LB 1100 NewTriNo

Efficient and reliable monitoring of ^{3}H



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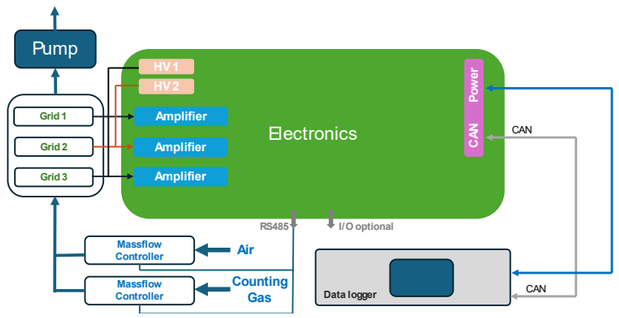
LB 1100 NewTriNo

Mode of operation and measuring principle

NewTriNo stands for reliable control, seamless monitoring and convenient reporting – for maximum safety in laboratories, for people and the environment.

The exhaust air to be monitored - for example, from chimneys or laboratories - first flows through a prefilter, which traps aerosols and thus protects the measuring chamber. It is then directed into the detector chamber, mixed with the carrier gas (e.g., P10), and subsequently returned to the exhaust system. Digital mass flow controllers precisely control both the flow rate and the ratio between the carrier gas and the air to be monitored. Thanks to integrated self-monitoring, the system detects deviations - for example, in flow or high voltage - and reliably alerts the user via pop-up messages or external alarm signals.

The system works according to the coincidence/anti-coincidence measurement principle, which differentiates the signal coming from tritium in air in the anti-coincidence channel.





Operation in dual-chamber mode

Highlights and functions

- Highly sensitive detection of ^3H with a detection limit <1 kBq/m³
- Continuous measurement of the ^3H activity concentration in room air and exhaust air
- Dynamic compensation for fluctuating gamma backgrounds or other gaseous nuclides
- Proportional counter detector; dual-chamber operation also possible
- Compact and fully flexible in use
- Integrated system test function
- 7-inch color touchscreen
- Analog and digital outputs
- Activation of external relays in conjunction with alarm thresholds
- Compliance with ISO 11929
- Database structure for archiving measurement data and reporting
- Ability to export the data to an external system
- Variants: in tabletop housing or as 19" plug-in unit

SOFTWARE OVERVIEW

Simple user interface and core features



Channel selection



Configuration Menu



Graphical representation

- Flexible, adjustable measurement intervals and tracking of activity and emission levels over days, weeks, or months
- Maximum transparency and compliance with standards (ISO 11929)
- Intuitive visualization and data analysis with the ability to export measurement data

MAXIMUM SAFETY AND EASE OF USE



- Secure Update feature to ensure the confidentiality, integrity, and authenticity of the firmware
- System Test Function (WKP): The WKP adapter allows pulses to be fed directly into the meter wires, enabling simple and reliable testing of the alarm functions



- Quick and easy filter replacement thanks to a removable filter replacement system

TECHNICAL SPECIFICATIONS

Technical data LB 1100 NewTriNo

Technical Data	
General	
Dimensions	Without table base: 48.5 cm x 47.5 cm x 31 cm (L x W x H) With table base: 52 cm x 50 cm x 33.1 cm (L x W x H)
Weight	without table housing: 23 kg with table housing: 37 kg
Media connections	Input: Sample gas and sample air Output: Gas-air mixture
Measuring chamber with a proportional counter	
Sensitive volumes	2,000 cm³ per shift (6,000 cm³ total)
Number of shifts	3
Ambient pressure	925 - 1060 mbar The permissible range of atmospheric pressure (without high-voltage adjustment).
Gas flow (P10-gas)	45 L/h
Gas flow (air)	15 L/h
Calibration factor (tritium)	approx. 4,000 Bq/m³/cps
Zero effect (background)	0.8 - 2.0 cps (anti-coincidence channel) 8 - 18 cps (coincidence channel)
Rise Time	approx. 1 min (detectable increase) approx. 15 min (10%–90%)
Spillover	Coincidence in anti-coincidence: approx. 7% Anti-coincidence in coincidence: approx. 4%
Measurement range	~ 0.5 kBq/m³ to 50 MBq/m³
Detection threshold	Typ. < 0.5 kBq/m³ in 600 seconds
Environmental conditions	
Temperature (Operating)	5°C - 50°C
Humidity (Operating)	10% - 80%, non-condensing
Operating height	up to 2,000 meters above sea level

Electrical Specifications	
Power supply	100–230 VAC ±10%, 50–60 Hz Power cord: 3x1.0 mm² or 3x18 AWG
Power consumption	240 VA
Control Panel Electrical Connections	1 x USB-A (keyboard) 1 x USB-B (Software Update, Secure Update) 1 x built-in connector in accordance with IEC 61076-2-106 (WKP)
Mini PC / Data Logger Electrical Connections	1 x Ethernet (network) 3 x USB 2 x RS232 / RS485 Serial interfaces (data communication) Alarm outputs
Screen	7-inch color touchscreen display
Signal light	On the front panel (LED indicator): - Ready to measure (green) - High voltage on (yellow) - Fault (red)
Ordering Information	Id No. 77789
77789-10	LB1100 Tritium-Noble Gas Monitor NewTriNo Tabletop Model with Data Logger
77789-20	LB1100 Tritium-Noble Gas Monitor NewTriNo 19“ Cabinet Model with Data Logger
77789-30	LB1100 Tritium-Noble Gas Monitor NewTriNo Tabletop Model without Data Logger
77789-40	LB1100 Tritium-Noble Gas Monitor NewTriNo 19“ Cabinet Model without Data Logger

Subject changes without prior notice.

TRANSFORMING SCIENCE INTO SOLUTIONS

Experience and expertise are of great importance to be able to ensure safety-relevant measurements properly and reliably. With more than 70 years of experience in planning and design, installation and commissioning, calibration, documentation and service of radiation protection measurement systems, we continue to support our customers in their task to continuously optimize their work processes and to ensure the safety of the environment and personnel.

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