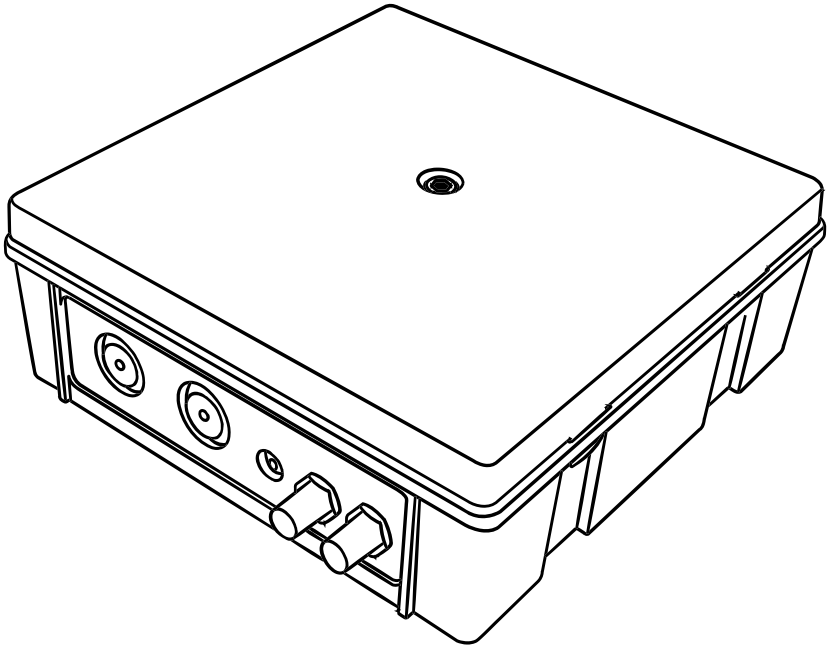
LANSEN

USER MANUAL

Wireless M-Bus Repeater 4 M

Version 1.0



Read The Instructions

Read and understand this manual and its safety instructions before using this product. Failure to do so can result in severe injury or death. Follow all instructions to avoid hazards like fire, explosions, or electric shocks.

Only use the product if you have fully read and understood the user manual. Ensure every user reads and follows these instructions before use. Keep safety information for future reference and pass it on to subsequent users. The manufacturer is not liable for damage or injury caused by incorrect handling or non-compliance with safety instructions.

Your safety and the device's proper functioning depend on adhering to these guidelines.

Intended Use

This device is a radio frequency repeater designed to extend the transmission range of Wireless M-Bus (EN 13757-4) meter data-transmitting devices. It is intended for professional and utility-managed deployment within residential, commercial, and industrial buildings. It relays utility telegrams from meters such as water, gas, heat, and electricity meters to a central data collector or gateway. It functions solely as a data-relay component and does not interpret meter data, store data, or act as a gateway.

Devices with an A1 suffix on the product label are intended for indoor installation. Devices with an A2 suffix on the product label are intended for indoor or outdoor installation.

This device is not intended for safety-critical alarm systems, safety-of-life infrastructure, or medical data collection.

Explanation Of Symbols



Important information regarding instructions or recommendations for installation of devices.



Indicates a mandatory action to follow.



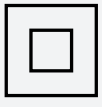
Warning, risk of bodily harm or death if handled without care.



The CE symbol is confirmation by Lansen Systems AB that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU and RoHS Directive 2011/65/EU (EU) 2015/863.



This symbol on the product or its packaging means that it should not be disposed of with household waste. It is your responsibility to dispose of your waste equipment separately from the municipal waste stream. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.



This symbol on the product means the safety requirements specified for Class II equipment according to IEC 61140.

Important Safety Information



Risk of injury or death due to electrical shock!

An all-pole mains switch with a contact separation of at least 3mm shall be incorporated in the electrical installation of the building. Furthermore, a 230 VAC installation MUST be carried out by an authorized installer (skilled person) according to the relevant electrical safety regulations.



Risk of injury or death due to electrical shock!

The device shall be connected to a surge protector if it is installed in an environment classified as overvoltage category IV. Failure to do so may result in damage to the device and/or electrical shock.



Do not attempt to alter or repair the device. If you are experiencing malfunction make sure to contact your place of purchase or visit our website.



Use ESD protection when handling the product with the PCB exposed to prevent potential damage to the electronics.

Disclaimer



Lansen Systems are not responsible for any damage, malfunction, or non-compliance resulting from the use of unauthorized accessories or modifications to this device.

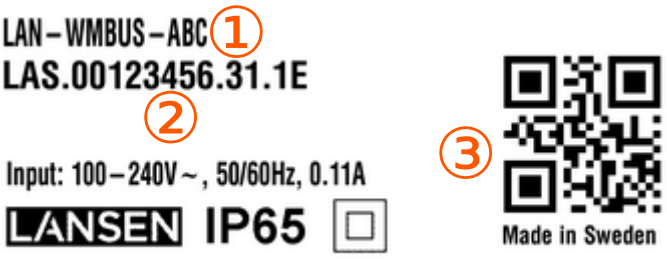
Introduction

The Lansen *Wireless M-Bus repeaters* from Lansen are highly configurable plug-and-play devices used for extending the range between meters and a collector/gateway. The enclosure is chosen to make the repeater as discrete as possible

For more information, visit *lansen.io*.

Label Information

The device label provides the essential identification information. See the example below.



① Product name

② Serial number

③ 2D barcode: Full device information

Example: Device information

```
LAS  .00123456    .02  .0F
①    ②            ③    ④
```

① Manufacturer

② Serial number

③ Device

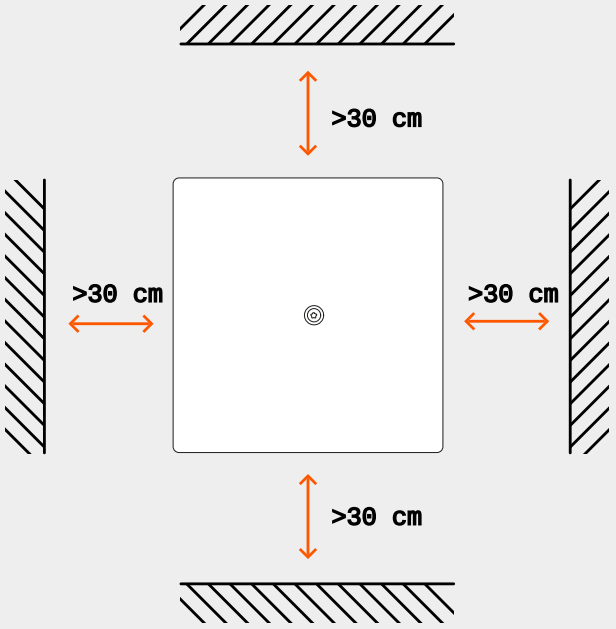
④ Protocol

Mounting R4

The R4 is designed for vertical mounting on walls and poles. Ceiling mounting directs the signal downward, potentially reducing the effective range for meters located on the same horizontal plane.

Recommended placement

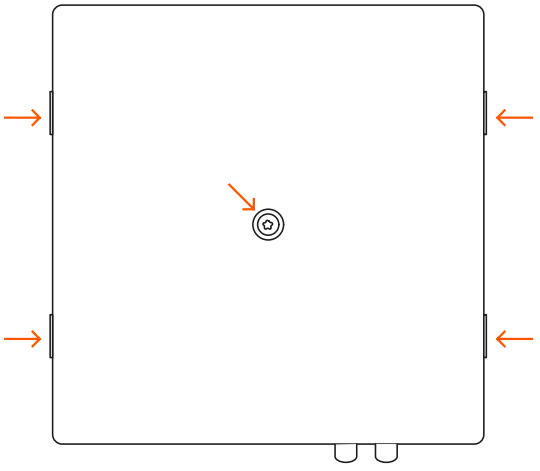
- Maintain a minimum distance of *30 cm* in all directions from other objects, walls, ceilings, or floors.



- The device can be fastened to walls, poles, and masts.
- For complete protection against water, the label on the device *must* face to the left, and the power cable outlet *must* point downwards.

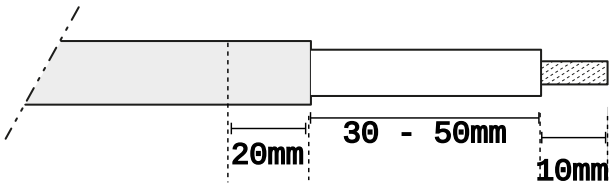
Opening the housing

1. Use a *Torx T20H* screwdriver to remove the *center screw*.
2. Push the clips on both sides of the cover.
3. Remove the cover.



Stripping the power supply cable

Use a power supply cable with a minimum diameter of 6 mm and a maximum diameter of 10 mm. Strip the power supply cable according to the diagram.



Installing the power supply cable

The power supply cable can be installed through the side cable inlet or the back cable inlet.

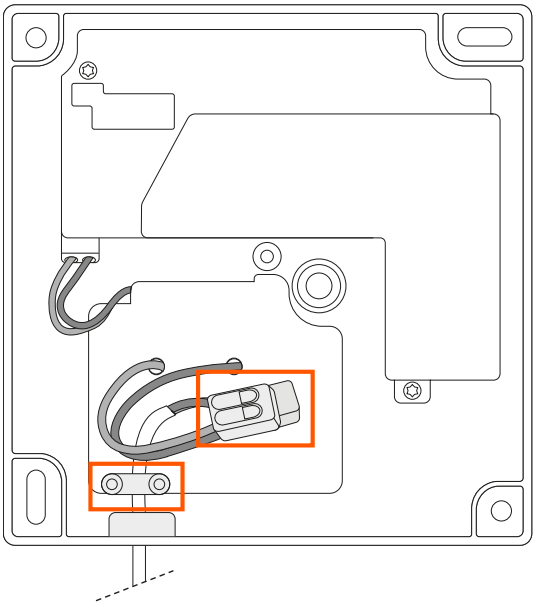
Using the side cable inlet

Use the side cable inlet if water ingress protection is needed.

Risk of injury or death due to electric shock!

When using the side cable inlet, the power cable shall be secured with strain relief. A loose cable can expose live parts and result in electric shock.

1. Use a round awl to perforate the silicone grommet to ensure a good seal.
2. Thread a stripped power supply cable through the grommet.
3. Secure the power supply cable with the strain relief cable clamp included in the package.
4. Connect the power supply cable with the coupling clamps.



Using the back cable inlet

Use the back inlet to mount the R4 directly over an outlet to hide the power supply cables.

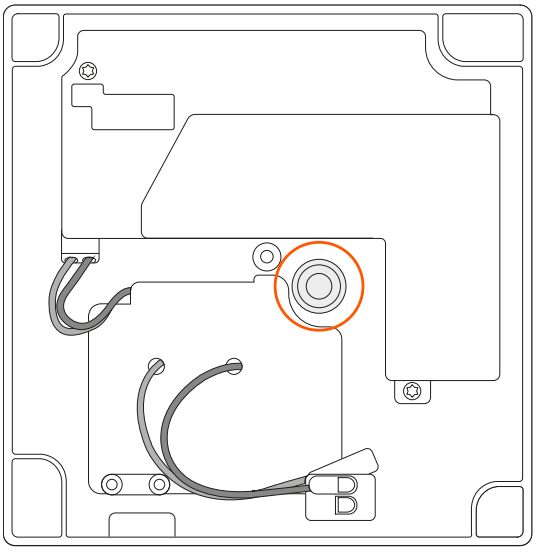
Risk of injury or death due to electric shock!

The cable inlet on the back shall only be used when the device fully covers the power cables, ensuring they are not accessible to an ordinary person. Exposed cables can be disturbed or pulled loose, which may result in electric shock.

Risk of injury or death due to electric shock!

When using the back cable inlet, the device shall be installed indoors only. This mounting method is rated IP40 and does not prevent water ingress. Exposure to moisture may result in electric shock.

1. Cut, drill or punch out the hole marked in the picture.
2. Thread a stripped power supply cable though the cable inlet.
3. Connect the power supply cable with the coupling clamps.

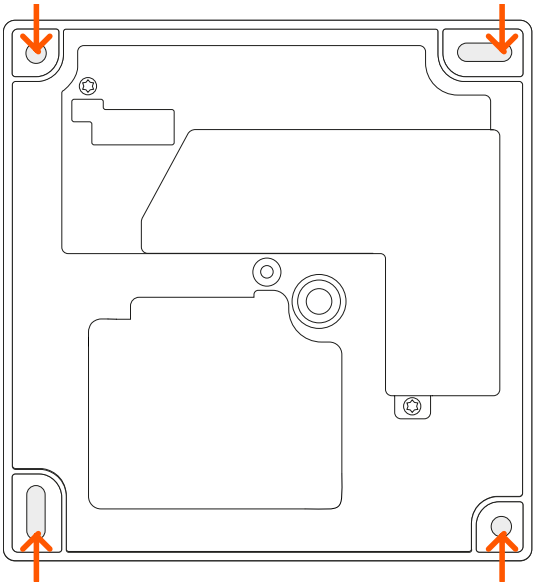


Mounting the device

Mount the R4 on a wall or on a pole.

Wall mounting

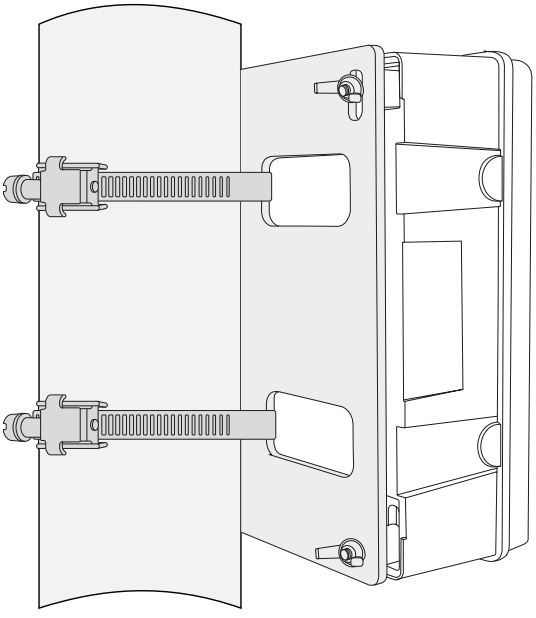
1. Remove the cover. (See *Opening the housing*)
2. Hold the device in the position where it will be mounted.
3. Mark the holes with a pencil.
4. If necessary, pre-drill the holes.
5. Mount the device by using four screws (not included) suited for the wall material.



Pole mounting

Pole mounting requires the Lansen pole mounting kit, available separately (art# LAN-910-0066).

1. Install the Lansen pole mounting kit to the back of the R4.
2. Pull the mounting straps through the holes in the mounting plate.
3. Wrap the straps around a pole or pipe.
4. Tighten the straps until the device is secured.



Starting the device

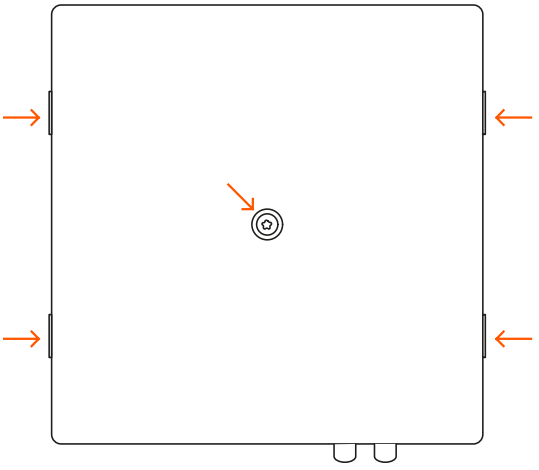
Connect the power.

The device emits three beeps during startup. A red LED blinks once for every packet the repeater retransmits.

If additional beeps are heard a few seconds (~5 s) after the first three beeps, the device indicates a fault. Contact your place of purchase.

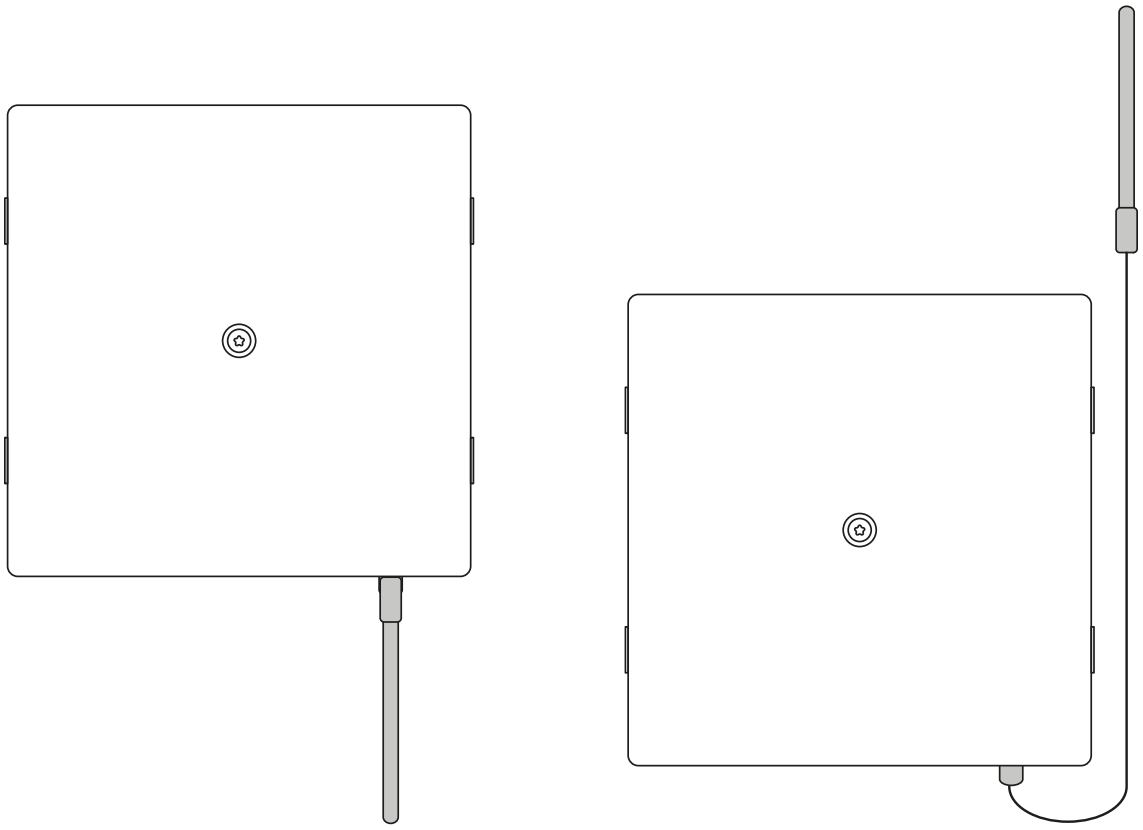
Closing the housing

1. Place the cover on the device.
2. Press the cover on both sides until the clips snap into place.
3. Use a *Torx T20H* screwdriver to tighten the center screw.



Installing an antenna

If your device supports an external antenna, attach the antenna directly to the SMA connector or use an antenna cable.



Ensure that the output power complies with the regulatory limits in your region when using an external antenna. You can adjust the output gain in the Lansen Configurator tool available from the Lansen website *http://www.lansen.io/download*.

Specifications

	wM-Bus
Frequency band(s)	868.95 MHz (T/C-mode) 868.3 MHz (S-mode)
Output power (ERP)	< 14 dBm
Input mode	T/C-mode (default) or S-mode
Output mode	C-mode (default), T-mode, or S-mode
Power supply	85 - 305 VAC
Typical receiver sensitivity	R4: -107 dBm (S-mode), -105 dBm (T/C-mode) R4-LR: -111 dBm (S-mode), -108 dBm (T/C-mode)
Max sensors	932
Max packet length	255 bytes
Multihop support	Yes
Antenna	Dual internal antennas, mounted 90 degrees apart, or external SMA antenna interface (X models).
Dimensions	150 x 150 x 53 mm
IP classification	IP40 (A1) IP65 (A2)
Operating conditions	-35°C to +85°C

Troubleshooting

Issue	Possible reason(s)	Potential solution(s)
The device does not start or transmit status packets.	• No supply voltage to the device. • Incorrect mains wiring or loose coupling clamps. • Damaged cable or poor cable connection.	• Verify that mains supply is available. • Check wiring and coupling clamps inside the device. • Inspect the cable and reconnect the power supply cable. • Power-cycle the device after correcting wiring.
The device starts but meter packets are not forwarded.	• The distance to meters or gateway is too long. • The repeater is mounted in a position with heavy shielding. • Mode/filter configuration does not match the installation.	• Move the repeater to improve radio path quality. • Keep recommended free space around the enclosure. • Verify configuration (input/output mode, filtering, routing). • Use an LR or external-antenna variant if longer range is needed.
Communication is unstable or intermittent.	• Electrical disturbances in the installation environment. • Installation method does not match environment (indoor/outdoor). • Moisture ingress risk due incorrect cable inlet use.	• Reposition the repeater away from strong interference sources. • For outdoor use, use a weather-protected enclosure variant. • Follow mounting orientation and cable-inlet recommendations.

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Regulatory Information

SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Lansen Systems AB declares that the radio equipment type defined by article name on the sticker is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: *lansen.io/DOC*