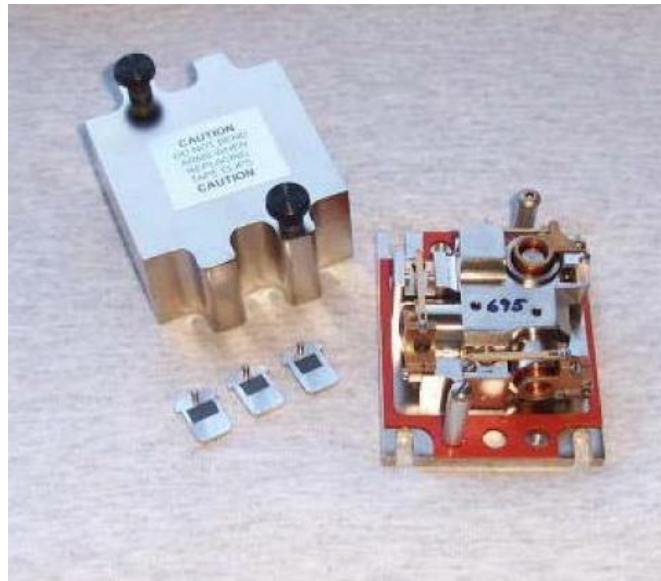


PRA-103 Peak Recording Accelerograph



- **No external power required**
- **Compact, rugged construction** designed for long-term reliability
- **Tri-axial measurement** (X, Y, and Z axes)
- **Multiple full-scale range options:** ± 0.5 g, ± 1 g, ± 2 g, or ± 5 g
- **Available in standard or high-temperature variants**
- **Qualified for nuclear power applications (IEEE-344)**
- **High-visibility, easy-to-read output**

The PRA-103 is designed to detect and record peak amplitudes of low-frequency acceleration generated by seismic events, strong winds, blasting, pile driving, and similar vibration sources. It provides a permanent, tamper-resistant mechanical record of peak acceleration using magnetic tape clips.

Ideal for use as a backup or an alternative technology to digital accelerograph systems, the sensor also enables independent, non-powered acceleration monitoring on nuclear power plants, drilling rigs, dams, bridges, buildings, offshore platforms, and other critical structures. It is also commonly deployed to monitor shipping-induced accelerations when transporting sensitive equipment.

The device records peak acceleration by selectively erasing pre-recorded reference lines on magnetic tape clips. Each axis uses a dedicated, non-contact permanent stylus, providing a full-scale erasure of ± 0.100 in (2.54 mm). Peak acceleration is determined by measuring the erasure displacement from the zero-baseline using a microscope or calibrated magnifying viewer.

Magnetic tape clips are quick to remove and replace, and each sensor is supplied with three tape clips as standard. Reorderable accessories include tape clips, tape strips, magnifiers, and developer and fixative solutions.

Application

Peak-acceleration recording for nuclear power plants, drilling rigs, dams, bridges, offshore structures, and other critical infrastructure.

Configuration

Three mutually orthogonal axes (X, Y, and Z)

Full-Scale Range Options

- ± 0.5 g
- ± 1 g
- ± 2 g
- ± 5 g

Natural Frequency

- 0–11 Hz (± 0.5 g version)
- 0–16 Hz (± 1 g version)
- 0–23 Hz (± 2 g version)
- 0–30 Hz (± 5 g version)
-

Accuracy & Resolution

$\pm 5\%$ of full scale

Sensor Element

- Type: Short-period, torsional
- Damping: 0.5 of critical; electromagnetic
- Recording Medium: Magnetic tape

Power Required

None

Enclosure Dimensions

57.1 × 82.5 × 101.6 mm
(2.25" × 3.25" × 4")

Weight

0.454 kg (16 oz)

Temperature Range

- Standard: -29° to $+65^{\circ}\text{C}$ (-20° to $+150^{\circ}\text{F}$)
- High Temperature: -29° to $+149^{\circ}\text{C}$ (-20° to $+300^{\circ}\text{F}$)

**Accessories
Developer Kit**

Case containing:

- 2-oz bottle of developer
- 2-oz bottle of fixative
- Tweezers
- 7× magnifier
-

Magnifier

Magnifier fitted with a millimetre-calibrated reticle for measuring erasure amplitudes on developed clips.

Magnetic Tape Clip Sets

Replacement clip sets (3 clips per set) with pre-recorded magnetic tape (standard or high-temperature options).

Pre-Recorded Tape Strips

18-inch (457 mm) × 1/4-inch (6.4 mm) pre-recorded tape strips (standard or high-temperature).

Developer Solution

KD-30; 8-oz can

Fixative Solution

KF-38; 2-oz jar

Ordering Information

Please specify the required:

- Full-scale range
- Temperature range (Standard or High Temperature)

Ordering Information

Part Number — Description

- **85-421023-01** – PRA-103, standard temperature, ½ g (*special order, long lead time*)
- **85-421023-02** – PRA-103, standard temperature, 1 g
- **85-421023-03** – PRA-103, standard temperature, 2 g
- **85-421023-04** – PRA-103, standard temperature, 5 g
- **85-421023-05** – PRA-103, high temperature, ½ g (*special order, long lead time*)
- **85-421023-06** – PRA-103, high temperature, 1 g
- **85-421023-07** – PRA-103, high temperature, 2 g
- **85-421023-08** – PRA-103, high temperature, 5 g

Accessories

- **85-421024-00** – Developer kit
- **85-421025-01** – Tape clips, set of 3, standard temperature
- **85-421025-02** – Tape clips, set of 3, high temperature
- **85-421025-03** – Tape clips, set of 3, no tape
- **85-421025-04** – Tape clips, set of 3, standard temperature, 5 g
- **85-421025-05** – Tape clips, set of 3, high temperature, 5 g
- **85-421026-00** – Magnetic tape, 18" strip, standard temperature
- **85-421026-02** – Magnetic tape, 18" strip, high temperature
- **85-421027-00** – Developer solution KD-30, 8-oz bottle
- **85-421027-00** – Developer solution KD-30, 8-oz custom can
- **70-421531-01** – Developer solution KD-30, 2-oz jar
- **85-421028-00** – Fixative solution KF-38, 2-oz jar
- **85-421029-00** – PRA-103 replacement gasket
- **95-420009-00** – PRA-103 manual

If you require assistance with any questions, please contact your local Sensonics representative.

