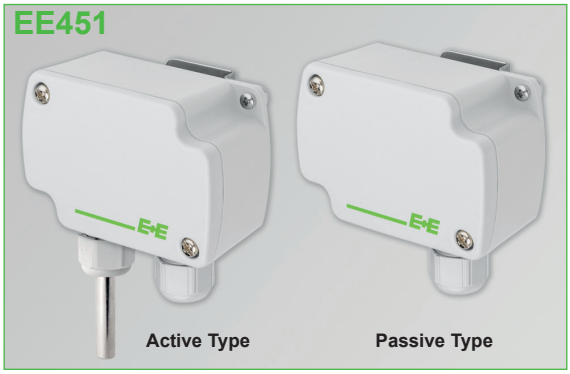
# EE451

## Wall Mounted Temperature Sensor for Indoor and Outdoor

E+E sensors EE451 are used for temperature measurement in heating, ventilation and air conditioning systems enabling weather-dependent temperature regulation.
In addition to active outputs 0-10 V or 4-20 mA various types of sensing elements such as Pt1000, NTC10k or Ni1000 are available for passive temperature measurement.
The innovative enclosure concept (IP65) with a mounting bracket allows for easy installation and unbiased detection of ambient temperature.




## Features

**External mounting holes**
» Mounting with closed cover
» Protection against construction site pollution

**Bayonet screws**
» Open/closed with a ¼ rotation

**Mounting bracket**
» Distance to wall for correct measurement of ambient temperature

CE RoHS compliant

## Technical Data

### Active output

| | |
|---|---|
| Sensing element | Pt1000 (class A, DIN EN60751) |
| Output | 0-10 V -1 mA < $I_L$ < 1 mA<br>4-20 mA (two-wire) $R_L$ < 500 Ω |
| Accuracy | ±0.3 °C (±0.54 °F) at 20 °C (68 °F) |
| Supply voltage (Class III) | |
| for 0-10 V | 15-35 V DC or 24 V AC ±20% |
| for 4-20 mA | 10 V DC + $R_L$ x 20 mA < V+ < 35 V DC |
| Current demand | DC: typ. 5 mA<br>AC: typ 12 $mA_{eff}$ |
| Electromagnetic compatibility | EN61326-1, EN61326-2-3 industrial environment |

### Passive output

| | |
|---|---|
| Sensing element types | see ordering guide |
| Measurement current | typ. < 1 mA[1)] |
| T-Sensor connection | two-wire |
| Electrical connection | screw terminal, 2x max. 2.5 $mm^2$ (0.004 $in^2$) |

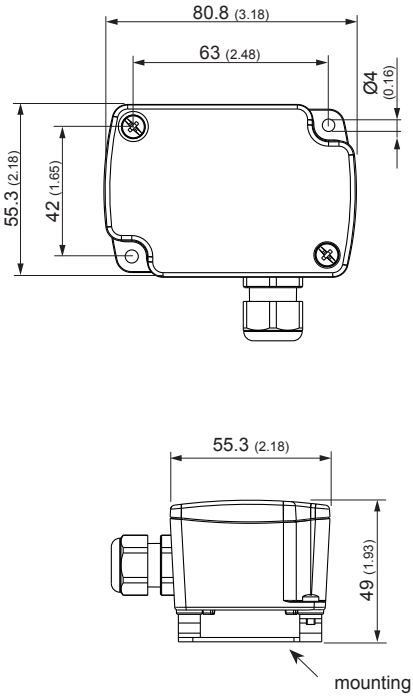
### General

| | |
|---|---|
| Operating temperature | -40 °C…+70 °C (-40 °F...+158 °F) |
| Enclosure material | polycarbonate, UL94-V0 approved |
| Protection class | IP65 / NEMA 4 |
| Cable gland | M16x1.5, UL94-V2 |
| Mounting bracket material | stainless steel (corr. 1.4301 / 304) |
| Storage temperature | -30 °C…+70 °C (-22 °F...+158 °F) |
| Storage humidity range | 5 % rh...95 % rh, no condensation |

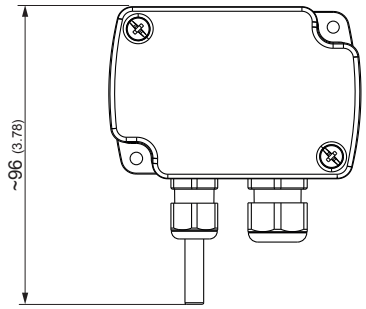
1) according technical data of the specific T-sensors

## Dimensions in mm (inch)

### Housing passive type

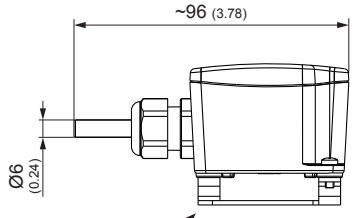



### Housing active type



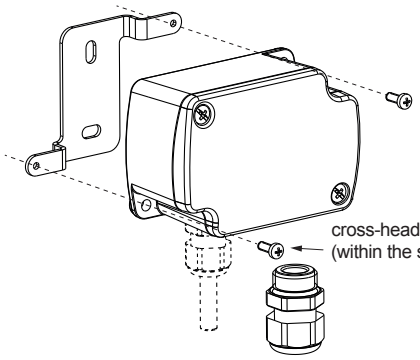




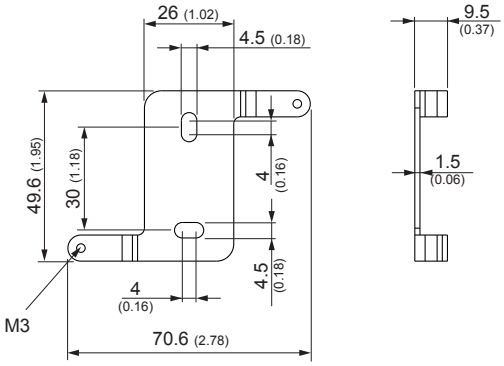



mounting bracket (included in the scope of supply)

### Mounting



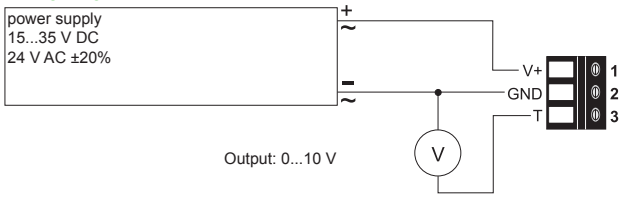

### Mounting Bracket



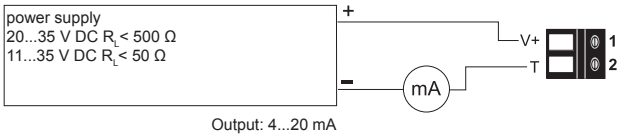

## Connection Diagram

### Active output

**EE451-T3xx**




**EE451-T6xx**




### Passive output

**EE451-Txx**

## Ordering Guide

| MODEL | | ANALOGUE OUTPUT | | T-SENSOR PASSIVE[1] | | HOUSING | | DESIGN | |
|---|---|---|---|---|---|---|---|---|---|
| Temperature | (T) | 0-10 V | (3x) | Pt100 DIN B | (B) | Standard | (P) | Standard | (O) |
| | | 4-20 mA | (6x) | Pt1000 DIN B | (D) | | | | |
| | | none | (xx) | NTC10k | (L) | | | | |
| | | | | NTC1.8k | (G) | | | | |
| | | | | Ni1000 TK6180 DIN B | (J) | | | | |
| | | | | Ni1000 TK5000 DIN B | (T) | | | | |
| | | | | Active output | (x) | | | | |
| EE451- | | | | | | | | | |

1) not relevant for active (analogue) output

### Setup analogue outputs

| SCALING[2] | | UNIT | |
|---|---|---|---|
| -40...60 | (002) | metric | (M) |
| -30...70 | (008) | non-metric | (N) |
| 0...50 | (004) | | |
| 0...100 | (005) | | |
| 32...212 | (075) | | |
| -40...140 | (083) | | |

2) other scaling upon request

## Order Example

**Passive Output**

**EE451-TxxLPO**

| | |
|---|---|
| Model: | Temperature |
| T-Sensor passive: | NTC10k |
| Housing: | Standard |
| Design: | Standard |

**Active Output**

**EE451-T3xxPO/008M**

| | |
|---|---|
| Model: | Temperature |
| Analogue Output: | 0-10 V |
| Housing: | Standard |
| Design: | Standard |
| Scaling: | -30...70 °C |
| Unit: | metric |

## Accessories

| | |
|---|---|
| Product configuration adapter | see data sheet EE-PCA |
| Product configuration software | EE-PCS (free download: www.epluse.com/configurator) |
| Power supply adapter | V03 (see data sheet Accessories) |
| Conduit adapter, M16x1.5 to 1/2“ | HA011110 |