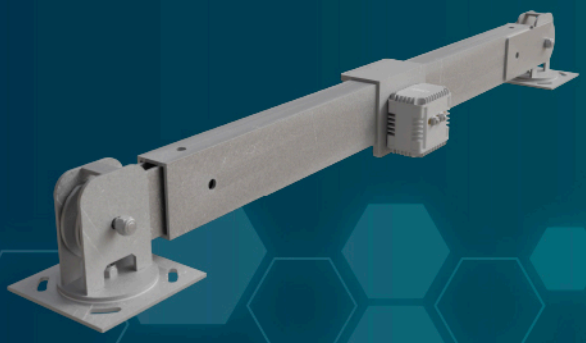
feelbat

NOTICE

INCLINOMETER LINE

Deformation monitoring

INCLINOMETER LINE



The inclinometer line enables monitoring of global structural deformations and millimetric displacements over large spans.

Each aluminum segment is mounted on biaxial articulated supports, ensuring freedom of movement to track all structural variations.

Compact & Resistant

Precise

Plug & Play

Autonomous

Connected

Features

Battery 3,6 V - 17 Ah - **Autonomy** 1 à 7 years*	Aluminum structure	**Measurement range** (+/-) 30° (+/- 10°)
Angular resolution 0,01°	**Bluetooth & LPWAN radio connection**	**Protection** IP66
Angular accuracy 0,005°	Simple wall or chained installation	Fixing on articulated support
Internal memory 250,000 measurements	**Operating temperature** -25 C° to +70 C°	Modular assembly from 0.5 m to 2 m

**depending on selected measurement interval, sensor exposure, and data transmission mode (Bluetooth, LPWAN, ...)*

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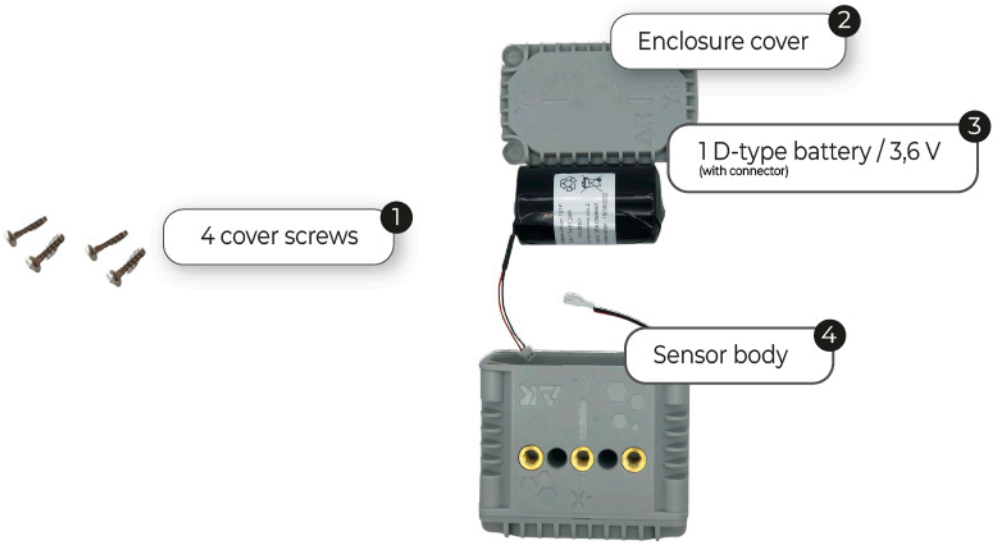
01 Packing List



Fixings

5. 1 segment of 0.5 m, 1 m or 2 m
6. x2 Part 1: articulated connection piece
7. x2 Part 2: fixed base 130 mm x 130 mm
8. 2 Teflon discs – Ø93 mm, pre-drilled Ø10 mm
9. 1 M8 nut, stainless steel A2
10. 2 low-profile M10 nuts, stainless steel A2
11. 1 M10 nut, stainless steel A2
12. 1 M10x60 hex head bolt, 17 mm wrench, stainless steel A2
13. x1 Part 3: Z-shaped aluminum piece
14. x1 Part 4: L-shaped aluminum piece
15. x1 Part 5: aluminum piece with threaded rods
16. x1 Part 6: aluminum circular plate
17. x1 Part 7: aluminum donut ring
18. 4 screws 4.0x12.0, stainless steel A2
19. 8 screws 6.0x8.0, stainless steel A2
20. 2 M6 flange nuts, stainless steel A2
21. 4 Teflon discs Ø70 mm, pre-drilled Ø12 mm
22. 8 universal wall plugs, nylon 12x60 + hex head wood screws 8x70, stainless steel A2, flat washer D8 stainless steel A2

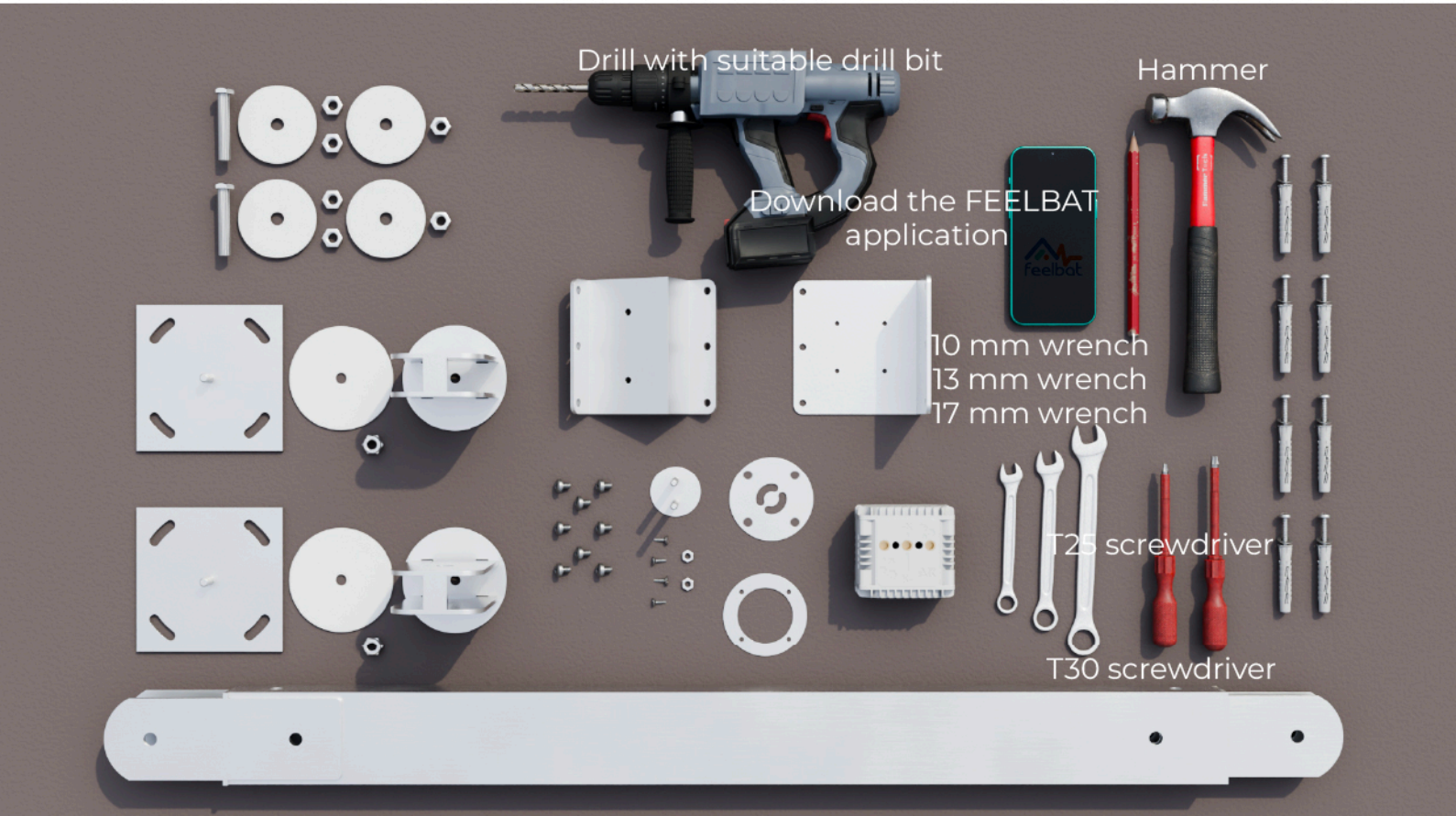
02 Advice

This installation manual is available in video format.

Watch the installation video

Fixing Advice

- TORX 20
- TORX 25
- TORX 30
- 12 mm wrench
- 17 mm wrench
- 13 mm wrench
- Hammer
- Drill with suitable drill bit – Ø10 mm drilling for nylon wall plug
- Mason's pencil
- Flat pliers



03 Download the application

To connect your sensor, install the FEELBAT mobile application:

GET IT ON Google Play

Download on the App Store

Download the FEELBAT application from your smartphone's app store.

Accept all access requests to fully use the application.

Sign up, then a confirmation email will be sent to you.

If you encounter any issues, please contact us at: (may appear in your spam folder)
SAV@feelbat.fr

03 Connect your sensor

After signing up, **open the FEELBAT application.**
You will be guided step by step to add and configure your first sensor.

Stay close!

When connecting your sensor, it must be close to you in order to capture the Bluetooth signal.

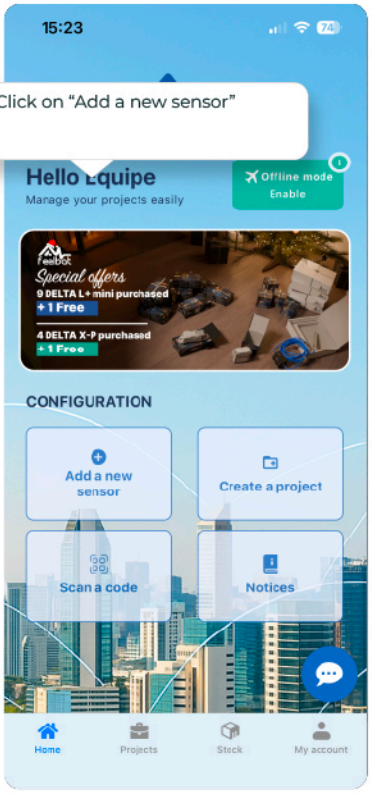
Stay within a maximum distance of 30 meters from the sensor, in open field conditions (no obstacles between you and the device).

Without a LINKFEEL token, you will not be able to receive data remotely, and you will only be able to synchronize via Bluetooth.

If you wish to activate the remote connection, you must have at least 10 credits.
To do so, please contact your sales representative or write to us.

<u>You must be connected to the sensor via Bluetooth in order to activate the token.</u>

⚠ **Do not forget to enable Bluetooth on your phone.**

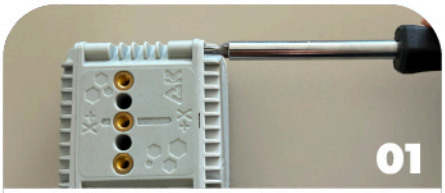


04 Sensor start-up

We strongly recommend connecting and configuring your sensor via Bluetooth before going on site.
It is essential to prepare your equipment 48 to 72 hours in advance and to test the Bluetooth connectivity.

Step 1

Before installing your sensor, you must connect the battery.
Please follow the green numbers, which correspond to the items in the packing list.



To begin, **remove the DELTA R cover** *(2)* by unscrewing the 4 screws *(1)* with a T20 TORX screwdriver.

⚠ Warning: do not remove the cover marked "Radio Wave" – do not open it.

Remove the battery and **then connect it** *(3)*

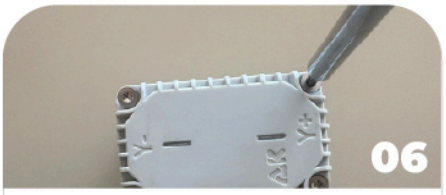
⚠ Use the keying slot (connector guide) when plugging it in, regardless of wire colors.

Carefully write down the **serial number** (located behind the battery); it will be required to connect the sensor to the application.

Reinstall the cover *(2)* making sure the O-ring seal is correctly positioned before closing.

⚠ Pay attention to the sensor positioning; an alignment guide is provided (orange arrow).

Press on the cover *(2)* and then reinstall the screws *(1)*.



Tighten without forcing.

⚠ Use silicone grease (not supplied) to lubricate the seal when closing. Do not overtighten the screws: they only hold the cover in place.

Your sensor is now almost ready to be installed on site.

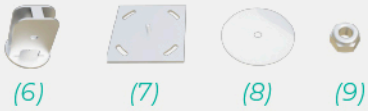
Your sensor is now:

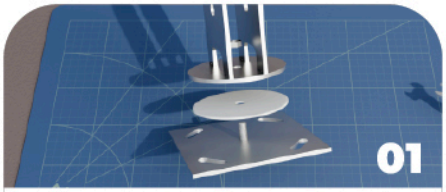
- ✓ **Connected**
- ✓ **Prepared**

05 Element Preparation

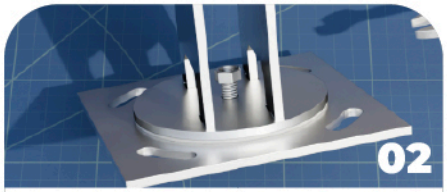
Step 2
Module pre-assembly

Required parts:
REF : PISUPP

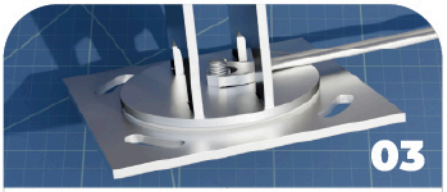

(6) (7) (8) (9)



To begin, **place the Teflon disc** *(8)* **and the articulated connection piece** *(6)* **inside the threaded rod of the fixed base** *(7)*



Once done, screw on the M8 nut *(9)*.

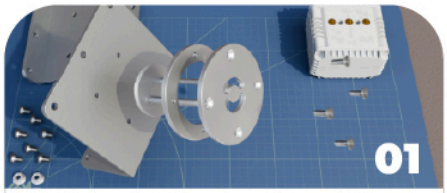


Then, using a 13 mm wrench, tighten the nut.

⚠ Light tightening is sufficient: as soon as the disc is seated without vertical play, stop tightening (over-tightening may damage the threaded rod).

Required parts:
REF : PIFIX


(5) (13) (14) (15) (16) (17) (18) (19)

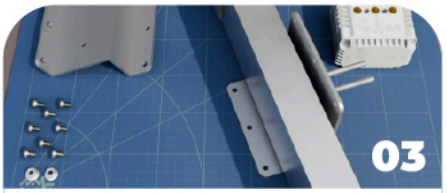


Align *(17)* with *(14)* by matching the 4 holes.
Place *(15)* in the center of *(17)*, against *(14)*. Finally position *(16)*, insert the screws *(16)** et *(17)*, and tighten them into *(14)*.

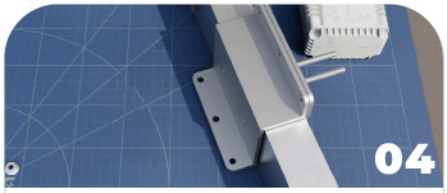
⚠ *For part (16), make sure the machined face is facing outward.

Next, **place the assembly at the center of the L-shaped bracket** on the vertical section and insert the 4 screws 4.0x12.0*(18)* Then tighten using a TORX 20 screwdriver without forcing.

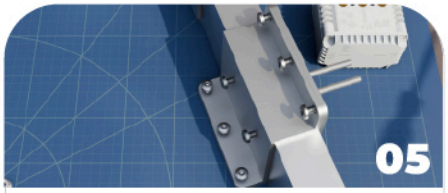
⚠ The threaded rods must be properly oriented before tightening the 4 screws.



Place the assembly onto your segment *(5)*.



Then cover the segment with part 3: Z-shaped aluminum piece *(13)***.**



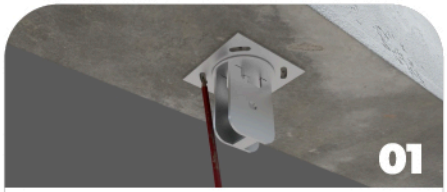
Finally, insert the 8 screws 6.0x8.0 *(19)* and tighten using a TORX 30 screwdriver.

⚠ First insert the screws diagonally opposite each other without tightening.
Position all screws, then tighten gently.

Your sensor is now ready.

✓ **The elements are ready to be installed on site.**

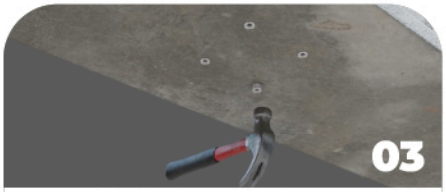
06 Sensor Installation



To begin, **mark your reference points using the pre-assembled aluminum parts** *(6,7,8,9)*

Using a drill with a 12 mm bit suitable for the material, **drill the holes** (>6 cm deep).

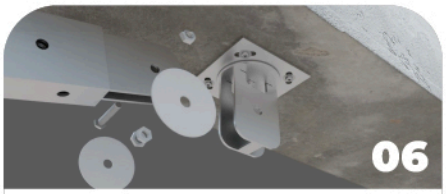
⚠ Remember to remove the dust using a blow-out pump.



Insert the 4 universal nylon wall plugs 10x60 *(22)*, then tap them in with a hammer to position them correctly.

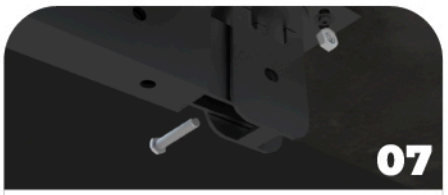
Place the aluminum assembly and **insert the washers into the wood screws,** pan head 6x70 TORX, then insert the screws into the wall plugs*(22).*

Tighten the screws using a TORX T25 screwdriver.



Insert the segment **by placing the Ø70 mm Teflon discs** *(21)* **on each outer side of the segment, then position the low-profile M10 nuts** *(10)* **on each inner side.**

CF : see image 8



Next, insert the M10x60 hex head bolt *(12)* through the entire assembly and **the M10 nut** *(11)* on the other side to secure the system.

CF : see image 8

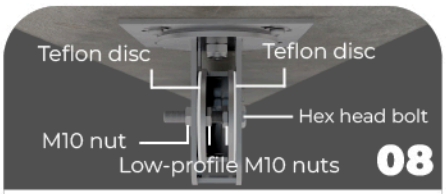
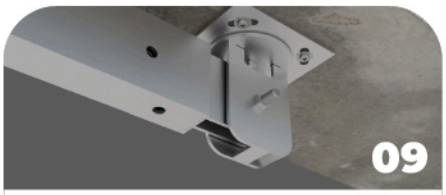


Illustration of steps 6 and 7.

⚠ The Teflon discs prevent friction between the two elements.

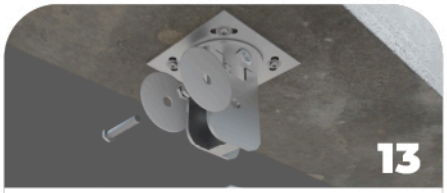


Tighten the M10 nut *(11)* using two 17 mm wrenches.

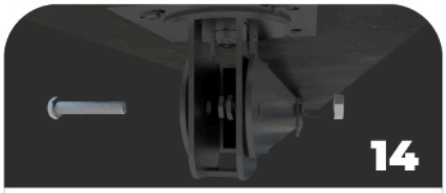
Then tighten the two other nuts *(10)* **inside the system** to clamp the two aluminum parts together.

Repeat the same process for the other side of the segment. Mark your points, drill, insert the wall plugs, and tap them in with a hammer.

Place the aluminum assembly and **insert the washers into the wood screws**, pan head 6x70 TORX, then insert the screws into the wall plugs*(22).*
Tighten the screws using a TORX T25 screwdriver.



Insert the segment by placing **the Ø70 mm Teflon discs** *(21)* **on each outer side of the aluminum connection parts** *(6,7,8,9)*, **then position the low-profile M10 nuts** *(10)* **on each inner side.**
CF : see image 7



Next, insert the M10x60 hex head bolt *(12)* **and the M10 nut** *(11)* on each side to secure the system.

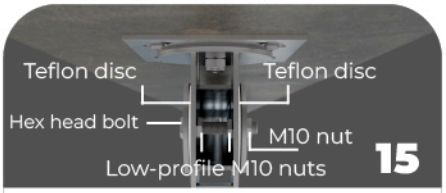
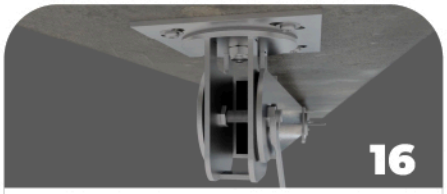
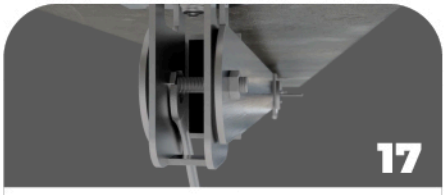


Illustration of steps 13 and 14.

⚠ The Teflon discs prevent friction between the two elements.

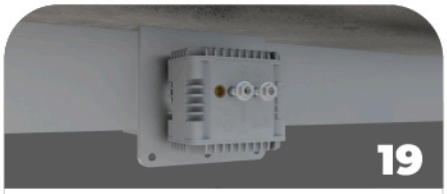


Tighten the M10 nut *(11)* using a 17 mm wrench.



Then tighten the two other nuts *(10)* **inside the system to clamp the two aluminum parts together.**

At the center of your segment, **position your DELTA R** on its mounting bracket.



Then insert the 2 M6 flange nuts *(20)*.

You can use the live view to slightly adjust the sensor angle.

Tighten the nuts using a 10 mm wrench.

Your sensor is installed.

Your sensor is now:

- ✓ **connected**
- ✓ **configured**
- ✓ **ready**
- ✓ **installed**

If you have not yet activated your LINKFEEL token, it's not too late!

Click on Connection, select LINKFEEL Activation and perform a network test.
You must be connected via Bluetooth to activate the token.
Once activated, the sensor will communicate within a few seconds to 4 hours depending on site conditions.
It is recommended to activate the token 24 hours before the mission.

Watch the video

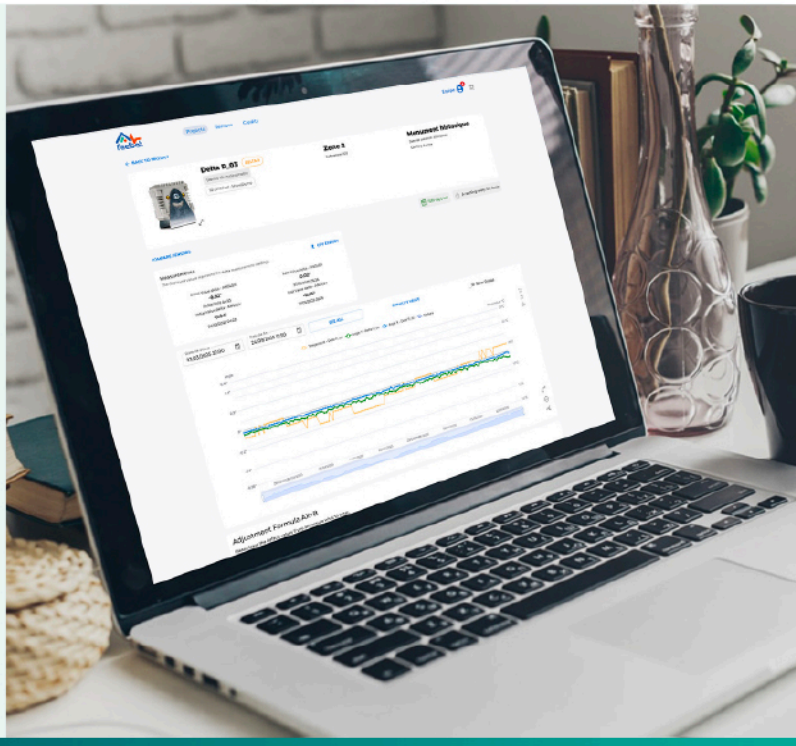
07 Web monitoring

Go further!

All the features available on the application are also accessible via the web, making it easier to analyze and compare charts.

- ✓ SIMPLIFIED PROJECT MANAGEMENT
- ✓ ZONE VISUALIZATION
- ✓ CURVE ANALYSIS
- ✓ PDF REPORT GENERATION

ACCESS THE WEB APPLICATION



Test Button

The test button allows you **to check Sigfox coverage** when the exact address or location of the sensors has not yet been defined, thus ensuring the proper functioning of the device.

Solutions to extend your network and ensure data recovery from your sensors

The FEELBOX

The FEELBOX is a 4G gateway that ensures data transmission from your FEELBAT sensors when Sigfox coverage is insufficient.
Wherever a 4G connection is available, your sensors can transmit their measurements.

The Repeater

The repeater extends the range of sensors in low Sigfox coverage areas.
It can relay up to 15 sensors (140 messages/day) and operates on battery power with a battery life of 1 to 7 years depending on use.
A 1-year subscription is included, renewable with a LINKFEEL token.

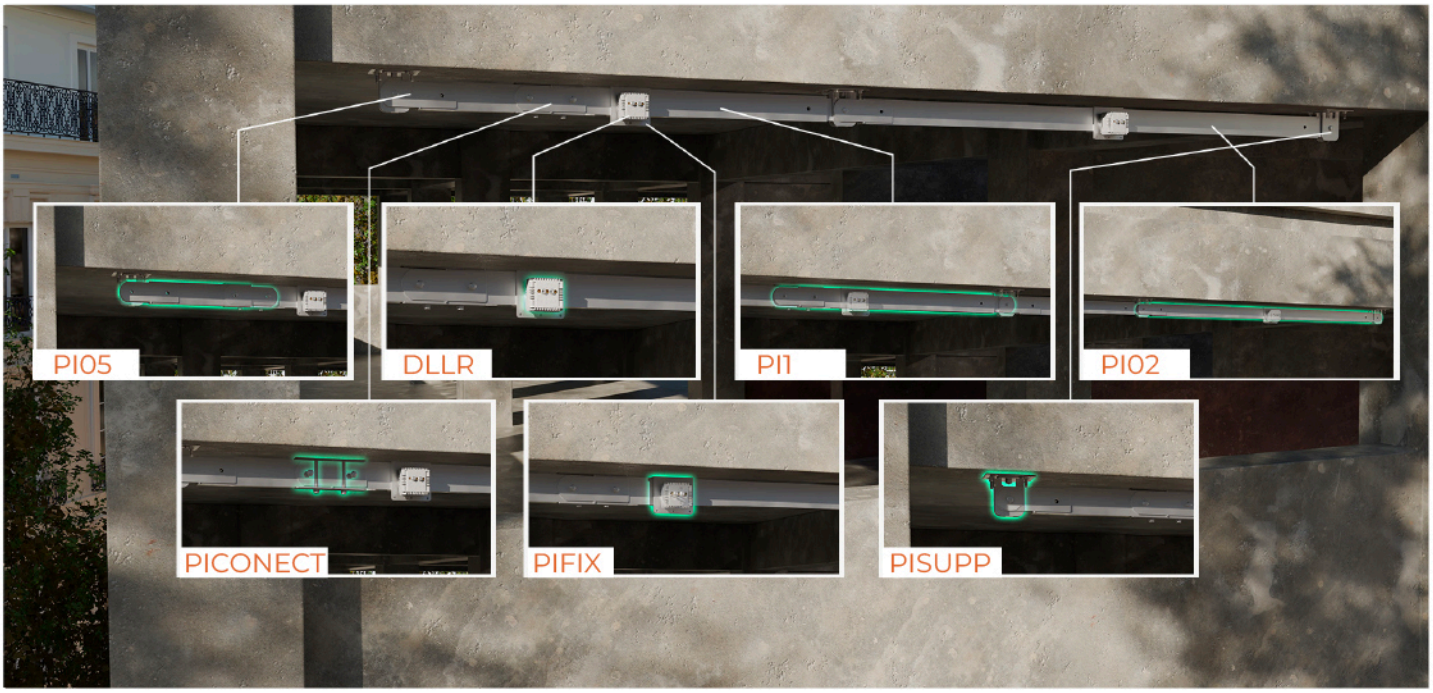
Sigfox Microstation

The Sigfox microstation extends Sigfox coverage indoors or in poorly covered areas.
It operates on 220 V with Ethernet or 3G/4G connection (optional).
An IP65 enclosure is recommended for outdoor use.
3G/4G USB dongles are available as an option (SIM card not included).

If you have any questions, please contact us:
SAV@feelbat.fr

08 Use case

09 Use case



10 Useful Information

FEELBAT products are covered by the legal warranty of conformity.
This warranty covers defects of conformity with respect to the sales contract that appear within two years following delivery of the product.
They are also covered by the warranty against hidden defects, which applies to defects not apparent at the time of sale and which render the product unfit for use or significantly reduce its use.
As such, the warranty does NOT apply in the following cases:

- The sensor has fallen
- The housing is damaged (impacts, cracks, marks)
- The sensor is used for non-compliant purposes
- The sensor has been immersed in water
- The sensor is stored or used outside the temperature range (-25 °C to +70 °C)
- The fixings restrict the linear operation of the sensor
- The sensor is used beyond its measurement range
- The sensor was purchased more than 2 years ago

Have a question?

Visit our FAQ: it gathers answers to the most frequently asked questions and guides you step by step in using our solutions.

Access the FAQ

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