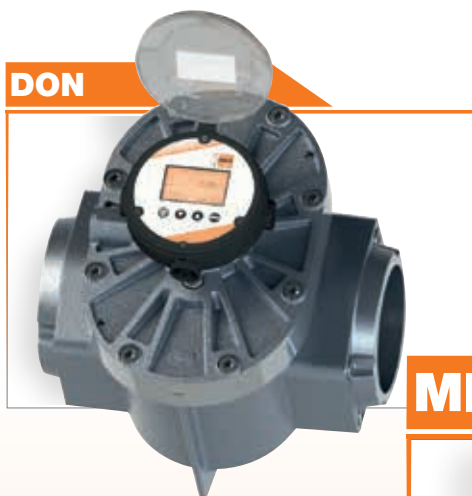


PRODUCT SUMMARY

FLOW • PRESSURE • LEVEL • TEMPERATURE • pH-VALUE/REDOX • CONDUCTIVITY • HUMIDITY • TURBIDITY • DENSITY

DON



HPC



MIM





The KOBOLD Messring GmbH Ledger

Founded 1980 by Dipl.-Ing. Klaus J. Kobold the name today is well-known as an internationally leading company in measurement and control technology.



Home plant in Hofheim near Frankfurt, Germany

Patentable technologies, high quality products and a customer service worthy of its name characterize the KOBOLD brand. With its offices and production sites in more than 30 countries KOBOLD is dedicated to develop, manufacture and selling the best devices to monitor, measure and control physical parameters like flow, pressure, level and temperature.

To be used in almost any industrial application our experienced engineers of various disciplines produce the most efficient and suitable solution for you. Even individual requests can be solved in a close collaboration with the customer. This enables us to respond quickly to the changing needs of various different industries and their markets.

The KOBOLD Group's worldwide prominence and broad spectrum of high quality products are the foundation of its solid growth and expansion since years.

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High Quality / Low Cost



Stainless steel design



For chemicals



Shock resistant



Heating jacket



Battery powered / external power supply



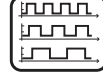
Battery powered



Sensor supply



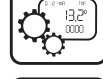
Installation under process conditions



Scalable analogue output



Rotatable display



Configurable Display



Bi-directional



Total and partial quantity counter



Configurable Outputs



Operational with gloves



Temperature and pressure measurement



Temperature and flow measurement



Patented



Space Saver



NFC

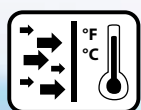


Magnetic Inductive Flowmeter

NEW



Stainless Steel



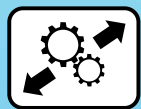
Flow and temperature measurement



Monitoring function



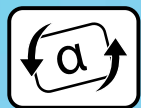
Total and partial quantity counter



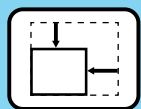
2 configurable outputs



Operational with gloves



Rotating colour display



Space Saver





Flowmeters / Switches / Controllers

KSV

Variable Area-Plastic - Low Volume

Polysulfone/brass, Polysulfone/stainless steel



- Water: 0.25 - 1.5 l/h ... 10 - 80 l/h
- Air: 20 - 80 NI/h ... 0.5 - 2.5 Nm³/h
- $t_{\max}$ 120 °C; $p_{\max}$ 6 bar
- Connection: 1/8" NPT female thread
- Accuracy: $\pm 6\%$ of full scale

KFR

Variable Area-Plastic - Low Volume

Acrylic



- Water: 5 - 50 ml/min ... 5 - 75 l/min
- Air: 0.05 - 0.5 ... 400 - 4000 NI/min
- $t_{\max}$ 65 °C; $p_{\max}$ 6.5 bar
- Connection: 1/8" NPT, 1" NPT female thread
- Accuracy: $\pm 2 - 5\%$ of full scale

KSK

Variable Area - Plastic

Trogamide®, Polysulfone, PVDF



- Water: 1.5 - 11 l/h ... 100 - 1000 l/h
- Air: 0.15 - 0.45 ... 20 - 105 Nm³/h
- $t_{\max}$ 140 °C; $p_{\max}$ PN 10
- Connection: G 1/4 ... 1 IG, glue-in connection
- Accuracy: Cl. 4 according to VDI

KSM

Variable Area - Plastic

Trogamide®, Polysulfone



- Water: 15 - 150 l/h ... 8000 - 60000 l/h
- Air: 0.8 - 5 Nm³/h ... 300 - 2500 Nm³/h
- $t_{\max}$ 100 °C; $p_{\max}$ 16 bar
- Connection: 1/2" ... 3 1/2"
- Accuracy: Cl. 4 according to VDI

KSR/SVN

Variable Area - Low Volume - Switch

Stainless steel



- Water: 2 - 250 ml/min
- Air: 3 - 360 NI/h
- $t_{\max}$ 70 °C; $p_{\max}$ 16 bar
- Connection: G 1/4, 1/4" NPT female thread

KDF-9 / KDG-9

Variable Area - Low Volume

Stainless steel



- Water: 0.02 - 0.25 l/h ... 10 - 100 l/h
- Air: 2 - 20 NI/h ... 300 - 3000 NI/h
- $t_{\max}$ 100 °C; $p_{\max}$ 16 bar
- Connection: G 1/4, 1/4" NPT female thread
- Accuracy: $\pm 3\%$ $q_G = 50\%$
- Option: Inductive contacts

KDF-2 / KDG-2

Variable Area - Low Volume

Stainless steel



- Water: 0.25 - 2.5 l/h ... 16 - 160 l/h
- Air: 0.5 - 5 NI/h ... 500 - 5000 NI/h
- $t_{\max}$ 100 °C; $p_{\max}$ 16 bar
- Connection: G 1/4, 1/4" NPT female thread, hose connector 8mm
- Accuracy: $\pm 2.5\%$ $q_G = 50\%$
- Option: Inductive contacts

URM

Variable Area - Glass Cone - Thread Connection

Stainless steel, PVC



- Water: 0.25 - 2.5 l/h ... 2500 - 25000 l/h
- Air: 3.2 - 32 NI/h ... 32 - 320 Nm³/h
- $t_{\max}$ 100 °C; $p_{\max}$ 16 bar
- Connection: G 3/8 ... 3 male, G 1/4 ... 1 1/2 female
- Accuracy: Cl. 4 according to VDI





URB

Variable Area - Glass Cone

PVC



- Water: 10 - 100 l/h ... 100 - 1000 l/h
- Air: 0.32 - 3.2 Nm³/h ... 3.2 - 32 Nm³/h
- t_{max} 65°C; p_{max} 3 bar
- Connection: G ½ ... 1 ¼ male/female thread
- Accuracy: Cl. 4 according to VDI

UVR/UTR

Variable Area - Glass Cone

Stainless steel, POM-C



- Water: 10 - 100 l/h ... 200 - 2000 l/h
- Air: 0.1 - 1 Nm³/h ... 5 - 50 Nm³/h
- t_{max} 100°C; p_{max} 10 bar
- Connection: G ¾, G ½ female thread
- Accuracy: Cl. 4 according to VDI

URL

Variable Area - Glass Cone - Loose Flange

PVC, PTFE



- Water: 1 - 10 l/h ... 250 - 2500 l/h
- Air: 0.025 - 0.25 Nm³/h ... 10 - 100 Nm³/h
- t_{max} 100°C; p_{max} 6 bar
- Connection: flange DN 15 ... 40
- Accuracy: Cl. 4 according to VDI

V31

Variable Area - Glass Cone

Stainless steel, PVDF, PVC



- Water: 3 - 30 l/h ... 1000 - 10000 l/h
- Air: 36 - 360 Nm³/h ... 18 - 180 Nm³/h
- t_{max} 80°C; p_{max} 15 bar
- Connection: G ¼ ... 2 female, flange DN 10 ... 65, ANSI ½ ... 2 ½"
- Accuracy: Cl. 1,6/2,5 according to VDI



URK

Variable Area - Glass Cone - Fixed or Loose Flange

Stainless steel



- Water: 1 - 10 l/h ... 15000 - 50000 l/h
- Air: 0.02 - 0.2 Nm³/h ... 50 - 500 Nm³/h
- t_{max} 100°C; p_{max} 16 bar
- Connection: flange DN 15 ... 80, ANSI ½ ... 3"
- Accuracy: Cl. 4 according to VDI

USR

Manifold Valves for Multiple Installation for Liquids

Brass



- Water: 0.04 - 0.4 ... 1 - 10 l/min
- t_{max} 100°C; p_{max} 16 bar
- Connection inlet: G1 or 1" NPT female
- Connection outlet: G ¼, G ¾, ¼" NPT, ¾" NPT female, hose Ø10, Ø13, Ø15 mm
- Accuracy: Cl. 2.5 according to VDI

UTS

Variable Area - Glass Cone for Gas burners

Brass



- Air: 10 - 100 Nm³/h ... 0.3 - 3 Nm³/h
- t_{max} 65°C; p_{max} 3 bar
- Connection: M18x1,5, G ¼, ¼" NPT
- Accuracy: Cl. 4 nach VDI

DSV - 1

Variable Area

Brass, stainless steel



- Water: 0.25 - 1.25 l/min ... 10 - 130 l/min
- t_{max} 100°C; p_{max} 10 bar
- Connection: G ¼ ... 1 ¼, ¼ ... 1 ¼" NPT female
- Accuracy: ± 4 % of full scale





Flowmeters / Switches / Controllers

DSV - 3

Variable Area

Brass, stainless steel



- Water: 0.25 - 1.25 l/min ... 10 - 130 l/min
- t_{max} 100 °C; p_{max} 10 bar
- Connection: G 1/4 ... 1 1/4, 1/4 ... 1 1/4" NPT female
- Accuracy: ± 4 % of full scale



KDS / KDS - R

Variable Area - Low Volume

Stainless steel



- Water: 0.1 - 1 l/h ... 20 - 200 l/h
- Air: 5 - 50 NI/h ... 600 - 6000 NI/h
- t_{max} 130 °C; p_{max} PN40/63
- Connection: 1/4" NPT
- Accuracy: ± 3 % $q_G = 50$ %
- Options: Analogue output 4-20 mA, inductive contacts



SWK

Variable Area - Low Volume

Brass, stainless steel, PVC

Switch
SWK - 11



Meter/Switch
SWK - 12



Switch
SWK - 13



- Water: 0.2 - 0.8 l/min ... 13 - 24 l/min
- t_{max} 100 °C; p_{max} 250 bar
- t_{max} 60 °C; p_{max} 6 bar (SWK - 13)
- Connection: G 1/2 female thread
- Accuracy: ± 4 % of full scale

BGK

Variable Area - Low Volume

Stainless steel



- Water: 0.1 - 1 l/h ... 20 - 200 l/h
- Air: 5 - 50 NI/h ... 600 - 6000 NI/h
- t_{max} 130 °C; p_{max} PN40 (higher on request)
- Connection: DN 10, DN 15, DN 25, ANSI 1/2", 3/4", 1"
- Accuracy: ± 3 % $q_G = 50$ %
- Options: Analogue output 4-20 mA, inductive contacts



BGN

Variable Area

Stainless steel, PTFE/stainless steel special material on request



- Water: 0.5 - 5 l/h ... 13000 - 130000 l/h
- Air: 0.015 - 0.15 ... 240 - 2400 Nm³/h
- t_{max} 350 °C; p_{max} PN40 (higher on request)
- Connection: flange DN 15 ... 150, ANSI 1/2" ... 6"
- Accuracy: $\pm 1,6 - \pm 2,2$ % $q_G = 50$ %
- Options: Analogue output, Bus-Interface, heating jacket, contacts



BGN-HIGH PRESSURE

Variable Area

Stainless steel special material on request



- Water: 0.5 - 5 l/h ... 13000 - 130000 l/h
- Air: 0.015 - 0.15 ... 240 - 2400 Nm³/h
- t_{max} 350 °C; p_{max} 600 bar
- Connection: flange DN 15 ... 150, ANSI 1/2" ... 6", thread, special connections
- Options: Analogue output, BUS-Interface, heating jacket
- Accuracy: $\pm 1.6 - \pm 2.2$ % of full scale



BGF

Variable Area - Mounting Position Independent

Stainless steel, PTFE/stainless steel special material on request



- 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} PN40
- Connection: flange DN 15 ... 80, ANSI 1/2" ... 3"
- Accuracy: ± 2 % $q_G = 50$ %





DSS

Variable Area

Brass, stainless steel



- Water: 0.05 - 1 l/min ... 10 - 110 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: G 1/4 ... 1 1/4, 1/4 ... 1 1/4" NPT female thread
- Accuracy: $\pm 5\%$ of full scale



SMV

Variable Area

Brass, stainless steel



- Water: 0.1 - 1 l/min ... 10 - 110 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: G 1/4 ... 1 1/4, 1/4 ... 1 1/4" NPT female thread
- Accuracy: $\pm 5\%$ of full scale



SMO / SMV

Variable Area

Brass, stainless steel



- Water: 0.2 - 3 l/min ... 10 - 120 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: G 1/4 ... 1, 1/4 ... 3/4" NPT female thread
- Accuracy: $\pm 5\%$ of full scale



SMN

Variable Area Switch - Mounting Position Independent

Brass, stainless steel



- Water: 1 - 100 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: 1" NPT, G 1 female thread
- Accuracy: $\pm 5\%$ of full scale



VKP

Viscosity Compensated - Plastic

Polysulfone



- Water: 2 - 20 l/min ... 20 - 100 l/min
- Oil: 1 - 18 l/min ... 10 - 75 l/min
- t_{max} 120 °C; p_{max} 16 bar
- Connection: G 1/2, G 3/4 female/male thread, G 1, 1" NPT male thread soldered or glue-in connection
- Accuracy: $\pm 5\%$ of full scale

VKG

Viscosity Compensated

Brass, stainless steel



- Viscosity range: 1 - 540 mm²/s
- Oil: 0.1 - 0.45 l/min ... 5 - 80 l/min
- t_{max} 100 °C; p_{max} 12 bar
- Connection: G 1/4 ... 1, 1/4 ... 1" NPT
- Accuracy: $\pm 4\%$ of full scale



VKM

Viscosity Compensated

Brass, stainless steel



- Viscosity range: 1 - 540 mm²/s
- Oil: 0.01 - 0.07 l/min ... 8 - 80 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: G 1/4 ... 1, 1/4 ... 1" NPT
- Accuracy: $\pm 4\%$ of full scale



VKM + ADI-1

Viscosity Compensated

Brass, stainless steel



- Viscosity range: 1 - 540 mm²/s
- Oil: 0.01 - 0.063 l/min ... 8 - 72 l/min
- t_{max} 100 °C; p_{max} 350 bar
- Connection: G 1/4 ... 1, 1/4 ... 1" NPT
- Accuracy: $\pm 4\%$ of full scale



Flowmeters / Switches

VKA

Viscosity Compensated

Brass



- Viscosity range: 30 - 540 mm²/s
- Oil: 0.1 - 0.4 l/min ... 30 - 100 l/min
- t_{max} 100 °C; p_{max} 250 bar
- Connection: G 1/4 ... 1, 1/2" NPT, 3/4" NPT female thread
- Accuracy: $\pm 4\%$ of full scale



BVB

Manifold Valves for Multiple Installation

Aluminium



- t_{max} 100 °C; p_{max} PN 64
- Connection: G 1/2 female thread
- Suitable for models: VKA, VKM, DSV, VKG

PSR

Paddle Switch

Brass, stainless steel



- Water: 2.3 - 4.7 l/min ... 47.6 - 67.2 l/min
- t_{max} 110 °C; p_{max} 250 bar
- Connection: G 1/4 ... 1 1/2, 1/4 ... 1 1/2" NPT female thread



PSE

Paddle Switch

Brass, stainless steel



- Water: 68 - 90 l/min ... 383 - 533 l/min
- t_{max} 110 °C; p_{max} 250 bar
- Connection: G 1/2, 1/2" NPT male thread



PPS

Paddle Switch - Polysulfone

Polysulfone



- Water: 18 - 36 l/min ... 72 - 108 l/min
- t_{max} 105 °C; p_{max} 10 bar
- Connection: G 1, 1" NPT male thread
- Accuracy: $\pm 20\%$ of reading

LPS

Paddle Switch - Air

Brass



- Air: 1 - 8 m/s
- t_{max} 85 °C; p_{max} atmospheric
- Connection: connection plate

FPS

Paddle Bellow Switch

Brass, stainless steel



- Water: 0.17 - 0.85 m³/h ... 72.6 - 165.7 m³/h
- t_{max} 120 °C; p_{max} 30 bar
- Connection: G 1/2, G 3/4 IG, R 1, 1" NPT male thread

DWN

Paddle Bellow Switch

Brass, stainless steel, PVC



- Water: 1 - 5 l/min ... 900 - 3600 m³/h
- t_{max} 100 °C; p_{max} PN 16
- Connection: G 3/8 ... 2, 3/8 ... 2" NPT female thread, flange DN 10 ... 50, ANSI 3/8 ... 2", weld-on flange DN 40 ... 500
- Accuracy: $\pm 3 - 5\%$ of full scale





DWU

Paddle Bellow Meter/Switch

Brass, Stainless steel, PVC



- Water: 1 - 5 l/min ... 900 - 3600 m³/h
- t_{max} 100 °C; p_{max} PN 16
- Connection: G ½ ... 2, ¾ ... 2" NPT female thread, flange DN 10 ... 50, ANSI ¾ ... 2", weld-on flange DN 40 ... 500
- Accuracy: $\pm 3 - 5$ % of full scale



DPT...C3

Paddle Torsion - Meter/Switch

Brass, Stainless steel



- Water: 5 - 30 l/min ... 850 - 1900 l/min
- t_{max} 80 °C; p_{max} PN 40
- Connection: G ¾ ... 3, ¾ ... 3" NPT female thread
- Accuracy: ± 3 % of full scale

DPT...K

Paddle Torsion - Meter/Switch

Brass, stainless steel



- Water: 5 - 30 l/min ... 850 - 1900 l/min
- t_{max} 80 °C; p_{max} PN 40
- Connection: G ¾ ... 3, ¾ ... 3" NPT female
- Accuracy: ± 3 % of full scale

DWD

Baffle Flap Meter/Switch

Brass, stainless steel, PVC



- Water: 1 - 10 l/min ... 360 - 3600 m³/h
- t_{max} 120 °C; p_{max} 25 bar
- Connection: G ¾ ... 2, ¾ ... 2" NPT female, flange DN 10 ... 50, ANSI ¾ ... 2", weld-on flange DN 40 ... 500
- Accuracy: ± 1.5 % of full scale

TSK

Flap Meter/Switch

Steel, stainless steel, PP, PTFE, Hastelloy®



- Water: 0.5 - 3.5 m³/h ... 200 - 1500 m³/h
- t_{max} 300 °C; p_{max} PN 40
- Connection: wafer flange DN 25 ... 500, ANSI 1 ... 20"
- Accuracy: from ± 2.5 % of full scale



HND - F115

Flow, Humidity, Temperature Hand-Held Measuring Unit



- Measuring range: 0.05 ... 5 m/s Water, 0.55 ... 20 m/s Air
- Humidity: 0 ... 100 % rH
- Temperature: -40 ... +120 °C, -80 ... +250 °C
- Accuracy: from ± 0.1 %



DRS

Turbine Wheel - ...

Brass, stainless steel, PPO

Pulse Output
...F5



max 150 °C

Analogue Output
...L3



... L4 + AUF



Pointer Indicator
...Z3



Compact Electronic
...C3



Counter
...+ ZED



- Water: 2 - 40 l/min
- t_{max} 150 °C; p_{max} 200 bar
- Connection: G ½, G ¾, ¾" NPT
- Accuracy: ± 1.5 % of full scale



max 150 °C



Flowmeters / Switches

TUR

Turbine Wheel - ...

PVC, PVDF
Pulse Output
TUR-1



Analogue Output
TUR-2...M



Compact Electronics
Tur-2...C3



Digital Display
Tur-2...K



- Water: 0.2 - 5 m³/h ... 2.5 - 100 m³/h
- $t_{\max}$ 70 °C; $p_{\max}$ 10 bar
- Connection: flange DN25 ... 100
- Accuracy: $\pm 1\%$ of full scale

DPE

Turbine Wheel - ...

Brass, stainless steel
Pulse Output
...F / L



Analogue Output
...+ AUF



Compact Electro.
...C3



Pointer Indicator
...Z3



Digital Display
...+ ADI-1



Dosing Electronics
...+ ZED



- Water: 5 - 30 l/min ... 50 - 750 l/min
- $t_{\max}$ 80 °C; $p_{\max}$ PN 40
- Connection: G ½ ... 3, ½ ... 3" NPT female thread, weld-on sleeve DN25 ... 80
- Accuracy: $\pm 2.5\%$ of full scale

DRB

Turbine Wheel - ...

Brass, stainless steel
Pulse Output
...F / L



Analogue Output
...+ AUF



Compact Electro.
...C3



Pointer Indicator
...Z3



Digital Display
...+ ADI-1



Dosing Electronics
...+ ZED



- Water: 5 - 30 l/min ... 50 - 750 l/min
- $t_{\max}$ 80 °C; $p_{\max}$ 16 bar
- Connection: G ½ ... 3, ½ ... 3" NPT female thread, weld-on sleeve DN25 ... 80
- Accuracy: $\pm 3\%$ of full scale

TUV

Turbine Wheel - Pulse Output

Stainless steel



- Water: 0.3 - 1.5 l/min ... 35 - 400 l/min
- $t_{\max}$ 350 °C; $p_{\max}$ 640 bar
- Connection: G ¼ ... 1½ female thread
- Accuracy: $\pm 1\%$ of reading



SFL

Turbine Wheel - Pulse Output

PVDF, Stainless steel



- Water: 0.5 - 20 l/min
- $t_{\max}$ 90 °C; $p_{\max}$ 250 bar
- Connection: G ¾
- Accuracy: $\pm 1\%$ of full scale

DOT

Turbine Wheel

Stainless steel



- 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, flange DN 15... 300
- Accuracy: $\pm 0.5\%$ (linearity)



EDM

Turbine Wheel Flowmeter/ Counter - Battery powered

Nylon, aluminium, stainless steel



- Water: 4 - 40 l/min... 80 - 800 l/min
- t_{max} 60 °C; p_{max} 100 bar
- Connection: Rc ½... 2 female thread
- Accuracy: $\pm 1.5\%$ of reading



PEL - L

Turbine Wheel - Low Volume

Nylon, stainless steel, titanium



- Water: 0.006 - 0.1 l/min... 0.1 - 28 l/min
- t_{max} 135 °C; p_{max} 345 bar
- Connection: R ¼... ½ male thread
- Accuracy: $\pm 1.25\%$ of full scale

PEL - M

Turbine Wheel

Stainless steel, PVC, titanium



- Water: 1 - 65 l/min... 10 - 500 l/min
- t_{max} 135 °C; p_{max} 345 bar
- Connection: R ½... 1 ¼, wafer flange DN 40/50, glue-in connection DN 15... 50
- Accuracy: $\pm 1.25\%$ of full scale

DPM

Rotating Vane - Low Volume - ...

Brass, stainless steel

Pulse Output
...F5



Analogue Output
...L3 ... L4 + AUF



Compact Electronics
...C3



Pointer Indicator
...Z3



Counter
...+ ZED



- Water: 0.015 - 0.7 l/min... 0.05 - 5 l/min
- t_{max} 80 °C; p_{max} 16 bar
- Connection: G ½, G ¼, ⅛" NPT, ¼" NPT female thread
- Accuracy: $\pm 1 - 2.5\%$ of full scale

DPL

Rotating Vane - Low Volume - ...

Polypropylene

Pulse Output
...F5



Analogue Output
...L3 ... L4 + AUF



Compact Electronic
...C3



Pointer Indicator
...Z3



Counter
...+ ZED



- Water: 0.025 - 0.5 l/min... 1 - 25 l/min
- t_{max} 70 °C; p_{max} 10 bar
- Connection: G ½ male thread, hose connector
- Accuracy: $\pm 2.5\%$ of full scale



Flowmeters / Switches

KFF-1 / KFG-1

Rotating Vane - Low Volume

Brass, PTFE, Ryton®



- Water: 15 - 100 ml/min ... 1 - 10 l/min
- Air: 10 - 50 Nml/min ... 100 - 500 NI/min
- t_{max} 50 °C; p_{max} 35 bar
- Connection: hose connection 1/8" ... 1/2"
- Accuracy: $\pm 3\%$ of full scale

KFF-3 / KFG-3

Rotating Vane - Low Volume

Brass, PTFE, Ryton®



- Water: 13 - 100 ml/min ... 0.2 - 5 l/min
- Air: 10 - 50 Nml/min ... 2 - 10 NI/min
- t_{max} 50 °C; p_{max} 35 bar
- Connection: hose connection 1/8" ... 1/2"
- Accuracy: $\pm 3\%$ of full scale

DF

Rotating Vane - ...

Trogamid®, Polysulfone, brass, Polypropylene, stainless steel

Pulse Output
...H



Analogue Output
...MA



Switch
...WM



Digital Display
...K



Counter
...Z



Dosing Electronic
...D



- Water: 0.08 - 0.5 l/min ... 40 - 160 l/min
- t_{max} 80 °C; p_{max} 100 bar
- Connection: G 1/4 ... 1 1/2, 1/4 ... 1 1/2" NPT female thread, flange DN 15 ... 50, ANSI 1/2 ... 2"
- Accuracy: $\pm 2.5\%$ of full scale

DFT

Rotating Vane - ...

Brass, PTFE

Pulse Output
11



Pulse Output
13



Counter/Dosing Electro.
13...E/G



- Water: 0.2 - 2 l/min ... 3 - 60 l/min
- t_{max} 80 °C; p_{max} 16 bar
- Connection: G 1/4 ... 3/4, 1/4 ... 3/4" NPT female thread
- Accuracy: $\pm 2.5\%$ of full scale

DRH

Rotating Vane - ...

POM, PVDF, brass, stainless steel

Analogue Output
...F / L



Analogue Output
... + AUF



Compact Electronics
...C3



Pointer Indicator
...Z3



Digit Disp / Counter / Dosing
...+ ADI-1/ZED



- Water: 0.2 - 0.8 l/min ... 2.5 - 50 l/min
- t_{max} 80 °C; p_{max} 100 bar
- Connection: G 3/8, G 1, 1/2" NPT, 1" NPT female thread
- Accuracy: $\pm 2.5\%$ of full scale

DRG

Rotating Vane - ...

Polypropylene, brass, stainless steel

Pulse/Analo. Output
...F / L

Analogue Output
... + AUF

Compact Electronics
...C3

Pointer Indicator
...Z3

Digit Disp/Counter/Dosing
...+ ADI-1/ZED



- Water: 0.5 - 12 l/min ... 10 - 140 l/min
- $t_{\max}$ 80 °C; $p_{\max}$ 40 bar
- Connection: G 1/2 ... 1, 1/4 ... 1" NPT female thread
- Accuracy: $\pm 3\%$ of full scale

DTK

Rotating Vane - Low Volume

Stainless steel



- Water: 0.05 - 0.6 l/min ... 1 - 12 l/min
- $t_{\max}$ 140 °C; $p_{\max}$ 30 bar
- Connection: G 1/4, 1/4" NPT female thread
- Accuracy: $\pm 2\%$ of full scale

LFM

Dual-Ring Piston - Pendulum - Low Volume

Stainless steel



- Water: 0.005 - 0.25 l/min
- $t_{\max}$ 70 °C; $p_{\max}$ 100 bar
- Connection: G 1/8, Swagelok 6 mm
- Accuracy: $\pm 2.5\%$ of reading

DRZ

Ring Piston Counter - ...

Brass

Pulse Output
...F



Analogue Output
...+ AUF



Compact Electronics
...C3



- Viscosity range: 5 - 100 mm²/s
- Oil: 6 - 420 l/h
- $t_{\max}$ 80 °C; $p_{\max}$ 40 bar
- Connection: G 1/8, G 1/4, 1/8" NPT, 1/4" NPT female thread
- Accuracy: $\pm 1\%$ of reading

OVZ

Oval Wheel - ...

POM, aluminium

Pulse Output
...I4



Analogue Output
... L4 + AUF



Compact Electronics
...C3



Pointer Indicator
...Z3



Dosing Electronics
...+ ZED



- 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 1/4 ... 3/4, 1/4 ... 3/4" NPT female thread
- Accuracy: $\pm 2.5\%$ of full scale



Flowmeters / Switches

DON

Oval Wheel - ...

Aluminium, stainless steel
Pulse Output
...F



Digital Display
...LCD



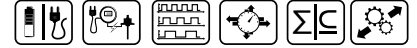
Mechanical
...mech



High Pressure
...H



- Viscosity range: up to 1 000 000 mPas
- Oil: 0.5 - 36 l/h ... 1 - 40 l/min
- t_{max} 80 °C; p_{max} 100 bar
- t_{max} 150 °C; p_{max} 400 bar (DON-H)
- Connection: G 1/2 ... 4 female thread, 1/2" ... 4" NPT female thread, flange DN 25 ... 100, ANSI 1 ... 4"
- Accuracy: $\pm 0.2 \dots 1$ % of reading



OMG / OMK / OMH

Screw Spindle - ...

Cast iron, stainless steel
Meter



Digital Disp/Counter/Dosing Elec
...+ ADI-1



Digital Disp/Counter/Dosing Elec
...+ ZED



- Viscosity range: 1 - 5000 mm²/s
- Oil: 0.1 - 10 l/min ... 50 - 5000 l/min
- t_{max} 200 °C; p_{max} 250 bar
- Connection: G 1/2 ... 6 female thread, flange DN 15 ... 150
- Accuracy: ± 0.3 % of reading



DOE

Oval Wheel - Pulse Output (OEM Version)

Aluminium, stainless steel



- Viscosity range: up to 1 000 000 mPas
- Oil: 0.5 - 36 l/h ... 2 - 100 l/h
- Connection: G 1/2, G 1/4, 1/8" NPT, 1/4" NPT female
- Accuracy: ± 1 % of reading



OME

Screw Spindle-Meter

Aluminium



- Viscosity range: 1 - 5000 mm²/s
- Oil: 0.1 - 15 l/min ... 3.5 - 350 l/min
- t_{max} 125 °C; p_{max} 40 bar
- Connection: G 1/2 ... 1 1/2 female thread, flange DN 15 ... 40
- Accuracy: ± 0.3 % of reading



OME + ADI-1 / ZED

Screw Spindle - Digital Disp/Counter/Dosing Electronic

Aluminium



- Viscosity range: 1 - 5000 mm²/s
- Oil: 0.1 - 15 l/min ... 3.5 - 350 l/min
- t_{max} 125 °C; p_{max} 40 bar
- Connection: G 1/2 ... 1 1/2 female thread, flange DN 15 ... 40
- Accuracy: ± 0.3 % of reading



DZR

Gear Wheel - Meter

Cast iron, stainless steel



- Viscosity range: 20 - 5000 mm²/s
- Oil: 0.008 - 2 l/min ... 3 - 700 l/min
- t_{max} 150 °C; p_{max} 400 bar
- Connection: G 1/2 ... 1 female thread
- Accuracy: $\pm 0.3 - 1$ % of reading





DZR + ADI-1 / ZED

Gear Wheel - Digital Display/Counter/Dosing Electronic

Cast iron, stainless steel



- Viscosity range: 20 - 5000 mm²/s
- Oil: 0.008 - 2 l/min ... 3 - 700 l/min
- t_{max} 150 °C; p_{max} 400 bar
- Connection: G 1/2 ... 1 female thread
- Accuracy: $\pm 0.3 - 1\%$ of reading



KZA

Gear Wheel - Meter

Aluminium



- Viscosity range: 20 - 4000 mm²/s
- Oil: 0.02 - 4 l/min ... 1 - 200 l/min
- t_{max} 80 °C; p_{max} 200 bar
- Connection: G 1/4 ... 1 female thread
- Accuracy: $\pm 0.3 - 3\%$ of reading



KZA + ADI-1 / ZED

Gear Wheel - Digital Display/Counter/Dosing Electronic

Aluminium



- Viscosity range: 20 - 4000 mm²/s
- Oil: 0.02 - 4 l/min ... 1 - 200 l/min
- t_{max} 80 °C; p_{max} 200 bar
- Connection: G 1/4 ... 1 female thread
- Accuracy: $\pm 0.3 - 3\%$ of reading



KAL-D

Calorimetric Indicator/Switch

Stainless steel



- Water: 0.04 - 2 m/s
- t_{max} 80 °C; p_{max} 40 bar
- Connection: G 1/4, G 1/2, 1/4" NPT, 1/2" NPT, M12



KAL-K

Calorimetric Indicator/Switch

Stainless steel



- Water: 0.04 - 2 m/s
- t_{max} 120 °C; p_{max} 100 bar
- Connection: G 1/4 ... 1 1/2, 1/4 ... 3/4" NPT, M12, Tri-Clamp®

KAL-A(K)

Calorimetric Meter/Switch

Stainless steel



- Water: 0.04 - 2 m/s
- t_{max} 120 °C; p_{max} 100 bar
- Connection: G 1/4 ... 1 1/2, 1/4 ... 3/4" NPT, M12, Tri-Clamp®
- Accuracy: $\pm 10\%$ of full scale

KAL / KAL-E

Calorimetric Indicator/Switch

Brass, stainless steel



- Water: 0.04 - 2 m/s
- t_{max} 120 °C; p_{max} 100 bar
- Connection: G 1/4 ... 1 1/2, 1/4 ... 3/4" NPT, M12



DVK

Calorimetric Flowmeter/Switch

Stainless steel



- Air: 1 - 10 NI/min ... 600 - 12000 NI/h
- t_{max} 50 °C; p_{max} 15 bar
- Connection: G 1/4 ... 2
- Accuracy: $\pm 5\%$ of full scale



Flowmeters / Switches / Controllers

KAL-L

Calorimetric Indicator/Switch

Brass



- Air: 1 - 20 m/s
- $t_{\max}$ 120 °C; $p_{\max}$ 8 bar
- Connection: G 1/2, Rp 1/2, M18, flange, smooth shaft
- Accuracy: ± 10 % of reading

KAH

Air velocity sensor

Polycarbonate



- Air: 0 ... 10/15/20 m/s
- Output signal: 0 ... 10 V_{DC} or 4 ... 20 mA
- Supply voltage: 24 V_{AC/DC}
- Connection: Mounting adapter
- Accuracy: $\pm (0.2 \text{ m/s} + 3 \text{ % of reading})$

DMW-A/B

Mass - Flowmeter - Thermal

Aluminium, stainless steel



- Air: 5 - 100 Nml/min ... 300 - 6000 Nl/min
- $t_{\max}$ 50 °C; $p_{\max}$ 10 bar
- Connection: G 1/4 ... 1 female thread
- Accuracy: ± 3 % of full scale

DMW-C/D

Mass - Flowmeter/Controller - Thermal

Aluminium, stainless steel



- Air: 5 - 100 Nml/min ... 50 - 1000 Nl/min
- $t_{\max}$ 50 °C; $p_{\max}$ 10 bar
- Connection: G 1/4 ... 1/2 female thread
- Accuracy: ± 3 % of full scale

MAS

Mass - Flowmeter - Thermal

Nylon, stainless steel



- Air: 0 - 10 Nml/min ... 0 - 500 Nl/min
- $t_{\max}$ 50 °C; $p_{\max}$ 35 bar
- Connection: 1/4" NPT female thread, Swagelok
- Accuracy: ± 1.5 % of full scale

DMS

Mass - Meter/Controller - Thermal

Stainless steel



- Air: 0,1 - 3,7 Nml/min ... 0 - 185 Nl/min
- $t_{\max}$ 50 °C; $p_{\max}$ 35 bar
- Connection: 1/4 ... 1/2" NPT female thread, clamp connection
- Accuracy: ± 1 % of full scale

KME

Mass - Flowmeter - Thermal

Aluminium

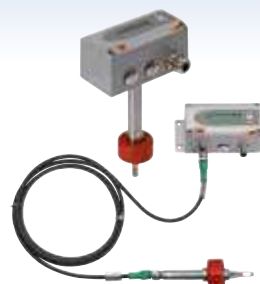


- Air: 0.2 - 76,3 ... 0.6 - 212 Nm³/h
- $t_{\max}$ 60 °C; $p_{\max}$ 16 bar
- Connection: G 1/2 ... 1, 1/2 ... 1" NPT male thread
- Accuracy: ± 3 % of reading + 0.3 % of full scale

KMT - 1 / - 2 / - 3

Mass - Flowmeter - Thermal

Stainless steel



- Air: 0.5 - 200 Nm/s
- $t_{\max}$ 80 °C; $p_{\max}$ 16 bar
- Connection: G 1/2 ... 2, 1/2 ... 2" NPT female thread ball valve
- Accuracy: ± 1.5 % of reading ± 0.5 % of full scale



KMT - 4

Mass - Flowmeter - Thermal

Stainless steel



- Air: 0.2 - 200 Nm/s
- t_{max} 80 °C; p_{max} 16 bar
- Connection: R 1/2" male thread for insertion (DN 65 ... DN 700)
- Accuracy: $\pm 1.5\%$ of reading
 $\pm 0.8\%$ of full scale



KEC - 1 / - 2

Mass - Flowmeter - Thermal

Stainless steel



- Air: 0.1 - 92.7 ... 0.1 - 224 Nm/s
- t_{max} 180 °C; p_{max} 100 bar
- Connection: G 1/2 ... 2, 1/2 ... 2" NPT male thread, flange DN 15 ... 80
- Accuracy: $\pm 1.0\%$ of reading
 $\pm 0.3\%$ of full scale

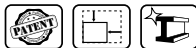
HPC

Coriolis Mass - Mini

Stainless steel



- 0 - 20 kg/h ... 0 - 160 kg/h
- t_{max} 180 °C; p_{max} PN 400 / PN 600
- Connection: G 1/2, 1/2" NPT, 6/8/10mm Grylok/Swagelok
- Accuracy: $\pm 0.15\%$ of reading



TME / UMC - 3

Coriolis Mass

Stainless steel



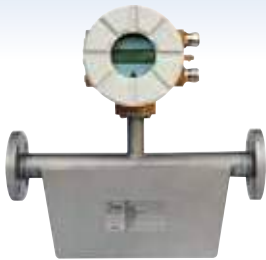
- Water: 0 - 60 kg/h ... 0 - 60 000 kg/h
- t_{max} 180 °C; p_{max} PN 40
- Connection: flange DN 10 ... 80, ANSI 1/2 ... 3"
- Accuracy: $\pm 0.15\%$ of reading



TMU / UMC - 3

Coriolis Mass

Stainless steel, Hastelloy®



- Water: 0 - 60 kg/h ... 0 - 2 200 000 kg/h
- t_{max} 260 °C; p_{max} PN 40 (up to 750 bar on request)
- Connection: flange DN 10 ... 300, ANSI 1/2 ... 12"
- Accuracy: $\pm 0.1\%$ of reading



TM / UMC - 3

Coriolis Mass

Stainless steel, Hastelloy®, tantalum



- Water: 0 - 0.8 kg/h ... 0 - 65 000 kg/h
- t_{max} 260 °C; p_{max} bis 900 bar
- Connection: 1/4 ... 1/2" NPT, flange DN 10 ... 100, ANSI 1/2 ... 4"
- Accuracy: $\pm 0.1\%$ of reading



TME / UMC - 4

Coriolis Mass

Stainless steel



- Water: 0 - 60 kg/h ... 0 - 60 000 kg/h
- t_{max} 180 °C; p_{max} PN 40
- Connection: flange DN 10 ... 80, ANSI 1/2 ... 3"
- Accuracy: $\pm 0.15\%$ of reading



TMU / UMC - 4

Coriolis Mass

Stainless steel, Hastelloy®



- Water: 0 - 60 kg/h ... 0 - 2 200 000 kg/h
- t_{max} 260 °C; p_{max} PN 40 (up to 750 bar on request)
- Connection: flange DN 10 ... 300, ANSI 1/2 ... 12"
- Accuracy: $\pm 0.1\%$ of reading





Flowmeters / Switches

TMU-... AC

Coriolis Mass with Heating

Stainless steel, Hastelloy®



- Water: 0 - 60 kg/h ... 0 - 1 900 000 kg/h
- $t_{\max}$ 260 °C; $p_{\max}$ PN 40
- Connection: flange DN10 ... 300, ANSI 1/2 ... 12"
- Accuracy: ± 0.1 % of reading



KPL

Orifice Plate - Differential Pressure

Steel, stainless steel, Hastelloy® C, titanium, Monel®, tantalum



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



KPL-B/-F

Orifice Plate - Differential Pressure

Steel, stainless steel, Hastelloy® C, titanium, Monel®, tantalum



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



ANU

Pitot Tube - Differential Pressure

Stainless steel



- Connection: G 1 ... 2, 1 ... 2" NPT, DN 25 ... 100, ANSI 1 ... 4"
- Probe length: 50 ... 8000 mm (2 ... 315")
- $t_{\max}$ 900 °C; $p_{\max}$ PN 250



DUS

Nozzle - Differential Pressure

Steel, stainless steel



- Nominal diameter: DN 50 ... 600 (2 ... 24")
- $t_{\max}$ 560 °C; $p_{\max}$ 420 bar



DVT

Venturi tube - Differential Pressure

Steel, stainless steel



- Nominal diameter: DN 50 ... 1200 (2 ... 48")
- $t_{\max}$ 560 °C; $p_{\max}$ 420 bar



RCD

Venturi Nozzle - Differential Pressure

Brass, stainless steel

Pointer Indicator
...Z



Compact electronic
...C3



Digital Display
...K



- Water: 0.5 - 3.3 ... 300 - 2350 l/min
- Air: 0.5 - 5.35 ... 300 - 2750 Nm³/h
- $t_{\max}$ 100 °C; $p_{\max}$ PN 40
- Connection: G 1/2 ... 3, 1/2 ... 3" NPT female thread
- Accuracy: ± 3 % of full scale



MIK

Electromagnetic - ...

PPS/Stainless steel, PVDF/Hastelloy®

Pulse Output
...F3

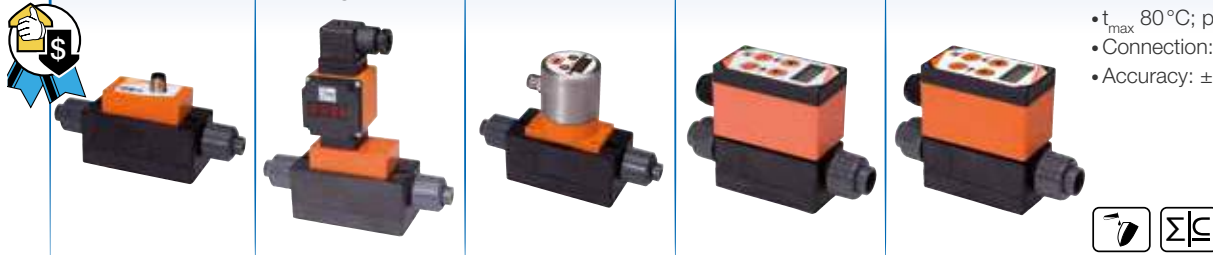
Analogue Output
... L4 + AUF

Compact Electronics
...C3

Counter
...E

Dosing Electronics
...G

- Water: **10 - 500 ml/min ... 37 - 700 l/min**
- $t_{\max}$ 80°C; $p_{\max}$ 10 bar
- Connection: G 1/2 ... 2 1/4 male thread
- Accuracy: $\pm 2\%$ of full scale



MIM

Electromagnetic-Flowmeter - All Metall Design

Stainless steel

- Water: **0.04 - 10 l/min ... 0.4 - 100 l/min**
- $t_{\max}$ 70°C; $p_{\max}$ 16 bar
- Connection: G 1/2 ... 1 male thread
- Accuracy: $< \pm(0.8\%$ of reading
+0.5% of full scale)



IO-Link

PIT

Electromagnetic - Insertion

Stainless steel / PTFE- or PFA-lining

- Water: **0.5 - 5 m/s or 1 - 10 m/s**
- $t_{\max}$ 150°C; $p_{\max}$ PN 40
- Connection: flange DN 40 ... 80, ANSI 2 ... 3", for pipelines DN 125 ... 2000
- Accuracy: $\pm 1.5\%$ of reading
 $\pm 0.5\%$ of full scale



PIT - U

Electromag. - Insertion + Installation-/Extracting Device

Stainless steel

- Water: **0.5 - 5 m/s oder 1 - 10 m/s**
- $t_{\max}$ 80°C; $p_{\max}$ PN 16
- Connection: flange DN 40 ... 80, ANSI 2 ... 3"
- Accuracy: $\pm 1.5\%$ of reading
 $\pm 0.5\%$ of full scale

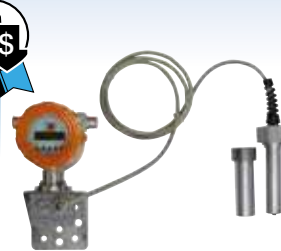


PIT_E

Electromagnetic - Insertion

Stainless steel

- 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: $\pm 1.5\%$ of full scale



EPS/EPX

Electromagnetic Meter

Lining: hard rubber, soft rubber, PTFE/PFA, EPDM ceramics

- Water: **0 - 10 m/s**
- $t_{\max}$ 150°C; $p_{\max}$ PN 40
- Connection: flange DN 2 ... 1200, ANSI 1/2 ... 24"
- Option: wafer type, sanitary connections
- Accuracy: $\pm 0.3\%$ of reading





Flowmeters / Switches

DVH

Vortex - Meter

Stainless steel



- Water: 0,2 - 5 ... 32 - 970 m³/h
- Air: 3 - 28 ... 3057 - 280187 Nm³/h
- Temperature: -200 ... +400 °C
- p_{max} PN 100
- Connection: DN 15 ... 300, ANSI ½ ... 12"
- Option: integrated temperature and pressure sensor, wafer type
- Accuracy: ± 0.7 % of reading (water)
± 1 % of reading (gas/steam)



Energy measurement



DVE

Vortex - Meter - Insertion Version

Stainless steel



- Water: 5.2 - 157 ... 284 - 8537 m³/h
- Air: 89 - 1463 ... 26915 - 2467081 Nm³/h
- Temperature: -200 ... +400 °C
- p_{max} 100 bar
- Connection: 2" NPT, DN 50, ANSI 2" mountable in NW50 ... NW600
- Option: integrated temperature and pressure sensor, Installation/removal device
- Accuracy: ± 1.2 % of reading (water)
± 1.5 % of reading (gas/steam)



Energy measurement

DVZ

Vortex - ...

PPS/Brass, PPS/Stainless steel

Pulse Output
...F3

Analogue Output
...L / ...L4 + AUF

Compact Electro.
...C3

Counter
...E

Switch
...S3

Dosing Electronic
...G

- Water: 0.5 - 4.5 l/min ... 10 - 100 l/min
- t_{max} 80 °C; p_{max} 20 bar
- Connection: G ¼ ... 1, ¼ ... 1" NPT
- Accuracy: ± 2.5 % of full scale



DOG-4*

Oscillation - Meter/Switch

Stainless steel



- Air: 0.12 - 12 Nm³/h ... 60 - 6000 m³/h
 - Pressure Drop: max. 50 mbar
 - t_{max} 120 °C (für EX 60 °C); p_{max} PN 40
 - Connection: Flange DN 25 ... 200, ANSI 1 ... 8"
 - Accuracy: ± 1.5 % of reading
- * Sponsored by the Federal Ministry of Economics and Technology on the basis of a resolution of the German Bundestag



DOG-4

Oscillation - Meter/Switch

Transducer / Transmitter



- Input: frequency
- Analogue output
- Pulse output, counter, flow computer

DOG-5

Oscillation - Meter/Switch

Stainless steel



- Water: 0.075 - 3.75 m³/h ... 19.6 - 980 m³/h
- t_{max} 120 °C; p_{max} PN 40
- Connection: Flange DN 25 ... 200, ANSI 1 ... 8"
- Accuracy: ± 0.5 % of reading

DUC

Ultrasonic Flowmeter - Clamp on

stationary · portable



- Medias: ultrasonic conducting liquids
- Temperature measuring range: -40 ... 150 °C
- Flow velocities: 0 ... ±30 m/s
- Pipe sizes: DN 10 ... DN6000
- For the most common or sound-conducting materials like steel and plastics
- Heat quantity measurement

Accuracy: up to 1 %





DUK

Ultrasonic - ...

Brass, stainless steel

Pulse Output
...F3

Analogue Output
... L4 + AUF

Compact Electro.
...C3

Digital Display
...K

Switch
...S3

Counter/Dosing
...E/G

- Water: 0.08 - 20 l/min ... 2.5 - 630 l/min
- $t_{\max}$ 120 °C; $p_{\max}$ 16 bar
- Connection: G 1/2 ... 3 female thread
- Accuracy: $\pm 1.5\%$ of full scale



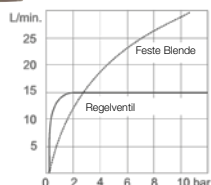
REG

Flow Restrictors

Brass, stainless steel



- Viscosity range: 1 - 30 mm²/s
- Water: 0.5 - 40 l/min
- $t_{\max}$ 300 °C; $p_{\max}$ 200 bar
- Connection: G 1/2, G 3/4, 3/4" NPT



REG-8 / REG-9

Flow Restrictors - Multiple Element

Brass, stainless steel



- Viscosity range: 1 - 30 mm²/s
- Water: 1 - 280 l/min
- $t_{\max}$ 300 °C; $p_{\max}$ 200 bar
- Connection: G 1 1/2 ... G 2 1/2
Flange DN 20 ... 50

DAA / DAH

Flow Indicator with Rotor

Brass, stainless steel



- Water: 0.4 - 4 l/min ... 8 - 100 l/min
- $t_{\max}$ 100 °C; $p_{\max}$ 16 bar
- Connection: G 1/4 ... 1 1/2,
1/4 ... 1 1/2" NPT female thread

DAF - 1 / - 2

Flow Indicator with Rotor

Brass, stainless steel



- Water: 0.03 - 0.1 l/min ... 5 - 150 l/min
- $t_{\max}$ 110 °C; $p_{\max}$ 16 bar
- Connection: G 1/8 ... 1 1/2,
1/8 ... 1 1/2" NPT female thread,
flange DN 15 ... 50, ANSI 1/2 ... 2"

DKF

Flow Indicator with Rotor

Brass



- Water: 0.14 - 2 l/min ... 1.8 - 83 l/min
- $t_{\max}$ 120 °C; $p_{\max}$ 6 bar
- Connection: G 1/8 ... 1,
1/8 ... 1" NPT female thread

DIH

Flow Indicator with Rotor

Brass, stainless steel, POM



- Water: 0.2 - 0.5 l/min ... 1 - 50 l/min
- $t_{\max}$ 80 °C; $p_{\max}$ 16 bar
- Connection: G 1/8, G 1 female thread,
3/8" NPT, 1" NPT



Flowmeters / Indicators

DIG

Flow Indicator with Rotor

PP, brass, stainless steel



- Water: 0.5 - 12 l/min ... 3 - 80 l/min
- $t_{\max}$ 80 °C; $p_{\max}$ 16 bar
- Connection: G 1/8 ... 1, 1/8 ... 1" NPT female thread

DAR - 1 / - 2

Flow Indicator with Rotor

Grey cast iron, cast steel, stainless steel



- $t_{\max}$ 260 °C; $p_{\max}$ 40 bar
- Connection: G 1/4 ... 2, 1/4 ... 2" NPT female thread, flange DN 15 ... 200, ANSI 1/2 ... 8"

DAK - 1 / - 2

Flow Indicator with Flap

Grey cast iron, cast steel, stainless steel



- $t_{\max}$ 280 °C; $p_{\max}$ 40 bar
- Connection: G 1/4 ... 2, 1/4 ... 2" NPT female thread, flange DN 15 ... 200, ANSI 1/2 ... 8"

DAT - 1 / - 2

Flow Indicator with Drip Tube

Grey cast iron, cast steel, stainless steel



- $t_{\max}$ 280 °C; $p_{\max}$ 40 bar
- Connection: G 1/4 ... 2, 1/4 ... 2" NPT female thread, flange DN 15 ... 200, ANSI 1/2 ... 8"

DAZ

Flow Indicator with Flap

Red cast iron



- Water: 2.1 - 17 l/min ... 2.1 - 24 l/min
- $t_{\max}$ 200 °C; $p_{\max}$ 16 bar
- Connection: G 1/2 ... 1 female thread

DAB

Flow Indicator with Ball

Bronze



- $t_{\max}$ 100 °C; $p_{\max}$ 6 bar
- Connection: G 3/4 ... 3 female thread

DKB

Flow Indicator with Ball

Brass, stainless steel



- Water: 0.05 - 15 l/min ... 0.14 - 105 l/min
- $t_{\max}$ 200 °C; $p_{\max}$ 16 bar
- Connection: G 1/8 ... 1 1/2, 1/8 ... 1" NPT female thread

UFJ

Flow Indicator - Sight Glass

Stainless Steel, PVC



- $t_{\max}$ 100 °C; $p_{\max}$ 6 bar
- Connection: G 1/4 ... G 1/2 female thread



MAN...

Bourdon Tube Pressure Gauges

Brass, stainless steel

...-R, -Q



All Stainless Steel
-R



for Exceptional Safety
-N...S



- Measuring range: -1 ... 0 bar ... 0 ... +1 000 bar
- Housing: Ø 63, 100, 160 mm
- Overload protected: 1.15 - 1.3 times
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread
- Accuracy: Cl. 1.0; 1.6



MAN - T

Bourdon Tube-Refrigeration

Brass, stainless steel



- Measuring range: -1 ... +9 bar ... -1 ... +40 bar
- Housing: Ø 63, 80, 100 mm
- Overload protected: 1.0 times
- Connection: 7/16-20 UNF, G ¼ male thread
- Accuracy: Cl. 1.0; 1.6



MAN - K

Capsule Element Pressure Gauges

Brass, stainless steel



- Measuring range: -10 ... 0 mbar ... 0 ... +600 mbar
- Housing: Ø 63, 80, 100, 160 mm
- Overload protected: 0.9 - 10 times
- Connection: G ¼, G ½ male thread
- Accuracy: Cl. 1.6



MAN - P

Diaphragm Pressure Gauges

Stainless steel



- Measuring range: -16 ... 0 mbar; 0 ... +40 bar
- Housing: Ø 100, 160 mm
- Overload protected: 1.15 - 1.3 times
- Connection: G ½, ½" NPT male thread, flange (nominal size 15 ... 100)
- Option: Contact
- Accuracy: Cl. 1.6

MAN - C

Diaphragm Pressure Gauges - Chemistry

Stainless steel



- Measuring range: -25 ... 0 mbar ... 0 ... +25 bar
- Housing: Ø 100 mm, 160 mm
- Overload protected: 1.3 times
- Connection: DIN, ANSI flange
- Accuracy: Cl. 1.6
- Wetted parts ECTFE



MAN - ZF

Pressure Transducer

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +600 bar
- Housing: Ø 100 mm
- Overload protected: 0.9 - 1.0 times
- Connection: G ½ male thread analogue output 4 - 20 mA
- Power supply: 24 V_{DC}
- Accuracy: Cl. 1.0



MAN - LD / - SD

Pressure Gauges Digital + Ceramic Sensor

Stainless steel / PA glass fibre reinforced



- Measuring range: -1 ... 0 bar ... 0 ... +1 600 bar
- Display: LC-Display
- Overload protected: 1.3 - 3 times
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male
- Analogue output 4 - 20 mA (MAN - LD)
- Power supply: 24 V_{DC}
- Accuracy: Cl. 0.5
- Option: Analogue output 0 - 2 V (MAN - SD)





Pressure Measurement

PDC

Pressure Gauges with Ceramic/Thin Film Cell

Stainless steel



- Measuring range: 0 ... +2 bar ... 0 ... +700 bar
- Display: 2 x 4½-digit LCD, illuminated
- Overload protected: 2 times - max. 1000 bar
- Connection: G ¼, ½" NPT male thread
- Accuracy: ±0.5% of full scale ... ±1 Digit



MAN - SF26

Pressure Gauges Digital with Ceramic Sensor Element

Stainless steel / PA glass fibre reinforced



- Measuring range: -1 ... 0 bar ... 0 ... +1600 bar
- Display: 4-digit LED
- Overload protected: 2 times
- Connection: G ¼, G ½, ½" NPT, ½" NPT male thread
- Analogue output, 2/4 limit contacts
- Option: absolute pressure
- Accuracy: Cl. 0.5

PUM

U-Pipe Pressure Gauges

Glass



- Measuring range: 0 ... ±25 mbar ... 0 ... ±150 mbar
- Scale division: 2 mm
- Hose connection: Ø 7 mm
- Accuracy: ±0.2 mbar

MAN - U

Differential Pressure Gauge with double diaphragm

Stainless steel



- Measuring range: 0 ... +100 mbar ... 0 ... +25 bar
- Static pressure on both sides: 200 bar
- Housing: Ø 100 mm, 150 mm
- Connection: G ½, ½" NPT male, ½" NPT female
- Accuracy: Cl. 1.6

MAN - BF...

Differential Pressure Gauge Digital with Ceramic Sensor Element

St. steel/PA glass fibre reinforced

...26



...20



...28V



- Measuring range: -1 ... 0 bar ... 0 ... +1600 bar
- Display: 4-digit LED
- Overload protected: 2 times
- Connection: G ¼, G ½, ½" NPT, ½" NPT male thread
- Accuracy: Cl. 0.5

MAN - DG12R

Differential Pressure Gauge with Bourdon Tube

Aluminium, steel



- Measuring range: 0 ... +1 bar ... 0 ... +60 bar
- Housing: Ø 160 mm
- Overload protected: 1.3 times - (short time)
- Connection: G ½ male thread
- Option: Contact
- Accuracy: Cl. 1.6

HND - P215/- P126, - P236

Hand-Held Pressure Measuring Device for Differential Pressure for 2 External Sensors



- Measuring range: +2,5 mbar ... +1000 bar depending on sensor
- Accuracy: ±0.1% vom ME
- Measuring range: -100 ... +2000 mba
- Accuracy: ±0.2% vom ME
- Option: alarm, control function





PMP

Differential Pressure Sensor - Thin Film



- Measuring range: 0 ... +50 mbar
- Power supply: 24 V_{AC/DC}, 110 V_{AC}, 230 V_{AC}
- Display: 4-digit LED
- Connection: hose connection 6 x 8 mm

PAD

Differential Pressure Transmitter

Stainless steel, Monel®, tantalum, Hastelloy®



- Measuring range: +0.75 mbar ... 413.70 bar
- Power supply: 18 - 45 V_{DC}
- Connection: 1/4" NPT, 1/2" NPT
- Accuracy: ±0.075 % of measuring span



HART
TECHNOLOGY FOR THE FUTURE

PAD...N

Differential Pressure Transmitter with Diaphragm Seal

Stainless steel, Monel®, tantalum, Hastelloy®



- Measuring range: 0 ... +250 mbar ... 0 ... +206.80 bar
- t_{max} 200 °C
- Connection: flange-, thread-, clamp on-, and in-line diaphragm seal (nominal size 15 ... 100)
- Accuracy: ±0.075 % of calibrated span + influence of diaphragm seal



HART
TECHNOLOGY FOR THE FUTURE

PNK

Pressure Transmitter for Harsh Conditions

Brass



- Measuring range: -1 ... 0 bar ... 0 ... +100 bar
- Overload protected: 1.6 times
- Connection: M16x1,5 mit sealing cone,
- Adapter: R 1/4, R 1/2, 1/2" NPT male thread
- Accuracy: ±1 % of full scale



MAN - F

Test Pressure Gauge with Bourdon Tube

Aluminium, brass, stainless steel



- Measuring range: -0.6 ... 0 bar ... 0 ... +2500 bar
- Housing: Ø 160, 250 mm
- Overload protected: 1.0 times - (calm)
- Connection: G 1/2 male thread
- Accuracy: Cl. 0.25; 0.6

MAN - RF...D

Pressure Gauge with Membrane Diaphragm Seal

Stainless steel



- Measuring range: -1 ... +3 bar ... 0 ... +40 bar
- Housing: Ø 100 mm
- Overload protected: 1.3 times
- Connection: flange Ø 85 mm
- Accuracy: Cl. 1.6



DRM

Diaphragm, Capsule, Inline Diaphragm Seals (Pressure Gauges)

Stainless steel, special material on request



- Measuring range: 0 ... +1 bar ... 0 ... +1600 bar
- Filling: glycerine, paraffin- and silicone oil
- diverse thread and flange connection, Tri-Clamp®, DIN 11851, SMS- and IDF-Norm
- Accuracy: Cl. 1.6



DRM

Flange Diaphragm Seals

Stainless steel, Monel®, tantalum, Hastelloy®, PTFE



- Standard version up to 350 °C / 40 bar: DN25 ... DN 100, ANSI 1 ... 4"
- Special version up to 400 bar: up to DN200, ANSI 8"
- Flanges according to BS, JIS and GOST Standard
- All possible also with extended diaphragm





Pressure Measurement

DRM 626 / 627

Membrane Diaphragm Seal, Vario

Stainless steel, Tantalum, ECTFE



- Measuring range: 0 ... +0,6 bar ... 0 ... +250 bar
- Housing: Ø 90 mm
- Filling: glycerine, paraffin- and silicone oil
- Option membrane: Tantalum, ECTFE, other on request



MAN - RF...DRM - 600

Bourdon Tube Pressure Gauge + Membrane Diaphragm

Stainless steel



- Measuring range: 0 ... +6 bar ... 0 ... +1 600 bar
- Housing: Ø 63 mm
- Connection: G NPT-thread; M20 x 1.5; M48 x 3
- Accuracy: Cl. 2.5



MAN-RF...MZB-711...DRM-602

Pressure Gauge + Diaphragm Seal DIN 11851 + Cool. Elem.

Stainless steel



- Measuring range: 0 ... +1 bar ... 0 ... +40 bar
- Housing: Ø 100 mm
- Connection: DIN 11851 DN20 ... 100
- Accuracy: Cl. 1.6



MAN - RF...M1...DRM - 620

Pressure Gauge with Membrane Diaphragm

Stainless steel



- Measuring range: 0 ... +1 bar ... 0 ... +40 bar
- Housing: Ø 100, 160 mm
- diverse thread and flange connection, Tri-Clamp®, DIN 11851, SMS- and IDF-Norm
- Accuracy: Cl. 1.6



MAN - RF...DRM - 502

Pressure Gauge with In-Line Diaphragm

Stainless steel



- Measuring range: +1.6 ... +40 bar ... +2.5 ... +40 bar
- Housing: Ø 100, 160 mm
- Connection: Tri-Clamp® ½ ... 2", hygienic connection ISO DN 15 ... 50
- Accuracy: Cl. 1.6



MAN - RF...M21...DRM - 602

Cont. Pres. Gauge + Membrane Diaphragm Seal DIN 11851

Stainless steel



- Measuring range: 0 ... +1 bar ... 0 ... +40 bar
- Housing: Ø 100, 160 mm
- Connection: DIN 11851 DN20 ... 100
- Accuracy: Cl. 1.6



MAN - RF...DRM - 603

Pressure Gauge + Membrane Diaphragm Seal, DIN 11851

Stainless steel



- Measuring range: 0 ... +1 bar ... 0 ... +40 bar
- Housing: Ø 100 mm
- Connection: DIN 11851 DN 25 ... 100
- Accuracy: Cl. 1.6



MAN - RF...DRM - 613

Pressure Gauge + Diaphragm Seal Clamp Connection

Stainless steel



- Measuring range: 0 ... +2.5 bar ... 0 ... +10 bar
- Housing: Ø 100 mm
- Connection: Tri-Clamp® 1 ... 3"
- Accuracy: Cl. 1.6





MAN...

Diaphragm Pressure Gauge for Semi-Conductor Industry PPH



- Measuring range: 0 ... +1 bar ... 0 ... +25 bar
- Housing: Ø 100 mm
- Connection: G 3/4 male thread
- Accuracy: Cl. 1.6

MAN - SD...DRM - 189

Digi. Press. Gauges + Diaphragm Seals f. Homogenizing Mach. Stainless steel



- Measuring range: 0 ... +100 bar ... 0 ... +1000 bar
- Housing: Ø 74 mm
- Membrane: flush mounted
- Connection: for block flange/thread
- Accuracy: Cl. 1.0



SEN...DRM - 189

Press. Sensor + Diaphragm Seals f. Homogenizing Mach. Stainless steel



- Measuring range: 0 ... +100 bar ... 0 ... +1000 bar
- Membrane: flush mounted
- t_{max} 100 °C
- Connection: for block flange/thread
- Option: Plug-on Display
- Accuracy: Cl. 1.0

MAN - SF...DRM - 189

Digi. Press. Gauges + Diaphragm Seals f. Homogenizing Mach. Stainless steel



- Measuring range: 0 ... +100 bar ... 0 ... +1000 bar
- Housing: Ø 100 mm
- Membrane: flush mounted
- Display: 4-digit, green LED display
- t_{max} 100 °C
- Connection: for block flange/thread
- Accuracy: Cl. 1.0

MAN - SD...DRM - 630

Digi. Pressure Gauge + Membrane Diaphragm Seal PVC



- Measuring range: 0 ... +1.6 bar ... 0 ... +10 bar
- Housing: Ø 74 mm
- Connection: G 1/4, G 1/2, 1/2" NPT female
- Accuracy: Cl. 1.0



SEN...DRM - 631

Pressure Sensor with Membrane Diaphragm Seal PP Polypropylene



- Measuring range: 0 ... +1.6 bar ... 0 ... +10 bar
- Connection: G 1/4, G 1/2, 1/2" NPT female
- Accuracy: Cl. 1.0

MAN - RD...DRM - 632

Pressure Gauge with Membrane Diaphragm Seal PVDF PVDF



- Measuring range: 0 ... +1.6 bar ... 0 ... +16 bar
- Housing: Ø 63 mm
- Connection: G 1/4, G 1/2, 1/2" NPT female
- Accuracy: Cl. 2.5

SEN...DRM - 600

Pressure Sensor with Diaphragm Seal Stainless steel



- Measuring range: 0 ... +6 bar ... 0 ... +600 bar
- t_{max} 70 °C
- Connection: G 1/2 ... G 1 1/2 male, stainless steel
- Option: Plug-on Display
- Accuracy: Cl. 1.0

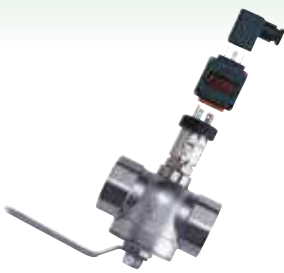


Pressure Measurement

SEN-86 + AUF, KUG-S

Pressure Sensor + Plug-on Display + Process Assembly

Brass, stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +25 bar
- Overload protected: 1.5 - 2 times
- Connection: G 1/2 male thread
- Accuracy: Cl. 0.5; 1.0

PDA

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +400 bar
- Display: 3-digit LED
- Connection: G 1/4, G 1/2, 1/4" NPT, 1/2" NPT male thread
- Accuracy: $\pm 0.5 - 1\%$ of full scale



PAS

Pressure Transmitter

Stainless steel, Hastelloy®-C, tantalum



- Measuring range: -1 ... +600 bar
- Power supply: 11.9 - 45 V_{DC}
- Connection: 1/4" NPT female, 1/2" NPT female
- Accuracy: $\pm 0.075\%$ of calibrated span



PAS-...N

Pressure Transmitter with Diaphragm Seal

Stainless steel, Monel®, tantalum, Hastelloy®, PTFE



- Measuring range: 0 ... +250 mbar ... 0 ... +600 bar
- t_{max} 200 °C
- Connection: thread or with flange (nominal size 15 ... 100)
- Accuracy: $\pm 0.075\%$ of calibrated span + influence of diaphragm seal



PAS-...N

Pressure Transmitter with Diaphragm Seal

Stainless steel, Monel®, tantalum, Hastelloy®, PTFE



- Measuring range: 0 ... +250 mbar ... 0 ... +600 bar
- t_{max} 350 °C
- Connection: thread or flange (nominal size 15 ... 100)
- Accuracy: $\pm 0.075\%$ of calibrated span + influence of diaphragm seal



SEN-86

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +600 bar
- Display: 4-digit LED
- Overload protected: 1.5 - 2 times
- Connection: G 1/2, 1/2" NPT male thread
- Option: Plug-on Display, absolute pressure
- Accuracy: Cl. 0.5

SEN-87

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +600 bar
- Display: 4-digit LED
- Overload protected: 1.5 - 2 times
- Connection: G 1/4, 1/4" NPT male thread
- Option: Plug-on Display, absolute pressure
- Accuracy: Cl. 0.5

SEN-96

Pressure Sensor with Ceramic

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +600 bar
- Overload protected: 1.3 - 5 times
- Connection: G 1/4, 1/2, 1/4" NPT, 1/2" NPT male thread
- Accuracy: $\leq \pm 0.5\%$ of full scale



SEN - 98 / - 99

Pressure Sensor with Ceramic

Stainless steel



- Measuring range:
-1 ... 0 bar ... 0 ... +600 bar (rel)
0 ... 1 bar ... 0 ... +25 bar (abs)
- Overload protected: 1.3 - 5 times
- Connection: G 1/4, 1/2, 1/4" NPT,
1/2" NPT male thread
- Accuracy: ≤ 0.25 ... 0.5 % of span

SEN - 3297

Pressure Sensor Compact Piezoresistive

Stainless steel



- Measuring range: 0 ... +1 bar ... 0 ... +6 bar
- Membrane: internal
- Overload protected: 2 times
- Connection: G 1/4, 1/2, 1/4" NPT,
1/2" NPT male thread
- Option: Plug-on Display
- Accuracy: Cl. 1.0

SEN - 3297

Pressure Sensor Compact Thin Film

Stainless steel



- Measuring range: 0 ... +10 bar ...
0 ... +600 bar
- Membrane: internal
- Overload protected: 2 times
- Connection: G 1/4, 1/2, 1/4" NPT,
1/2" NPT male thread
- Option: Plug-on Display
- Accuracy: Cl. 1.0

SEN - 3276, - 3277

Pressure Sensor - Piezoresistive

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +25 bar
- Membrane: internal
- Overload protected: 2 - 3.5 times
- Connection: G 1/4, 1/2, 1/4" NPT,
1/2" NPT male thread
- Option: Plug-on Display,
absolute pressure
- Accuracy: Cl. 0.25; 0.5

SEN - 3251, - 3252

Pressure Sensor Industrial Piezoresistive - Flush Mounted

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +25 bar
- Membrane: flush mounted
- Overload protected: 2 - 3.5 times
- Connection: G 1/2, G 1 male thread
- Option: Plug-on Display
- Accuracy: Cl. 0.25; 0.5

SEN - 3376, - 3377

Press. Sensor Industrial Thin Film

Stainless steel



- Measuring range: 0 ... +40 bar ...
0 ... +1000 bar
- Membrane: flush mounted
- Overload protected: 1.5 - 3 times
- Connection: G 1/4, 1/2, 1/4" NPT,
1/2" NPT male thread
- Option: Plug-on Display, absolute pressure
- Accuracy: Cl. 0.25; 0.5

SEN - 3290, - 3390

Pressure Sensor Precision Piezoresistive/Thin Film

Stainless steel



- Measuring range: -0.25 ... 0 bar ...
0 ... +1000 bar
- Membrane: internal
- Overload protected: 1.5 - 3.5 times
- Connection: G 1/2 male thread
- Accuracy: ± 0.1 % of full scale

SEN - 3344, - 3386

Pressure Sensor Piezoresistive/Thin Film - Flush Mounted

Stainless steel



- Measuring range: 0 ... +40 bar ...
0 ... +600 bar
- Membrane: flush mounted
- Overload protected: 2 times
- Connection: G 1/2 male thread
- Option: Plug-on Display
- Accuracy: Cl. 0.25; 0.5



Pressure Measurement / Monitoring

HND

Pressure Hand-Held Unit - ...

for External Sensors
... - P210, -215



with 2 Integrated Sensors
... - P121, -123, -126



with 1 Integrated Sensor
... - P129, -P239



- Measuring range: -1.999 ... +2.5 mbar... 0 ... +1000 bar (sensor dependent)
- Accuracy: $\pm 0.1\%$ of full scale
- Measuring range: -1 ... +25 mbar ... -100 ... +2000 mbar
- Accuracy: $\pm 0.2\%$ of full scale
- Measuring range: 0 ... +1300 mbar (abs)
- Accuracy: $\pm 0.2\%$ of full scale
- Option: Logger, Alarm



PDD

Pressure Switch with Ceramic Cell

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +400 bar
- Display: 3-digit LED
- Overload protected: 1,5 - 2 fach
- Connection: G 1/4, G 1/2, 1/4" NPT, 1/2" NPT male thread
- Accuracy: $\pm 0.5 - 1\%$ of full scale

PSD

Electronic Pressure Switch - Thin Film on Steel

Stainless steel



- Measuring range: -1 ... +1.5 bar ... 0 ... +600 bar
- Display: 4-digit LED
- Connection: G 1/4 male thread, others with adapter
- Accuracy: $\pm 0.5\%$ of full scale



SCH -27 / -28

Differential Pressure Switch - Mechanical Switch

Stainless steel



- Switching range: 0,7 ... 6 mbar ... 8 ... 160 bar
- Switching range: 0,1 ... 1 bar ... 0,2 ... 10 bar
- Switching function: micro switch
- Connection: 1/2" NPT female, 1/4" NPT female, 1/2" NPT male, G 1/2 male
- Repeatability: $< 1\%$ of switching point



MZB -712 /...

Accessories f. Elec. Press. Switch - Thin Film on Steel

Stainless steel



- Connection: G 1/2, 1/4", 3/8" male thread oder NPT, 7/16-20 UNF DIN 3866, G 1/2 DIN 3852-E, M 20 x 1,5



MZB

Pressure Gauges Accessories

Brass, steel, stainless steel



Shut off cocks and valves, syphons, trottler and overpressure protection equipment, adapters



AUF

Sandwich Plug-On Display



- Input: 4-20 mA ; 2-wire or 3-wire
- 4-digit red LED, without additional power supply
- Option: Open-Collector, various colours





M

Float Magnet Switch

Brass, stainless steel, PVC, PPH, PVDF



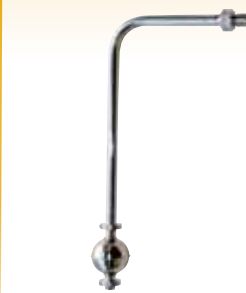
- Density: from 0.5 kg/dm³
- t_{max} 150 °C; p_{max} 100 bar
- Connection: thread G/NPT, flange DIN/ANSI



MS

Float Magnet Switch

Brass, stainless steel, PVC, PP



- Density: from 0.6 kg/dm³
- t_{max} 150 °C; p_{max} 100 bar
- Connection: thread G/NPT, flange DIN/ANSI



NBA/NBE

Float Bypass Switch

Aluminium, stainless steel



- Density: 0.65 kg/dm³
- t_{max} 90 °C; p_{max} 10 bar
- Connection: G 3/8 IG, R 1/2 male thread

NKP

Plastic Level Switch

Polypropylene, PVDF



- Density: 0.6 kg/dm³
- t_{max} 100 °C; p_{max} 10 bar
- Connection: G 1/2, 1/2" NPT, M 16



RFS

Float Switch

Stainless steel



- Density: 0.7 kg/dm³
- t_{max} 120 °C; p_{max} 5 bar
- Connection: 1/2" NPT male thread



NV

Float Switch

Brass, stainless steel



- Density: 0.7 kg/dm³
- t_{max} 110 °C; p_{max} 16 bar
- Connection: G 3/4 male, M27 x 1.5 male

NSP-S/-K

Float Switch

Polyethylene, Polypropylene



- Density: from 0.6 kg/dm³
- t_{max} 85 °C; p_{max} 2 bar
- Connection: cable

NAB

Float Switch

Polypropylene



- Density: 0.5 ... 1.15 kg/dm³
- t_{max} 85 °C; p_{max} 5 bar
- Connection: cable



Level Switches

NSM

Float Switch

Polypropylene



- Density: 0.6 kg/dm³
- t_{max} 95 °C; p_{max} 3 bar
- Connection: cable

NEC

Float Switch

Polypropylene, Hypalon®



- Density: 0.7 ... 1.15 kg/dm³
- t_{max} 85 °C; p_{max} 4 bar
- Connection: cable

NST

Float Switch

PTFE



- Density: 0.79 kg/dm³
- t_{max} 150 °C; p_{max} 1 bar
- Connection: cable

NSE

Float Switch

Stainless steel



- Density: 0.8 kg/dm³
- t_{max} 150 °C; p_{max} 15 bar
- Connection: G ½ male thread

NGS

Dual Magnet Float Switch

Stainless steel



- Density: 0.7 kg/dm³
- t_{max} 250 °C; p_{max} 25 bar
- Connection: Square box flange, DIN-flange, DN80/100, BSP 2", 2" NPT



NES

Conductive Switch

Stainless steel, Hastelloy®, titanium / Coating: polypropylene, PTFE



- t_{max} 150 °C; p_{max} 30 bar
- Connection: G ½, G 1 ½ male thread

NEH

Conductive Suspended Electrodes

Stainless steel, Hastelloy®, titanium, Neoprene®, PVC



- t_{max} 150 °C; p_{max} 6 bar
- Connection: G ½, G 1 ½ male thread

NEW

Conductive Switch § 19 WHG

Stainless steel, Hastelloy®, titanium / Coating: polypropylene, PTFE



- t_{max} 60 °C; p_{max} atmospheric
- Connection: G 1, G 1 ½ male thread





NEK

Conductive Switch

PP, PPS



- t_{max} 85 °C; p_{max} 20 bar
- Connection: G 3/4 male, 3/4" NPT male
- Open-Collector or relay

LNK

Conductive Switch

Stainless steel, PEEK



- Measuring range: 4 - 1500 mm
- t_{max} 150 °C; p_{max} 10 bar
- Connection: G 1/2 male, G 1 male, hygienic installation system LZE
- Open-Collector



LNK-K

Conductive Switch Compact Probe

Stainless steel, PEEK



- Measuring range: 4 - 1500 mm
- t_{max} 150 °C; p_{max} 10 bar
- Connection: G 1/2 male, hygienic installation system LZE
- Open-Collector



NE-104 / -304

Electrode Relays for Conductive Switches



- max 2 limit contacts or
- max 2 Min/Max control switches
- Switch capacity: max. 250 V_{AC}, 5 A, 600 VA

NE-204

Electrode Relay § 19 WHG



- 1 limit contact
- Switch capacity: max. 250 V_{AC}, 5 A, 600 VA



LNR

Head Mounted Transmitter for Conductive Probes



- t_{max} 80 °C
- Open-Collector

LNM

Microwave-Switch

Stainless steel, PEEK



- t_{max} 100 °C (150 °C for CIP); p_{max} 10 bar
- Connection: G 1/2, M 12 x 1.5 male thread, hygienic installation system LZE
- Open-Collector



LNZ

Capacitive Switch Liquids

Stainless steel, PEEK



- t_{max} 100 °C (150 °C for CIP); p_{max} 10 bar
- Connection: G 1/2 male thread, hygienic installation system LZE
- Open-Collector





Level Switches

NCW

Capacitive Switch Liquids

Stainless steel, PVDF



- t_{max} 90 °C; p_{max} 30 bar
- Connection: G 1, G 2 male thread,
- Adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT



NCW - H

Capacitive Switch Liquids - High Temperature

Stainless steel



- t_{max} 125 °C; p_{max} 10 bar
- Connection: G 1, G 2 male thread,
- Adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT



NQ - 1000

Ultrasonic Switch Liquids

Stainless steel



- t_{max} 125 °C; p_{max} 20 bar
- Connection: R 1 AG
- 1 Schaltausgang

OPT

Optical Switch Liquids

Polypropylene, stainless steel



- t_{max} 80 °C; p_{max} 10 bar
- Connection: G ½, ½" NPT male thread or M 14 with bulkhead nut
- Open-Collector

NWS - ***20

Ultrasonic Switch Liquids

Stainless steel



- t_{max} 130 °C (150 °C for CIP); p_{max} 45 bar
- Viscosity: max. 5000 mm²/s
- Connection: R- /NPT-thread, DIN- /ANSI-flange, Tri-Clamp®, DIN 11851, DIN 11864, DRD

NWS - ***20*2S / F...

Vibration Switch Liquids - Plug / Cable connection

Stainless steel



- t_{max} 90 °C (150 °C for CIP); p_{max} 45 bar
- Viscosity: max. 5000 mm²/s
- Connection: R- /NPT-thread, DIN- /ANSI-thread, Tri-Clamp®, DIN 11851, DIN 11864, DRD



NSV

Vibration Switch - Bulk Materials

Stainless steel



- Switching range: 230 - 3000 mm
- Density: 0.06 kg/dm³
- t_{max} 80 °C; p_{max} 25 bar
- Connection: G 1½ male thread
- 1 relay, SPDT



NVI

Vibration Switch - Bulk Materials

Stainless steel, PE-coating for cable



- Probe length: up to 20 m
- Density: 0.05 kg/dm³
- t_{max} 160 °C; p_{max} 25 bar
- Connection: G 1½, 1½" NPT male thread
- 1 relay, SPDT



NMF

Diaphragm Switch - Bulk Materials

Neoprene®, FPM, steel, stainless steel



- $t_{\max}$ 200 °C; $p_{\max}$ 1 bar (over-pressure secure)
- Connection: flange

NIR - 9 / NIR - E9

Rotation Vane Switch - Bulk Materials

Stainless steel



- Measuring range: 65 - 1 000 mm
- $t_{\max}$ 200 °C; $p_{\max}$ 0.5 bar
- Connection: G 1 male thread
- Adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT



NSC

Capacitive Switch - Bulk Materials

Stainless steel, PTFE



- Measuring range: 265 - 3 000 mm
- $t_{\max}$ 80 °C; $p_{\max}$ 0.5 bar
- Connection: G 1 male, Adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT



PLS

Pendulum Level Monitor Bulk Materials

Aluminium, EPDM



- Pendulum length up to 2 000 mm
- $t_{\max}$ 80 °C; $p_{\max}$ -0.1 ... +0.5 bar
- Process connection: aluminium flange
- Contact: max. 250 V_{AC}/3 A

MM

Float Transducer - Reed Chain

Stainless steel, PVC-U, PP, PVDF



- Measuring range: 300 - 6 000 mm
- Density: 0.4 kg/dm³
- $t_{\max}$ 130 °C; $p_{\max}$ 30 bar
- Connection: G ¾ ... 2 male, ¾ ... 2" NPT male, flange DN 40 ... 100, ANSI 1 ½ ... 4"
- Accuracy: ± 10 mm



NMT

Float Magnetostrictive

Stainless steel



- Measuring range: 300 - 4 000 mm
- Density: 0.7 kg/dm³
- $t_{\max}$ -20 ... +70 °C; $p_{\max}$ PN 10
- Connection: G 2, 2" NPT male thread
- Analogue output
- Accuracy: ± 1 mm

NMC

Capacitive Measurement

Stainless steel, PVDF



- Measuring range: 265 - 4 000 mm
- $t_{\max}$ 125 °C; $p_{\max}$ 30 bar
- Connection: G 1, G 2 male thread,
- Adapter: G 1¼, G 1½, round flange, weld-in sleeve
- Analogue output
- Measuring error: 1.5 % of probe length



LNP

Potentiometric Measurement

Stainless steel



- Measuring range: 200 - 2 000 mm
- $t_{\max}$ 120 (150) °C; $p_{\max}$ 10 bar
- Connection: G 1, 1" NPT male, hygienic installation system LZE
- Analogue output
- Accuracy: ± 1 % of probe length





Level Switches/Transmitters

SZM

Bypass Glass Gauge

Stainless steel



- Measuring range: 370 - 3080 mm
- t_{max} 100 °C; p_{max} 10 bar
- Connection: flange DN 15...50, ANSI ½...2, Union nut G ½, NPT ½

NZJ

Mini-Bypass - Level Gauge

Aluminium, stainless steel



- Installation length: 100 - 540 mm
- Scale length: 60 - 500 mm
- t_{max} 100 °C; p_{max} 16 bar
- Connection: G ¼ male thread, NPT ¼ male thread

NBK - M

Mini Bypass with Roller Indicator

Stainless steel



- Measuring range: 200 - 3000 mm
- Density: 0.8 kg/dm³
- t_{max} 200 °C; p_{max} PN 40
- Connection: flange DN 10...25, ANSI ½...1"
- Accuracy: ± 1 mm (transmitter)



NBK - 03, - 06, - 07, - 10

Bypass with Roller Indicator

Stainless steel



- Measuring range: 300 - 5500 mm over 5500 mm 2-piece or multipart
- Density: min. 0.54 kg/dm³
- t_{max} 400 °C; p_{max} PN 100
- Accuracy: ± 1 mm (transmitter)



NBK - 31, - 32, - 33

Bypass with Roller Indicator - High pressure

Stainless steel



- Measuring range: 300 - 5500 mm
- Density: min. 0.54 kg/dm³
- t_{max} 100 °C; p_{max} PN 320
- Accuracy: ± 1 mm (transmitter)



NBK - ATEX, - GL

Bypass with Roller Indicator

Stainless steel



- Measuring range: 300 - 5500 mm over 5500 mm 2-piece or multipart
- Density: 0.54 kg/dm³
- t_{max} 400 °C; p_{max} PN 100
- Accuracy: ± 10 mm (transmitter)



NBK - 04 / NBK - 04 ATEX

Bypass Over-Top Tank Measurement

Stainless steel



- Measuring range: 300 - 4000 mm
- Density: 0.43 kg/dm³
- t_{max} 120 °C; p_{max} PN 16
- Connection: flange DN 50, 65 ANSI 2", 2½"
- Accuracy: ± 10 mm (transmitter)



NBK - 16, - 17

Bypass Level Roller Indicator Measurement - Plastic

PP, PVDF



- Measuring range: 200 - 4000 mm
- Density: 0.57 kg/dm³
- t_{max} 80 °C; p_{max} 4 bar
- Connection: flange DN 20...50, ANSI ¾...2"
- Accuracy: ± 10 mm (transmitter)





NBK - 01

Bypass Roller Indicator Low Cost

Stainless steel



- Measuring range: 300 - 5500 mm
- Density: 0.54 kg/dm³
- t_{max} 120 °C; p_{max} PN 16
- Accuracy: ± 1 mm (transmitter)



NBK - 19

Bypass Roll Measuring Rope

PVC



- Measuring range: 0.2 - 4.8 m
- Density: 1 kg/dm³
- t_{max} 60 °C; p_{max} atmospheric
- Accuracy: ± 1 mm (transmitter)

NBK - R, RT

Limit Contact for Bypass Measurement

Aluminium, Polycarbonate



- t_{max} 400 °C
- Switch capacity: 80 VA, 250 V_{AC/DC}, 1 A



NBK - RA / - RV, - RN

Limit Contact for Bypass Measurement



- t_{max} 85 °C (-RA); 200 °C (-RV, -RN)
- Switch capacity:
45 VA, 230 V_{AC/DC}, 0.6 A (-RA)
5 W, 400 V_{DC} / 230 V_{AC}, 0.5 A (-RV, -RN)

BA

Displacement Level Meter

Stainless steel



- Measuring range: 300 - 6000 mm
- Density range: 400 - 2000 g/l
- t_{max} 250 °C; p_{max} PN40
- Connection: flange DN 50, ANSI 2"
- Analogue output, 2 limit contacts
- Accuracy: ± 5 mm



NGM

Guided Wave Radar (TDR) for process industry - rod probe

Stainless steel, PTFE



- Measuring range: 100 - 3000 mm (liquids)
- t_{max} 250 °C; p_{max} 40 bar
- Connection: thread, flange
- Analogue output, switching output
- Accuracy: ± 3 mm or 0.03 % of measured value



NGM

Guided Wave Radar (TDR) for process industry - coax probe

Stainless steel



- Measuring range: 100 - 6000 mm (liquids)
- t_{max} 250 °C; p_{max} 40 bar
- Connection: thread, flange
- Analogue output, switching output
- Accuracy: ± 3 mm or 0.03 % of measured value



NGM

Guided Wave Radar (TDR) f. process industry - rope sensor

Stainless steel



- Measuring range: 1000 - 20000 mm (solids and liquids)
- t_{max} 150 °C; p_{max} 40 bar
- Connection: thread, flange
- Analogue output, switching output
- Accuracy: ± 3 mm or 0.03 % of measured value





Level Switches / Transmitters

NGR

Guided Wave Radar (TDR) for machines/factory automation

Stainless steel



- Measuring range: 200 - 4000 mm (liquids)
- $t_{\max}$ 100 °C; $p_{\max}$ 10 bar
- Connection: G 3/4, 1/2" NPT male
- Analogue output, switching outputs
- Accuracy: ± 5 mm

NRM

Non-Contact Radar Level Transm. (TDR) f. process industry

Stainless steel, PP, PTFE



- Measuring range: up to 23 m (liquids)
- $t_{\max}$ 180 °C; $p_{\max}$ 25 bar
- Connection: thread, flange, Tri-Clamp®, DIN 11851
- Analogue output
- Accuracy: ± 3 mm



NUS - 7

Ultrasonic Measurement

PP, PVDF



- 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



NUS - 4

Ultrasonic - Measurement

PP, PVDF



- Measuring range: 0.2 - 25 m (liquids)
0.2 ... 10 m (bulk)
- $t_{\max}$ 90 °C; $p_{\max}$ 3 bar abs
- Connection: G 1 1/2, G 2, 1 1/2" 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



PAD -...N

Differential Pressure Transmitter with Diaphragm Seal

Stainless steel, Monel®, tantalum, Hastelloy®, PTFE



- Level: 0 ... +2500 mmWC ... 0 ... +150 mWC
- $t_{\max}$ 200 °C
- Connection: flange via neck tube
DN 50 or bigger
- Accuracy: ± 0.075 % of calibrated span
+ influence of diaphragm seal



PAS -...N

Pressure Transmitter with Diaphragm Seal

Stainless steel, Monel®, tantalum, Hastelloy®, PTFE



- Level: 0 ... +2500 mmWC ...
0 ... +150 mWC
- $t_{\max}$ 350 °C
- Connection: thread or flange DN 50
or bigger
- Accuracy: ± 0.075 % of calibrated span
+ influence of diaphragm seal



NTB

Deep-Well Probe

Stainless steel, cable polyurethane



- Measuring range: 0 - 1 ... 0 - 300 mWS
- Analogue output
- Cable length: 200 m
- Accuracy: ± 0.5 % of full scale



NPF

Hydrostatic Diaphragm Measurement

Stainless steel



- Measuring range: 0 - 600 ...
0 - 10000 mmWS
- $t_{\max}$ 80 °C
- Connection: G 1/2 male, 1/2" NPT,
DN 50 ... DN 100, ANSI 2 ... 4"
- Accuracy: ± 1.6 % of full scale



TWR

Bi-metal Switch

Brass, stainless steel



- Switching range: 30 ... 120 °C
- t_{max} 150 °C; p_{max} 64 bar
- Connection: G 3/4 male thread

TRS

Thermal Reed Switch

Brass, stainless steel



- Switching range: 10 ... 120 °C
- t_{max} 120 °C; p_{max} 25 bar
- Connection: G 1/4 ... 1, 1/4 ... 1" NPT



TDD -1, -3, -5, -7

Temperature Switch Digital

Stainless steel



- Measuring range: -20 ... +120 °C
- t_{max} 125 °C; p_{max} 80 bar
- Connection: G 1/2, G 3/4, 1/2" NPT, 3/4" NPT male thread
- 2 limit contacts
- Accuracy: ± 0.5 °C



TDD...D6

Temperature Switch Digital

Stainless steel



- Measuring range: -50 ... +125 °C
- t_{max} 125 °C; p_{max} 80 bar
- Connection: smooth probe $\varnothing$ 6 mm
- 2 limit contacts
- Accuracy: ± 0.5 °C



TGL/TGK

V-Form - Machinery Glass Thermometer

Aluminium-, plastic casing, brass



- Measuring range: -60 ... +40 °C ... 0 ... +200 °C
- Connection: G 1/2, 1/2" NPT male thread
- Accuracy: $\pm 1\%$ of full scale

TBI/TBI-S

Bi-metal Thermometer

Copper alloy, steel, stainless steel



- Measuring range: -30 ... +500 °C
- p_{max} 25 bar
- Connection: G 1/2 male thread, welding sleeve
- Accuracy: Cl. 1.0 according to VDI



TBE

Bi-metal Thermometer

Stainless steel



- Measuring range: -50 ... +50 °C ... 0 ... +600 °C
- p_{max} 15 bar
- Connection: G 1/2 ... 3/4, 1/2 ... 3/4" NPT, fixed, rotatable, slidable
- Accuracy: Cl. 1.0



TND

Shaft Thermometer for Diesel Engines

Steel, stainless steel



- Measuring range: 0 ... +800 °C
- p_{max} 25 bar
- Connection: G 1/2, G 3/4 male thread
- Accuracy: Cl. 1.0; 1.6



TNS / TNF

Shaft/Capillary Thermometers DIN 16205/DIN 16206

Stainless steel



- Measuring range: -40 ... +600 °C
- $p_{\max}$ 25 bar
- Connection: G 1/2 ... 1, 1/2 ... 1" NPT, DIN 11851, Tri-Clamp®, helix probe
- Accuracy: Cl. 1.0; 1.6



TNS / TNF

Safety Thermometer with Contacts

Stainless steel



- Measuring range: -40 ... +600 °C
- $p_{\max}$ 25 bar
- Connection: G 1/2 ... 1, 1/2 ... 1" NPT, DIN 11851, Tri-Clamp®, helix probe
- Accuracy: Cl. 1.0; 1.6



TWL - 0

Thermowells f. Shaft, Capillary + Resistance Thermometer

Stainless steel, Special



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



TDA

Electronic Temperature Sensor

Stainless steel



- Measuring range: -20 ... +120 °C
- $p_{\max}$ 80 bar
- Connection: G 1/2, G 3/4, 1/2" NPT, 3/4" NPT male thread
- Analogue output, limit contact
- Accuracy: ± 0.5 °C



TDA -...D6

Electronic Temperature Sensor

Stainless steel



- Measuring range: -50 ... +125 °C
- $p_{\max}$ 80 bar
- Connection: smooth probe $\varnothing$ 6 mm
- Analogue output, limit contact
- Accuracy: ± 0.5 °C



TIR - FA

Infrared Fixed Thermometer

Stainless steel



- Measuring range: 0 ... +120 °C ... 100 ... +500 °C
- 10 mV/K or voltage model J, K
- Accuracy: ± 1.5 % of measuring range or 2.5 °C

TIR - SN

Infrared Fixed Thermometer

Stainless steel



- Measuring range: -20 ... +300 °C
- Analogue output
- Accuracy: ± 1.5 % of measuring range/°C

TIR - FS / FG

Infrared Fixed Thermometer

Stainless steel



- Measuring range: +300 ... +1300 °C ... +1100 ... +2500 °C
- Analogue output
- Accuracy: 0.8 ... 1 % of reading + 1 °C

HND - T105 / T205

Precision Hand-Held Thermometer



- Measuring range: -65 ... +1150 °C
- Sensor: Pt 100 or thermocouple types K
- Option: Logger, alarm, control function
- Accuracy: ± 0.03 % of full scale



HND - T120 / T125

Precision Hand-Held Thermometer



- Measuring range: -50 ... +1150 °C
- Sensor: Type K (NiCr-Ni)
- Accuracy: (HND-T120): 1 ... 1.5 % of reading
- Accuracy: (HND-T120): ± 0.2 of full scale
 ± 0.05 ... 0.1 % of reading



DTM

Digital Thermometer

Stainless steel



- Measuring range: -30 ... +400 °C
- $p_{\max}$ 25 bar
- Connection: G 1/2 ... 1, 1/2 ... 1" NPT
- Analogue output, 2/4 limit contacts
- Accuracy: Cl. 0.5

TSA

Temperature Sensor

Brass, stainless steel



- Measuring range: -40 ... +150 °C
- $t_{\max}$ 150 °C; $p_{\max}$ 25 bar
- Connection: G 1/4 ... 1, 1/4 ... 1" NPT
- Accuracy: from 0.7 °C

TNK

Resistance Thermometer

Brass, bronze, stainless steel



- Measuring range: -80 ... +150 °C
- $t_{\max}$ 150 °C; $p_{\max}$ 50 bar
- Connection: M18x1.5; G 1/2; 1/2" NPT
- Accuracy: Cl. A or B



MMA + AUF + KUG - S

Screw-In Resistance Thermometer

Stainless steel



- Measuring range: -200 ... +400 °C (configurable)
- $p_{\max}$ 36 bar
- Accuracy: <0.5 % of span

LTS - A / K

Resistance Temperature Probe with Connection Box



- Measuring range: -50 ... +250 °C
- $p_{\max}$ 10 bar
- Connection: G 1/2, M12x1.5 male, hygienic installation system LZE
- Pt100, 4 ... 20 mA
- Accuracy: Cl. A



KM - 1 / - 3 / - 6

Temperature Transducer-Head, Rail or Wall Mounting



- Measuring range: -200 ... +250 °C ... -50 ... +1768 °C
- Input: RTD, TC, Ω , mV
- Analogue output





Temperature Indicators

MWD

Industriel - Resistance Thermometer

Stainless steel



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



DTE

Digital Thermometer

Stainless steel



- Measuring range: -200 ... +250 °C
- $p_{\max}$ 34 bar
- Display: 6-digit, LCD
- Connection: compression fitting G 1/4 ... 1/2, 1/4" ... 1/2" NPT
- Accuracy: ± 0.1 % measured value ± 0.2 °C



TWE

Screw-In Resistance Thermometer

Stainless steel



- Measuring range: -20 ... +600 °C
- Connection: G 1/4, G 1/2, M 10
- Accuracy: Cl. A or B



TWM / TWA

Sheath - Contact Resistance Thermometer

Stainless steel



- Measuring range: -20 ... +600 °C
- Accuracy: Cl. A or B



TWL

Resistance Temperature Measuring Unit

Stainless steel



- Measuring range: -80 ... +600 °C
- $p_{\max}$ 250 bar
- Connection: thread, flange, weld-in sleeve
- Pt 100, 4 ... 20 mA
- Accuracy: Cl. A or B



TWL - ST

Room Thermometer

Aluminium



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



TTL

Immersion Thermocouples

Stainless steel, Alloys



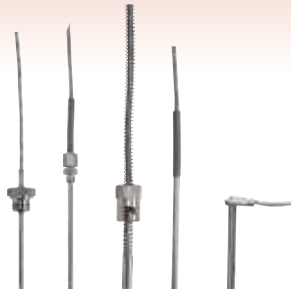
- Measuring range: -200 ... +1100 °C
- $p_{\max}$ 250 bar
- Connection: thread, flange, weld-in sleeve
- 4 ... 20 mA
- Accuracy: Cl. 1.0 or 2.0



TTE

Screw-In Thermocouples with Compensating Lead

Stainless steel



- Measuring range: -200 ... +600 °C
- Connection: G 1/2, M 10 x 1
- Accuracy: Cl. 1.0



APM - 1

Transmitter for pH-Value and ORP



- Outputs: 1 binary output, 2 analogue outputs
- Switch output: 2 relays with adjustable setpoints

APS

pH-Combined Electrodes

Glass, plastic



- Measuring range: pH 0...14
- $t_{\max}$ 135 °C; $p_{\max}$ 10 bar
- Diaphragm: PTFE-ring, ceramic

HND - R

pH-, Redox- and Temperature Hand-Held Measurement



- Measuring range: pH: 0...14;
- Redox: -1999...+2000 mV
- Temperature: -5...+150 °C
- Accuracy: ± 0.01 pH; ± 0.1 % of full scale



ACM - 1

Transmitter for Specific Conductivity



- Measuring range: 0...200 mS/cm
- Outputs: 1 binary output, 2 analogue outputs
- Switch output: 2 relays with adjustable setpoints

ACS

Conductive/Inductive Conductivity Measuring Cells

Stainless steel, graphite



- Measuring range: 0,05 μ S/cm...15 mS/cm
- $t_{\max}$ 135 °C; $p_{\max}$ 16 bar
- Process connection: G 3/4 male thread



LCI

Inductive Conductivity Measuring System

PEEK, PVDF, stainless steel



- Measuring range: 0...2000 mS/cm
- $t_{\max}$ 140 °C; $p_{\max}$ 10 bar
- integrated Pt 100
- Accuracy: ± 0.5 - 1 % of full scale



HND - C

Hand-Held Conductivity Measuring Unit



- Measuring range: 0...200 μ S/cm - 0...200 mS/cm
- Resistance, salinity, TDS
- Accuracy: from ± 0.1 %



AFK - G2

Humidity/Temperature Transmitter



- Measuring range: 0...100 % rH; -60...+200 °C
- $t_{\max}$ 200 °C; $p_{\max}$ 25 bar
- Outputs: 2 x 4...20 mA
- Accuracy: ± 2 % rH

AFA - G

Humidity Transmitter with Display



- Measuring range: 5...95 % rH; 0...60 °C
- $t_{\max}$ 80 °C
- Outputs: 4...20 mA
- Accuracy: ± 2 % rH

AFK - E

Humidity/Temperature Measurement



- Measuring range: 0...100 % rH; -40...+180 °C
- $t_{\max}$ 180 °C; $p_{\max}$ 15 bar
- Outputs: analogue outputs and switches
- Accuracy: ± 1.6 % of reading % rH

AFS - G

Hygrostat, Humidity Annex Switch



- Measuring range: 30...100 % rH
- $t_{\max}$ 60 °C
- Switch output: 1 SPDT
- Accuracy: 3 % rH

HND - F

Hand-Held Humidity Precision Measuring Unit



- Measuring range: 0...100 % rH
- integrated Pt 1000
- Accuracy: ± 0.1 - 0.2 %



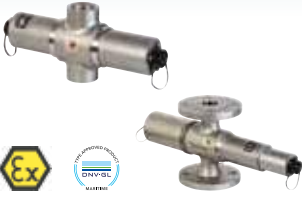


Analysis / Assemblies

ATA - K, ATS - K

Turbidity Measuring System

Stainless steel



- Measuring range: 0 ... 500 ppm; 0 ... 4 CU, 0 ... 10 - 200 FTU
- $t_{\max}$ 150 °C; $p_{\max}$ 16 bar
- Outputs: 4 ... 20 mA
- Accuracy: $\pm 2\%$ of full scale

ATL

Turbidity Probe

Stainless steel

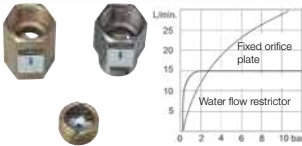


- Measuring range: 0 ... 500 ppm; 0 ... 4 CU
- $t_{\max}$ 90 °C; $p_{\max}$ 10 bar
- Outputs: 4 ... 20 mA
- Accuracy: $\pm 2\%$ of full scale

REG

Flow Restrictors

Brass, stainless steel



- Viscosity range: 1 - 30 mm²/s
- Water: 0,5 - 40 l/min
- $t_{\max}$ 300 °C; $p_{\max}$ 200 bar
- G 1/2, G 3/4, 3/4" NPT

REG - 9

Flow Restrictors - Multiple Element

Brass, stainless steel



- Viscosity range: 1 - 30 mm²/s
- Water: 1 - 280 l/min
- $t_{\max}$ 300 °C; $p_{\max}$ 200 bar
- Connection: G 1 1/2 ... 2 1/2

KUG - VO, -VK

Flange - Ball Valves

Grey cast iron, stainless steel



- $t_{\max}$ 180 °C; $p_{\max}$ PN 40
- Flange DN 15 ... 200 according to DIN 3202 F4/5

KUP - KA, -VN, -ZA, -VH, -PD

Ball Valves with Pneumatic Actuator

Brass, stainless steel



- $t_{\max}$ 120 °C; $p_{\max}$ PN 16
- G 1/2 ... 4 female thread
- Control pressure: 6 - 8 bar
Single or double acting
- T- and L-bore

ATT - K

Transmitter for Turbidity Measuring System



- Outputs: 4 ... 20 mA
- Switch output:
2 alarm contacts (potential-free SPDT),
1 Alarm (lamp and function control)

DWF

Density Meter

Stainless steel



- Measuring range: 700 ... 1900 g/l
- $t_{\max}$ 150 °C
- Process connection: flange DN 25 ... 50, ANSI 1 ... 2"
- Option: transmitter contacts



REG - 8

Flow Restrictors - Multiple Element

Brass, stainless steel



- Viscosity range: 1 - 30 mm²/s
- Water: 1 - 280 l/min
- $t_{\max}$ 300 °C; $p_{\max}$ 200 bar
- Flange DN 20 ... 50

KUG - TB, -AG, -IK, -VN, -VL, -KUG, -ZE, -ZF, -ZG, -PD

Ball Valves

Brass, stainless steel



- $t_{\max}$ 180 °C; $p_{\max}$ PN 64
- G 1/4 ... 4 female thread
- hand level, 1, 2 and 3 piece versions

KUG - S

Ball Valves Shut-off for Measuring Device

Brass, stainless steel



- $t_{\max}$ 120 °C; $p_{\max}$ PN 25
- G 1/2 ... 2 female thread
- Sensor support: G 1/4, G 1/2

KUP - VO, -VK

Flange Ball Valves with Pneumatic Actuator

Grey cast iron, stainless steel



- $t_{\max}$ 160 °C; $p_{\max}$ PN 16
- Flange DN 15 ... 200
- Control pressure: 6 - 8 bar
Single or double acting



KUP - RE

Accessories for Pneumatic Actuator



3/2- and 5/2-way solenoid valve several volgates, mechanical limit switch and proximity switch

KLP

Butterfly Valves with Pneumatic Actuator

Aluminium, GGG-40



- t_{max} 160 °C; p_{max} PN 16
- Flange DN 40 ... 300
- Seals: EPDM, FKM
- Control pressure: 6 - 8 bar
- Double acting or spring resetting

KLA

Butterfly Valves

Aluminium, GGG-40



- t_{max} 180 °C; p_{max} PN 16
- Flange DN 40 ... 300
- Seals: NBR, FKM, PTFE

NAD - AC

Needle Valve

Brass



- t_{max} 100 °C; p_{max} PN 100
- $G \frac{1}{8}$... 2 female thread

NAD - M, - Z

Needle Valve

Stainless steel



- t_{max} 400 °C; p_{max} PN 250
- $G \frac{1}{8}$... 1 1/4, $\frac{1}{2}$... 1" NPT

NAD - AD, - BE

Angle Seat Valves

Brass, stainless steel



- t_{max} 180 °C; p_{max} PN 16
- $G \frac{1}{8}$... 3 female thread

NAD - AB, - BF

Outlet Globe Valves

Brass, stainless steel



- t_{max} 130 °C; p_{max} PN 16
- $G \frac{1}{4}$... 3

KUR - TD, - MR

Check Valves

Red cast iron, brass, stainless steel



- t_{max} 110 °C; p_{max} PN 25
- $G \frac{1}{4}$... 4 IG

MFR

Threaded Magnetic Filter

Bronze, brass



- t_{max} 200 °C; p_{max} PN 16
- $R \frac{1}{2}$... 3 female thread
- Filter grade: 280 μ m

MFR - IG, - EA

Magnetic Filter Dirt Trap

Brass, stainless steel



- t_{max} 180 °C; p_{max} PN 40
- $G \frac{3}{8}$... 2 female thread
- Filter grade: 250 μ m

MFF

Flange Magnetic Filter

Grey cast iron



- t_{max} 200 °C; p_{max} PN 16
- $R \frac{1}{2}$... 3, soldering connection 22 ... 35 mm, flange DN 50 ... 200
- Filter grade: 750 μ m

MSR

Pulse - Contact Protection Relay



- Input: potential-free contacts
- Output: 1 or 2 relays, SPDT



Control Devices and Relays

KFD - 2 / KFA - 6

Isolation Switching Amplifier for Initiators



- Input: Initiators (Namur), potential-free contacts
- 1 relay, SPDT



DAG - A / S / M

Digital - Panel Mount - Indicators



- Input: current, voltage, temperature, frequency, resistance
- Analogue output
- Limit contacts
- Min/Max-memory



AUF

Sandwich Plug-On Display



- Input: 4-20 mA ; 2-wire or 3-wire
- 4-digit red LED, without additional power supply
- Option: Open-Collector, various colours



ADI - 1

Universal Indicator



- Input: current, voltage, frequency
- Analogue output
- 2 limit contacts
- Sensor supply



ADI - 1...S

Universal Indicator



- Input: current, voltage, frequency
- Analogue output
- 2 limit contacts
- Sensor supply



ZOK

Industrial Dosing, Counter and Flow Indicator



- Input: frequency
- Analogue output
- Limit contacts
- Sensor supply
- Battery powered



ZOE

Industrial Counter and Flow Indicator



- Input: frequency
- Pulse output
- Sensor supply
- Battery powered



ZED - K

Electronic for Measuring and Monitoring



- Input: frequency
- Analogue output
- 2 limit contacts
- Sensor supply

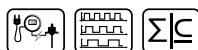


ZED - D / Z

Batch Controller / Counter Electronics



- Input: frequency
- Analogue output
- 2 limit contacts
- Sensor supply



DAG - Z2

Counter Electronics / Batch Controller



- Input: frequency
- Limit contacts
- Sensor supply



DAG - T4

Universal Panel Meter



- Input: current, voltage, Pt 100, thermocouples
- Limit contacts
- Sensor supply



ZLS - 2

Electronic Multi - Channel Data Logger



- Input: 0 - 5(10) V / 0(4) - 20 mA or thermocouples / Pt 100, Pt 500, Pt 1000
- Interface
- Sensor supply



Model Register

Model	Page	Model	Page	Model	Page	Model	Page	Model	Page
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