From concepts to assembly thinking in solutions is our strength

We like to think in solutions, not in problems. If you have a measurement, test or control problem we have the solution. From component to electronic boards, from design to product solution and from single unit to large series of equipment, we are ready for it!

Our professional, well-equipped workshop with an ISO 9001 certificate and a highly skilled and motivated team make your specific requirements possible. Also for repairs and assembly of your equipment you can rely on istec International B.V.

Some of our principals:

- Akzo Nobel
- Arcelor
- Corus
- DOW Chemicals
- DSM Limburg
- Dupont
- Electrabel
- Essent
- ExxonMobil
- NV Nederlandse Gasunie
- NuON
- Philips
- Sabic
- Stork
- Teijin Twaron
- Total

Istec International B.V.
Explore, select and market products. Istec International B.V. is the key in engineering solutions. Development and assembly of the most sophisticated templates is a day to day job for us.

With an ISO 9001 certificate a high-tech workshop comes natural

ISO 9001:2000

Sensors and solutions

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mail@istec.nl
www.istec.be

Your partner for solutions
JAQUET solutions for rotating machinery

JAQUET TECHNOLOGY GROUP offers the world’s most versatile and advanced range of solutions for the detection, measurement, diagnosis and management of rotational speed. Our industry and application specific expertise ensures that you will achieve an optimum solution. Completely matched to your individual requirements, meeting key, industrial standards and certifications.

Speed sensors

JAQUET has a speed sensor for every reason, need to detect, monitoring of a hydro-turbine? Or maybe measure the complete speed range of a reciprocating in a hazardous area? Then there’s done that, got this sensor. Of course they are provided with the appropriate approval and certification for your application.

Pole bands and pole wheels

Should your machine not already be fitted with a suitable means of generating speed signals, JAQUET provides a total solution starting at the shaft. Small standard pole wheels, with or without boss, single or two piece are available along with tailor made pole bands for large diameter shafts.

Multi-channel overspeed protection

Whether your machine is a 500 MW steam turbine or a gas turbine / compressor set, JAQUET’s FT3000 is configurable to provide ultimate protection and plant availability. Its fast reaction time and acceleration function enable operation at maximum efficiency without compromising system safety. Naturally IEC 61508 SIL3 certified and API 670 compliant, the flexibility of FT3000 allows its use in any OEM or retrofit application.

Measurement/protection modules, with or without display

Ultra cost effective solution. T401 provides current output and a set point relay; T411 adds a 5 digit display. T430 builds a B+2 measurement and protection chain when used with JAQUET’s T006 Speed Sensor or can be used for speed and direction in conjunction with JAQUET’s DYS speed sensor.

Engine diagnostics

The performance and health of reciprocating engines can be diagnosed from the progress of rotation. JAQUET’s MDS4000 delivers cylinder health information allowing event based maintenance as opposed too often unnecessary scheduled overhauls. Faults are detected at an early stage, allowing operation with increased fuel consumption and ultimately catastrophic failure.

Engine protection

The new T500 product offers fast speed to analogue converters that may be used for regulation purposes. In addition, four limit relays are available for start control and overspeed protection. Uniquely, JAQUET’s T500 offers the ability to record temperature and speed, a logical combination of temperature and speed or perhaps speed and oil pressure.

Regulation, overspeed protection & event logging

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Eddy Current Proximity Probes

Eddy current proximity probes and signal conditioners, now with current modulation, allow measurement in contactless mode of relative vibration or axial displacement on rotating machines such as steam and gas turbines, hydroelectric turbines, generators, turbo-compressors etc. Intrinsically safe extensions conforming to ATEX safety standards are available.

Piezo-electric Accelerometers

Designed to work continuously in severe industrial conditions, wide range of models provide the ability to convert linear or rotational acceleration into electrical output. Intrinsically safe executions conforming to ATEX safety standards are available.

VMU 100 “VibroSmart”

The single channel monitor is designed for protection monitoring of individual machines, independently or as part of a larger system as required. housed in a rugged IP65 industrial enclosure, it can be mounted close to the machine to be monitored.

Vibro-Meter Industrial & Marine Division is a supplier of complete systems for the protection and condition monitoring of turbo-machinery. That means from the transducers, monitoring electronics to the condition and performance monitoring system as well as all the cables and accessories.

VM600 series

The philosophy is simple. One system, modular, scalable, configurable, using standard operating systems and standard communications interfaces. Easy to specify, easy to install, easy to live with, easy to adapt and easy to expand.

Traditionally, separate systems have been provided for machinery protection, on-line condition monitoring and machinery performance assessment. Vibro-Meter now introduces a unified concept based on five decades of experience. The VM600 uses the latest digital signal processing technology. Industry standard communications interfaces deliver the most up-to-date, integrated, modular, scalable solution to all machinery protection, condition and performance monitoring requirements within a single system framework. Only three types of signal processing modules are required: one for condition monitoring, one for performance monitoring and one for condition and performance monitoring data acquisition (C&PM). Each card can perform the necessary signal processing tasks with input from any appropriate sensor, simplifying specification, installation, training and spares holding.
METRIX Instrument Co.
We manufacture a complete line of equipment to measure and monitor vibration and provide early warning of potential machinery failure. Our products include proximity systems, transducers, sensor systems, switches, transmitters, signal conditioners, monitors and portable meters.

Proximity Transducers - Probes, Extension Cables, Drivers
- Direct Replacements for Bently Nova Series 3300, 7200, 3000 and RAM probes, cables, and drivers
- Latest technology design including gold plated hex connectors, Tefzel insulation, Proberae™ and VersaGrip™ for easy installation
- Resource conserving designs by replacing individual components
- Protect Critical Machinery at a lower cost.

Proximity Transmitters & Signal Conditioners
- Transmitter 590 (Relay) and TXA (Aid1), TXB (Aid2), TXC (Option)
- Loop-powered transmitter and probe driver connection
- Measure radial vibration, position (thrust), speed, and phase
- Single-channel signal conditioners
- Variable 4-20mA signal proportional to vibration level or shaft axial position
- IN1 connector for local analysis
- SPI/Serial connection versus dedicated rack mount monitors

Piezo-electric Accelerometers and Signal Conditioners
- Wide Frequency Response
- Case Standard, Hermetic 303 Can
- Independent polarity: 0° or 180°
- Intrinsically safe versions available
- Low Profile
- High Temperature
- 4-20mA proportional to vibration level
- Significant savings over rack mount monitors
- Optional display, filter and/or galvanic isolation
- Sensor/calibrate input: “OK” tight
- Buffered signal output for analysis

Velocity Sensors - High Temperature, Hazardous Areas, Low Frequency
- Self-generating or piezo-electric pickups
- Velocity output response (IPR)
- Operating temperature up to 327°C
- Any wire orientation
- Faster Six Sigma performance

Switches - Electronic and Mechanical
- Low cost projection system
- Many of the features of high-end systems
- Single or dual switching
- Adjustable time delay or startup, stop, or reverse
- Remote or local read capability
- Acceleration, Velocity or Displacement response
- External switch adjustment available
- STD or DRT switch output contacts
- 3 wire Electronic Switch

Loop-Powered Vibration Transmitters
- 4-20mA proportional to velocity or displacement
- Sensor replaces probe and related electronics
- Interfaced directly to PLC or DCS
- Highest operating temperature (300°C)
- Most stable detection circuit (NMP)
- Wide frequency range available
- LCD display option
- Reliable micro-switch redundant shock protection
- Buffered signal output for analysis option
- High and low pass filter options

Loop-Powered Impact Transmitter
- Mechanical/impact tolerance
- Loop powered, 5.0VDC input
- Center bolt for mounting ease
- Stainless steel housing
- 4-20mA output
- 2-pin HI connector
- Detects:
  - Loose or missing nuts
  - Crushed or broken bearing
  - Broken or loose bolts
  - Crack or split in the process
  - Excessive clearance in the slipper
  - Other loose or broken parts
- Engine Detonation
- Metric Value
- Minimal-Capital-Spending
- Certifications available: UL, CSA, CE, Gasteland and ATEX

Laser-triangulation: Non-contact displacement and position sensors
The non-contact displacement transducers use laser triangulation as a measuring principle. A laser diode projects a light spot onto the target surface, and an infrared photodiode is used to detect the reflected light. The measurement is then calculated by triangulation, which allows for high accuracy and non-contact measurement.

Non-contact capacitive displacement and position sensors
Displacement sensors are linear for all metals. The sensor acts as an electrode; the opposite electrode is the target. The measurement technique facilitates exclusively measurements against all conducting objects. Micro-Epsilon has extended the capacitive measurement principle with optical triangulation, which allows for non-contact, highly-precise measurement and very stable measurements to be obtained.

Eddy current principle: Non-contact displacement and position sensors
Eddy current sensors measure distances, displacements, or positions by the electromagnetic interaction between an oscillating field and a metal target. The measurement system transmits an oscillating magnetic field into the target, and the resulting eddy currents induce a magnetic field that is measured by the sensor.

Draw-wire sensors for displacement, position and length
Draw-wire sensors are used in applications requiring precision measurement of linear displacement, such as machine tools, robots, and linear actuators. The sensor typically consists of a flexible wire that is tensioned and displaced, and the displacement is converted into an electrical signal that is proportional to the wire position.

More precision, Sensors, measurement devices and systems
As the technological leader, Micro-Epsilon is pursuing the challenge of developing high precision sensors, measurement equipment and systems. This challenge represents the drive for continued high performance in the field of measurement technology.
I.R.C. in control of Rotation
- Independent
- Proactive
- Active
- Reactive
- Immediate and direct contact
- Emergency diagnostic/repair aid
- Condition monitoring
- Preventive maintenance planning and service
- Fixit-outcall
- Service contracts
- Functional system design

About I.R.C.
- I.R.C. offers many years of worldwide experience in machine condition monitoring, preventive maintenance planning and machine diagnostics.
- We guarantee professional expertise and reliability in the fast-paced, demanding environment of the manufacturing, engineering and construction industries and are proactive in the pursuit of process and power generation industries.
- Broad independence ensures our customers' benefit from independent and objective advice.
- We strongly believe in providing high quality service, value for money, first-time-right and on-time delivery in full.
- We take responsibility for implementing advised concepts.

Diagnostic tools
I.R.C. has its own set of tools for machine condition monitoring.
- Diagnostic tools are local based and can be used by customer-based systems (e.g. SCADA).

I.R.C. diagnostics equipment
- Multi-channel DAQ systems for run-up/coast-down and troubleshooting applications
- Reliable data collection, real-time, flow and other process data.
- Related measurements.

Equipment service activities / brands served
Bently Nevada
Bruel & Kjaer
Vibro-meter
SKF
Dytran
Envi
Matrix
Istec
Skid
other

Condition monitoring activities brands served
ABB/Itron
Dresser-Rand
General Electric
Kobe-Toshiba
Mitsubishi
Siemens
Sulzer
STORK

ProfiSignal

Mission Statement
"With our products, we at Delphin wish to help our customers towards greater efficiency, improved product quality and optimal usage of their machinery and equipment."

High level measurement precision with 24 bit resolution ensures accurate data acquisition.
Message devices can function independently due to its internal data storage capability of up to 1GB.

Because of TopMessage's extended functions a wide range of applications can be realized. e.g. If limit values are exceeded alarm warnings can be issued or digital outputs activated. Flow signals can be integrated, impulse counts performed with very high accuracy (even very narrow impulses can be counted), pressure and temperature differences.

External devices (e.g. weighing machines, modems, large displays) can be connected to Message devices via serial ports.

Communication via Profibus DP is also available. Configuration of TopMessage takes place via the user friendly "Bus manager" PC software.

Configuration data can be transferred off-line via file transfer; on-line functioning used for operation, monitoring and analysis.

Hardware and software from one supplier
ProfiSignal uses Delphin's tried and tested ProfiBus Hardware. These are decentralized, network capable, measurement data is stored in one place.

ProfiSignal can use existing data networks - no new cabling is required. ProfiSignal enables process data to be accessed from any PC.

ProfiSignal offers complete solutions
ProfiSignal can be delivered as a complete package including hardware, software, installation and training. The hardware and software is fully compatible and can be operated separately. Using ProfiSignal makes system planning and system start-up quick and easy.

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ProfiSignal is simple to understand and logically designed. High out-sourcing costs are not necessary - ProfiSignal reduces costs.

SUITED TO A WIDE RANGE OF APPLICATIONS
- ProfiSignal applications range from the simple acquisition of process data through to the monitoring and analysis of dynamic vibrations.
- ProfiSignal is not limited to the number of processes to be monitored and controlled.
- ProfiSignal car can provide solutions - whether the application consists of a single stand or reactor.
- ProfiSignal software is made-up of function blocks which require only configuration. The makes it simple to generate applications which meet specific user requirements. A further benefit is the ability to run, for example, both quality control and trouble-shooting from the same software.
- ProfiSignal can be tailored to suit a range of applications. ProfiSignal's modular construction provides the user with the only solution both in terms of functionality and value for money.
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Modular and flexible

There are many good reasons for choosing ProfiSignal: lots of large and medium-sized applications are successfully using ProfiSignal for measurement data acquisition, test stand and laboratory automation and remote monitoring (e.g. Bayer, Siemens, Oelwein Lederle Lab, etc.).

ProfiSignal applications are suitable in process and test engineering, quality control and research and development.

ProfiSignal is a modular system designed to meet user requirements - both for systems with complex requirements and for very simple systems.

ProfiSignal's modular construction provides the user with the only solution both in terms of functionality and value for money.

ProfiSignal is available without Flex or Xikka.
- ProfiSignal enables data acquisition, archiving, analysis, evaluation and observation. Xikka includes integrated programming, reporting and input mask functions.

A diverse range of uses-proof of our products
Well known clients trust and build on the solutions we can provide for a range of different applications, e.g. in process engineering, test engineering and research, as well as the complete monitoring and acquisition of operational data in tanks, plant and machinery etc.

Using your existing PC you can analyze measurement data and operate and monitor your processes irrespective of where the Message devices are located.

Message devices can operate as stand alone or be networked and are not dependent on PCs and networks. The 1 GB data storage ensures no loss of data even in the event of a power failure.

Data can be transferred off-line via file transfer; on-line functioning used for operation, monitoring and analysis.

Hardware and software from one supplier
ProfiSignal uses Delphin's tried and tested ProfiBus Hardware. These are decentralized, network capable, measurement data is stored in one place.

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SolidFlow
The measuring system for measuring mass flows of solids in an absolutely easy way. Either in free fall or pneumatic transportation.
• Applications in pneumatic conveying systems.
• The measuring system SolidFlow can be used in pneumatic dust phase conveyed systems with pipe diameters of 20–600 mm.

MaxxFlow
The measuring system for the measurement of bulk materials after mechanical conveyed feeders such as screw feeders, air conveying systems, with pipe diameters up to 250 mm.
• For all solids
• For round pipelines or channels
• No limit for the amount of throughput
• Diaphragm measuring in the conveying flow and of flow pattern of the transported material within the pipeline
• The pipe cross section of the sensor is according to the existing pipeline.

DensFlow
The measuring system for the continuous flow measurement of pneumatically conveyed materials.
• The measuring system DensFlow can be used with pneumatically dense-phase-conveyed materials or after mechanical conveying systems, with pipe diameters up to 250 mm.
• Powder- or granulate-shaped solids can be measured.
• The optimal velocity of the material flow is in the range of 5–10 m/s.

Dusty
Low-cost Broken Bag Detection
The appliance has been designed for reliable detection of broken bags without delay.
• The complete measuring system consists of a sensitive digital circuit and a compact device working with 24 V supply voltage.
• Dusty is available with an automatically adjustable sensitivity.
• The first alarm releases at 50% exceeding and the second at 100% exceeding to the reference value.
• The unit provides optical and audible alarm output.

Dusty is being adjusted to normal dustflow conditions in your application. The first alarm releases at 50% exceeding and the second at 100% exceeding to the reference value.

ProSens
Dust detection for the reliable and time near monitoring of broken bag detection.
• Problem-free using in all metallic channels and pipes with a diameter up to 400 mm.
• The complete measuring point consists of a probe and electronic unit, in a compact device which works with 24V / 230 V distribution voltage.
• Dust detection is available with an automatically adjustable setup function. With this function the ProSens is being adjusted to normal dust flow conditions.
• The appliance has been designed for broken bag detection. ProSens is applicable in all metallic channels in which dust particles should be detected.
• The operative range of ProSens extended from 0.5 m/s up to 1 kg/m³.

Communicating Electronic
Micro-vapacitance silicon sensor

Micro-vapacitance silicon sensor

Ultrasonic Flowmeter series
Basic measuring principle “Time Difference”
All Fuji’s Flowmeters measure flow rate by utilizing the Transit-Time Difference Principle. Simply, two ultrasonic sensors are mounted in the pipe exterior. Each transmits an ultrasonic pulse to the opposite sensor. The difference in the transit times of the two signals is used to calculate the flow velocity. A Micro-vapacitance silicon sensor has been developed. Storing design located in the electronics module provides different outputs: 4 – 20 mA, with Hart™, Fieldbus, or HART™ protocols.

FCX Transmitters
As a leader in the pressure measurement field, Fuji ELECTRIC has achieved an installed base of about 500,000 FCX transmitters throughout the world. As a result of high technology design, a high-quality micro-capacitive silicon sensor has been developed. Storing design located in the sensor, accuracy 1% of rate, and the electronics unit provides different outputs: 4 – 20 mA, with Hart™ or Fieldbus Foundation H1, or Profinet PA.

Micro-vapacitance silicon sensor

Time Delta-S for general use
Features
The philosophy is simple. One system, modular system.
• Reliable to bubbles in the liquid
• Accurate measurement: 1.0% of rate
• Various sensors available according to usage
• Almost unaffected by fluid temperature or pressure variations
• Measurement range -50 to 0 to 50 m/s
• Response time: 0.5 s or less
• Output signal: 4 to 20 mA DC, pulse output, alarm output
• Accuracy: 1.0% of rate
• Structure: converter and detector, waterproof
• Power supply voltage: 200 to 240V AC, 50 or 60 Hz
• Diameter of pipe: 150 mm max.

Portaflow-X, offering true mobility
Features
• Portable: 1.5 kg & 5 hours operation
• Superior operability with large graphic display
• Dedicated carrying case for easy carriage
• 10,000 data logging function
• Measurement range: 0 to 1,000 m/s
• Response time: 0.5 s or less
• Output signal: 4 to 20 mA DC
• Communication interface: RS232C
• Accuracy: 1% of rate
• Power supply voltage: 120 to 240V AC, built in battery

Dusty

ProSens

Ultrasonic Flowmeter series

FCX Transmitters

Time Delta-S for general use

Portaflow-X, offering true mobility

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The pipe cross section of the sensor is according to the existing pipeline.
Easy to use. Easy to install.

**Bimetallic thermometers**

The temperature as a physical unity cannot be measured directly but only upon a phenomenon related to temperature change, like the volume or length expansion of gases, liquids or solid materials.

When a metallic element is submitted to temperature changes, its length varies. This physical property has been used and developed to build temperature measuring devices. The bimetallic sensor is made of two coils twisted together, and welded at their end.

**Gas pressure thermometers**

This thermometer uses the volume expansion of gases at temperature changes, in particular the proportional gas expansion of inert gases.

**RTD Sensors and Thermocouples**

RTD sensors and thermocouples are used as electronic temperature sensors. These temperature sensors are suitable for use in industrial and laboratory temperature and process measurement.

**RTD Sensors (Pt-100)**

Platinum resistance thermometers are well-known for their accurate and stable performance. A Pt-100 detector has a value of 100 Ohms at 0°C and varies with a positive temperature coefficient. Pt-100 sensors are used in processes from -260°C to +800°C. The sensors consist of a single or dual detector which is built into a stainless steel sheath. The standard tolerance is according to DIN EN 60751 Class 5 or A; however, 1/15 or 1/20 DIN Tolerance detectors are also available. The 2-, 3- or 4-wire Pt-100 detectors are the most popular formats; but we can also supply Pt-20, Pt-50, Pt-100 and Pt-1000 versions.

**Thermocouples**

Thermocouples essentially comprise a thermoelement (a junction of two specified dissimilar metals) and an appropriate two wire extension lead. A thermocouple operates on the basis of the junction located in the process producing a small voltage which increases with temperature. It does so on a reasonably stable and repeatable basis. Thermocouple probes have a short response time and can be used dependably on the production floor. Thermocouples can be used from -260°C to +800°C, or even as high as +2200°C using Tungsten/Rhenium elements. The materials are made according to internationally accepted standards as laid down in IEC SAI 1, 2, 4 and 4 which is based on the International Practical Temperature Scale 1990 (IPTS-90). Operating temperature maxima are dependent on the conductor thickness and type of thermocouple wire. The most well-known types are Types J, K, N, T, E, R, S, B, C and W. Thermocouple probes consist of thermocouple pairs which have been built into a ceramic or metallic sheath with a cable, connector or connection head at the cold end.

**Safety due to Request Class 4 (AK4) and IEC 61508 SIL2**

Due-Tec Failsafe systems are TÜV-certified according to the “Fundamental considerations of security for MSR-protection systems” DIN EN 50178 for request class 4 and it is conform to IEC 61508 SIL 2. Request class 4 or SIL2 is the highest class which can be achieved with a single channel system.

**Main benefits**

- Self monitoring by means of 2 microprocessors, master-slave principle
- DIN 19250 AK4 Certificate and IEC 61508 SIL2
- Diagnosis manager with error memory
- Configuration using WINDOWS-WINSMART
- Online-display
- Bus-connection (RS 232 and RS 485)
- Input: multi-functional

**MÜTEC**

It starts with an idea

**Fischer**

FISCHER products are used to streamline and optimize processes in a wide variety of industrial applications. Pressure, differential pressure, temperature, relative humidity, level monitoring, or flow rate - whatever your measuring task, we can offer the ideal solution. Complete end-to-end solutions - all from a single source. Our company is certified as per DIN EN ISO 9001:2000. Many FISCHER products are structure tested.

**DE501 Differential Pressure Transmitter**

Measuring transmitter with limit switching function for overpressure, vacuum and differential pressure especially for air and inert gases. The transmitter is used in all areas where measurement, control and monitoring of all kinds of gases is necessary. It is also suitable for the measurement of vacuum and overpressure in the same line. It can be used in air conditioning, ventilation, vacuum technology and process engineering. The transmitter is mounted on a DIN 35-7,5 standard rail. The transmitter provides limit switching between 0 and 2 bar. The transmitter is available with either 3 or 4 wires.

**DA03 Differential Pressure Gauge**

The DA03 is a versatile differential pressure gauge which can be configured with various optional features such as:

- Adjustable limit contacts: delayed action of non-magnetic, non-corrosive type
- Proximity type (NAMUR) non-contact limit detector
- Pointer position transducer, with electrical signal output

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