

## **PTD 1 – Working procedure**

### **Please note that there might be some deviations to the final HMI-concept (final Software-Configuration)**

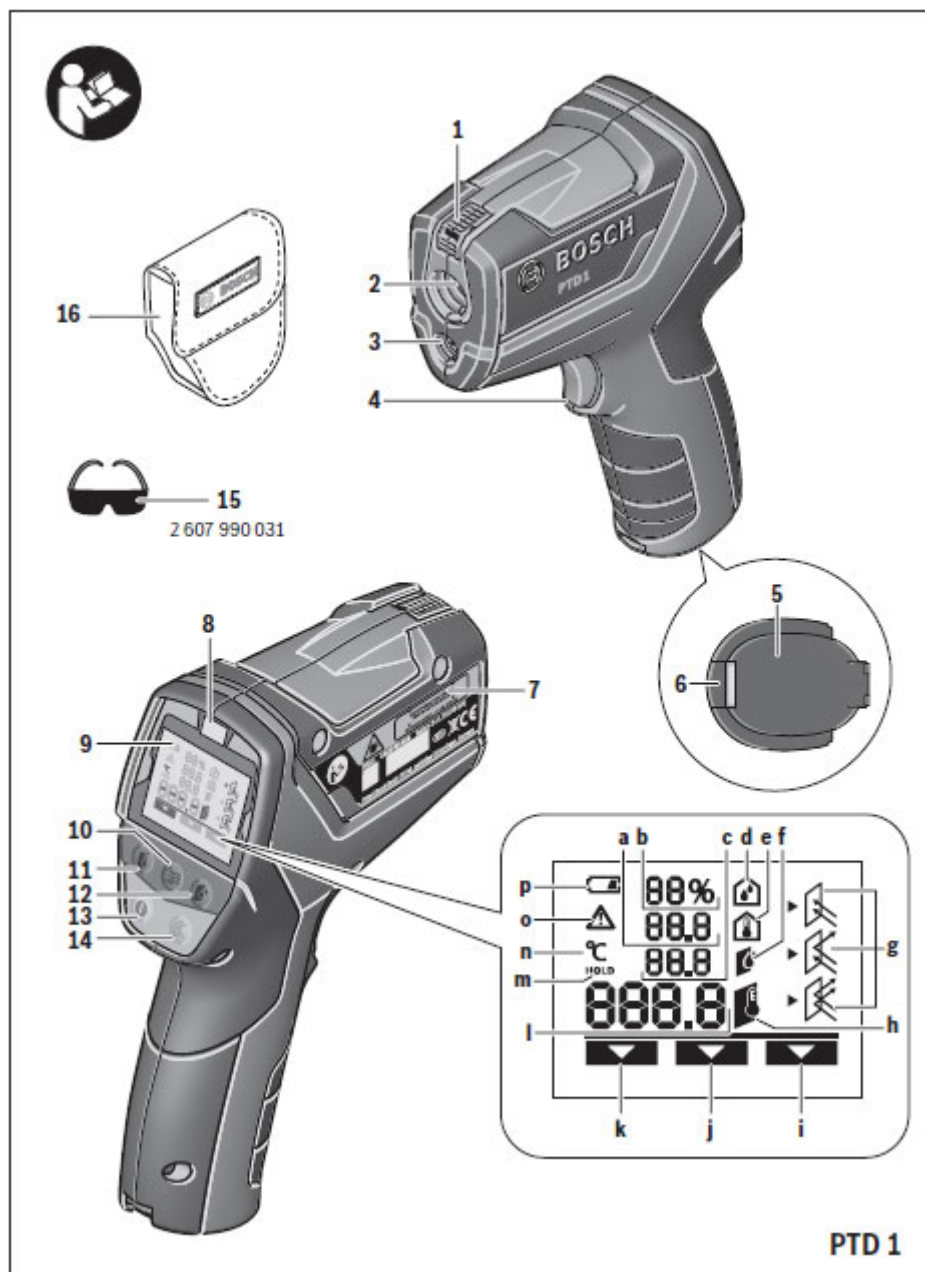
Please note also that there is a bug in the current software: if you have reached an ambient temperature of 28 °C on the display there will be following indication: “Lo” (this is a software mistake!)

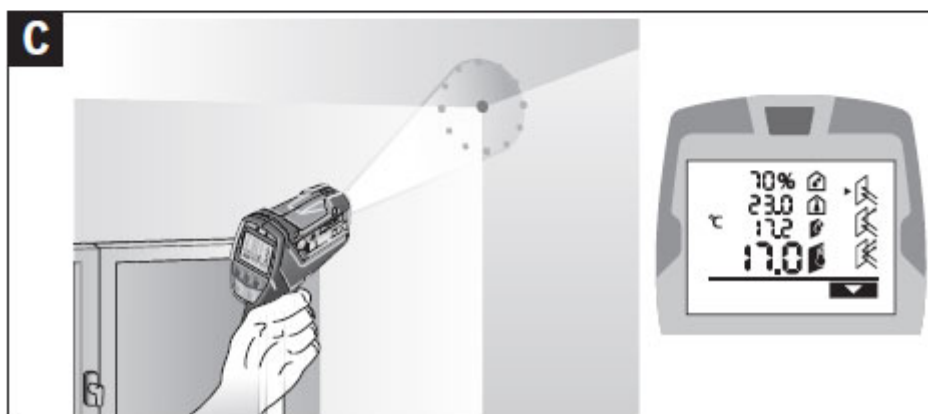
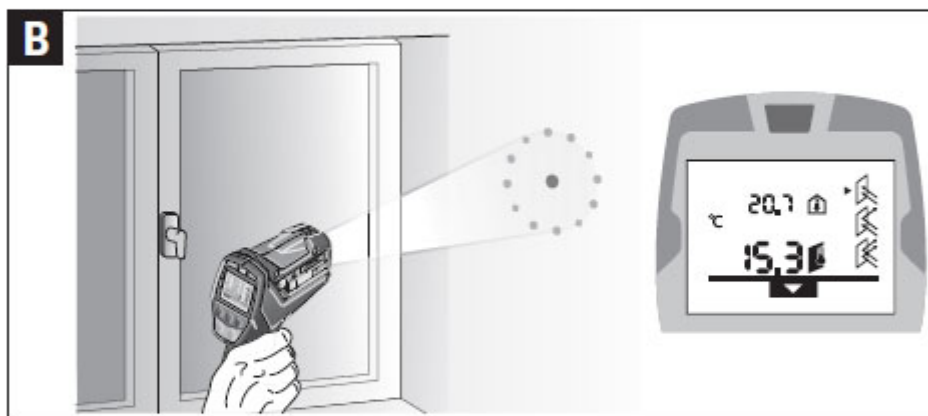
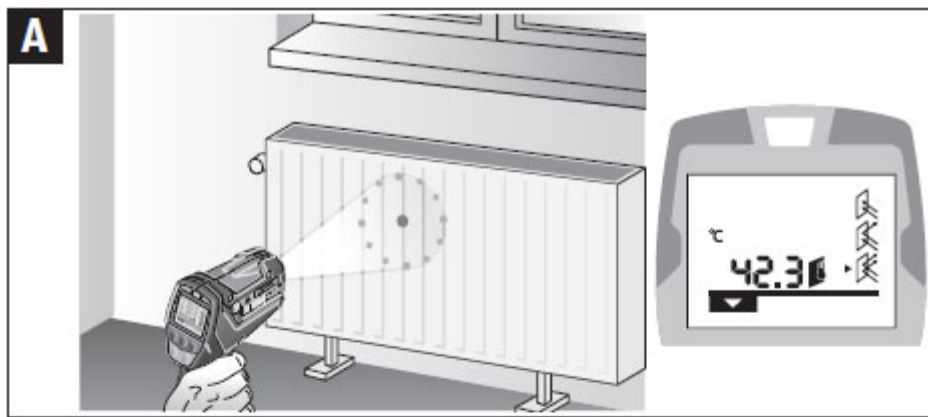
#### **1. Switching On an Off**

There are following possibilities to switch on the tool:

- Switch on the tool by pressing the **On/Off-button (13)**
- Switch on the tool by pressing the **Measuring-button (4)**
- Switch off the tool by pressing the **On/Off-button (13)**

If no button will be pressed for four minutes, the tool will automatically switch off to save battery capacity.







**A: Surface Temperature Mode**

**B: Thermal Bridge Mode**

**C: Mould Warning Mode**

## **2. Measurement preparation**

**Setup emissivity before doing a measurement (c.f. Icon Nr. 14)**

- ▶  **Group I: (Emissivity = 0,93):** Materials such as concrete (dry), brick, sandstone, mortar, marble, stucco,
- ▶  **Group II (Emissivity = 0,85):** granite, cobblestone, fibreboard, wallpaper, varnish



**Group III (Emissivity = 0,75):** porcelain (white), varnish (bright), cork, cotton

### 3. Area of measurement

The laser circle indicates the area of measurement.

Optimal working distance is 1 m – measurement can be done from 0,1 m to 5 m

### 4. Modes

#### **A: Surface Temperature Measurement**

Mode is selected by pushing button 11.

Within this mode one can measure surface temperature by pushing the trigger (4).

When the measurement is finished, the laser will automatically be switched off. Measuring result (surface temperature) is shown on the display.



#### **B: Thermal bridges mode (Picture B)**

This mode is selected by pushing button 10 → Measurement is conducted by pushing the trigger (4).

In this mode the PTD 1 is measuring surface temperature (icon h) and ambient temperature (icon e)

These two measuring results will be compared:



The results are interpreted via LED:

- Green = No risk of thermal bridge; Technical background: Difference between ambient and surface temperature is less than 3,5°C
- Yellow = **Deviation from optimal conditions;** Technical background: Difference between ambient and surface temperature is between 3,5° and 4,5°C
- Red = **Thermal bridge has been detected;** Technical background: Difference between ambient and surface temperature is more than 4,5°C  
→ If a thermal bridge has been detected (red LED) the **surface temperature icon** on the display is **blinking** telling the user that there is a **problem with the insulation**  
Additionally, if room temperature is too low (below 12, 6 °C) the icon “**ambient temperature**” is blinking

#### **Mould warning mode (Picture C)**

This mode is selected by pushing button 12 → measurement is conducted by pushing the trigger (4).

In this mode ambient temperature (icon: e), relative humidity (icon: d) and surface temperature (icon h) is measured

→ Dew point temperature is calculated (icon: f)



The results are interpreted via LED:

- Green = **No mould conditions**; Technical background: Surface temperature is higher than dew point temperature
- Yellow = Deviation to optimal conditions
- Red = Surface temperature corresponds with dew point temperature  
 → If there are mould conditions red LED turns on indicating that there is a risk.  
 Additionally the blinking of the different icons are indicating possible root causes:
  - **Humidity Icon**: Relative Humidity is too high (>60 %)
  - **Surface Temperature Icon**: Problem with the insulation, object's surface temperature is too low
  - **Room Temperature Icon**: Room temperature is too low (below 12, 6 °C)

→ **Please note:** the tool is not able to detect mould. Merely, it indicates mould conditions.

### **Permanent measurement – Scanning on the wall**

For making permanent measurements, press the measuring button (4) and keep it held. The laser will be kept switched on. Point the laser slowly successively at all surfaces to be measured. The laser will switch off as soon as the measuring button (4) will not be pressed any longer. Finally, the measured results will be shown on the display.