

On-Line Magnetite Measurement Directly on Tonnage Rated Conveyor Belts

ironSCAN® provides the real time measurement of magnetic ore concentrations such as magnetite and hematite.

ironSCAN® is a proven technology and is ideally suited for installation into a wide range of industries including:

- Plant Feed Grade Control
- HPGR Feed Grade Control
- Metallurgical Accounting
- Grade Control
- Product Quality Control
- Tailings Losses Monitoring



Electrical Cabinet



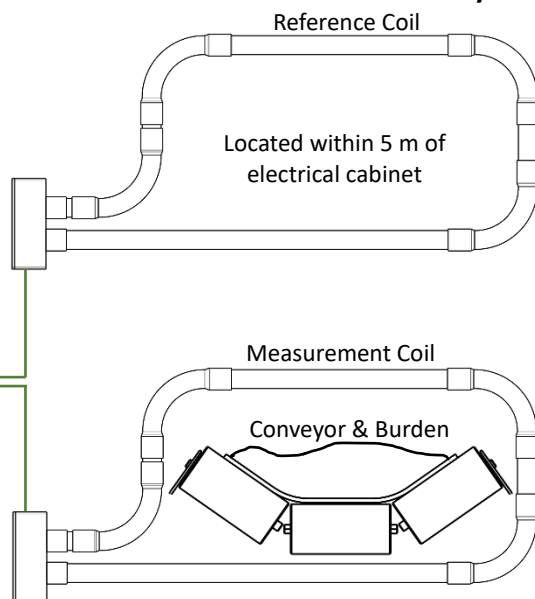
Schematic of System Supply

- Inputs**
- Power Supply - 100V-240V AC 1.6A
- Analogue**
- Mass flow
- Digital**
- Material Available

Outputs

- Analogue**
- Kg Fe₃O₄
 - % Fe₃O₄
 - Optional Relays for alarms

Field Coil Assembly



System Description

Field Coil Assembly

A Measurement Coil is installed around the conveyor belt close to a Reference Coil. The Measurement Coil measures changes in magnetic field caused by the passage of the magnetite on the conveyor belt.

Electrical Cabinet

The Electrical Cabinet houses all electronic components, power supply and terminations. These electronics manipulate the raw data and output the Magnetite result.

Calibration

The system is calibrated after installation – usually by using an automatic sampling system if this is available. If automatic sampling is not available then stop belt sampling can be used.

ironSCAN[®] On-Conveyor Magnetic Susceptibility Meter

Features and Benefits

Encircling Coil Configuration	Interrogates the entire conveyor burden
“Split-Coil” Design	No need to cut the belt for installation
Non-Contact with Process Material	No wear concerns
State-Of-Art Electronics & Inbuilt Temperature Compensation	Ultimate precision
Mass Flow Measurement Input Capability	Adjusts to varying tonnage rates and bulk densities
Ruggedized Construction	Suitable for field installation

Technical Specification

Operation	
Type of operation	Automatic, on-line direct on conveyor installation
Conveyor size	Up to 1,200mm as standard. Larger conveyors require non-standard coils
Conveyor speed range	No limit
Magnetite range	0 to 100 wt %
System update time	User configurable
Performance	
Accuracy	Typically, 0.5 wt % Fe ₃ O ₄
Repeatability	Better than 0.2 wt % Fe ₃ O ₄
Electrical	
Power supply	Single phase, 100 – 240VAC 1.6A Amp (optionally 24 V DC)
Inputs	
Mass flow	Analogue 4 – 20 mA (from belts-scale etc)
Clean contacts	Material Available
Outputs	
Analogue	4 – 20 mA providing kg Fe ₃ O ₄ (optional wt % Fe ₃ O ₄ available)
Digital	Optional clean contacts for high Fe ₃ O ₄ , low Fe ₃ O ₄ , system healthy
System Physical Specifications	
Mass	Electrical Cabinet 25 kg / Field Coil Assembly 40 kg (typical)
Dimensions	Electrical Cabinet 400mm wide x 600mm high x 200mm deep Field Coil Assembly dependent on conveyor dimensions
Shipping	
Mass	120 Kg (approximately)
Dimensions	Dependent on conveyor dimensions

PO Box 5067

Brassall

Ipswich QLD 4305

Tel : +61 (0)7 3282 8748

Email : ask@ultradynamics.com.au

Website : www.ultradynamics.com.au

