NEX-ABG-9TT Dual Detector Assembly

NEX-ABG-9TT Electronics

Test and Treat Drinking Water Safety System

Model - NEX-ABG-9TT

Protect Vulnerable:
Hospitals - Schools - Government Facilities

- Measures at or Below EPA/DHS **PAG Levels**
  Protective Action Guideline Levels and Military Drinking Water Limits

Note:
- TA Makes the World's only PAG-Level Water Monitors
- Also Detects Some Isotopes Down to Lowest EPA Levels

Features

- Detects Alpha, Beta and Gamma Radiation
- **Nex-ABG-9TT – Test and Treat System**
- Biological Sensors
  - Oxidation Reduction Potential (ORP)
  - Total Organic Carbon (TOC)
- Treatment of Isotopes and Biological Contamination
- On-Board Computer
- Portable or Installed
- Real Time Continuous Water Monitor
- High Sensitivity
- No Reagent Tanks to Fill; No Waste Stream
- Easy Calibration
- Alarms – Audio / Visual
- Prevent Acute Health Effects; Reduce Risk of Chronic Exposure

Application

Install **Nex-ABG-9TT monitor** on your water inlet pipe to automatically and continuously monitor drinking water 24/7 for any radioactive contamination. The **NEX-ABG-9TT monitors and treats radionuclide and biological contamination.**

Facilities with multiple water inlets may wish to install multiple **Nex-ABG-9TT Systems.**

Specifically designed to protect populations vulnerable to contaminants, such as in hospitals, schools, and government facilities. Very few cities or water wholesalers monitor water continuously for radiation.

Alternative Uses:

- **Monitor Liquid-Waste-Stream** from plant or laboratory **to maintain regulatory compliance.**
- **If water source is river or reservoir** the particulate pre-filter with its own RAD Detector is recommended.

CBRN Real - Time Air & Water Specialists

TA

TECHNICAL ASSOCIATES
OVERHOFF TECHNOLOGY

DIVISIONS OF
US NUCLEAR CORP

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Model - NEX-ABG 9TT

Problem

Drinking water sources are vulnerable to accidental or knowing contamination by individuals, groups, industry, medical labs, terrorists, and from naturally occurring radioactive materials (NORM). As yet very few water districts have real-time radiation monitors in place to protect the water and the public.

Solution

- For the first time in a **Continuous Real Time** monitor the **Nex-ABG-9TT series** solves this problem by continuously monitoring water using ultra-sensitive, radiation detectors.
- The information from these detectors is analyzed and displayed in units of picoCuries per liter.
- Monitors drinking water against most radioactive contaminants except H-3, C-14, S-35, Fe-55.

Nex-ABG-9TT

- The count times are user settable. Calculations are automatically updated every 2 minutes, every hour and every day. Measurements of radiation concentration are logged 24 hr/day, 7 day/week in. The longer update times correspond with greater precision and increased sensitivity.
- Sensitivities in the daily updates meet or exceed the DHS **PAG** (Protective Action Guideline Levels) for drinking water.
- The **Nex-ABG-9TT system is a Test and Treat system removing biological contaminations and reducing radioisotopes.**

Description

Model **NEX-ABG-9TT** is a radiation detection and treatment system for monitoring, measuring, and controlling Alpha, Beta and Gamma emitting radionuclides.. The electronics are microprocessor with LED/LCD display. The system is covered by TA's full one year warranty. On-site service contracts available in many areas.

The Alpha, Beta flow cell and Gamma detector are easily changed via disconnect fittings. All connections are sealed against leaks. The standard water moving system is based on a high precision pump. It has a 10 liter per minute capacity. System can also be operated using city water pressure in which case no pump is required.

A wide range of pump capacities are available to meet users' specific needs. The system detectors and electronics are ruggedly built. It comes complete with all cabling tubing and connectors in place and is ready to operate. 115 Volt 60Hz is standard; 220 Volt 50/60 Hz or battery operations are optional.

Detectors In This System:

1. **Alpha-Beta Detector** consists of a light-tight detector assembly which interfaces with the sample via quick disconnect coax cables and medical grade hoses. The sample is viewed by a matched pair of 5" diameter photo-multiplier tubes.
2. **Gamma Scintillation detector** has a sensitive 2" diameter crystal.
3. **BioSensor**
   - Oxidation Reduction Potential (ORP)
   - Total Organic Carbon (TOC)

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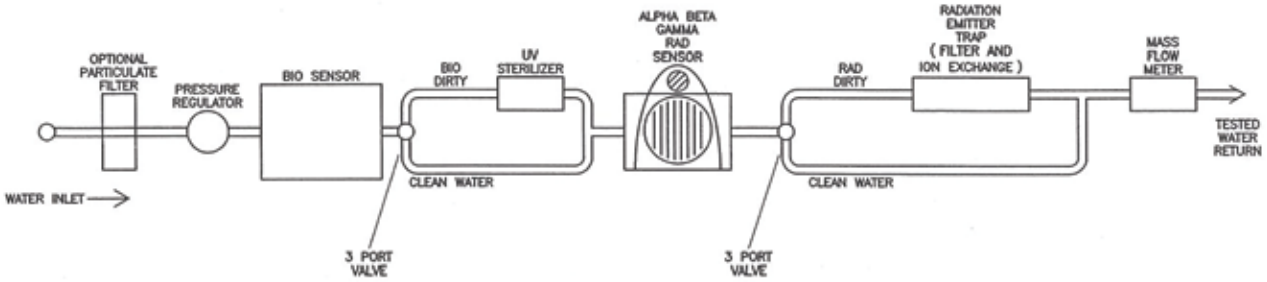
Hospitals – Schools – Government Facilities

FLOW PATH: NEX-ABG 9TT (Test & Treat)

- Water Inlet port
- Optional Particulate Pre-Filter
- Pressure Regulator
- Bio Sensor
- Valve to Direct Clean or Dirty Water
- Ultra Violet Sterilizer for Dirty Water
- Valve to Direct Clean or Dirty Water
- Flow chamber with Alpha Beta & Gamma Detectors
- Valve to Direct Clean or Dirty Water
- Filter & Ion Exchange for Dirty Water
- Mass Flow Meter
- Tested & Treated Water is Clean & Returns to the Water Line.
  - No liquid scintillate or reagents are added
  - No toxic or radioactive waste of any kind.

FLOW PATH



NEX-ABG-9TT Test & Treat

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NEX-ABG-9TT Electronics

DATA:-Analysis-Display-Data Stored Flash Drive Archive

NEX-ABG 9TT

- The concentration and total activity released and MDA levels are continuously calculated and recorded.
- On Board Data Storage
- USB / Ethernet Ports
- Data can be saved to the optional flash drive in spreadsheet format.

Specifications

- **Alarms:** Each alarm activates a relay. Relay alarms are available to the user.
- **Sample temperature:** measurements are most accurate in range 40o to 85o F. Instrument is still operational up to higher temperatures
- **Optional:** Cooler model Cool-33 for detector & sample is used in case of higher sample or ambient temperatures.

Dimensions, Weight, Shipping Information

NEX-ABG-9TT Electronics:
11" W x 11" W x 14" H - **Weight: 12 lbs**

Dimensions NEX-ABG-9TT Assembly:
10" H x 10" D x 29" - **Weight: 45 lbs**
(excluding optional shielding)

Note: Optional thin Lead Sheet for shielding can be shipped with or shipped separately. Overseas customers may wish to buy the lead sheet locally.

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DETECTION EXAMPLES	PAG LEVEL	LOWER LIMIT of SENSITIVITY	TOP OF RANGE	SENSOR / METHOD USED		MAINTENANCE for finished water
					TIME	ACTION
Alpha **U-238**	**U-238** 3,000 pCi/l			5" dia. Dual PM Tube crushed scintillation bed of crystals	3--6 mo	Replace particulate filter cartridge
30 min 24 hr		25,000 pCi/l 3,000 pCi/l	2×10^7 pCi/l			
Beta **K-40**	**K-40** 30,000 pCi/l			5" dia. Dual PM Tube 1000 ml chamber	3--6 mo	Replace particulate filter cartridge
30 min 24 hr		30,000 pCi/l 10,000 pCi/l	2×10^7 pCi/l	1100 cm^2 Beta Scintillator		
Gamma **Co-58**	**Co-58** 30,000 pCi/l			Standard: Single Channel Energy Analyzer Optional: Multi-ChannelAnalyzer	3--6 mo	Simple MCA check
30 min 24 hr		20,000 pCi/l 5,000 pCi/l	2×10^7 pCi/l	75x75mm NaI(Tl) Crystal		
OPTIONS:		**LOWER LIMIT**	**TOP OF RANGE**			
DETECT						
Tritium		20,000 pCi/l	1×10^6 pCi/l	Crushed scintillation bed of crystals		Replace ion exchange cartridge
Radon		100 pCi/liter	2000 pCi/liter		1-3 mo	Clean or replace vapor trap
PRE-CONDITION						
Expel Radon						Clean or replace vapor trap

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FEATURES	NEX-BETA-ABG	NEX-BETA-ABG User's PC	NEX-BETA-ABG-9 All-in-One	NEX-ABG-9TT All-in-One
Read–Out Units (Typical)	Bq/m^3 pCi/l User Selectable	Bq/m^3 pCi/l User Selectable	Bq/m^3 pCi/l User Selectable	BIO – ppm RAD - Bq/m^3 or pCi/l User Selectable
Measures	Waterborne Concentration	Waterborne Concentration	Waterborne Concentration	Waterborne Concentration
Electronics	LAM-10 Ratemeter	User PC switches units, subtracts background data logging, electronic data transmissions	Calculations by embedded processor	Calculations by embedded processor
Software Functions Data Logger	N/A	Optional WIN-W Data Logger Software for PC users	On board data logger	On board data logger
Assisted Calibration	N/A	Optional	Included	Included
Report Generator	N/A	Optional	Included	Included
Advanced Data Analysis (for low radiation levels and long measurements)	N/A	Optional	Included	Included
Available Options		Optional WIN-W Data Logger Software for PC users	Optional Overhoff Networking Overview (ORO)	Optional Overhoff Networking Overview (ORO)
Portable Version	NEX-BETA-ABG-P		NEX-BETA-ABG-9P	
Installed Version	NEX-BETA-ABG		NEX-BETA-ABG-9	Inline/Installed only NEX-BETA-ABG-9TT

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