

1040-9

Portable Continuous Air Monitor

The Code of Federal Regulations requires assurance that radio-active materials within gaseous effluents do not exceed maximum permissible concentrations (MPC) as set forth in the United States Nuclear Regulatory Commission (USNRC) radiation protection standards. This simply means that any effluent that could possibly contain radioactivity must be monitored. Besides the legal implications, sound industrial hygiene practices require that personnel be protected against the possibility of exposure to excessive radioactivity from any source.

Off-line gas monitors are frequently used in conjunction with particulate monitors. This is particularly the case with a stack or duct where effluent is released into the environment. Used in this manner, the particulate monitor serves as a pre-filter for the gaseous monitor and also as a monitor of airborne radioactive particulates. Where an off-line gas monitor is used independently, without the aid of a particulate monitor, a separate filter assembly is installed to prevent contaminated particulate buildup inside the sensitive volume. The off-line effluent monitor incorporates its own pumping system to insure a positive displacement of the effluents being monitored.

Off-line effluent monitoring is normally utilized where optimum geometry is desired to gain maximum sensitivity. Scintillation crystal detectors are used because of their sensitivity and reliability. The 1040-9 provides all of the functions of the 1040-1 Off-Line Gaseous Effluent Monitor, in



Key features

- Mounted on heavy-duty casters to enhance mobility
- Self-contained portable air monitor
- Compatible with the 953 Series detectors and the 1042 Series or the 1060 Series electronics
- Universal Digital Ratemeter with dynamic range up to 10^7 CPM
- Scintillation type detectors
- Rugged construction for ease of maintenance
- Positive displacement type pumping system
- Automatic pressure compensation for gas density monitor
- Automatic purge of sampling system



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a portable configuration. The most common uses for the 1040-9 system are as backup to a permanently installed system or for portable use during an accident scenario. The detector output signal is trans-mitted to the Universal Digital Ratemeter. The particulate rate-meter displays gross particulate counts, iodines are absorbed in an easily removable cartridge, and the gas ratemeter displays gross noble gas counts, compensated for changes in pressure at the volume chamber. These ratemeters also provide output alarm contacts for Alert, High Radiation, Channel Fail, and when required, Rate Of Rise for fixed filter application. A Low Flow alarm is also available for the sample stream. Check source actuation is manual from the ratemeter, with alarms muted when in the check source mode.

Technical specifications

Power requirements

120 V ac, 50/60 Hz, 1 phase

Sample flow rate

1 to 4 SCFM

Sample temperature limit

32 °F to 122 °F (0 to 50 °C)

Sample inlet

0.75 inch OD stainless steel tubing, compression fitting

Sample outlet

0.75 inch OD stainless steel tubing, compression fitting

Maximum internal pressure

10 psig

Dynamic count range

10 to 107 CPM

Skid weight

950 lb

Particulate filter paper

Hollingsworth & Voss #LB-5211-A-O with a collection efficiency of 99.97% for particles 0.3 micron and larger

Iodine filter

TEDA impregnated charcoal cartridge

Note: *Optional grab sampling capability available for particulate, iodine, noble gas, and tritium*

Ordering information

Model

1040-9: Portable Continuous Air Monitor

Options

1. The 1040-9 may be supplied with any combination of particulate, iodine, and noble gas samplers, detectors, and readouts.
2. Sonalert and Warn/High indicator lights available.

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