



**PROTK & RAMSYS**

# SB 40/150™

*Plastic Scintillators*

Monitoring of beta activity



## FEATURES

- Wide measuring range
- Low gamma sensitivity
- Built-in pulse amplifier and buffer

## DESCRIPTION

The scintillation detectors SB 40 and SB 150 have been developed for monitoring for beta activity according to the KTA standards 1502 and 1503 in safety related applications.

In the disc shaped scintillator ionizing radiation generates light pulses, which are converted and amplified into charge pulses by the photomultiplier. The sensitivity to gamma radiation is low because of the thin layer of scintillating material. An adjustable pulse amplifier offers calibration of the sensitivity and matching of the output pulses to the impedance of the detector cable.

TECHNICAL CHARACTERISTICS

Properties		SB 40	SB 150
		with measuring vessel RSD 200, lead shielding RSA 310 (if applicable), $U_{discr} = -100mV$	with measuring vessel RSD 275 and lead shielding RSA 482 RSA 482, $U_{discr} = -150mV$
Calibration factor for betas	Kr-85	3e4 Bq/m <sup>3</sup> s-1 ±10%	4.4e3 Bq/m <sup>3</sup> s-1 ±20%
Measuring range	Xe-133	4.4e4 Bq/m <sup>3</sup> s-1 ±20%	8.1e3 Bq/m <sup>3</sup> s-1 ±20%
Background Gamma sensitivity	Kr-85, 5 cm lead shielding	5e3 ... 5e9 Bq/m <sup>3</sup>	2e3 ... 5e8 Bq/m <sup>3</sup>
	Xe-133, 5 cm lead shielding in 5 cm lead shielding	1e4 ... 1e10 Bq/m <sup>3</sup>	3.37e3 ... 1e9 Bq/m <sup>3</sup>
	Cs-137	0.4 s-1	2.5 s-1
Output signal		8.5 s-1/μGy/h, without shielding	0.2 s-1/μGy/h, with 5 cm lead
Pulse width		0 ... -5V at 50 Ohms	0 ... -5V at 50 Ohms
Detector voltage		0.7 μs approx.	0.6 μs approx.
Supply voltage		1000 V, <0.15 mA	1200 V, <0.25 mA
		14.25 ... 25 V, 30 mA approx.	14.25 ... 25 V, 30 mA approx.
Scintillator	Material; Ø; thickness	KL236; Ø 50 mm; 0.5 mm	NE102A; Ø 150 mm; 0.5 mm
Detector housing		Aluminium, Brass	Aluminium, steel
Light-tight cover foil		Aluminium, 9 μm	Aluminium, 12 μm
Magnetic shielding		μ-metal	μ-metal
Connectors		Fischer S105 A 06093	Fischer S105 A 06093
Cables		TKK 05	TKK 05
Temperature range		0 ... +50°C (+32 ... +122°F)	0 ... +50°C (+32 ... +122°F)
Ambient pressure		0.7 ... 2 bar	0.7 ... 1.25 bar
Dimensions	Ø (Flange) x L without connector	65 (90) × 310 mm	150 (232) × 382 mm
Weight	without connector	(2.5 (3.5) × 12.2 in)	(5.9 (9.1) × 15 in)
		1.5 kg (3.3 lb) approx.	4.6 kg (10.1 lb) approx.

EXAMPLE OF APPLICATIONS



Beta particulate monitor AD 24 with SB 40

Noble gas detector assembly with SB 40

- Detector SB 40 with Plastic scintillator Ø 50mm
- Measuring vessel RDS 200 approx. 1ltr
- Lead shielding RSA 310 50mm
- Remote check source TKA 61 Sr-90

