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

Istec International B.V.
Explore, select en inform markets. Istec International B.V. is the key in engineering solutions. Development and assembly of instrumentation cabinets is a day to day job for us.
Our professional utilized workshop, the ISO 9001 certificate and strong motivated professionals make your specific requirements possible. Also for repairs and assembly of your equipment you can rely on Istec International B.V.

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!

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

ISO 9001:2000 SKGCI

INTRON VGM CHECKLIST AANNEMERS VCA-381*

IC istec International

Your partner for solutions

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Sensors and solutions

IC istec International

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.

JAQUET TECHNOLOGY GROUP

Speed sensors

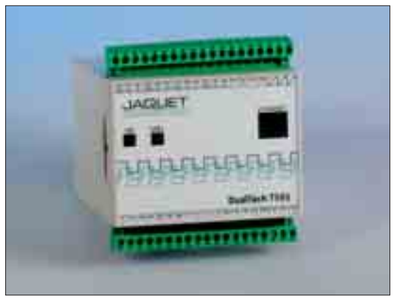
JAQUET has a speed sensor for every reason; need to detect, creeping of a hydro-turbine? Or maybe measure the complete speed range of a gas turbine in a hazardous area? Been there, done that, got the sensor. Of course they are provided with the appropriate environmental approval and certification for 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.

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. T420 builds a SIL2 measurement and protection chain when used with JAQUET's IQ Speed Sensor, or can be used for speed and direction in conjunction with a JAQUET DSY sensor and T401.



Regulation, overspeed protection & event logging

The new T500 product offers two 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 construct system limits e.g. logical combinations of temperature and speed or perhaps speed and oil pressure.

JAQUET's T600 takes this product to a higher level with the addition of CAN and Ethernet interfaces and the provision of diagnostic capabilities for the OEM. Critical events are also logged with time and date for later analysis and display on a PC.

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.

Engine diagnostics

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

Your partner for condition monitoring

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.

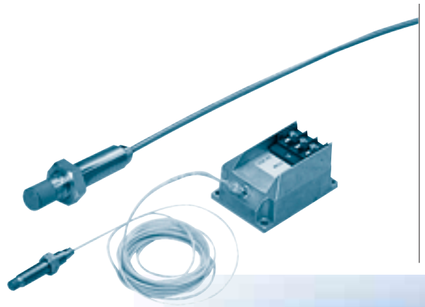
MEGGiTT

Piezo-electric Accelerometers

Designed to work continuously in severe industrial conditions. Wide range of models available including types with built-in electronics and current modulation output, others for high temperatures up to 700°C fitted with integral cables or rugged industrial connectors. 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, where a multi-channel installation is not required. Housed in a rugged IP 65 industrial enclosure, it can be mounted close to the machine to be monitored.



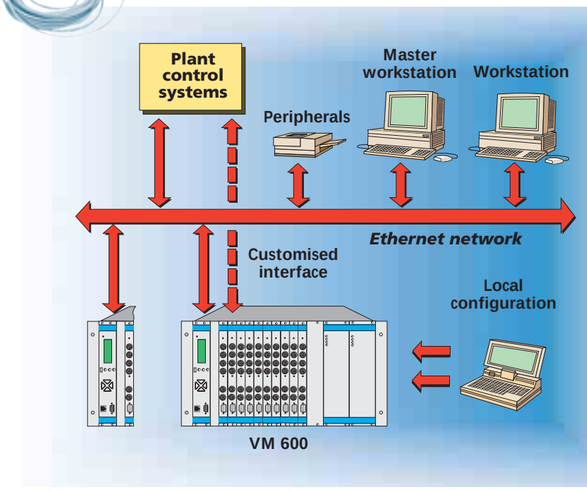
Eddy Current Proximity Probes

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

The VM600 series

The philosophy is simple. One system, modular, scaleable, configurable, using standard operating systems and standard communications. 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, scaleable 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 protection (MPC 4), one for temperature and process signals (AMC8) and one for condition and performance monitoring data acquisition (CMC16).
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, seismic sensors, switches, transmitters, signal conditioners, monitors and portable meters.

Proximity Transducers - Probes, Extension Cables, Drivers

- Direct Replacements for Bently Nevada Series 3300, 7200, 3000 and RAM probes, cables and drivers.
- Latest technology design including gold plated hex connectors, Tefzel insulation, ProbeSeal™ and VerniGap™ for easy installation*
- Extend life of installed transducers by replacing individual components
- Protect Critical Machinery at a lower cost.

Proximity Transmitters & Signal Conditioners

- Trendsetter TXR (Radial) and TXA (Axial), 5510 (Radial) and 5516 (Axial)
- Loop-powered transmitter and probe driver combined
- Measure radial vibration, position (thrust), speed and phase
- Single-channel signal conditioners
- Provides 4-20mA signal proportional to vibration level or shaft axial position
- BNC connector for local analysis
- Significant savings and simplification versus dedicated rack mount monitors

Piezo-electric Accelerometers and Signal Conditioners

- Wide Frequency Response
- Case isolated, Hermetic SS Case
- Independent Polarity (IPT™)*
- 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/cable input "OK" light
- Buffered signal output for analysis

Velocity Sensors - High Temperature, Hazardous Areas, Low Frequency

- Self-generating or piezo-electric pickups
- Velocity output response (IPS)
- Operating temperature up to 375°C
- Any axis orientation
- Near Six Sigma performance

METRIX INSTRUMENT CO.

Loop-Powered Vibration Transmitters

- 4-20mA proportional to velocity or displacement
- Loop terminals with Independent Polarity (IPT™)
- Interfaces directly to PLC or DCS
- Highest operating temperature (100°C)
- Most stable detection circuit (RMS)
- Widest frequency range available
- LCD display option
- Built-in temperature shock protection
- Buffered signal output for analysis option
- High and low pass filter options

Loop-Powered Impact Transmitter

- Measures mechanical looseness
- Loop powered, self contained sensor
- Center bolt for mounting ease
- Stainless steel housing
- 4-20mA output
- 2 Pin MS connector

Detects:

- Loose rod nuts
- Cracked rod
- Broken or loose bolts
- Liquids in the process
- Loose or worn pins
- Excessive clearance in the slipper
- Other loose or broken parts
- Engine Detonation

Metrix Value

- Minimize Capital Spending
- Certifications available: UL, CSA, CE, Gosstandard and ATEX

Switches - Electronic and Mechanical

- Low cost protection system
- Many of the features of high-end systems
- Weatherproof/Explosion-proof options
- Single or dual setpoints
- Adjustable time delay or startup bypass available
- Remote or local reset capability
- Acceleration, Velocity or Displacement response
- External setpoint adjustment available
- SPDT or DPDT switch output contacts
- 2 wire Electronic Switch

More precision. Sensors, measurement devices and systems

As the technological leader, Micro-Epsilon is always 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.

Laser-triangulation: Non-contact displacement and position sensors

The non-contact displacement opto NCDT product group utilizes optical triangulation as a measuring principle. A laser diode projects a visible spot of light onto the target surface (laser class 2). The light reflected from this spot is directed through an optical receiving system onto a position-sensitive element.
Optical displacement sensors measure with a large reference distance and a very small measuring spot diameter.

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 innovative functions which enable highly linear output characteristics, nanometer-precise resolution and very stable measurements to be obtained.

Eddy current principle: Non-contact displacement and position sensors

Eddy current displacement sensors measure distances, displacements, or positions of any electrically-conductive target.
The principle enables non-contact and wear free measurements. The measurement objects may have either ferromagnetic or non-ferromagnetic properties. Due to its immunity to oil, dirt, dust, moisture, interference fields, etc. the eddy current principle is ideally suitable for applications in harsh industrial environments.

MICRO-EPSILON

Linear inductive displacement and position sensors

Electromagnetic displacement sensors are used extensively in applications for automated processes, quality assurance, test rigs, hydraulics, pneumatic cylinders and automotive engineering. The advantages of these displacement sensors are well known and highly valued, and include ruggedness, reliability under harsh conditions, high signal quality and good temperature stability,

The electromagnetic sensors of the induSENSOR series are based on the well-proven inductive and eddy current principle. They are used successfully both in single and high volume OEM applications.

Draw-wire sensors for displacement, position and length

Draw-wire displacement and position sensors are essentially electronic tape measures and measure the linear movement of a component by means of a wire made of highly-flexible stainless steal strands, which is wound onto a drum by a long-life spring motor.

The measuring drum is axially coupled with a multi-turn potentiometer, an incremental encoder, or an absolute encoder. With the draw-wire principle a linear movement is transformed into a rotary movement and then converted into a resistance change or into countable increments.

I.R.C. in control of Rotation

- ***Independent*** • ***Proactive***
- ***Active*** • ***Reactive***
- ***Immediate and direct contact***

- *Emergency diagnostics/first aid*
- *Condition monitoring*
- *Preventive maintenance planning and service*
- *Overhaul*
- *Service contracts*
- *Functional system design*

About I.R.C.

- I.R.C. offers many years of world-wide experience in machine condition monitoring, preventive maintenance planning and machine diagnostics.
- We currently provide services to rotating equipment manufacturers, engineering and construction companies and to process & power generation industries.
- Brand independence ensures our customers benefit from independent and objective advise.
- The I.R.C. team strongly believes in Full Path Approach and takes responsibility for implementing advised concepts.

Instrumentation

Being product independent allows I.R.C. to offer a full package of services from design through to acceptance tests, including product supply if required.

- Tender specification
- Product benchmark (customer application specific).
- Functional design specification
- Detailed design specification
- Factory acceptance test specification/supervision
- Site acceptance test specification/ supervision
- Project planning
- Project monitoring
- Loop checks
- System verification (accuracy)
- Functional check (alarm level trip level tests).
- Refurbished parts for obsolete equipment
- OEM stock on-site or local

Diagnostic tools

I.R.C. has its own set of tools for machine diagnostics but is also experienced with customer based systems (e.g. SKF, VM, BN, B&K, CSI).

I.R.C. diagnostics equipment

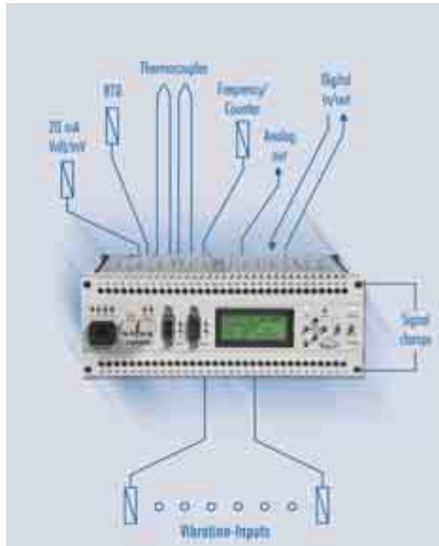
- Multi-channel DAQ systems for run-up/coast-down and trouble shooting applications
- Portable data collectors
- Process data (pressure, tempera-ture, flow and other process data).
- Related measurements

Condition monitoring activities brands served

ABB/Alstom
DRESSER-RAND
General Electric
Kobe-Toshiba
Mitsubishi
SIEMENS
Sulzer
STORK
other

Equipment service activities /brands served

Bently Nevada
Brüel en Kjaer
Vibro-meter
SKF
Dymac
Entek
Metrix
other



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 or set points issued.

TopMessage devices can calculate averages and temperature differences.
External devices (e.g. weighing machines, modems, large displays) can be connected to Message devices via serial ports.
Communication is via Modbus (LAN).

A diverse range of uses-proof of our products

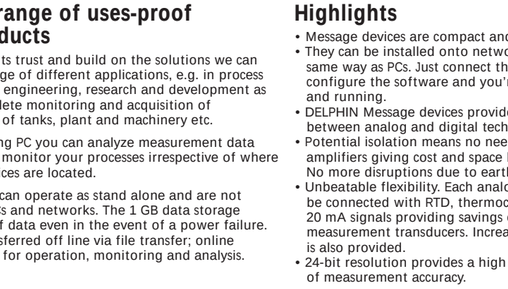
Well known clients trust and build on the solutions we can provide for a range of different applications, e.g. in process engineering, test engineering, research and development as well as the complete monitoring and acquisition of operational data of tanks, plant and machinery etc.

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 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; online functioning used for operation, monitoring and analysis.

Highlights

- Message devices are compact and practical
- They can be installed onto networks in the same way as PCs. Just connect the signals, configure the software and you're up and running.
- DELPHIN Message devices provide a unique link between analog and digital technology.
- Potential isolation means no need for isolating amplifiers giving cost and space benefits. No more disruptions due to earth loops.
- Unbeatable flexibility. Each analog input can be connected with RTD, thermocouple, volt or 20 mA signals providing savings on expensive measurement transducers. Increased reliability is also provided.
- 24-bit resolution provides a high level of measurement accuracy.



Modular and flexible

There are many good reasons for choosing ProfiSignal. Lots of large and medium sized organisations have already done so and are using ProfiSignal for measurement data acquisition, test stand and laboratory automation and remote monitoring (e.g. Bayer, Siemens, Oerlikon Leybold Vacuum, E. ON, MTU and many more).
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 thousands or just several numbers of channels. ProfiSignal's modular construction provides the user with the optimal solution both in terms of functionality and value for money.

ProfiSignal is available as either Basic or Klicks. Basic enables data acquisition, archiving, analysing, operation and observation. Klicks includes programming, reporting and input mask functions.

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

Configuration data is transmitted to the device and securely stored there. Configuration data can be amended and adapted during operational run time.

Typical applications for TopMessage devices are the acquisition of measurement and process data, as a data logger for universal measurement values, remote monitoring of decentralized plant and machinery, test bench automation, vibration monitoring of shafts and bearings and factory data acquisition.

Hardware and software from one supplier

ProfiSignal uses Delphin's tried and tested TopMessage Hardware. These are decentralised, network capable, measurement data acquisition and automation devices in one.

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/ software components can also be delivered separately. Using ProfiSignal makes system planning and system startup quicker.
ProfiSignal is simple to understand and logically designed.
High out-sourcing costs are not necessary – ProfiSignal reduces costs.

Suited to a wide range of application

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 can provide solutions – whether the application concerns test stands or reactors.

ProfiSignal software is made up of function blocks which require only configuration. This 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 PC. Vibration analysis and monitoring can be optimised by using Delphin's TopMessage hardware. This saves on the costs involved in combining systems from different suppliers.

SWR Philosophy

Creating values together

The success of our customers is the central point of our work.
SWR wants to be partner as well as „problem settler“ for customers, which are handling solids.
Our goal is to make your business easier with excellent and simple solutions.
Development and application technology are most important for SWR. Solutions and products corresponding to real market conditions are developed by our highly motivated employees.
Thereby we learn from our customers and their satisfaction is our “yardstick”.

SolidFlow

The radar 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 dilute phase conveyed systems with pipe diameters of 20 – 600 mm.
- All kinds of solids can be measured even finest materials within the nanometre range up to particle size of 10 mm. Larger particle sizes are possible, but have to be discussed. The velocity of the dilute phase may be without any problem up to 80 m/sec.
- Depending on material resp. on the application it is possible to measure flow rates up to 20 t/h.

MaxxFlow

The measuring system for the measurement of bulk materials after mechanical conveyed feeders such as screw feeders, air conveying troughs, elevators and other feeders.

- For all solids
- For round pipelines or channels
- No limit for the amount of throughput
- No internal measuring in the conveying flow
- The measurement is independent of speed of flow and of flow pattern of the transported material within the pipeline
- The pipe cross section of the sensor is according to the existing pipelines

DensFlow

The measuring system for the continuous flow measurement of dense phased-conveyed materials and high flow rates

- The measuring system DensFlow can be used with pneumatically dense phase-conveyed materials or after mechanical conveying systems, with pipe diameters up to 100 mm.
- Powder- or granulate-shaped solids can be measured.
  The optimal velocity of the material flow is in the range of 1 – 10 m/sec..

SWR engineering

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 4000mm.
· The complete measuring point consists of probe and electronic unit in a compact device which works with 24V / 230 V distribution voltages.
ProSens is available with an automatically 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 usable in all metallic channels in which dust particles should be detected.
The operative range of ProSens extended from 0,1 mg/m³ up to 1 kg/m³.

Dusty

Low-cost Broken Bag Detection

The appliance has been designed for reliable broken bag detection without delay.

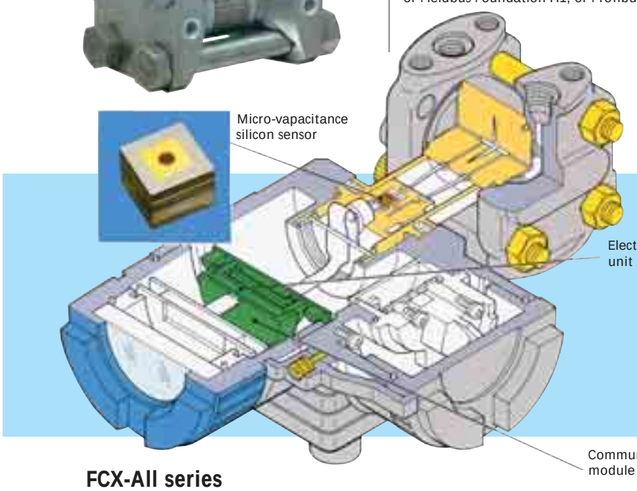
- The complete measuring system consists of a probe and an electronic unit in a compact device working with 24 V supply voltage.
- Dusty is available with an automatically setup function. With this function the Dusty is being adjusted to normal dust flow conditions in your application.
  The first alarm releases at 50% exceeding and the second at 100% exceeding to the reference values.
- Simultaneously a LED gives optical information about the filter condition

Fuji Electric France S.A.,

subsidiary of the Japanese group FUJI ELECTRIC Co., Ltd, manufactures and markets in Europe the instruments that made the worldwide reputation of the Group. Specialist of the industrial instrumentation, the Company supplies products and services to the main industrial sectors: oil and gas, petrochemical, chemical, energy, iron industry, food industry, paper mills, pharmaceutical industry and nuclear industry.

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-capacitance silicon sensor has been developed (floating design located in the neck of the cell). The microprocessor based electronics unit provides different outputs:
4 – 20 mA with Hart™ / Fuji protocols,
or Fieldbus Foundation H1, or Profibus PA



FCX-All series

FCX-All series are available for differential, gauge and absolute pressure, liquid level, and offer measuring ranges from 10mmWC to 500bar. For specific application, Fuji Electric can supply a wide selection of remote seals.

Thanks to 0.07% accuracy, a 1 to 100 wide rangeability, and the various materials available for wetted parts (Tantalum, Monel, Hastelloy C or PVDF) our transmitters can be used in various applications in industry fields such as: petrochemistry, chemistry, energy, iron industry, food industry and water treatment. Thanks to microprocessors and LSI chips, the FCX-AII transmitters offer excellent repeatability.
The standard FCX-AII provides 4 – 20 mA + FUJI and HART™ protocols. It is also available with selectable Fieldbus Foundation H1 / Profibus PA protocols.
The modular design allows interchangeability between the cell unit and electronics units, providing easy and quick maintenance.

FUJI ELECTRIC

Ultrasonic Flowmeter series

Basic measuring principle “TRANSIT-TIME Difference”
All Fuji’s flowmeters measure flow rate by utilizing the Transit-Time Difference Principle. Simply, two ultrasonic sensors are mounted on the pipe exterior. Each transmits an ultrasonic pulse to the opposite sensor.
The difference in the transit times of the two waves is used to calculate the flow velocity. Compared to the other popular principle, “Doppler” , “Transit-Time” has better performance in accuracy and measurable flow range.

Time Delta-S for general use

Features

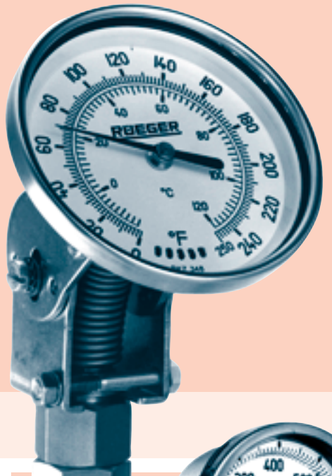
The philosophy is simple. One system, modular, features:

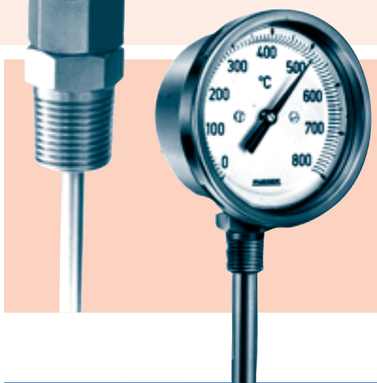
- Resistant to bubbles in the liquid
- Accurate measurement: 1.0% of rate
- Various sensors available according to usage
- Almost unaffected by fluid temperature or pressure variations
- Measurement range: -32 to 0 to 32 m/s (0.3m/s min.)
- Response time: 0.5s or less
- Output signal: 4 to 20mA DC, pulse output, alarm output
- Accuracy: 1.0% of rate
- Structure: converter is IP65, waterproof
- Power supply voltage: 100 to 240V AC
- Cable length between detector and converter: 150 m max
- Diameters to 6000 mm

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
- 40,000 data logging function
- Measurement range: -32 to 0 to 32m/s (0.3m/s min.)
- Response time: 1s or less
- Output signal: 4 to 20mA DC
- Communication interface: RS 232C
- Accuracy: 1% of rate
- Power supply voltage: 100 to 240V AC, built in battery





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.

RÜEGER

Being selected on purpose with very different thermal expansion coefficients, the two materials will generate a torque at their free end when submitted to temperature changes.

Thanks to its double helicoid technology, Rüeger offers the shortest bimetal systems of the world, which guarantees accuracy and short time temperature measurements.

Gas pressure thermometers

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

These gases can cover temperature changes from -260ºC to +800ºC and are therefore particularly suitable for high or low temperature measurement. In a closed pressure system the internal pressure change will be proportional to the temperature change, i.e. the pressure will increase when the temperature rises.

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 0ºC and varies with a positive temperature coefficient. Pt-100's are used in processes from -260ºC to +650ºC. The sensors consist of a single or duplex detector which is built into a stainless steel sheath.The standard tolerance is according to DIN/IEC 751 Class B or A, however, 1/3, 1/5 or 1/10 DIN Tolerance detectors are also available. The 2-, 3- or 4-wire Pt-100 detectors are the most popular types, but we can also supply Pt-20, Pt-50, Pt-500 , Pt-1000 or Ni-100 versions.

Thermocouples

Thermocouples essentially comprise a thermo element (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 (depending on the element type) over a large temperature range (-40ºC to +1600ºC, or even as high as +2200ºC using Tungsten/Rhenium elements).
The materials are made according to internationally accepted standards as laid down in IEC 584 1, 2 and 4 which is based on the international Practical Temperature Scale ITS 90. Operating temperature maxima are dependent on the conductor thickness of the thermo elements.
Types K (chromel/alumel), J (iron/constantan) and T (copper/constantan) are the most well-known types. Thermocouple probes consist of thermocouple pairs which have been built into a ceramic or metal sheath with a cable, connector or connection head at the cold end.

MÜTEC
it starts with an idea

DuoTec-systems consist of the transmitter (MTP200) and the 2-wire supply unit (MSK200). They are the Interface between the system (sensors in the field) and the PCS or PLC. The system accepts practically all electrical standard signals (mA, mV, V) and temperature sensors (Pt100, TC). Hazardous area protection to EExia (area 0) is available. Two-wire transmitters are supplied directly by the supply unit to EExib (area 1) or EExia (area 0). The systems itself are not installed in an ex-area. Output signals such as 4-20mA or 0-10VDC, 4 limit values and a maintenance accessory relay are available.

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

DuoTec Failsafe systems are TÜV-certified according to the "fundamental considerations of security for MSR-protection systems" DIN 19250 for request class 4 and it is conform to IEC61508 SIL2. Request class 4 or SIL2 is the highest class which can be achieved with a single channel system.

mütec Instruments

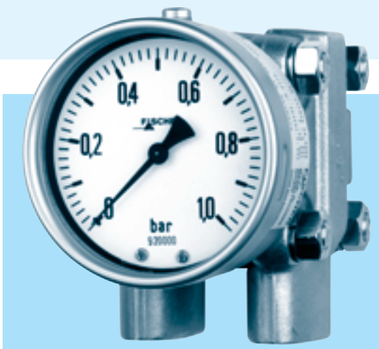
Main benefits

- Self monitoring by means of 2 micro processors, master-slave-principle
- DIN 19250 AK4 Certificate and IEC 61508 SIL2
- Diagnosis manager with error memory
- 4 limit values, 1 maintenance requirement alarm
- Configuration using WINDOWS-WINSMART
- Online-display
- Bus-connection (RS 232 and RS 485)
- Input: multi-functional

FISCHER

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.



DA 03// 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 magnet actuated type
- Proximity type (NAMUR) non-contact limit detector
- Pointer position transducer, with electrical signal output

DE50// Differential Pressure Transmitter

Measuring transmitter with limit switching function for overpressure, vacuum and differential pressure especially for gaseous media

Range of applications:
- air conditioning technology
- ventilation technology
- environmental engineering

Typical Applications
- continuous ventilating control
- monitoring of exhausters, tapline filters etc.
- chimney draft measurement
- flow and control pressure measurement
- surface technology