

Combined Cycle Gas Turbine plants

Comprehensive solutions for improved safety and efficiency





Power up your plant

Power plants play a vital role. We help minimize downtime whilst delivering safety and productivity.

The world needs reliable and safe power Whether your gas power plant (CCGT) serves the needs of ordinary homes, hospitals or factory production lines – the world needs reliable and safe power, and you need profitability.

At Endress+Hauser, we bring precision and safety to gas power plants all over the world.

The power behind your plant Your plant needs a multi-skilled, versatile partner. You need reliable solutions that meet your application requirements and industry quality standards. And you may need to upgrade ageing plants with proven and state-of-the-art technologies, to keep the output consistently high.

With our instruments, services and solutions, we take an active part in your natural gas-fired power plants. We indeed support you in providing highly reliable, efficient and low cost means of electricity generation.

When you choose us, you:

Boost the efficiency of your plant

Simplify your process and reduce downtime with real-time information accessible 24/7.

When you are running a gas power plant, efficiency remains the ultimate goal. Today, you are facing various challenges:

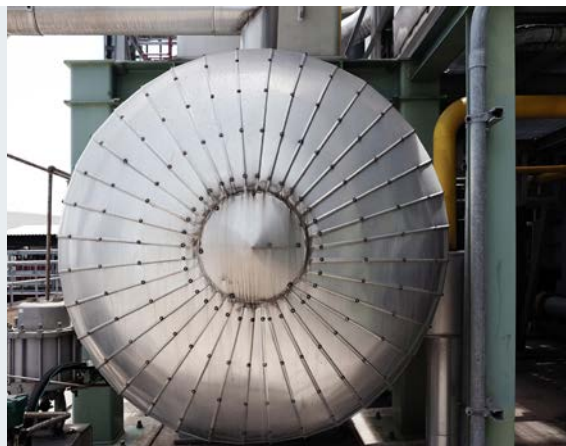
- managing higher throughput while achieving the efficiency to better compete with traditional or renewables technologies;
- meet peak and intermediate demands;
- diversity and complexity of applied instrumentation;
- lack of efficiency which causes repetitive failures and time consuming operations;
- unplanned maintenance issues.



Increased safety

The right solutions help you prevent potential systems failures

The safety of your personnel comes first in the design, construction, operation and maintenance of your gas power plant. Serious injuries can be caused by equipment failure that often stems from years of improper operation and maintenance.



Retain expertise

Rely on a knowledgeable partner that supports you from conceptual design to commissioning services

With the worldwide demand for energy rising, the industry has seen a steady decline in the numbers of new recruits. Until recently, you could manage the situation. However, over the last decade you have noticed a risk of serious shortages in engineers and technically-skilled employees. The increasing global demand and the large number of the industry's workforce rapidly approaching retirement are large contributors to this. Such shortages are felt at all professional levels.



Our automation solutions leverage your equipment and resources

Optimize gas consumption

Endress+Hauser's Coriolis flowmeter provides direct and accurate measurement of natural gas.

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Ensure optimum operation of air inlet filter

Endress+Hauser's solution ensures accuracy and long-term stability of air pressure measurement.

➔ Read more on page 10

Monitor the temperature in a high electromagnetic field

Endress+Hauser delivers safe WirelessHART solutions for T&D infrastructures.

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Keeping an eye on water quality 24/7/365

Endress+Hauser's turnkey panel solutions monitor critical parameters to preserve the integrity of the water/steam circuit.

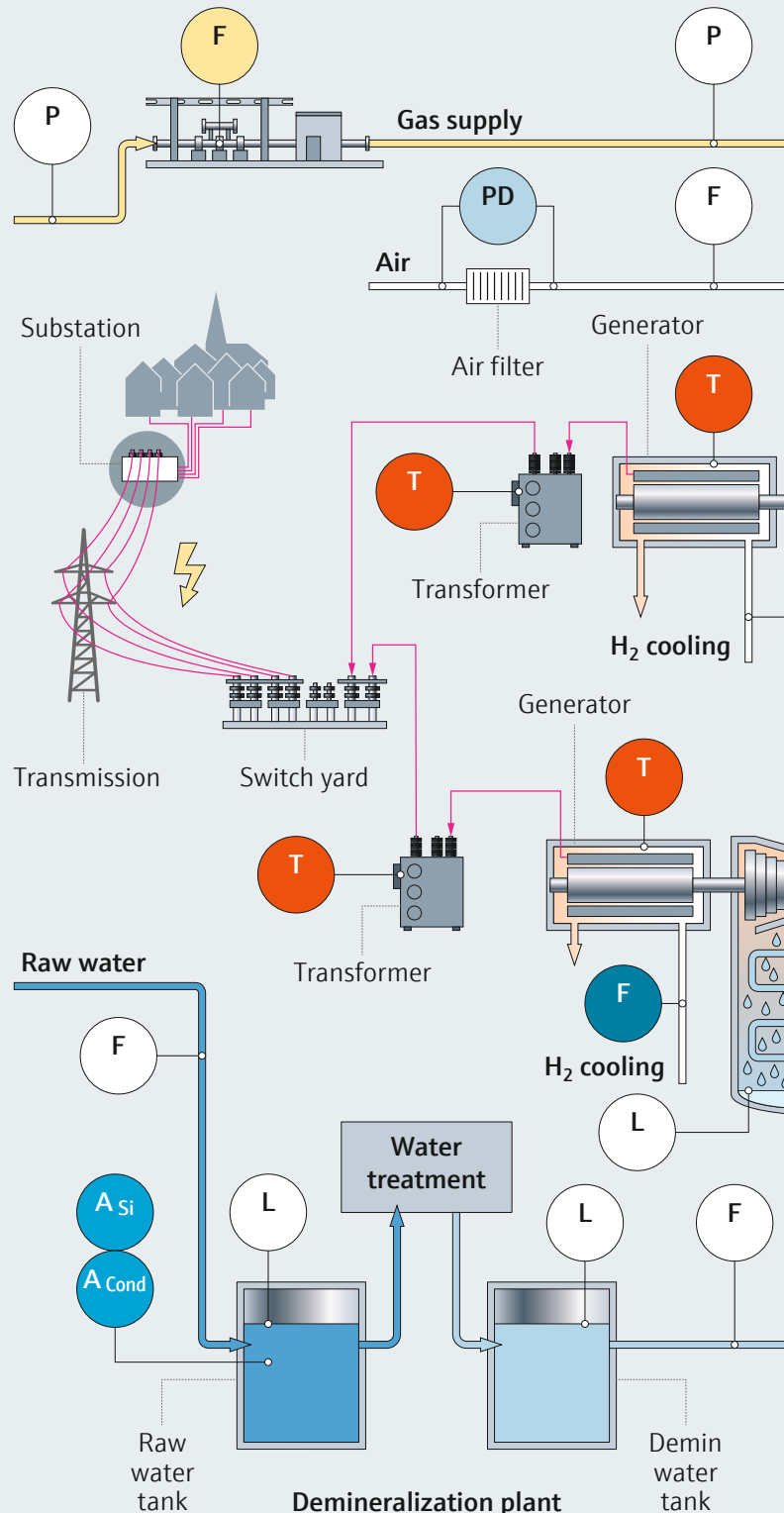
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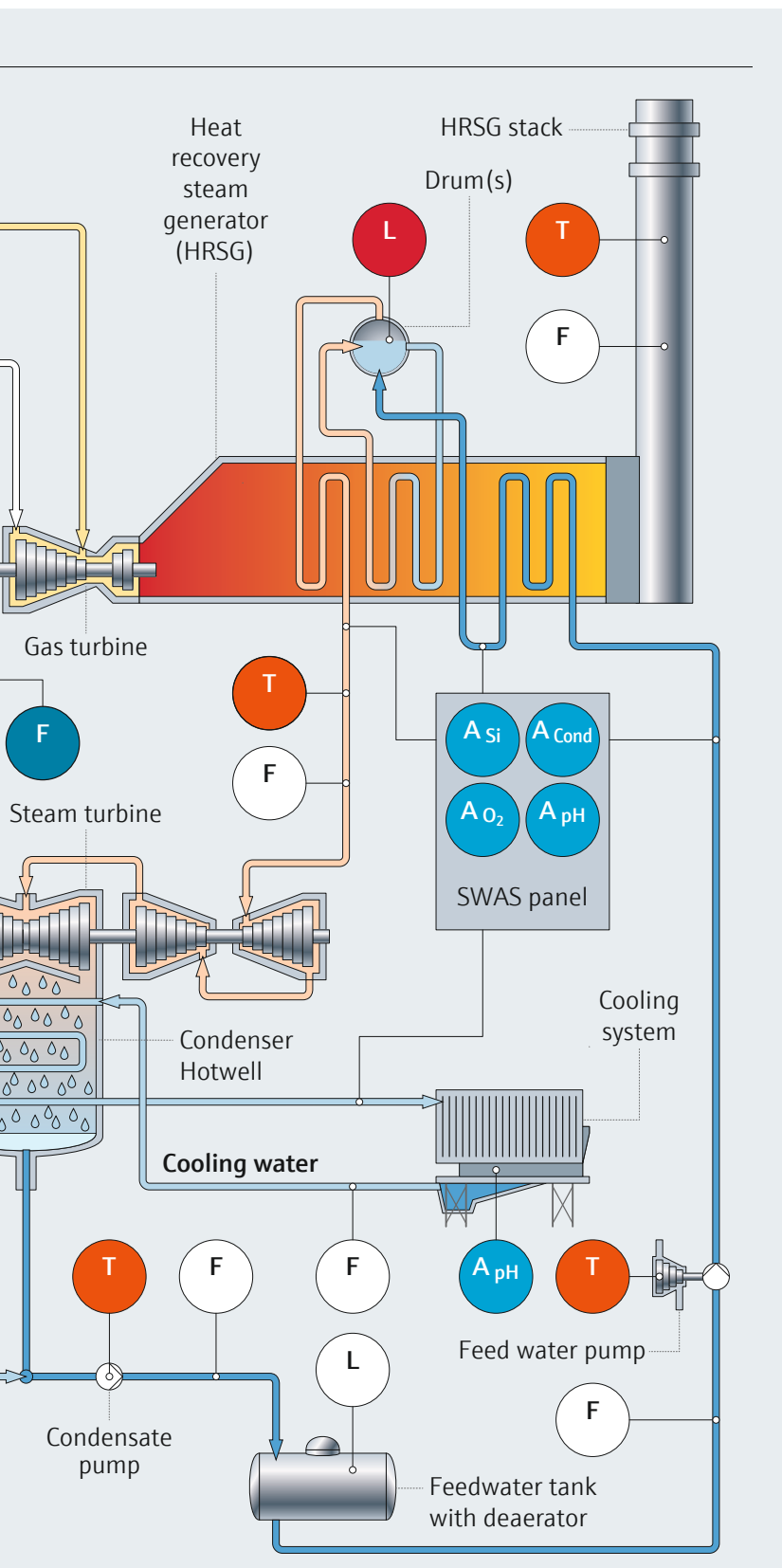
Include a worldwide partner to your projects

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Combined cycle power plant





Keep steam pressure under control

Endress+Hauser provides the safest guided wave radar level measurement for the steam drum.

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High temperatures? No problem

Endress+Hauser provides reliable and accurate solutions to guarantee maximum safety, irrespective of the temperature range.

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Safe and secure hydrogen cooling

Endress+Hauser's flow metering solutions provide maximum safety for hydrogen cooling applications.

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Assign instrument calibration to specialists

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Achieve your maintenance goals

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A worldwide partner for your international projects

The people right on budget, schedule and quality – wherever you need.

Due to globalization, EPC projects are becoming more international. Owners and contractors often have to coordinate power projects in countries where they do not have a current presence. Such scenarios are becoming more prevalent than ever before and the successful execution of a given project is influenced by people across borders.

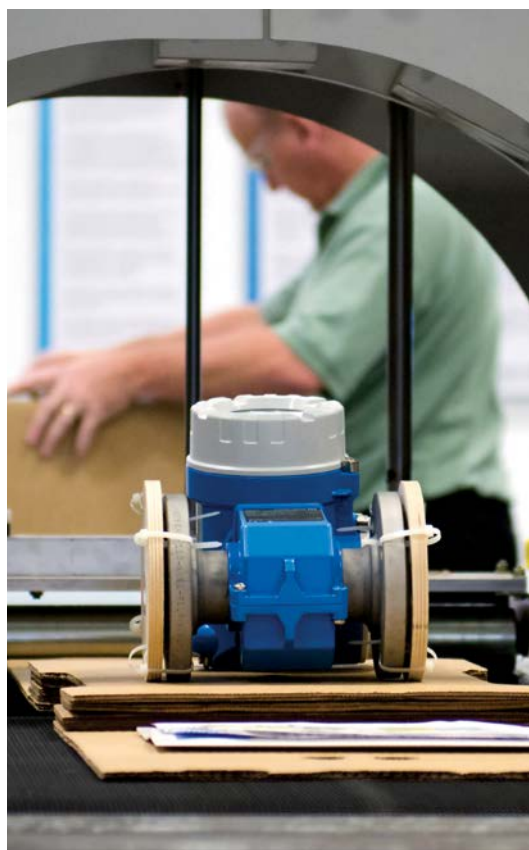
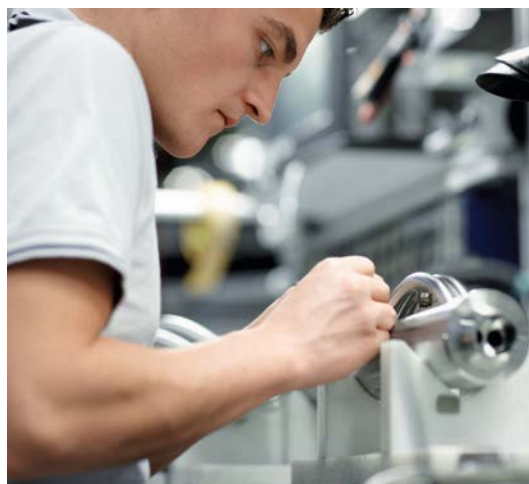
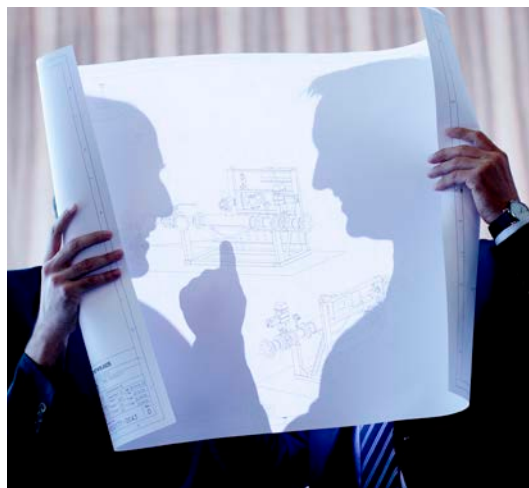
International management made easy Your challenges as EPC or Plant Builder are manifold, such as technical, non technical or cultural. Some of the biggest non-technical challenges include the selection and management of subcontractors, and the understanding of the in-country rules, regulations and requirements. Our experts have extensive knowledge of the instrumentation and your processes. A Project Manager gets designated as your central point of contact throughout the execution of the project.

Proactive support from the initial stages of the project

Right after the contract is signed, our experts get in touch with you to plan a technical clarification meeting. This aims to review each measuring point and validate that the instrumentation choices meet your requirements. This phase is of utmost importance: the more detailed and precise we are in the beginning, the smoother the execution of the project.

We offer what is requested

- We offer and deliver all field instrumentation / sensors a combined-cycle / simple-cycle power plant needs, reducing its inventory.
- The instrumentation delivered fits to the safety and efficiency requirements of the end-user (certification).
- We provide you with a local base of sales support and service, worldwide.
- Documentation is delivered in the local language.
- Consistent two-wire concept for all measurement parameters saves you engineering and installation costs.



Our expertise spans over two decades and includes over 100 facilities that produce a total of more than 135 GW.



Partner of choice

Main Equipment Suppliers need to meet the most demanding schedules, while meeting the highest safety standards. Endress+Hauser is focused on providing innovative products, solutions and services to a diversified portfolio of power stations through superior project delivery expertise and quality of execution.

Optimize gas consumption

Endress+Hauser's Coriolis flowmeter provides direct and accurate measurement of natural gas.

One of the most important OPEX is the fuel consumption, which has therefore a strong impact on the plant's efficiency and bottom line. This is why the use of natural gas must be thoroughly monitored.

The challenge Flow measurement is usually done in corrected volume terms (e.g. Nm³ or SCF). This type of unit is a mass term (e.g. kg or lb) divided by the reference density of the natural gas. Traditional instruments measure in units of volumetric flow, then correct for temperature, pressure, and density conditions to derive the mass flowrate. Most of them also require straight runs of piping upstream and downstream, which tends to complicate their installation requiring larger buildings and flow straighteners increasing pressure drop.

Our solution Promass Coriolis flowmeter eliminates the need to measure and correct for pressure, temperature, and density fluctuations to determine compressed natural gas mass flowrate. With this solution, you get direct mass measurement with an accuracy of 0.35%. Reference density can be programmed as a fixed value or read in from an external gas chromatograph. No inlet runs or flow conditioners are required resulting in smaller buildings and less pressure drop. For liquid fuels, additional information (density and viscosity) help improve safety and efficiency.

High safety and easy maintenance

- Promass Coriolis flowmeter is certified per IEC61508 for use in SIL2/3 with excellent safety parameters.





Promass Coriolis flowmeter

- The meter offers in-situ verification; no need to remove it from the process.
- Promass Coriolis flowmeters have best-in-class accuracy, lowest footprint and weight.



Endress+Hauser's gas metering system increases overall efficiency

A major CCGT power station situated in Bavaria region of Germany - installed the Promass coriolis flowmeter at the inlet of the world's highest output gas turbine the SGT5-8000H. The original turbine flowmeter presented numerous disadvantages:

- Its accuracy was 1%, which represents several Million Euros of gas per year;
- The system included additional pressure and temperature devices that had to be periodically re-calibrated;
- It required long inlet runs although a flow conditioner was used upstream;
- The turbine flowmeter was subject to wear and required periodical greasing.

Huge savings

The replacement of the turbine flowmeter by a Promass Coriolis flowmeter removed all these disadvantages:

- The gain in accuracy (0.35%) allows to save 1 to 2 Mio Euros of gas every year;
- The system directly determines gas mass flow without additional measuring devices for pressure, temperature and gas composition, which reduces potential error sources and re-calibration effort;
- The in-line-test-features allow to easily determine meter integrity, to prove calibration state and, in the end, to prolong recalibration periods;
- There are no requirements concerning inlet and outlet conditions;
- With no moving parts and no seals, and providing robustness against deposition, the solution increases long term stability and reduces maintenance costs.



Ensure optimum operation of air inlet filter

Endress+Hauser's solution ensures accuracy and long-term stability of air pressure measurement.

Not only Compressed Natural Gas (CNG)/ Diesel impacts combustion, but also air, which is the combustive. Therefore air intake systems play a key role in a gas turbine power plant. In addition, air filter systems are essential for protecting sensitive turbine parts.

The challenge

The inlet of air filters fails, because polluting agents contained in the air like oil drops, soot, organic material, ground and salts enter the filters causing build-up. This dirt in air filters affects the efficiency in the gas turbine of around 0.2%, due to losses in the compressor as well as in the gas turbine.

The solution By measuring the pressure upstream and downstream, Endress+Hauser's differential pressure transmitter detects any air pressure loss. Reliable differential pressure measurement warn about presence of dirt in the filters.

When the differential pressure across the inlet filters reaches a preset value, an alarm is initiated. This alarm may signify a need to change the filter elements.





Differential Pressure Transmitter Deltabar S

Deltabar differential pressure measurement

- Best accuracy, reproducibility and long-term stability differential pressure transmitter for measuring very low pressure (10 mbar measuring cell).
- High reliability through HistoROM technology that allows:
 - Automatic storage of all device and configuration data ensures maximum plant safety;
 - Data restoration that enables quick exchange of components for improved plant availability;
 - Integrated event logbook and data logger for quick failure analysis.



Keeping an eye on water quality 24/7/365

Endress+Hauser's turnkey panel solutions monitor critical parameters to preserve the integrity of the water/steam circuit.

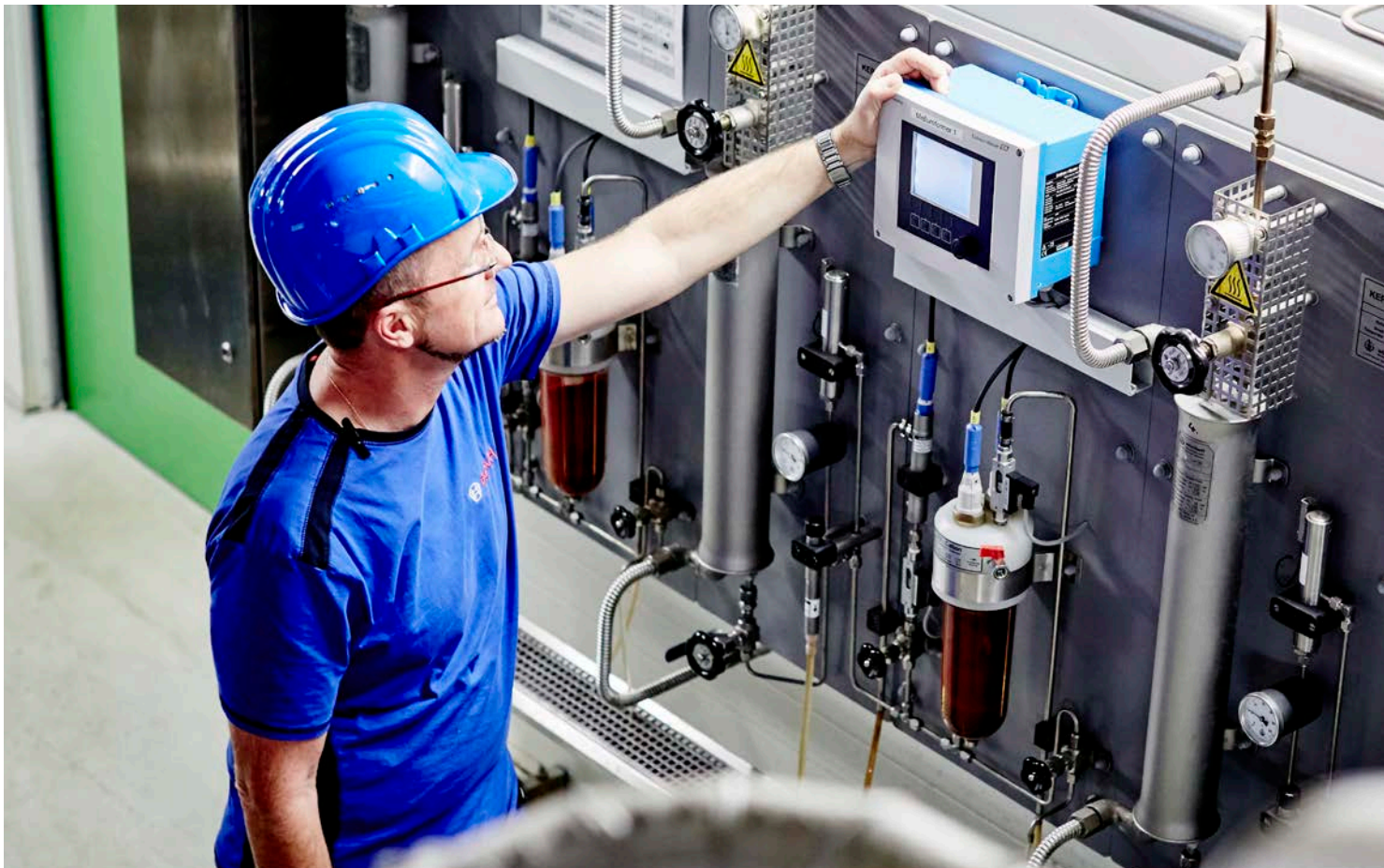
Inside the heat recovery steam generator (HRSG), the constant contact of water and steam with pipes, condensers and turbine blades can cause equipment scaling and corrosion, thus affecting the whole efficiency of the system.

The challenge The high temperatures and pressures in the water/steam cycle and the low measuring ranges demand smart solutions. You want to preserve the integrity of the main components and keep the turbine supplier warranties applicable.

The solution Endress+Hauser offers a standardized and modular water quality control solution which ensures the operational efficiency and minimize plant downtime caused by equipment corrosion.

The solution enables to measure the critical parameters:

- **Conductivity** – The conductivity value indicates the quantity of dissolved solids that are present. High conductivity damages the turbine blades and low conductivity increases corrosion.
- **pH** – This is an important parameter to monitor in order to avoid equipment corrosion. It is common practice to keep the pH value of feed-water at slight alkaline levels to prevent corrosion.
- **Silicate** – Among multiple potential contaminants in the steam cycle, silica can be a spoiler because of its high solubility in steam. Silica can deposit on any surface steam touches, creating issues with plant safety and efficiency. Therefore, silicate analysis is required at several points: high pressure and low pressure turbine steam, drum steam, make-up water, drum water.



- Dissolved Oxygen** – Since Oxygen is one of the major factors of corrosion in water circuits, water is always thermally degassed before use. Oxygen should only be present in trace quantities (ppb). Even small quantities of DO in boiler water are capable of causing severe pitting in boilers of all pressures, and will reduce the boiler life dramatically. Additional parameters can also be monitored depending on plant-specific requirements.

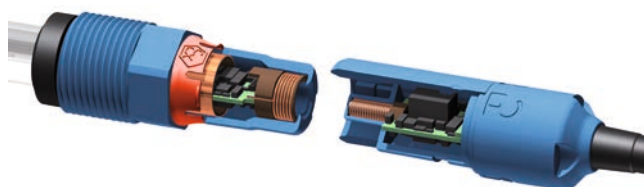
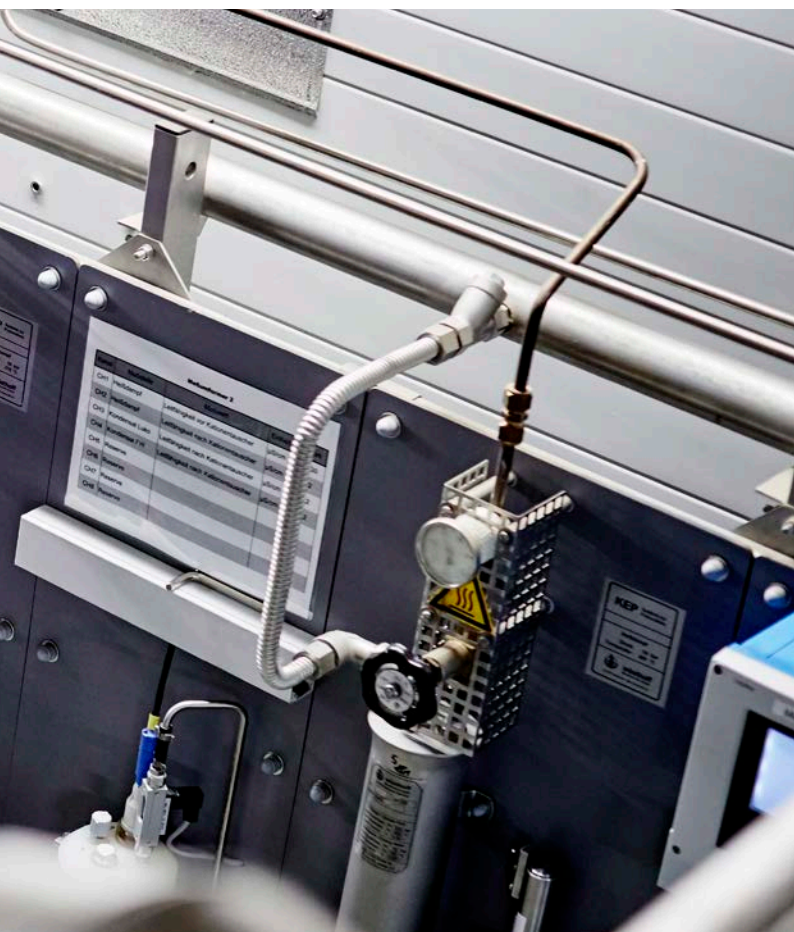
Steam/Water Analysis System (SWAS)

Endress+Hauser SWAS panels provide all necessary analytical for process control. They come equipped with cutting-edge sensor technology Memosens which has become the worldwide leading standard in liquid analysis. Memosens technology digitizes the measured value within the sensor and ensures non-contact and interference-free



Endress+Hauser analytical instruments and sampling components user-friendly mounted in an air-conditioned shelter

transfer to the transmitter. This ensures you always have an accurate and reliable overview of the quality of your water/steam cycle and the status of the individual measuring points that are installed on your panel. The Liquiline transmitter provides evidence that water quality constantly remains within the required range.



Memosens

The first connection that you can truly rely on. The mechanically safe, non-contact connection between the sensor and the cable enables the technology to function safely, even under water. As all sensor-related data are stored directly in the sensor head, it is possible to perform predictive maintenance. This has been proven to reduce maintenance costs significantly and to increase sensor operating time. At the same time, process safety is increased and system downtime reduced to a minimum. And as if that wasn't enough, Memosens saves hard cash when it comes to capital costs.

Keep steam pressure under control

Endress+Hauser provides the safest guided wave radar level measurement for the steam drum.

The heat recovery steam generator (HRSG) provides the thermodynamic link between the gas turbines and steam turbines. It is monitored via instrumentation that works at very high pressures and temperatures to ensure the process safety, the efficiency of the steam generator and therefore a great part of the plant's heat rate.

The challenge Level measurement inside the steam drum is both critical and difficult. The water level in the drum must be precisely monitored:

- Low level exposes boiler tubes to damage by overheating;
- High level can result in water carryover into the steam piping; steam separators will be affected, and temperature will get hard to control; in a second step, moisture or the water treatment chemical carryover could damage the superheater tubes and turbine;
- Poor level control impacts the drum pressure control.

With modern 3-drum heat recovery steam generators being characterized by a sliding operating pressure, frequent startup and shut down, selecting the proper mix of instruments to maintain correct water levels under all conditions has become even more difficult.

The solution Although differential pressure (DP) transmitters was most commonly used for drum level control in the past, things have recently shifted: in the last generation of CCGTs, the guided radar technology outstrips the differential pressure transmitter technology by far.

Endress+Hauser's Levelflex guided radar level measurement is both the safest and the more reliable DP level measurement for steam applications within the HRSG:

- The Levelflex can support up to 450 °C (842 °F) under 400 bar (5,801 psi);
- It is not affected by vacuum, density changes or foam;
- The Levelflex guided radar measuring system is certified for use in Functional Safety applications – it complies with IEC 61508/61511 (SIL 2). It has also been approved for steam boilers according to EN 12952/12953.

Levelflex technology provides cyclic automatic gas phase compensation – the ideal solution for precise level measurement in all steam applications. Quite flexible, the Levelflex can be adapted to changing process conditions without the need to make mechanical modifications to the measuring task.

The Levelflex technology simplifies the job:

- No need for complex pressure piping installations to avoid any measurement error;
- Unlike the conventional measurement methods, such as differential pressure transmitters or displacers, this technology does not need compensation curves.

Since it contains no mechanical moving part, the Levelflex guided radar measuring system is practically maintenance-free. A unique HistoROM data management concept allows for safe level measurement, as well as the Multi-Echo Tracking with Tank Trace marks and traces all echoes signals, not only the level signal - guaranteeing safe measurement at any time.



Endress+Hauser bypass chamber solutions built for your individual applications



Safe and secure hydrogen cooling

Endress+Hauser's flow metering solutions provide maximum safety for hydrogen cooling applications.

The challenge Due to its extremely high heat transfer ability and low density compared with air, Hydrogen gas is typically used for the cooling of generators in power plants.

All generator systems that employ hydrogen as a means of cooling must ensure that it does not leak into the surrounding environment – Hydrogen and dry air can create an explosive atmosphere from a hydrogen concentration of only 4% per volume. Therefore, suitable measurement solutions should be placed in order to prevent leakage or to alert before potentially explosive concentrations are reached.

The solution Coriolis mass flowmeters (e.g. Promass A) provide a highly accurate measurement when dosing additional hydrogen to this circuit. Moreover, they do not require inlet runs and their all-welded design reduces the number of points of potential emissions.

For monitoring the hydrogen circuit itself, the Proline t-mass thermal mass flowmeter is the most appropriate solution, since repeatability is the main focus of the measurement.



Proline Promass Coriolis flowmeter monitoring the mass flow of hydrogen to control the cooling of the generator



Proline t-mass thermal mass flowmeter. Alternative to Coriolis flowmeter to monitor the flow of hydrogen

High temperatures? No problem.

Endress+Hauser provides reliable and accurate solutions to guarantee maximum safety, irrespective of the temperature range.

Temperature is both highly safety relevant and key for efficient operation in thermal power plants. Keeping the maximum temperature limits, as for example the steam temperature after the super heater, is essential. Exceeding the allowable temperatures of structural steels would lead to material fatigue and finally to material failures. If undetected, serious accidents and calamities would be the result. In order to reach optimum plant efficiency however, steam temperatures should be as high as possible.

The challenge These conflicting goals impose highly accurate, reliable and long-term stable measurements. High accuracy is a precondition for temperature control with narrow bounds. As these measurements are safety relevant, it must be guaranteed under any circumstances, that the measured values are correct and that errors or irregularities would be immediately detected. This requirement not only involves the temperature sensing element but also all mechanical and electrical components that are linked to it. In this context, the mechanical stability of installed thermometers (in order to withstand pressure shocks in the steam pipe for example) and signal transmission are also important parameters to consider.

The solutions Steam temperatures above 500°C (932°F) (e.g. the superheated steam of turbine inlet) are typically measured with thermocouple sensors. Due to high pressures and temperatures, the sensor must be protected by a thermowell for which Endress+Hauser offers stability calculations for maximum safety. iTEMP transmitter with SIL certification according IEC61508 provides permanent safety monitoring, diagnostics and stable signal transmission in safety loops. With this solution, usual safety margins can be lowered in order to rise steam temperatures and reach a higher overall efficiency of the plant.

For measuring temperatures below 500°C (932°F), iTHERM StrongSens RTD sensor is the perfect solution. It offers highest accuracy and long-term stability – by far better than any other thermocouple sensor. Unless standard RTD sensors, it is extremely robust and withstands vibrations up to 60g. This set of features makes the iTHERM StrongSens THE sensor of choice for most applications in modern power plants.

In addition to the measuring devices, Endress+Hauser offers a full portfolio of services. An example: performed at regular intervals, calibration ensures the accuracy of critical measurement devices throughout the plant lifecycle.



Full range of temperature transmitters

Monitor the temperature in a high electromagnetic field

Endress+Hauser delivers safe WirelessHART solutions for electricity transmission and distribution (T&D) infrastructures.

CCGT plants supply power to an electrical grid. Part of this grid, electrical substations located at each end of the transport grid are there either to increase voltage to a level suitable for transport or to reduce voltage to a level suitable for local distribution. To change voltage, substations generally include transformers which are surrounded by switching, protection and control equipment.

The challenge Overloads cause transformers to overheat and may expose them to the risk of exploding. Therefore temperature must be monitored at various points of the transformer to prevent overheating. The particularity of this application is that lightning, high electromagnetic field (EMF) and voltage changes impact the 4-20 mA signals which are typically used for the measurement transmission, causing transmitters and

power supplies to fail. Therefore, 4-20 mA signal wires are not the ideal measurement media. To obtain critical data for daily operations from locally installed gauges, the substation operator needs to send personnel every day which is deemed to be a threat to the staff's safety.

The solution Our temperature measurement systems prevent any overheating of the transformers. The use of the WirelessHART protocol avoids any potential problem with 4-20 mA signals and ensures the correct transmission of the measured values to the control system.

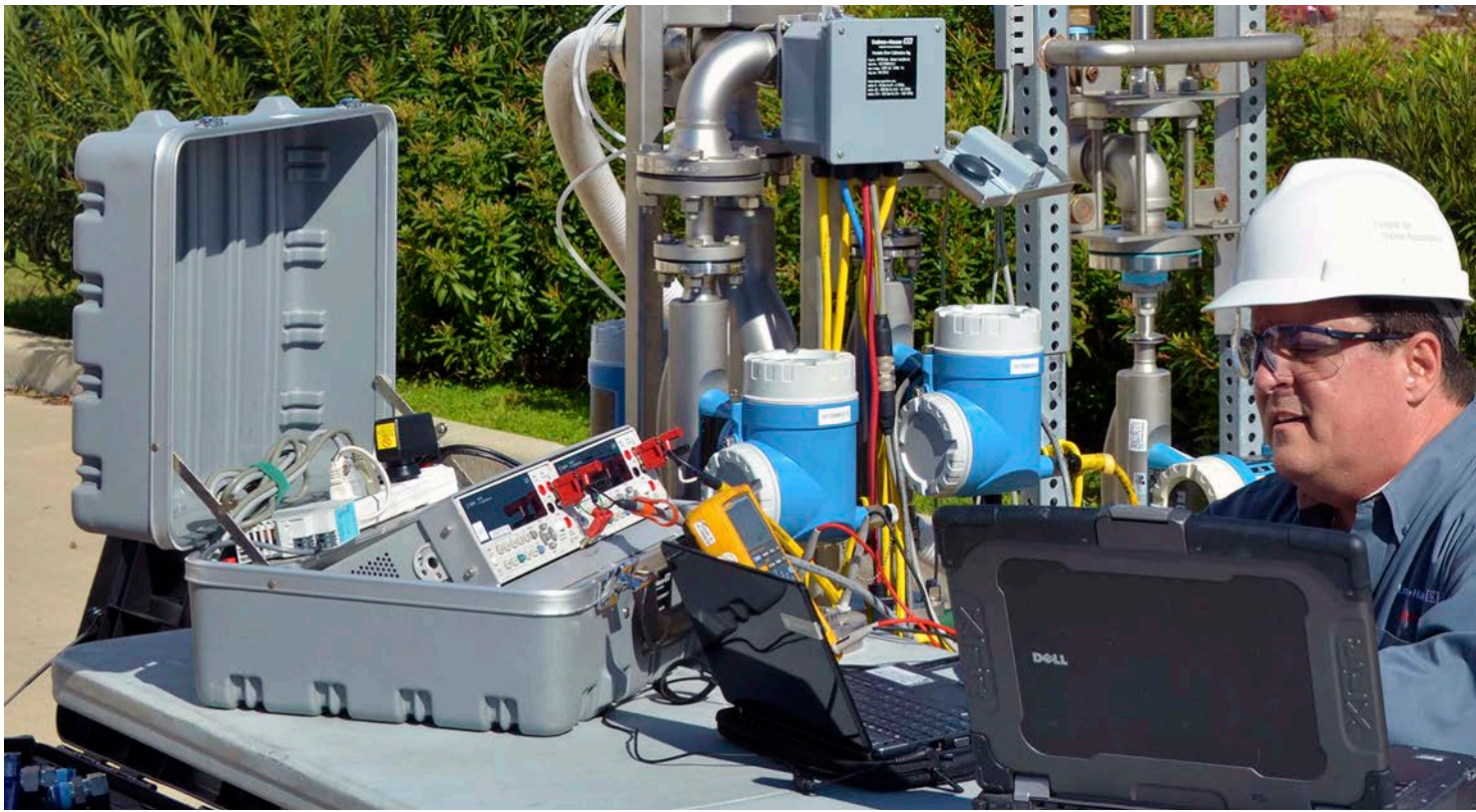
Efficient retrofit The Endress+Hauser WirelessHART solution also enables retrofit of existing field devices. Up to 4 field devices can be connected to a WirelessHART adapter, which reduces project costs.





Reliable transmission of critical measures like temperature/ pressure on transformers and level of dielectric fluid via Endress+Hauser WirelessHART





Assign instrument calibration to specialists

Endress+Hauser experts provide best-in-class calibration services to ensure maximum efficiency and safety of your natural gas-fired power plant.

Nowadays in the more and more competitive global power market the day-to-day metering process conditions are often very challenging. This is why Endress+Hauser has been building high-tech calibration rigs for over 35 years in order to document the accuracy of the devices in a reliable and traceable manner.

Global partner with premium expertise With calibration being our core competence, we are in the best position to meet the needs of your most critical applications (including custody transfer). Endress+Hauser's range of calibration services covers on-site verification tests, accredited laboratory calibrations, ISO17025 certificates and traceability to ensure compliancy. Our service engineers are certified by Endress+Hauser and your local metrology entities.

On-site service increases power generation availability On-site calibration is performed by highly trained engineers. Convenient and cost-effective,

it removes the need to send instruments off-site as our specialists come to you, keeping downtime to an absolute minimum. It also offers the highest flexibility as calibration can be scheduled according to power plant shortages. Our qualified and experienced field service engineers can perform adjustments, diagnose faults and re-calibrate. We calibrate all of your natural gas-fired power plant's installed base (including 3rd party devices), not just Endress+Hauser devices.

Our mobile trailers with portable calibration equipment are stationed close to you, allowing your instruments to remain at your place of operation. Depending on plant topology, many measuring points can be quickly calibrated with minimal interruption to your process. Mobile trailers perform a comparison between two devices under test. They are all fully traceable to national and international standards thus allowing end-to-end traceability of measured values.



Laboratory services to achieve highest accuracy Our calibration laboratories are located worldwide to provide the best possible service, wherever and whenever you need it. These identically built high-tech calibration systems ensure standardized quality statements.

Confidence thanks to 100% traceability All our calibration facilities are accredited (ISO/IEC 17025) and provide numerous advantages:

- Traceability to national standards, e.g. METAS (Switzerland), PTB (Germany), LNE (France), NIST (USA), NIM (China), CENAM (Mexico)
- Worldwide acceptance via Mutual Recognition Agreement
- Quality certified by national accreditation bodies
- Secure calibration results

Calibration certificates (SCS, A2LA, EMA, CNAS) The dictates of quality are often such that a meter needs an official calibration certificate, e.g. for flow metering or volume measurement in large water pipelines. Therefore, Endress+Hauser, as officially accredited calibration provider for the main measured variables (flow, pressure, temperature etc.), also performs calibration with SCS, A2LA, EMA or CNAS certification. These certificates are accepted in all ISO member states and consequently they are invariably recognized and accepted by national authorities and in quality audits.

✓ Optimizing calibration to enhance productivity, ensure compliance, and maintain the reliability of your power plant.

- We ensure conformity and keep calibration costs under control (integration of KPIs)
- We manage your calibration set-up for full compliance (documentation traceability)
- We make effective use of power plant downtime (smart scheduling with optimized calibration intervals)
- We support customers to accurately adjust existing metrological requirements such as Maximum Permissible Error or deviation alerts

More information at www.endress.com/calibration-optimization



Endress+Hauser Operations App

Download this app and get mobile access to up-to-date and comprehensive

information about your installed Endress+Hauser instruments - wherever you are, whenever you need it. The Endress+Hauser Operations app allows you to quickly download specific documentation such as operating instructions and technical information for your Endress+Hauser field instruments. Get quick and easy access to up-to-date product information and device details e.g. order code, availability, spare parts, successor products for old devices and general product information. Simply enter the serial number or scan the data matrix code on the device to download the information - you can even share the information and documents with your colleagues by email!

Features

- Get detailed and up-to-date product information
- 'Device List' - history of recent search result
- Get spare parts
- Download documentation like operation manuals or certificates
- Share the information and documentation with colleagues
- Recommend the app via Facebook, Twitter and email



Achieve your maintenance goals

Endress+Hauser service teams support you in ensuring maximum availability and performance of your process and help you optimize your maintenance costs.

Nowadays, power companies are running with limited personnel who focuses on the operation of critical equipment such as boilers, heat recovery steam generator or turbines. Every year, the replacement of experienced people who are retiring by new comers causes a loss of knowledge. This lack of resources and expertise impacts plant maintenance. Older plants are facing even tougher situations, since old instrumentation requires more maintenance and, more and more often, needs to be replaced.

Maintenance services of field instrumentation From inspection to preventative maintenance services, we support you to define the right maintenance regimen based on your plant's requirements. Specific reaction time for corrective maintenance on your critical assets can also be defined in a service level agreement. You will get:

- Maintenance report per device
- Full traceability of the maintenance event and report per device (in option)

Benefits:

- Decrease the complexity of your installed base through standardization, allowing you to improve personnel efficiency and optimize spare part stock.
- Achieve safety and quality compliance by optimizing your efforts with an efficient maintenance schedule.
- Minimize downtime by ensuring the readiness of your organization to handle the breakdown of critical components within your process.
- Full traceability of your installed base with updated information and documentation throughout your plant's life cycle.



✓ **Maintain your installed base with W@M Portal**

The web-based W@M Portal allows for real-time data monitoring of your process, permitting proactive maintenance of your devices. You get fast access to critical information, such as spare parts, product availability and reports. Quick access to the right information speeds up your processes, such as repair or replacement on an instrument or downloading certificates for inspections. Furthermore, the up-to-date data allows reliable planning of your maintenance events.

More information at
www.endress.com/life-cycle-management-portal

Maintenance contract increases plant uptime

In order to remain competitive, a Mexican plant had strongly reduced the personnel dedicated to maintenance. The degradation of the plant's maintenance particularly impacted analyzers' operation.

In 2010, the company appointed Endress+Hauser to check not only the Steam/Water Analysis panel and the analytics instrumentation provided by Endress+Hauser, but also the 3rd party installed devices. The yearly maintenance contract includes several visits per year and the permanent availability of consumables and spare parts.

Customized support

To fulfill the various needs of the plant, Endress+Hauser dedicated a contract manager and an engineer responsible for service. This helped facilitate communication and minimize response time. In cooperation with the plant's engineering department, we carried out the migration and updating of O₂, conductivity and pH sensors to Memosens technology. The achieved measurement improvements had immediately a positive impact on plant's operation and efficiency, thus ensuring the ROI from this migration.

Every year, we deliver field service report and quality dossier, with all documents related to the contract in electronic and paper format. We provide calibration stickers, calibration certificates, maintenance program, helpdesk 24/7. We run 3rd party devices maintenance, including the provision of consumables.

Benefits for the CCGT

- We reduce to the minimum the risk of plant breakdown due to damages to the HRSG and the steam turbine.
- By avoiding build up, corrosion, pitting in HRSG and steam turbine, we keep the CCGT up and running.
- Proper maintenance avoids chemical washing in the HRSG.
- At any time, the company is ready for audits and inspections.

The customer has widened the scope of the contract several times since its beginning.

www.addresses.endress.com

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