

PENETRATION THERMOMETER HART



- HAND LANCE UP TO 2000 MM
- PT100 OR TYPE K
- 4...20 mA HART
- MEDIUM UP TO +400 °C
- IP 65 / IP 68



IP65



Stainless Steel

KEY DATA

| Property   | Value                                       | Property            | Value                               |
|------------|---------------------------------------------|---------------------|-------------------------------------|
| Input      | Pt100 3-wire · type K · type K with display | Medium              | -50 ... +400 °C (2)                 |
| Output     | 4...20 mA HART · resistance direct          | Ambient             | -20 ... +80 °C with transmitter (1) |
| Accuracy   | 0.3 % of span                               | without transmitter | -30 ... +100 °C                     |
| Hand lance | Ø 10 mm, 500 ... 2000 mm                    | Tip                 | pointed or flat                     |
| Display    | 7-segment LCD, 0.1 °C, battery CR 2032      | Product code        | WL                                  |

A penetration hand lance for mobile use — hay, compost, hot asphalt.



## TECHNICAL DATA

### INPUT AND OUTPUT

|                     |                                             |
|---------------------|---------------------------------------------|
| Sensor              | 1x Pt100, 3-wire · thermocouple type K      |
| Classes Pt100       | A · B · AA · C on request                   |
| Maximum range       | -50 ... +400 °C, smallest span 50 K (2)     |
| Lance length        | 500 · 1000 · 1500 · 2000 mm · other         |
| Current output      | 4 ... 20 mA with HART, 2-wire loop          |
| Current range       | 3.6 ... 21 mA                               |
| Fault signal        | 21 mA on break, short circuit or underrange |
| Without transmitter | resistance directly on the connector        |
| Display             | 7-segment LCD, resolution 0.1 °C            |
| Display accuracy    | ±1 % or 1 °C — the larger value applies     |

### PERFORMANCE

|                         |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| Total accuracy HART     | 0.3 % of span                                                           |
| Resolution              | 16 bit                                                                  |
| Filter                  | 0 ... 99 s                                                              |
| Measuring rate          | 10 measurements/s                                                       |
| Switch-on delay         | < 5 s                                                                   |
| Transfer characteristic | linear with temperature                                                 |
| Display                 | 78 × 43 × 20 mm, ABS housing                                            |
| Display battery         | CR 2032                                                                 |
| Adjustable over HART    | LRL · URL · LRV · URV · filter · adjustment · simulation · HART address |
| Weight                  | approx. 845 g (1000 mm with display)                                    |

### SUPPLY AND ENVIRONMENT

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Load                        | $R = (U_B - 12 \text{ V}) / 21 \text{ mA}$ |
| Supply display              | battery CR 2032                            |
| Reverse polarity            | protected, no destruction                  |
| Ambient with transmitter    | -20 ... +80 °C (1)                         |
| Ambient without transmitter | -30 ... +100 °C                            |
| Medium                      | -50 ... +400 °C (2)                        |
| Storage                     | -40 ... +85 °C                             |
| Condensation                | < 95 % rH                                  |

### MECHANICS

|                    |                                                 |
|--------------------|-------------------------------------------------|
| Process connection | hand lance, no installation                     |
| Hand lance         | Ø 10 mm, stainless steel 1.4571                 |
| Tip                | pointed · flat · as specified                   |
| Housing            | stainless steel 1.4571                          |
| Display housing    | ABS plastic, 78 × 43 × 20 mm                    |
| Connector insert   | PBT GF30 · option stainless steel 1.4571        |
| Weight             | approx. 845 g (1000 mm with display)            |
| Protection         | IP 65 electronics · IP 68 sensor, potted inside |

(1) The ambient temperature is not the medium temperature.

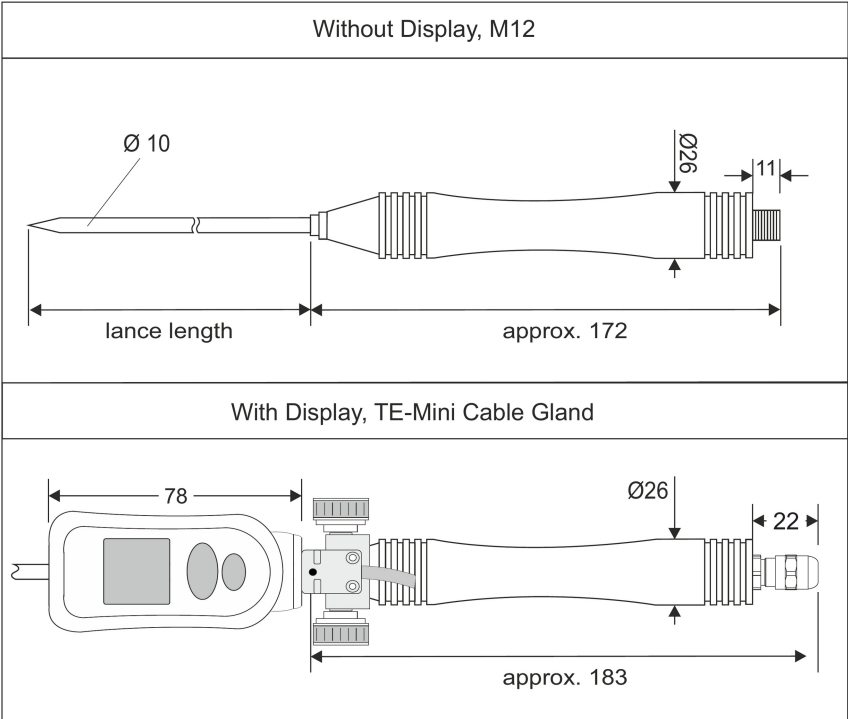
(2) The sensor reaches +400 °C, the nominal range and the factory setting of the transmitter only +200 °C. Whoever wants to measure higher states a customer-specific configuration.

### ELECTRICAL CONNECTION

Ten electrical connections are available: M12x1 four-, five- and eight-pole, Deutsch DT04 three- and four-pole, Super Seal 1.5 three-pole, bayonet (DIN) four-pole, valve plug to EN 175301-803 type A, MIL six-pole and cable; with the display the two-pole TE-Mini is added. The pin assignment depends on the number of wires and on the connector. Two sensors do not fit every connector: the Super Seal and the Deutsch DT04 three-pole carry one only.



DIMENSIONS



Dimensions in mm.



CONFORMITY

|                        |                                 |
|------------------------|---------------------------------|
| Display battery        | CR 2032                         |
| Protection             | IP 65 electronics, IP 68 sensor |
| Material to the medium | stainless steel 1.4571          |

ORDER INFORMATION

Accessories

- HART interface with USB and software, order number 01310-00220. The HART tool is a menu-driven operating program for commissioning, configuration, signal analysis, data backup and documentation. When communicating through a HART modem a resistance of 250 Ω has to be taken into account.

ORDER KEY

| Field                 | Value       | Meaning                                                                                                                        |
|-----------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|
| Product code          | WL          | stands at the beginning of every order code                                                                                    |
| Transmitter           | F · G       | none · 4...20 mA HART                                                                                                          |
| Sensor                | 1 · 5 · 6   | Pt100 3-wire · thermocouple type K · type K with display                                                                       |
| Accuracy              | 1 ... 4     | class A · B · AA · C on request                                                                                                |
| Lance length          | 0 ... 4     | 500 · 1000 · 1500 · 2000 mm · please state                                                                                     |
| Lance diameter        | 6           | Ø 10 mm — the position carries the 6                                                                                           |
| Lance tip             | 0 · 1 · 2   | pointed · flat · please state                                                                                                  |
| Connector insert      | 1 · 2       | plastic · metal                                                                                                                |
| Electrical connection | 1 ... A · M | M12x1 4/5/8-pole · Deutsch DT04 3/4-pole · Super Seal · bayonet · valve · cable<br>2 m · MIL · TE-Mini (with the display only) |
| Configuration         | 0 · 1 · 2   | none · factory setting -50...200 °C, span 0...100 °C (2) · customer-specific                                                   |
| Special model         | 0 · 1       | no · yes, please state                                                                                                         |

The order code is formed from the product code and the fields of the key.

