

## DAI Temp



### Datasheet

### Temperature Sensor

DAI sensor unit for temperature  
measurements

Art. Nr. 86459544

# DALI Temp Temperature Sensor

## Overview

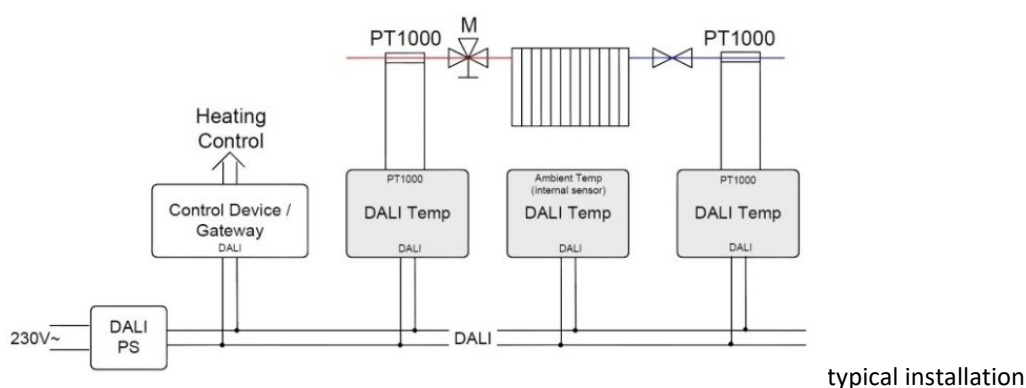
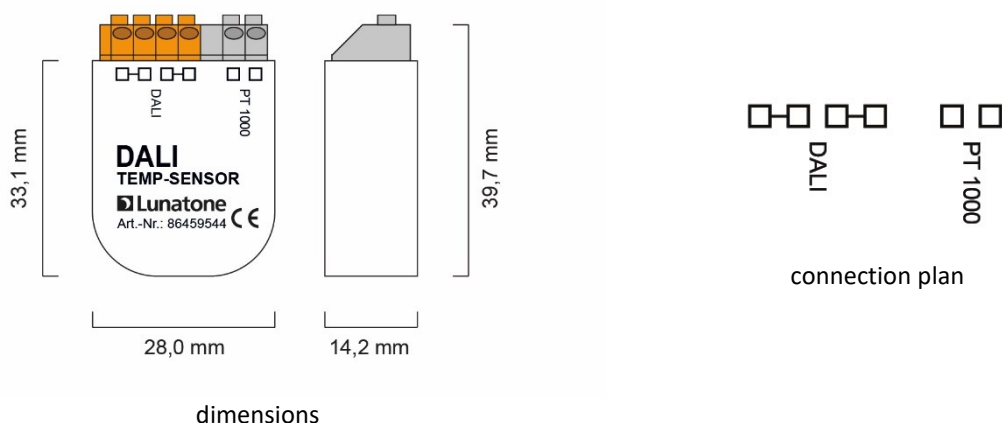
- DALI sensor unit for temperature measurements
- Internal sensor and terminals for connecting an external PT1000 (other external sensors on request)
- The measurement values of internal and external sensor can be queried via DALI
- Suitable for measuring and monitoring temperature e.g. for heating and ventilation technology
- The module does not require an additional power supply, it is supplied by the DALI-line directly
- Double DALI terminals – the DALI signal line is connected through

## Specification, Characteristics

<b>type</b>	<b>DALI Temp</b>
article number	86459544
<b>electrical data:</b>	
power supply	via DALI- Bus
typ. current consumption	2.6 mA
output	DALI
number of used DALI addresses	1
input (optional)	PT1000
<b>technical data:</b>	
temperature measurement range (internal sensor)	0°C to... +75°C
accuracy (internal sensor)	0.5°C
temperature measurement range (external PT1000)	-25°C ... +125°C
accuracy (external PT1000)	0.4°C
storing and transportation temperature	-25°C ... +75°C
operational ambient temperature	-25°C ... +75°C
protection class	IP20
connecting wire cross section	0.5-1.5 mm <sup>2</sup>
dimensions	39,7mm x 28mm x 14mm
mounting	back box

### Application in heating technology e.g. for:

measurement of flow temperatures  
 measurement of return temperatures  
 measurement of ambient temperatures



## Querying and Evaluating Temperature Values

### Query Measurement Values

The measurement values of the internal and the external sensor can be queried via scene values. Each measurement value is a 16bit value (2bytes), for low resolution (1°C) reading out the high byte (HiByte) alone, is sufficient.

#### Internal sensor:

Query HiByte value via Scene 0

Command: QUERY SCENE 0 (to DALI address of the DALI Temp)

Query LoByte value via Scene 1

Command: QUERY SCENE 1 (to DALI address of the DALI Temp)

#### External sensor:

Query HiByte value via Scene 2

Command: QUERY SCENE 2 (to DALI address of the DALI Temp)

Query LoByte value via Scene 3

Command: QUERY SCENE 3 (to DALI address of the DALI Temp)

#### Evaluating the temperature

For measurements with low resolution reading the HiByte is sufficient. The value of the HiByte corresponds directly to the temperature value in °C (significant digits). For higher resolutions, the LoByte (for the decimal places) can be queried after having read out the HiByte.

Formula for combining the two bytes and generating a value in °C:

$$\text{Temp}[^{\circ}\text{C}] = \text{HiByte} + (\text{LoByte}/256)$$

range HiByte (signed): [-128 ... +127]  
corresponds to temperature range  
[-128°C – 127°C]

range LoByte (unsigned): [0...255]  
for temperature accuracy [0,00°C – 0,99°C]

#### Calculation Example Temperature -5,75 °C

HiByte: hex: 0xFA → decimal: -6

LoByte: hex: 0x40 → decimal: 64

$$\text{Temperature} = -6 + (64/256) = -6 + 0,25 = -5,75^{\circ}\text{C}$$

#### Calculation Example Temperature +5,75 °C

HiByte: hex: 0x05 → decimal: 5

LoByte: hex: 0xC0 → decimal: 192

$$\text{Temperature} = 5 + (192/256) = 5 + 0,75 = +5,75^{\circ}\text{C}$$

#### Translation HiByte

Query HiByte value (e.g. DALI Monitor) DALI Answer (hex Data)	corresponding Temperature in °C
0 (0x00)	0°
1 (0x01)	1°
2 (0x02)	2°
3 (0x03)	3°
...	...
127 (0x7F)	127°
128 (0x80)	-128°
129 (0x81)	-127°
...	...
254 (0xFE)	-2°
255 (0xFF)	-1°

#### Translation LoByte

Query LoByte value (e.g. DALI Monitor) DALI Answer (hex Data)	corresponding Temperature in °C (LoByte/256)
0 (0x00)	0.0°
1 (0x01)	0.004°
2 (0x02)	0.008°
3 (0x03)	0.012°
..	..
127 (0x7F)	0.496°
128 (0x80)	0.500°
129 (0x81)	0.503°
..	..
254 (0xFE)	0.992°
255 (0xFF)	0.996°

## Purchase Information

**Art.Nr. 86459544:** DALI Temp, temperature sensor (internal: 0°C ... +75°C), external PT1000 (-25°C ... +125°C), back box

## Additional Information and Equipment

DALI-Cockpit – free configuration tool from Lunatone for DALI systems

<http://lunatone.at/en/downloads/Lunatone-DALI-Cockpit.zip>

Lunatone DALI products

<http://www.lunatone.at/en/>

Lunatone datasheets and manuals

<http://lunatone.at/en/downloads/>

## Contact

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## Disclaimer

Subject to change. Information provided without guarantee.  
The datasheet refers to the current delivery.

The compatibility with other devices must be tested in advance to the installation.