



# Strap-On Pipe Radiation Monitor

## Model Series PEMO-7LE

### Application

The **PEMO-7LE** is a sensitive and versatile version of the broadly used, TBM-emergency response radiation detector for Water monitoring. It may be used to monitor water in pipes or effluent streams.

### Description

The **PEMO-7LE** Pipe Monitor assures accurate detection and quick alarm in case of waterborne radioactivity contamination flowing thru one or more pipes.

A constant check with alarm and data record on optionally included computer.

It provides integrated exposure information and can provide hard copy via external printer.

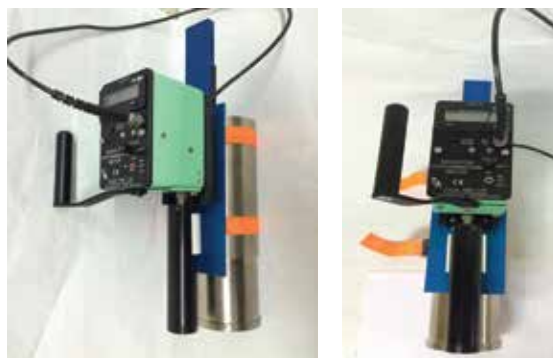
It is a complete system but may be expanded per need.

The **PEMO-7LE** uses a standard NaI(Tl) Detector in T/A's unique Strap-On Style probe to continuously measure any Gamma emitting Radioactive water or other liquids.

- The water stream is under constant surveillance via a scintillation detector.
- The unit is completely self-contained.
- No down time

### Optional

- Data archive and retrieval.
- Software package for integration into facility computer and to link multiple detectors.



## Features

- Gamma Detection in Water Pipes
- Portable
- Quick Installation with Adjustable Straps
- Installs Anytime Anywhere
- No Penetration, No Downtime
- Sensitivity Independent of Flow Rate
- Battery Operated
- Read Out mR/hr or cps
- Real Time Alarm
- Rate and Integrated Exposure
- Local Read-Out
- **Optional:** USB Port
- Works Well with Standard Scada Data SYSTEMS



## TECHNICAL ASSOCIATES OVERHOFF TECHNOLOGY

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### Specifications

#### Sensitivity

- With a 1" x 1" crystal, without the optional shielding: detects 80 $\mu$ R/hr above background in 3 sec at 99% confidence level.
- Sensitivity and response time depend on user's requirements and physical circumstances such as pipe diameter, wall thickness and ambient background radiation level and energy (KeV) of major nuclides of interest.
- For Example: A system with 3" x 3" NaI detector and 2" of lead shielding has a limit of sensitivity better than 1 X 10<sup>-7</sup>  $\mu$ Ci/cc of Co-60 in 18" diameter pipe with 0.02mR/h background in one hour measurement.

#### Detectors

##### Model PGS-3

1" x 1" NaI (TI) crystal scintillation detector probe, sensitive to all Gamma above 100 KeV depending on wall thickness of the pipe.

Mount Plate:

Blue Aluminum

Mount Strap:

Orange Adjustable Strapping

#### Electronics Model TBM-3D Programmable Scaler with RS-232 /485

Alarm: Settable

2000 Hz beeper, red LED

Response Time:

Settable 0.1 to 100 seconds

Readout:

6 digit LCD for each detector showing: rate and total

Power:

6 AA cells. **Optional** AC adapter  
110 VAC to 240 VAC Input 9V DC Output, 0.6 amps

Flow Rate:

Measurement is independent of flowrate

Case:

Sturdy, gasket lined aluminum case

Cable:

36" BNC to BNC Cable

BNC Adapter:

Right Angle

Serial Cable:

16 feet Rj-11 to DB-9 (F)

Optional:

USB Adapter Model TU-S9

#### Weight and Dimensions

Dimensions Electronics:

3" W x 4" H x 5.3"

Dimensions Detector:

1.5" dia x 8" long

Detector Assembly Weight:

4 lbs. for unshielded system

Shipping Weight:

8 lbs. (1 detector system)

#### Optional:

Smart Switch:

B+B Electronics 4 Port  
232-MSS2

On-Site:

Onsite set-up with users  
SCADA System

PGS-3L\*:

2" x 2" Na(Tl) Crystal probe

Shielding:

0.25" to 3" low-activity-lead  
around detector

Power:

AC adapter

Data:

Data Archive and Retrieval

*\*Call factory for more options*



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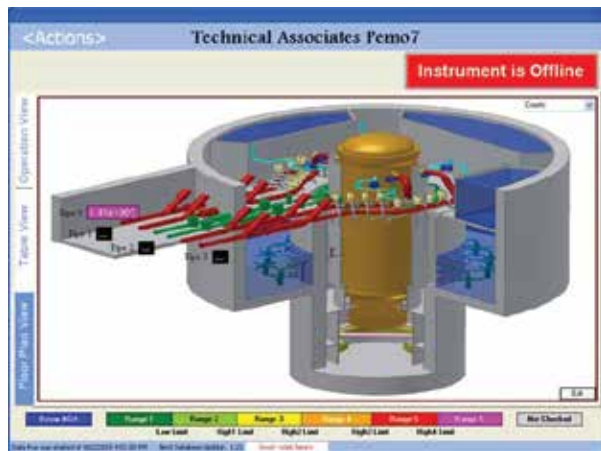
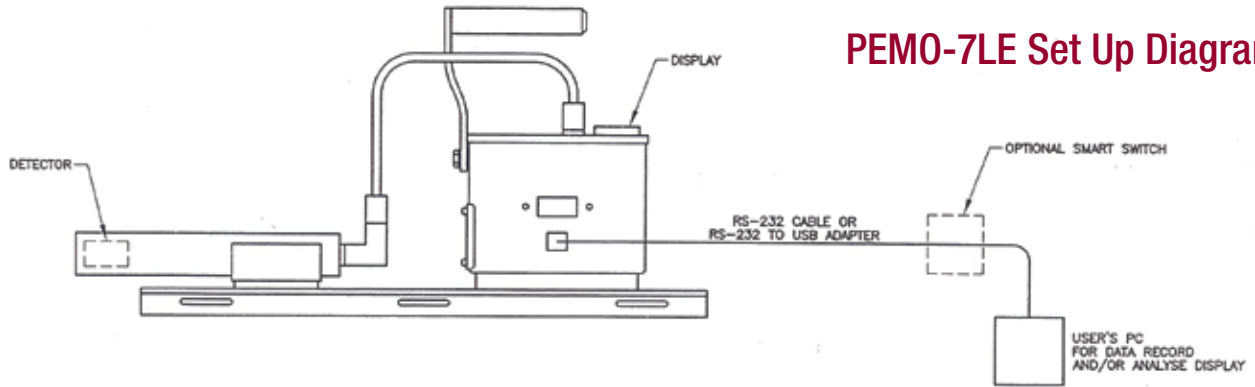


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This screenshot displays the 'Table View' of the software. It shows a data table with the following columns: Measurable Name, EU/s, Units, Counts Per Second, EU/s (2 min Average), EU/s (30 min Average), EU/s (1 hr Average), EU/s (4 hr Average), Limit Level, and Loss Of Signal. The table lists various pipe-related measurements such as 'Pipe 0 Counts', 'Pipe 0 Count Rate', 'Pipe 0 Dose Rate', etc., for pipes 0 through 3. The 'Instrument is Offline' status is visible at the top.

Optional Software Screen Shots

This screenshot shows a summary table of the monitor's status for four pipes. The status for Pipe 0 is 'OK', while Pipes 1, 2, and 3 are 'Offline'. The data for Pipe 0 is as follows:

Location	Pipe.0	Pipe.1	Pipe.2	Pipe.3
States	OK	Offline	Offline	Offline
Total Counts	1.45e+007	...	...	...
Counts Per Second	6.11	...	...	...
Dose Rate	6.11 mR/h	...	...	...
Dose	1.45e+007 mR	...	...	...



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