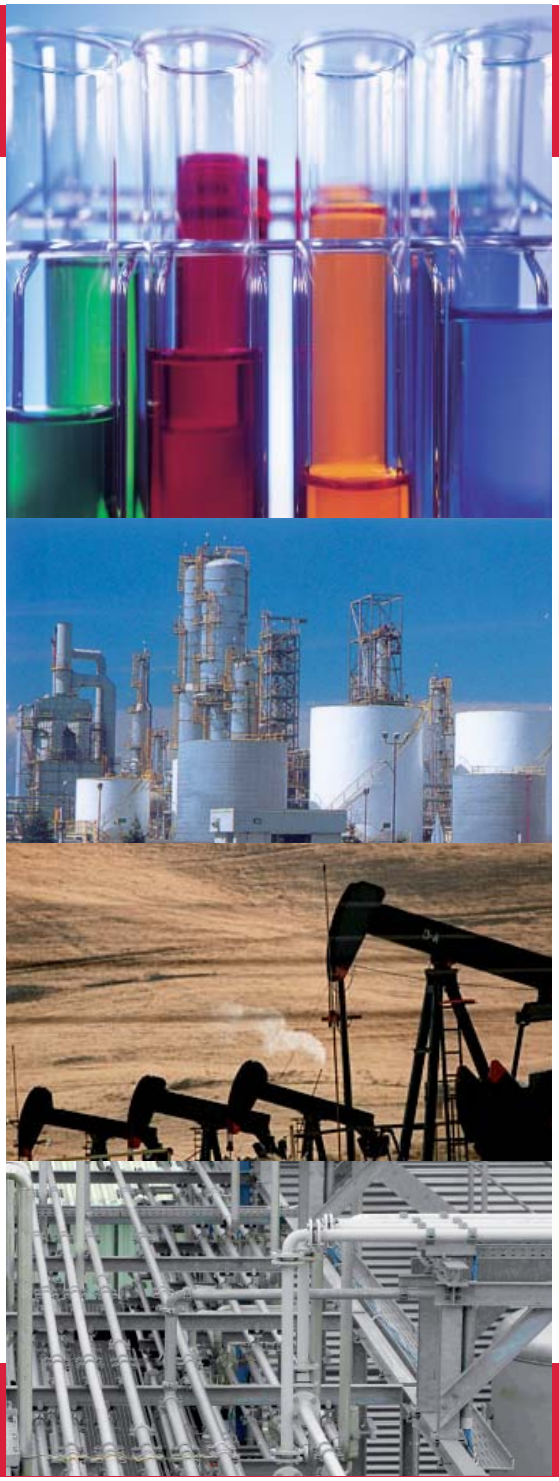
for more than 100 years Process Instrumentation

1911-2011

Heinrichs
KOBOLD Group



Product Range



made in Germany

Heinrichs Messtechnik GmbH

Heinrichs

KOBOLD Group

for more than 100 years Process Instrumentation

1911 - 2011



Company Profile

Heinrichs Messtechnik can look back to a company tradition of 100 years.

The history of the company began with the construction of variable area flowmeters.

As soon as electronics conquered measuring technology, the product portfolio could be extended by magnetic-inductive flowmeters.



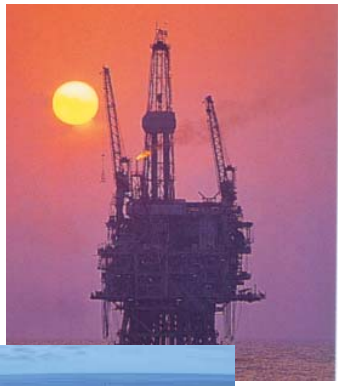
As one of the first European companies, Heinrichs designed a mass flowmeter working with the Coriolis principle, 25 years ago.

The adaptation of microprocessor technologies by the end of the nineties lead to more communication technologies as e. g. HART® and Profibus®.

Following main industries are served:

Chemical / Petrochemical
Oil and gas
Energy and Engineering

Heinrichs offers competence, flexibility and tailor-made solutions as e. g.
special materials,
high temperature designs,
high pressure designs,
heat jacketing





Your measuring problem is our challenge.

Diverse Application Fields



Petrochemical Industry

Extreme temperature on liquids, gases and steam - difficult conditions - we help you to cope with processes which become more and more complex.

Chemical Industry

Reliable partner for the chemical industry since more than 100 years. We supply our instruments nearly to all well known chemical companies. With our great variability of instruments you cover nearly the most applications. Benefit from our experience.





Oil & Gas

We solve even extreme applications for high pressures and viscosities. We are used to rough environmental conditions. Here reliability is our highest mark.

Power Stations

Beside conventional EPCs we deliver also measuring technology into nuclear power plants and thus we are familiar with the corresponding demands.
Special for us is normal.





Shipbuilding

Since decades we deliver solutions for flow and level into the shipbuilding industry. Robustness and durability are also demanded besides reliability.

Laboratory Equipment

The laboratory - here everything begins - since more than 50 years we produce low volume instruments for lab use - if needed also for special applications.





Machine and Plant Engineering

You need instruments which are not standard or which are adapted to your demands? We develop solutions for your machines and plants together with your engineering.

Water and Waste Water

Present right from the start - since the 1960´s we manufacture electromagnetic instruments and level meters with highest reliability.



Flowmeters

Coriolis Mass Flowmeter
Measurement of Mass-, volume, density and temperature
Material: stainless steel 1.4571 or 1.4404, Hastelloy C22 or C4, tantalum, other materials on request

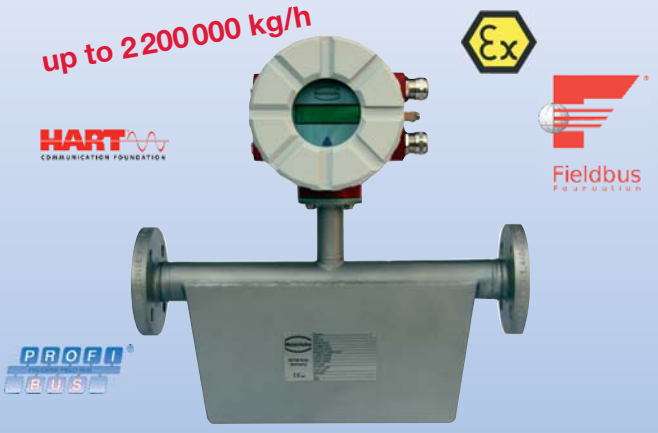
Model: TM (Universal Line)
High Accuracy · special versions available · heating jackets



Measuring range: Water: 0 - 0.8 kg/h ... 0 - 65 000 kg/h
t_{max} +260 °C; p_{max} 40 bar (up to 900 bar on request)
Connection: flange DN 10 - 100; ANSI ½" - 4"; JIS, NPT
Accuracy
Liquids: ±0,1 % of reading ±ZP-stability
Gases: ±0,5 % of reading ±ZP-stability

Coriolis Mass Flowmeter
Mass flow, density, temperature and volume flow
Material: stainless steel, Hastelloy C22 or C4

Model: TMU (Classic Line)
High measuring span



Measuring range: 0 - 60 kg/h ... 0 - 2 200 000 kg/h
t_{max} +260 °C; p_{max} 40 bar / 300 lbs (up to 750 bar on request)
Connection: flange DN 10 - 400 / ANSI, JIS
Accuracy
Liquids: ±0,1 % of reading ±ZP-stability
Gases: ±0,5 % of reading ±ZP-stability

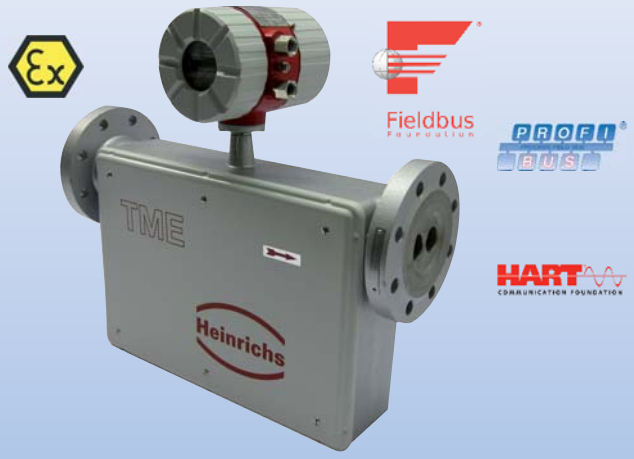
Coriolis Mass Flowmeter
Compact mounting length, compatible with different PD meters
Material: Stainless steel, Hastelloy, tantalum
Model: TMR (Compakt Line)
Replacement for oval gear flowmeter



Advantages
- No servicing required
- No filters needed
- non sensitive against vibrations
- non sensitive against tension of the piping

Viscosity range: 0.3 - 50 000 mPas
Measuring range: 0 - 120 kg/h ... 0 - 120000 kg/h Water
t_{max} +260 °C; p_{max} 40 bar / 600 lbs
Connection: flange DN 20 - 100 / ANSI ¾" - 4"
Accuracy: ±0.1 (0.15) % of reading ±ZP-stability

Coriolis Mass Flowmeter
Mass flow, density, temperature and volume flow
Material: stainless steel, Housing: cast iron
Model: TME (Economy Line)



Measuring range: Water: 0 - 60 kg/h ... 0 - 60 000 kg/h
t_{max} 180 °C; p_{max} 40 bar / 300 lbs
Connection: flange DN 10 - 80 / ANSI ½"-3"
Accuracy
Liquids: ±0.15 % of reading ±ZP-stability
Gases: ±0.5 % of reading ±ZP-stability

HART® registered trademark of HART Communication Foundation, Austin, USA
Profibus® registered trademark of PROFIBUS Nutzerorganisation e. V., Karlsruhe
Fieldbus™ registered trademark of Fieldbus Foundation, Austin, USA
Tri-Clamp® registered trademark of Tri-Clover Inc. of Alfo-Laval Group

Coriolis Mass Flowmeter
High pressure version
For high pressure - filling applications (H2)



Measuring range: up tp 600 kg/h gas
p_{max} up to 1000 bar

Coriolis Mass Flowmeter
Material: stainless steel, Hastelloy C22 or C4, Housing: cast iron
Economy series **TME / UMC4**
Transmitter series **UMC4**



Measuring range: 0.4 ... 60 000 kg/h
t_{max} 180 °C; p_{max} 40 bar / 300 lbs
Connection: flange DN 10 - 80 /ANSI ½"-3"
Accuracy
Flüssigkeit: ±0.15 % of reading ± ZP-stability
Gases: ±0.5 % of reading ± ZP-stability

Vortex Flowmeter INLINE-version/ INSERTION-version
Material: stainless steel
Model: DVH/DVE



Measuring ranges
Water: 0,2 - 5 ... 32 - 970 m³/h (DVH)
Water: 5,2 - 157 ... 284 - 8537 m³/h (DVE)
t_{max} 400 °C; p_{max} 100 bar
Process connection
DN 15 - 200 / ANSI ½“ ... 8“ (DVH)
2“ NPT, DN 50, ANSI 2“ (DVE)
Option: integrated temperature and pressure sensor, wafer type,
Installation / removal device
for pipes DN 50/2" - 600/24"
Accuracy
DVH: water: ±0,7 % of reading; gas: ±1 % of reading
DVE: water: ±1,2 % of reading; gas/steam: ±1,5 % of reading

Vortex Flowmeter
Analogue output / Frequency output / Compact electronic / Switch / Counter / Dosing Electronic
Material: PPS/brass, PPS/stainless steel
Model: DVZ



Measuring range: Water: 0,5 - 4,5 l/min ... 10 - 100 l/min
t_{max} 80 °C; $_{max}$ 20 bar
Connection: G ¼ ... 1, ¼ ... 1" NPT
Accuracy: ± 2,5 % of full scale

Flowmeters

Magnetic Inductive Flowmeter
for conductive liquids
Lining materials: hard rubber, soft rubber, Wagunit, PTFE
Model: EP / EPX / UMF 2 / UMF 3



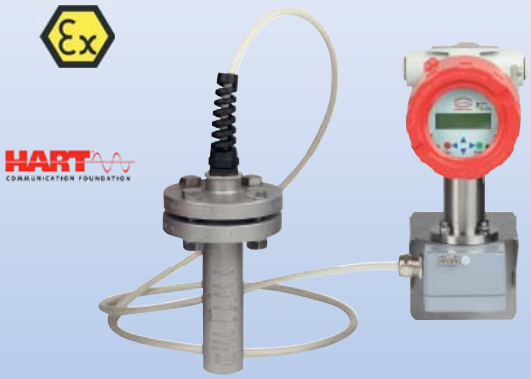
Measuring range: Water: 0 - 10 m/s
1 ... 40300 m³/h
Min. conductivity
Liquids in general: ≥5 µS/cm
Demineralised water: ≥20 µS/cm
t_{max} 150°C p_{max} 40 bar
Connection: flange DN 10 - 1 200 / ANSI ½"...48"
Outputs: analogue output, HART®, pulse and status
Accuracy: ±0.3 % of reading ±0.01 % x Q_{max}

Magnetic Inductive Flowmeter - INSERTION-version -
Material: stainless steel, PFA, PTFE
Model: PIT



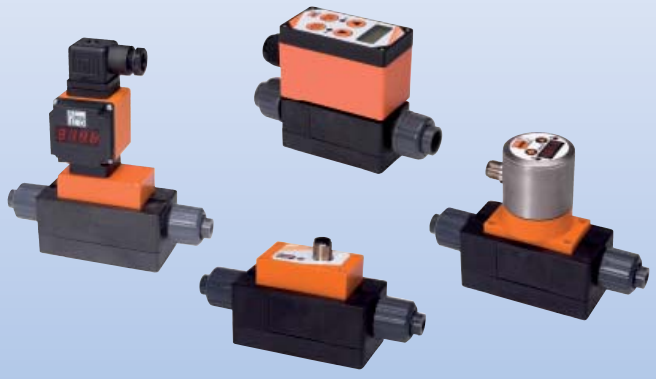
Measuring range: Water: 0,5 - 5 m/s oder 1 - 10 m/s
t_{max} 140 °C; p_{max} 40 bar
Connection: flange DN 40...80, ANSI 2“...3“,
for pipelines DN 125 ... 2000
weld-on connection for pipes DN 125 - 2000
analogue output, HART®, pulse and status
Accuracy: ±1.5 % of reading, +0.5 % of full scale

Electromagnetic Flowmeter - Insertion version -
Material: Stainless steel
Model: PITe



Measuring range: Water: 0 - 10 m/s
t_{max} 100 °C; p_{max} PN 16
Connection: weld-on nozzle ø 40 mm,
sensor with union nut M 52x2
for pipelines DN 50...400, ANSI 2"...16"
IP 68
Accuracy: ± 1.5 % of full scale

Magnetic Inductive Flowmeter - Compact version-
Pulse / switching / analogue output, digital indicator, counter, dosing electronics
Material: PPS/stainless steel, PVDF/Hastelloy
Model: MIK



Measuring range: Water: 10 - 500 ml/min ... 35 - 700 l/min
t_{max} 80 °C p_{max} 10 bar
Anschluss: G ½ ... G 2 ¾ male
Accuracy: ±2.0 % of full scale

Orifice Plate - Differential Pressure
Material: steel, stainless steel, Hastelloy C, titanium, Monel, tantalum
Model: KPL



Measuring ranges: for liquids, gases, steam
Connection: DN 50 ... 600, ANSI 2" ... 24"
t_{max} 500 °C; p_{max} PN 420

Oscillation - Meter/Switch
Material: stainless steel
Model: DOG-4*



Measuring rage: Air: 0,2 - 20 Nm³/h ... 60 - 6000 m³/h
Pressure Drop: max. 50 mbar
t_{max} 120 °C (for EX 60 °C); p_{max} PN 40
Connection: Flange DN 25...200, ANSI 1"...8"
Accuracy: ± 1,5 % of reading

Ultrasonic flowmeter
Material: Stainless steel
Model: DUE



Measuring range: Water: 1,5 - 20 m³/h ... 127 - 2000 m³/h
t_{max} 150 °C; p_{max} PN 40
Connection: flange DN 32 - DN 300
Accuracy: ± 0,5 % of reading

Ultrasonic Flow Meter
stationary · portable
Model: DUC

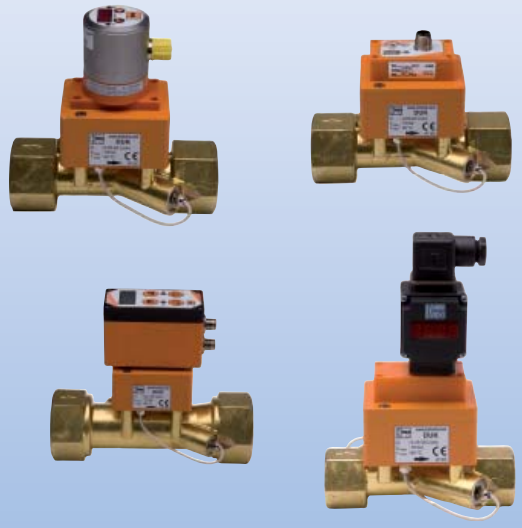


Medias: ultrasonic conducting liquids
Temperature measuring range: -40 ... 150 °C
Flow velocities: 0 ... ±30 m/s
Pipe sizes: DN 10 ... DN 6000
For the most common or sound-conducting materials like steel and plastics
Heat quantity measurement
Accuracy: up to 1%

* Sponsored by the Federal Ministry of Economics and Technology on the basis of a resolution of the German Bundestag.

Flowmeters/-switches

Ultrasonic Flow Meter
Analogue output / Frequency output / Compact electronic / Switch / Counter / Dosing Electronic / Digital Display
Material: brass, stainless steel
Model: DUK



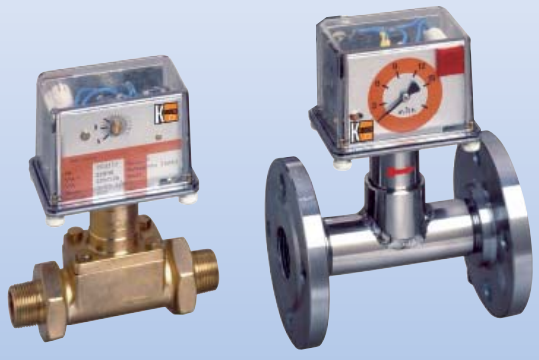
Measuring range: Water: 0.08 - 20 l/min ... 2.5 - 630 l/min
t_{max} 120 °C; $_{max}$ 16 bar
Connection: G ½ ... 3 female
Accuracy: ± 1,5 % of full scale

Flap Flowmeter for Liquids
Material: steel, stainless steel, PP, PTFE, Hastelloy
Model: TSK



Measuring range: Water: 0,5 - 3,5 m³/h ... 200 - 1500 m³/h
t_{max} -40 ... +300 °C; p_{max} 40 bar, from DN 100: 16 bar,
from DN 200: 10 bar, higher on request
Connection: wafer flange DN 25...500, ANSI 1½"...20"
Options: limit contacts, analogue output, HART®, Profibus® PA,
Fieldbus® Foundation™
Accuracy: ±2.5 % of full scale

Paddle Bellows Flow Meter and Monitor
for Liquids
Material: brass or stainless steel
Model: DPU



Measuring ranges: Water: 3 - 55 l/min ... 50 - 600 l/min
Connection: Rp ½ ... Rp 2 female, R ½ ... R 2 male,
½" ... 2" NPT
Flange: DN 15 ... DN 50, ASME ½" ... 2"
p_{max} 16 bar; t_{max} 100 °C
Universal mounting
Accuracy: ±3 ... ±5 % of full scale

Variable Area Flowmeter - All Metal Version
Material: stainless steel, PTFE-lining, Hastelloy, others on request
Model: BGN



Measuring-/switching ranges: Water: 0.5 - 5 ... 13 000 - 130 000 l/h
Air: 0.015 - 0.15 ... 240 - 2 400 Nm³/h air
Material: stainless steel, PTFE-lining, Hastelloy, others on request
t_{max} +350 °C p_{max} 40 bar (up to 550 bar on request)
Connection:
flange DN 15-150 ANSI ½"...6", female thread, hygienic connection,
Tri-Clamp®, Swagelok, others on request DIN 11851 DN 20...100
Options: limit values, analogue output, counter, HART®,
Profibus® PA, Fieldbus® Foundation™
Accuracy: ±1.6 % of full scale (±2 % for Gases)

Variable Area Flowmeter - horizontal mounting - All Metal Version
Material: stainless steel or PTFE-lining, others on request
Model: BGF



Measuring-/switching ranges: Water: 10 - 100 l/h ... 4000 - 40000 l/h
Air: 0.3 - 3 Nm³/h ... 110 - 1100 Nm³/h
t_{max} 200 °C p_{max} 40 bar (400 bar on request)
Connection: flange DN 15...80, ANSI ½"...3", flange DN 15 - 100 or ANSI ¾" - 4", female thread, male thread, hygienic connection, Tri-Clamp®, Ermeto, Swagelok, others on request
Options: 1 or 2 limit contacts, analogue output, counter, HART®, Profibus® PA, Fieldbus® Foundation™
Accuracy: ±2,0 % of full scale

Low Volume Variable Area Flowmeter
Glass tube version
Material: stainless steel, glass
Model: K09/K12/K17/K32



Installation lengths: 90 mm/125 mm/175 mm/320 mm
Measuring-/switching ranges: Water: 0.02 - 0.25 ... 10 - 100 l/h
Air: 2 - 20 ... 300 - 3 000 Nl/h
t_{max}: 0 ... +100 °C, (0 ... +70 °C with contact); p_{max}: 16 bar
Connection: G ¼, G ½, ¼" NPT, Swagelok, Ermeto
Options: limit contacts, inlet/outlet differential pressure regulator
Accuracy: ±1 %, 2 % or 3 % of full scale (depending on tube length)

Variable Area Flowmeter - All Metal Version
Material: stainless steel
Model: KDS/BGK
NEW: KDS-E analogue output



Measuring-/switching ranges: Water: 0.1 - 1.0 ... 20 - 200 l/h
Air: 3 - 30 ... 600 - 6000 Nl/h
t_{max} -40 ... +130 °C (-25 ... +100 °C with contact); p_{max} 64 bar
Connection: ¼" NPT, flange DN 10, 25 or ANSI ½", 1"
Options: limit contacts, inlet/outlet differential pressure regulator
Analogue output
Accuracy: ±3 %of full scale

Variable Area Flowmeter
Glass tube version
Material: stainless steel, glass
Model: V31



Measuring ranges: Water: 2.5 - 25 ... 1 000 - 10 000 l/h
Air: 0.8 - 8 ... 28 - 280 Nm³/h
t_{max} -10 ... +100 °C; p_{max} 15 bar
Connection: G ¼ ... 2 female, flange DN 10 ... 65, ANSI ½"...2 ½", hose connection, glue connection,
Options: limit contacts
Accuracy: Cl. 1.6 / 2.5 according VDI
Liquids: 1.6 %
Gases: 2.5 % VDE/VDI

Flowmeters/-switches

Variable Area Flowmeter - Plastic
Material: Polysulfone, Trogamide, PVDF
Model: KSK/KSM



Measuring range: Water: 1.5 - 11 l/h ... 8000 - 60000 l/h
Air: 0.15 - 0.45 Nm³/h ... 100 - 860 Nm³/h
KSK: t_{max} 140 °C; p_{max} PN 10
KSM: t_{max} 100 °C; p_{max} 16 bar
Connection:
KSK: G ½ ... G 3½, glue connection
KSM: G ½ ... 3½ female / male thread
Accuracy: Cl.4 according to VDI

Turbine Wheel - Pulse Output - Analogue Output - Digital Display
Material: PVC, PVDF
Model: TUR



Measuring range: Water: 0.2 - 5 m³/h ... 2.5 - 100 m³/h
t_{max} 70 °C; p_{max} 10 bar
Connection: Flange DN 25...100
Accuracy: ±1 % of full scale

Turbine Wheel
Material: stainless steel
Model: DOT



Measuring range: Water: 0,11 - 1,1 m³/h... 270 - 2700 m³/h
t_{max} 150 °C p_{max} 250 bar
Connection: G ½ ... 2, ½"...2" NPT, ange DN 15 ... 300
Accuracy: ±0,5 % (linearity)

Oval Gear - Pulse Output - Analogue Output
Material: POM, aluminium
Model: OVZ



Viscosity range: 10 - 800 mm²/s
Oil: 0,3 - 8 l/min ... 1,6 - 40 l/min
t_{max} 80 °C; p_{max} 40 bar
Connection: G ¼...¾, ¼...¾" NPT female
Accuracy: ± 2,5 % of full scale

Oval Gear - Pulse Output
Material: Aluminium, stainless steel
Model: DON



Viscosity range: 0 - 1 000 000 mPas
Oil: 0,5 - 36 l/h ... 150 - 2500 l/min
t_{max} 120 °C; p_{max} 400 bar
Connection: G ⅛...4 female thread, flange DN 25...100, ANSI 1"...4"
Accuracy: ± 0,2 - 1 % of reading

Calorimetric Indicator / Switch
Material: stainless
Model: KAL-K



Measuring range: Water: 0.04 ... 2 m/s
t_{max} 120 °C; p_{max} 100 bar
Connection: G ¼ ... 1 ½, ¼ ... ¾" NPT, M 12, Tri-Clamp®

Flow Indicator with Rotor
Material: grey cast iron, cast steel, stainless steel
Model: DAR-1/-2



t_{max} 260 °C; p_{max} 40 bar
Connection: G ¼ ... 2 female, ¼...2" NPT female,
flange DN 15...200, ANSI ½"...8"

Flow Indicator with Flap
Material: grey cast iron, cast steel, stainless steel
Model: DAK-1/-2



t_{max} 280 °C; p_{max} 40 bar
Connection: G ¼ ... 2 female, ¼...2" NPT female,
flange DN 15...200, ANSI ½"...8"

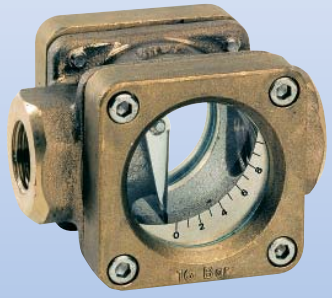
Flowmeter indicators
Level Switches

Flow Indicator with Drip Tube
Material: grey cast iron, cast steel, stainless steel
Model: DAT-1/-2



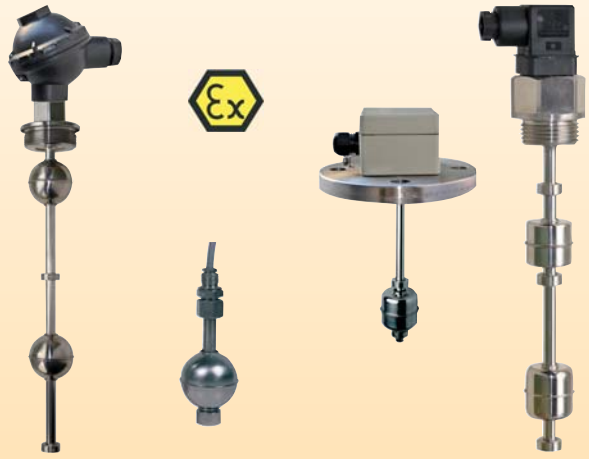
t_{max} 280 °C; p_{max} 40 bar
Connection: G ¼ ... 2 female, ¼...2" NPT female,
flange DN 15...200, ANSI ½"...8"

Flow Indicator with Flap
Material: red cast iron
Model: DAZ



Measuring range: Water: 2.1 - 17 l/min ... 2.1 - 24 l/min
t_{max} 200 °C; p_{max} 16 bar
Connection: G ¼ ... 1 IG

Float Magnet Switch
Material: Brass, stainless steel, PVC, PP, PVDF
Model: M



Density: from 0.5 kg/dm³
t_{max} 150 °C; p_{max} 100 bar
Connection:
thread G/NPT, flange DIN/ANSI

Level Switch with Tuning Fork
Material: stainless steel
Model: NWS



t_{max} (NWS-...20): 130 °C (150 °C for CIP), (NWS-...2.S/F): 90 °C (150 °C for CIP); p_{max}: 45 bar
Connection: R-/NPT-thread, DIN-/ANSI-flange, Tri-Clamp®,
DIN 11851, DIN 11864, DRD

Dual Magnet Float Level Switch
Material: Stainless steel
Model: NGS

Housing sea water resistant
Approvals: GL, ATEX



Density: 0.7 kg/dm³
t_{max} 250 °C; p_{max} 25 bar
Connection: Square box flange, DIN flange, BSP, NPT, others on request

Rotation Vane Switch - Bulk Materials
Material: stainless steel
Model: NIR-9 / NIR-E9



Measuring range: 65 - 1000 mm
t_{max} 200 °C; p_{max} 0,5 bar
Connection: G 1 male,
Adapter: G 1¼, G 1½, round flange, weld-in sleeve
1 relay, SPDT

Vibration Switch - Bulk Materials
Material: stainless steel
Model: NSV



Measuring range: 230 - 3 000 mm
Density: 0.06 kg/dm³
t_{max} 80 °C; p_{max} 25 bar
Connection: G 1½ male
1 relay, SPDT

Ultrasonic Switch Liquids
Material: stainless steel
Model: NQ-1000



t_{max} 125 °C; p_{max} 20 bar
Connection:: R1 male
1 switch output

Level Switches

Microwave Switch
Material: stainless steel, PEEK
Model: LNM



t_{max} 100 °C (150 °C for CIP); p_{max} 10 bar
Connection: G ½, M12 x 1.5 male,
hygienic installation system LZE
Open-Collector

Capacitive Switch - Liquids
Material: stainless steel, PEEK
Model: LNZ



t_{max} 100 °C (150 °C for CIP); p_{max} 10 bar
Connection: G ½ male, hygienic installation system LZE
Open-Collector

Conductive Switch
Material: stainless steel, PEEK
Model: LNK/LNK-K



Measuring range: 4 - 1500 mm
t_{max} 150 °C; p_{max} 10 bar
Connection: G ½ male, G 1 male,
hygienic installation system LZE
Open-Collector

Hygienic Mounting Systems
Material: stainless steel
Model: LZE



t_{max} 250 °C; p_{max} 10 bar
M12x1,5; G ½; G 1
Seals: metallic, PEEK-ring

Liquid Level Meter according Buoyancy principle
Material: stainless steel, Hastelloy C
Model: BA



Measuring range: 300 - 6000 mm
Liquids with density 400 - 2000 g/l
t_{max} -40 ... +250 °C; p_{max} 40 bar / 300 lbs
Connection: flange DN 50 - DN100, ANSI 2" - 4"
Options: limit contacts, analogue output, HART®, Profibus® PA, Fieldbus® Foundation™
Accuracy: ±5 mm of reading

Level Indicator with Roller or Ball Indication
Limit contacts, Transmitter
Model: NBK-MBSK



Measuring range: one-piece up to 5500 mm, > 5500 mm two or multipart
Viscosity: max. 200 mm²/s
Density: ≥0,54 kg/dm³
t_{max} -100 ... +400 °C; p_{max} 320 bar/1500 lbs
Connection: flange DN 15 - 50, thread R / NPT, ANSI ½" - 2", others on request
Options: limit contacts, analogue output, HART®, Profibus® PA, Fieldbus® Foundation™

Float Transducer - Reed Chain
Material: Stainless steel, PVC-U, PP, PVDF
Model: MM



Measuring range: 300 - 6000 mm
Density: 0.4 kg/dm³
t_{max} 130 °C; p_{max} 30 bar
Connection: G ⅜...2 male thread, ⅜" … 2" NPT male thread, flange DN 40 ... 100, ANSI 1 ½" … 4"
Accuracy: ± 10 mm

Capacitive Level Meter for Liquids
Material: Stainless steel, PVDF
Model: NMC





Measuring range: 265 - 4000 mm
t_{max} 125 °C; p_{max} 30 bar
Connection: G 1 male thread, G 2 male thread
Adapter: G 1 ¼, G 1 ½, round flange, weld-in sleeve
Analogue output
Measuring error: 1.5 % of probe length

Level Meters

Guided Wave Radar (TDR)
Material :Stainless steel / PTFE
Model: NGM



Version: rod, rope, koaxial version
Application: liquids and bulk solids
t_{max} 250 °C; p_{max} 40 bar
Connection: thread, flange
Analogue output, switching output
Accuracy: ± 3 mm or 0.03 % of measured value

Ultrasonic Measurement
Material: PP, PVDF
Model: NUS-4



Measuring range:: 0,2 - 25 m (liquids)
0,2 ... 10 m (bulk)
t_{max} 90 °C; p_{max} 3 bar abs
Connection: G 1½, G 2, 1½" NPT, 2" NPT male, DN 80, DN 125, DN 150, ANSI 3", 5", 6"
Analogue output
Accuracy: ± 0,2 % of reading ± 0,05 % of full scale

Ultrasonic Measurement
Material: PP, PVDF
Model: NUS-7



Measuring range: 0,25 - 6 m (liquids)
t_{max} 80 °C; p_{max} 3 bar abs
Connection: G 2, 2" NPT
Analogue output
Accuracy: ± 0,2% of reading ± 0,05% of full scale

Hydrostatic Diaphragm Measurement
Material: stainless steel
Model: NPF



Measuring range: 0 - 600 ... 0 - 10 000 mmWS
t_{max} 80 °C
Connection: G ½ male, ½" NPT, DN 50 ... DN 100, ANSI 2" ... 4"
Accuracy: ± 1,6 % of full scale

Pressure Switch with Ceramic Cell
Material: stainless Steel
Model: PDD



Measuring range: -1 ... 0 bar ... 0 ... +400 bar
Display: 3-digit LED
Overload protected: 1.5 - 2 times
Connection: G ¼, G ½, ¼" NPT, ½" NPT male
Accuracy: ± 0.5 - 1 % of full scale

Test Pressure Gauge with Bourdon Tube
Material: aluminium, brass, stainless steel
Model: MAN-F



Measuring range: -0.6 ... 0 bar ... 0 ... +2500 bar
Housing: Ø 160, 250 mm
Overload protected:: 1,0 times - (calm)
Connection: G ½ male
Accuracy: Cl. 0.25; 0.6

Pressure Gauge with Membrane Diaphragm Seal
Material: PVDF
Model: MAN-RD...DRM-632



Measuring range: 0 ... +1.6 bar ... 0 ... +16 bar
Housing: Ø 63 mm
Connection: G ¼, G ½, ½" NPT female
Accuracy: Cl. 2.5

Pressure Sensor with Ceramic Cell
Material: stainless steel
Model: PDA



Measuring range: -1 ... 0 bar ... 0 ... +400 bar
Display: 3-digit LED
Connection: G ¼, G ½, ¼" NPT, ½" NPT male
Accuracy: ± 0.5 - 1 % of full scale

Pressure Measurement

Pressure Gauges Digital with Ceramic Sensor Element, Battery Powered
Material: stainless steel/PA glass fibre reinforced
Model: MAN-SD



Measuring range: -1 ... 0 bar ... 0 ... +1600 bar
Housing: Ø 74 mm
Display: LC-Display
Overload protected: 1.3-3 times
Connection: G ¼, G ½, ¼" NPT, ½" NPT male
Accuracy: Cl. 0.5

Pressure Transmitter
Material: Stainless steel, Hastelloy-C, tantalum
Model: PAS
High Quality - Low Cost



Measuring range:
PAS: -1 ... +600 bar
PAS-N: 0 ... +350 mbar ... 0 ... +600 bar
t_{max} 200 °C (PAS-N with capillary)
Connection
PAS: ½" NPT female
PAS-N: thread or with flange (nominal size 15 ... 100)
Temperature: -40 ... +120 °C (diaphragm seal up to 250 °C)
Accuracy
PAS: ± 0.075 % of calibrated span
PAS-N: ± 0.075% of calibrated span +influence of diaphragm seal

Differential Pressure Transmitter
Stainless steel, Monel, tantalum, Hastelloy
Model: PAD
High Quality - Low Cost



Measuring range
PAD: +0.75 mbar ... +413.70 bar
PAD-N: 0 ... 250 mbar ... ...206.80 bar
Power supply: 18-45 V_{DC}
t_{max} 250 °C (PAD-N with capillary)
Connection
PAD: ¼“ NPT, ½“ NPT
PAD-N: flange-, thread-, clamp on-, and in-line diaphragm seal (nominal size 15 ... 100)
Accuracy
PAD: ± 0.075 % of measuring span
PAD-N: ± 0.075 % of calibrated span +influence of diaphragm seal

Flange Diaphragm Seals
Material: Stainless steel, Monel, Tantalum, Hastelloy, PTFE
Model: DRM



Standard version up to 350 °C / 40 bar:
DN 25 ... DN 100 , ANSI 1" ... 4"
Special version up to 400 bar: up to DN 200, ANSI 8"
Flanges according to BS, JIS or GOST standard
All possible also with extended diaphragm

Temperature Switch Digital
Material: stainless steel
Model: TDD



Messbereich: -20 ... +120 °C
t_{max} 125 °C; p_{max} 80 bar
Anschluss: G ½, G ¾, ½" NPT, ¾" NPT AG
2 Grenzkontakte
Genauigkeit: ± 0,5 °C

Electronic Temperature Sensor
Material: stainless steel
Model: TDA



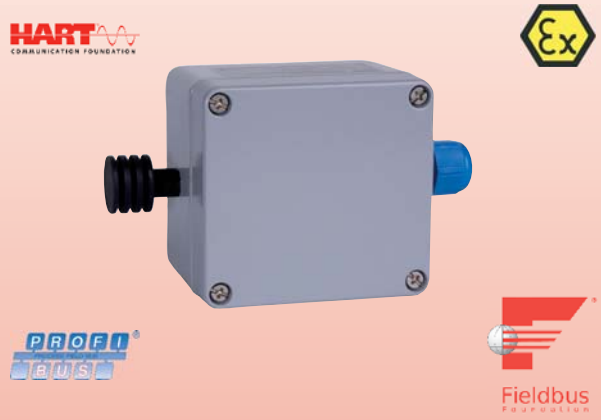
Measuring range: -20 ... +120 °C
p_{max} 80 bar
Connection: G ½, G ¾, ½" NPT, ¾" NPT AG
Analogue output, limit contact
Accuracy: ± 0.5 °C

Industriel - Resistance Thermometer
Material: stainless steel
Model: MWD



Measuring range: -70 ... +250 °C ... -200 °C ... +600 °C
p_{max} 40 bar
Accuracy: Cl. A or B

Room Thermometer
Material: Aluminium
Model: TWL-ST



Measuring range:: -20 ... +60 °C
p_{max} atmospheric
Wall socket
Pt 100, 4...20 mA
Accuracy: Cl. A or B

Temperature Indicator

Resistance Temperature Measuring Unit
Material: Stainless steel
Model: TWL



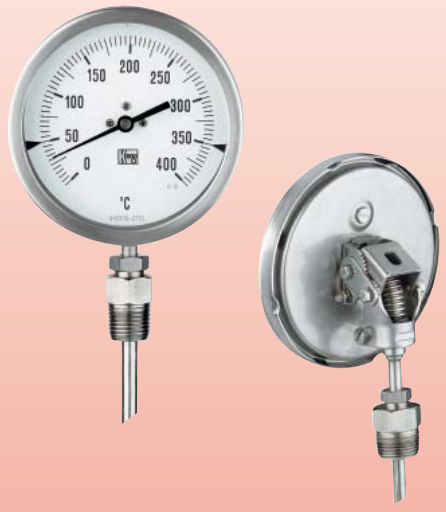
Measuring range: -80 ... +600 °C
p_{max} 250 bar
Connection: thread, flange, weld-in sleeve
Output: analogue output, resistance, Profibus® PA
Option: digital display
Pt 100, 4...20 mA
Accuracy: Cl. A or B

Immersion and Insertion Thermocouples
Material: stainless steel, Alloys
Model: TTL



Measuring range: -200 ... +1100 °C
p_{max} 250 bar
Connection: thread, flange, weld-in sleeve
4 ... 20 mA
Accuracy: Cl. 1,0 or 2,0

Bi-metal Thermometer
Material: stainless steel
Model: TBE



Measuring range:: -50 ... +50 °C ... 0 ... +600 °C
p_{max} 15 bar
Connection: G ½ ... ¾, ½" ... ¾" NPT,
fixed, rotatable, slidable
Accuracy: Cl. 1,0

Thermowells for Shaft, Capillary and Resistance Thermometer
Material: stainless steel, special
Model: TWL-0



t_{max} 800 °C; p_{max} 250 bar
Connection: thread, flange, welding sleeve

Industrial Dosing, Counter and Flow Indicator
Model: ZOK



Input: frequency
Analogue output, limit contacts, sensor supply, battery powered

Electronic Multi - Channel Data Logger
Model: ZLS



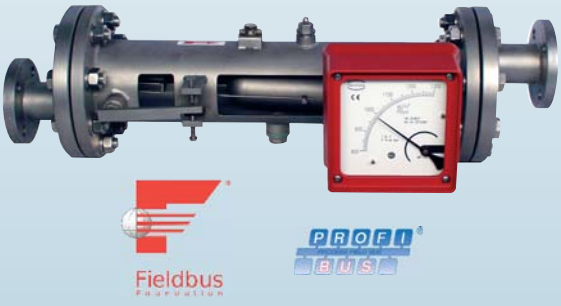
Input: 4 - 20 mA, Pt 100, Pt 500, Pt 1000
interface, sensor supply

Sandwich Plug-On Display
Model: AUF



Input: 4 - 20 mA loop powered
Option: Open-Collector
Without additional power supply

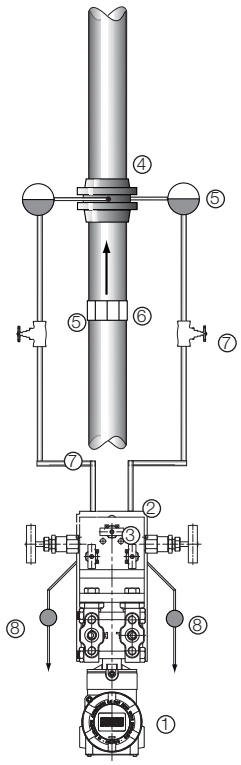
Inline Density Weighing System for Liquids
Material: Edelstahl, Hastelloy, others on request
Model: DWF



Measuring range: 700 ... 1 900g/l
Measuring span: 50 ... 600 g/l
Flow: max. 2 500 / 5 000 / 10 000 l/h
t_{max}:150 °C; p_{max}: 16 bar / 150 lbs
Flansch DN 25 ... 50, ANSI 1"... 2"
Options: limit contacts, analogue output, HART®, Profibus® PA, Fieldbus® Foundation™
Accuracy: ±1,25 - 6,0 g/l according to span

Steam Flow Measurement
-Complete solutions from one source-

Example based on a differential pressure transmitter



A complete measuring system comprises of:

① **Differential pressure transmitter PAD**
② **Flat bracket for pipe mounting ZUB-PAD/PAS-L**
③ **5-way Block valve as accessory PAD**
④ **Orifice flange including orifice plate KPL**
⑤ **Steam condensate chambers as accessory KPL**
⑥ **Flow conditioner as accessory KPL**
⑦ **Shut-off valve as accessory KPL**
⑧ **Separator as accessory KPL**

We will gladly prepare a customised offer for you.

Highly accurate steam flow measurement with Vortex flowmeter DVH/DVE from Heinrichs Messtechnik

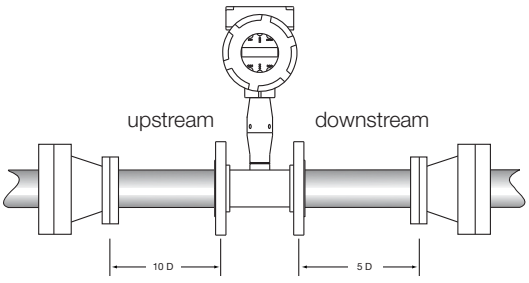
Steam is one of the most commonly used media in the process industry. It is used for example to heat tanks, pipes or produced for cleaning and sterilizing purposes in various industries.

In all cases, first of all, steam must be generated.

The generation of steam is extremely energy-intensive and for this reason expensive. Therefore it is logical not only to measure the generated steam but also the amount of steam required by the consumer. The more accurately it is done, the more energy-efficient and therefore the more economically the steam can be generated. In times of high energy costs and dwindling resources, precision is required in handling these precious commodities.

The vortex flowmeters from Heinrichs are highly accurate and always offer a functionality tailored specifically for each steam application.

Vortex shedding flowmeter



All devices can be equipped optionally with an integrated pressure and temperature measurement, which allows the state of the steam to be determined precisely. The “Energy Monitoring” option which incorporates an additional external temperature sensor, makes energy consumption measurement possible. With up to 3 analogue outputs and 3 alarm outputs, pulse output, and MODBUS interface. The devices offer a vast communication spectrum for the users. A fully welded sensor design without seals also ensures stability and long-life cycle. In-line devices cover pipes up to DN 200 (8"). For bigger sizes an insertion type variant, for up to DN 600 (24") is available.

Subject to change without prior notice

Flow measurement of critical media



Task:

Liquid sulfur
Liquid Bitumen
Asphalt

Solution:

Coriolis Mass Flowmeter from Heinrichs Messtechnik with directly heated measuring loop



Advantage over instruments with indirect electric heaters:

- High accuracy
- High process reliability through precise thermal control
- Fast response
- High heating capacities

For this purpose we supply a wide range of heating systems that can be specifically adapted to the process.

- Internally routed heating loops
- Double wall Plate Heating Systems
- Multivariable heating system with flange to flange heating
- Exchangeable heating plates - designed for each liquid or steam

Heinrichs Coriolis Flowmeters are easy to maintain and can be opened for sizes of DN 100 / 4" or larger. This facilitates maintenance and upgrade of systems, especially with larger devices. This is a decisive cost advantage in plant operation.

Bitumen measurements under difficult conditions

Task:

The special challenge of this application is the exact temperature of the heat-tracing, which must be adapted to the respective type of Bitumen used. The meters must be robust and temperature-stable, and should furthermore not affect the accuracy of probable custody transfer devices.

Solution:

Coriolis Mass Flowmeters from Heinrichs Messtechnik



- Precise measurements, even with high temperature fluctuations
- Durable due to bigger wall thicknesses of measuring tubes
- Variable, stable tracing systems for various heating media
- Up to DN 400 / 16" for media temperatures up to 260 °C
- Versions for custody transfer operation
- Maintenance easy due to open design of the devices
- Can be retrofitted

Application:

The robust construction of our Coriolis devices allow usage in mobile plants or machinery, such as in a „HOT-RECYCLER“, which removes the tarmac and re-applies it with the addition of asphalt and bitumen. The hot recycling method is used solely for the rehabilitation of damaged asphalt surface courses. The hot recycler processes the existing road pavement, improving it with virgin mix, if necessary.



Flow measurement of aggressive or highly corrosive liquids

Task:



Flow measurement of:

- Sulfuric Acid
- Sulfur Chloride
- Sodium Carbonate
- Nitric Acid
- Phosphoric Acid

These media cannot be measured reliably with conventional instruments made of stainless steel or hastelloy. Glass and enamel, with which plants are often equipped, are not suitable for SS Coriolis Mass Fowmeters. Ultrasound measurements, depending on pipe line, also cannot be used.

Solution:

Coriolis Flowmeters with pure tantalum measuring tubes from Heinrichs Messtechnik

- High accuracy
- Process safety through use of pure Tantalum with no hidden alloy components
- Wear and Tear and chemical compatibility can be determined accurately
- High heating capacities
- Reliability through 25 years of experience in processing and calculation of measuring loops

Coriolis Flowmeter with Tantalum Measuring loops

- Up to DN 100/4"
- Up to +150 °C medium temperature
- Up to 40 bar
- For almost all Coriolis series
- We adjust the form and behaviour of the measuring loops

Hydrogen vehicle fueling for fuel cell drives

Task:



The filling of fuel cell vehicles with highly compressed gaseous hydrogen requires the measuring system to have a high compressive strength and is a highly complex measurement task.

Reliable flow measurement is required with a single device at pressures ranging from 20 bar to 750 bar, and in future even with custody transfer approvals.

Solution:

Coriolis Flowmeters with high pressure version from Heinrichs Messtechnik

- Large Measuring Span Filling with a single device
- Currently the only usable Coriolis Flowmeter with Norm-Compliance according to SAE 2601 J
- Reliability through over 10 years of experience in high pressure hydrogen fueling
- Long-term stability



In an EU-project (HyAc) to develop the fueling and custody transfer Norm, the Heinrichs Hydrogen High Pressure Coriolis Flowmeter's have proven their accuracy and long term stability, and are therefore a reference in this application field.

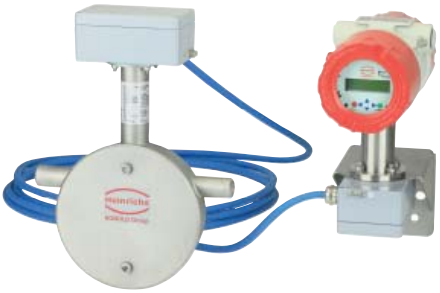
- Filling pressure: up to 750 bar
- Design pressure: 1050 bar
- Temperature range: -40 ... +60 °C

Chemical injection in oil rigs, sub-sea drilling or fracking

Task:

High-pressure processes for chemical injection systems, for example in oil drilling rigs or offshore platforms are a challenge for any flow measurement system.

Chemicals added by injection through a bore pipe at high pressure directly at the wellhead increase water viscosity and enable efficient detachment of oil from the reservoir rock making its transport easier. In order to control the process, the injected chemicals must be measured accurately. Conventional volumetric systems such as gear flowmeters or turbine flowmeters cannot be used for all media due to different liquid properties and big differences in density and viscosity, and do not provide the same results in terms of accuracy and reliability.



Solution:

High Pressure Coriolis Flowmeters from Heinrichs Messtechnik

- High Accuracy, despite large differences in density and viscosity
- High Reliability due to no moving parts
- Small Measuring Ranges possible

For more than 15 years, Heinrichs Messtechnik have been offering solutions in high-pressure Coriolis for customers worldwide. Our experience in Coriolis Flowmeters, special forms of measuring loops, combined with special materials (different stainless steel versions, HP 160, Duplex and so on) and heat treatment methods allow you to work with operating pressures up to 1500 bar, extremely low flow rates from 1 kg/h and thus, offer a reliable solution for high-pressure processes.

Drill head - cooling lubricant for tunnel boring machine (TBM)

Task:

Modern tunnel boring machines are highly complex underground mobile factories. The high drilling performance can only be guaranteed by the latest technology and only be achieved by lubrication and cooling via the supply of cooling lubricants.

In order to achieve an efficient lubrication, flushing, and cooling, the drilling emulsion is fed with pressures up to 500 bar to the drill head. For data acquisition in the drill head control, a robust measuring system is needed that can provide output signals and can withstand harsh conditions.





Solution:

Variable Area Flowmeter in a High-Pressure Version from Heinrichs Messtechnik

By design our BGN variable area flowmeters are equipped with a cylindrical measuring tube, which may easily be designed for 500 bar or higher pressures with the use of thick-walled pipes. The float is kept in position via guiding stars, which are also robustly designed and do not constitute a weak point as many other rod-guided floats typically available in the market.

The measurement is coupled to the mechanical display or output transmitter via a contact-free magnet system. The transmitters are available with 4-20 mA HART ®, Profibus ® or Fieldbus ®.

Flow measurement in ballast tank system on ships

Task:

Large ships have a ballast tank system to compensate for different loads, so that the ship is as balanced as possible in water. Water sucked in for ship balancing in one ocean is prohibited to be mixed with other ocean water due to regulations. The IMO (International Marine Organization) states that such systems would kill microbes and small animals, which are sucked in with sea water.

For this purpose, the amount of water sucked in and recirculated must be reliably measured. A big problem is space limitations inside the ship - pipelines of up to 500 mm are typically installed at the vessel wall, making an in-line flowmeters installation impossible. Inlet and outlet straight runs are typically missing, which makes the use of ultrasound devices very difficult in addition to the onboard sonar that may disturb an ultrasonic measured signal.



Solution:

Electromagnetic Insertion Flowmeter PIT from Heinrichs Messtechnik

- The strongest magnetic field in the market, thereby accurate reliable measurements
- Optimised for small inlet and outlet runs
- Small installation length
- Functional at 30 m under water via IP 68 /69 Encapsulation
- The sensor head is sea water resistant - PFA coated with Hastelloy electrodes
- Installation and removal during operation possible
- Low maintenance because recalibration not required
- Ex-usage possible



The measuring system complies with the international marine guidelines and has the necessary approvals..

Fresh water extraction at the reservoir



Task:

In a dam project a permanent flow measurement over the next 30-40 years must be ensured. Since the pipeline is constantly under pressure, the meter can only be installed or removed during operation. The use of a conventional in-line magnet inductive flowmeter may thus be ruled out. Even an Ultrasonic Liquid Flowmeter cannot be installed from outside of a concrete pipe.

Solution:

Magnetic Inductive Flowmeter Insertion PIT from Heinrichs Messtechnik

- Installation and removal under process pressure with help of an installation/removal device possible
- Large pipe sizes up to DN 2000
- Small inlet/outlet runs
- Long term stability
- Flow rates from smallest values of up to 10 m/s
- Use in hazardous areas possible



For more than 25 years, the Insertion type PIT sets standards in measurement stability and reliability in water networks for permanent measurements in concrete or plastic pipes.

Flow measurement in hydraulic systems of coal crushers

Task:

In the mining industry, large hydraulic systems are used in coal crushers. These coal crushers use a large quantity of oil spread over several loops to monitor the hydraulic cylinders. The oil flow rate to be measured is commonly influenced by pressure shocks caused by heavy loads of the hydraulic cylinders, different pipe sizes from DN40 / DN50 / DN100 (1.5" - 4"), flow rates of up to 1000 l/min, and flow which must be monitored with a low pressure drop.

Solution:

Flap Flowmeter TSK from Heinrichs Messtechnik

- Very robust design with heavy duty axis and multiple bearings
- Largely linear measurement over entire sensing range
- Low pressure drop due to our uniquely shaped flap
- Accurate measurement
- Optional 4-20 mA transmitter HART®, Profibus® or Fieldbus®
- Mining approval
- Insensitive to dirt particles
- High temperature versions via extended display
- Up to nominal width of DN 700 (24")



Heinrichs Messtechnik manufactures flap type flowmeters, even for the toughest jobs in the mining industry e.g. approved by ThyssenKrupp and HITACHI. The special shape of the flap typically occupies 30 % of the cross section, depending on the nominal pipe size. Available materials such as Polypropylene and PTFE, inexpensive measurement of aggressive liquids in the chemical industry is an option, as opposed to other more expensive volumetric systems

Density measurement in foams and non-conductive two-phase mixtures

Task:

In the production and processing of technical foams, the gas content of the foams must be determined for reliable process control. In these two-phase mixtures, this is accomplished by measuring the density. Most foams are polymer-based and therefore non-conductive, making a density measurement via inductive measuring systems impossible. The gas proportions incur large inaccuracies in the density measurement through Coriolis Systems as well.

Solution:

The mechanical density measuring system DWF from Heinrichs Messtechnik

Here the density is measured by a precisely calibrated float within the measuring chamber. This technology works well when measuring the two-phase mixtures of technical foams and adhesive-gas mixtures found in cardboard production. Our system measures densities up to 1900 g/l, temperatures up to 150 °C and pressures up to 16 bar. An optional integrated output electronic can transmit the measured value via 4-20 mA HART®, Profibus®, or Fieldbus®.

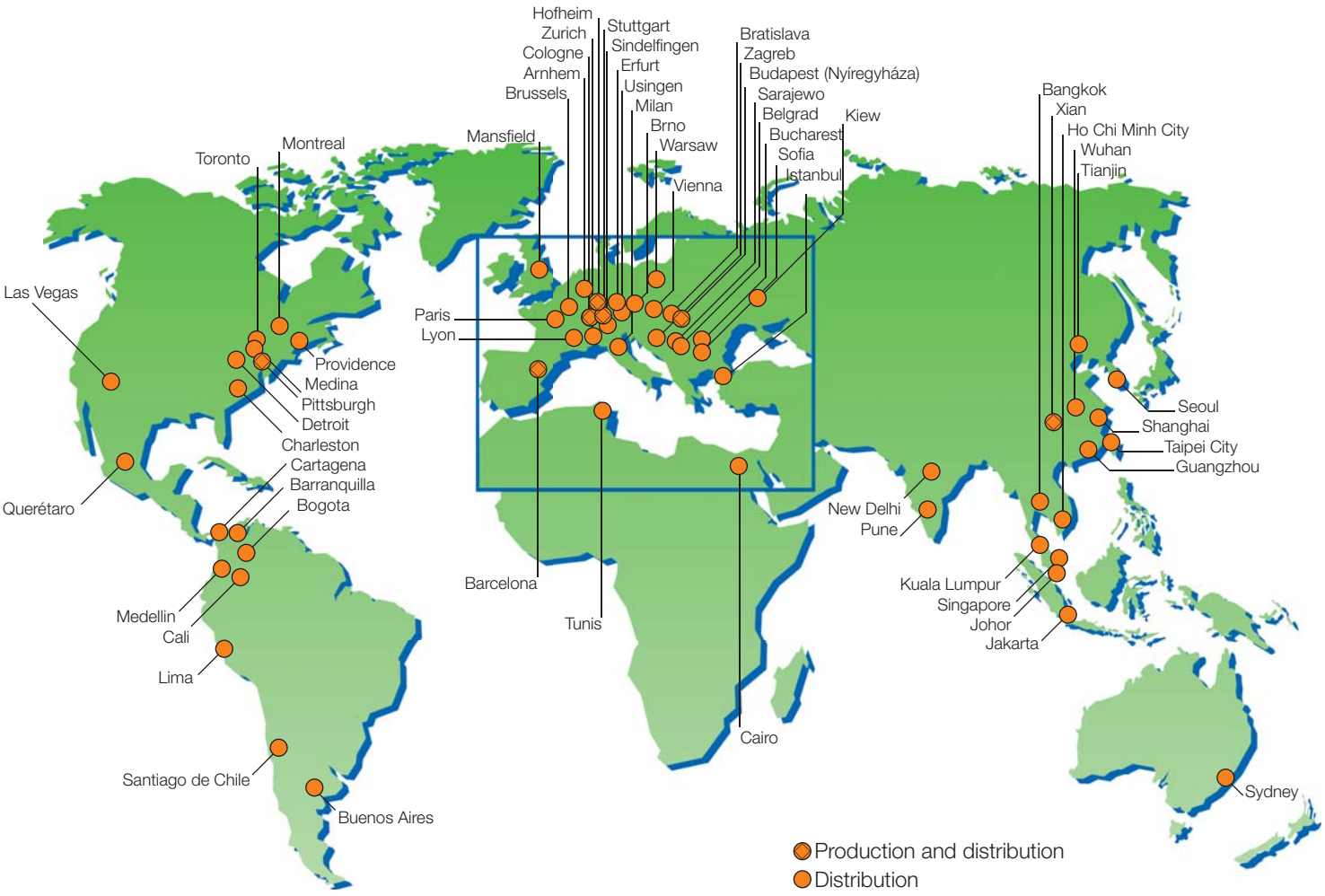


Heinrichs Messtechnik worldwide

Heinrichs

KOBOLD Group

Heinrichs Messtechnik GmbH



Robert-Perthel-Str. 9 · D-50739 Köln/Germany · Tel. +49 (221) 4 97 08-0 · Fax +49 (221) 4 97 08-178
www.heinrichs.eu · info@heinrichs.eu

1/08-2015