User Manual

TP LAN

Temperature Sensor

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Regulations and Certification

The device fulfils the requirements of the following standards:

Eletrical safety :	EN 62368-1 ED.2
EMC :	EN 55032 ED.2; EN 55035; EN 50121-4 ED.4

This product was developed and produced with the following EU directives:

EMC :	Electromagnetic compatibility directive **2014/30/EU**
LVD :	Low voltage directive **2014/35/EU**
RED :	Radio equipment directive **2014/53/EU**
RoHS II :	Restriction of the use of certain hazardous substances directive **2011/65/EU**
WEEE :	Waste electrical and electronic equipment directive **2012/19/EU**
REACH :	Chemical substance directive **ES 1907/2006**

See Conformity for the declaration of conformity of this specific product. This produst may offer a CB test certificate on request.

CE

Important Notes

1. Please read and follow the safety information in this document before operating the product. We cannot guarantee that no accidents or damage will occur to improper use of this product. Please use this product with care and operate at your own risk.
2. We are not liable for any direct or indirect damage caused by the use of this document or the said product.
3. This product must be connected and installed by qualified electrician who is familiar with the relevant regulations (e.g. VDE).
4. The information in this document is subject to change without notice. The latest version of this document is available for download at https://docs.mobatime.cloud/TP-LAN/user-manual/pdf .
5. This User Manual has been composed with the utmost care to explain all the details to ensure a safe and stable operation of this product. Nevertheless, if question arise or error appear, feel free to contact support.
6. Images shown are for illustrative purposes and may differ from the final product.
7. No part of this document or the said product may be reproduced in any form or by any means or used to make any derivative such as translation, transformation, or adaption without permission from ELEKON, s.r.o., Brněnská 364/17, Vyškov 682 01 / CZECH REPUBLIC.
8.

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1 Safety

Read the safety instructions carefully and follow all the instructions. This ensures safe and reliable operation of this device.

1.1. Instructions and Symbols

Symbols used throughout this document and their meaning are as follows:

A note or important information.

Answer to a possible question. Contact information.

Keep away from children and people with limited physical, sensory, or mental capacities.

Action needs to be taken.

Connect device to earth ground.

More information included in the manual.

Disconnect mains power before doing anything.

An example or a hint.

Additional references or information.

Attention of electrical shocks.

Surface may be hot.

Item is flammable.

A warning, be cautious.

Recyclable materials.

Do not put in trash.

1.2. General

For safety and licensing reasons, unauthorized modifications and/or changes to the product is prohibited. Maintenance, adjustments or repairs may only be carried out by the factory (copyright holder).

This product is not a toy; it does not belong in the hands of children. Mount or place the product so that it cannot be reached by children. Children may try to insert objects into the product. The product will not only be damaged, but there is also a risk of injury, as well as danger to life through electric shock.

Never open the housing of this product, for it poses mortal danger from electric shock or may even cause a fire.

Keep packaging such as plastic films away from children. There is the risk of suffocation of misused.

Use caution with the product, knocks, blows, or even falls from a low height can damage it.

In industrial facilities, the accident prevention regulations of the trade associations for electrical systems and equipment must be observed.

Do not use the product if it is damaged. It can be assumed that safe operation is no longer possible, if:

- The product has visible damage.
- The product is not working properly (thick smoke or a burning smell, audible crackling noise, discoloration of the product or surrounding areas).
- The product was stored under adverse conditions.
- Tough conditions during transport.

Improper handling of this product operated on the mains voltage can cause mortal danger from electric shock!

Interconnection or combining equipment bearing a CE label does not inevitably result in a system that conforms with the safety regulations. Integrators will have to reassess the new product's compliance according to the locally valid directives. See section Conformity for more information on certifications of this product.

1.3. Installation

This product must be connected and installed by a qualified electrician who is familiar with the relevant regulations (e.g. VDE).

Never plug the product into voltage / power supply immediately after it has been moved from cold into warm environment (e.g. during / after transport / unboxing). The resultant condensed water may damage the product or may cause electric shock.

Allow the product reach the ambient temperature. Wait until the condensation has evaporated, this can take a few hours. Only then can the product be connected to the voltage / current supply and put into operation.

1.4. Operation

Use the product in the specified environment. Use outside of the specifications can damage the product and/or stop any operation.

The product may not be exposed to extreme temperatures, direct sunlight or strong vibrations. Protect the product from moisture, dust and dirt.

Operation in environments with excessive dust, flammable gases, vapours or solvents is not permitted. It may cause explosion or fire.

- Do not overload the product. Note the input / output voltage and currents as well as output powers indicated on the product.
- Depending on the input currents and input voltages, suitable connecting cables with appropriate cable diameter must be used. Only use the plugs and connectors supplied in the original packaging with the product.

1.5. Maintenance and Cleaning

- If the product and/or the connecting cable is damaged, do not touch it: there is mortal danger from electric shock! First, turn off the power supply to all poles of the product. Verify the absence of voltage using an appropriate meter.
- For the end consumer, the product is maintenance-free. Leavy any maintenance to an expert. Repairs may only be done by the factory itself (copyright holder).
- For external cleaning one can use a clean, soft, dry cloth. Dust can be easily removed with a clean, soft brush and a vacuum cleaner.

1.6. Disposing

At the end of its lifecycle, do not dispose of this device in the regular household rubbish. Return it to the supplier who will dispose of it correctly.

The user is lawfully obligated to return unusable batteries. **Disposal of used batteries through household waste is prohibited!** Batteries which contain dangerous substances are labelled with a picture of crossed out trash bin. The symbol means that this product may not be disposed through household waste.

Unusable batteries can be returned free of charge at appropriate collection points of your waste disposal company or at shops that sell batteries. By doing so, you fulfil your legal responsibilities and help protect the environment.

This product was packed and stuffed with proper materials to protect it during transportation. Packaging materials can be recycled and should be disposed environmentally friendly.

1.7. Warranty

The device is intended for a normal operational environment according to the corresponding norm.

The following circumstances are excluded from the warranty:

- Inappropriate handling or interventions.
- Chemical influences.
- Mechanical defects.
- External environmental influences (natural catastrophes, etc.)

Repairs during and after warranty period are assured by the manufacturer.

2 Introduction

Versatile temperature sensor designed for seamless integration with digital clocks. The TP sensor is connected via Ethernet, offering a quick and hassle-free connection.

Features

- Measurement of temperature within the range of -55 °C to +125 °C.
- Data transfer by TCP/IP protocols (10/100 Ethernet.)
- 5 VDC power supply (adapter included) or PoE.
- Temperature sensor in a metal rod, within protection degree IP 68, with 3 m long cable connection (for TP LAN PoE the cable is detachable).

3 Technical Data

3.1. Basic Data

Parameter	TP LAN	TP LAN PoE
Scope of Measures Temperatures	-55 °C to +125 °C	
Measuring Accuracy	±0.5 °C within the range of -10 °C to +85 °C; otherwise ±2 °C	
Power Supply	4–6 VDC (max. 230 mA)	PoE
Operating Temperature	-40 to +85 °C	
Protection Degree - Case	IP 30	
Protection Degree - Sensor	IP 68	
Dimensions - Electronics	54 x 33 x 24 mm (W x H x D)	112 x 55 x 24 mm (W x H x D)
Weight	approx. 135 g (with cable)	approx. 160 g (without sensor)
Sensor Connection Cable	3 m, PVC insulation	
Dimensions - Sensor	⌀6 x 60 mm	
Connector	RJ45, TBase 10/100 Ethernet, coaxial 3.8 x 1.3 mm, power supply (+ in the middle)	

3.2. Default Network Parameters

Parameter	Value
IP address	192.168.1.254
Subnet Mask	255.255.255.0
Gateway	0.0.0.0

4 Sensor Settings

4.1. IP Address Change

Changing the IP address is done using the `EthernetConfigurator` software.

1. After starting the software, all temperature sensors connected to the local LAN are found and their IP addresses are displayed in the upper window.
2. Select the IP of the temperature sensor you want to set and pres the `Set Device` button.
3. At the bottom, edit the IP address and possibly other parameters.
4. Press the `Set` button to send the current setting to the temperature sensor.

4.2. Reset

Use the following procedure to reset the device to its factory settings:

4.2.1. TP LAN with hole located under Ethernet connector

1. Disconnect power.
2. Press and hold the button in the hole under the Ethernet connector.
3. Turn on power and wait approx. 10 seconds.
4. Release the button.
5. The device reset process is complete.

4.2.2. TP LAN without hole located under Ethernet connector

1. Disconnect power.
2. Open the device box by unsrewing screws on the sides.
3. Short the jumper inside the device and keep it shorted.
4. Turn on power and wait approx. 10 seconds.
5. Disconnect the jumper and reassemble the box.
6. The device reset process is complete.

4.2.3. TP LAN PoE

1. Disconnect the Ethernet cable.
2. Pres and hold the reset button.
3. Connect the Ethernet cable.
4. Release the reset button.
5. The device reset process is complete.

5 Digital Clock Settings

The digital clock must have its own IP address set manually or via DHCP.

More information can be found at www.papouch.com .

5.1. Generation 4 Digital Clock

5.1.1. Setting IP Address of Sensor to Clocks

1. Enter the digital clock main menu, navigate to the `SEn 1` submenu and proceed to enter.
2. Navigate to item `tY 1` and set the value to `2` or `3` (depending on your sensor type).
3. Navigate to item `22` and set the communication protocol. The default communication protocol is `Modbus` . It is required to set either `Auto` or `Spinel` .

   If there are any Generation 3 digital clocks communicating with a set sensor, it is required to use `Spinel` communication protocol. This way the G4 and G3 clock can both communicate with one LAN temperature sensor.

4. Navigate then to item `23` and proceed to enter the item which leads to submenu `IP` where the IP address of the sensor can be set to digital clock.

   See chapter IP Address Change on how to view and change the sensor IP address.

Submenu `IP`

Value	Description	Range
`A`	1 st octet IPv4 address	0–255, set digit by digit
`b`	2 nd octet IPv4 address	0–255, set digit by digit
`C`	3 rd octet IPv4 address	0–255, set digit by digit
`d`	4 th octet IPv4 address	0–255, set digit by digit

5. Navigate to item `24` and set the value to `0` .
6. Leave the menu.
7. The digital should display correct temperature within **3 minutes** .

5.1.2. Setting Temperature Correction

Temperature sensors may have inherent inaccuracies or drift over time. If this is the case, you can set the temperature correction on display by following this procedure:

1. Enter the digital clock main menu, navigate to the `SEn 1` submenu and proceed to enter.
2. Navigate to item `tY2` and proceed to enter the item which leads to submenu `cT` where the `-d.d` is displayed.

Submenu c t

Value	Range
- d.d	- = negative value d.d = value of correction set digit by digit, the range of each digit is 0–9 Range: -9.9 to 9.9 °C

3. Enter the edit mode of - d.d value:
   a. First digit will flash. You can then set the negative (-) or positive value. Confirm your selection and move to next value d .
   b. Second digit will flash. You can then set the numerical value in range 0–9. Confirm your selection and move to next value .d .
   c. Third digit will flash. You can then set the decimal value in range 0–9. Confirm your selection to save end exit edit mode.

If you have more than 1 temperature sensor, repeat this procedure in SEN2 (respectively in SEN3 and SEN4) menu.

5.2. Generation 3 Digital Clock

5.2.1. Setting IP Address of Sensor to Clocks

1. Enter the digital clock main menu, navigate to r 6._ _ (version) item.
2. Hold down the PB1 and PB2 buttons or the DISP button on the remote control and proceed to enter the service menu.
3. Navigate to item C 5 , proceed to enter the item and set the value to 3 .
4. Proceed to enter the item C 5: 3 to set 4 octects of the temperature sensor IP address.
5. If you have two temperature sensors, proceed to enter the item C 5: 4 and repeat the previous step.
6. Leave the service menu.
7. The digital should display correct temperature within **3 minutes** .

5.2.2. Setting Temperature Correction

Temperature sensors may have inherent inaccuracies or drift over time. If this is the case, you can set the temperature correction on display by following this procedure:

1. Enter the digital clock main menu, navigate to the P 12 submenu and proceed to enter.
2. The c 1: 0 is displayed, the set correction is flashing. Change the flashing item to desired value in range -9 to +9 (°C or °F).
3. If you have second temperature sensor, navigate to item c 2: 0 and repeat the previous step.
4. Save the values and return to main menu by pressing the PB1L or OK on the remote control.

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