

# **TYNESS-FACTORY USA ENGLISH**

by Ewattch Documentation

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## 1. Hazards and warnings

The manufacturer cannot be held responsible if the instructions in this manual are not followed.

The product may only be installed by a professional.

Any intervention on the product must be carried out by a professional.

The product must be replaced by a professional.

The device must be used in accordance with the specifications in this documentation, otherwise there is a risk of danger. If the device is used in a manner not specified by the manufacturer, the protection provided by the device may be compromised.

No part of the device should be replaced or removed.

Disconnect all power supplies before servicing this unit.

Only accessories conforming to the manufacturer's specifications should be used (current clamps, temperature probes and connecting cables)

## 2. Homologations and compliances

### FCC compliance statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

### FCC §15.21

The Federal Communications Commission (FCC) warns the users that changes or modifications to the unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

### FCC §15.203

This equipment must be installed by qualified professionals or contractors in accordance with FCC Part 15.203, Antenna Requirements. Do not use any antenna other than the one provided with the unit.

### FCC §15.105 (b)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC ID: 2BBDG-TYNESS-V3-01

### 3. Presentation



### 4. Product description

The **TYNESS-FACTORY** is a multifunctional LoRaWan radio sensor equipped with a remote omnidirectional magnetic antenna. It enables to perform :

- 3 current measurements by current clamps
- 2 temperature measurements by PT100 probes
- 2 digital input measurements
- 2 analog measurements 0-24V

## 5. Product installation



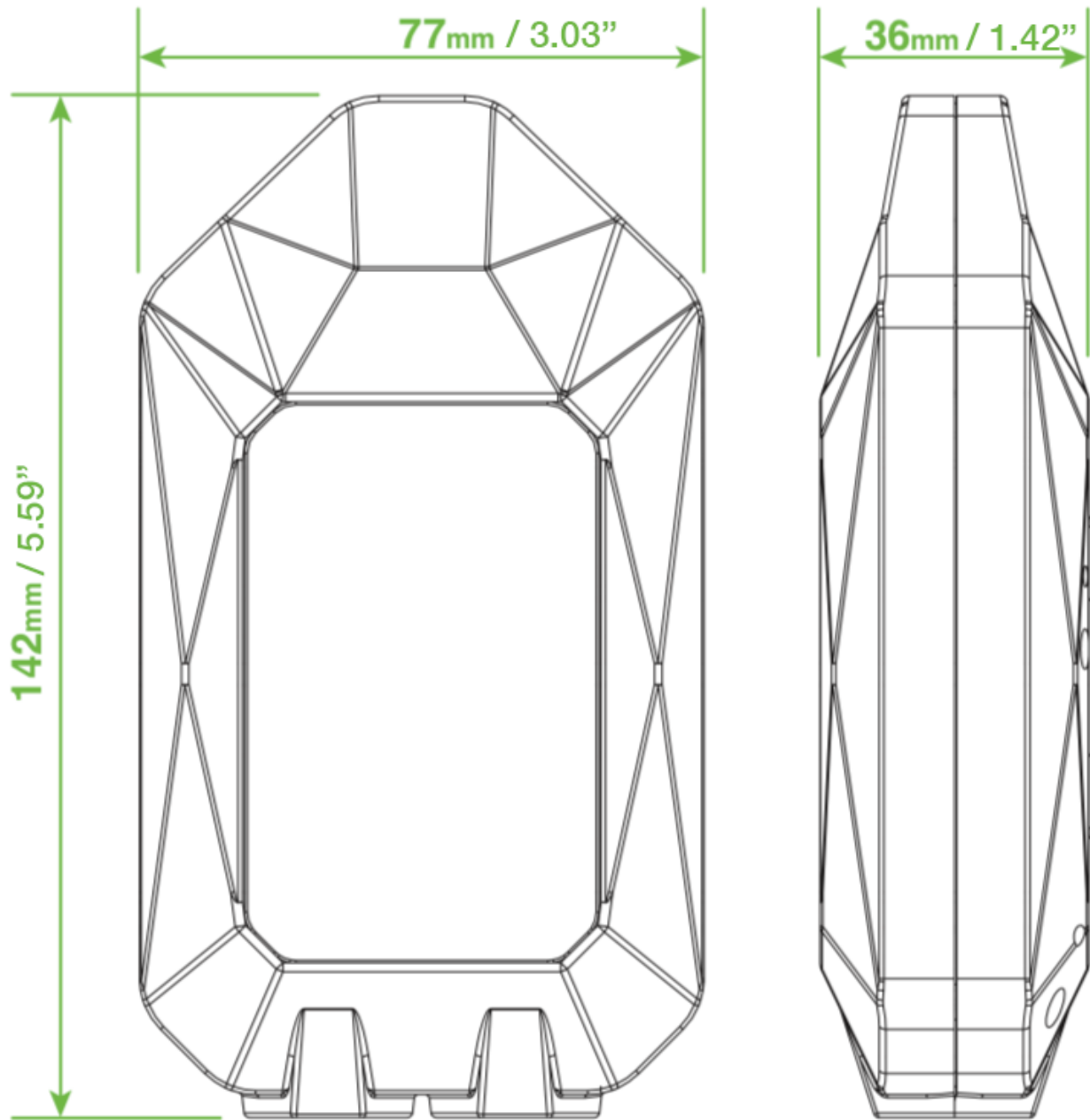
### **RISK OF ELECTROCUTION, EXPLOSION OR ARCING**

Turn off all power supplies before working on the device. The failure to comply with the information contained in this notice shall not manufacturer's liability

#### **Positioning of the product**

The product must be positioned in a way that does not make it difficult to operate disconnecter devices.  
The product must be installed in an indoor environment.

#### **Product dimensions**

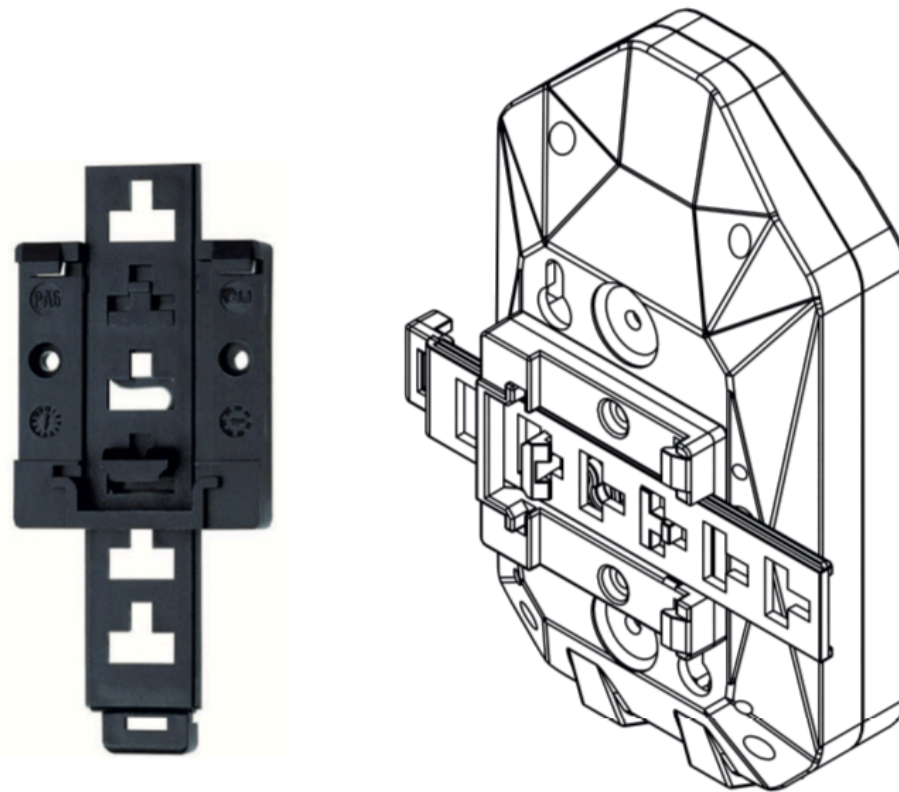


#### Mounting on DIN rail

The product must be installed on a 35mm DIN rail fixed in an electrical panel.  
Be careful to lock the housing on the DIN rail.

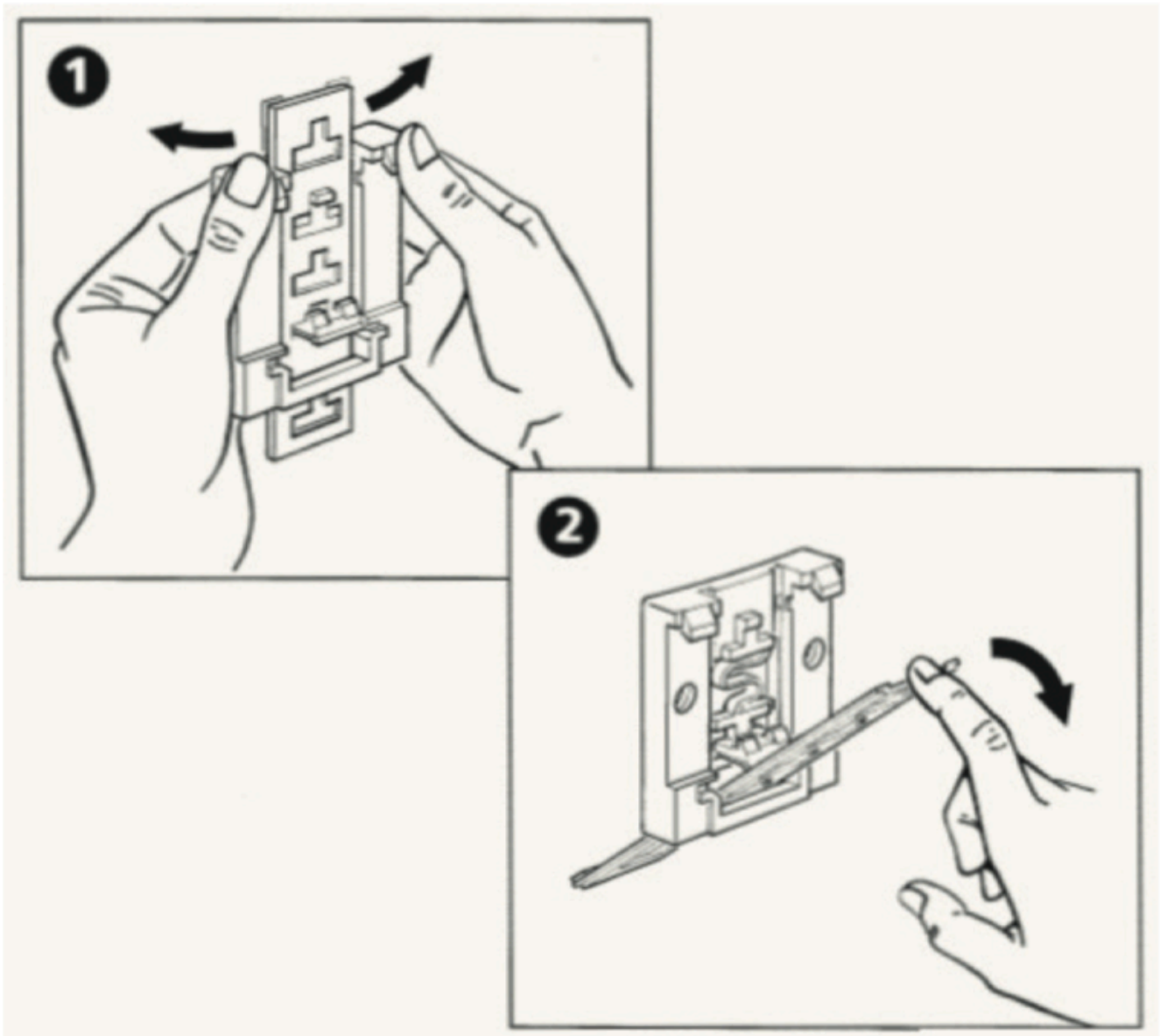
The DIN rail mount consists of 2 parts: a base and a movable and adjustable latch.  
It is used to fix the Tyness horizontally or vertically on a DIN rail.

The Tyness can be removed from the DIN rail by manipulating the movable latch with a screwdriver like any other bracket of the same type. It is delivered with 2 mounting screws.

**Adjustment of the tongue :**

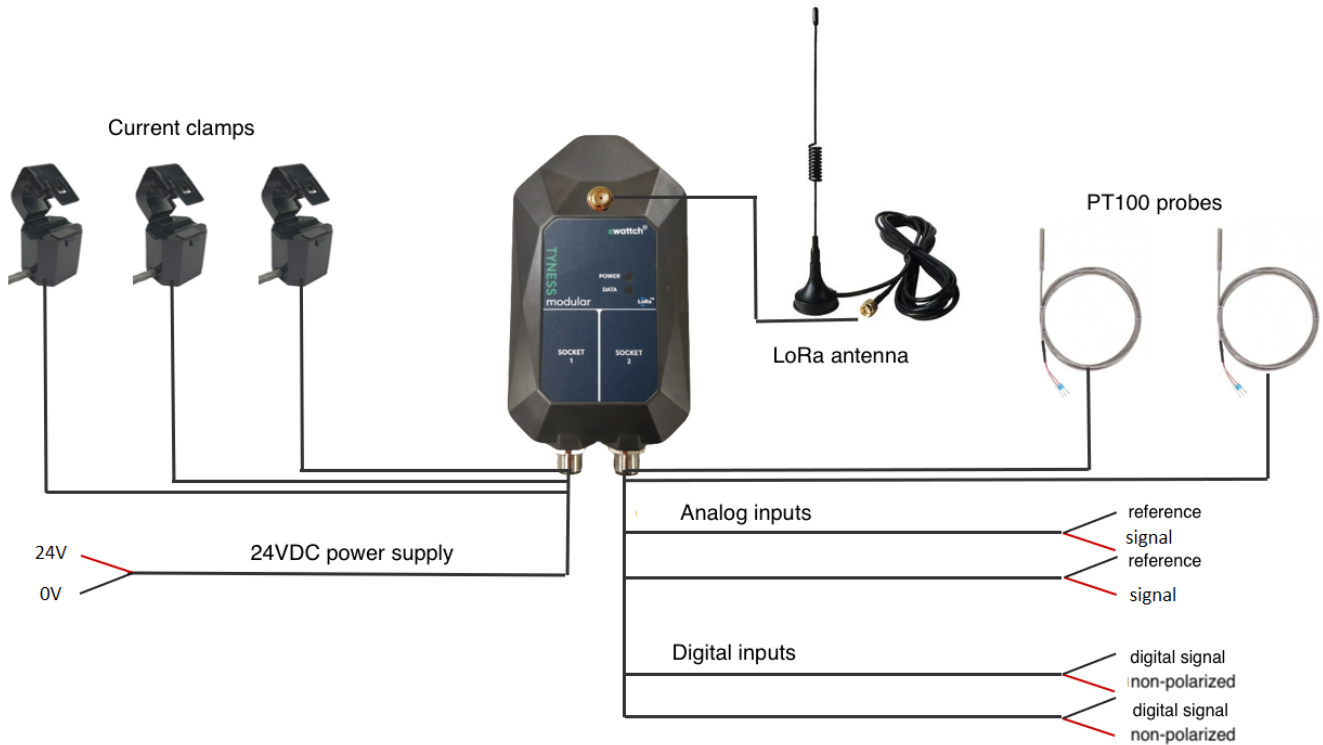
Depending on the positioning of the FIX-RAIL, the height of the latch must be adjusted in order to remain accessible.

When the upper part of the latch protrudes from the Tyness (for example with a Tyness in a low axial position), it can be cut with a wire cutter.



## 6. Power supply of the sensor

The product must be powered by a 24VDC power supply and provide a minimum current of 1A. Connect the cable marked power supply of the product to this power supply. The red wire on the 24V and the black wire on the 0V. It is very important to respect this polarity.



## 7. Measurements

The sensor enables to make different measurements. Here below are the wiring methods for each one. The technical characteristics are described at the bottom of the documentation.

### Measurements of current:

The measurement of current is carried out by means of the 3 opening current clamps connected to the sensor by 2-meter cables. These clamps must be opened then clipped around each of the insulated cables of the phases to be measured. Caution, the current and the maximum voltage of each phase must not exceed the limits fixed in the technical characteristics.

### Analog measurements :

These 2 measurement channels enable the measurement of DC voltages between 0 and 24V. The measurement is carried out via the 2 cables identified as Ana 1 and Ana 2. For each of them, the red wire must be connected to the voltage to be measured and the black wire to the ground. Caution, it is important to respect the polarity.

### Digital measurements :

These 2 measurement channels enable the measurement of digital voltage signals ranging from 0 to 24V DC or AC. The measurement is made via the 2 cables identified DI 1 and DI 2. For each of them, one wire must be connected to the voltage to be measured and the other to the ground. The polarity does not matter.

These measurement inputs will enable to measure the following information:

- The current state of the signal
- The time to ON of the signal
- The number of passage to ON of the signal
- The length of the last ON state revolved

### Temperature measurements :

These 2 measurements of temperatures are done by PT100 probes connected to the product. These PT100 probes are compatible with thermowells with a minimum diameter of 10mm.

## 8. Cleaning the product

The cleaning of the product should be done with a dry, soft and lint-free cloth. Remove embedded deposits with a slightly damp cloth.

Do not use any cleaner, alcohol or thinner.

## 9. Technical Specifications

### POWER SUPPLY

- **Voltage** : 24VDC  $\pm 5\%$
- **Power** : 1,2W
- **Power cable length** : 1 meter (39,07 inches)
- **Power supply voltage Fluctuation** :  $\pm 5\%$  of rated voltage

### POWER CURRENT MEASUREMENTS BY OPENING PINS

- **Maximum allowable current/sections** : 10mm/75A, 16mm/100A, 24mm/300A, 36mm/600A
- **Measurable circuit** : 230VAC CAT III
- **Wire length** : 2 meters (78,74 inches)
- **Number of measurement channels** : 3
- **Accuracy** :  $\pm 2\%$  from 1A
- **Bandwidth** : 40Hz à 20KHz
- **Sampling frequency** : 8KHz
- **RMS current measurement duration** : 1 second
- **Resolution** : 10 mA

### ANALOGIC MEASUREMENTS

- **Cable length** : 2 meters (78,74 inches)
- **Number of measurement channels** : 2

- **Precision** : +/-10 mV
- **Measurement range** : 0VDC to 24VDC
- **Resolution** : 1mV

## DIGITAL MEASUREMENTS

- **Cable length** : 2 meters (78,74 inches)
- **Number of measurement channels** : 2
- **Maximum allowable voltage** : 24V
- **Voltage range measurement 1 logic** : 10V to 24V
- **Voltage range measurement 0 logic** : 0V to 1V
- **Maximum signal frequency** : 3Hz
- **Minimum off time** : 200ms
- **Minimum on time** : 100ms

## TEMPERATURE MEASUREMENTS

- **Cable length** : 3 meters (118,11 inches)
- **Number of measurement channels** : 2
- **Precision** : +/-0.5 °C
- **Measurement range** : -100°C to +300°C (- 148°F to +572°F)
- **Resolution** : 0.01°C

## ENVIRONMENTAL CONDITIONS

- **Operating temperature** : from 5°C to 60°C (from 41°F to 140°F)
- **Storage temperature** : from -20°C to +70°C from -4°F to 158°F)
- **Operating humidity** : from 10% to 80%, non-condensing
- **Protection index** : IP 20
- **Maximum altitude** : 2000 m
- **Pollution degree** : 2
- **Using environment** : indoor

## LORA RADIO COMMUNICATION RADIO

- **Wireless communication** : LoRaWAN™
- **Maximum transmission power** : 14dBm
- **Unique serial number** : Oui
- **Communication distance** : 15km (9,32 miles) in free field
- **Antenna** : external magnetic with 3 meters cable
- **LoRaWan version** : 1.0.1
- **LoRaWan classe** : A

## PHYSICAL CHARACTERISTICS

- **Dimensions (H x W x D)** : 5.59 " x 3.03" x 1.42" (142 x 77 x 36 mm)
- **Weight** : 1231g
- **Mounting** : Rail according to DIN EN 60715 (1 x 35 mm)

## 10. Contact



13, Rue Maurice Jeandon  
88100 Saint-Dié des Vosges  
FRANCE  
sales@ewattch.fr  
[www.ewattch.com](http://www.ewattch.com)(<http://www.ewattch.com>)