

## E1 Gauge – Digital crackmeter



The E1 gauge is recommended for monitoring cracks on 1 axis (gap) or 2 axes (gap + shear).

It provides reliable measurements with a resolution of 0.01 mm and repeatability of +/- 0.01 mm. **Its patented fastening system** allows the E1 gauge to be positioned in the plates and easily removed in any configuration.

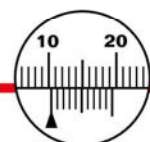
The G1 gauge is recommended for monitoring parallel-lip cracks. It provides reliable measurements with 0.1 mm resolution.

An application, available at <https://saugnac.app>, is supplied to read and manage the measurements, particularly for 2-axis tracking.

The E1 digital crackmeter offers the following advantages:

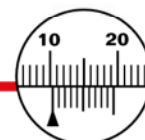
- **Digital reading** of the measurement
- Measurement resolution to **0.01 mm**
- Can track movement in **1 or 2 axes**
- **Removable gauge** with carrying case
- Small, transparent positioning plates
- Unique identification of plates by QR code and measurement tracking in the Saugnac application (more information at <https://saugnac.app/help>)
- Can be used to **monitor angled cracks** or cracks with a large gap (up to 35mm)

The E1 gauge is designed, produced and assembled in France (excluding electronics).



It is supplied with :

- a **top-of-the-range case** for easy storage and transport
- a **carbon standard** with a very low coefficient of expansion ( $3,5 \times 10^{-6}$ ) for zeroing before measurement. The standard is measured to one hundredth, with a value indicated on the body of the standard so that values can be compared if the standard is changed.
- a **1-axis installation jig**
- a **2-axis installation jig**
- **5 pairs of P1E1 plates** with impact anchors for tracking 5 cracks on 1 axis
- detailed instructions



### Technical data

Resolution	0,01 mm
Repeatability	±0,01 mm
Dimensions	E1 gauge: 220 mm (length) x 60 mm (width) x 30 mm (height) Plates: 33 mm (diameter without tab) x 9 mm (thickness)
Plate material	PA12
Material mounting pin	Hard anodised aluminium
Measurement range	Approx. 25 mm (variation possible between maximum and minimum measurement)
Weight	210 g

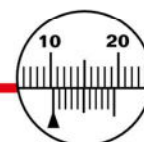
### Fixing P1E1 (1 axis) or P2E1 (2 axes) plates

- **Mechanical fastening:** P1E1 and P2E2 plates are supplied with impact anchors for long-term fastening. The plates are manufactured with a  $\varnothing$  4mm hole in the centre: these holes facilitate mechanical fastening using impact anchors. The 4 mm diameter makes it easy to drill a hole in any surface..



- **By gluing:** It is also possible to fix by gluing with fast-curing epoxy adhesive.

This fast-setting adhesive can be fixed in 4 minutes, but as the final setting time is 2 hours, **it is necessary to wait for this time before taking the first measurement to ensure that the plates are perfectly attached to the substrate.** As the resolution of the E1 gauge is one hundredth of a mm (0.01), the repeatability of the measurement to one hundredth depends on the quality of the fixing.



**Fixing at an angle or in a plane with flush fitting**

The patented mounting system allows installation configurations with a high level of flushness (up to 35 mm) or in corners.

Example of corner mounting (corner mounting possible, including 2-axis tracking):



Example of fastening with a 2.5 cm flush:



## 2-axis crack monitoring (gap + shear)

The E1 gauge offers the advantage of **2-axis crack monitoring**, i.e. both crack spreading and shearing.

To monitor a crack or movement of this type, you need to use the E1 gauge combined with P2E1 plates for 2-axis monitoring and the Saugnac.app application to perform the calculations.

The P2E1 plates are similar in operation to the P1E1 plates (identical fixing and positioning) but are supplied in triplicate (3 plates). They are sold separately in boxes of 5 triplets and can then be added to the carrying case.

The plates are fixed using the 2-axis template supplied, indicating 3 fixing marks A, B and C. The measurements are then taken and entered into the application.



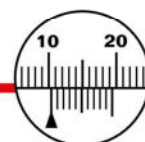
The Saugnac.app application can be used to project these values into an orthonormal X,Y reference frame and deduce the movement on these 2 axes...

## Weathering / UV resistance

Only the plates remain on the stand. The E1 gauge is stored in the protective case for optimum storage and transport.

The P1E1 / P2E2 plates are injected in a specific Nylon PA12 which has good shock resistance, UV and rain resistance and good stability at high temperatures.

This material is commonly used for parts subject to severe weather conditions, such as car headlights, watch windows, boat parts, spectacle frames, control panels, etc.



## Monitoring measurements with the Sagnac application

The Sagnac web application, which is completely free with no restrictions, is available on PC or smartphone from [www.sagnac.app](http://www.sagnac.app). It allows you to :

- save measurements and photos in your space
- retrieve **temperature and humidity levels** using geolocation
- **calculate variations on 2 axes** (X and Y)
- work together on the same gauge
- manage **alert thresholds**
- classify gauges by location and locate them on a map
- download **data in Excel format**
- automatically display graphs
- **share data** with others without an account
- access the application from your **PC** or **smartphone**
- add measurements without a connection in offline mode

