

PRODUCT SUMMARY



Magnetic Inductive Flow Meter



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Magnetic Inductive Flow Meter



Ultrasonic Flow Meter



Magnetic Inductive Flow Meter



Positive Displacement Oval Gear Flow Meter



Digital Pressure Gauge



Bypass Level Gauge



Bimetal Temperature Switch

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



Home plant in Hofheim near Frankfurt, Germany

Founded in 1980 by Dipl.-Ing Klaus J. Kobold, KOBOLD is a global leader in the field of measurement and control technology. The KOBOLD brand is characterized by patented technology, high quality products, and exceptional customer service.

advance the field of instrumentation. They also work directly with customers to develop customized solutions for their exact needs and can create and build what other companies cannot.

From offices and production facilities in over 30 countries KOBOLD develops, manufactures, and distributes instrumentation for measuring, monitoring, and controlling flow, pressure, level, and temperature. Experienced engineers from a wide range of industrial sectors and disciplines develop ideal application solutions and

With such expertise and the ability to develop, manufacture, sell, and support the products, KOBOLD is uniquely positioned to quickly meet the changing needs of various industries with excellence.

Product categories

Flow
3 - 20

Temperature
36 - 38

Pressure
21 - 27

Analysis
39 - 40

Level
28 - 35

Accessories
40 - 42

Feature Icons

- QR code for product information
- 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
- Universal electronics
- Configurable outputs
- Operational with gloves
- Temperature and pressure measurement
- Temperature and flow measurement
- Energy measurement
- Space saver
- NFC



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 - 2.4 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/brass, acrylic/stainless steel



- Water: 10 - 100 cm³/min ... 1 - 10 l/min
- Air: 0.04 - 0.5 ... 100 - 700 l/min
- t_{max} 65 °C; p_{max} 6.5 bar
- Connection: 1/8" NPT, 1" NPT female thread
- Accuracy: $\pm 2... \pm 5\%$ of full scale



KSK

Variable Area - Plastic

Trogamide®, polysulfone



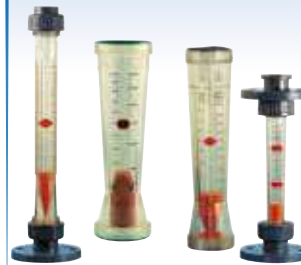
- Water: 1.5 - 11 l/h ... 100 - 1000 l/h
- Air: 0.15 - 0.45 ... 20 - 105 Nm³/h
- t_{max} 140 °C; p_{max} PN 10
- Connection: G 1/4 ... 1 female thread, glue-in connection
- Accuracy: cl. 4 according to VDI



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, downstream pressure regulator, panel mounting, wall mounting



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 nozzle 8 mm
- Accuracy: $\pm 2.5\%$ $q_G = 50\%$
- Option: inductive contacts, downstream pressure regulator, panel mounting, wall mounting



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: $\pm 2... \pm 2.5\%$ $q_G = 50\%$





Flow Meters/Switches/Controllers

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 1/2 ... 1 1/4 male/female thread
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



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 3/8, G 1/2 female thread
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



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} 10 bar
- Connection: loose flange DN 15 ... 40
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



V31

Variable Area - Glass Cone

Stainless steel, PVDF, PVC



- Water: 3 - 30 l/h ... 1000 - 10000 l/h
- Air: 36 - 360 NI/h ... 18 - 180 Nm³/h
- t_{max} 80 °C; p_{max} 15 bar
- Connection: G 1/4 ... 2 female, flange DN 10 ... 65, ANSI 1/2 ... 2 1/2"
- Accuracy: $\pm 1.6... \pm 2.5\%$ $q_G = 50\%$
- Option: up to 2 switching contacts



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 1/2 ... 3"
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



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 1/4, G 3/8, 1/4" NPT, 3/8" NPT female, hose \varnothing 10, \varnothing 13, \varnothing 15 mm
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



UTS

Variable Area - Glass Cone (for gas burners)

Brass, stainless steel



- Air: 10 - 100 NI/h ... 0.3 - 3 Nm³/h
- t_{max} 65 °C; p_{max} 3 bar
- Connection: M 18x1.5, G 1/4, 1/4" NPT
- Accuracy: $\pm 2... \pm 2.5\%$ $q_G = 50\%$



KDS

Variable Area - Low Volume

Stainless steel



- Water: 0.1 - 1 l/h ... 20 - 200 l/h
- Air: 3 - 30 NI/h ... 600 - 6000 NI/h
- t_{max} 130 °C; p_{max} PN 40/63
- Connection: 1/4" NPT female thread
- Accuracy: $\pm 3\%$ $q_G = 50\%$
- Options: analogue output 4 - 20 mA, inductive contacts, downstream pressure regulator





DSV

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: $\pm 4\%$ of full scale



SWK

Variable Area - Low Volume

Brass, stainless steel, PVC

Switch
SWK-11



Meter/Switch
SWK-22



Switch
SWK-13



- Water: 0.05 - 1 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 ½ female thread
- Accuracy: $\pm 4\%$ of full scale



BGK

Variable Area - Low Volume

Stainless steel



- Water: 0.1 - 1 l/h ... 20 - 200 l/h
- Air: 3 - 30 NI/h ... 600 - 6000 NI/h
- t_{max} 130 °C; p_{max} PN40 (higher on request)
- Connection: DN 10, DN 15, DN 25, ANSI ½", ¾", 1"
- Accuracy: $\pm 3\%$ $q_G = 50\%$
- 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: 0.03 - 0.19 ... 290 - 2900 Nm³/h
- t_{max} 350 °C; p_{max} PN40 (higher on request)
- Connection: flange DN 15 ... 150, ANSI ½" ... 6", thread, special connections
- 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: 0.03 - 0.19 ... 290 - 2900 Nm³/h
- t_{max} 350 °C; p_{max} 600 bar
- Connection: flange DN 15 ... 150, ANSI ½" ... 6", thread, special connections
- Accuracy: $\pm 1.6... \pm 2.2\%$ $q_G = 50\%$
- Options: analogue output, BUS-Interface, heating jacket, contacts



BGF

Variable Area - Mounting Position Independent

Stainless steel, PTFE/stainless steel, special material on request



- Water: 10 - 100 l/h ... 6000 - 60000 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 ½" ... 3", thread, special connections
- Accuracy: $\pm 2\%$ $q_G = 50\%$
- Options: analogue output, BUS-Interface, heating jacket, contacts





Flow Meters / Switches

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 ¼ ... 1 ¼, ¼ ... 1 ¼" 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 ¼ ... 1 ¼, ¼ ... 1 ¼" NPT female thread
- Accuracy: $\pm 5\%$ of full scale



SMO / SMW

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 ¼ ... 1, ¼ ... ¾" NPT female thread
- Accuracy: $\pm 5\%$ of full scale



SMN

Variable Area Switch

Brass, stainless steel



- Water: 1 - 100 l/min
- Fixed Switch point at ~ 1 l/min falling flow
- t_{max} 100 °C; p_{max} **350 bar**
- Connection: 1" NPT, G1 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 ½, G ¾ female/male thread, G1, 1" NPT male thread soldered or glue-in connection
- Accuracy: $\pm 5\%$ of full scale



VKG

Viscosity Compensated

Brass, stainless steel

...VKG



...VKG + BVB



- 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 ¼ ... 1, ¼ ... 1" NPT
- Accuracy: $\pm 4\%$ of full scale





VKM

Viscosity Compensated

Brass, stainless steel

...VKM



...VKM + BVB



...VKM + ADI



- 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 ¼ ... 1, ¼ ... 1" NPT
- Accuracy: ± 4 % of full scale

BVB

Manifold Valves for Multiple Installation

Aluminium



- t_{max} 100 °C; p_{max} PN 64
- Connection: G ½ 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 ¼ ... 1 ½, ¼ ... 1 ½" 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 ½, ½" NPT male thread

PPS

Paddle Switch

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: ± 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 ½, G ¾ female thread, R 1, 1" NPT male thread



Flow Meters / Switches

DPT

Paddle Torsion - Meter / Switch

Brass, stainless steel

Compact Electronics
...C3



Digital Display
...K



- Water: 5 - 30 l/min ... 850 - 1900 l/min
- t_{max} 80 °C; p_{max} PN 40
- Connection: G 3/8 ... 3, 3/4 ... 3" NPT female
- Accuracy: $\pm 3\%$ of full scale



TSK

Flap Meter / Switch

Steel, stainless steel, PTFE, Hastelloy®



- Water: 0.5 - 3.5 m³/h ... 200 - 1500 m³/h
- t_{max} 300 °C; p_{max} PN 40
- Connection: wafer flange DN25 ... 500, ANSI 1 ... 20"
- Accuracy: from $\pm 2.5\%$ of full scale
- Option: Analog output, switching output BUS - interfaces



DRS

Turbine Wheel - ...

Brass, stainless steel, PPO

Pulse Output
...S0



Analogue Output
...L3



... L4 + AUF

Compact Electronic
...C3



Counter
...+ ZED



- Water: 2 - 40 l/min
- t_{max} 150 °C; p_{max} 200 bar
- Connection: G 1/2, G 3/4, 3/4" NPT
- Accuracy: from $\pm 1.5\%$ of full scale



max 150 °C

max 150 °C



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



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 1/2 ... 3, 1/2 ... 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



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 1/2 ... 3, 1/2 ... 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} 630 bar
- Connection: G 1/4 ... 1 1/2 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 3/8
- Accuracy: $\pm 1\%$ of full scale

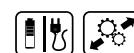
DOT

Turbine Wheel

Stainless steel



- Water: 0.11 - 1.1 m³/h ... 270 - 2700 m³/h
- t_{\max} 120 °C; p_{\max} 250 bar
- Connection: G 1/2 ... 2, 1/2 ... 2" NPT, flange DN 15 ... 300
- Accuracy: $\pm 0.5\%$ (linearity)





Flow Meters / Switches

KFF-1 / KFG-1

Rotating Vane - Low Volume

Brass, Ryton®



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



KFF-3 / KFG-3

Rotating Vane - Low Volume

Brass, Ryton®



- Water: 13 - 100 ml/min ... 0.25 - 5 l/min
- Air: 10 - 50 Nml/min ... 2 - 10 L_N/min
- t_{max} 50 °C; p_{max} 35 bar
- Connection: hose connection 1/8" ... 1/2"
- Accuracy: ± 3% of full scale



DPM

Rotating Vane - Low Volume - ...

Brass, stainless steel

Pulse Output
...F5



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



Compact Electronics
...C3



Counter
...+ ZED



- Water: 0.015 - 0.7 l/min ... 0.05 - 5 l/min
- t_{max} 80 °C; p_{max} 16 bar
- Connection: G 1/8, G 1/4, 1/8" NPT, 1/4" NPT female thread
- Accuracy: ± 1 ... ± 2.5 % of full scale

DPL

Rotating Vane - Low Volume - ...

Polypropylene

Pulse Output
...F5



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



Compact Electronic
...C3



Counter
...+ ZED



- Water: 0.025 - 0.5 l/min ... 1 - 25 l/min
- t_{max} 70 °C; p_{max} 10 bar
- Connection: G 1/2 male thread, hose nozzle
- Accuracy: ± 2.5 % of full scale

DF

Rotating Vane - ...

Trogamide®, 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: ± 2.5 % of full scale



Flow Meters / Switches

DFT

Rotating Vane - ...

Brass, PTFE
Pulse Output
11



Pulse Output
13



Counter/Dosing Electronic
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



Digit Disp / Counter / Dosing
...E / G



- 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, 3/8" 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



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, 1/2 ... 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



Flow Meters / Switches

OVZ

Oval Wheel - ...

POM, aluminium
Pulse Output
...I4



Analogue Output
... L4 + AUF



Compact Electronics
...C3



Dosing Electronics
...+ ZED



- Viscosity range: 10 - 800 mm²/s
- Oil: 0.1 - 2.0 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: ± 2.5 % of full scale

DON

Oval Wheel - ...

Aluminium, stainless steel
Pulse- / Analogue Output



IO-Link

Digital Display
...ZOK



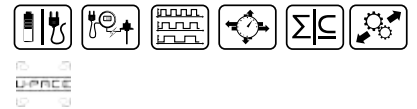
Universal Electronics
...U-PACE



High Pressure
...H



- Viscosity range: Up to 1 000 000 cP
- Oil: 0.5 - 36 l/h ... 150 - 2500 l/min
- t_{max} 150 °C; p_{max} 400 bar
- Connection: G 1/8 ... 4 female thread, 1/8" ... 4" NPT female thread, flange DN25 ... 100, ANSI 1 ... 4"
- Accuracy: ± 0.2 ... ± 1 % of reading



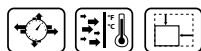
DOE

Oval Wheel - Pulse Output (OEM Version)

Stainless steel



- Viscosity range: up to 1000 cP
- Oil: 0.5 - 36 l/h ... 1 - 40 l/min
- Connection: G 1/2, G 1/4, 1/2" NPT, 1/4" NPT female
- Accuracy: ± 1 % of reading



OME

Screw Spindle - Meter

Aluminium



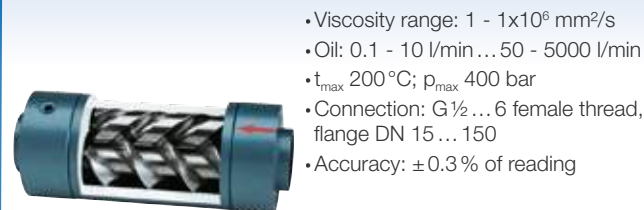
- Viscosity range: 1 - 5000 mm²/s
- Oil: 0.1 - 10 l/min ... 3.5 - 350 l/min
- t_{max} 125 °C; p_{max} 40 bar
- Connection: G 1/2 ... 1 1/2 female thread, flange DN 15 ... 40
- Accuracy: ± 0.1 % of reading



OMG / OMH / OMK

Screw Spindle - ...

Cast iron, stainless steel



- Viscosity range: 1 - 1x10⁶ mm²/s
- Oil: 0.1 - 10 l/min ... 50 - 5000 l/min
- t_{max} 200 °C; p_{max} 400 bar
- Connection: G 1/2 ... 6 female thread, flange DN 15 ... 150
- 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 1/8 ... 1 female thread
- Accuracy: ± 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 ¼ ... 1 female thread
- Accuracy: $\pm 0.3... \pm 3\%$ 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 ¼, G ½, ¼" NPT, ½" NPT, M12x1



KAL

Calorimetric - Meter/Switch

Stainless steel

Indicator
...K



Meter
...A(K)



- Water: 0.04 - 2 m/s
- t_{max} 120 °C; p_{max} 100 bar
- Connection: G ¼ ... 1½, ¼ ... ¾" NPT, M12, Tri-Clamp®
- Accuracy: $\pm 10\%$ of full scale [A(K)]



KAL / KAL - E

Calorimetric - Meter/Switch

Brass, stainless steel



- Water: 0.04 - 2 m/s
- t_{max} 120 °C; p_{max} 100 bar
- Connection: G ¼ ... 1½, ¼ ... ¾" NPT, M12x1



KAL - L

Calorimetric - Switch

Brass



- Air: 1 - 20 m/s
- t_{max} 120 °C; p_{max} 8 bar
- Connection: G ½, Rp ½, M18, flange, smooth shaft
- Accuracy: $\pm 10\%$ of reading



DVK

Calorimetric - Meter/Switch

Stainless steel



- Air: 1 - 10 NI/min ... 50 - 500 NI/min
- t_{max} 50 °C; p_{max} 15 bar
- Connection: G ¼ ... ½
- Accuracy: $\pm 5\%$ of full scale



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: $\pm (0.2 \text{ m/s} + 3\% \text{ of reading})$





Flow Meters / Switches / Controllers

MAS

Mass - Flow Meter - 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: $\pm 1.5\%$ of full scale



MAK

Thermal Mass Flow Meter

Stainless steel



- Measuring range: 0 - 10 Nml/min ... 0 - 500 Nl/min
- t_{max} 50 °C; p_{max} 6 bar
- Connection: 1/4" NPT, 1/4" - 1/2" clamp connection
- Accuracy: $\pm 1.5\%$ of full scale
- Option: Needle Valve
- Selectable gases
- Analogue output (selectable), Counter, Modbus



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: $\pm 1\%$ of full scale



KET

Mass - Flow Meter - Thermal

Aluminium, stainless steel



- Measuring range: 0.1 - 50 ... 0.1 - 224 m/s
- t_{max} 80 °C; p_{max} 40 bar
- Connection: G 1/2 ... 2, 1/2 ... 2" NPT female
- Accuracy: $\pm 1.5\%$ of reading (Option: $\pm 1.0\%$ of reading) $\pm 0.3\%$ of full scale



KEP-1

Thermal Mass Flow Meter

Stainless steel



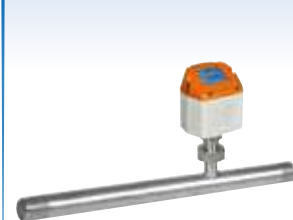
- Air: 0.1 - 50 ... 0.1 - 224 m/s
- t_{max} 110 °C; p_{max} 50 bar
- Connection: G 1/2, 1/2" NPT male
- Accuracy: $\pm 1.5\%$ of reading (Option: $\pm 1.0\%$ of reading) $\pm 0.3\%$ of full scale



KEP-2

Thermal Mass Flow Meter

Stainless steel



- Air: 0.1 - 50 ... 0.1 - 224 m/s
- t_{max} 110 °C; p_{max} 40 bar
- Connection: G 1/4 ... 2, 1/4 ... 2" NPT male thread, flange DN 15 ... 80, ANSI 1/2 ... 3"
- Accuracy: $\pm 1.5\%$ of reading (Option: $\pm 1.0\%$ of reading) $\pm 0.3\%$ of full scale



KEC-1

Mass - Flow Meter - Thermal

Stainless steel



- Air: 0.1 - 50 ... 0.1 - 224 m/s
- t_{max} 180 °C; p_{max} 100 bar
- Connection: G 1/2, 1/2" NPT male thread, flange DN 15 ... 80
- Accuracy: $\pm 1.5\%$ of reading (Option: $\pm 1.0\%$ of reading) $\pm 0.3\%$ of full scale



KEC-2

Mass - Flow Meter - Thermal

Stainless steel



- Air: 0.1 - 50 ... 0.1 - 224 m/s
- t_{max} 180 °C; p_{max} 40 bar
- Connection: G 1/4 ... 2, 1/2 ... 2" NPT male thread, flange DN 15 ... 80, ANSI 1/2 ... 3"
- Accuracy: $\pm 1.5\%$ of reading (Option: $\pm 1.0\%$ of reading) $\pm 0.3\%$ of full scale





KME

Mass-Flow Meter - Thermal

Aluminium



- Air: 0.2 - 76.3 ... 2.2 - 848.2 Nm³/h
- t_{max} 60 °C; p_{max} 16 bar
- Connection: G 1/2 ... 2, 1/2 ... 2" NPT male thread
- Accuracy: $\pm 3\%$ of reading + 0.3 % of full scale



TMU - W

Coriolis Mass (for H2 filling stations and high pressure applications)

Stainless steel



- Measuring range: max. 4 kg/min H2 (p_{nom} 1000 bar)
- Temperature range: -40 ... +100 °C (H2 dispenser -40 ... +55 °C)
- p_{max} up to 1000 bar
- Connection: 6MF 9/16-18 UNF (optional: 1/2" NPT (female); Hofer 7/8")
- Accuracy: $\pm 0.5\%$ actual flowrate \pm zero-point stability (gases)



HPC

Coriolis Mass - Mini

Stainless steel



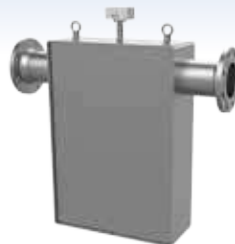
- Measuring range: 0 - 20 kg/h ... 0 - 50 kg/h
- t_{max} 180 °C; p_{max} PN 100/PN 320/PN 400
- Connection: G 1/2, 1/2" NPT, 6/8/10mm Gyrolok®/Swagelok®
- Accuracy: $\pm 0.1\%$ of reading +/- zero point stability



TMU/UMC - 4

Coriolis Mass

Stainless steel, Hastelloy®



- Water: 60 - 600 ... 400 000 - 2 200 000 kg/h
- t_{max} 260 °C; p_{max} PN 40 (up to 750 bar on request)
- Connection: flange DN 10 ... 400, ANSI 1/2 ... 16"
- Accuracy: $\pm 0.1\%$ of reading



TMU - ... AC

Coriolis Mass with Heating

Stainless steel, Hastelloy®



- Water: 60 - 600 ... 400 000 - 2 200 000 kg/h
- t_{max} 260 °C; p_{max} PN 40
- Connection: flange DN10 ... 400, ANSI 1/2 ... 16"
- Accuracy: $\pm 0.1\%$ of reading



KPL

Orifice Plate - Differential Pressure

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



- Ranges: for liquids, gases, steam according to ISO 5167 - 1
- Connection: DN 50 ... 600, ANSI 2 ... 24"
- t_{max} 500 °C; p_{max} PN 420/cl. 2500





Flow Meters / Switches

KPL-B/-F

Orifice Plate - Differential Pressure

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



- Ranges: for liquids, gases, steam according to ISO 5167 - 1
- Connection: DN 50 ... 600, ANSI 2 ... 24"
- t_{max} 500 °C; p_{max} PN 420/cl. 2500



ANU

Pitot Tube - Differential Pressure

Stainless steel



- Connection: G 1 ... 1½, 1 ... 1½" NPT, DN 25 ... 80, ANSI 1 ... 3"
- Probe length: 50 ... 8000 mm (2 ... 315")
- t_{max} 1175 °C; p_{max} 400 bar



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 ½ ... 3, ½ ... 3" NPT female thread
- Accuracy: $\pm 3\%$ of full scale



MIK

Magnetic Inductive - ...

PPS/stainless steel, PVDF/Hastelloy®, PPS/Hastelloy®, PVDF/tantalum

Pulse Output ...F3



IO-Link

Analogue Output ... L4 + AUF



Monitor ...S3



Universal Electronics ...U-PACE



- Water: 10 - 500 ml/min ... 35 - 700 l/min
- t_{max} 80 °C; p_{max} 10 bar
- Connection: G ½ ... 2¾ male thread
- Accuracy: $\pm 2\%$ of full scale





MIM

Magnetic Inductive - All-Metal Design

Stainless steel

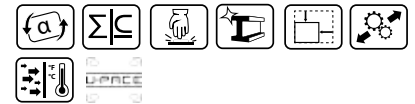
-40... 140 °C



IO-Link



- Water: 10 - 1000 ml/min ... 3 - 650 l/min
- t_{max} 140 °C; p_{max} 16 bar
- Connection: G 1/2 ... 2 male thread, NPT
- Accuracy: $< \pm(0.8\%$ of reading +0.5% of full scale)



MIS

Magnetic Inductive - All-Metal Design

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



IO-Link



- Water: 0 - 10 m/s
- t_{max} 70 ° (130 °C); p_{max} 16 bar
- Connection: DN 80 ... 200, ANSI 3 ... 8" (larger on request)
- Accuracy: $< \pm(0.5\%$ of reading +0.5% of full scale)



PIT

Magnetic Inductive - Insertion

Stainless steel/PTFE- or PFA-lining



- Water: 0.5 - 5 m/s or 1 - 10 m/s
- t_{max} 140 °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
- IP 68
- Option: single dismantling device, dismantlable under pressure



PITe

Magnetic Inductive - Insertion

Stainless steel



- Water: 1 - 10 m/s
- t_{max} 100 °C; p_{max} PN 16
- Connection: weld-on nozzle $\varnothing 40$ mm, sensor with union nut M52 x 2 for pipelines DN 50 ... 400, ANSI 2 ... 16"
- IP 68
- Accuracy: $\pm 1.5\%$ of reading



EPS

Magnetic Inductive

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



- Water: 1 - 10 m/s
- t_{max} 150 °C; p_{max} PN 40
- Connection: flange DN 15 ... DN 1200, ANSI 1/2 ... 48", wafer type DN2 ... DN10, ANSI 1/2 ... 3/8", sanitary DN10 ... DN100, ANSI 3/8 ... 4"
- Accuracy: $\pm 0.3\%$ of reading





Flow Meters / Switches

DVH

Vortex - Meter

Stainless steel



- Water: max. 9.2 m/s
- Air/steam: max. 92 m/s
- t_{max} 400 °C; p_{max} PN 100; T_{min} -200 °C
- Connection: DN 15 ... 300, ANSI 1/2 ... 12"
- Option: integrated temperature and pressure sensor, wafer type
- Accuracy: $\pm 0.7\%$ of reading (water)
 $\pm 1\%$ of reading (gas/steam)



DVE

Vortex - Meter - Insertion Version

Stainless steel



- Water: max. 9 m/s
- Air/steam: max. 90 m/s
- t_{max} 400 °C; p_{max} PN 100
- Connection: 2" NPT, DN 50, ANSI 2" mountable in NW 50 ... NW 600
- Option: integrated temperature and pressure sensor, Installation/removal device
- Accuracy: $\pm 1.2\%$ of reading (water)
 $\pm 1.5\%$ of reading (gas/steam)



DVZ

Vortex - Compact...

PPS/brass, PPS/stainless steel

Pulse Output ...F3

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

Universal Elec. ...U-PACE

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



IO-Link



DOG - 4 / DOG - 6

Oscillation - Meter / Switch

Stainless steel



- Air: 0.12 - 12 m³/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: $\pm 1.5\%$ of reading
- Analogue output
- Pulse output, counter, flow computer

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



DUC

Ultrasonic Flowmeter - Clamp on

Stationary · portable



- Media: 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%





DUK

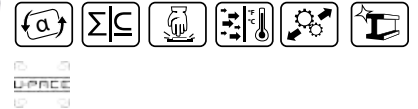
Ultrasonic - ...

Brass, stainless steel
Pulse Output
...F3

Analogue Output
... L4 + AUF

Universal Electronics
...U-PACE

- Water: 0.08 - 20 l/min ... 2.5 - 630 l/min
- t_{max} 90 °C; p_{max} 16 bar
- **Turndown 250:1**
- Connection: G 1/2 ... 3 female thread
- Accuracy: $\pm 0.7\%$ of full scale
 $\pm 0.7\%$ of reading

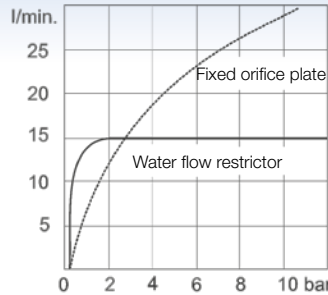


IO-Link

REG

Flow Restrictor

Brass, stainless steel



- Water: 0.5 - 560 l/min
- t_{max} 300 °C; p_{max} 200 bar
- Connection [single element]:
G 1/2, G 3/4, 1/4" NPT
- Connection [multiple elements]:
G 1 1/2 ... 2 1/2 flange DN 20 ... 100



DAA / DAH

Flow Indicator with Rotor

Brass, stainless steel

- Water: 0.4 - 4 l/min ... 8 - 100 l/min
- t_{max} 180 °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

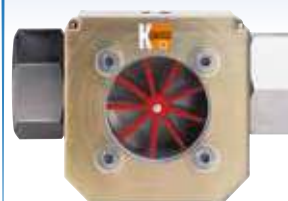


DIH

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 3/8, G 1 female thread,
3/8" NPT, 1" NPT





Flow Meters/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/DAK/DAT

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"



DAI

Sight glass flow indicator with rotor, flap, chain or ball

Carbon steel, stainless steel, PVC, PP, PVDF



- t_{max} 260 °C; p_{max} 40 bar
- Connection: G 1/2 ... 3, 1/2" ... 3" NPT, DN 15 ... DN 200, ANSI 1/2" ... 8"



DAZ

Flow Indicator with Flap

Red cast iron



- Water/oil: 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

Red cast iron



- t_{max} 100 °C; p_{max} 6 bar
- Connection: G 3/4 ... 2 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





MAN - R

Bourdon Tube Pressure Gauges - ...

Brass, stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +1 000 bar
- Housing: Ø 63, 80, 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 - R...S

Bourdon Tube Pressure Gauges for Exceptional Safety

Stainless steel



- Measuring range: -0.6 ... 0 bar ... 0 ... +1 000 bar
- Housing: Ø 63, 100, 160 mm
- Overload protected: 1.3 times
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread
- Accuracy: cl. 1.0
- Contact (NG100+160): up to 4 times (NG100 also for „Exceptional Safety“)
- Option: application specific design



MAN - T

Bourdon Tube - Refrigeration

Brass, stainless steel



- Measuring range: -1 ... +9 bar ... -1 ... +40 bar
- Housing: Ø 63, 80, 100 mm
- Overload protected: 1.3 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: 1.3 - 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 (Option: aluminium)
- Overload protected: 1.3 times
- Option: Overpressure 4 times, 10 times (max 40 bar)
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread, DIN/ANSI flange, DIN 11851
- Accuracy: cl. 1.6
- Contact: upto 4 times
- Option: application specific design



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, PTFE



MAN - ZF

Pressure Transducer - Chemistry

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 - 20mA
- Power supply: 13 - 30 V_{DC}
- Accuracy: cl. 1.0



MAN - N...S

Bourdon Tube Pressure Gauges - Exceptional Safety

Stainless steel



- Measuring range: -1 ... 0 bar ... 0 ... +1000 bar
- Housing: Ø 63, 80, 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





Pressure Measurement

MAN - SC

Digital Pressure Gauge - Battery Powered

Stainless steel/PA glass fibre reinforced



- Measuring range: -0.6... 0 bar ... 0 ... +1 600 bar
- Fitting: Ø 80 mm
- Display: 5-digit LC-Display
- Overload protected: 1.5 - 3 times
- Connection: G ¼, G ½, ½" NPT, ½" NPT male
- Power supply: battery 9V
- Accuracy: cl. 0.5
- Option: Tare function, touch pads, peak value memory, protective rubber sleeve, temperature measuring



MAN - LC

Digital Pressure Gauge with IO-Link

Stainless steel/PA glass fibre reinforced



IO-Link

- Measuring range: -0.6... 0 bar ... 0 ... +1 600 bar
- Housing: Ø 80 mm
- Display: LC-Display
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male
- Power supply: 24 V_{DC}
- Accuracy: cl. 0.5
- Option: Tare function, touchpads, peak memory, rubber protection sleeve, temperature measuring
- User configurable outputs option (upto 2 relay outputs possible)

PUM

U-Pipe Pressure Gauges

Glass



- Measuring range: -250...+250...-1500...+1500 mmWC
- Scale graduation: 2 mm
- Hose connection: Ø 7 mm
- Accuracy: ±0.2 mbar

MAN - U

Differential Pressure Gauge with double diaphragm

Stainless steel



- Measuring range: 0...+250 mbar...0...+25 bar
- Static pressure on both sides: 200 bar
- Housing: Ø 100 mm, 150 mm
- Connection: G ½, ½" NPT male, ¼" NPT female
- Accuracy: cl. 1.6

MAN - Q

Bourdon Tube Pressure Gauge

Brass, stainless steel



- Measuring range: -0.6... 0 bar ... 0 ... +1000 bar
- Housing: 96x96, 144x144 mm
- Overload protected: 1.3 times
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread
- Accuracy: cl. 1.0
- Contact: upto 3 times
- Option: application-specific versions

MAN - R HEAVY DUTY

Bourdon Tube Pressure Gauge

Brass, stainless steel



- Measuring range: -600... 0 bar ... 0 ... +1000 bar
- Housing: Ø 100, 160 mm
- Overload protected: 1.3 times (Option multiple)
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread
- Accuracy: cl. 1.0
- Contact: upto 4 times
- Option: application-specific versions
- Torsion-free + impact-resistant housing

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, 2 Sensors (Internal/External)



- Measuring range: +2.5 mbar ... +1000 bar depending on sensor
- Accuracy: ±0.1 % of full scale
- Measuring range: -100 ... +2000 mbar
- Accuracy: ±0.2 % of full scale
- Option: alarm, real-time clock





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: 12 ... 45 V_{DC}
- Connection: ¼" NPT
- Accuracy: ±0.075 % of measuring span



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: 0.9 - 1.3 times
- Connection: G ½ 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
- Connection: flange Ø 85 mm, LK 70 mm
- Accuracy: cl. 1.6
- Contact: upto 4 times
- Accessories: Weld-on flange, screw and gasket set
- Option: vibration damping, application-specific designs



DRM

Diaphragm, Capsule, Inline, Membrane Chemical Seals

Stainless steel, tantalum, ECTFE



- Measuring range: 0 ... +0.6 bar ... 0 ... +1600 bar
- Filling: glycerine, paraffin- and silicone oil
- Connection: G/NPT/M-thread G ¼ ... G 1½ male thread, DIN, ANSI
- Diverse thread and flange connection, Tri-Clamp®, DIN 11851, SMS- and IDF-Norm
- Option: application-specific versions



DRM

Flange Diaphragm Seals

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



- Standard version up to 350 °C / 40 bar: DN25 ... DN100, 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



MAN - RF ... DRM - 600

Bourdon Tube Pressure Gauge + Membrane Diaphragm

Stainless steel



- Measuring range: 0 ... +4 bar ... 0 ... +1600 bar
- Housing: Ø 63, 100, 160 mm
- Connection: G/NPT/M-thread G ¼ ... G 1½ male thread
- Accuracy: cl 1.6 (NG63 = 2.5)
- Option: application-specific versions



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

Pressure Gauge + Diaphragm Seal upto 350°C

Stainless steel



- Measuring range: 0 ... +4 bar ... 0 ... +600 bar
- Housing: Ø 63, 100, 160 mm
- Connection G/NPT/M-thread G ¼ ... G 1½ male thread, DIN, ANSI, Tri-Clamp®, DIN 11851, SMS/IDF-Norm
- Accuracy: cl 1.6 (NG63 = 2.5)
- Contact (NG100+160): upto 4 times
- Option: application-specific versions





Pressure Measurement

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 DN 20 ... 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 - RF ... P21 ... DRM - 600

Cont. Pressure Gauge + Membrane Diaphragm

Stainless steel



- Measuring range: 0 ... +160 bar ... 0 ... +800 bar
- Housing: Ø 100 mm
- Connection: Diaphragm seal thread G ¾ male thread
- Silicone-free
- Accuracy: cl. 1.6
- Contact: Pneumatic, magnetic spring contact
- Option: application-specific versions



MAN - SC ... DRM - 189

Digi. Press. Gauges + Diaphragm Seals (f. homogenizing mach.)

Stainless steel



- Measuring range: 0 ... +100 bar ... 0 ... +1000 bar
- Housing: Ø 80 mm
- Membrane: flush mounted
- Connection: for block flange/thread
- Accuracy: cl. 1.0
- Tara function, touchpads, peak memory
- Option: Temperature measurement



SEN ... DRM - 600

Pressure Sensor with Diaphragm Seal

Stainless steel



- Measuring range: 0 ... +6 bar ... 0 ... +600 bar
- t_{max} 70 °C
- Connection: G ½ ... G 1½ male, stainless steel
- Option: Plug-on Display
- Accuracy: cl. 1.0





SEN... DRM - 189

Press. Sensor + Diaphragm Seals (for homogenizing machines)

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 - SC... DRM - 630

Digi. Pressure Gauge + Membrane Diaphragm Seal

PVC



- Measuring range: 0...+1.6 bar...0...+10 bar
- Housing: Ø 80 mm
- Connection: G ¼, G ½, ½" NPT female
- Accuracy: cl. 1.0
- Tara function, touchpads, peak memory
- Option: Temperature measurement



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 ¼, G ½, ½" NPT female
- Accuracy: cl. 2.5



PDA

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: -1...0 bar...0...+700 bar
- t_{max} 80°C
- Display: 3-digit LED
- Connection: G ¼, G ½, ¼" NPT, ½" NPT male thread
- Accuracy: $\pm 0.5... \pm 1\%$ of full scale



PAS

Pressure Transmitter

Stainless steel, Hastelloy®-C, tantalum



- Measuring range: -1...+600 bar
- Power supply: 12...45 V_{DC}
- Connection: ½" 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



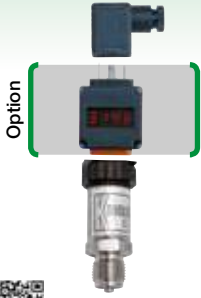


Pressure Measurement

SEN - 8

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: 0 ... +0.6 bar ... 0 ... +800 bar
- t_{max} 85 °C (Option: t_{max} 125 °C)
- Connection: G 1/4 ... G 2, NPT, 7/16 UNF
- Overload protected: 1.2 - 2 times (max. 800 bar)
- Accuracy: cl. 0.5
- Output: 4 ... 20 mA, 0 ... 10 V
- Cable and plug connection (IP65 to IP68)
- Option: plug-on Display, absolute pressure, application-specific versions



SEN - 8

Pressure Sensor with Ceramic Cell

Stainless steel



- Measuring range: 0 ... +0.6 bar ... 0 ... +800 bar
- t_{max} 85 °C (Option: t_{max} 125 °C)
- Connection: G 1/4 ... G 2, NPT, 7/16 UNF
- Overload protected: 1.5 - 8 times (max. 800 bar)
- Accuracy: cl. 0.5
- Output: 4 ... 20 mA, 0 ... 10 V
- Cable and plug connection (IP65 to IP68)
- Option: Heavy Duty (plug protection), application-specific versions



SEN - 96

Pressure Sensor with Ceramic Cell

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
- Option: Plug-on Display
- Accuracy: $\leq \pm 0.5\%$ of full scale



SEN - 98 / - 99

Pressure Sensor with Ceramic Cell

Stainless steel



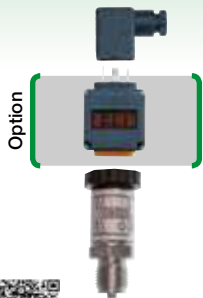
- Measuring range: -1 ... 0 bar ... 0 ... +600 bar (rel)
0 ... 1 bar ... 0 ... +25 bar (abs)
- Overload protected: 1.3 - 5 times
- Connection: G 1/4, 1/2, 1/4" NPT, 1/2" NPT male thread
- Option: Plug-on Display
- Accuracy: $\pm 0.5\%$ of measuring range



SEN - 3276, - 3277

Pressure Sensor - Piezoresistive

Stainless steel



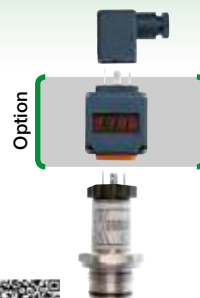
- Measuring range: -1 ... 0 bar ... 0 ... +25 bar
- Membrane: internal
- Overload protected: 2 - 3.5 times
- Connection: G 1/4, 1/2, 1/4" NPT, 1/2" NPT male thread
- Option: Plug-on Display, absolute pressure
- Accuracy: cl. 0.25; 0.5
- Oil-, fat free
- LABS-free



SEN - 3251, - 3252

Pressure Sensor Industrial Piezoresistive - Flush Mounted

Stainless steel



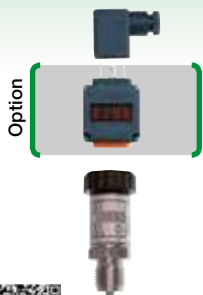
- Measuring range: -1 ... 0 bar ... 0 ... +25 bar
- Membrane: flush mounted
- Overload protected: 2 - 3.5 times
- Connection: G 1/2, G 1 male thread
- Option: Plug-on Display
- Accuracy: cl. 0.25; 0.5
- Absolute pressure
- Oil-, fat free
- LABS-free



SEN - 3376, - 3377

Pressure 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 - 3344, - 3386

Pressure Sensor Piezoresistive/Thin Film - Flush Mounted

Stainless steel



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





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 ... +700 bar
- t_{max} 80 °C
- Display: 3-digit LED
- Overload protected: 1.5 - 3 times
- Connection: G 1/4, G 1/2, 1/4" NPT, 1/2" NPT male thread
- Accuracy: $\pm 0.5\% \pm 1\%$ of full scale

SCH-PSB

Differential Pressure Switch for neutral gases

Plastic



- Switching range: 20 ... 300 Pa ... 200 ... 1000 Pa
- Connection: stub 6 mm
- t_{max} 70 °C
- Micro switch

PSD

Electronic Pressure Switch -

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



MZB-712/...

Accessories, Adapter for Elec. Press. Switch - PSD

Stainless steel



- Connection: G 1/2, 1/4", 3/8" male thread or 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, cooling elements, throttle and overpressure protection equipment, adapters



AUF

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



Level Switches

M

Float Magnet Switch

Brass, stainless steel, PVC, PPH, PVDF



- Density: min. 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, PPH, PVDF



- Density: min. 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



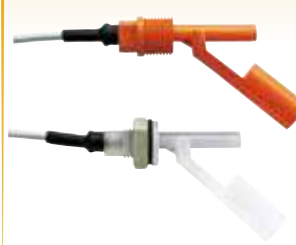
- Density: min. 0.65 kg/dm³
- t_{max} 150 °C; p_{max} 10 bar
- Connection: G 3/8 female thread, R 1/2 male thread



NKP

Level Switch - Plastic

Polypropylene, PVDF



- Density: min. 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: min. 0.7 kg/dm³
- t_{max} 120 °C; p_{max} 10 bar
- Connection: 1/2" NPT male thread



NV

Float Switch

Brass, stainless steel



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



NSP/NAB

Float Switch (for liquids)

Polypropylene



- Density: min. 0.5 kg/dm³
- t_{max} 85 °C; p_{max} 3,5 bar
- Connection: cable



NAS

Level Switch (for bulk materials)

Polypropylene



- Density: min. 0.3 kg/dm³
- t_{max} 85 °C; p_{max} 3,5 bar
- Connection: cable





NSM

Float Switch

Polypropylene



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



NSE

Float Switch

Stainless steel



- Density: min. 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: min. 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, rubber hose, PVC, PTFE



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



NEW

Conductive Switch

Stainless steel, Hastelloy®, titanium/Coating: PTFE



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





Level Switches

NEK

Conductive Switch

PP, PPS



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



LNK

Conductive Switch

Stainless steel, PEEK



- Measuring range: 4 - 1500 mm
- t_{max} 100 °C (150 °C for CIP); p_{max} 10 bar
- Connection: G 1/2 male, G 1 male, hygienic installation system LZE



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 Overfill Protection



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



NE - 5048

Electrode Relays for Conductive Switches



- 1 limit signal or 1 min/max controller
- Supply: 24...240 V_{AC}/V_{DC}
- Switch capacity: max. 250 V_{AC}, 8A, 2000 V_{AC} (AC), 240 W (DC)



LNM

Microwave - Switch (for 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



LNZ

Capacitive Switch (for 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

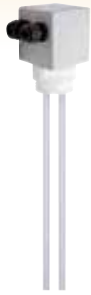




NCW

Capacitive Switch (for liquids)

Stainless steel, PVDF



- t_{max} 200 °C; p_{max} 30 bar
- Connection: G 1, G 2 male thread, adapter: G 1¼, G 1½, weld-in sleeve
- 1 relay, SPDT



NWS

Turning Fork Switch (for 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



NSV

Vibration Switch (for 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 (for 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



OPT

Optical Switch (for liquids)

Polypropylene, stainless steel, sensor: polysulfone



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



NMF

Diaphragm Switch (for bulk materials)

Neoprene®, FPM, steel, stainless steel



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





Level Switches / Meters

NIR - 9 / NIR - E9

Rotation Vane Switch (for bulk materials)

Stainless steel

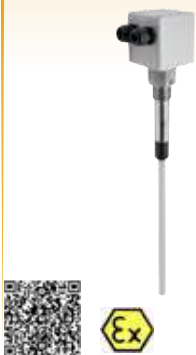


- Measuring range: 65 - 1000 mm
- t_{max} 200 °C; p_{max} 0.5 bar
- Connection: G 1 male thread, adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT

NSC

Capacitive Level Switch (for bulk materials)

Stainless steel, PTFE

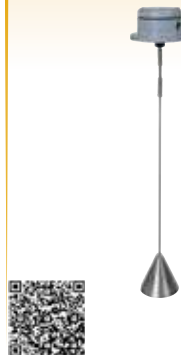


- Measuring range: 265 - 3000 mm
- t_{max} 80 °C; p_{max} 0.5 bar
- Connection: G 1 male, adapter: G 1¼, G 1½, round flange, weld-in sleeve
- 1 relay, SPDT

PLS

Pendulum Level Monitor (for bulk materials)

Aluminium, EPDM



- Pendulum length up to 2000 mm
- t_{max} 80 °C; p_{max} -0.1 ... +0.5 bar
- Process connection: aluminium flange
- Contact: max. 250 V_{AC}/15 A

MM

Float Transducer - Reed Chain

Stainless steel, PVC-U, PP, PVDF



- Measuring range: 300 - 6000 mm
- Density: min. 0.4 kg/dm³
- t_{max} 130 °C; p_{max} 30 bar
- Connection: G ¾ ... 2 male, ¾ ... 2" NPT male, flange DN 40 ... 125, ANSI 1 ½ ... 4"
- Accuracy: ± 10 mm

NMT

Float Magnetostrictive

Stainless steel



- Measuring range: 300 - 4000 mm
- Density: 0.7 - 1.0 kg/dm³
- t_{max} -20 ... +70 °C; p_{max} PN 10
- Connection: G 2, 2" NPT male thread
- Analogue output
- Accuracy: ± 1 mm

NMS

Magnetostrictive Level Transmitter - Compact Line

Stainless steel, PFA



- Insertion length: 300 - 3000 mm
- Density: min 0.4 kg/dm³
- t_{max} 90 °C; p_{max} 25 bar
- Connection: G, NPT, Tri-clamp, flange
- Analogue output
- Accuracy: ± 1 mm

NMB

Magnetostrictive Level Transmitter - Expert Line

Stainless steel, PFA



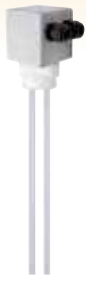
- Insertion length: 300 - 15000 mm
- Density: min 0.4 kg/dm³
- Connection: G, NPT, Tri-clamp, flange
- Analogue output, display (optional)
- Accuracy: ± 1 mm (optional ± 0,1 mm)



NMC

Capacitive Measurement

Stainless steel, PVDF



- Measuring range: 265 - 4000 mm
- t_{max} 200 °C; p_{max} 30 bar
- Connection: G 1, G 2 male thread, adapter: G 1¼, G 1½, weld-in sleeve
- Analogue output
- Measuring error: <1.5% of probe length



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, ½" NPT, welding fitting



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, ¼" NPT male thread



NBK - M

Mini Bypass with Roller Indicator

Stainless steel



- Measuring length: 200 - 3000 mm
- Density: 0.8 - 1.0 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 length: 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



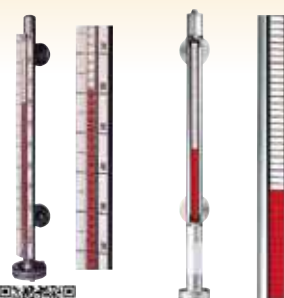
- Measuring length: 300 - 5500 mm
- Density: min. 0.54 kg/dm³
- t_{max} 100 °C; p_{max} PN 320
- Accuracy: ± 1 mm (transmitter)



NBK - ATEX

Bypass with Roller Indicator

Stainless steel



- Measuring length: 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: ± 10 mm (transmitter)



NBK - 04

Bypass Over - Top Tank Measurement

Stainless steel



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





Level Switches / Meters

NBK - 16

Bypass Level Roller Indicator Measurement - Plastic PP



- Measuring length: 200 - 4000 mm
- Density: min. 0.59 kg/dm³
- t_{max} 80 °C; p_{max} 4 bar
- Connection: flange DN 20... 50, ANSI 3/4 ... 2"
- Accuracy: ± 10 mm (transmitter)



NBK - 01

Bypass Roller Indicator Low Cost

Stainless steel



- Measuring length: 300 - 5500 mm
- Density: 0.78 ... 1.18 kg/dm³
- t_{max} 120 °C; p_{max} PN 16
- Accuracy: ± 1 mm (transmitter)



NBK - 19

Bypass Roll Measuring Rope

PVC



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



NBK - R, - RH, - RV, - RN, - RS, - RE, - RD

Limit Contact for Bypass Measurement

Stainless steel, aluminium, polycarbonate



- t_{max} 350 °C



NGM

Guided Wave Radar (TDR) (for process industry)

Stainless steel, PTFE

Rod Sensor



Coax Probe



Rope Probe



- Measuring range: 100 - 3000 mm (Rod)
- t_{max} 250 °C; p_{max} 40 bar
- Measuring range: 100 - 6000 mm (Coax)
- t_{max} 250 °C; p_{max} 40 bar
- Measuring range: 1000 - 20000 mm (Rope)
- t_{max} 150 °C; p_{max} 40 bar
- Connection: thread, flange
- Analogue output, switching output
- Accuracy: ± 3 mm or 0.03 % of measured value



NGR

Guided Wave Radar (TDR) (for machines / factory automation)

Stainless steel



- Measuring range [Rod Probe]: 200 - 2000 mm (liquids)
- Measuring range [Wire Probe]: 200 - 4000 mm (liquids)
- t_{max} 100 °C; p_{max} 10 bar
- Connection: G 3/4, 3/4" NPT male
- Analogue output, switching outputs
- Accuracy: ± 5 mm



IO-Link

NRM

Radars Level Transmitter, 25 GHz. (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, dairy connection
- Analogue output
- Accuracy: ± 3 mm





NRE - 4 / - 7

Radar Level Transmitter, 80 GHz (TDR) (f. process industry)

Stainless steel PP, PVDF, PTFE
NRE-4 (Expert Line)



NRE-7 (Compact Line)



- Measuring range: 0...30m
- t_{max} 180 °C; p_{max} 40 bar (NRE - 4)
- t_{max} 80 °C; p_{max} 3 bar (NRE - 7)
- Connection: thread, flange
- Analogue output + relay
- Accuracy: ± 2 mm



NUS - 4

Ultrasonic - Measurement - Expert Line

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 1½, G2, 1½" NPT,
2" NPT male, DN80, DN125, DN150,
ANSI 3", 5", 6"
- Analogue output
- Accuracy: $\pm 0.2\%$ of reading
 $\pm 0.05\%$ of full scale

NUS - 7

Ultrasonic Measurement - Compact Line

PP, PVDF



- Measuring range: 0.25 - 6 m (liquids)
- t_{max} 80 °C; p_{max} 3 bar abs
- Connection: G2, 2" NPT
- Analogue output
- Accuracy: $\pm 0.2\%$ of reading
 $\pm 0.05\%$ of full scale

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



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
DN50 or bigger
- Accuracy: $\pm 0.075\%$ of calibrated span
+ influence of diaphragm seal



NTB

Deep - Well Probe

Stainless steel, cable polyurethane



- Measuring range: 0 - 1 ... 0 - 200 mWC
- Analogue output
- Cable length: max. 300 m
- Accuracy: $\pm 0.5\%$ of full scale

NPF

Hydrostatic Diaphragm Measurement

Stainless steel



- Measuring range: 0 - 600 ...
0 - 10 000 mmWC
- t_{max} 80 °C
- Connection: G ½ male, ½" NPT,
DN50 ... DN100, ANSI 2 ... 4"
- Accuracy: $\pm 1.6\%$ of full scale





Temperature Switches / Indicators

TWR

Bimetal Switch

Brass, stainless steel



- Switching range: 30 ... 118 °C
- t_{max} 150 °C; p_{max} 64 bar
- Connection: G 3/4 male thread



TWS

Bimetal Switch (OEM)

Stainless steel



- Switching range: -15 ... +160 °C
- t_{max} 160 °C; p_{max} 60 bar
- Connection: G 1/2 ... G 3/4, NPT, M14x 1,5



TBS

Bimetal Temperature Switch

Brass, stainless steel



- Switching range: 10 ... 100 °C
- t_{max} 120 °C; p_{max} 25 bar
- Connection: G 1/4 ... G 1 1/2, 1/4" ... 1 1/2" NPT male thread



TDD

Temperature Switch Digital

Stainless steel



- Measuring range: -50 ... +125 °C
- p_{max} 80 bar
- Connection: G 1/2, G 3/4, 1/2" NPT, 3/4" NPT male thread, smooth probe \varnothing 6 mm
- 2 limit contacts
- Accuracy: ± 0.5 °C (-10 ... +85 °C)



TNF-Q

Remote Thermometer DIN 16205 / DIN 16206

Stainless steel



- Measuring range: -40 ... +600 °C
- Housing: 96x96, 144x144 mm
- p_{max} 25 bar
- Connection: G 1/4 ... 1, 1/4" ... 1" NPT, DIN 11851, Tri-Clamp®, Wendel
- Accuracy: cl. 1.0
- Contact: up-to 4 times
- Option: application-specific versions



TBE

Bi-Metallic 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 (for shaft, capillary + resistance thermometer)

Stainless steel, special materials



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





TDA

Electronic Temperature Sensor

Stainless steel



- Measuring range: -50 ... +125 °C
- p_{max} 80 bar
- Connection: G 1/2, G 3/4, 1/2" NPT, 3/4" NPT male thread, smooth probe \varnothing 6 mm
- Analogue output, limit contact
- Accuracy: ± 0.5 °C (-10 ... +85 °C)



TIN - SS / - SH

Infrared Thermometer

Stainless steel



- Measuring range: -50 ... +975 °C
- Analogue output, thermocouple J,K
- Accuracy: ± 1 %



HND - T105 / T205

Precision Hand-Held Thermometer



- Measuring range: -50 ... +400 °C
- Sensor: Pt 100 or thermocouple type K
- Option: logger, alarm, control function
- Accuracy: from 0.03 °C



HND - T126

Precision Hand-Held Thermometer



- Measuring range: -220 ... +1372 °C
- Sensor: type K (NiCr-Ni)
- Accuracy: ± 0.5 °C / ± 0.2 % of full scale



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

Option

TWC - N / - P

OEM Temperature Sensors



- Measuring range (TWC-N): -40 ... 200 °C
- Accuracy: ± 0.2 °C for R25 reference, ± 0.1 °C for medical application
- Measuring range (TWC-P): -196 ... 600 °C
- Accuracy: Class A, B IEC 60751, ± 0.1 °C with PCBA calibration

TNK

Resistance Thermometer

Brass, bronze, stainless steel



- Measuring range: -80 ... +150 °C
- t_{max} 150 °C; p_{max} 50 bar
- Connection: M 18x1.5, G 1/2, 1/2" NPT
- Accuracy: cl. A or B

MMA

Screw - In Resistance Thermometer

Stainless steel



- Measuring range: -198 ... +250 °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, M 12 x 1.5 male, hygienic installation system LZE
- Pt 100, 4 - 20 mA
- Accuracy: cl. A



TWP

Pipe Temperature Sensor

Stainless steel, electropolished



- Dead-zone-free, temperature measurement
- Measuring range: -20 ... +200 °C
- CIP-/SIP compliance
- Connection: DIN 11851 (DIN 11887) DN 15 ... 80 Tri-Clamp® ISO 2852 DN 1/2" ... 2 1/2"
- Housing: DIN head form B or stainless steel
- Option: PT 100 / Option: 4 ... 20 mA



Temperature Switches / Indicators

MWD

Industrial - Resistance Thermometer

Stainless steel



- Measuring range: -70 ... +250 °C ... -200 ... +600 °C
- p_{max} 30 bar
- Accuracy: cl. A or B



DTE

Digital Thermometer

Stainless steel



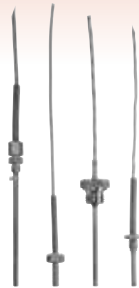
- Measuring range: -200 ... +850 °C
- Display: 6-digit, LCD
- Accuracy: ± 0.1 % measured value ± 0.2 °C



MWE

Screw - In Resistance Thermometer

Stainless steel



- Measuring range: -70 ... +250 °C
- p_{max} 30 bar
- Accuracy: cl. A or B



MWA

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 - T

Room Thermometer

Aluminium, polycarbonate



- Measuring range: -40 ... +80 °C
- 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, 2 analogue
- 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

Hand-Held Measurement Device (f. pH value, Redox and temperature)



- Measuring range: pH: 0... 14; Redox: -1999... +2000 mV; temperature: -5... +80 °C
- Accuracy: pH: ± 0.01 ; Redox: $\pm 0.1\%$ of full scale; temperature: ± 0.2 °C



ACM - 1

Transmitter for Specific Conductivity



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

ACS

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 $\frac{3}{4}$ 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: $\pm 0.5... \pm 1\%$ 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 $\pm 0.1\%$



AFK - G2

Humidity/Temperature Transmitter



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

AFA - G

Humidity Transmitter with Display



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

AFK - A / - F

Humidity/Temperature Transmitter



- Measuring range: 0... 100 % rH; -80... +200 °C
- t_{max} 200 °C; p_{max} 25 bar
- Outputs: voltage, current outputs
- Accuracy: ± 1.5 rH; ± 0.15 K
- Interchangeable or permanently connected transmitters/probes

AFS - G

Hygrostat, Humidity Annex Switch



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

AFB

Humidity/Temperature Transmitter



- Measuring range: 0... 100 % rH -40... +125 °C
- t_{max} 125 °C; p_{max} atmospheric
- Outputs: voltage, current outputs
- Accuracy: $\pm 0.2\%$ rH; 0.35 K
- Option: USB-interface



Analysis / Accessories

HND - F

Hand-Held Humidity Precision Measuring Unit



- Measuring range: 0 ... 100% rF
- Pt 1000 integrated
- Accuracy: $\pm 0,1 - 0,2\%$

AFO

Turbidity Probe

Stainless steel



- Measuring range: 0 ... 1 a_w; ppm; temperature
- t_{max} 100 °C; p_{max} 300 bar
- Outputs: 2x 4 - 20 mA
- Accuracy: up to $\pm 0,02 a_w$



ATA - K / ATT - 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

DWF

Density Meter

Stainless steel



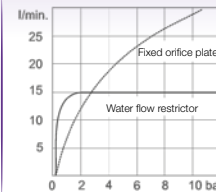
- Measuring range: 700 ... 1900 g/l
- t_{max} 150 °C
- Process connection: flange DN 25 ... 50, ANSI 1 ... 2"
- Option: transmitter contacts



REG

Constant Flow Valves

Brass, stainless steel



- Water: 0.5 - 560 l/min
- t_{max} 300 °C; p_{max} 200 bar
- Connection [single element]: G 1/2, G 3/4, 3/4" NPT
- Connection [multiple elements]: G 1 1/2 ... 2 1/2 flange DN 20 ... 100

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

Ball Valves

Brass, stainless steel



- t_{max} 180 °C; p_{max} PN 64
- G 1/4 ... 3 female thread
- Hand lever, 1, 2 and 3 piece versions
- T- and L-bore

KUG -VO, -VK

Flange - Ball Valves

Grey cast iron, stainless steel

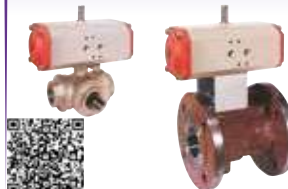


- t_{max} 180 °C; p_{max} PN 40
- Flange DN 15 ... 200

KUP

Ball Valves with Pneumatic Actuator

Grey cast iron, 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

Accessories/Relays

KLA

Butterfly Valves

Aluminium, GGG-40



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



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



NAD ...

Needle Valve

Brass, stainless steel

Needle Valve
- AC



Needle Valve
- M, - Z



Angle Seat Valves
- AD, - BE



Outlet Globe Valves
- AB, - BF



- t_{max} 400 °C; p_{max} PN 250
- G 1/8 ... 3/8, 1/8 ... 1" NPT

MFR / MFF / MFT

Flange Magnetic Filter

Bronze, brass, grey cast iron



- t_{max} 200 °C; p_{max} PN 40
- G 1/4 ... 4, flange DN 50 ... 200
- Filter grade: 50 ... 1200 μ m

KUR - TD, - MR

Check Valves

Red cast iron, brass, stainless steel



- t_{max} 110 °C; p_{max} PN 25
- G 1/4 ... 4 female thread

ZUB - KAB

Electrical Connecting Accessories and Cable



- Circular connectors M12x1, socket
- Connection: terminals, cable, Quickon
- Plastic, brass nickel-plated
- Cable length: max. 10 m

MSR

Pulse - Contact Protection Relay



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

KFD - 2 / KFA - 6

Isolation Switching Amplifier for Initiators



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



Control Devices and Relays

AUF

Plug-On Display



- Input: 4 - 20 mA, pulses
- Output: 4 - 20 mA, switch output PNP
- 4-digit red LED, without additional power supply
- Option: Open-Collector, various colours



DAG-A/S/M

Digital - Panel Mount - Indicators



- Input: current, voltage, temperature, frequency
- Output: pulse, 2x analogue
- Limit contacts
- Min/Max-memory



ADI-1/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
- Impulse output
- 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

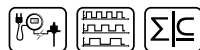


ZED-D/-Z

Batch Controller/Counter Electronics



- Input: frequency, control input
- Analogue output
- 2 limit contacts
- Sensor supply



DAG-Z2

Counter Electronics/Batch Controller



- Input: 3 x PNP/NPN
- 2 limit contacts
- Sensor supply



DAG-T4

Universal Panel Meter



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



ZLS-2

Electronic Multi-Channel Data Logger



- 8 x input: 0 - 5(10)V/0(4) - 20 mA or thermocouples/Pt 100, Pt 500, Pt 1000
- Interface: 1 x USB, 1 x RS485
- Sensor supply



Model Register

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DKB	20	KFG	10	NEC	29	PSD	27	VKM	7
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