

Satmagan 135

Rapiscan
systems

An OSI Systems Company

INDUSTRIAL AND MINING EQUIPMENT

Accurate Measurement of Magnetic Material

Instant Analysis

Reliable

Cost Effective



Accurate measurement of ferrous material content in iron ore is extremely difficult and time-consuming by conventional chemical methods in the laboratory. This is overcome by measuring the total magnetic moment of the sample in a high magnetic field thereby measuring the magnetite content in the sample accurately, reliably and faster than measurement based on susceptibility of the material.

For over 40 years Satmagan has been in use in the mining industry around the world and has been proven to be a fast, accurate and reliable instrument for measuring the magnetite content in samples. With a measuring time of roughly one minute and an accuracy of 0.4 % or less Satmagan is considered to be an ideal instrument for securing an optimal return on investment.

The principle behind the **Satmagan 135** is to measure the force acting on the sample in a magnetic field with a spatial gradient. The magnetic field is strong enough to saturate the magnetic component in a sample. A Satmagan can be used to measure any sample with only one magnetic component. Alternatively, it can measure a component with a dominant concentration and/or dominant specific magnetic moment.

Once Satmagan is calibrated it is easy and fast to use. Therefore it is an ideal instrument for analyzing mixtures of magnetic and non-magnetic components.

OTHER INDUSTRIAL AND MINING PRODUCTS: Metcorr 117C metal detector for mines, quarries, recycling plants and other industrial facilities.

ABOUT RAPISCAN SYSTEMS

Rapiscan Systems designs, manufactures and markets security and inspection systems worldwide. The company is a wholly-owned subsidiary of a Nasdaq-listed OSI Systems, Inc. and headquartered in Hawthorne, California. It has additional offices and manufacturing in Canada, Finland, India, Malaysia, Singapore, United Kingdom and the United States. For more information on Rapiscan Systems, please visit www.rapiscansystems.com.

APPLICATIONS

The Satmagan was designed especially to measure magnetite in iron ore concentrations. It can be used in various applications:

Analysis of magnetite in iron ores, concentrates and tailings

Control of copper and nickel smelting by analyzing magnetite and other ferromagnetic oxides in slag

Determination of martensite or ferrite in austenitic steels

Determination retained austenite in steels

Control of magnetizing roasting

Control of oxidizing roasting of carbonate ores

Controlling the heat hardening of pellets

Control of iron ore sintering

FEATURES

MAXIMUM ERROR: 0.4% of the measurement range (the result can be as good as 0.1%)

ANALYSIS TIME: roughly one minute

TWO RANGES:

Low less than 50%

High more than 50 % with maximum error of 2.2%

POWDER, GRANULAR OR SOLID SAMPLES USED FOR THE MEASUREMENT

STABILIZED FOR VOLTAGE AND TEMPERATURE



ONE COMPANY - TOTAL SECURITY

INDUSTRIAL AND MINING EQUIPMENT

FINLAND

Nihtisillankuja 5, P.O. Box 174
FIN-02631 Espoo
FINLAND
Tel: +358 9 32941500
Fax: +358 9 32941302

E-MAIL

industrial@rapiscansystems.com

ISO 9001:2000 Certified

TECHNICAL DATA

MATERIALS FOR ANALYSES

Magnetite and magnetic iron can be analyzed. The sample can contain only one magnetic component, or have one component with a dominant concentration and/or specific magnetic moment.

TYPE OF SAMPLE

powder, granular or solid samples
maximum volume of sample 1.2 cu cm (0.073 cu inch)
recommended sample size: sample container filled up
grain size: An average grain size greater than 150um (100 mesh) does not disturb the measurements. For finer materials, the Satmagan gives slightly lower readings, so a different calibration curve is required.

THE RANGE OF MEASUREMENT

0 to 100 % by weight
0 to 200 % by weight for high contents

REPRODUCIBILITY

0.2% by weight

SAMPLE CONTAINERS

An acrylic container has a sample volume of 1.2 cu cm (0.073 cu inch). Its plug is made of polyethylene. Average weight: container 1010mg, plug 543mg. The weight distribution of sample containers is approx. +/- 5mg, corresponding to an error +/- 0.12% in a 4g sample. The weight distribution of plugs is approx. +/- 1mg, corresponding to an error of +/- 0.08% in a 4g sample.

OPERATING TEMPERATURE RANGE

+10C to +40C (+50F to +100F)

AMBIENT HUMIDITY

Up to 95% relative

CONTROLS

power switch
range switch
sample weight balancing knob
crank for turning magnet

LINE VOLTAGE

210...240V or 110...130V
(to be specified when ordering).

LINE FREQUENCY

50 to 60Hz

POWER CONSUMPTION

10W

PHYSICAL SPECIFICATIONS

OVERALL DIMENSIONS

length 64cm (26in.)
width 34cm (13.5in.)
height 37cm (15in.)
weight 63kg(145lbs.)net.

EXPORT PACKAGE

length 97cm (38in.)
width 56cm (22in.)
height 56cm (22in.)
weight 95kg (210lbs.)gross

CE COMPLIANCE

Yes