

1040-2

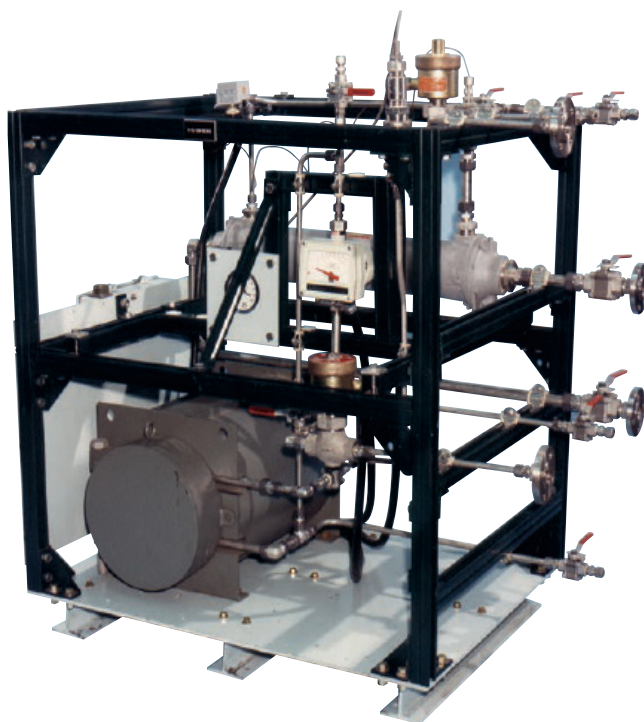
Off-Line Liquid Effluent Monitor

The 1040-2 Off-Line Liquid Effluent Monitor assures radioactive materials within liquid effluents do not exceed maximum permissible concentrations (MPC), protecting personnel against the possibility of exposure to excessive radiation.

The Code of Federal Regulations requires any effluent that could possibly contain radioactivity be monitored, and the 1040-2 Off-Line Liquid Effluent Monitor meets the guidelines set forth in the United States Nuclear Regulatory Commission (USNRC) radiation protection standards. Off-line liquid monitors usually include their own pumping systems to ensure a constant flow of effluent through the sample volume chamber with sufficient pressure to return the sample to the process. Off-line effluent monitoring is normally utilized where optimum geometry is desired to gain maximum sensitivity. Scintillation detectors are used because of their sensitivity and reliability.

The sample is drawn from the process piping through the customer's sample line to the inlet of the sampling skid. The sample flows through the heat exchanger (when supplied), then through the sample volume to the pumping system and back to the process pipe. The sample flow rate is indicated by a rotameter and manually controlled by a throttling valve.

The detector output signal is transmitted to the Universal Digital Ratemeter which displays gross liquid radiation counts. This ratemeter also provides output alarm contacts for Alert, High Radiation and Channel Fail. A low-flow alarm is included on the pumping system control module, with alarm contacts for customer use. The low-flow alarm also shuts down the system to protect the pump. Check source actuation is manual from the ratemeter, with alarms muted when in the check source mode.



Key features

- Universal Digital Ratemeter with dynamic range up to 10^7 CPM
- Scintillation type gamma detector
- Rugged open frame skid construction for ease of maintenance
- Centrifugal type pumping system
- Class 1E qualification available
- Off-line liquid monitor
- Compatible with the 953 Series Detectors and the 1042 Series Digital Ratemeters
- Optimum geometry for maximum sensitivity
- High temperature versions available



Trusted
radiation
monitoring.

Technical specifications

Power requirements

120 V ac, 50/60 Hz, 1 phase

Sample flow rate

1 to 5 GPM

Sample temperature limit

50 °F to 122 °F (10 °C to 50 °C) without heat exchanger

Dynamic count range

10 to 10^7 CPM

Liquid sample volume

3000 cc

Skid overall dimensions (w x d x h)

48 in x 35 in x 48 in
(121.9 cm x 88.9 cm x 121.9 cm)

Skid weight

2000 lb (907.18 kg)

Note: Refer to 841-334 data sheet for sampler specifications. Refer to the respective data sheets for the Universal Digital Ratemeter and the 943/953 Series Gamma Detectors for detailed specifications.

The off-line liquid effluent monitor consists of the following components:

Open-frame sampling skid, with the following major elements mounted, plumbed and wired:

- Liquid sampler (with detector well), fixed volume, with 4 pi lead shielding, 841-334
- Scintillation type gamma detector
- Flow indicator with manual flow adjusting valve
- Centrifugal pump
- Low-flow switch
- Manual inlet and outlet isolation valves
- Universal Digital Ratemeters, local or remote mounting
- Optional heat exchanger for sample cooling is available, if required
- Optional high temperature gamma scintillation detectors, 953-36H and 953-36HT

Ordering information

Model

1040-2: Off-Line Liquid Effluent Monitor

Standard accessories

841-334: Three Liter Off-Line Sampler

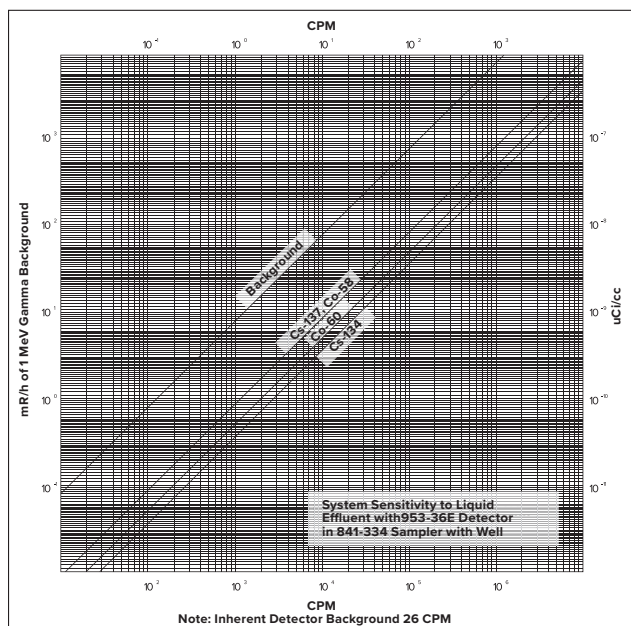
953-36E: Scintillation type gamma detector

1042A-200: Universal Digital Ratemeter (UDR)

Optional accessories

953-36H: High Temperature Gamma Scintillator (up to 160 °F)

953-36HT: Very High Temperature Gamma Scintillator (up to 300 °F)
940-2 Off-line Liquid Effluent Monitor available with 942 series UDRs



FLUKE®

Biomedical

Fluke Biomedical.

Trusted for the measurements that matter.

Fluke Biomedical

28775 Aurora Road
Cleveland, OH 44139-3303 U.S.A.

For more information, contact us at:

(844) 847-8139 or Fax (440) 349-2307
Email: sales@victoreen.com
Web access: www.victoreen.com

©2014 Fluke Biomedical. Specifications subject to change without notice. Printed in U.S.A. 10/2014 3015215B_EN

Modification of this document is not permitted without written permission from Fluke Corporation.

