

NITA II

Online bulk elemental analyser



ScanMin Africa's on-line bulk elemental analysers NITA II (Neutron Inelastic scatter and Thermal capture Analysis) deliver rapid and reliable measurements of the elemental composition of bulk material directly on-belt.

Description

Nita II was developed by the world renowned CSIRO Minerals on line analyser control division. The analyser is being built in South Africa by ScanMin Africa under licence from CSIRO Minerals. Nita II is an automated system with IP 65 rated enclosure, is installed on the conveyor belt and monitors the material on belt eliminating, the need for routine sampling for analysis.

Nita II uses advanced neutron-gamma technology to provide elemental composition measurements that are both rapid and accurate. It utilises the penetrating power of neutron radiation to interrogate a large volume of material flowing on the conveyor belt. When neutrons interact with the material, gamma radiation is emitted promptly with energy signatures that are characteristic of elements present in the material.

NITA II uses unique and robust BGO detectors as well as a long-lived Am-Be source, which significantly increases detector sensitivity to important elements such as C, O and H. Nita II analyser incorporates patent technology to reduce sensitivity to spatial segregation and profile variation.

Nita II includes the Plant Interface Module (PIM) which is essentially on board interface computer running a SCADA and is located between NITA II's Modbus output and plant. Its functions are to store data, interface into the plant PLC, capture trends which are user friendly and easy to interpret.



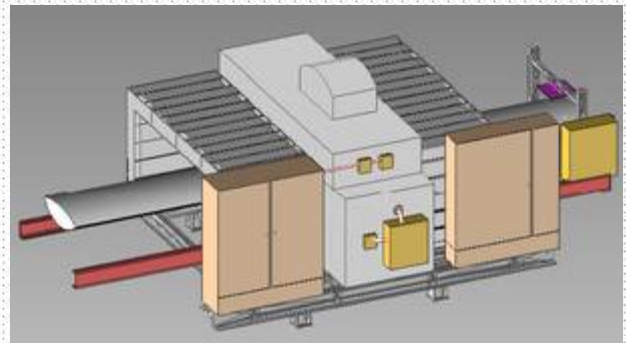
Results reporting

Nita II will provide real time information, with updates periodically after two to five minutes as well as cumulative averages / tones averages for the current hour, shift or day.

Application

The ability to screen large volumes of material and operate in hostile environments means that NITA II has a wide range of applications. Real time elemental analysis enables active process control, therefore maximising yields.

- ◆ In Coal: Determination of coal quality and report as standards Ash, CV, Total Moisture, Volatile Matter, Ash elements and other parameters required by clients.
- ◆ In other applications: Elements such as Fe, Ca, Si, Mg Al, Si, S, Mn, Ca, Ti....the elements can be reported also as oxides
- ◆ Blending, stockpile building
- ◆ Feedback to mining operators or process controllers, Ore grade control
- ◆ Process control, contractual compliance



Key Features of Nita II

Access to a wider range of elements when comparing with analysers using californium neutron source that uses neutron capture only.

- ◆ Good sensitivity for many industrial significant elements including C, H, O, Si, Fe, K, Ag, Au, Cl, Ca, Cu, Al...
- ◆ Measures in 'bulk'- all or most of the material on belt is viewed by the analyser.
- ◆ Patent technology to compensate for material segregation and changes in loading.
- ◆ Modular design for easy installation on conveyor.
- ◆ No expensive sampling system required- measurements are done directly on the belt.
- ◆ No Isotope change required over a life-time of the analyser

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Nita II Specification

Conveyor Width	: Standard up to 1400mm : Special up to 2100mm
Bed Depth	: Typical 100mm up to 350mm
Material size	: Typically up to 300mm
Moisture	: moisture analysers monitor supplied as standard
Moisture range	: 0% to 25% depending on material & bed depth
Weight	: 6000 kg (approximate)
Electrical	: 110-240 V
Inputs	: 4-20mA from belt weigher Belt Running
Outputs	: Three I.O contacts can be configured to suit end user requirements. Analysis results and status data are transmitted to the plant via a data protocol output or interface compatible with most Industrial standard SCADA or PLC Systems.
Enclose	: IP 65 Rating
Calibration	: Factory calibrated
Safety	: Conforms to international standards
Remote Access	: Optional
Advantages	<ul style="list-style-type: none">• Real time process data• Suits most belt sizes and loads• No sampling required• Low maintenance & running costs (source half-life 432 years)• No wearing parts• Interface to a wide range of process control systems• No Source replacement over the lifetime of the analyser• Local Technical support

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