



## Chemical Threat Detection

- Integrated CWA/TIC detection and identification:  
Bruker **RAID-S2plus**

# Choose Innovation – Choose Bruker

Bruker is recognised as the leading authority on the use of detection and identification technologies to mitigate the threat from the accidental or deliberate release of toxic gases, explosives and radioactive materials that could kill or injure civilians and military personnel.

We offer the world's most comprehensive range of threat detection and identification solutions and can help you to assess how these can be best employed to protect people, property and military assets.

We develop, manufacture and supply technology worldwide for a range of customers and end users that need to protect people and property. These

include, but are not limited to, national armies who need to protect their troops, as well as governments, commercial enterprises and multi-national corporations who need to protect their employees and clients from the ever-increasing threat from terrorism.

Bruker is strongly committed to meeting its customers' needs by continuing to revolutionise the design, manufacture and distribution of detection tools based on our core technologies; by providing solutions that are regarded as the 'Gold Standard' by threat mitigation experts.



# RAID-S2plus: Installed CWA/TIC Detector

The Bruker RAID-S2plus is a high sensitivity installed detector specifically designed for the simultaneous detection of trace chemical warfare agents (CWA) and toxic industrial chemicals (TIC).

Using field-proven ion mobility spectrometry (IMS), the RAID-S2plus is designed for long-term use; specifically where 24/7 operation is mandated. Equipped with a new combined CWA/TIC library, and using the acclaimed Bruker interference rejection algorithms, RAID-S2plus provides fast detection of multiple chemical threats, with substance identification and quantification at low parts per billion levels.

The RAID-S2plus has been designed and tested for operation in harsh environments. Configured to operate continuously and to require minimal maintenance, it is housed in an IP65-rated cast metal enclosure, and only requires maintenance as infrequently as eighteen months. Maintenance can be performed by the operator and it is not necessary to call for Bruker engineering support, nor is it usual to return the instrument to a workshop. Field calibration is not required as the factory setting holds for the life of the system.



## Why specify RAID-S2plus?

- Detects both CWA and TIC releases
  - Simultaneous threat detection in one product
- High sensitivity detection technology
  - Down to low parts per billion levels
- Superior interference rejection
  - Minimises false alarms, increases confidence
- Simultaneous detection of multiple threats
  - Most critical concentration displayed first
- Low consumables burden
  - Up to eighteen months between services
- IP65 protection and MIL-STD tested
  - Use outdoors and/or for military deployment
- Multiple mounting options available
  - For vehicle and mobile platform integration
- Anti-shock mounts available
  - For the most demanding installations
- Low power requirements
  - Simplifies system integration/installation
- Ideal for CBRN ColPro filter monitoring
  - Alarms on filter breakthrough



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# The Integrated CWA/TIC Detector

In mobile installations such as reconnaissance vehicles and field laboratories, and in stationary facilities such as shelters and bunkers, ColPro CBRN air filtration systems are specified to alarm should toxic gases or vapours infiltrate the working environment.

The state of both the incoming and the filtered clean air must be monitored constantly to protect all personnel reliant on this, and monitoring is readily achieved using a RAID-S2plus equipped with dual sample inlets. Installed close to the CBRN filter, to give the fastest response, this Bruker technology monitors the air streams and alarms if a CWA/TIC threat is detected. When an external chemical threat is detected, the system switches to monitoring the filtered air and provides an alarm if the CBRN filter is overwhelmed. Under these conditions, the sensitive RAID-S2plus gives an early warning of filter break-through, and enables occupants to don personal protective gear.

For ship-borne use, RAID-S2plus can be installed within the ship's citadels for crew protection against chemical attack, and when filter break-through monitoring is required, adjacent to the CBRN filter stations. As part of the Naval Bruker NC-detection solution, the RAID-S2plus permits the installation of highly customised detection configurations to any class of naval surface vessel. A standard Bruker IT-module manages all sensor data and interfaces these to the ship's management systems.

For all installations, RAID-S2plus can either be operated as a stand-alone device or it can be integrated into a network containing several instruments. Data can be streamed to a central control room and displayed using Bruker NC monitoring software.





# RAID-S2plus at a Glance



## PRODUCT OVERVIEW

Bruker is regarded as the Subject Matter Expert on installed IMS detection systems, and it is easy to tell why. With its IP65-rated, all cast metal enclosure, integrated sampling pump and combined CWA/TIC detection library, the RAID-S2plus system has been designed for the most demanding of personnel protection installations.

The RAID-S2plus system detects, identifies and quantifies multiple airborne chemical threats simultaneously, and software algorithms reject common interferences that otherwise can cause false alarms. The identified agents and their calculated concentrations, down to low parts per billion ranges, can be shown on the remote control unit. Where required, detection data can be streamed to a central control facility, where the threat data can be displayed on Bruker NC Monitoring software. The RAID-S2plus can be operated as stand-alone installation, or several instruments can be connected in networks, with results from multiple instruments being consolidated in Bruker NC Monitoring software.

Designed for 24/7 operation, RAID-S2plus impresses with its low maintenance requirements. Maintenance checks might only be required after 18 months of operation and no preventive maintenance is needed. When it is necessary to replace consumables, this can be done by the operator, without calling on Bruker for engineering support. Calibrated at the factory, the original calibration holds for the life of the instrument, and in-field calibration is not required.

## INSTALLATION ACCESSORIES

A wide range of accessories and software packages are available for the RAID-S2plus to simplify installation. Our specialist engineers will help you to select the most appropriate system configuration to meet your requirements precisely.

Full details of the Bruker RAID-S2plus can be found in the Product Specification Sheet (PSS), a copy of which is available on request.

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# Global Resources – Local Focus



Bruker has support centres of technical expertise in every major area of the world providing sales, applications and engineering support for our complete product range. With more than 6,000 employees at 90 locations worldwide you can be confident that the support team fronts a uniquely integrated global resource. Research and development specialists, applications professionals and highly trained engineers in every field are dedicated to your investment in our equipment.

## Superior Detector Performance

For highly sensitive detection, identification and quantification of chemical, biological, explosive and radiation threats. Superior performance and high reliability comes as standard.

## Applications Support

Systems are configured to meet your needs and result from our detailed evaluation of your requirements.

## Standards & Compliance

All our systems are manufactured in ISO9001 compliant factories; so you can be assured of superior quality and performance.

## Software & Data Systems

Designed to industry standards on the Microsoft® platform, our software can be integrated with your security management software.

## Training

User Training and User-Level Maintenance is part of our standard Scope of Supply. Our goal is simple; to minimise your cost of ownership.

## Low Maintenance

All our systems are designed for extended maintenance periods and reduce the through-life-costs of your investment.

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