



Trusted  
radiation  
protection.

## 943 Series Beta Scintillation Detectors

The 943 Series Beta detectors are designed to be sensitive to a beta radiation source.

Although the 943 Series Beta detectors are functionally identical, the detectors differ in the material used for the housing, the material used for the end window, and in the response ratio achieved through the variations in the scintillation disc area.

Two end window materials are used for the 943 Series Beta detectors. The mylar end window is used for replacement of existing beta detectors with similar windows. The beta detectors with titanium end windows offer greater durability and ease of decontamination.

The beta detector has preamplifier circuitry located in the interior of the overall protective

housing. The preamplifier provides pulse conditioning and cable driving capabilities to match the input characteristics of the instruments used to monitor detector output. The detector is supplied with an integral eight foot cable that normally terminates in a junction box located within a sampling system.

### Applications

The detector can be used with the Universal Digital Ratemeters or with the Scaler Module 960SF. Ratemeters are used with beta detectors in small single channel digital monitoring systems while scaler modules and detectors are primarily used in multiple channel digital monitoring systems.



### Key features

- Beta scintillation detectors
- Used on process gas and particulate channels
- For use with the 942A Series or the 960 Series electronics
- Count range:  $10^7$  CPM
- Preamp integral with detector
- Operating temperature range: 32 °F to 122 °F (0 to 50 °C) (max delta T 20 °C/hour)
- Ratemeter may be remotely located up to 1500 feet
- Dead time correction less than 1 % at  $10^7$  CPM

## Technical specifications

### Detector

#### Dimensions

9 long x 2.5 in  $\varnothing$   
(22.9 cm x 6.4 cm)

#### Weight

3 lb (1.4 kg)

#### Housing material

- Stainless steel:  
943-25/25A/25B/25T/25TA/  
25TB
- Carbon steel:  
943-26/26A/26B/26T/26TA/  
26TB

#### Power requirements

- + 2000 V dc max @ 500  $\mu$ A;
- $\pm$  15 V dc @ 50 mA

#### Connector

MS 3106E 2427B (supplied with detector)

#### Detector cable length

8 ft (2.4 m) (supplied with detector)

#### Field cable

Model 50-111 (two 50 ohm coax and two #18 AWG)

#### Interconnecting cable

Model 50-100 (one 50 ohm coax, one 75 ohm coax, two #18 AWG, four #18 AWG twisted pairs)

#### Environmental

Operating temperature:

32 °F to 122 °F (0 to 50 °C)

Storage temperature:

32 °F to 104 °F (0 to 40 °C)

Relative humidity: 0 to 95 %, non-condensing

#### Response ratio

- 1:1 943-25/25T/26/26T
- 10:1 943-25A/25TA/26A/26TA
- 100:1 943-25B/25TB/26B/26TB

#### End window material

- Mylar:  
943-25/25A/25B/26/26A/26B
- Titanium: 943-25T/25TA/  
25TB/26T/26TA/26TB

#### Maximum external pressure (face exposure)

30 psig

### Preamplifier

#### Rise time

< 60 ns

#### Input impedance

> 50 kilo ohms

#### Output coupling

AC

#### Voltage gain

6 V/V

#### Configuration

Voltage sensitive

#### Output pulse polarity

Negative

#### Output impedance

50 ohms

#### Maximum field cable length

1500 ft (457 m)

#### Maximum pulse amplitude

- 6 V

#### Dead time

Approximately 10  $\mu$ s @ 8 ft cable length

#### Maximum count rate

107 CPM

## Ordering information

### Model

**943-25:** (Beta) Scintillation Detector  
1:1 ratio

**943-25A:** (Beta) Scintillation Detector  
10:1 ratio

**943-25B:** (Beta) Scintillation Detector  
100:1 ratio

**943-25T:** (Beta) Scintillation Detector  
1:1 ratio

**943-25TA:** (Beta) Scintillation  
Detector 10:1 ratio

**943-25TB:** (Beta) Scintillation  
Detector 100:1 ratio

**943-26:** (Beta) Scintillation Detector  
1:1 ratio

**943-26A:** (Beta) Scintillation Detector  
10:1 ratio

**943-26B:** (Beta) Scintillation Detector  
100:1 ratio

**943-26T:** (Beta) Scintillation Detector  
1:1 ratio

**943-26TA:** (Beta) Scintillation  
Detector 10:1 ratio

**943-26TB:** (Beta) Scintillation  
Detector 100:1 ratio

**943-26TL:** LED Check sources

**943-26TLA:** LED Check sources

**943-26TLB:** LED Check sources



6045 Cochran Road  
Cleveland, OH 44139-3303 U.S.A.

**For more information, please contact us at:**

Phone: 440-542-3628

Email: Sales@Victoreen.com

Web access: www.victoreen.com

©2015 Fluke Corporation. Specifications subject to change without notice. Printed in U.S.A.  
5/2015 2802296c\_en

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