

Laboratory/off-line

Our products help customers to improve accuracy and speed of materials analysis in the laboratory and in process manufacturing applications. We also provide test and measuring equipment for research and development applications.

Process/manufacturing

Our products and applications provide precision measurement and control in challenging operating environments, ensuring process quality, asset uptime, safety, and improved yield. We also provide automation and control products for the discrete manufacturing industries.

The group comprises four business segments which reflect the applications and end user industries we serve.

Business segment

Materials Analysis provides a wide range of analytical instrumentation and systems for particle and material characterisation.

Business segment

Test and Measurement supplies test and measuring equipment for research and development, principally to the aerospace and automotive industries, and for environmental monitoring.

Business segment

In-line Instrumentation provides process analytical solutions, asset monitoring and on-line controls for both primary processing and the converting industries.

Business segment

Industrial Controls supplies automation and control products for the discrete manufacturing industries.

Applications	Industries	Sales	Profit
Material characterisation	Pharma/life sciences	32%	32%
Contamination detection	Mining/metals		
Quality control	Semiconductor		
	Research institutes		

Applications	Industries	Sales	Profit
Measurement	Automotive	32%	25%
Data acquisition	Aerospace		
Simulation	Electronics		
	Environmental		

Applications	Industries	Sales	Profit
Quality control	Process industries	30%	36%
Process technology	Pulp & paper		
Safety	Energy		
	Converting		

Applications	Industries	Sales	Profit
Product tracking	General manufacturing	6%	7%
Machine interface	Original equipment manufacturers		
Industrial networking	Distributors		

Sales and profit as % of group total.

Materials Analysis

Good demand for new products from pharmaceutical and life sciences industries

Metals, minerals and mining slowing, but need for efficiency and cost reductions sustains demand

Semiconductor weakens due to reduced investment in capital equipment

Environmental legislation boosts demand for X-ray analysis

£253.2m

Sales

£37.5m

Operating profit

1,534

Employees

Overview

Materials Analysis provides a wide range of analytical instrumentation and systems for material characterisation to the metals and mining, pharmaceutical and life sciences, and semiconductor industries. Our products help customers to improve accuracy and speed of materials analysis in the laboratory and in process manufacturing applications. The operating companies in this segment are Malvern Instruments, PANalytical and Particle Measuring Systems.

Market drivers

In addition to the need to improve process manufacturing productivity, a key factor in the demand for this segment's products is the requirement for certification to comply with regulation, for example for quality control in the manufacture of drugs in the pharmaceutical industry and detection of materials such as lead and cadmium to meet legislation on the use of hazardous substances. Another driver for materials analysis instrumentation is the growth in new molecular and material sciences, where our equipment is used to analyse and characterise materials and structures in the development of new products.

Zetasizer APS

The Zetasizer APS is the most advanced dynamic light scattering system available for investigating protein behaviour in the biotechnology and pharmaceutical industries. It enables accurate, reliable measurement of protein stability over a wide range of developmental conditions with minimal user intervention.



Segment performance

Sales in Materials Analysis increased by 18% (8% at constant currencies) to £253.2 million. Operating profit increased by 8% to £37.5 million. Operating margins declined from 16.3% to 14.8%. Approximately 0.9pp of this reduction was due to a 34% increase in research and development expenditure in this segment from 7.5% to 8.4% of sales, and 0.6pp was due to the dilutive effects of foreign exchange rates.

Malvern launched a number of new products aimed at the pharmaceutical and life sciences industry, with particular emphasis on the characterisation of proteins. These included two additions to the highly successful Zetasizer family: the Zetasizer APS and the Zetasizer μ V, both of which are used for measuring the particle size and distribution of proteins and nano-particles in drug development. These products utilise technology developed by Viscotek, the business Malvern acquired in January. Particle Measuring Systems continued to focus on contamination monitoring products for the pharmaceutical industry and extended its capabilities for counting aerosol particle concentrations in the nano-particulate range (down to one nanometre of diameter) through the acquisition of a 31.2% investment in Naneum Limited, a company supplying instruments for nano-technology applications.

PANalytical saw continuing demand from the metals, minerals and mining industry, despite the sector slowing in the second half of the year, as the need for greater efficiency and cost reduction sustained demand for analytical instruments. The company extended its range of products specifically designed for materials applications. One example is the MiniPal 4 Sulfur, based on the highly successful MiniPal compact spectrometer. Designed for petrochemical analysis, this product helps industrial customers demonstrate, amongst other things, compliance with new European legislation on sulphur in fuel. X-ray fluorescence spectroscopy has also emerged as an optimal solution for the screening of toxic heavy metals regulated by the EU directives RoHS (Restriction of Hazardous Substances) and WEEE (Waste Electrical and Electronic Equipment) and PANalytical's equipment is helping customers to ensure their products meet these standards.

In the semiconductor industry, with a few notable exceptions, there was a decline in investment in capital equipment and the industry is beginning to see some consolidation. The reduction in demand for production-related equipment was offset to some extent by continued demand from universities and government-funded institutions for research and development solutions for the analysis of new materials and complex structures, particularly in the fields of material sciences, which benefited PANalytical.



MiniPal 4 Sulfur

The MiniPal 4 Sulfur compact spectrometer is designed for accurate and precise petrochemical analysis. Its improved sensitivity and lower limits of detection provide reliable and cost-effective analysis of elements and also help to ensure compliance with environmental regulations, for example legislation to reduce sulphur levels in fuel.

Outlook

We expect that consolidation in the pharmaceutical sector will continue to be a feature of the industry, however, our operating companies, with the new products and applications they have recently introduced, together with those they have acquired, are well placed to capture the opportunities in this sector, particularly in the increasingly important fields of life sciences and biotechnology. Demand in the metals, minerals and mining industry fell sharply towards the end of 2008 as capital expenditure was reined in, however, service and consumables are a major feature in this sector and we expect the demand for these to continue. Although demand in the semiconductor industry is not expected to improve in 2009, this market represents less than 5% of revenues in this segment and is thus not expected to have a significant impact.

Test and Measurement

nCode acquisition brings software simulation capabilities for fatigue and durability testing

LDS acquisition adds vibration test systems and data acquisition products for new model development

Capabilities in environmental noise monitoring services expanded

£254.9m

Sales

£29.7m

Operating profit

2,653

Employees

Overview

Test and Measurement supplies test and measuring equipment for research and development, principally to the aerospace and automotive industries. For customers in these industries, our products and applications help them to design safer, more fuel-efficient, environmentally-friendly vehicle platforms whilst reducing time to market. Further applications are in consumer electronics and the environmental monitoring market. The operating companies in this segment are Brüel & Kjær Sound & Vibration and HBM.

Market drivers

Product testing and quality control are the principal drivers of demand in the test and measurement sector. Prototype testing is a costly, but unavoidable, stage in the development of many consumer durable products. R&D engineers must ensure not only that consumer requirements are met within shorter development cycle times, but also compliance with ever-increasing environmental, safety and efficiency targets. In addition to product development, increasing legislation and regulation on noise levels, for example EU directives on noise regulation for airports, cities and workplace noise, is also driving demand for our test and measurement applications.

Segment performance

Sales in Test and Measurement increased by 23% (8% at constant currencies) to £254.9 million. Operating profit increased by 13% to £29.7 million. An increase in R&D expenditure from 7.2% of sales to 7.8% led to operating margins, at 11.7%, being lower than the prior year figure of 12.6%.

Automotive industry investment is focused on research and development of new models, with the emphasis on bringing smaller, more fuel-efficient vehicles to market as quickly as possible. Shorter development cycles result in higher volumes of data requiring rapid analysis and manufacturers are now using software modelling to assess new vehicle designs before the prototype is built. This reduces the number of tests required and thus shortens the development time, helping to cut costs and reduce time to market. The acquisition of nCode extends our



LAN-XI

LAN-XI data acquisition hardware provides increased flexibility from a single system for sound and vibration measurement. Used as a stand-alone module or as part of a multi-rack distributed system, LAN-XI can be configured to measure from two to over 1000 channels, depending on the user's requirements.



QuantumX
 QuantumX is the first universal data acquisition instrument with advanced plug and measure technology which enables precise and immediate results, even in difficult conditions. Its compact design allows for centralised or distributed high speed data acquisition for performance testing in development programmes for the automotive, aerospace and railway industries.

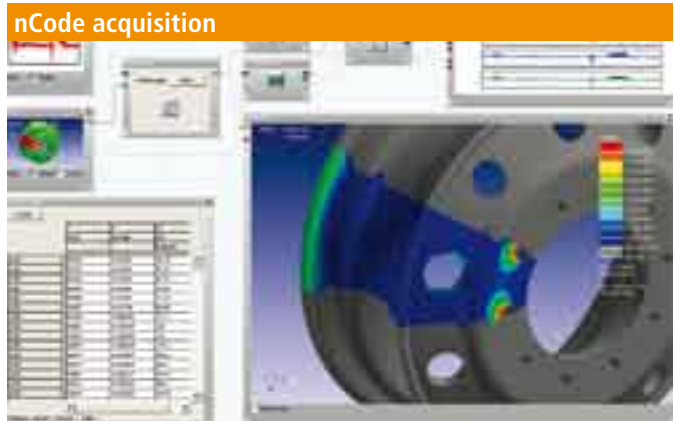
software capabilities in this area, providing customers with the technology to carry out fatigue and durability testing and life prediction, as well as noise and vibration analysis and accelerated testing. The acquisition of the LDS Test and Measurement business broadens our portfolio of data acquisition instruments and adds world-leading capability in vibration testing, enabling us to provide customers with complete test systems.

Materials testing is increasingly being used in applications such as construction, mechanical engineering, and the energy industry. Orders were received for a number of new projects in the field of renewable energies, including supplying and installing test and measurement equipment for a research project in Germany to minimise material usage in the main stem of wind turbines, which are made of expensive steel and commonly weigh around 350 tonnes. The research focuses on materials, assembly processes and new manufacturing methods for these critical support structures. HBM's systems are being used in onshore research to test the stresses which would result from the wind, waves and salt water to which the materials will be subjected when used offshore. We also received significant orders from leading commercial aircraft manufacturers for testing applications on new development programmes.

As regulation increases, particularly in the area of noise pollution from airports and cities, demand for environmental monitoring is growing. This has benefited Brüel & Kjær, who supply noise monitoring and analysis solutions to customers around the world. In February 2009, we extended our capabilities in environmental monitoring systems to offer customers an increased range of products, including a suite of noise management solutions and innovative web-based services.

Outlook

The automotive industry is facing a challenging year. The focus for new vehicle development will continue to be on building smaller, more fuel-efficient cars which meet increasingly stringent legislation on noise emissions and pollution control, and the products acquired in 2008 give our companies greater capabilities to capture the opportunities available. In the aerospace industry, ongoing programmes for new aircraft offer good prospects for this segment. Additionally, good demand is expected for data acquisition and measurement applications in environmental monitoring.



The acquisition of nCode extends our software capabilities for research and development programmes in the automotive and aerospace industries. nCode's products enable customers to carry out fatigue and durability simulation, providing them with the full testing cycle from virtual to physical test. This helps manufacturers to cut test and prototype cycles, saving time and money and speeding up time to market.

Overview

Business Review

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In-line Instrumentation

Continued demand for oil and gas;
strong growth in industrial gas business

Demand for tissue products sustains
pulp and paper market

Good growth in Asia, Middle East
and Africa

Converting and packaging sectors
reduced capital investment

£233.3m

Sales

£42.7m

Operating profit

1,406

Employees

Overview

In-line Instrumentation provides process analytical measurement, asset monitoring and on-line controls for both primary processing and the converting industries. Our products and applications provide precision measurement in challenging operating environments, ensuring process quality, asset uptime, safety, and improved yield. The operating companies in this segment are Beta LaserMike, Brüel & Kjær Vibro, BTG Group, Fusion UV Systems, NDC Infrared Engineering and Servomex.

Market drivers

The growing requirement to improve process manufacturing productivity and drive down costs in an increasingly competitive global environment has led to greater demand for process instrumentation. End user markets are facilities with critical plant assets such as paper mills and converting plants where downtime and lost production are costly. Environmental issues are also key drivers for process instrumentation in these industries. The oil and gas industry continues to focus on enhancing productivity and is seeing growing demand from the industrialising economies. Increasing power costs have led energy-intensive industries such as pulp and paper to install new instrumentation as they seek production efficiencies. Investment in infrastructure is also driving demand for process control solutions worldwide. The growth in demand for renewable resources, for example alternative energy sources such as hydro-electric and wind power, as well as the need to meet regulations on reducing emissions, has led to an increase in demand for process control solutions. Safety is also a priority in these industries, where it is a requirement to monitor gas emissions and other harmful substances in order to comply with increased health and safety regulation.

Segment performance

Sales in In-line Instrumentation increased by 17% (5% at constant currencies) to £233.3 million. Operating profit increased by 23% to £42.7 million and operating margins increased by 1pp to 18.3%. The favourable effects of foreign exchange rates and R&D expenditure growing at a slower rate than sales contributed to the increase in operating margins.

DRT-5500

The DRT-5500 Freeness Inline is the fastest, smallest and most flexible drainage rate transmitter on the market. It improves control during refining of the pulp and stabilises the drainage rate, which affects paper properties such as composition and strength. Improved drainage leads to lower energy consumption, reducing costs for pulp and paper manufacturers.



The high price of oil in the first half of 2008 led to rapid development of natural gas production and transportation and process efficiencies in existing plants, resulting in good growth for Servomex in this sector, particularly in the Americas. The company also saw strong growth in the industrial gas business and in June signed a global supply agreement with Air Liquide to supply industrial gas analysers to their operations worldwide. The aftermarket business is also showing good growth as customers look to outsource their service and maintenance work. In November, Servomex opened a new technical centre in Crowborough, England, merging the production, management and R&D facilities under one roof for the first time. In the last quarter, the company launched two new gas analysers: the SERVOTOUGH-Oxy and SERVOPRO-MultiExact, which set new industry benchmarks in flexible, accurate and reliable gas measurement. Brüel & Kjær Vibro continued to see good demand for its condition monitoring products for oil and gas installations and for remote monitoring systems for wind turbines.

In the pulp and paper industry, although some capacity was taken out of the industry over the summer, the falling price of energy in the second half of the year helped paper manufacturers to improve margins, however temporary shutdowns were implemented at many mills at the end of the year to reduce inventories. Certain grades of paper have remained unaffected, with the market for tissue products growing in all regions of the world. This benefited BTG who saw increased demand for high performance creping blades as a replacement for traditional steel blades. In addition, the company secured an order to supply its new blades to a major tissue manufacturer for production of a new product. During the year BTG launched a number of new products which help to reduce pulp and papermaking costs, including a drainage rate transmitter which provides improved control during refining of the pulp and reduces energy consumption.

Customer investment in alternative energy sources continued to create demand for products from NDC and Fusion. NDC received orders for the on-line measurement of proprietary coatings used in solar panel production and Fusion also saw increasing demand for its UV curing equipment from the solar energy market. Fusion's equipment is used for the curing of adhesives, layers and coatings on a variety of solar energy-generating platforms.

Demand from the converting industry was strong in the first half of the year but orders slowed towards the end of the year as the difficult economic environment became evident. At NDC, speciality markets such as lithium ion battery production continue to generate good demand. The company introduced a new on-line web measurement and control system, the Pro.Net TDI, which features a 'Total Distributed Intelligence' architecture, breaking down complex gauging tasks to their simplest components. The system uses operator interfaces supplied by another Spectris operating company, Red Lion Controls. Red Lion's operator interfaces are also being used on NDC's newly-launched 710e series of ethernet-enabled on-line gauging systems for process control. These systems measure critical parameters such as coat weight and moisture in the converting and papermaking industries, as well as moisture, fat and protein for a wide range of applications in the food industry. Beta LaserMike saw good sales



Series 710e

The Series 710e is a new range of on-line gauging systems, featuring high-speed digital processing technology and ethernet connectivity. The systems provide real-time measurement of critical parameters such as coat weight and moisture in the converting and papermaking industries, as well as moisture, fat and protein for a wide range of applications in the food industry.

of its products to the metals industry, which is now the company's second largest market, after cable, with increasing sales into new applications rather than cold mill operations. The company also launched the LaserSpeed 4000 gauge which provides non-contact length and speed measurement in non-metals applications such as plastics and film.

Demand for optical fibre continued to grow, driven by oceanic undersea cables and for fibre-to-the-home applications, particularly in the Asia Pacific region. This has resulted in fibre producers recommissioning 'mothballed' production equipment and/or adding new equipment to increase volumes and production speeds. This has benefited Beta LaserMike, who supply a variety of process control systems to address the different stages in the manufacture and quality control of optical fibre, and Fusion, whose equipment is used to cure the barrier coatings that are required to protect the glass fibre prior to its incorporation into the transmission cables.

Outlook

Customer investment in the energy market is expected to continue, despite the falling oil price. The focus on alternative energy sources continues, in particular the use of wind turbines, where Spectris has a growing presence in both development of new materials for the turbine structures and in remote monitoring of power generation. The outlook for the pulp and paper market remains uncertain in the short term, although demand for tissue is expected to continue to grow. The converting industry is slowing in some areas, particularly in China, but speciality markets in converting and high technology, especially lithium ion battery production, are still doing well in this region.

Industrial Controls

Good demand from general manufacturing applications, but weakness in second half

Continued growth in industrialising economies

Acquisition of Siemens' Machine Vision Business expands tracking and traceability solutions

£45.7m

Sales

£8.4m

Operating profit

365

Employees

Overview

Industrial Controls supplies automation and control products for the discrete manufacturing industries. Our products provide identification and tracking solutions during the manufacturing process, displays for process monitoring and control, and data interfaces for a broad range of manufacturing industries. Sales are indirectly to end users via distributors as well as directly to original equipment manufacturers, with a significant proportion of repeat business. The operating companies in this segment are Microscan and Red Lion Controls.

Market drivers

Manufacturing automation is growing in importance as customers compete in an increasingly global environment where improving efficiency and reducing unit costs are key to survival. Another significant factor driving automation and control equipment is the demand for increased operational data regarding product manufacture, and the need to improve processes to reduce rework and scrap, for example by tracking products through the manufacturing process and beyond so that they can be traced in the event of a product recall. In some industries, such as the aerospace and pharmaceutical industries, product tracking by means of barcodes is a regulatory requirement.

Segment performance

Sales in Industrial Controls increased by 19% (9% at constant currencies) to £45.7 million. Operating profit was £8.4 million compared with £8.6 million in the prior year. Operating margins were 18.4% (2007: 22.5%). Changes in the product mix, an increase in research and development expenditure, and acquisition integration costs resulted in margins being lower than in the previous year.

Universal signal conditioners

The new IAMS series of universal signal conditioners feature a detachable LCD display/programming module. This provides simple push-button programming which allows the signal conditioner to be easily set up and can be used to programme multiple units in the same way, greatly reducing configuration time. When not being used for programming, it can remain attached to the unit to indicate the input parameters, in the same way as a panel meter.





G3 Kadet

Based on the G3 series, with many of the same capabilities, the G3 Kadet series of touchscreen operator interfaces offer the ideal balance of advanced features and value for process machinery applications.

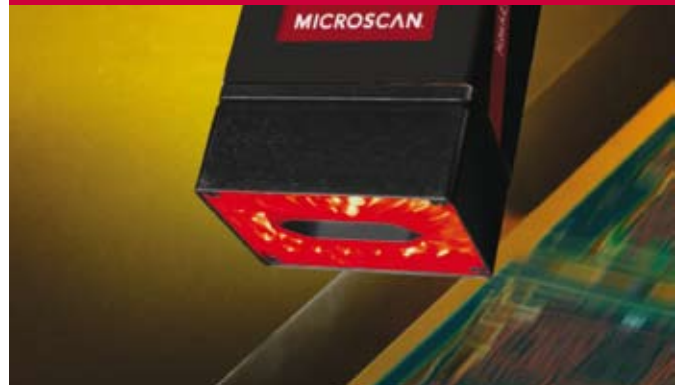
The acquisition of the Siemens Machine Vision Business expands Microscan's range of vision and smart camera products for tracking and traceability applications, from basic barcode reading to complex inspection and measurement. The acquisition has added ten product lines and over 60 technology patents. Microscan saw good success for its products in the life sciences and electronics manufacturing sectors, particularly for the Quadrus MINI Velocity mini imager for general factory automation, and launched the QX-830, the first in a series of products with the new QX platform technology. This compact laser scanner combines the 'Quick Connect' system of cabling and easy networking with 'X-Mode' symbol technologies to deliver high performance barcode reading with simplified connectivity and networking in industrial automation environments.

Red Lion Controls continued to expand sales of its human machine interface and data station products internationally, particularly in China and India. A number of new products were launched in the second half of the year, including large plant floor marquee displays for factory floors, the G3 Kadet series of operator interface panels with touchscreen displays for process machinery, and universal signal conditioners with detachable LCD display and programming modules.

Outlook

Whilst the longer-term demand drivers for general automation continue to be positive, this segment is particularly sensitive to general manufacturing and industrial output. The acquisition of the Siemens Machine Vision Business has enabled us to increase the served market within the broader industrial controls space, estimated to be in the region of £10 billion, particularly in the area of product tracking.

Siemens' Machine Vision Business



The acquisition of the Siemens Machine Vision Business strengthens the Industrial Controls segment by expanding our range of vision and smart camera products. An industry leader in Automatic Identification and Data Capture (AIDC), the company specialises in machine vision and inspection systems used in a broad array of manufacturing, packaging and traceability applications. The acquisition enables us to provide full track, trace and control solutions, from basic barcode reading to complex inspection and measurement, to leading industrial markets, particularly in the medical, electronics manufacturing and automotive sectors. The acquisition has added ten product lines and over 60 technology patents to the Industrial Controls portfolio.