ELSYS | PART OF BEMSIQ GROUP

Operating manual
ERS Temp wM-Bus

ERS Temp wM-Bus

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Important Safety Information

Read this manual before attempting to install the device.

Failure to observe the recommendations included in this manual may be dangerous or cause a violation of the law. The manufacturer, ElektronikSystem i Umeå AB, will not be held responsible for any loss or damage resulting from not following the instructions of this operating manual.

- The device must not be dismantled or modified in any way.
- The device is only intended for indoor use. Do not expose it to moisture.
- The device is not intended to be used as a reference sensor, and ElektronikSystem i Umeå AB will not be held liable for any damage which may result from inaccurate readings.
- The battery should be removed from the device if it is not to be used for an extended period. Otherwise, the battery might leak and damage the device. Never leave a discharged battery in the battery compartment.
- The device must never be subjected to shocks or impacts.
- To clean the device, wipe with a soft moistened cloth. Use another soft, dry cloth to wipe dry. Do not use any detergent or alcohol to clean the device.
- CAUTION – Risk of explosion if the battery is replaced by an incorrect type

Disposal note in accordance with Waste from Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU

The device, as well as all the individual parts, must not be disposed of with household waste or industrial waste. You are obliged to dispose of the device at the end of its service life in accordance with the requirements of Directive 2012/19/EU to protect the environment and to reduce waste through recycling. For additional information and how to carry out disposal, please contact the certified disposal service providers. The sensors contain a lithium battery, which must be disposed of separately.

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1. Description

The ERS Temp WM-Bus sensor is an indoor climate sensor that communicates on WM-Bus and measures Temperature with long expected battery time.

1.1 ERS Temp wM-Bus Attributes

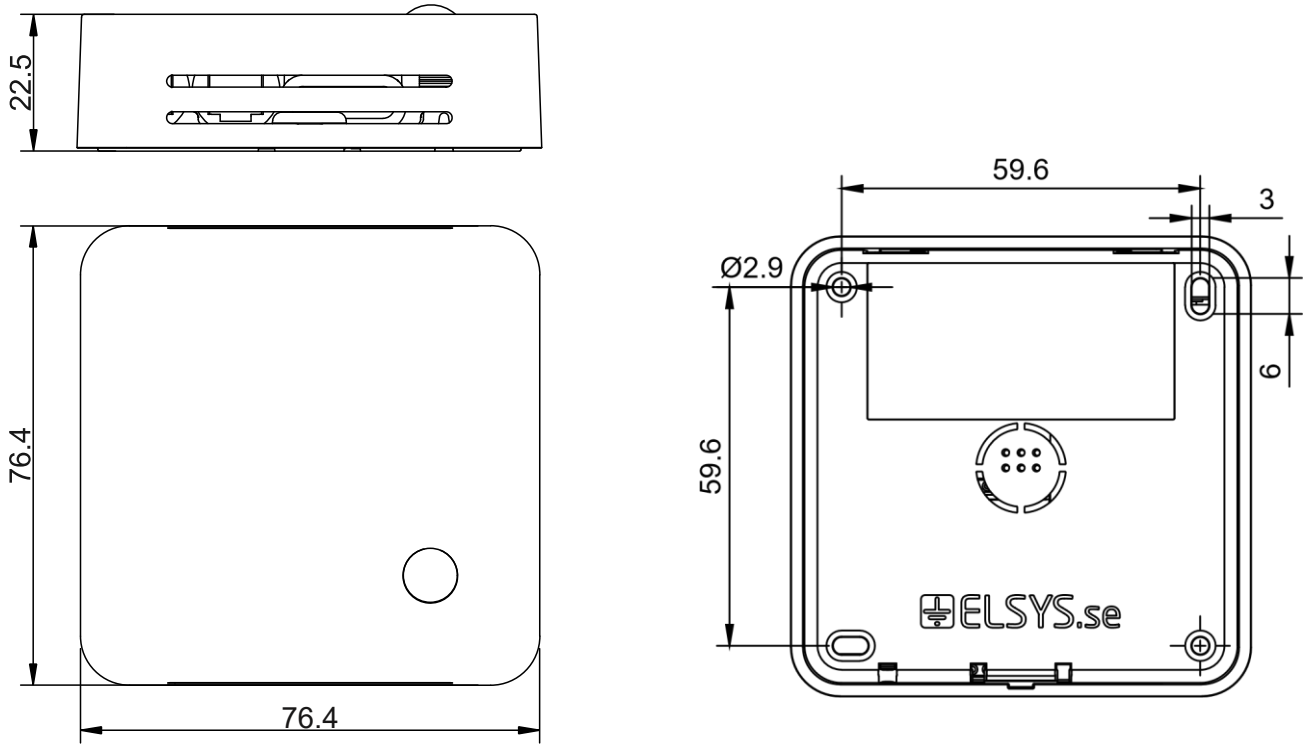
The ERS Temp WM-Bus attributes are Temperature, WM-Bus, and no NFC.

1.2 Label

The Barcode is of Aztec type and contains DevEUI and sensor type. This label is located at the back of our device.

1.3 Dimensions

Measurements are given in millimeters



1.4 Main Features of the ERS Temp wM-Bus

- Wireless M-Bus mode
- Wireless M-Bus standard EN13757:2018
- Measures ambient temperature
- 15 years of battery life**
- Configurable over the air
- Easy Installation
- Easy Configuration
- IP30
- OMS 4.0 Compatible

** *Depending on settings and environmental factors*

2. Mounting Guidelines

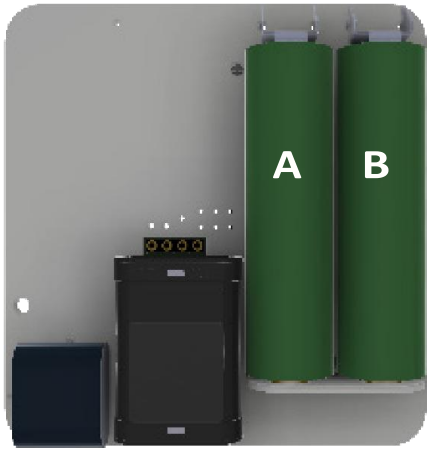
Common mounting guidelines for ERS Display Series LoRa line of sensors:

- Place the sensor in an open space on the wall, with an installation height of 1.6 meters.
- For best RF and measurement performance, make sure you mount the sensor with the ventilation openings vertically. See installation in chapter 2.1
- Make sure that the sensor is not placed in direct sunlight, close to heating vents, near windows, air ventilation where it may measure values that are not representative of the rest of the room.
- Do not mount the sensor in a steel cabinet. Doing so will dramatically decrease the signal coverage.

2.1 Installation

1. Remove the back panel of the sensor with a small screwdriver.

2. Install the Battery. The ERS Temp WM-Bus requires one AA battery. The battery type is 3.6V Lithium Battery (ER14505). Use battery slot A.



3. Mount the back panel to the wall with at least 2 appropriate screws, using any of the four mounting holes. Alternatively attach the sensor using double sided adhesive tape.

4. Attach the sensor to the back panel.

2.2 Service and Maintenance

There are no serviceable parts inside. If service is needed other than battery replacement, please get in touch with your distributor.

2.3 Operation

Upon Installation of the batteries, the sensor will begin to transmit wireless M-Bus telegrams. The telegrams contain sensor data as well as various information about the product status.

2.4 Wireless M-bus mode

The ERS Temp WM-Bus has one mode which is C1A. And is OMS 4.0 compatible. The WM-Bus Telegram can be encrypted (AES).

3.0 Sensor Payload Format

The Sensor Payload Format for the ERS Temp WM-Bus can be found on the table below.

Byte index	Data	Description
0	0xnn	L-Field
1	0x44	C-Field: SND_NR
2..3	0x9615	Manufacturer "ELV"
4..7	0xnnnnnnnn	Identification number
8	0xnn	Version field: 80d..84d
9	0x1B	Device type (Medium) = Room sensor
10	0x7A	0x7A = short application header
11	0xnn	Access number, increases after each transmission (0...255)
12	0xnn	Status No Error: 0x00 Any Error: 0x10
13..14	0xnnnn	CONFIG: Bit 3..0 = 0 Bit 7..4 = 1 to 15, number of encrypted 16-byte block, 0 if encryption = OFF Bit 12..8 = encryption mode, 5 with encryption, 0 without encryption Bit 13=1 (synchronized) Bit 15..14 = 0
15..16	0x2f2f	AES check (idle filler) Only if encrypted
17	0x02 (0x32 in case of error)	Instantaneous DIF
18	0xFD	VIF, extension table FD
19	0x46	VIFE, battery voltage in mV
20..21	0xnnnn	Instantaneous battery voltage In case of error this value will be set to 0.
22	0x02 (0x32 in case of error)	Instantaneous DIF
23	0x65	VIF, external temperature
24..25	0xnnnn	Instantaneous temperature x 100 In case of error this value will be set to 0.

3.1 Transmissions

The Product will automatically begin transmitting data after the batteries are inserted into the sensor. By default, a SND_NR telegram will be transmitted according to the table above.

3.2 Technical specifications

Type	Value	Unit	Comments
Mechanics			
Casing material	ABS UL94-V0	-	White
Protection class	IP30	-	
Dimensions	76.2x76.2x22.5	mm	
Weight	60	g	Excluding battery
Mounting	Wall-mount	-	
Electrical			
Power supply	Lithium Battery	-	Removable
Battery type	ER14505	-	
Battery size	AA	-	
Operating voltage	3.6	V	
Environmental			
Operating temperature	0 – 50	°C	
Operating humidity	0 – 85	%RH	No condensation
Operating altitude	0-2000	m	
Pollution degree	Degree 2	-	
Usage environment	Indoor	-	
Storage temperature	-40 – 85	°C	
Sensor characteristics			
Temperature range	0 – 50	°C	
Temperature accuracy	± 0.2	°C	
User interface			
LED	Activation	-	
Wireless M-Bus			
Frequency	868.95	MHz	
Transmit power	25	MW	
Encryption	Yes/No	-	Mode 5 or 0
Wireless M-Bus modes	C1a	-	C1a (default)
Wireless M-Bus Standard	EN13757:2018	-	
OMS Standard	4.0	-	

4. Approvals

The ERS Temp WM-Bus is designed to comply with the directives and standards listed below.

Approval	Description
EMC	2014/30/EU
RED	2014/53/EU
LVD	2014/35/EU
REACH	2011/65/EU + 2015/863

4.1 Legal Notices

5. Version

Version	Date	Description
1.0	2025-04-28	First version