32/EU of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments (Measuring Instruments Directive – MID)
RoHs	Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

PLHD-PLCB-DSPS ISONRG platinum temperature sensors

PLH temperature sensors are platinum resistance temperature detectors (RTDs) used for temperature measurement. The output parameter is electrical resistance. Installation can be either direct or via thermowells with a 1/2" G male threaded process connection. All three versions are MID004 approved, and electrical connection can be implemented using either two-wire or four-wire technology, depending on the model. Together with flow meters and energy calculators, the temperature sensors are instruments used for the measurement and calculation of thermal energy, as well as for the metering and optimization of heating and cooling energy consumption.

The probes are designed for installation in **thermal energy metering systems**, comply with European Directive 2014/32/EU (MID – Annex MI-004) and meet the requirements of EN 1434 and EN 60751 Class 2 standards. Each pair of sensors is supplied as a matched and calibrated pair, ensuring accurate measurement of the temperature difference between the flow and return lines of heating or cooling systems. The sensors are approved for both direct installation in contact with the fluid and installation in immersion thermowells. They operate over a temperature range from 0 to +150 °C and are suitable for pressures up to 25 bar. The sensors can also be supplied with a three-point calibration certificate, providing metrological documentation required for specific applications.

Compatible with ISOIL models

- MV311
- MV311SC
- TherMAG Valve CS611
- IFX-E3
- IFX-E4



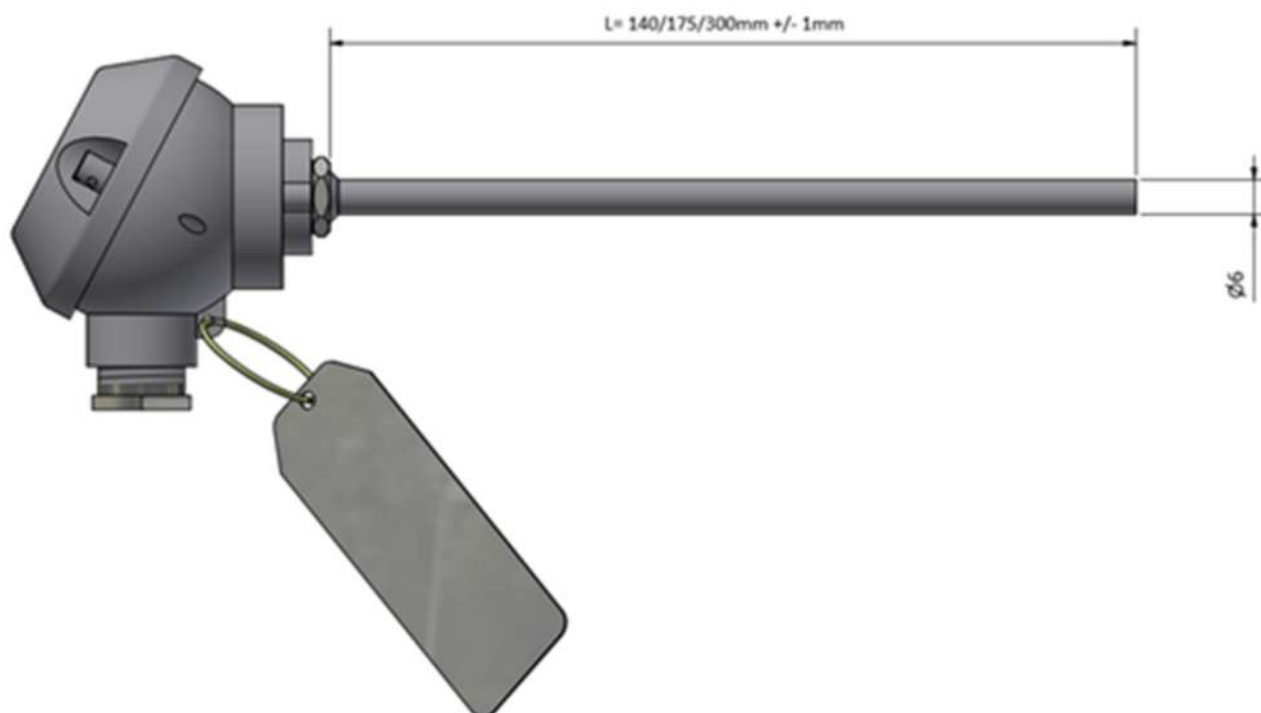
PLHD probes Technical Data

PLHD PROBES WITH CONNECTION HEAD

- PT500 platinum sensing element (Pt100 and Pt1000 available on request)
- Class A tolerance according to EN 60751
- 4-wire technology
- Operating temperature: -25 to +150 °C
- Measuring range: 0 to +150 °C

MECHANICAL CHARACTERISTICS

- Stainless steel AISI 316L stem $\varnothing$ 6 mm
- Length: 140 / 175 / 300 mm
- Mini connection head in painted grey aluminum, IP66 watertight execution with M16x1.5 cable gland
- Stainless steel nameplate 25 × 70 mm
- 4-terminal ceramic terminal block



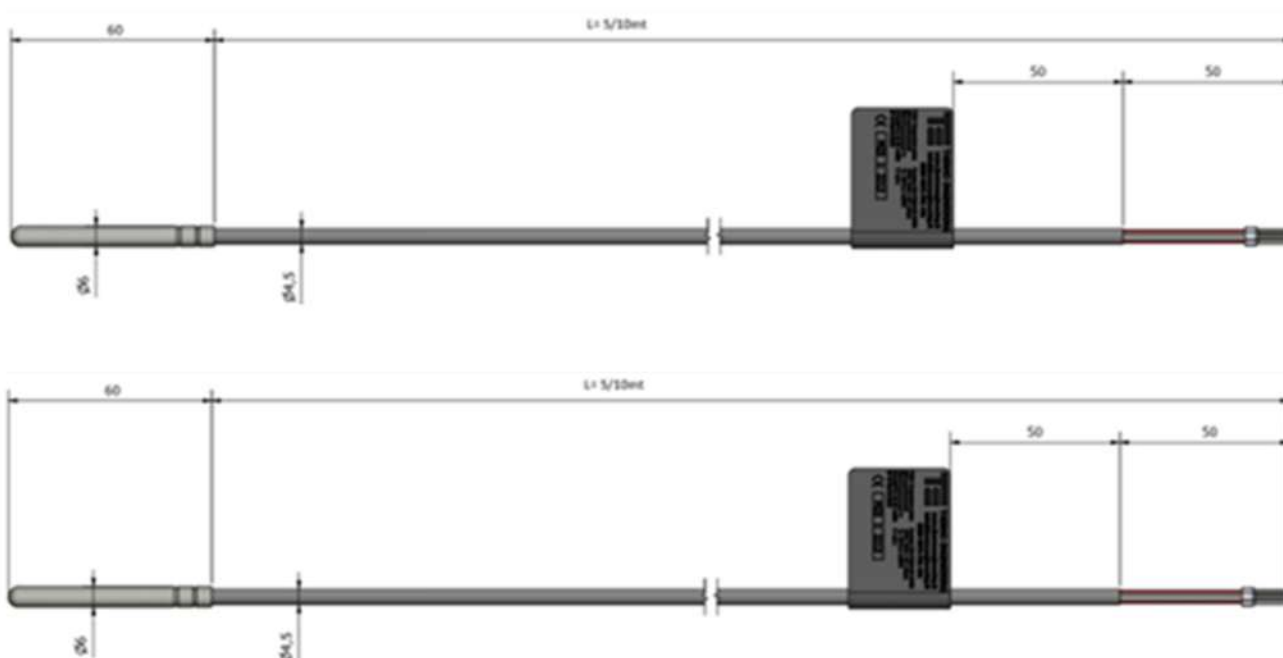
PLCB probes Technical Data

PLCB PROBES WITH CABLE

- Platinum sensing element PT500 (PT100, PT1000 available on request)
- Class A tolerance according to EN 60751
- 4-wire technology
- Temperature range: -25 to 150°C
- Measuring range: 0°C to +150°C

MECHANICAL CHARACTERISTICS

- Stainless steel stem AISI 304 $\varnothing$ 6 mm-Lunghezza: 60 mm
- Double cable crimping
- Black silicone connection cable with 4 conductors, 0.22 mm² cross-section
- Cable length 5 / 10 m (up to 25 m on request)
- Adhesive label on the cable



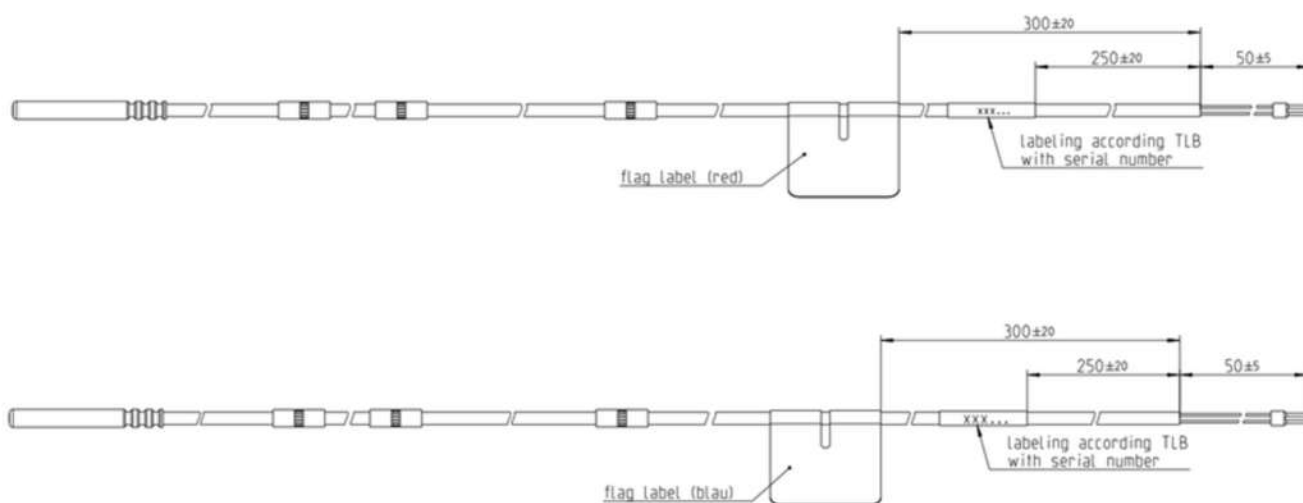
DSPS probes Technical Data

DSPS PROBES WITH CABLE

- Platinum sensing element PT500 (PT100, PT1000 available on request)
- Class B tolerance according to EN 60751
- 2-wire technology
- Temperature range: -25 to 150°C
- Measuring range: 0°C to +150°C

MECHANICAL CHARACTERISTICS

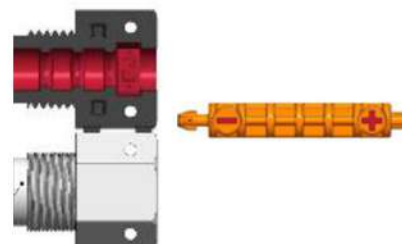
- Stainless steel stem AISI 316 Ø 5.2 mm
- Length: 45 mm
- Double cable crimping
- Black silicone connection cable with 4 conductors, 0.22 mm² cross-section
- Cable length 3 / 5 m (up to 10 m on request)
- Adhesive label on the cable



INSTALLATION ACCESSORIES

DSPS PROBES WITH CABLE

-Available sizes	M10
-Process connection	Male M thread
-Material of the body	PEI (Polyetherimide)
-Maximum pressure (PN)	25 bar
-Temperature range	0°C ... +100°C



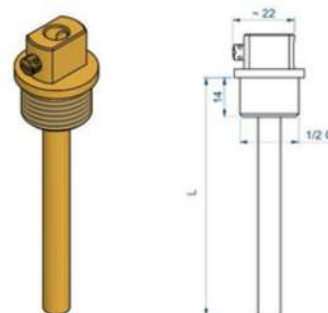
BALL VALVE

-Available sizes	1/2", 3/4", 1", 1 1/2"
-Process connection	Female thread UNI 338
-Material of the body	Nickel-plated brass
-Maximum pressure (PN)	16 bar
-Temperature range	0°C ... +100°C
-Connection for temperature probe	Female M10 thread



IMMERSION WELLS

-Immersion lengths (L)	85 mm, 120 mm, 210 mm
-Process connection	Male G 1/2" thread
-Internal diameter	5.2 mm and 6 mm
-Maximum pressure (PN)	40 bar
-Temperature range	-20°C...+150°C
-Maximum fluid velocity	2 m/s
-Material	Brass



PRODUCT CODE SELECTION

Progressive Code Composition (Step 1-7)		Option Description
T-		MID004 temperature probes
PLHD-		Head type B probes
PLCB-		Silicone cable probes with stem Diameter 6.0 mm
DSPS-		Silicone cable probes with stem Diameter 5.2 mm
	1	RTD 100 Ohm 0°C
	2	RTD 500 Ohm @ 0°C
	3	RTD 1000 Ohm @ 0°C
	2	2-Wire technology
	3	3-Wire technology
	4	4-Wire technology
	00	Head type B probes
	03	Silicone Cable length 3 m
	05	Silicone Cable length 5 m
	10	Silicone Cable length 10 m
	15	Silicone Cable length 15 m
	25	Silicone Cable length 25 m
	A-	Accuracy class A
	B-	Accuracy class B
	45	Stem Length 45 mm for cable probes
	60	Stem Length 60 mm for cable probes
	140	Stem Length 140 mm for DIN type B Head probes
	175	Stem Length 175 mm for DIN type B Head probes
	300	Stem Length 300 mm for DIN type B Head probes
	N	Without calibration certificate
	R	With 3-point calibration certificate 10°C -80°C -150°C

Note: not all combinations are available.

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