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## 943 Series **Beta Scintillation Detectors**

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

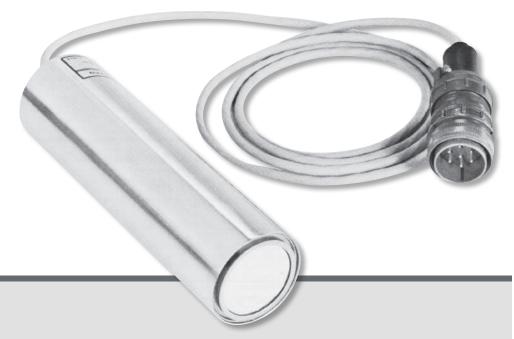
Although the 943 Series Beta detectors are functionally identical, the detectors differ in the material used for the housing, the material used for the end window, and in the response ratio achieved through the variations in the scintillation disc area.

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: 107 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<sup>7</sup> CPM

# Technical specifications

#### **Detector**

#### **Dimensions**

9 long x 2.5 in Ø (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 µA;
- ± 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

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