masibus

A Sonepar Company

Agency Products

We Distribute Following Products

INOR	Temperature Transmitter
PULS	Power Supply
Vibrasens	Vibration Sensor
Williamson	Infrared Pyrometer
OPTO	Edge Programmable Controller
HMS	IoT & Gateway - Remote Access & Monitoring
Procomsol	HART Communicator
Cogent, A Skynet Company	OPC Tunnel OPC Gateway IoT Gateway OPC Loggers
Aveva	SCADA Software
Technicad	Vibration Sensors Non Contact Type
Hofmann	Online Balancer

Please send the enquires in below mail ID

sales@masibus.com

Temperature Transmitter

NFC Bluetooth® IEC IECEx Ex FM APPROVED HART COMMUNICATION PROTOCOL SIL 2 CE 5 YEAR WARRANTY

Features

Increased process control through extended diagnostic information

Flexible workflow using wireless communication

Temperature Transmitters for in-head and DIN-rail mounting

App for wireless configuration and monitoring via NFC and Bluetooth

Loop Powered Isolators and Isolation Transmitters

ATEX, SIL2 and HART Certified Products

Made in Sweden, 5 Year Warranty

Inor Products

APAQ C/R 130

Digital 2-wire transmitters for Pt100/Pt1000 and Thermocouple

Input:	RTD or TC
Output:	4-20mA
Configuration:	App (via NFC)
Accuracy RTD:	±0.15% of Span
Accuracy TC:	Type E, J, K, N: ±1 K or ±0.2 % of Span Type B, R, S, T: ±2 K or ±0.2% of Span

NFC

IPAQ C/R 330

Universal Programmable 2- wire Transmitter

Input:	RTD, T/C, Ω, mV
Output:	4-20mA
Configuration:	PC (via USB Interface) App (via NFC or Bluetooth®)
Accuracy:	±0.08% of Span
Isolation:	1500 VAC
Approvals:	ATEX/IECEx/cFMus

Ex IEC IECEx NFC Bluetooth®

IPAQ C/R 530

HART® Universal 2- wire Transmitter

Input:	RTD, T/C, Ω, mV
Output:	4-20mA HART®7
Configuration:	PC (via USB Interface) App (via NFC or Bluetooth®) HART, DD, DTM
Accuracy:	±0.08% of Span
Isolation:	1500 VAC
Approvals:	ATEX/IECEx/cFMus

Ex IEC IECEx FM APPROVED Bluetooth®
NFC HART COMMUNICATION PROTOCOL

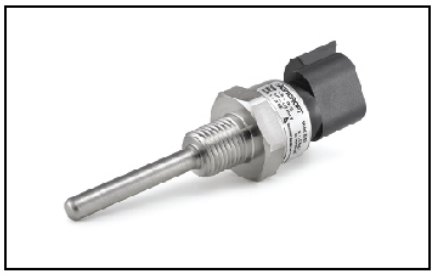
IPAQ C/R 520

HART® Universal Dual-Input 2- wire Transmitter

Input:	RTD, T/C, Ω, mV
Output:	4-20mA HART®6
Configuration:	PC (via USB Interface) HART, DD, DTM
Accuracy:	±0.05% of Span
Isolation:	1500 VAC
Approvals:	ATEX/IECEx/SIL2

Ex IEC IECEx
SIL 2 HART COMMUNICATION PROTOCOL

Target Industries



OEM Sensor

Chemicals & Pharmaceuticals

Petrochemicals

Energy

Cooling Equipment

Pharma

Oil & Gas

Steel

Research & Institute

Food & Beverage

Marine

Water & Wastewater

The perfect power supply for every application

PULS

Power Supply

DIMENSION

Highest performance
with numerous variants,
features and approvals.
Series: C, PISA, Q, U, X, Z

PIANO

Focus on basic functionalities without
compromising on quality
and reliability.
Series: PIC, PIM, PIRD

MINILINE

Ultra compact design
for low-power applications.
Serie: ML

Specification

	DIMENSION	PIANO	MiniLine
	Full Featured	**Cost Oriented**	**Low-Power**
INPUT / OUTPUT			
Input voltage	1-phase, 3-phase, DC	1-phase	1-phase, 3-phase, DC
Output voltage (DC)	12 / 24 / 30 / 36 / 48V	24V / 48V	5 / 10 / 12 / 15 / 24 / 30 / 48V
Output power	80-960W	36-480W	15-100W
FEATURES			
Power reserves	√√	-	-
Efficiency, 24V versions	96.0%	95.7%	91.0%
Housing material	Aluminium	Polycarbonate (PC)	PC/ABS Blend
Parallel operation	√√	√√	√√
DC-OK relay contact versions	√√	√√	√√
Long lifetime	√√	√√	√√
Fuse breaking capability	√√	√	-
Resists high power transient voltages	√√	√√	√
FEATURES			
Operational temperature range	-25°C ... +70°C*	-10°C ... +70°C*	-10°C ... +70°C*
Conformal coated versions	√√	-	√
Hazardous environment	√	-	√
High mechanical stress (shock & vibration)	√√	√√	√√

* Special versions with broader temperature range available.

PIC Series

The Perfect Blend of Value & Quality

The growing PIANO product range offers high-end values at a mid-range price. The power supplies are focused on simplicity without making compromises on PULS' renowned qualities: high efficiency, absolute reliability and long lifetimes.

New low-Power Unit

The very compact 60W and 90W DIN rail power supplies complement the PIANO product line. Both units are highly efficient and available with large screw or push-in terminals.

PIC90-The Smallest 90W Unit Ever

Efficiency: >92.0%
Size record: 36x90x90mm (WxHxD)
AC 100-240V wide range input
Optional puch-in or screw terminals

PIC480.241D

Efficiency: >95.0%
Minimum lifetime: >11 Years
Space saving design: 59mm wide
Also available without wide range input (AC 200-240V): PIC480.241C

Target Industries

Panel Builder

System Integrator

Packaging Industries

Railway

SPM

Wind Energy

Oil and Gas Industry

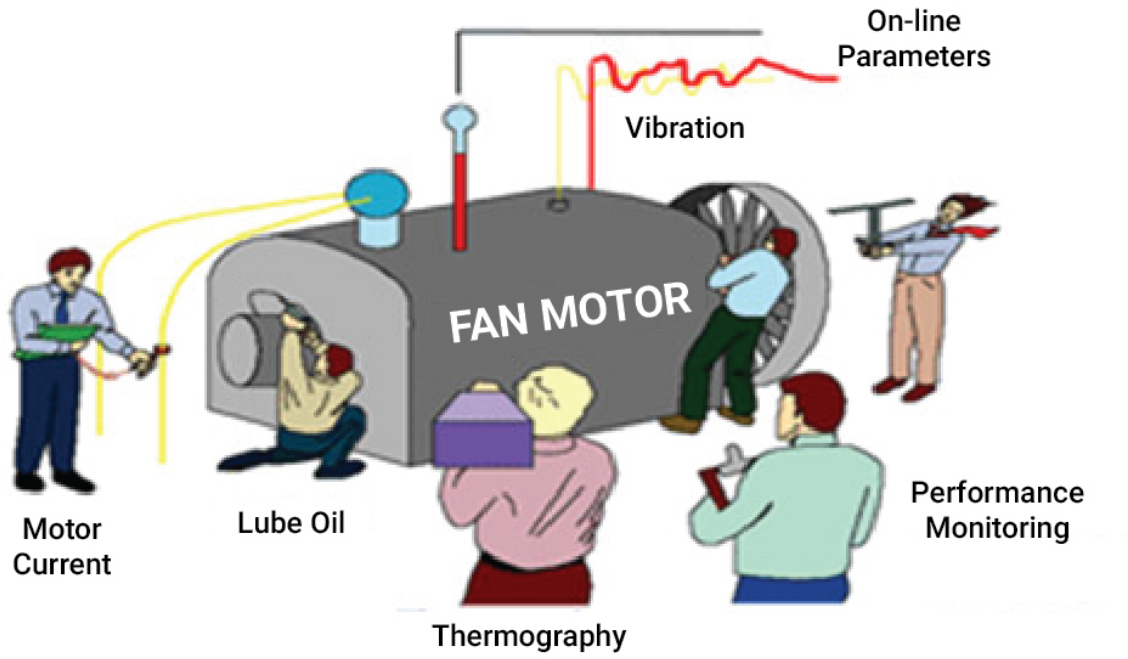
Pharma

Automotive

Meter & Mining

VibraSens
Your Vibration Sensor Partner

Vibration Sensors



BENEFITS OF CONDITION MONITORING

- Increases Machine Uptime
- Decreases the Risk of Machine Failure
- Allows Predictive Maintenance
- Reduces Capital Costs by Extending Machine Service Life
- Decreases Machine Repair Costs

Vibration Sensors Contact Type

Accelerometer

Features

- Uniaxial Accelerometer output 10mV/g, 50mV/g, 100mV/g, 500mV/g
- Electrical connection: M12 Connector, MIL grade connector and integral cable
- Annular shear technology
- Temperature output also available
- ATEX certified
- Hermetic glass sealing

Features

- MEM's based Loop powered sensor
- Velocity output in form of 4-20mA
- Electrical connection: M12 connector, MIL grade connector and integral cable
- Suitable for frequency 10Hz- 1KHz
- DA/DV/Temperature output also available

Loop Powered Sensor

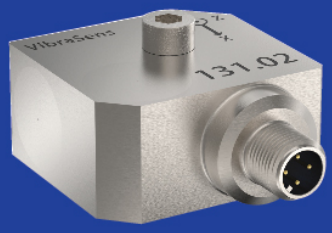
Loop Powered Sensor

Features

- Piezo electric loop powered sensor
- Accelerometer, velocity output in form of 4-20mA
- Electrical connection: M12 connector, MIL grade connector and integral cable
- Suitable for frequency 3Hz- 1KHz
- DA/DV/Temperature output also available

Features

- Triaxial accelerometer output 10mV/g, 50mV/g, 100mV/g, 250mV/g,500mV/g 1000mV/g
- Electrical connection: M12 connector and integral cable
- Annular shear technology



Triaxial Piezo

Vibration Basics

- **Type of Vibration Measurement**
  - **Relative Vibration Measurement**

    Shaft vibration measurement relative to machine body (Non-Contact type sensors will be used)

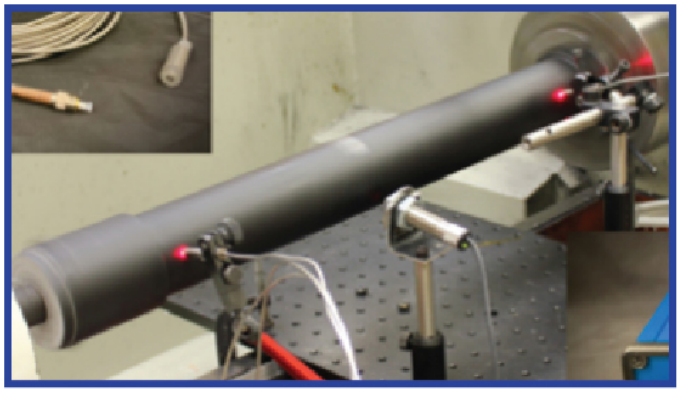
  - **Absolute Vibration Measurement**

    Casing vibration is the measurement of the case motion relative to free space or absolute motion

    (Contact type sensor will be used)

- **Vibration can be Measured in Three Parameters**
  - Displacement : When RPM is less than 600
  - Velocity : When RPM is > 600 and < 60000
  - Acceleration: When RPM is > 60000

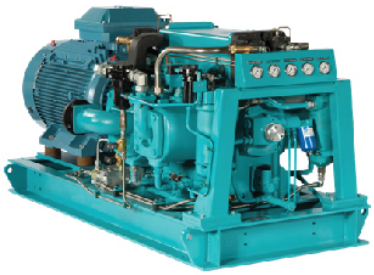
Relative Vibration



Absolute Vibration

Sensor Installation Photos

Target Industries



Compressor OEM

SI's Waste Water

Industrial Fan OEM

Cement

Steel

Power

Infrared Pyrometers

The Advantages of Infrared Pyrometers

Temperature is commonly measured in manufacturing operations to monitor and control product quality and process productivity. Many applications use contact devices like thermocouples and RTDs, but all too often these devices are inaccurate, too slow, difficult to use, or require frequent replacement creating process downtime and reducing productivity. For many applications, infrared pyrometers are the perfect solution because they can accurately and reliably measure a target's temperature without contact. This capability is ideal for applications involving:

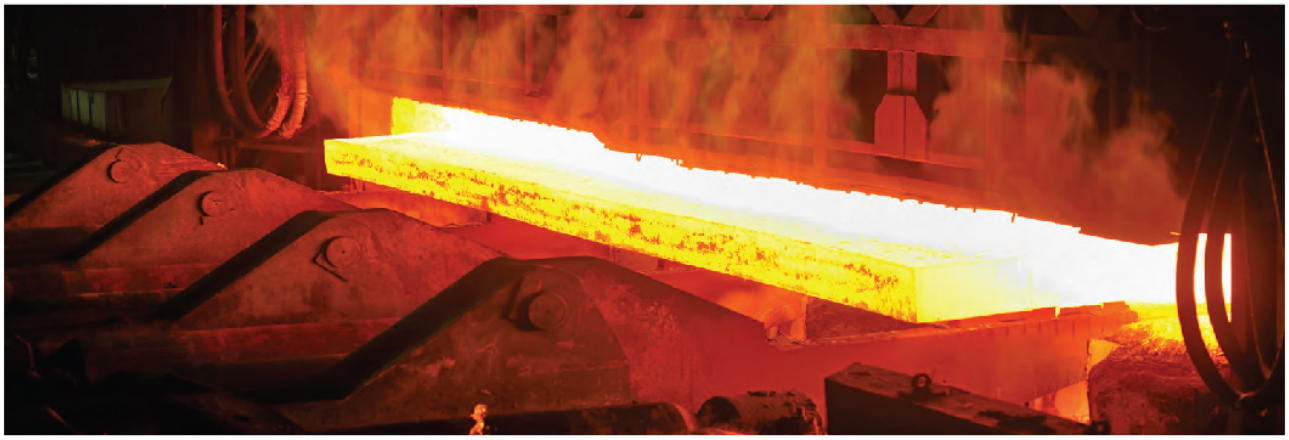
- High Temperatures
- Moving or Inaccessible Targets
- Hostile or Hazardous Environments
- Fast Response Times

Pro Series

Gold Series

Silver Series

With the Silver, Gold, and Pro Series products, Williamson offers the optimal pyrometer for a wide range of applications.



How Infrared Pyrometers Work

Every object emits infrared energy proportional to its temperature. Hotter objects emit more energy; cooler objects emit less energy. Infrared pyrometers collect the infrared energy emitted by an object and convert it into a temperature value. The amount of energy collected by a sensor is influenced by the **emissivity** characteristics of the target and the transmission characteristics of any **intervening optical obstructions** between the sensor and the measured target. The influence of these factors varies significantly at different infrared wavelengths. Selecting a pyrometer filtered at an appropriate wavelength makes all the difference in achieving accurate readings.

Emissivity is a term used to quantify a material's tendency to emit infrared energy. It is related to the reflective and transmissive characteristics of the material and is measured on a scale of 0.0 to 1.0. In practical terms, emissivity is the opposite of reflectivity. For example, a highly reflective surface like aluminum has a low emissivity of 0.1, while a dull surface like refractory brick has a higher emissivity of 0.9.

Intervening optical obstructions such as steam, water vapor, flames, or combustion gasses have the potential to interfere with the amount of energy that is measured by the sensor

Williamson - Where Wavelength Matters

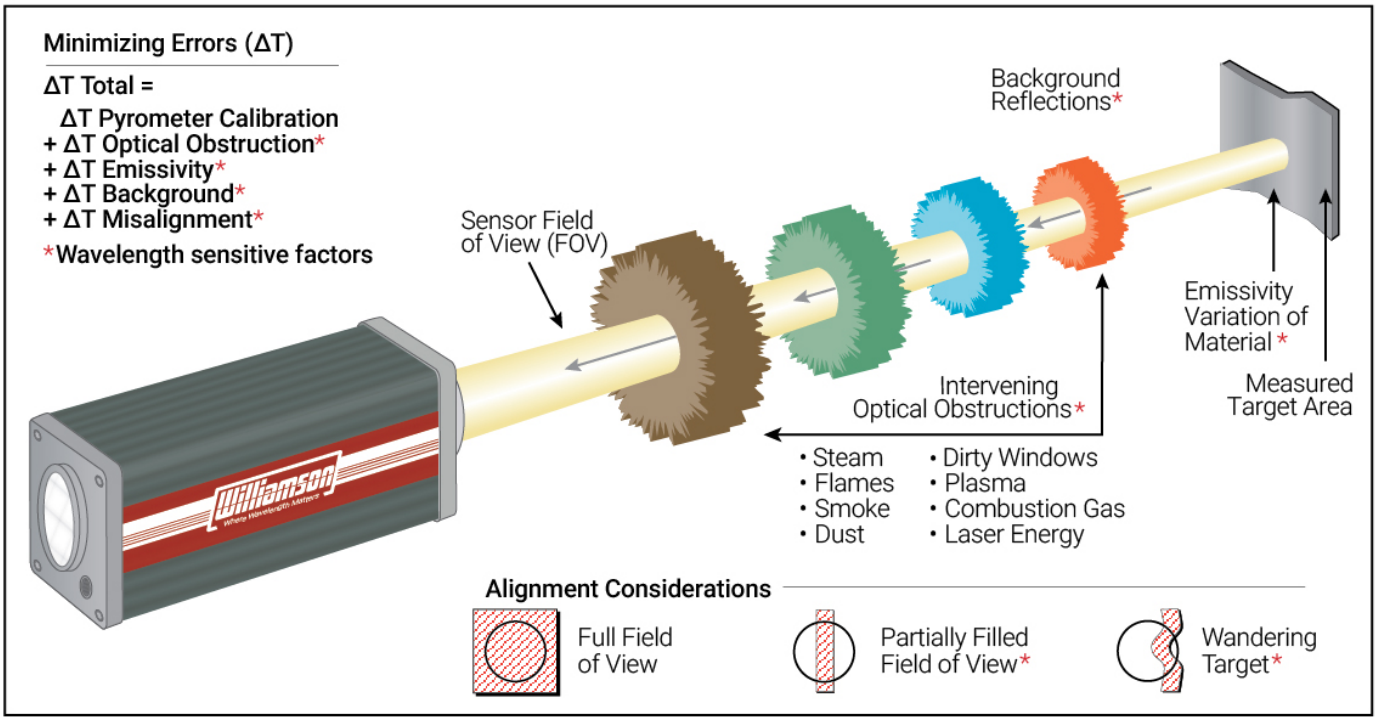
The most important Williamson difference is our particular emphasis on wavelength. By carefully selecting the wavelengths in our pyrometers, we can view through intervening optical obstructions, reduce emissivity variation and provide more stable and accurate temperature measurements.

For over 60 years, Williamson has been making the most accurate pyrometers for demanding industrial applications. With a history of engineering customized solutions, our philosophy is that there is a specific pyrometer for every application, not a handful of pyrometers to fit every application.

Why Wavelength Matters

For temperature measurements in ideal laboratory settings, all that matters is the calibration accuracy of the pyrometer. However, most industrial applications involve less than ideal operating conditions with a number of interferences and factors that contribute to inaccurate readings. Thoughtful wavelength selection can dramatically reduce or even eliminate errors due to optical obstructions, emissivity variation, background reflections, and misalignment. Most pyrometer manufacturers focus on calibration accuracy, optics, and temperature range but not wavelength selection. At Williamson we emphasize thoughtful wavelength selection to ensure our pyrometers provide the most accurate temperature measurement under any operating condition.

Common Causes of Pyrometer Measurement Errors



Pyrometer Technologies

Williamson offers 6 different infrared technologies with a variety of wavelength options, multiple optical configurations, temperature spans and accessories to ensure that each pyrometer can be optimally configured for each application.

Single-Wavelength Technologies		
Short-Wavelength (SW)	**Long-Wavelength (LW)**	**Specialty-Wavelength (SP)**
Errors are relatively small for moderate emissivity variation, optical obstruction and misalignment, particularly at lower temperatures. Certain models can view through common interferences.	Low-cost pyrometers ideal for general purpose applications measuring temperatures below 100˚C / 200˚F	Used when the target is least reflective and most opaque at a specific wavelength or when optical obstructions are most transparent at a specific wavelength.

Advanced Infrared Technologies		
Two-Color (TC)	**Dual-Wavelength (DW)**	**Multi-Wavelength (MW)**
Ratio Pyrometers designed to compensate for emissivity variation and modest optical obstruction or misalignment.	Ratio Pyrometers designed to measure the hottest temperature viewed. Select wavelength sets tolerate water, steam, flames, plasma, and laser energy. More tolerant of scale, misalignment, and optical obstructions than Two-Color.	Used for non-greybody materials such as aluminum, copper, stainless steel, and zinc. Application specific algorithms adjust for complex emissivity characteristics.

Single-Wavelength Technology

Single-Wavelength pyrometers are preferred when appropriate due to simpler, lower-cost technology. For most applications, select the shortest wavelength compatible with the measurement conditions and desired temperature span. Specialty wavelengths may be necessary depending on the optical and emissivity properties of the target.

Short-Wavelength (SW)

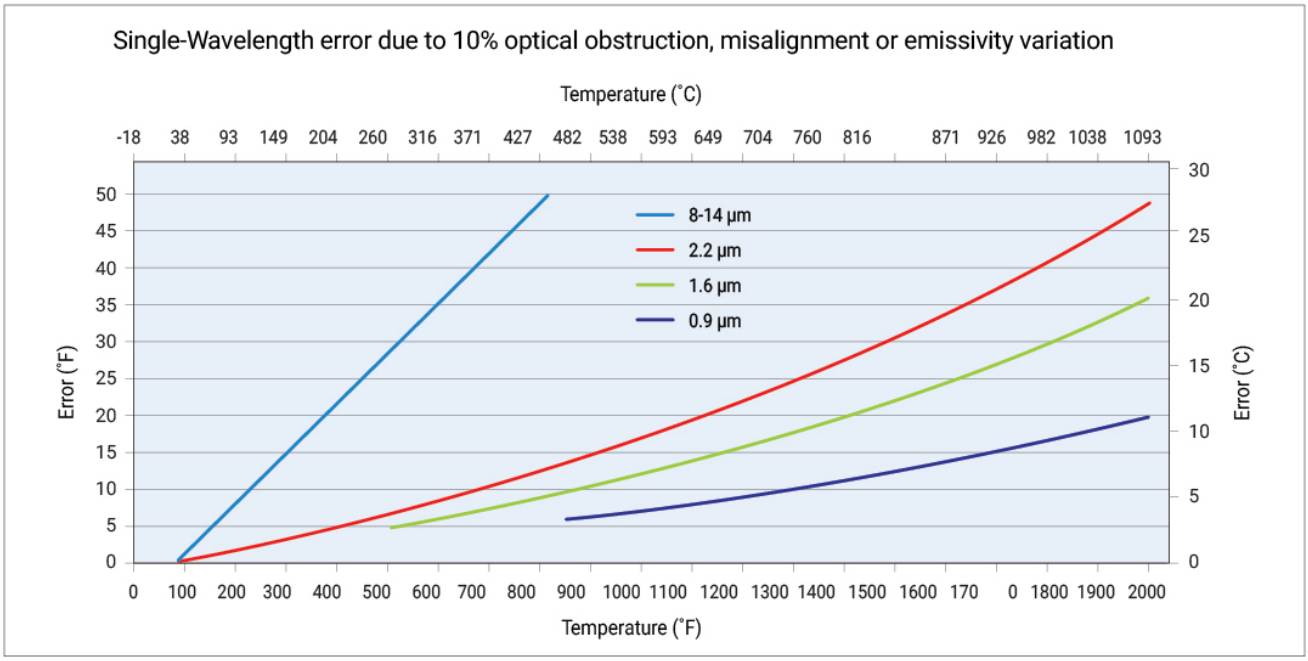
Williamson places a strong emphasis on short-wavelength single-wavelength pyrometers because of their ability to better to lerate emissivity variation and optical obstruction. As a result, these short-wavelength sensors are able to provide superior performance over a wide range of real world operating conditions

Popular Short-Wavelength Applications

- Low Temp Metals
- Melters
- Furnaces
- Thermal Reactors
- Boilers

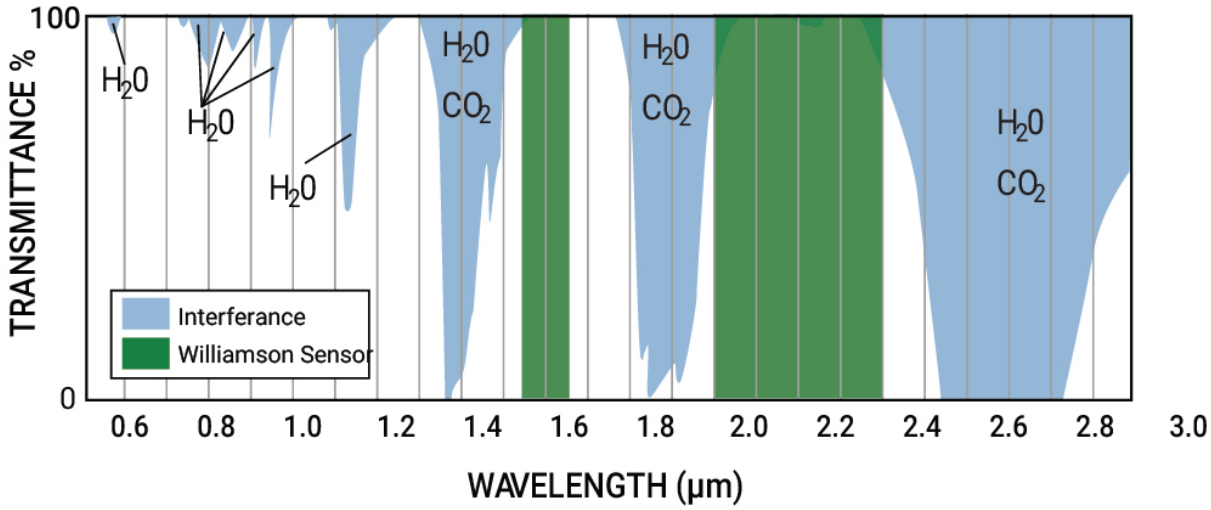
Short-Wavelengths Reduce Error from Emissivity Variations

For most applications, selecting the shortest practical wavelength is recommended. As indicated in the chart, shorter wavelengths result in smaller errors. In fact, short-wavelength sensors can be 4-20 times less sensitive to emissivity variation compared to long-wavelength sensors.



Short-Wavelengths Can View Through Optical Obstructions

Wavelength selection is a critical factor in Williamson's shortwavelength technology. By choosing the correct wave span, you can view through water, steam, flames, combustion gasses, plasmas, and other common industrial interferences.



Despite being highly transparent in the visible spectrum, carbon dioxide and water vapor are significantly opaque over a wide range of the infrared spectrum. Williamson's 1.6µm and 2.2µm sensors use unique narrow band filters that avoid these interferences. Competitive products which use much wider infrared filters (typically 1.0-1.7µm and 2.0-2.6µm) cannot view clearly through these common gasses.

Williamson Flare Monitor

Infrared Sensors & pyrometers for Monitoring Smokeless Flares, Pilots, and Flame Intensity

Monitor smokeless flare combustion efficiency to maximize destruction of hazardous VOCs and assure smoke-free operation.

Williamson IR Pyrometers Silver Series

The Silver Series is a family of compact industrial infrared thermometers. They are recommended for applications that typically involve:

- Target temperatures below 1000°F/550°C
- Non-reflective target materials
- Moving targets
- A need for a small sensor size
- High reliability and performance

Williamson IR Pyrometer PRO Series Single Wavelength

The PRO 40/50 Series offers a complete family of single-wavelength infrared thermometers featuring state-of-the-art technology to provide accurate and reliable measurements for a wide range of industrial applications.

Industries Served

STEEL

ALUMINIUM

PETROCHEMICAL

CVD/
SEMICONDUCTOR

INCINERATION

GLASS

OPTO 22

Edge Programmable Controller

groov EPIC

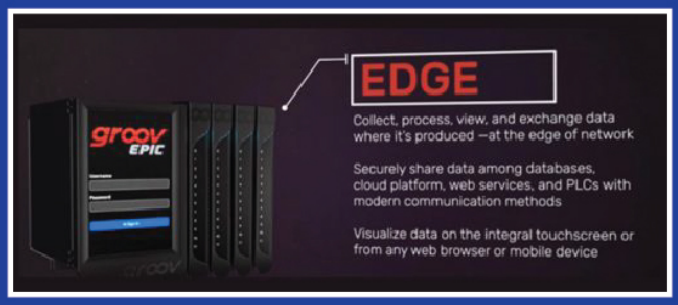
The world's first
Edge ProgrammableIndustrial Controller

Edge

Now you can collect, process, view, and exchange data where it's produced—at the edge of the network. When you work with data at the edge, you don't have to worry about latency, and you have one single source of truth.

Securely share data among databases, cloud platforms, web services, PLC systems, and other systems and equipment, using open, modern communication standards. Built-in security features include configurable device firewall, VPN, encryption, user authentication, and more.

Visualize data on the controller's integral touchscreen, an external HDMI monitor, or from any web browser or mobile device.



Programmable

Now you have new programming options:

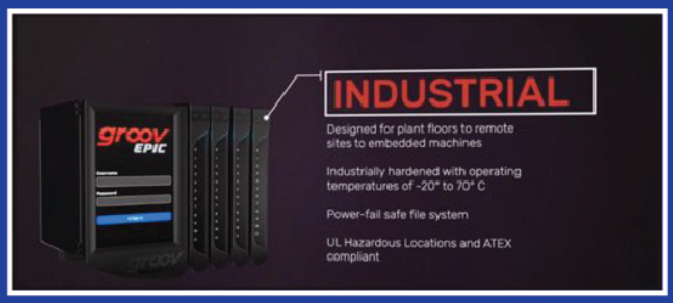
- Program with the field-proven, flowchart-based, multi-chart control language PAC Control.
- Use any IEC 61131-3 compliant language with the CODESYS Development System and CODESYS runtime.
- Exchange data using the visual, flow-based editor and runtime Node-RED, with its free pre-built nodes for databases, web services, and more.
- Run your own C, C++, Java, Python, or other custom-developed application on an open, Linux-based automation system, using secure shell access.

Industrial

From plant floors to remote sites, the edge demands industrially hardened equipment. Now you don't have to worry about processing power in challenging locations.

groov EPIC has:

- Stainless steel processor and I/O chassis with a secure, screw-down design
- Industrial quad-core ARM processor and solid-state drive
- Industrial high-resolution color touchscreen display
- UL Hazardous Locations and Class 1 Div 2 approval
- Wide -20 to 70 °C temperature range
- ATEX compliance



Controller

You can rely on real-time control and I/O from an automation manufacturer with 45+ years of experience. Opto 22's worldwide reputation for quality was built on solid state relays and I/O, and all our experience is poured into the design of groov EPIC.

You'll appreciate:

- Integral touchscreen for local configuration, commissioning, and troubleshooting—no PC required
- Real-time, open-source Linux operating system
- Multi-tasking real-time control engine
- Dual independent Gigabit Ethernet network interfaces to help securely segment your control network from your business network
- HDMI port for optional local monitor
- USB ports for keyboard, mouse, Wi-Fi dongle, serial connections
- Intelligent, hot-swappable, guaranteed-for-life I/O
- Spring-clamp field wiring up to 14 AWG, with an integrated wireway and adjustable cover
- Multicolor LED for I/O module quality, plus channel indicators for discrete I/O
- Integrated power supply options

Video on Introduction to OPTO22 groov EPIC

https://blog.opto22.com/optoblog/getting-an-edge-in-automation-webinar-recording-now-available

IoT & Gateway - Remote Access & Monitoring

Ewon Cosy- Industrial Remote Access Gateway

Benefits of Industrial Remote Access

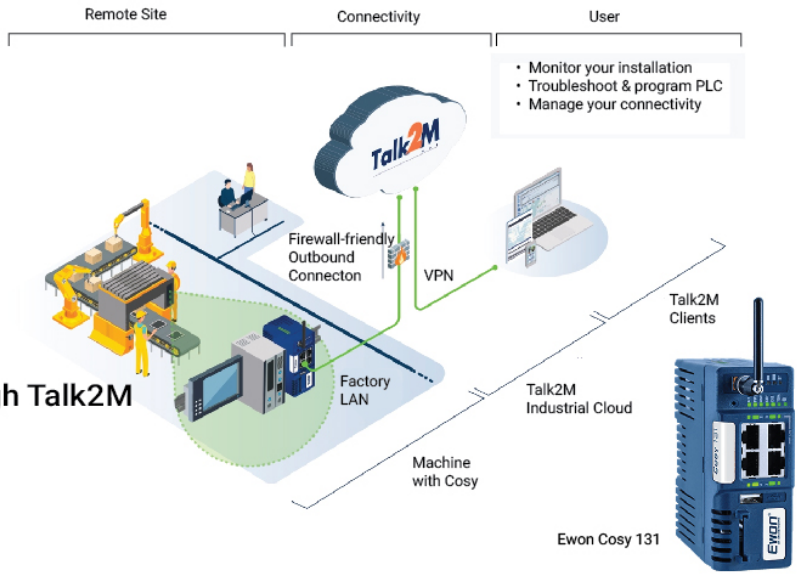
- Minimize downtime through fast remote support
- Save time and money by avoiding unnecessary service trips

State-of-the-art Security

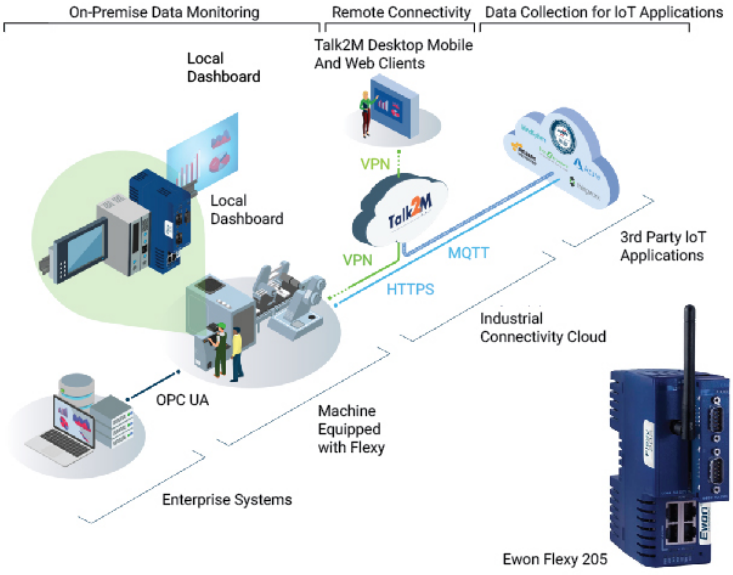
- New generation of devices with built-in hardware security
- Increase safety with digital output indicating active connection

Successful Worldwide Connectivity through Talk2M

- Scalability: Add as many devices & users you need at any time
- Email & SMS services- Receive notifications from your machine



Ewon Flexy- IIoT Gateway with VPN Connectivity



On-Premise Data Monitoring

- All major PLC protocols for data logging and alarm notification
- Local web-dashboard for easy monitoring of KPIs through Talk2M's M2Web service

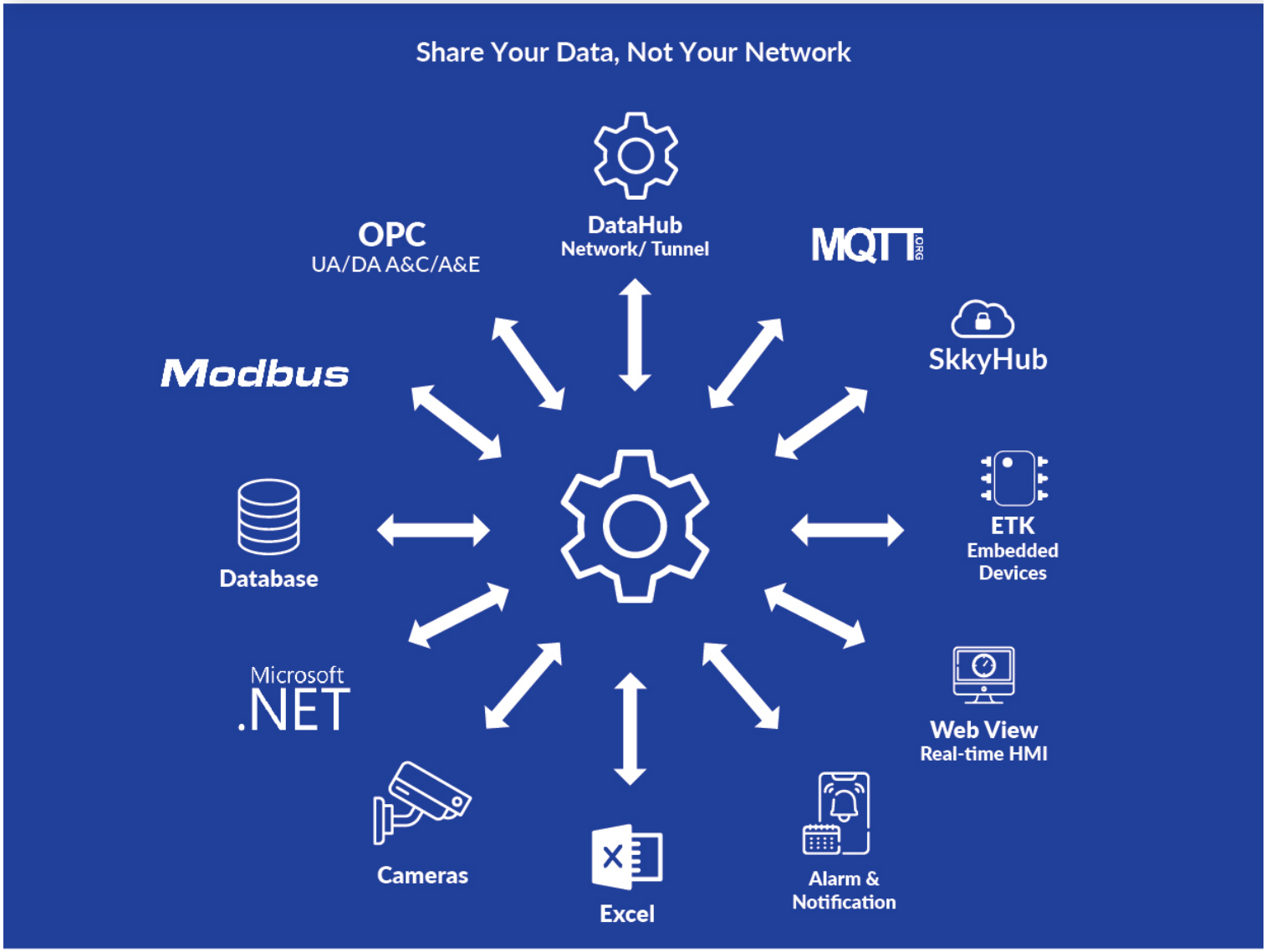
Remote Connectivity

- VPN Remote Access for PLC troubleshooting
- Talk2M global cloud infrastructure included

Data Collection for IoT Applications

- Full flexibility to send data to any server (local or cloud)
- Multiple IoT connectors, and MQTT/HTTPS through embedded BASIC or JAVA scripting engine

OT - IT Connectivity



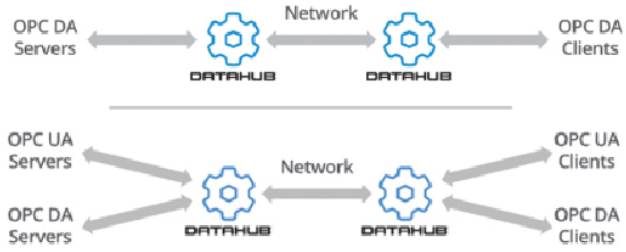
The Cogent DataHub from Skkynet Inc. Canada is a single tool that lets you connect, concentrate, integrate, and redistribute your live data among sources and users in real time. As a focal point to your data stream, DataHub establish secure, bidirectional data communication for your industrial systems. Receive, integrate, and stream over 50000 data changes per second.

DataHub pool data from all sources and protocols into a single, unified data set. Any client can access any data subset using any supported protocol: OPC UA, OPC Classic, MQTT, Modbus, DDE, TCP, ODBC, HTTP, XML, and more.

Just as described above, DataHub is single software which supports multiple protocols and has multiple tools to execute various functions/features. Some of the major features are briefed below;

OPC Tunnelling

Tool networks the OPC Data between servers and clients without the hassles of DCOM and it requires no open firewall ports. You share your data, not your network.

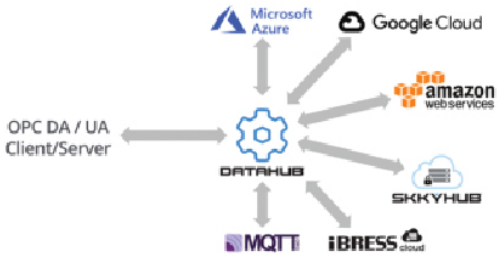


OPC Gateway

Converts real-time, streaming OPC UA data to OPC DA or vice-versa.

IOT Gateway

Streams real-time OPC UA and OPC DA industrial data directly into Manufacturing Execution Systems (MES) device clouds, and Big Data analytics platforms.



OPC Loggers

Write OPC data into any ODBC compliant database, such as Microsoft SQL Server, MySQL, OSIsoft PI, Oracle, and more. It can use the existing tables, or create new ones.

PROCOMSOL
Process Communications Solutions

HART Communicator

Convert Your PC or Mobile Device into a HART/FF Communicator!

USB and Bluetooth HART/FF modems, and DevCom communication software and Apps that can be used to convert a PC or Mobile Device into a HART/FF Communicator.

Some of the advantages of our device descriptor based HART/FF Communicators are:

- Ease of use - see entire DD (Device Description) menu structure
- Multi-function capability of PC, iOS (Apple), or Android device
- Cost-effective solution, Emerson 475 or 375 replacement at fraction of the cost
- Supports WirelessHART devices
- Hazardous Area HART/FF Communication Option
- CalCheck feature steps the user through a calibration verification and records the results. Save the results in a pdf file as "As Found or As Left". This record can be used to prove the accuracy of the device was verified

ProComSol can provide everything you need for HART/FF communication. Select the modem and HART communication software that best fits your needs from the options below:

HART Modem (Pick One)

- **HM-USB-ISO:** Reliable, Cost-effective USB HART Modem-Compact in size, USB 1.1 and 2.0compatible, CE Certified, and more.
- **HM-BT-BAT-ER:** Convenient, Wireless Bluetooth HART Modem- Easy instrument configuration, high-security 128-bit encryption, internal antenna, reliable wireless communication up to 275 ft., and more.
- **MOBI-FF:** Perform Foundation Fieldbus (FF) and HART communications in hazardous areas using Bluetooth interface. USB interface for communications in non-hazardous areas.

HART/FF Application Software (pick one)

- **DevCom2000:** For Windows devices- Communication and event logs, clone devices, no tag limits, easily navigable menu, complies with Enhanced DDL standard & more
- **DevComDroid:** For Android devices- Supports HART 7 and WirelessHART devices, no tag limits, support for numerous languages, and more
- **DevCom.iOS:** For iOS (Apple) devices- Supports HART-IP, clone devices, easily navigable menu, 1-year warranty, and more
- **DevComFF.Win:** For Windows devices- Communication and event logs, clone devices, no tag limits, easily navigable menu, complies with Enhanced DDL standard & more
- **DevComFF.Droid:** For Android devices- no tag limits, support for numerous languages, and more

SCADA Software

AVEVA Edge is a highly scalable, flexible software that provides the tools for everything from advanced HMI/SCADA applications to small-footprint embedded applications. The rich feature set enables users to create intuitive, secure, and highly maintainable HMI/ SCADA applications for any industry.

AVEVA Edge enables OEMs, panel builders, system integrators and end users to create intuitive, secure and highly scalable HMI and SCADA applications for any industry.

AVEVA Edge is an easy-to-use, powerful, and affordable HMI/SCADA software and IoT/industry 4.0 solutions for PCs, industrial panels, embedded & mobile devices

Develop your project once → Deploy and run it anywhere

Linux, Windows CE/Mobile, Windows Embedded, Windows Desktop and Server Editions, among others.

AVEVA Edge contains IIoT and edge device management capabilities, easy web publishing, and over 250 native communication protocols

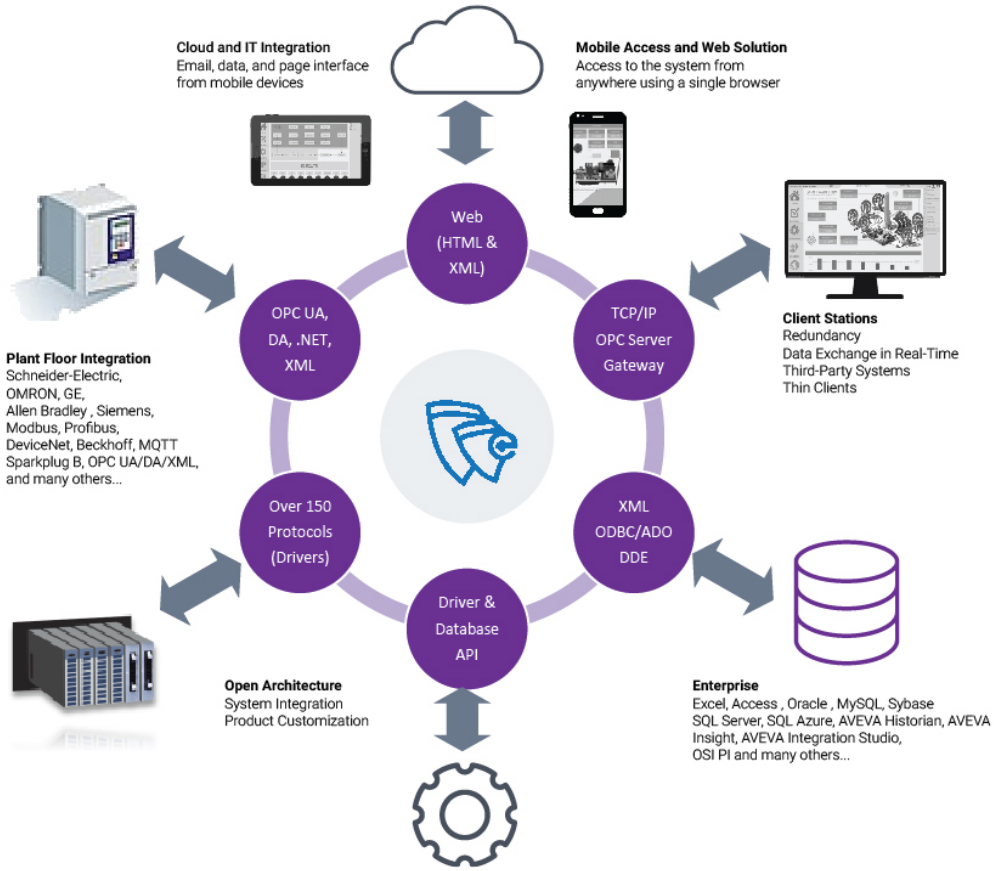
OT+IT Native Integration

Native built-in drivers (connectors) for 100+ protocols

HTTP/HTTPS REST

MQTT.ORG

OPC UA



Choosing the right version of AVEVA Edge

AVEVA Edge SCADA - The full Microsoft Windows-based runtime offers all the tools you need for advanced SCADA applications.

AVEVA Edge HMI - AVEVA Edge for embedded systems such as Microsoft's Windows Embedded operating systems. The small footprint makes AVEVA Edge HMI ideal for embedded and edge machines.

AVEVA™ Edge IoT View - AVEVA Edge IoT View is designed for Linux devices and enables edge computing on even small devices such as a Raspberry Pi.

AVEVA Edge offers an integrated development environment (IDE) that can be deployed to any runtime edition of AVEVA Edge

Cloud Analytics and Mobile Access

analytics, consolidation, artificial intelligence (AI), machine learning (ML), remote management/deployment, remote notifications and monitoring

Edge devices

data acquisition, data manipulation (aggregations, filtering, contextualization, normalization), link with the cloud, local maintenance, local operation

Instrumentation and Controllers

operational real-time control, raw data measurements

AVEVA™ Plant SCADA

Flexible, high-performance supervisory control and data acquisition (SCADA) software for plant personnel

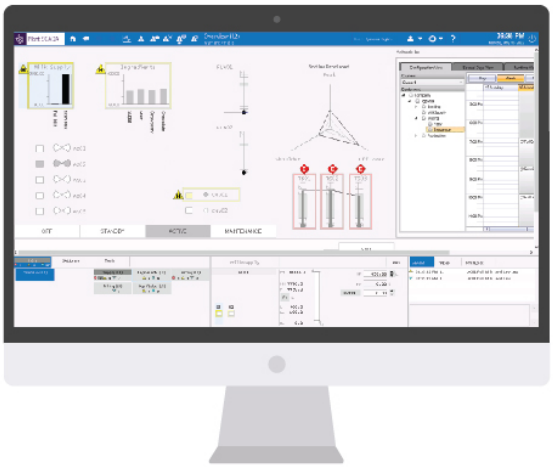
AVEVA Plant SCADA offers superior operational context and built-in functionalities that consolidate, simplify and optimize control. It streamlines your operations for efficiency, reliability and safety.

Intuitive configuration tools and powerful engineering features give you control of all your information, even as you add more data sources.

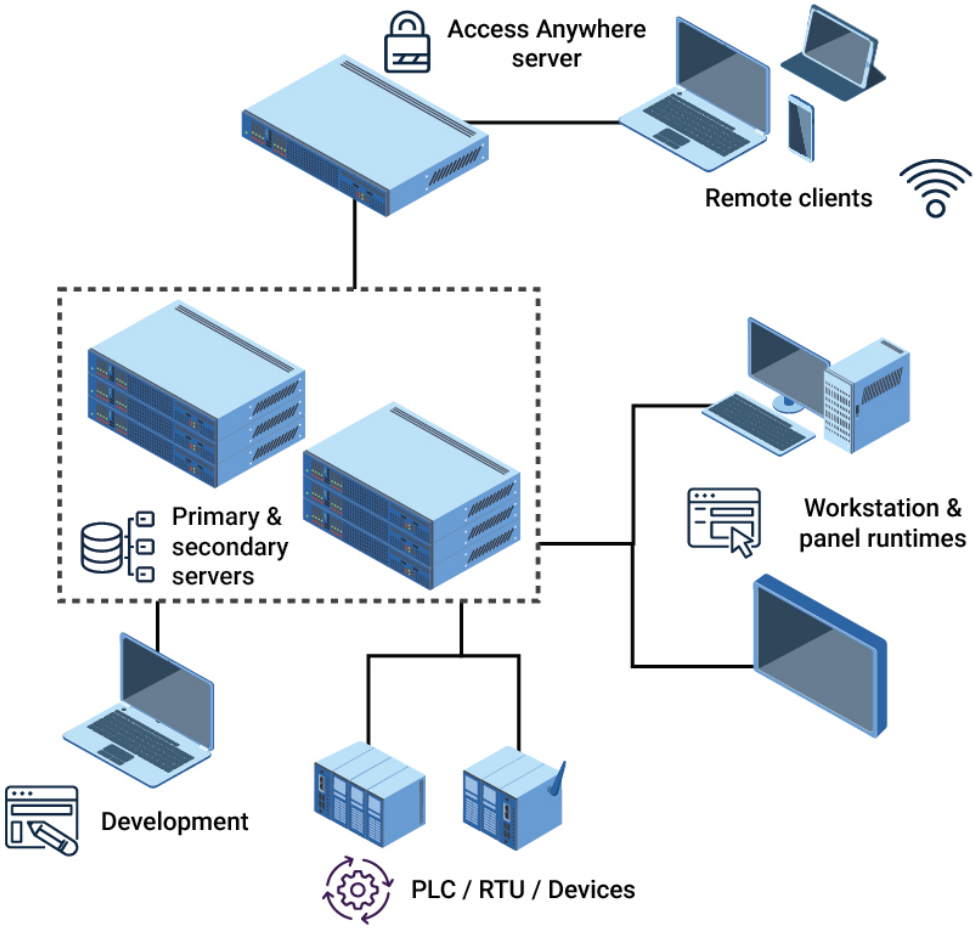
Robust visualization helps you see how to optimize operations now—and continues doing so as you change your design, process and operations over time.

- Increase operator awareness
- Utilize advanced alarm management
- Simplified engineering
- Flexibly deploy anywhere

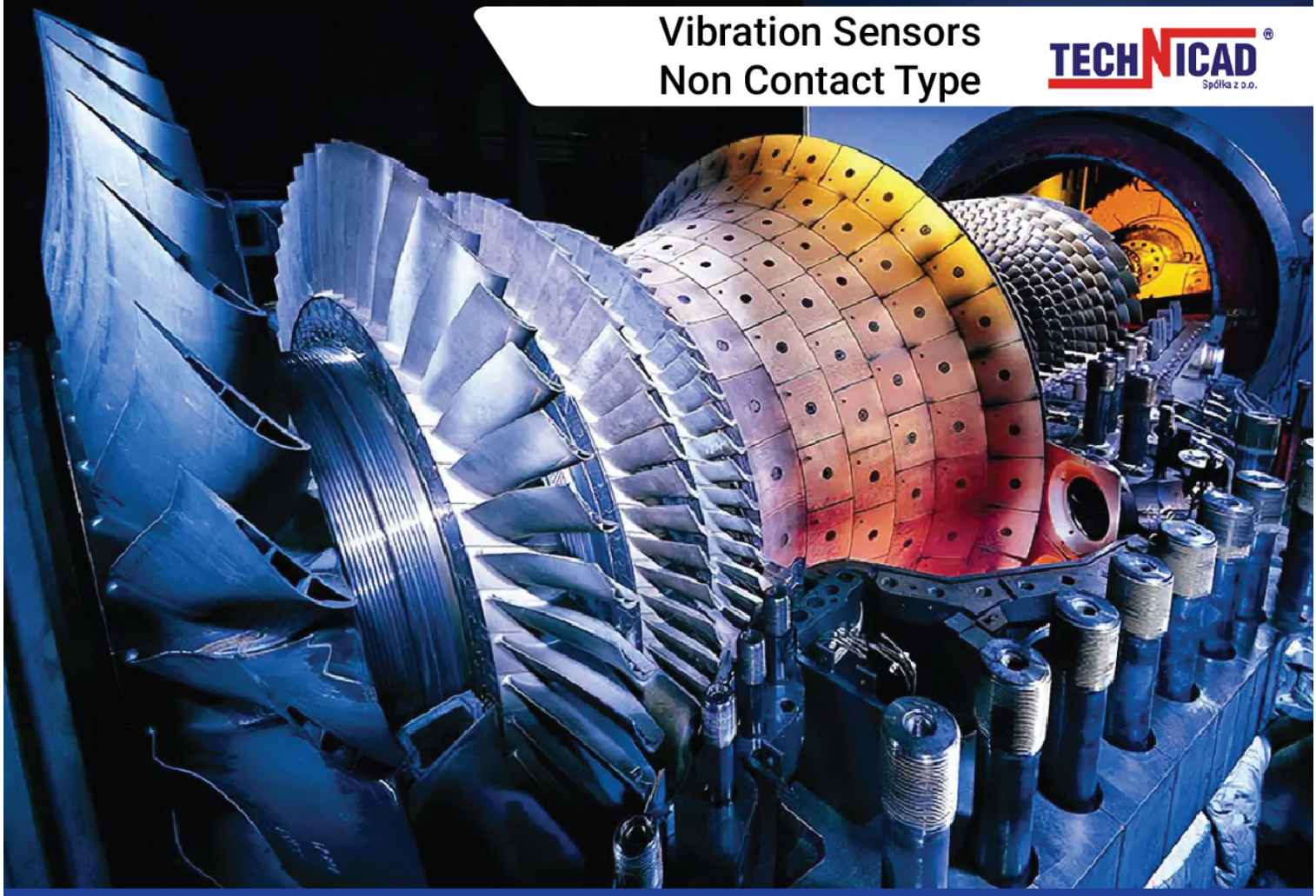
FLEXIBLE. SCALABLE. RELIABLE.



AVEVA™ Plant SCADA



Vibration Sensors Non Contact Type



Vibration Sensors Non-Contact Type

- Eddy-current principle based probes/transducers for displacement measurements
- Measuring range from 2mm to 16mm
- Recommended for axial displacement, relative vibration, differential expansion, rotating speed, phase marker measurements

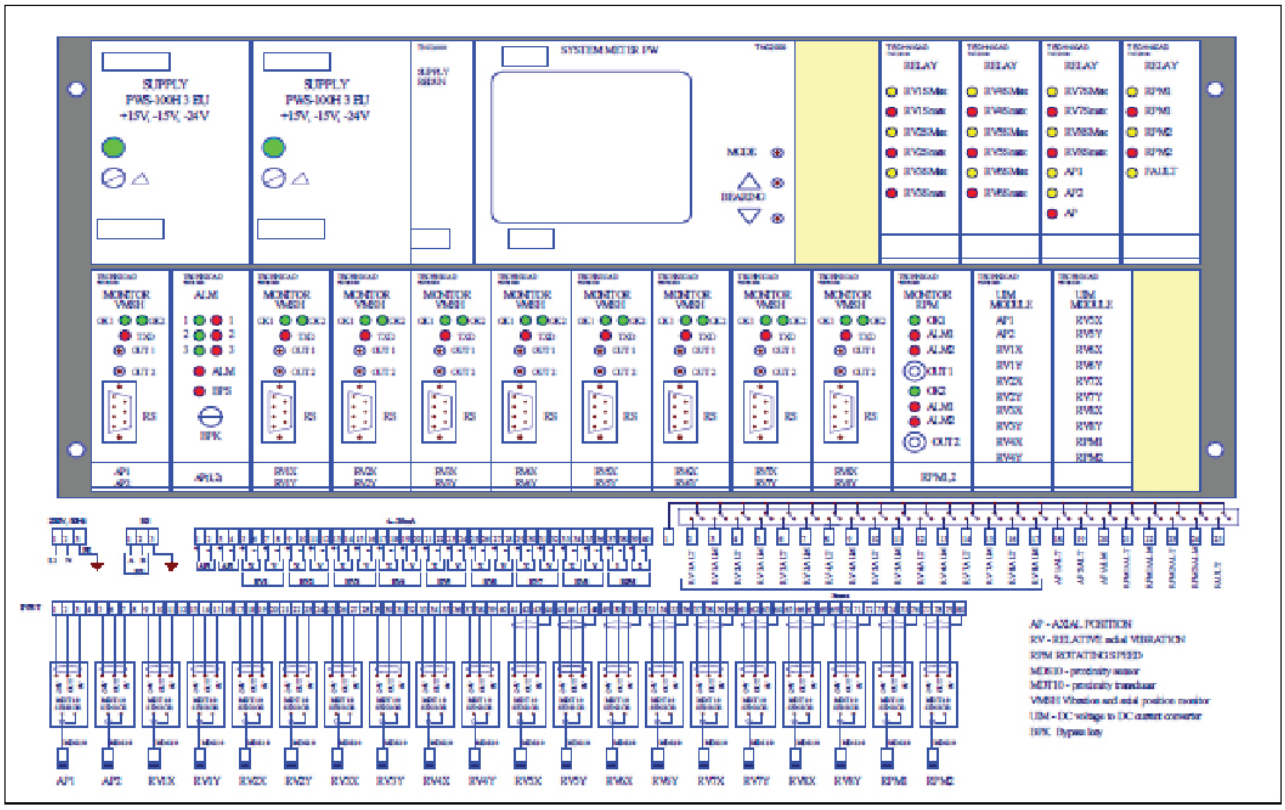
Eddy Current Sensor

Features

- Meets API 670 specification
- Measures frequency response from 0 to 10 KHz
- Gives DC voltage O/P
- Also available with ATEX approval
- Driver comes with IP65

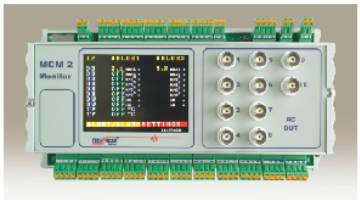
TNC2000 signal conditioning system for rotating machinery monitoring and protection

- EURO rack style
- Input from Technicad sensors, transducers
- Outputs:
  - binary(relays) for protection
  - DC 4-20mA
  - RS485 Modbus
  - Modbus TCP



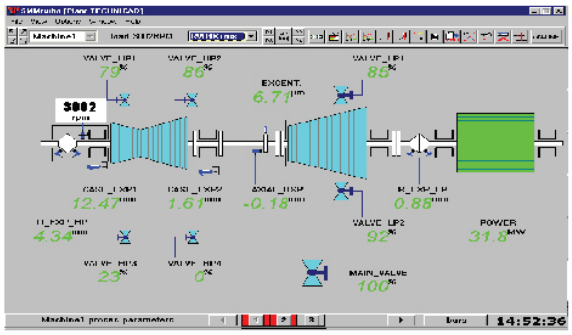
TNC 2010 system - measuring monitors for rotating machinery monitoring

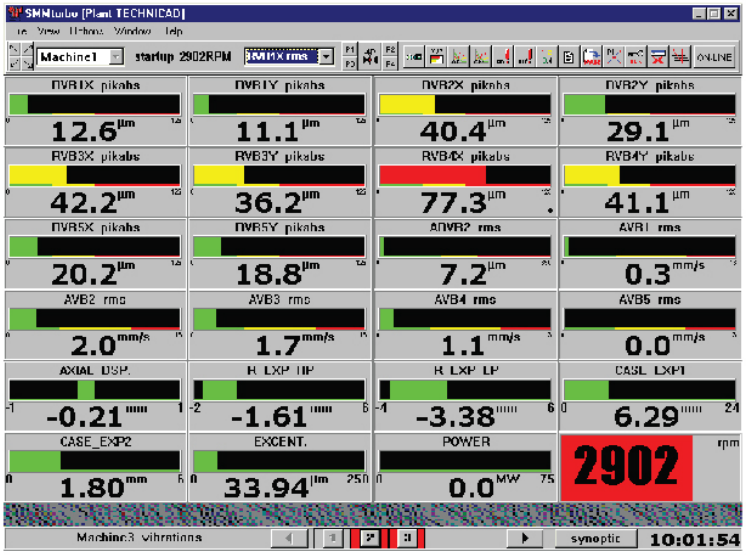
- for mounting on TS35 rail (DIN)
- absolute vibration
- relative vibration
- displacement
- thermal expansion of the rotor/machine body
- rotation speed
- bearing temperature



TNCscada software for condition monitoring and diagnostics of rotating machinery

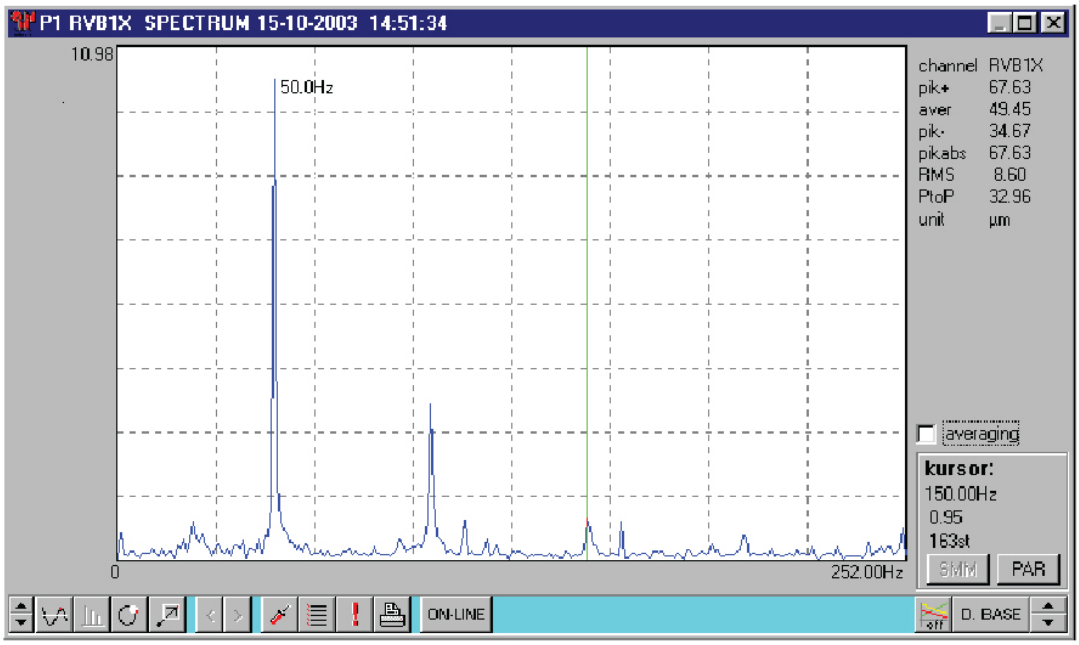
- Data acquisition
- Data processing and analysis
- Data storage
- Visualization
- Data transfer from measuring modules to DCS and diagnostic workstation via Modbus TCP and TNCbus communication protocols

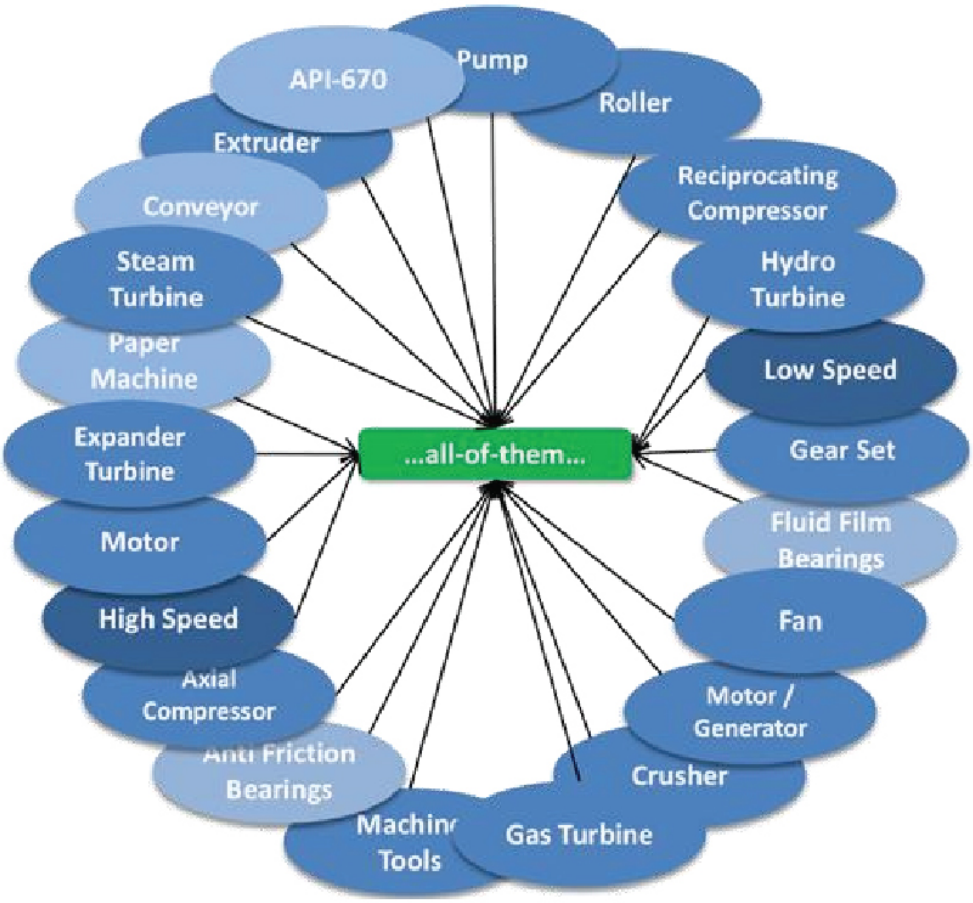




TNCscada software for condition monitoring and diagnostics of rotating machinery

Spectral Analysis of Vibration Signals





Hofmann.
Intelligent Balancing Solutions

Online Balancer

Offering - Balancing System for Fan

Reduce Unscheduled Shutdowns of the Kiln ID Fan due to High Vibration

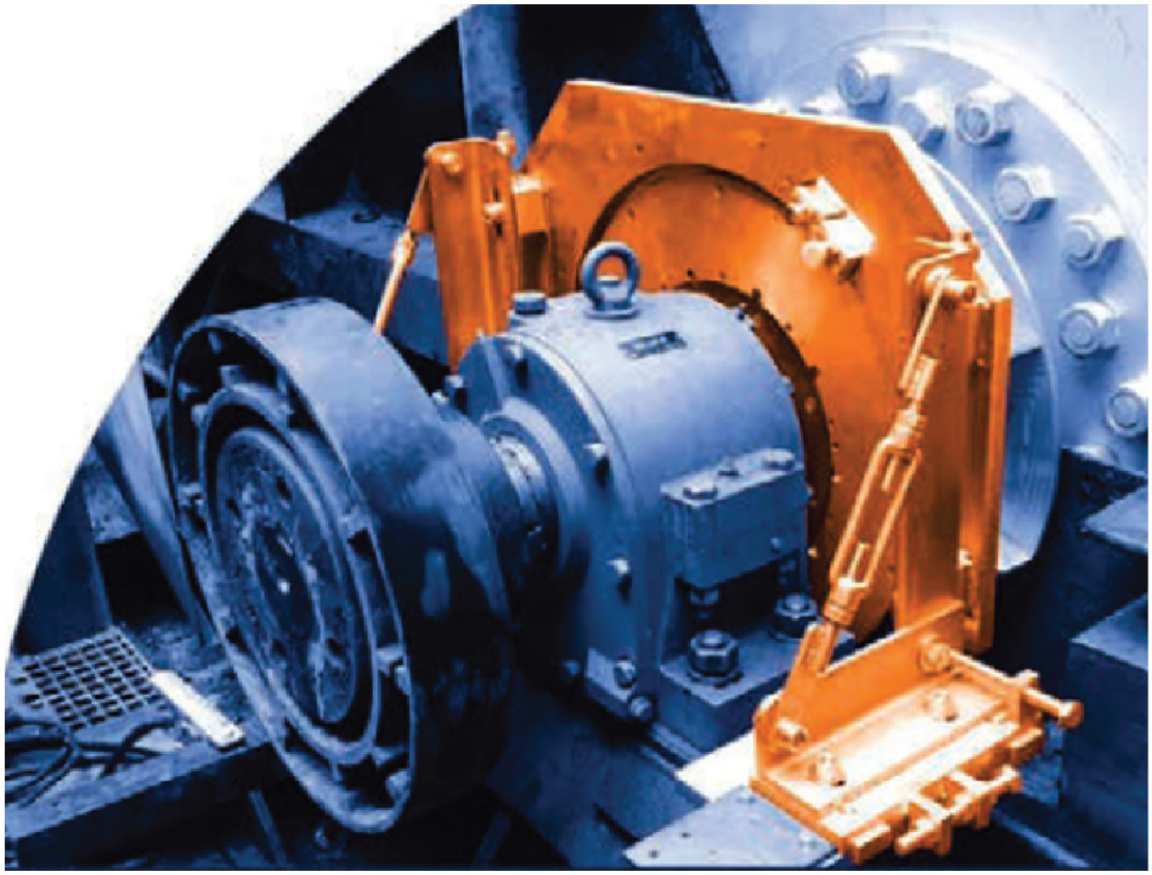
Save Time and Money

Hofmann's active balancing system AB 9000 compensates for imbalance caused by material build-up on process fans. Balancing is fully automatic and occurs at operating speed without having to stop the fan.

The AB 9000 reduces vibration, which results in fewer stops, fewer energy consumption, smoother running and an increase in process stability which leads to a short return on investment.

Benefit using active balancing system

- Real-time monitoring of unbalance vibration
- Fully automatic balancing during fan operation
- At operation speed
- In one or two planes
- Software user interface
- Profibus / Profinet interface to the plant control systems



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