

Data Sheet

Subject to technical alteration
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Application

The touch room operating panel **thanos** is designed for temperature and humidity detection as well as for integrated operation of HVAC, lighting and blind for single room control. By means of high-graded optics, the device is especially ideal for design-oriented applications. The operating functions can be adapted flexibly to the most different room layouts.

Functions

- Control of automatic HVAC applications by simple touch
- Integrated temperature detection
- Optional with integrated humidity detection
- EnOcean Interface
- Touch surface made of glass for intuitive operation
- Operational functions: Light on/off/dimming, set point adjustment, blinds up/down/adjusting, fan stages, presence ...
- Display: Room temperature, set point, operating mode, fan stage, presence, failure, date and time ...
- Display/Buttons: 3.5" TFT, 320x640 pixel, 262,144 colors, capacitive touch technology, large thanos types additionally with up to 8 touch buttons
- Function clip: Anodized aluminum, with touch sensor, free parameterizable functions (occupied/unoccupied, light on/off ...)

For parametrization / programming, please take the **thanos** SR ... software manual (included on the enclosed software CD or downloadable at www.thermokon.de) to help.

Type Overview

thanos

S black	black, 3.5" TFT, power supply 24 V ~/24 V =
SQ black	black, 3.5" TFT, cross version, power supply 24 V ~/24 V =
L black	black, 3.5" TFT, additional panel with 8 touch sensor buttons, power supply 24 V ~/24 V =
LQ black	black, 3.5" TFT, additional panel with 8 touch sensor buttons, cross version, power supply 24 V ~/24 V =
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S black MVolt	black, 3.5" TFT, power supply 100..240 V ~
SQ black MVolt	black, 3.5" TFT, cross version, power supply 100..240 V ~
L black MVolt	black, 3.5" TFT, additional panel with 8 touch sensor buttons, power supply 100..240 V ~
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Security Advice – Caution



The installation and assembly of electrical equipment must be performed by a skilled electrician.

The modules must not be used in any relation with equipment that supports, directly or indirectly, human health or life or with applications that can result in danger for people, animals or real value.

Before connecting devices with electrical power supply the installation must be isolated from power source!

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Electrical Connection

The devices are constructed for the operation of protective low voltage (SELV). For the electrical connection, the technical data of the corresponding device are valid.

Especially with regard to passive sensors in 2-wire conductor versions, the wire resistance of the supply wire has to be considered. If necessary the wire resistance has to be compensated by the follow-up electronics. Due to self-heating, the wire current affects the measurement accuracy. So it should not exceed 1 mA.

Sensing devices with transducer should always be operated in the middle of the measuring range to avoid deviations at the measuring end points. The ambient temperature of the transducer electronics should be kept constant. The transducers must be operated at a constant supply voltage ($\pm 0,2$ V). When switching the supply voltage on/off, onsite power surges must be avoided.

When using lengthy connection wires (depending on the cross section used) the measuring result might be falsified due to a voltage drop at the common GND-wire (caused by the voltage current and the line resistance). In this case, 2 GND-wires must be wired to the sensor - one for supply voltage and one for the measuring current.

Information about EasySens (Radio)

Transmission Range

As the radio signals are electromagnetic waves, the signal is damped on its way from the sender to the receiver. That is to say, the electrical as well as the magnetic field strength is removed inversely proportional to the square of the distance between sender and receiver ($E, H \sim 1/r^2$).

Beside these natural transmission range limits, further interferences have to be considered: Metallic parts, e.g. reinforcements in walls, metallized foils of thermal insulations or metallized heat-absorbing glass, are reflecting electromagnetic waves. Thus, a so-called radio shadow is built up behind these parts.

Radio waves can penetrate walls, however signal dampening is increased vs transmitting within the free field.

Penetration of radio signals:

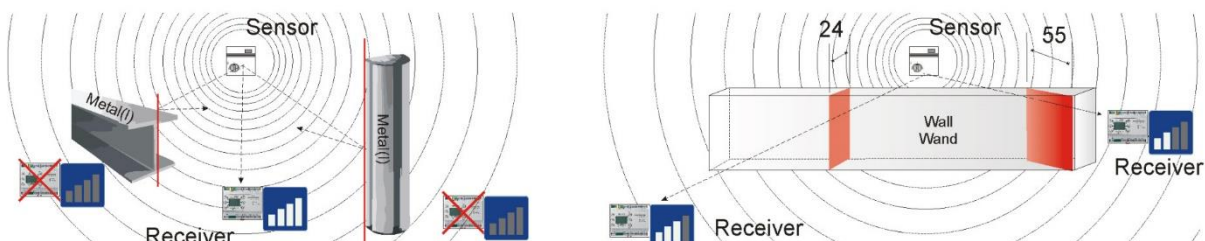
<i>Material</i>	<i>Penetration</i>
Wood, gypsum, glass uncoated	90..100%
Brick, pressboard	65.. 95%
Reinforced concrete	10.. 90%
Metal, aluminium pasting	0.. 10%

This means that the building material used in a building is of paramount importance for the evaluation of the transmitting range. For an evaluation of the environment, please see guide values listed below:

<i>Radio path</i>	<i>Range/penetration</i>
Visual contacts	Typ. 30m range in passages, corridors, up to 100m in halls
RI gypsum walls/wood	Typ. 30m range through max. 5 walls
Brick wall/Gas concrete	Typ. 20m range through max. 3 walls
Reinforced concrete/-ceilings	Typ. 10m range through max. 1 ceiling

Supply blocks and lift shafts should be seen as a compartmentalization

In addition, the angle with which the signal sent arrives at the wall is also important. Depending on the angle, the effective wall strength and thus the damping attenuation of the signal changes. If possible, the signals should run vertically through the wall. Recesses should be avoided.



Other Interference Sources

Devices that also operate with high-frequency signals, e.g. computer, audio-/video systems, electronic transformers and ballasts etc. are also considered as an interference source. The minimum distance to such devices should amount to 0,5 m.

Selecting the best Device Mounting Position using field strength measuring instruments (e.g. Thermokon AirScan)

Instruments for measuring and indicating the received field strength (RSSI) of the EnOcean telegrams and interfering radio activity of transmission frequency support electrical installers during the planning phase and enable them to verify whether the installation of EnOcean transmitters and receivers is possible at the positions planned.

They can be used for the examination of interfered connections of devices, already installed in the building, to determine the correct mounting position for the wireless sensor/ receiver:

Person 1 operates the wireless sensor and produces a radio telegram by manual actuation while Person 2 monitors the displayed field strength values on the measuring instrument. Person 1 does vary the wireless sensor's position to determine the optimal intended mounting position.

High-Frequency Emission of Wireless Sensors

Since the development of cordless telephones and the use of wireless systems in residential buildings, the influence of radio waves on people's health living and working in the building have been discussed intensively. Due to incomplete measuring results and long-term studies, very often great feelings of uncertainty exist with the supporters as well as with the critics of wireless systems.

A measuring expert certificate of the institute for social ecological research and education (ECOLOG) has confirmed, that the high-frequency emissions of wireless keys and sensors based on EnOcean technology are **considerably lower** than comparable conventional keys.

Even conventional keys send electromagnetic fields, due to the contact spark. The emitted power flux density (W/m²) is 100 times higher than using a wireless switch considering the total frequency range. In addition, a potential exposition by low frequency magnet fields emitted via used wires are reduced due to wireless keys.

If the radio emission is compared to other high-frequency sources in a building such as DECT-telephones and basis stations, these systems are 1.500 times higher-graded than wireless switches.

Technical Data

Power supply:	24 V Version: 24 V ~ / 15..24 V = (±10%) MVolt Version: 100..240 V ~ (±10%)
Power consumption:	typ. 2 W / 4 VA
Interface:	EnOcean, Transmitting-/ Receiving frequency 902 MHz
Inputs:	4 digital inputs for floating switching contact (inputs are not available in MVolt version)
Clamps:	terminal screw, max. AWG16
Measuring range:	Temperature: +32..+104 °F Rel. humidity: 0..100% rH
Accuracy:	Temperature: ±0.9 °F Rel. Humidity: ±3% rH in the range 20..80% rH

Housing:	Material glass and ABS, black or white
LCD display:	3.5" TFT, 320x640 Pixel, 262,144 colors, capacitive touch sensor function
Housing protection:	NEMA 1
Ambient temperature:	0..122 °F
Transport:	+14..+122 °F / max. 85% rH, non condensed
Weight:	Version S/SQ approx. 10.58 oz. Version L/LQ approx. 14.11 oz.
Keypad:	Only Version L/LQ: 8 capacitive touch sensor buttons, individual paper label area

For EMC-compliant operation of MVolt version an additional EMC line filter (type Schurter 5500.2040 FMW2-41-3 / I) has to be used.

Mounting Advices

The device is designed for mounting on a flush box.

For pre-wiring, the terminal screw can be drawn from the device. Due to the extended retaining capacity for the cabling, the use of deep installation boxes is recommended. It is important to ensure adequate heat dissipation. The fastening of the wall unit can be done by the screws of the installation box, (max. torque of screws 0.8 Nm).

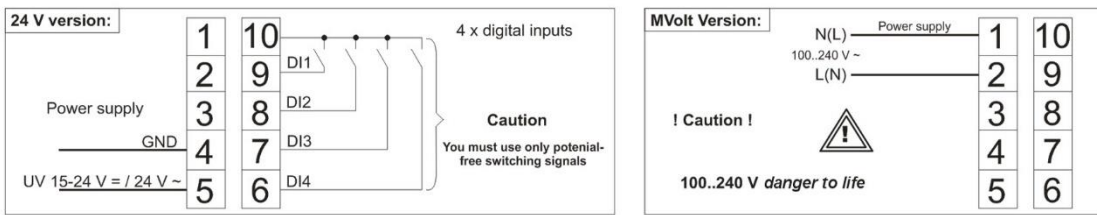
Installation has to be done at representative places for the room temperature to avoid a falsification of the measuring result. Solar radiation and draught should be avoided. The end of the installation tube in the flush box must be sealed to avoid any draught in the tube falsifying the measuring result.

Please note the general remarks in our "INFO THK"

Please note that the adjusted brightness value of the display and of the button area could have an effect on the temperature measurement due to occurring self-heating. thanos has a special functionality to keep these effects as low as possible.

The final values are available after approx. 100 minutes. When installing thanos for the first time, an offset calibration should be done earliest 100 minutes after installation.

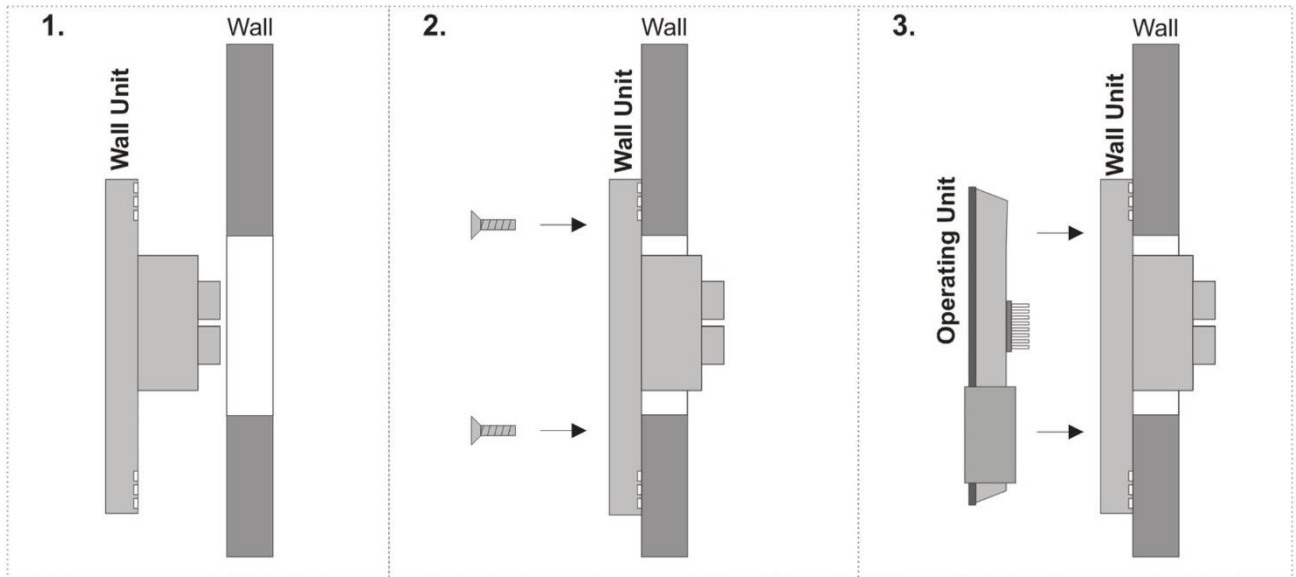
Terminal Connection Plan



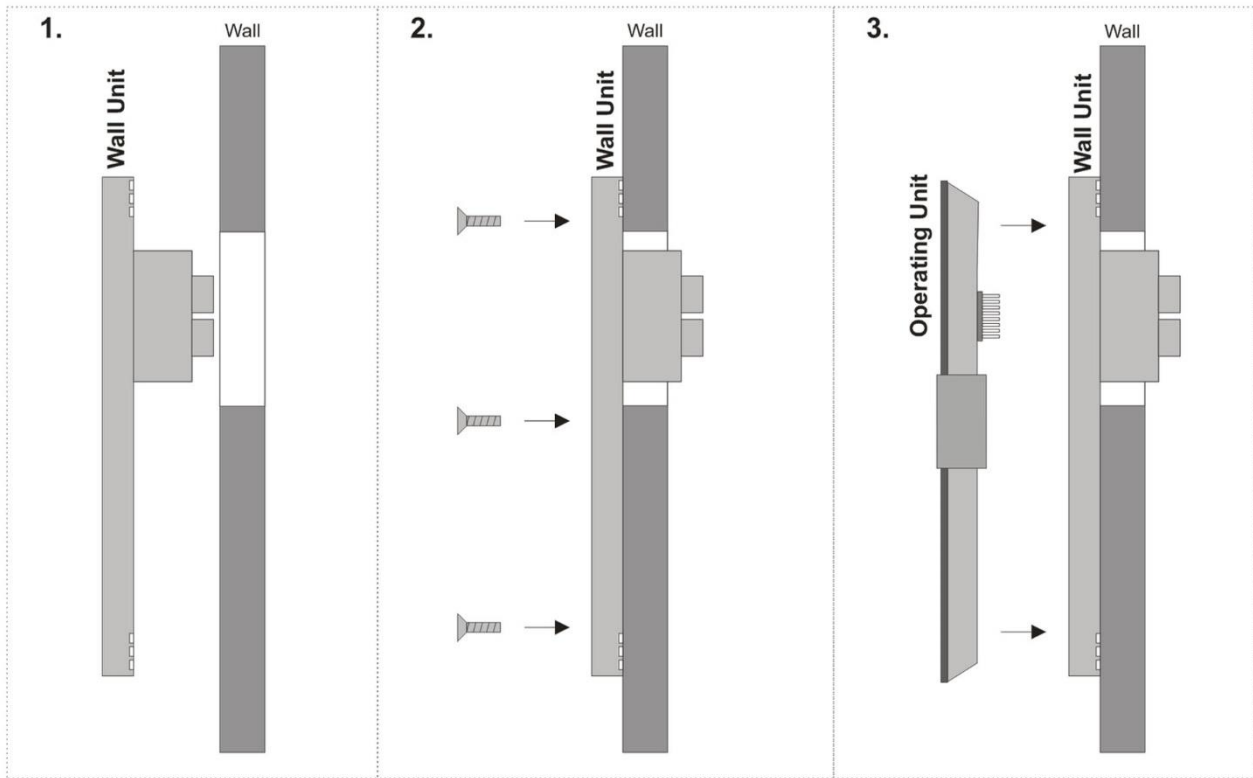
Mounting Device

1. Place wall unit.
2. Mount wall unit with countersunk screws.
3. Insert operating unit carefully into the wall unit and click it in.

thanos S / SQ



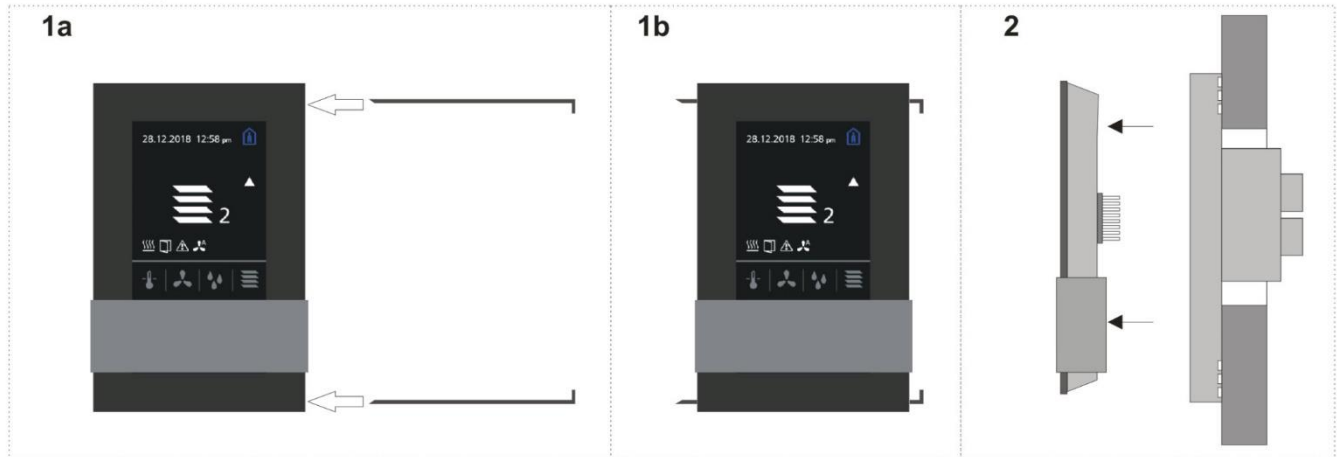
thanos L / LQ

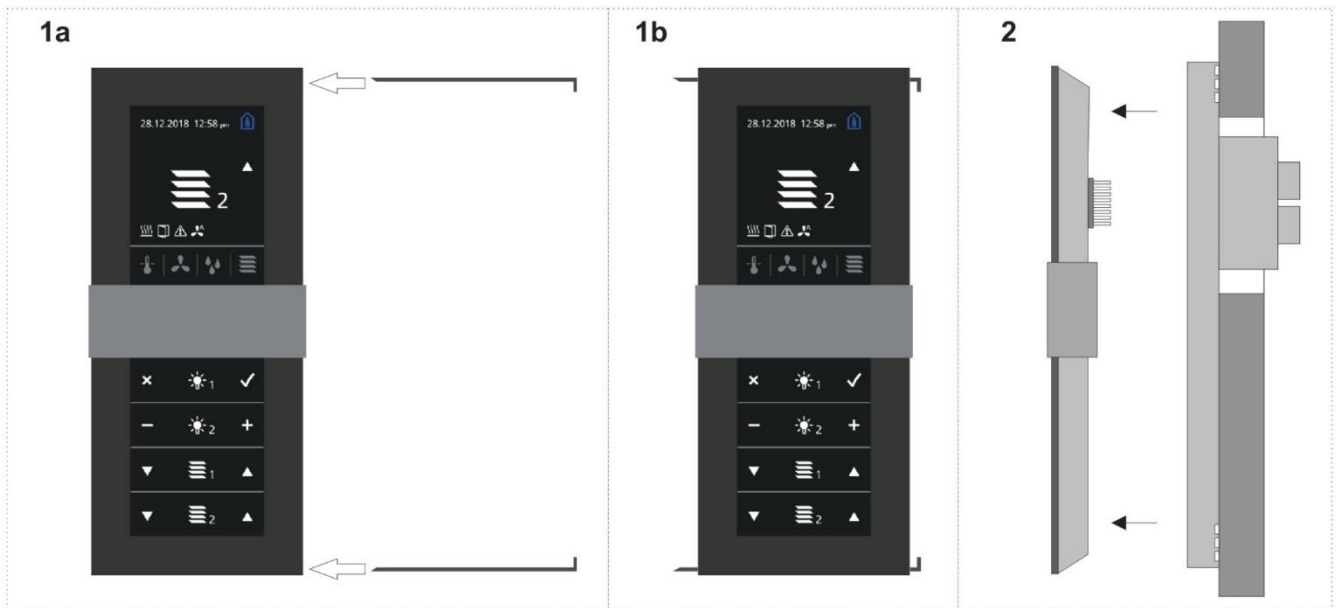


Remove Operating Unit

1. Insert extraction tools into the available slots.
2. Take the operating unit at the edges and remove it carefully from the wall-unit

thanos S / SQ

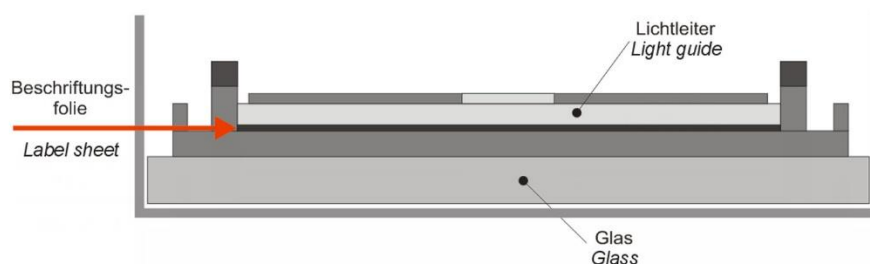
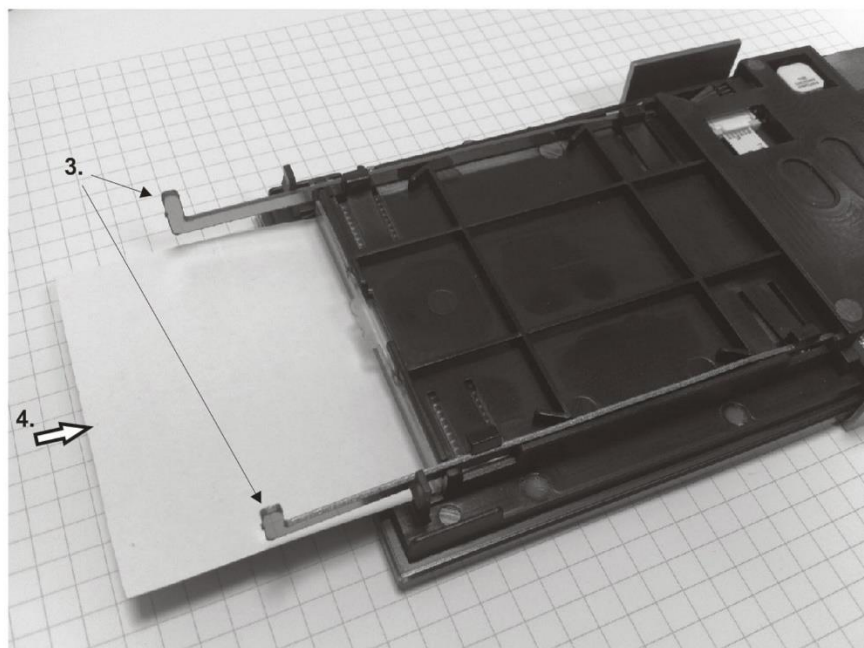


thanos L / LQ**Insert label sheet (L & LQ)**

To insert the label sheet (thanos L & LQ) follow these steps:

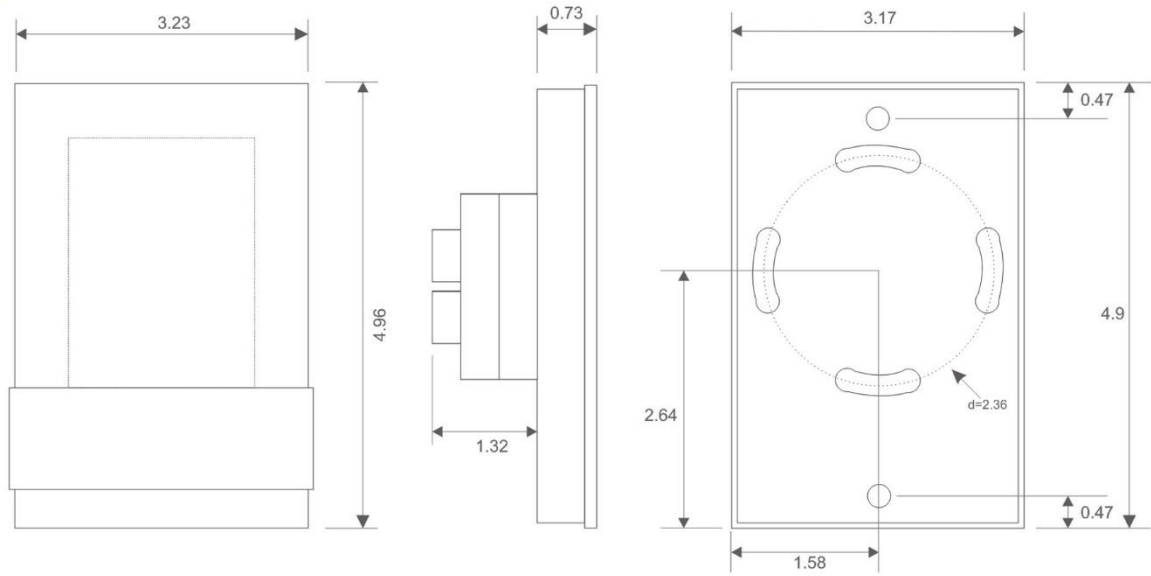
3. Print the label sheet.
4. Remove the front panel.
5. Put the two unlocking tools, as shown below, and slide it along the slot.
6. Slide the foil carefully down between the glass and light guide.

Each device is delivered including a blank label sheet, which can be printed with a standard laser or inkjet printer. The template-file is on the software CD which is enclosed as well.



Dimensions (inch)

thanos S / SQ



thanos L / LQ

