



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services



Solutions

Condensed Launch EngyCal[®] RH33 BTU Meter and EngyCal[®] RS33 Steam Calculator



Disclose waste of energy and reduce costs

EngyCal[®] RH33 and RS33 enable

- **Transparency** on energy consuming plants and processes
- **Sustainability** within the energy management
- **Process stability** through continuous monitoring

Reduce energy costs by up to 8%
with monitoring and analyzing energy
consumption based on reliable and accurate
calculation and measurement instruments.

Proven reduction potential without additional investment
just by an increased awareness and change in behavior.



Endress+Hauser

People for Process Automation

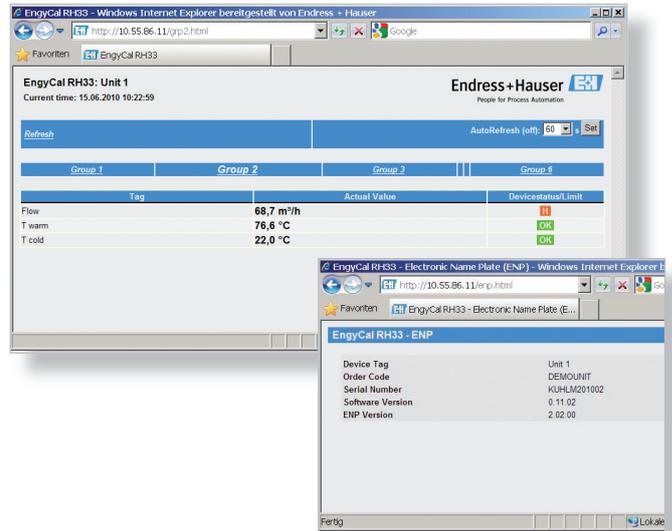
Open and web based information

Access to **information** worldwide via the web browser **free of charge!**
Reduce costs for system integration and information transfer **over the complete life time!**

The following information is available:

- measured values (temperature, pressure, mass flow)
- calculated values (energy, enthalpy, Delta T, ...)
- alarm and limits
- device and value status

In addition the electronic name plate (showing serial number, tag, etc.) can be obtained via the web server as well.



Information supply via Field Data Manager software



Consolidates the measured and calculated data, **visualizes** the consumption, generates reports automatically and delivers a **tamper-proof documentation**.

Your benefits:

- Target-performance comparison and benchmarking
- Identify and monitor energy intensive process steps
- Create correlations between energy consuming plants (heat exchanger for process heating) and energy generators (like boilers)
- Validate invoices – monitor energy usage on consumer side for comparison purposes
- Automatically create invoices in combination with an ERP system

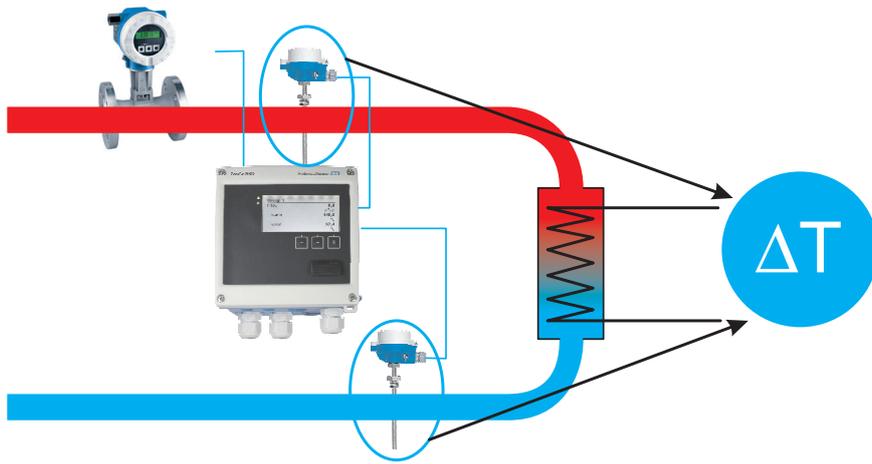
Highly accurate measurement technology – calculation according to IAPWS

Endress+Hauser offers a **complete portfolio of devices and tools** calculating energy of water and steam **according to the international standard IAPWS-97**.

IAPWS delivers an internationally accepted formulation for properties

- light and heavy steam,
- water and
- selected aqueous mixtures in
- thermal power cycles and
- other industrial applications.





The **BTU Meter EngyCal® RH33** measures the **energy flow** in a heating or cooling circuit based on **volumetric flow** and the **temperatures at the input and output** (temperature difference) of a heat exchanger. Suitable for all fluids.

The **Steam Calculator EngyCal® RS33** measures the **mass and energy flow of saturated and superheated steam** based on **volumetric flow** and the **temperatures and/or pressure**.

Boiler

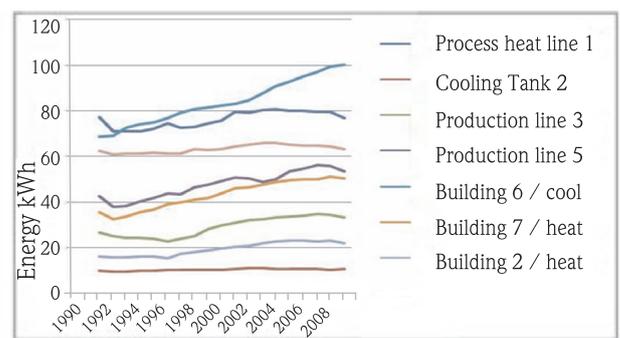


Consumer
(e.g. sterilization, process heat)

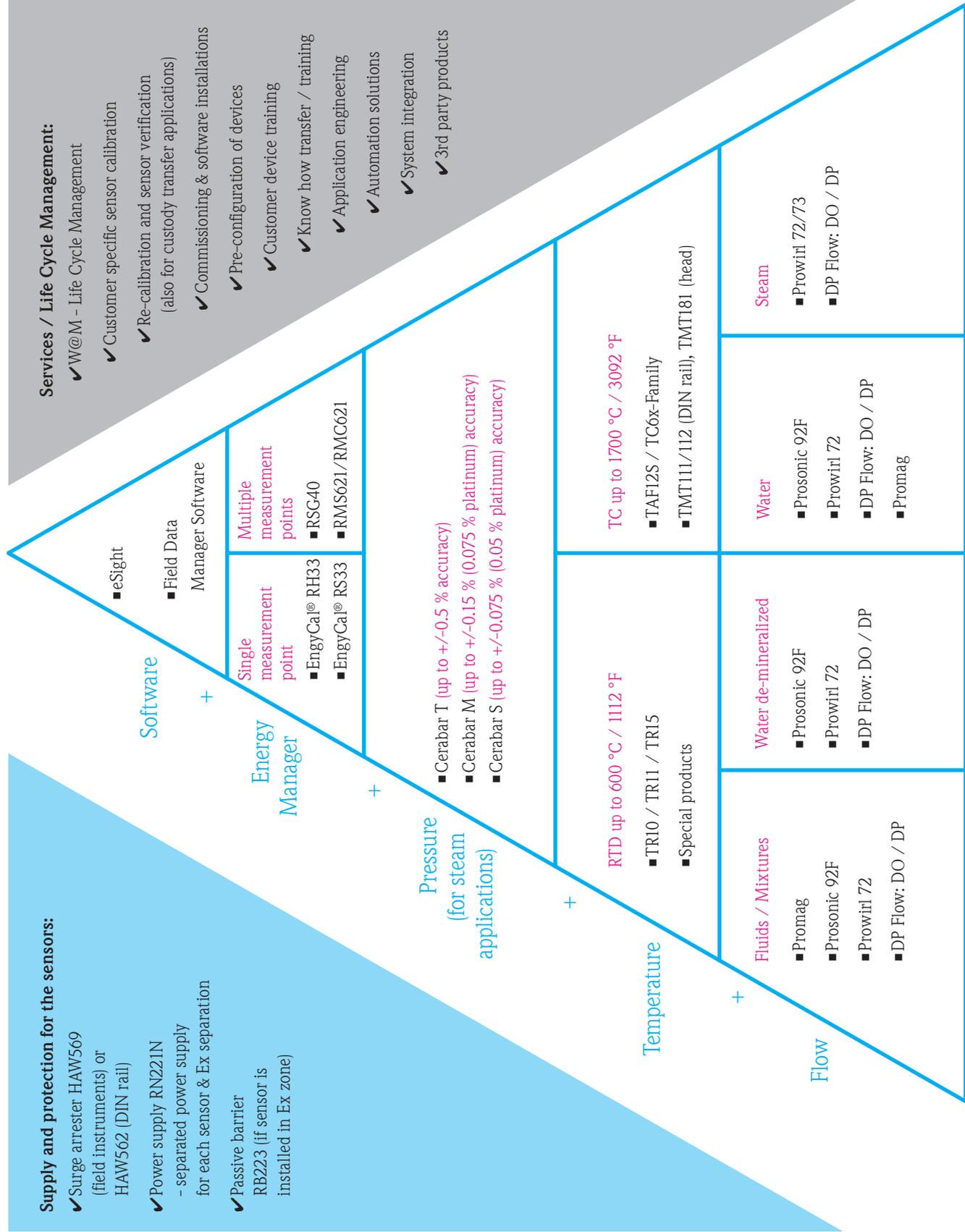


The combination of **Field Data Manager Software MS20** and EngyCal® delivers **data transparency** and a solid basis for **decision making** based on

- data and event visualization for **Target-Performance-Comparison**,
- tamper-proof documentation to **validate invoices** and
- **identification** of main consuming actors.



Integrated Offering



Supply and protection for the sensors:

- ✓ Surge arrester HAW569 (field instruments) or HAW562 (DIN rail)
- ✓ Power supply RN221N - separated power supply for each sensor & Ex separation
- ✓ Passive barrier RB223 (if sensor is installed in Ex zone)

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