

R2 Gauge – Wireless crackmeter with large-range external sensor



The R2 gauge is a wireless crackmeter designed to measure large-amplitude crack movements, **up to 100 mm**.

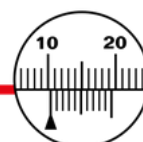
Its external linear sensor is perfectly suited to structures subject to wide variations in crack opening.

The housing contains all the components required to collect and transmit the data. Data transmission is fully integrated: no additional accessory is required.

In addition, a **Monitoring+ mode provides temporary enhanced monitoring**.

The R2 wireless crackmeter offers the following advantages:

- **External linear sensor – 100 mm range:** ideal for wide cracks or large deformations on concrete, masonry or metal structures.
- **Built-in humidity and temperature sensors** to correlate movements with ambient conditions.
- Web and mobile application with unrestricted access, to view the data remotely and in real time.
- **One-year subscription included** (activated on first commissioning).
- **A Monitoring+ mode that can be activated remotely** for occasional needs requiring more intensive monitoring, with a **measurement possible every 2 minutes**.
- Fixings supplied for solid or hollow substrates.
- Gauge reusable once the data has been archived.
- Multi-operator connectivity ensuring reliable communication over the best-performing local network.
- **Battery life of up to 8 years**, depending on the measurement and transmission frequency selected.
- Remote configuration via the application to adjust the settings to the monitoring requirements.



The tool, the measurement, the know-how and the service too

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Technical specifications

Linear sensor	Resolution: 0.01 mm, Measuring range: 100 mm, Accuracy: $\pm 0.1\%$ of the measuring range
Temperature sensor	Resolution: 0.1°C, Measuring range: -40°C to 125°C, Accuracy: $\pm 0.2^\circ\text{C}$
Humidity sensor	Resolution: 1% RH, Measuring range: 0-100% RH, Accuracy: $\pm 2\%$ RH
Measurement frequency	in standard mode: 1h, 2h, 4h, 6h, 8h, 12h, 24h in "Monitoring+" mode (limited in time): 2 min, 5 min, 10 min, 20 min, 30 min
Transmission frequency	in standard mode: twice a day, daily, every 2 days, every 3 days, weekly in "Monitoring+" mode: hourly, every 2h, every 3h, every 4h
Battery life	Estimated between 2 and 8 years depending on the measurement and transmission frequency settings
Battery	SAFT 3.6V 13Ah battery included
Operating temperature	Between -30°C and +70°C
Network coverage	Multi-operator LTE-M / NB-IoT communication module. Industrial SIM card included.
Frequency bands	B1, B3, B8, B20 and B28
RF transmission power	+21 dBm
Mounting	Mounting on solid or hollow substrates with the bracket and screws supplied
Dimensions	Housing: 84 x 84 x 56 mm Sensor (retracted): 250 mm x Ø20 mm
Housing material	Polycarbonate with UV protection
Ingress protection	Housing: IP66, Sensor: IP65
Weight	350 g with battery
Warranty	2 years

Warning

The Saugnac R2 gauge is **not designed or approved for critical applications or for an alarm system intended to save lives.**

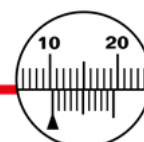
The Saugnac R2 gauge is a wireless measuring instrument that makes data collection easier, but it does not provide the prerequisites (instant alerts, guaranteed reliability of the network connection at all times) required for use as an alarm system where there is a risk of personal injury or damage to property.



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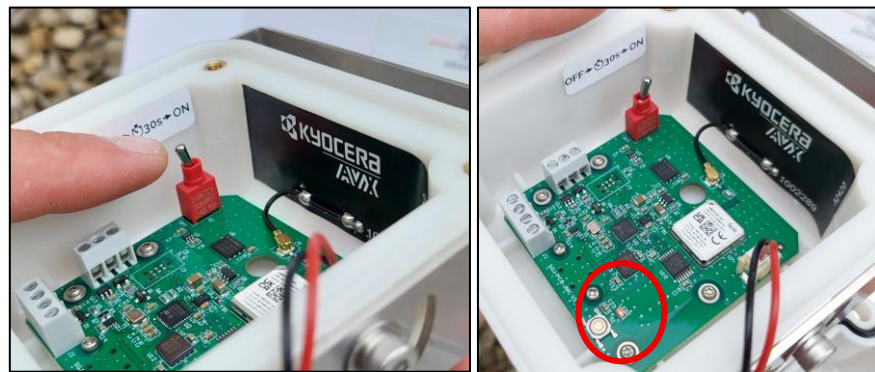
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Installing the large-range wireless crackmeter

The R2 gauge is installed in 4 steps:

1. **Add the R2 gauge in the application:** by scanning the QR code on the gauge or by entering the ID printed beneath the QR code.
2. **Set the activation parameters:** time of the first measurement, measurement frequency, transmission frequency.
3. **Switch the gauge on** by operating the switch inside the housing.

The gauge powers up: an indicator light shows the configuration status. Once initialised, the gauge goes into standby.



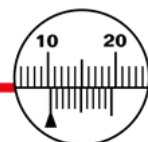
4. **Fix the gauge and the sensor to the substrate** using the screws supplied



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Mounting the R2 wireless crackmeter

On a solid substrate

- Equipment required **not supplied**: drill, Ø8 mm bit, 5 mm Allen key + 3 mm Allen key to open the housing and switch on the R2 gauge.
- Fixings **supplied** for solid substrates: two brass anchors + mounting bracket with 2 M6 x 35 mm screws

On a hollow substrate (can also be used on a solid substrate)

- Equipment required **not supplied**: drill, Ø13 mm bit, 5 mm Allen key + 3 mm Allen key to open the housing and switch on the R2 gauge.
- Fixings **supplied** for hollow substrates: two EPDM anchors + mounting bracket with 2 M6 x 35 mm screws

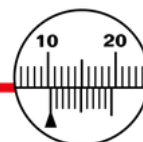
To install the gauge, first fix the housing and then the sensor. Mounting is straightforward with the fixings supplied. Every operation is described step by step in the detailed instruction manual.



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Network coverage of the R2 gauge

The remote crack monitor benefits from a **multi-operator** subscription ensuring optimal coverage throughout Europe. As soon as it is switched on, the gauge automatically selects the network offering the best signal quality, guaranteeing reliable and continuous data transmission, even in the most remote areas.

It uses the **LTE-M and NB-IoT protocols, designed specifically for industrial connected devices**. These technologies, based on the operators' 4G infrastructure, offer **excellent connection stability, low power consumption and long range**, ensuring that the gauge operates reliably over the long term, with no interruption in communication.

The subscription included with the wireless crackmeter is valid for one year. **The subscription only starts when the gauge is activated**. Until the gauge is commissioned, the subscription does not take effect.

Battery life of the R2 wireless crackmeter

Battery life depends on the settings of the R2 gauge. The higher the measurement and transmission frequency, the higher the battery consumption.

Based on the tests carried out, **the battery life of the R2 gauge is estimated at between 2 years and more than 8 years** under normal conditions of use. Battery life figures are estimates. They in no way constitute a commitment on the part of Saugnac. Battery life depends on several parameters beyond our control: signal quality, transmission power and weather conditions.

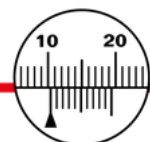
An alert is sent at the end of battery life to warn that the battery needs replacing. The battery can easily be replaced by following the instructions in the manual.



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Monitoring+ mode

To meet occasional needs for more intensive monitoring (e.g. unusual events, construction work, structural alert), a "Monitoring+" mode can be activated remotely via the application.

This mode increases the measurement and transmission frequency, with the following settings:

- measurement frequency: every 2, 5, 10, 20 or 30 minutes
- transmission frequency: every 1, 2, 3 or 4 hours

This mode is temporary, as it consumes more energy and data.

The maximum operating time is automatically determined by the frequency selected. Once this time has elapsed, if the user has not deactivated the "Monitoring+" mode, the device automatically returns to standard mode in order to preserve battery life and limit the volume of data exchanged. This mode can be activated several times for a series of measurements, up to a limit of 12,000 measurements.

Measurement frequency	Max. possible duration
2 min	4 days
5 min	10 days
10 min	20 days
20 min	40 days
30 min	60 days

Weather resistance

The design of the housing achieves an IP66 protection rating. The sensor offers an IP65 protection rating.

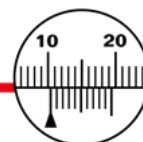
The choice of materials and electronic components, together with the tests carried out, ensures operation between -30°C and +70°C.

Remote measurement monitoring with the Saugnac application

All the data collected by the 3 sensors is available on the Saugnac application <https://saugnac.app/> from a PC or smartphone. The Saugnac application, supplied with the R2 gauge, remains accessible even after the subscription expires, so the data can be viewed and exported at any time.

To discover the application, log in with the demo account:

- user: saugnac.en@gmail.com
- password: demo



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