

GUTTER AND FLAT ROOF · SOLAR · NB-IOT / LTE CAT-M

Gutter Sensor

Installation guide

ALARM FOR STANDING WATER

Detect blocked gutters early, before damage occurs: clamp the bracket to the gutter, align the solar gateway and lay the probe in the gutter. No drilling and no battery changes.

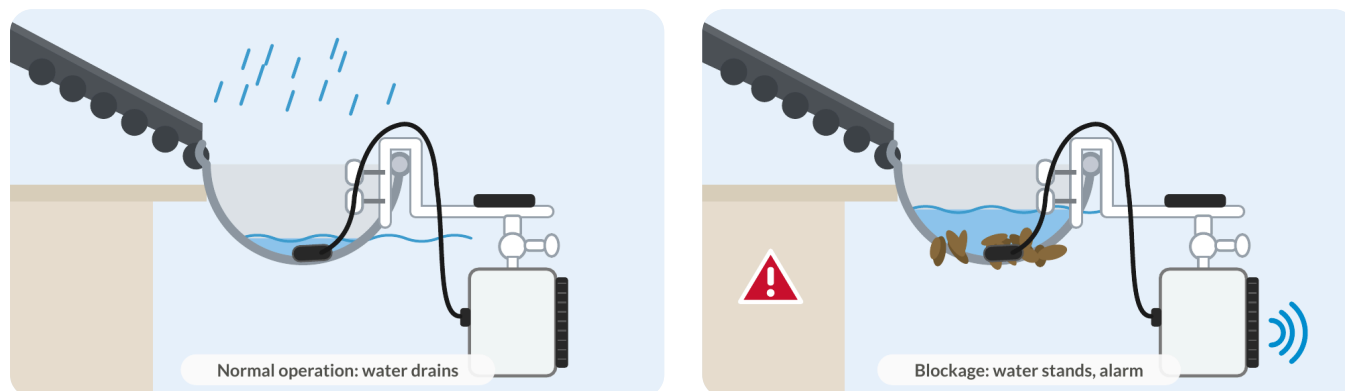


SECTION 1

Overview

The gutter sensor monitors roof gutters and drainage for standing water. It detects a blockage early, sends its readings to the monitoring portal over the mobile network and raises an alarm when a threshold is exceeded, before the building is damaged. It is solar-powered and retrofitted to the gutter, or to the roof drain on a flat roof (section 4).

How the gutter sensor works



Combining the rainfall reference with the moisture reading in the gutter gives reliable blockage detection: water that stands while no rain is falling is the signal. Temperature is recorded as well, as a frost warning.

Components



The sensor unit: clamp bracket, swivel mount, rainfall reference, solar gateway and sensor cable

- 1 Gateway with solar panel**
The electronics and the NB-IoT or LTE Cat-M transmitter in one weatherproof housing, powered by the solar panel on its face. The device ID is on the label.
- 2 Swivel mount**
A ball joint with a thumbscrew, so the panel can be turned through 360 degrees to face the light.
- 3 Clamp bracket**
A U-profile with two thumbscrews that clamps onto the front edge of the gutter. No drilling.
- 4 Rainfall reference**
A black sensor pad on the bracket that records current rainfall, so standing water can be told apart from rain. Keep it exposed and uncovered.
- 5 Sensor cable with probe**
The probe lies on the gutter bottom and detects standing water.

ABOUT THIS GUIDE

This guide covers fitting the sensor to a roof gutter, which is the standard installation. Section 4 describes the options for flat roofs with a central drain; agree those with Allbase before you install.

SECTION 2

Preparation

The sensor is clamp-mounted on the front edge of the gutter, without drilling and without touching the structure. The thumbscrews are tightened by hand. On a standard gutter, fitting typically takes 10 to 15 minutes once you are at the gutter.

Components and materials

Sensor system

- Gateway with solar panel
- Swivel mount (ball joint with thumbscrew)
- Clamp bracket with two thumbscrews
- Sensor cable with probe (connected to the gateway)

On site, bring along

- Safe access: ladder, scaffold or lifting platform
- Protective gloves (sharp sheet-metal edges)
- Hand scoop or brush and a bucket for leaves and debris
- Smartphone or camera for documentation
- Access to the monitoring portal

Check the installation location

- ☐ The gutter has a **stable, undamaged front edge** for the clamp bracket: no loose or corroded sheet metal and no loose joint.
- ☐ The solar panel will receive **as much daylight as possible**; avoid shading from trees, roof overhangs or parts of the building.
- ☐ There is **mobile reception** at the site. A normal phone signal at the gutter is a good first indication; doubtful sites can be checked with a demo device.
- ☐ The probe can lie where **water collects if there is a blockage**, for example near the downpipe inlet, and the cable reaches it without tension.
- ☐ The gateway **hangs freely on the outside** of the gutter and does not touch the facade, a window or the roof.
- ☐ The **owner's or operator's approval** is in place.

Safety

WORKING AT HEIGHT

Please do not use the gutter as a step or standing surface, and secure the ladder against slipping. Avoid installing in wet, frosty, stormy or thundery conditions. At greater heights use scaffolding or a lifting platform and the fall protection the site operator specifies.

EDGES, CABLE AND PANEL

Gutter sheet metal has sharp edges, so wear protective gloves. Do not kink, crush or pull the cable over sharp edges. Keep the solar panel and the rainfall reference clear: nothing should cover, stick to or damage them.



Clamp bracket with two thumbscrews on the front edge of the gutter

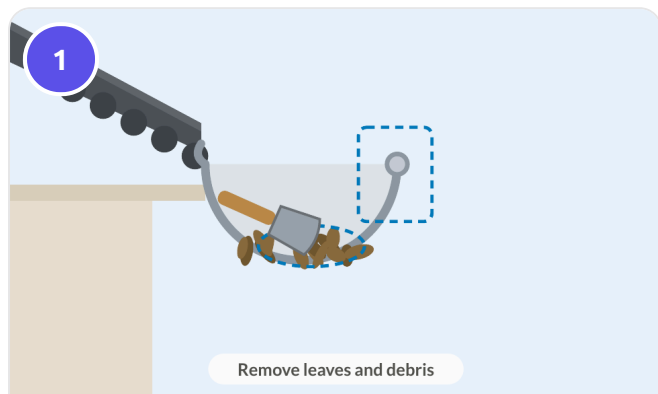


Gateway with solar panel on its swivel mount and clamp bracket

SECTION 3

Installation on the roof gutter

From the clamp bracket to aligning the solar panel: steps 1 to 4.



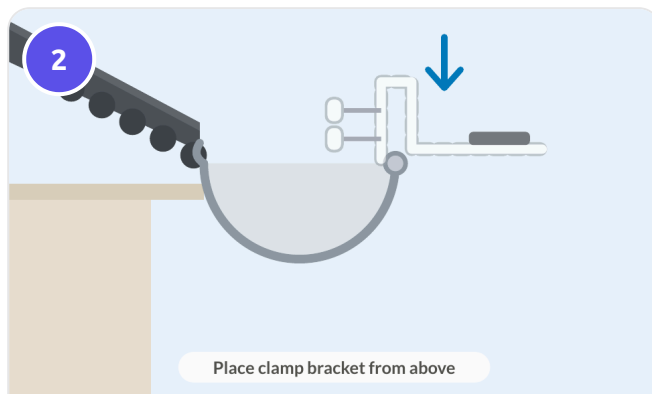
1

Remove leaves and debris

Prepare the gutter

Remove leaves, dirt and deposits at the clamping point and where the probe will lie. Check the front edge of the gutter for damage.

→ Clamping point clean, gutter bottom clear.



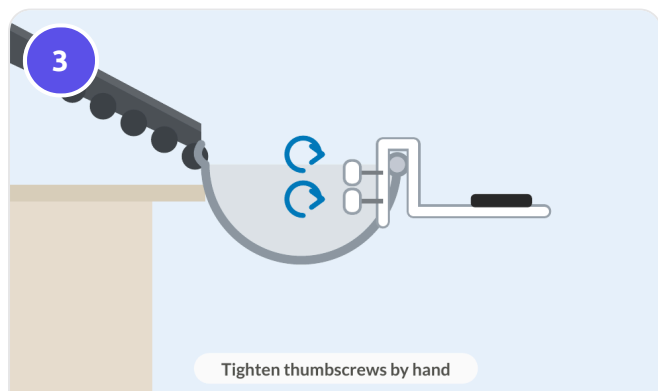
2

Place clamp bracket from above

Place the clamp bracket

Loosen both thumbscrews far enough for the clamp bracket to fit over the front edge of the gutter. Place the U-profile on the front edge from above until it is fully seated.

→ The thumbscrews point into the gutter.

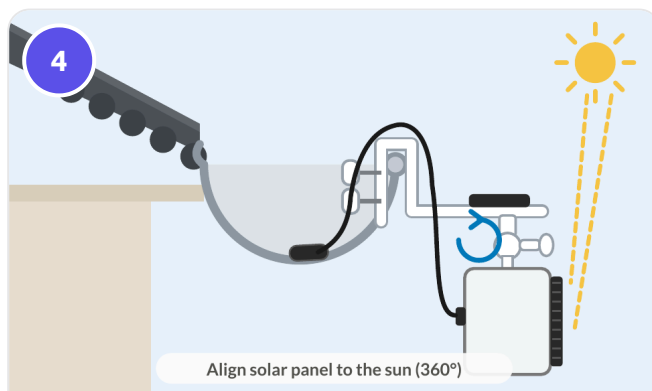


3

Tighten thumbscrews by hand

Tighten the thumbscrews

Tighten both thumbscrews evenly by hand until the clamp bracket sits firmly and can no longer be shifted or turned. Do not overtighten; the gutter metal must not deform.



4

Align solar panel to the sun (360°)

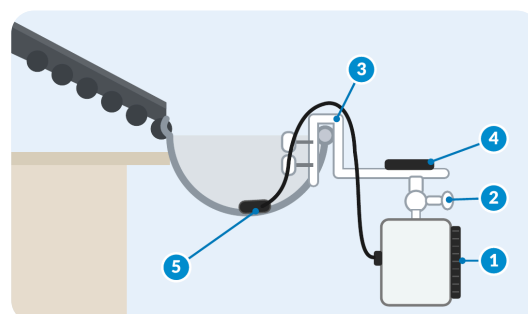
Align the solar panel

Loosen the thumbscrew on the joint, turn the gateway so that the solar panel faces the light (adjustable through 360 degrees) and tighten the thumbscrew again.

→ The gateway hangs freely on the outside of the gutter.

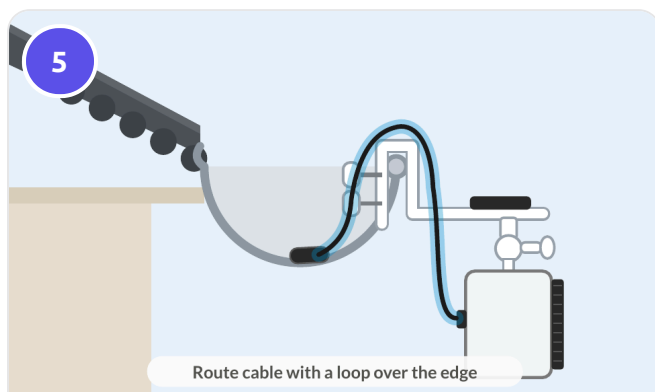
TIP

The sun moves. Align the panel so that it receives light for as much of the day as possible and does not sit in the shade of roof overhangs, trees or neighbouring buildings. The panel charges from ordinary daylight, not only direct sun.



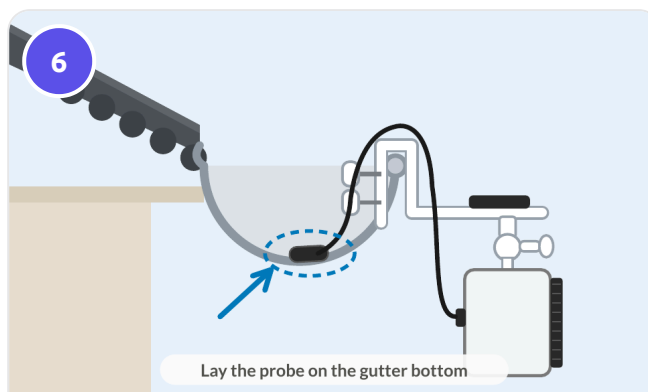
SECTION 3, CONTINUED

Installation on the roof gutter



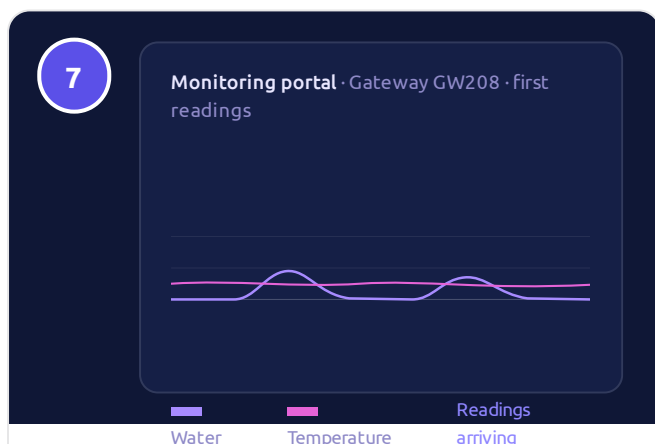
Route the cable

Route the sensor cable over the front edge of the gutter into the gutter. Lay it with a loose loop: no tension, no sharp kinks and not pulled over sharp sheet-metal edges.



Place the probe

Lay the probe on the gutter bottom at the intended spot, where water collects if there is a blockage, for example near the downpipe inlet. It must not obstruct the water flow.



Check and document

Check the seating of the clamp bracket and joint, the cable routing and that the rainfall reference is uncovered. Check the first readings in the monitoring portal. Record a photo, the device ID and the position in the installation record (section 6).



What it looks like in the gutter

Probe on the gutter bottom, cable with a loop over the front edge, clamp bracket with two thumbscrews.

IMPORTANT

The cable and probe must not obstruct the water flow and must not protrude into the downpipe. The solar panel and the black rainfall reference on the bracket need to stay **free, clean and uncovered**.

IF NO READINGS ARRIVE

If nothing appears in the monitoring portal after installation, first check the alignment of the solar panel, the seating of the clamp bracket and the cable routing. If readings still do not arrive, contact Allbase and we will diagnose the unit remotely.

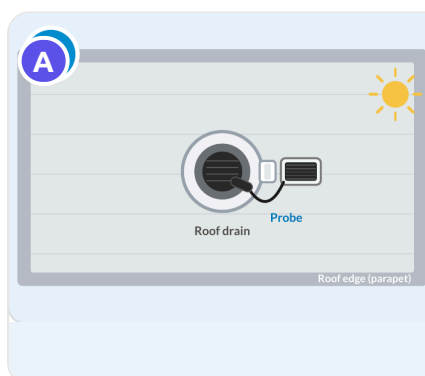
SECTION 4

Flat roof: alternative mounting methods

The brackets are universal. If the drain of a flat roof is in the middle and there is no gutter, three mounting methods are available. In every case the probe lies at the roof drain, where water collects if there is a blockage.

CONFIRM BEFORE INSTALLATION

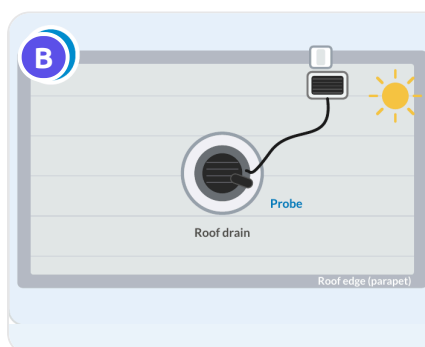
These flat-roof methods have not yet been documented on a live installation. Please agree the mounting details and cable routing with Allbase before fitting.


Clamp at the roof drain

Suitable if: the drain has a stable, vertical rim (for example a gully top, extension ring or leaf guard).

1. Clear leaves and dirt from the drain rim and its surroundings.
2. Place the clamp bracket on the rim, tighten the thumbscrews by hand and align the gateway (steps 2 to 4).
3. Lay the probe at the drain inlet and route the cable with a loop (steps 5 and 6).

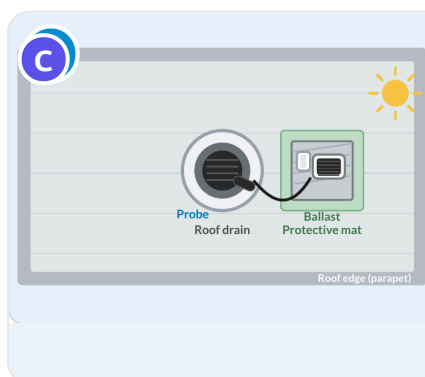
Note: Do not restrict the drain opening and do not damage the roof membrane or sealing collar. The rim must safely take the clamping force.


Clamp at the roof edge (parapet)

Suitable if: the drain is not too far from the roof edge and the sensor cable reaches it.

1. Clean the parapet or roof-edge upstand and check the clamping point.
2. Tighten the clamp bracket on the roof edge, then align the gateway and panel.
3. Route the cable flat and protected to the drain, lay the probe at the inlet and secure the cable against wind and tripping.

Note: Check the cable length and distance beforehand: no tension and no sharp edges. Fall protection applies at the roof edge.


Free-standing with ballast

Suitable if: clamping at the drain or the roof edge is not possible.

1. Clean the base area and lay a protective layer (building protection mat) on the membrane.
2. Place a ballast body of sufficient weight, for example a concrete slab, fix the bracket to it firmly and align the gateway.
3. Lay the probe at the drain, route the cable flat and secure it.

Note: Do not drill or glue. Have the weight and stability against wind suction and sliding determined by a competent person, and keep within the roof load.

FOR ALL FLAT-ROOF OPTIONS

- Never penetrate the roof membrane; bracket, cable and probe must not damage it.
- The drain must stay clear: bracket, ballast and cable must not obstruct the water flow.
- Enter the flat roof only with approval and fall protection, and secure the edge areas.
- Align the solar panel to the light and watch for shading, snow and dirt.

SECTION 5

Operation, maintenance and removal

Operation and alarm

- The system is solar-powered and maintenance-free.
- Readings and alarms appear in the monitoring portal and go out by email or SMS, or into a building management system where that has been set up.
- On an alarm: inspect the gutter and downpipe on site, clear the blockage, then watch the trend of the readings return to normal.

Visual check

- During regular gutter cleaning, check the clamp bracket, cable, probe and solar panel.
- Carefully clean the solar panel if it is dirty.
- After storms or a hard frost, check the seating and the cable routing.

Removal

- Take the probe and cable out of the gutter.
- Loosen the thumbscrews of the clamp bracket and lift the bracket with the gateway upwards.
- Clean the device and store it dry.

SECTION 6

Installation record

Project / site _____

Date / time _____

Building / gutter section _____

Installer _____

Device ID _____

Panel orientation _____

Gutter material / profile _____

Probe position _____

Mounting method: ☐ Roof gutter ☐ Flat roof A (drain) ☐ Flat roof B (roof edge) ☐ Flat roof C (ballast)

☐ Gutter cleaned

☐ Clamp bracket firm, thumbscrews tightened

☐ Joint tightened, panel aligned to the light

☐ Cable routed with a loop, no tension

☐ Probe placed on the gutter bottom

☐ Rainfall reference free and clean

☐ Readings checked in the monitoring portal

☐ Photos (overview and detail) taken

Remarks:

Questions about the installation?

Allbase Group Ltd, Cutter Mill, Tileyard North, Wakefield WF1 5FY
+44 (0) 113 868 0097 · john@allbase.co.uk · allbase.co.uk