KROHNE Power Generation – your partner for the right measurement solution

The power generation market is facing new challenges like load flexibility, low load operation, higher efficiencies, increasing plant availabilities and tighter environmental regulations. As a leading multi-instrument vendor, KROHNE supplies established process control technologies as well as modern and sophisticated systems. KROHNE Power Generation offers safety and non-safety related products, systems and services within the specific market standards and requirements.

KROHNE Power Generation is a dedicated expert for:
- Project management
- Design and calculations
- Testing and examination
- Product qualification
- Fabrication
- Documentation with the highest consideration of safety.

Standards and certifications

We deliver according to the following manufacturing and material standards:
- DIN-ISO, EN, ASME materials
- ASME materials e.g. Section III P91/92
- KROHNE is certified according to ISO9001, ISO3834-2 and PED module H
- ASME N & NPT authorized
- Supply capabilities for ASME PP and U stamp instruments
- Qualified welders AD 2000-HP 3, TRD 201, encl. 2, EN ISO 9606, ISO 14732, VdTÜV-Mbl. 1164, ASME IX

Safety standards:
- SIL 2/3
- Custody transfer standards: MID M001, M002, M004, M005, OIML R49, R75, R137, R117

Applications – flow, level and pressure

Flow
- LP/IP/HP Feedwater
- LP/IP/HP main steam
- Condensate, spray water
- Custody transfer of hot water/steam
- Primary/secondary air
- Burner fuel oil/gas
- Ammonia and lime slurry for SCR & FGD
- Custody transfer of fuel
- Other flows in auxiliary plants

Level
- Drum, deaerator, condenser, preheater
- Steam trap/drainaging
- Coal bunker
- Fly ash silos
- Chemical tanks
- Pressure
- Pulverisers, filters, ESP, condensers, heaters
- Flow and level applications with DP

Applications – temperature, analysers and systems

Temperature
- Temperature measurements across the plant (heater steam circuit, flue gas, secondary air, etc.)
- Thermowells with calculations for natural frequency, steady-state and dynamic stress analysis

Feedwater treatment
- Condensate
- Cooling water
- Waste water

Systems
- Complete flowmeter rigs e.g. for natural gas supply
Excerpt from the KROHNE product portfolio – thermal power generation

**OPTISONIC** – ultrasonic flowmeters
For steam process and utility applications, energy and custody transfer (CT) measurements

- Variants for high pressure and high temperature available
- No requirements for winterisation, low installation time and cost
- Tolerance to pollution even during chemical cleaning and steam blowout
- No obstructions, no pressure loss, large turn-down ratio, maintenance-free

**OPTIFLUX** and **WATERFLUX** – electromagnetic flowmeters
For all applications with conductive liquids

- Available in a wide range of DN2.5...DN1000 mm covering basic to demanding flow and custody transfer (CT) measurements
- Robust design for temperature up to +180°C / +356°F and pressure rating up to 2500 lbs / 150 bar
- All meters are in-house calibrated up to 30.000 m³/h
- Advanced diagnostic capabilities, OPTICHECK service tool for in-line verification

**H250** and **DK devices** – variable area flowmeters
For all applications measuring small or medium liquid and gas flow rates

- Robust measuring tube construction for high process temperatures up to +600°C / +1112°F and extreme operating pressures up to several hundred bar
- Custom wetted materials: stainless steel, Hastelloy®, titanium, Monel, 6Mo, Inconel 625, PTFE, ceramics and others
- SIL 2 compliant

**OPTIMASS** – Coriolis mass flowmeters
Mass flow and density measurement of burner fuel oil, gaseous and liquid ammonia, lime slurries and other applications

- Various versions, single straight tube, high capacity and high accuracy
- Meter sizes up to DN400, temperatures up to +400°C / +752°F
- Continuous flow measurement, even with entrained gas of up to 100% (EGM™)
- SIL 2 compliant versions available

**OPTIBAR** – pressure transmitters and DP flowmeters
Process instruments for pressure and differential pressure applications

- Comprehensive portfolio: transmitters, primary elements, diaphragm seals and accessories
- State-of-the-art ceramic and metallic measuring cells
- 3D calibration, extremely robust against static pressure effects
- SIL 2/3 compliant versions available

**OPTISONIC 8300**
**OPTISONIC 7300**
**OPTISONIC 6000 F**
**OPTISONIC 6300 F**
**OPTISONIC 4000**
**OPTISONIC 3400**
**OPTISONIC 2000**
**OPTIFLEX 8200**
**OPTIFLEX 2200**
**OPTIFLEX 3200**
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**OPTIFLEX 2000**
**OPTIFLUX 4300**
**WATERFLUX 3300**
**OPTIBAR PM 5060**
**OPTIBAR DP 7060**
**OPTIBAR CSD 3210**
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**OPTIFLEX** – TDR radar level transmitters
Continuous level and interface measurement of liquids and bulk material

- Wide range of antennas
- High temperature / pressure version with steam compensation for the power generation industry
- SIL 2/3 compliant versions available

**OPTIWAVE** – FMCW radar level meters
Non-contact measurement solution for solids, bulk material and liquids

- Wide range of products from 6 to 80 GHz
- Patented drop antenna design, extremely robust in powder applications
- SIL 2/3 compliant versions available

**BM 26** – magnetic bypass level transmitters
Contact level measurement of liquids and liquid-liquid interfaces

- Variety of versions with switches, continuous transmitters, etc.
- MLU contained in hermetically sealed (IP68) Pyrex glass tube
- Bypass chamber in combination e.g. with FMCW or TDR transmitters
- Local level indication without power supply
- HT/HP versions for steam/condensate applications

**BW 25** – displacer level transmitter
Continuous measurement of level, liquid-liquid interface or density at extreme process conditions

- Wide measuring range: 0.3...5.5m / 1...18ft
- Measuring accuracy: ±1.5% of full scale
- Retrofit versions for existing bypass chamber vessels

**OPTISWITCH** – level switches
The rugged solution for solids and liquids

- Measurement is independent of media properties
- Probe length 80...6,000mm / 3.1...236.2”
- Tuning fork, float and capacitance level switches

**OPTITEMP** – temperature measurement
Assemblies, sensors, transmitters and accessories for temperature measurement

- Resistance temperature detectors (RTD) and thermocouples (TC) for industrial processes
- Wide measuring range: –50...+1,600°C / –58...+2,912°F
- Head- and rail-mounted temperature transmitters with safe and SIL approved designs
- Thermowells with calculations for natural frequency, steady-state and dynamic stress analysis