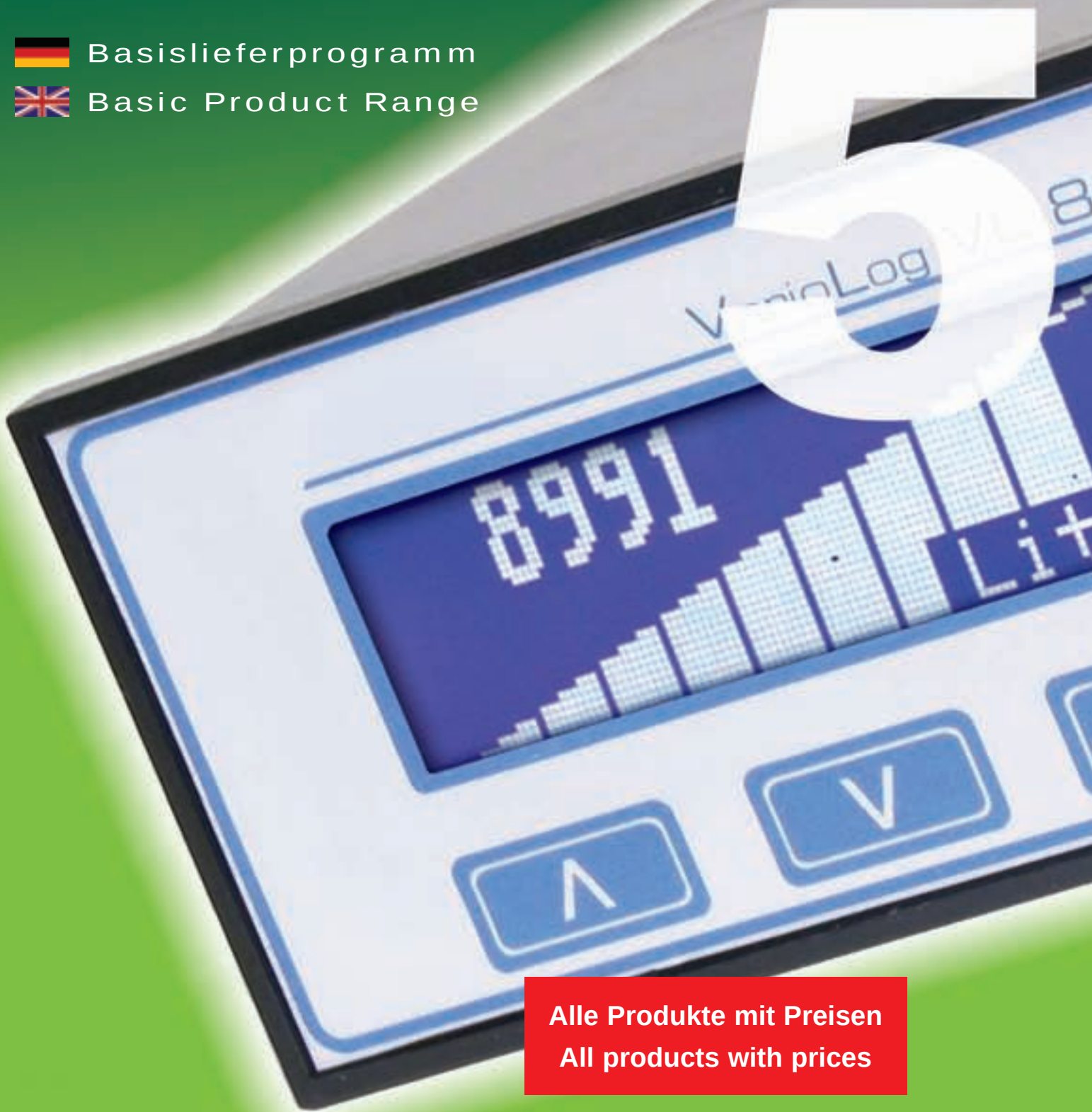




Basislieferprogramm



Basic Product Range



Alle Produkte mit Preisen
All products with prices

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MESSTECHNIK GmbH



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Basic Product Range

5

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1



Flow control

Pages E / 2 – E / 19

- Flow indicator
- Flow controller

2



Flowmeter

Pages E / 20 – E / 55

- Variable-area Flowmeter
- Magnetic-inductive Flowmeter
- Mass-Flowmeter
- Ultra-Sonic Flowmeter
- Other Flowmeter

3



Level

Pages E / 56 – E / 67

- Level Switch
- Continuous Level Measurement

4



Analysis

Pages E / 68 – E / 73

- Converter 200 CR
- Converter 770 MAX



6



5



**Pressure &
Temperature**

Accessory

Pages E / 74 – E / 87

Pages E / 88 – E / 113

Pressure
Temperature

Computer
Recorder /
Data logger
Digital display
with pulse input
Digital display
with analogue input
Preset counter
Measuring contact
Switch amplifier
Mounting parts

Flow control

1

Flowmeter

2

Level

3

Analysis

4

Pressure & Temperature

5

Accessory

6



We provide
real values!

Flow indicator and Flow controller



SG 4000



SG 4200



SG 6100



SG 7100



SG 4830



SG 4930



PW 2500



KM 1000



MF 4000



SN 5000



SN 4500



SN 4600



LW 4100



LW 4600

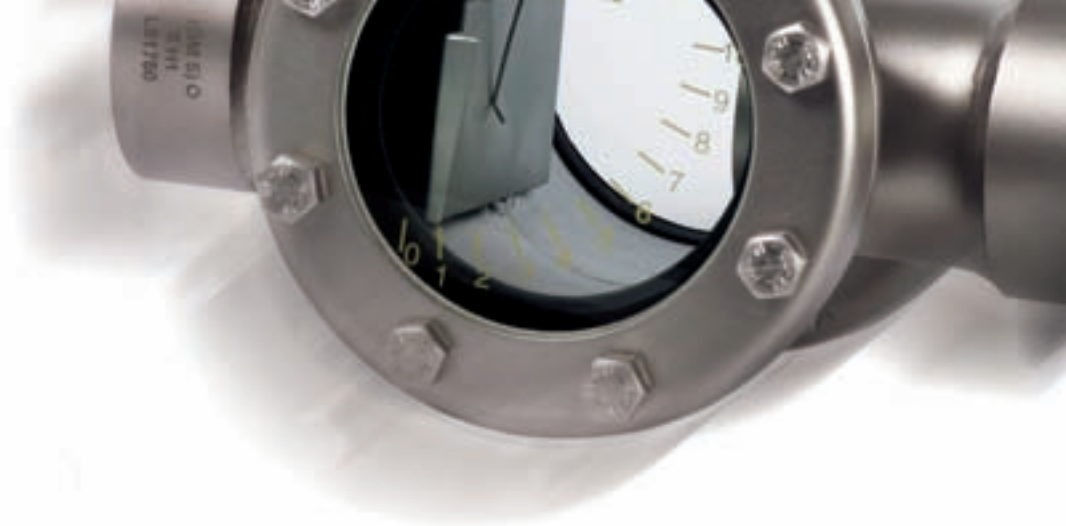


DS 5000

**Trust is
good,
control is
better.**



Type	Flow indication	Flow control
SG 4000	x	
SG 4200	x	
SG 6100	x	
SG 7100	x	
SG 4830	x	
SG 4930	x	
PW 2500		x
KM 1000	x	x
MF 4000	x	x
SN 5000		x
SN 4500		x
SN 4600		x
LW 4100		x
LW 4600		x
DS 5000		x



Liquids	Gases	Electric output	Approval	Page
x				E / 4
x				E / 5
x				E / 6
x				E / 7
x				E / 8
	x			E / 9
x	x			E / 10
x				E / 11
x	x	 (4-20 mA)	Ex	E / 12
x		 (4-20 mA)		E / 14
x		 (4-20 mA)		E / 15
x			Ex	E / 16
	x	 (4-20 mA)		E / 17
	x		Ex	E / 18
x		 (4-20 mA)		E / 19

SG 4000

For liquids

- Sight glass with swirl stem
- Cast iron or stainless steel
- Temperature resistant up to 300 °C

Flow sight glass with flange connection straight-through type.

The housing is equipped with a founded swirl stem. The glass windows on both sides are made from high temperature resistant pressed hardglass and are used for visual flow control. Borosilicate glass for an operating temperature up to 300 °C is also available as an option (price adder).



Technical Data

Connection	Flanges
Flow indication	Vortex
Gasket	Asbestos free
Pressure	Max. 16 bar
Material	SG 401 cast iron GG 25 / SG 405 stainless steel 1.4408
Viewing window	Cast iron: pressed hardglass opt. borosilicate*, stainless steel: borosilicate standard
Temperature	Standard 150 °C, optionally 300 °C

Order Data SG 4000

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
SG 401	DN 15	Cast iron GG 25	130 mm	SG 4011	57.00
SG 401	DN 20	Cast iron GG 25	150 mm	SG 4012	68.00
SG 401	DN 25	Cast iron GG 25	160 mm	SG 4013	73.00
SG 401	DN 32	Cast iron GG 25	180 mm	SG 4014	87.00
SG 401	DN 40	Cast iron GG 25	200 mm	SG 4015	107.00
SG 401	DN 50	Cast iron GG 25	230 mm	SG 4016	145.00
SG 401	DN 65	Cast iron GG 25	290 mm	SG 4017	184.00
SG 401	DN 80	Cast iron GG 25	310 mm	SG 4018	257.00
SG 401	DN 100	Cast iron GG 25	350 mm	SG 4019	287.00
SG 405	DN 15	Stainless steel 1.4408	130 mm	SG 4051	169.00
SG 405	DN 20	Stainless steel 1.4408	150 mm	SG 4052	223.00
SG 405	DN 25	Stainless steel 1.4408	160 mm	SG 4053	255.00
SG 405	DN 32	Stainless steel 1.4408	180 mm	SG 4054	365.00
SG 405	DN 40	Stainless steel 1.4408	200 mm	SG 4055	455.00
SG 405	DN 50	Stainless steel 1.4408	230 mm	SG 4056	606.00
SG 405	DN 65	Stainless steel 1.4408	290 mm	SG 4057	861.00
SG 405	DN 80	Stainless steel 1.4408	310 mm	SG 4058	1,052.00
SG 405	DN 100	Stainless steel 1.4408	350 mm	SG 4059	1,430.00

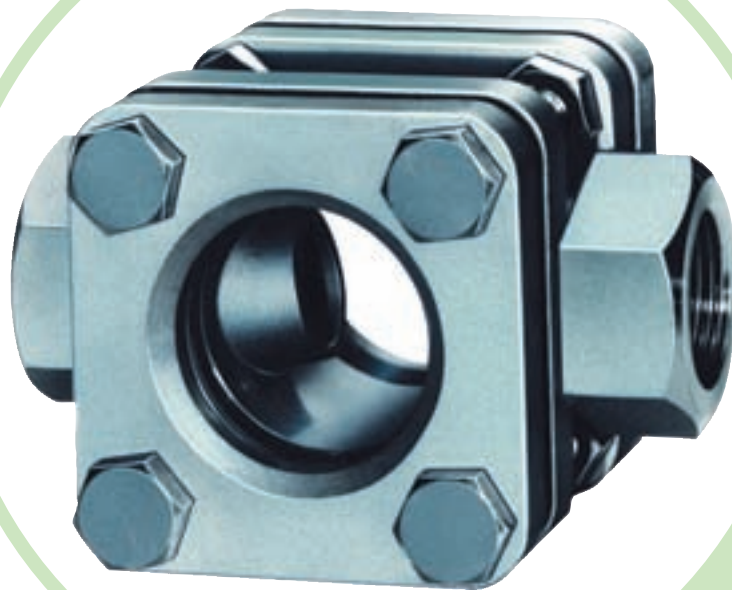
*Additional charge for borosilicate glass on request

SG 4200**For liquids**

- Sight glass with swirl stem
- Cast iron or stainless steel
- Temperature resistant up to 300°C

Flow sight glass with coupling sleeve straight-through type

The housing is equipped with a founded swirl stem. The glass windows on both sides are made from high temperature resistant pressed hardglass and are used for visual flow control. For an operating temperature up to 300°C borosilicate glass is also available as an option (price adder).

**Technical Data**

Connection	Coupling sleeve
Flow indication	Vortex
Gasket	Asbestos free
Pressure	Cast iron 16 bar / stainless steel PN 25/40
Material	SG 421 cast iron GG 25 / SG 405 stainless steel 1.4408
Viewing window	Pressed hardglass opt. borosilicate*
Temperature	Standard 150 °C, optionally 300 °C

Order Data SG 4200

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
SG 421	G 3/8	Cast iron GG 25	110 mm	SG 4211	52.00
SG 421	G 1/2	Cast iron GG 25	110 mm	SG 4212	57.00
SG 421	G 3/4	Cast iron GG 25	130 mm	SG 4213	57.00
SG 421	G 1	Cast iron GG 25	130 mm	SG 4214	62.00
SG 421	G 1 1/4	Cast iron GG 25	170 mm	SG 4215	73.00
SG 421	G 1 1/2	Cast iron GG 25	170 mm	SG 4216	104.00
SG 421	G 2	Cast iron GG 25	190 mm	SG 4217	129.00
SG 425	G 3/8	Stainless steel 1.4408	110 mm	SG 4251	234.00
SG 425	G 1/2	Stainless steel 1.4408	110 mm	SG 4252	254.00
SG 425	G 3/4	Stainless steel 1.4408	130 mm	SG 4253	287.00
SG 425	G 1	Stainless steel 1.4408	130 mm	SG 4254	391.00
SG 425	G 1 1/4	Stainless steel 1.4408	170 mm	SG 4255	434.00
SG 425	G 1 1/2	Stainless steel 1.4408	170 mm	SG 4256	516.00
SG 425	G 2	Stainless steel 1.4408	190 mm	SG 4257	634.00

*Additional charge for borosilicate glass on request

SG 6100

For liquids

- Sight glass with indication vane
- 1 viewing window and line marking 1 – 10
- Stainless steel

Flow sight glass with one viewing window as straight-through type with coupling sleeve or flange connection made of stainless steel.



Sight glass with incorporated indication vane, line scale 1 – 10 and one viewing window made of soda lime glass. Maximum temperature is 130 °C.

Technical Data

Connection	Coupling sleeve or flanges
Gasket	EPDM
Pressure	PN 16
Material	Stainless steel 1.4408
Viewing window	Soda lime glass
Temperature	Max. 130 °C

Order Data SG 6100

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
Typ 6.10	G 1/2	Stainless steel 1.4408	100 mm	SG 6101	212.00
Typ 6.10	G 3/4	Stainless steel 1.4408	105 mm	SG 6102	220.00
Typ 6.10	G 1	Stainless steel 1.4408	140 mm	SG 6103	232.00
Typ 6.10	G 1 1/4	Stainless steel 1.4408	192 mm	SG 6104	314.00
Typ 6.10	G 1 1/2	Stainless steel 1.4408	190 mm	SG 6105	325.00
Typ 6.10	G 2	Stainless steel 1.4408	225 mm	SG 6106	548.00
Typ 6.10	DN 15	Stainless steel 1.4408	170 mm	SG 6111	374.00
Typ 6.10	DN 20	Stainless steel 1.4408	180 mm	SG 6112	399.00
Typ 6.10	DN 25	Stainless steel 1.4408	205 mm	SG 6113	419.00
Typ 6.10	DN 32	Stainless steel 1.4408	215 mm	SG 6114	484.00
Typ 6.10	DN 40	Stainless steel 1.4408	226 mm	SG 6115	583.00
Typ 6.10	DN 50	Stainless steel 1.4408	230 mm	SG 6116	796.00

SG 7100

For liquids

- Sight glass with indication vane
- 2 viewing windows and line marking 1 – 10
- Stainless steel

Flow sight glass with two viewing windows as straight through type with coupling sleeve or flange connection made of stainless steel.

Sight glass with incorporated indication vane, line scale 1 – 10 and two viewing windows made of soda lime glass. Maximum temperature is 130 °C.



Technical Data

Connection	Coupling sleeve or flanges
Gasket	EPDM
Pressure	PN 16
Material	Stainless steel 1.4408
Viewing window	Soda lime glass
Temperature	Max. 130 °C

Order Data SG 7100

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
Typ 7.10	G 1/2	Stainless steel 1.4408	100 mm	SG 7101	299.00
Typ 7.10	G 3/4	Stainless steel 1.4408	105 mm	SG 7102	317.00
Typ 7.10	G 1	Stainless steel 1.4408	140 mm	SG 7103	339.00
Typ 7.10	G 1 1/4	Stainless steel 1.4408	192 mm	SG 7104	356.00
Typ 7.10	G 1 1/2	Stainless steel 1.4408	190 mm	SG 7105	462.00
Typ 7.10	G 2	Stainless steel 1.4408	225 mm	SG 7106	699.00
Typ 7.10	DN 15	Stainless steel 1.4408	170 mm	SG 7111	415.00
Typ 7.10	DN 20	Stainless steel 1.4408	180 mm	SG 7112	440.00
Typ 7.10	DN 25	Stainless steel 1.4408	215 mm	SG 7113	471.00
Typ 7.10	DN 32	Stainless steel 1.4408	220 mm	SG 7114	548.00
Typ 7.10	DN 40	Stainless steel 1.4408	222 mm	SG 7115	668.00
Typ 7.10	DN 50	Stainless steel 1.4408	230 mm	SG 7116	949.00

For starting values please see under
www.tablar.com

SG 4830**For liquids**

- Sight glass with rotor
- Cleaning during operation
- Brass or stainless steel

Flow indicator in a hexagonal shaped housing with coupling sleeve type connection and a sight glass made of Borosilicate glass.

The rotor of model SG 4830 is made from POM and has wiper elements for cleaning the inner surface of the sight tube. The turn of the rotor is proportional to the flow. By using different materials, optional brass or stainless steel, the flow indicator is suitable for dissimilar liquids.

**Technical Data**

Gasket, wiper	Brass: NBR, stainless steel: Viton
Pressure	PN 16
Housing	Brass or stainless steel
Rotor	POM red / > DN 32 Nylon white
Viewing window	Borosilicate glass
Temperature	Max. 100 °C

Order Data SG 4830

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
Visoflow WR1-W	G 1/4	Brass	71 mm	SG 4831	113.00
Visoflow WR1-W	G 3/8	Brass	71 mm	SG 4832	120.00
Visoflow WR1-W	G 1/2	Brass	86 mm	SG 4833	139.00
Visoflow WR1-W	G 3/4	Brass	94 mm	SG 4834	140.00
Visoflow WR1-W	G 1	Brass	104 mm	SG 4835	148.00
Visoflow WR1-W	G 1 1/4	Brass	120 mm	SG 4836	226.00
Visoflow WR1-W	G 1 1/2	Brass	130 mm	SG 4837	253.00
Visoflow WR1-W	G 1/4	Stainless steel	71 mm	SG 4851	205.00
Visoflow WR1-W	G 3/8	Stainless steel	71 mm	SG 4852	216.00
Visoflow WR1-W	G 1/2	Stainless steel	86 mm	SG 4853	231.00
Visoflow WR1-W	G 3/4	Stainless steel	94 mm	SG 4854	237.00
Visoflow WR1-W	G 1	Stainless steel	104 mm	SG 4855	249.00
Visoflow WR1-W	G 1 1/4	Stainless steel	120 mm	SG 4856	368.00
Visoflow WR1-W	G 1 1/2	Stainless steel	130 mm	SG 4857	408.00

SG 4930

New!

For gases

- Sight glass with rotor
- Cleaning during operation
- Brass or stainless steel

Flow indicator in a hexagonal shaped housing with coupling sleeve type connection and a sight glass made of Borosilicate glass.

The rotor of model SG 4930 is made from POM and has wiper elements for cleaning the inner surface of the sight tube. The turn of the rotor is proportional to the flow. By using different materials, optional brass or stainless steel, the flow indicator is suitable for dissimilar liquids.



Technical Data

Gasket, wiper	Brass: NBR, stainless steel: Viton
Pressure	PN 16
Housing	Brass or stainless steel
Ball bearing	Chrome-plated steel
Rotor	POM red / > DN 32 Nylon white
Viewing window	Borosilicate glass
Temperature	Max. 100 °C

Order Data SG 4930

Type	Nominal size	Material	Overall length	Article-No.	€/Piece
Visoflow WR1-G	G 1/4	Brass	71 mm	SG 4931	139.00
Visoflow WR1-G	G 3/8	Brass	71 mm	SG 4932	146.00
Visoflow WR1-G	G 1/2	Brass	86 mm	SG 4933	165.00
Visoflow WR1-G	G 3/4	Brass	94 mm	SG 4934	166.00
Visoflow WR1-G	G 1	Brass	104 mm	SG 4935	174.00
Visoflow WR1-G	G 1 1/4	Brass	120 mm	SG 4936	252.00
Visoflow WR1-G	G 1 1/2	Brass	130 mm	SG 4937	279.00
Visoflow WR1-G	G 1/4	Stainless steel	71 mm	SG 4951	231.00
Visoflow WR1-G	G 3/8	Stainless steel	71 mm	SG 4952	242.00
Visoflow WR1-G	G 1/2	Stainless steel	86 mm	SG 4953	257.00
Visoflow WR1-G	G 3/4	Stainless steel	94 mm	SG 4954	263.00
Visoflow WR1-G	G 1	Stainless steel	104 mm	SG 4955	275.00
Visoflow WR1-G	G 1 1/4	Stainless steel	120 mm	SG 4956	394.00
Visoflow WR1-G	G 1 1/2	Stainless steel	130 mm	SG 4957	434.00

PW 2500**For liquids and gases**

- Standard version for all nominal pipe sizes
- Brass or stainless steel
- Easy installation



These instruments are used for controlling and protection against lack in the industry, heating engineering and process engineering.

The flow controller transmits the flow proportional motion via a bellows-supported paddle and a spring retained rocker to an adjustable micro switch. By adaption of the paddle length the flow controller can be used for pipe diameters of DN 25 up to DN 200.

Technical Data

Connection	R 1
Output	Change over 250 V AC, 15 A
Pressure	Max. 11 bar
Material	Brass or stainless steel
Paddle material	Stainless steel 1.4571
Protection class	IP 65
Temperature	Max. 120 °C

Order Data PW 2500

Type	Housing	Bellows	Article-No.	€/Piece
CRG-025HM	Brass	Tombac	PW 2501	110.00
CRG-025HK	Stainless steel	Stainless steel	PW 2502	209.00

Ranges of adjustment:
for water: data sheet under www.tablar.com,
for air use factor 15.



KM 1000

For liquids

- Omnidirectional installation
- Compact design
- Optionally with limit switch



The piston-type flowmeter **KM 1000** is used to measure water, oils or other liquids independently from mounting position.

The instruments are equipped with a spring loaded piston inside a cylindrical tube made of borosilicate glass. The flow rate can be read directly from the scale on the glass tube. Optionally a bistable limit switch is available for controlling of measured value.



Technical Data

Connection	Stainless steel
Armature	Stainless steel
Gasket	NBR optionally EPDM / Viton
Pressure	Max. 10 bar
Installation length	156 mm
Accuracy	4 %
Measuring cone	Borosilicate glass
Temperature	0 °C up to +100 °C

Order Data KM 1000

Type	Connection*	Measuring range	Article-No.	€/Piece
SKM	G 1/4	1,5 ... 4,5 l/min	KM 1101	203.00
SKM	G 1/4	2,5 ... 8 l/min	KM 1102	203.00
SKM	G 1/4	5 ... 15 l/min	KM 1103	203.00
SKM	G 1/2	2,5 ... 8 l/min	KM 1112	257.00
SKM	G 1/2	5 ... 15 l/min	KM 1113	257.00
SKM	G 1/2	10 ... 30 l/min	KM 1114	257.00
SKM	G 3/4	10 ... 30 l/min	KM 1124	257.00
SKM	G 3/4	15 ... 45 l/min	KM 1125	257.00
SKM	G 3/4	20 ... 60 l/min	KM 1126	257.00
SKM	G 1	15 ... 45 l/min	KM 1135	257.00
SKM	G 1	20 ... 60 l/min	KM 1136	257.00
SKM	G 1	30 ... 90 l/min	KM 1137	257.00

Order Data Options KM 1000

Type	Option	Article-No.	€/Piece
RK	1 bistable limit switch	KM 1500	93.00

*Other types of connection please see datasheet under www.tablar.com

MF 4000**New!****For liquids and gases**

- Direct flow indication
- Limit switch, analog output
- For horizontal or vertical installation



4-20 mA



MF 4000 is an all-metal flowmeter which operates on the float measuring principle.

In the M9 indicator the position of the float is transmitted to the pointer and the flow value is indicated directly on the scale. Model H250H is slated for horizontal installation and type H250U for vertical flow measurement in up and down direction.

**Technical Data**

Connection	Flanges acc. to EN 1092-1, other on request
Output	Optional 4 – 20 mA, Profibus PA
Pressure	PN 16 – PN 100
Installation length	250 mm
Housing	Aluminium, optionally stainless steel
Accuracy	2,5 %
Measuring range	Water: see table, air: on request
Measuring span	10 : 1
Measuring cone	Stainless steel
Temperature	-70 °C up to +100 °C (higher on request)
Approval	ATEX
Add. ordering information	Flow direction

Order Data MF 4000

Type	Connection	Measuring range: Water*	Article-No.	€/Piece
H250H	DN 15 PN 40	0,007...0,07 up to 0,16 ... 1,6 m³/h	MF 4010	637.00
H250H	DN 25 PN 40	0,13 ... 1,3 up to 0,8 ... 8 m³/h	MF 4020	689.00
H250H	DN 50 PN 40	1 ... 10 up to 2,2 ... 22 m³/h	MF 4030	818.00
H250H	DN 80 PN 16	2,5 ... 25 up to 3,5 ... 35 m³/h	MF 4040	1,183.00
H250H	DN 100 PN 16	8 ... 80 m³/h	MF 4050	1,460.00
H250U	DN 15 PN 40	0,0065 ... 0,065 up to 0,15 ... 1,5 m³/h	MF 4110	637.00
H250U	DN 25 PN 40	0,115 ... 1,15 up to 0,76 ... 7,6 m³/h	MF 4120	689.00
H250U	DN 50 PN 40	0,9 ... 9 up to 2,1 ... 21m³/h	MF 4130	818.00

*Intermediate values please see data sheet under www.tablar.com.
Other media on request.

Order Data Options MF 4000

Type	Option	Article-No.	€/Piece
K1 MIN	1 limit switch MIN	MF 4080	156.00
K1 MAX	1 limit switch MAX	MF 4081	156.00
K2 MIN/MAX	2 limit switches MIN/MAX	MF 4082	225.00
ESK II	Analog output 4 – 20 mA	MF 4090	477.00
ESK 3-PA	Output Profibus PA	MF 4091	621.00
ATEX II2G	Approval ATEX	MF 4092	17.00
APZ 3.1 B	Material certificate for pressure retaining parts with APZ 3.1	MF 4096	48.00

SN 5000

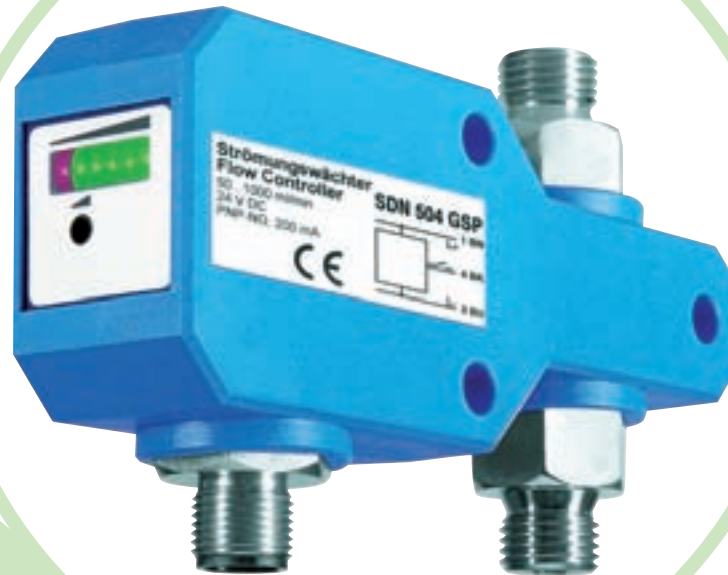
For water and oil

- Inline sensor
- Limit switch or analog output
- Short reponse time



Thermal flow controller type SN 5000 are used for controlling liquid flow.

Model SN 5000 is available in two versions: as a controller with switch output or with 4 – 20 mA analog output. The required switch point resp. analog output can be adjusted by a trimpot.



Technical Data

Connection*	G 1/4 , G 1/2 , G 3/4
Flow indication	LED display
Output	Contact normally open or 4 – 20 mA
Pressure	Max. 20 bar
Electr. connection	M12 plug-in system
Material*	Stainless steel 1.4571
Protection class	IP 67
Temperature	0 °C up to +80 °C
Power supply	24 V DC

Order Data SN 5000

Type	Detection range	Connection*	Output	Article-No.	€/Piece
SDN 504 GR	0,001 ... 1 l/min	G 1/4	Contact normally open	SN 5001	247.00
SDN 510 GR	0,01 ... 6 l/min	G 1/4	Contact normally open	SN 5002	247.00
SDN 515 GR	2 ... 25 l/min	G 1/2	Contact normally open	SN 5003	287.00
SDN 520 GR	3 ... 40 l/min	G 3/4	Contact normally open	SN 5004	287.00
SDN 504 GA	0,001 ... 1 l/min	G 1/4	4 – 20 mA	SN 5011	309.00
SDN 510 GA	0,01 ... 6 l/min	G 1/4	4 – 20 mA	SN 5012	309.00
SDN 515 GA	2 ... 25 l/min	G 1/2	4 – 20 mA	SN 5013	350.00
SDN 520 GA	3 ... 40 l/min	G 3/4	4 – 20 mA	SN 5014	350.00

*Other connections and materials on request

SN 4500

For Liquids

- Compact instrument
- Relay or analog output
- One-piece sensor made of stainless steel



4-20 mA

Thermal flow controller type SN 4500 are used for controlling liquid flow.

Model SN 4500 is available in two versions: as a controller with relay output or with 4 – 20 mA analog output. The required switch point resp. analog output can be adjusted by a trimpot.



Technical Data

Connection	G 1/2
Flow indication	LED display
Output	Relay / changeover or 4 – 20 mA
Pressure	Max. 100 bar
Electr. connection	See below
Detection range	5 ... 150 cm/s, SN 4504 5 ... 300 cm/s
Material	Stainless steel 1.4571
Protection class	IP 67, SN 4504 IP 65
Temperature	-20 °C up to +80 °C
Power supply	24 V DC or 230 V AC

Order Data SN 4500

Type	Output	Connection	Power supply	Article-No.	€/Piece
SN 450/1-GA-3M	Analog	Universal plug M12	24 V DC	SN 4504	351.00
SN 450/1-A4-WR2	Relay/changeover	Cable 2 m PVC	230 V AC	SN 4514	219.00
SN 450/1-A4-GR	Relay/changeover	Cable 2 m PVC	24 V DC	SN 4524	219.00

SN 4600

For liquids

- Ex-approval
- Limit value adjustable by a processor
- One-piece sensor made of stainless steel



Sensors for use in hazardous area.

The thermal flow sensors series SN 4600 are designed for operation in hazardous areas. The adjustment of the limit value is carried out by a processor with integrated switching amplifier. Additionally the processor is equipped with an open-circuit monitoring LED adjustment row and a shutt-off delay. The measuring system is consisting of the sensor and the processor.



Technical Data

Connection	G 1/2
Flow indication	LED display
Output	Relay / changeover
Electr. connection	Cable 2 m PUR blue
Detection range	Water 1 ... 100 cm/s, Oil 3 ... 200 cm/s
Material	Stainless steel 1.4571
Protection class	IP 67
Sensor length	13 mm
Temperature	See below
Power supply	24 V DC or 230 V AC

Order Data SN 4600

Type	Version*	Ex-zone	Operating temperature	Article-No.	€/Piece
STS 103 K	II 1/2 G EEx ia IIC T 6	0	-20 up to +60 °C	SN 4603	283.00
ST 103 K	II 2 G EEx ib IIC T 6	1	-20 up to +85 °C	SN 4604	231.00
ST 103 KH	II 2 G EEx ib IIC T 6	1	+10 up to +120 °C	SN 4605	282.00
SZA 400 Ex-230	II (1) GD [EEx ia] IIC		Processor 230 V AC	SZ 4600	348.00
SZA 400 Ex-24	II (1) GD [EEx ia] IIC		Processor 24 V DC	SZ 4601	348.00

*Other versions on request

LW 4100**For gases**

- Compact version
- Relay or analog output
- Wide working range



4-20 mA

Thermal flow controller type LW 4100 are used for controlling air and gas flow.

Model LW 4100 is available in two versions: as controller with relay output or with 4 – 20 mA analog output. The required switch point resp. analog output can be adjusted by a trimpot.



1

Technical Data

Connection	G 1/2
Flow indication	LED display
Output	Relay / changeover or 4 – 20 mA
Pressure	Max. 100 bar
Electr. connection	Cable 2 m PVC
Detection range	0,5 ... 30 m/s
Material	Stainless steel 1.4571
Protection class	IP 67
Temperature	-20 °C up to +80 °C
Power supply	24 V DC or 230 V AC

Order Data LW 4100

Type	Output	Power supply	Article-No.	€/Piece
LNZ 450 GR-K	Relay / changeover	24 V DC	LW 4101	228.00
LNZ 450 GA-K	Analog output	24 V DC	LW 4102	271.00
LNZ 450 WR2-K	Relay / changeover	230 V AC	LW 4103	228.00

LW 4600

For gases

- Ex-approval for dust and Zone 0 – 1
- Limit switch adjustable via processor
- One-piece sensor made of stainless steel



Sensors for use in hazardous areas.

The thermal flow sensors series LW 4600 are designed for operation in hazardous areas. The adjustment of the limit value is carried out by a processor with integrated switching amplifier. Additionally the processor is equipped with on open-circuit monitoring LED adjustment row and a shutt-off delay. The measuring system is consisting of the sensor and the processor.



Technical Data

Connection	G 1/2
Flow indication	LED display
Output	Relay / changeover
Electr. connection	Cable 2 m blue
Detection range	2 ... 25 m/s
Material	Stainless steel 1.4571
Protection class	IP 68
Sensor length	9,5 mm
Temperature	See below
Power supply	24 V DC or 230 V AC

Order Data LW 4600

Type	Version*	Ex-zone	Operating temperature	Article-No.	€/Piece
STS 215 K	II 1 D T100°C	0	-20 °C up to +60 °C	LW 4601	284.00
STS 215 KH	II 1/2 G EEx ia IIC T 4	0	+10 °C up to +60 °C	LW 4602	280.00
STS 215 KH	II 1/2 G EEx ia IIC T 4	1/2	+10 °C up to +120 °C	LW 4603	280.00
SZA 400 Ex-230	II (1) GD [EEx ia] IIC		Processor 230 V AC	LZ 4600	348.00
SZA 400 Ex-24	II (1) GD [EEx ia] IIC		Processor 24 V DC	LZ 4601	348.00

*Other versions on request

DS 5000

For conductive liquids

- Relay output or 4 – 20 mA
- Materials in contact with medium are made out of stainless steel or ceramic



4-20 mA

Magnetic-inductive flowmeter type DS 5000 for conductive liquids.

The instrument is available in two versions: DS 5001 as a simple switch and DS 5002 as a flow controller with 4 – 20 mA analog output. The current output can be transmitted by a telemetering system. The instrument is suitable for pipe diameter from DN 50 up to DN 400. The max. medium temperature is 150 °C and the max. operating pressure is 25 bar. DS 5000 is installed in the pipeline with the aid of the supplied connection sockets.

Technical Data

Connection	Threaded sleeve
Pressure	Max. 25 bar
Housing	Aluminium die-cast
Accuracy	5 %
Conductivity	Min. 20 µS/cm
Sensor	Stainless steel
Temperature	-25 °C up to +150 °C
Ambient temperature	-25 °C up to +60 °C

Order Data DS 5000

Type	Version	Power supply	Article-No.	€/Piece
DWM 1000	Switch relay output	48 – 230 V AC/DC	DS 5001	546.00
DWM 2000	Controller 4 – 20 mA	24 V DC	DS 5002	662.00



Flowmeter

**Know
the flow.**



Type	Installation position	Liquids	Gases
PM 2000		x	x
MG 2200		x	x
VA 4000		x	x
MF 1600		x	x
MF 3000		x	x
KS 2000		x	
KS 9000			x
SA 3100	any	x	
FA 2000	any	x	
SA 5000	any	x	
WF 6000	any		x
LB 5000	any		x
LB 6000	any		x
OM 7300	any	x	x
OM 3300	any	x	x
UM 3000	any	x	
CO 7100	any	x	
ZA 2500	any	x	
DP 2000	any	x	x
WY 4000	any	x	x



Application range	Electric output	Approval	Page
free of solids			E / 22
free of solids			E / 24
free of solids			E / 26
free of solids	 4-20 mA		E / 28
free of solids	 4-20 mA 		E / 30
free of solids	 4-20 mA		E / 32
free of solids	 4-20 mA		E / 34
conductive liquids >5 µS	4-20 mA 		E / 35
conductive liquids >5 µS	4-20 mA 		E / 37
conductive liquids >1 µS	4-20 mA 		E / 39
dry gases, free of solids	4-20 mA		E / 40
dry gases, free of solids	4-20 mA	on request	E / 42
dry gases, free of solids	4-20 mA	on request	E / 43
bubble formation, inhomogeneity	4-20 mA 		E / 45
bubble formation, inhomogeneity	4-20 mA 		E / 47
air pockets, free of solids	4-20 mA 		E / 48
air pockets, free of solids	4-20 mA 		E / 50
maximum viscosity 700mPas			E / 51
abrasive products, high viscosity	 4-20 mA		E / 52
high viscosity, inhomogeneity	4-20 mA 		E / 54

PM 2000

For liquids and gases

- Fine-metering valve made of stainless steel
- Measuring, dosing, bubbling, controlling
- ATEX approval



The flowmeter PM 2000 for small liquid and gas rates works in accordance to the float type principle.

The actual flowrate is directly monitored on the glass measuring cone and the flow rate can be adjusted to constant value by the aid of the incorporated fine dosing valve. For flow controlling the instrument is equipped with monostable or bistable limit switches. The mounting position is vertical and the flow direction is from bottom to top.



Technical Data

Connection	1/4 NPT optionally G 1/4
Output	Limit switch
Pressure	Max. 10 bar
Installation length	125 mm
Accuracy	2,5 %
Measuring span	10 : 1
Measuring cone	Borosilicate glass
Scale length	80 mm
Temperature	-20 °C up to +80 °C
Valve seat and shaft	Stainless steel
Approval	ATEX
Add. order information	For special scale: medium, pressure, temperature

Order Data PM 2000

Type	Material	Medium	Measuring range	Article-No.	€/Piece
DK 800N	Brass	Water	0,25 ... 2,5 l/h	PM 2024	85.00
DK 800N	Brass	Water	0,5 ... 5 l/h	PM 2026	85.00
DK 800N	Brass	Water	1,2 ... 12 l/h	PM 2028	85.00
DK 800N	Brass	Water	2,5 ... 25 l/h	PM 2030	85.00
DK 800N	Brass	Water	4 ... 40 l/h	PM 2032	85.00
DK 800N	Brass	Water	6 ... 60 l/h	PM 2034	85.00
DK 800N	Brass	Water	10 ... 100 l/h	PM 2036	85.00
DK 800N	Brass	Water	16 ... 160 l/h	PM 2038	85.00
DK 800N	Brass	Liquid	Special scale	PS 2000	117.00
DK 800R	Stainless steel	Water	0,25 ... 2,5 l/h	PE 2024	160.00
DK 800R	Stainless steel	Water	0,5 ... 5 l/h	PE 2026	160.00
DK 800R	Stainless steel	Water	1,2 ... 12 l/h	PE 2028	160.00

Order Data PM 2000

Type	Material	Medium	Measuring range	Article-No.	€/Piece
DK 800R	Stainless steel	Water	2,5 ... 25 l/h	PE 2030	160.00
DK 800R	Stainless steel	Water	4 ... 40 l/h	PE 2032	160.00
DK 800R	Stainless steel	Water	6 ... 60 l/h	PE 2034	160.00
DK 800R	Stainless steel	Water	10 ... 100 l/h	PE 2036	160.00
DK 800R	Stainless steel	Water	16 ... 160 l/h	PE 2038	160.00
DK 800R	Stainless steel	Liquid	Special scale	PV 2000	195.00
DK 800N	Brass	Air 20 °C 1,2 bara	0,5 ... 5 NI/h	PM 2020	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	0,8 ... 8 NI/h	PM 2021	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	1,6 ... 16 NI/h	PM 2022	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	4 ... 40 NI/h	PM 2023	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	6 ... 60 NI/h	PM 2025	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	10 ... 100 NI/h	PM 2027	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	25 ... 250 NI/h	PM 2029	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	50 ... 500 NI/h	PM 2031	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	80 ... 800 NI/h	PM 2033	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	100 ... 1000 NI/h	PM 2035	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	180 ... 1800 NI/h	PM 2037	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	400 ... 4000 NI/h	PM 2039	85.00
DK 800N	Brass	Air 20 °C 1,2 bara	500 ... 5000 NI/h	PM 2040	85.00
DK 800N	Brass	Gas	Special scale	PS 2001	117.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	0,5 ... 5 NI/h	PE 2020	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	0,8 ... 8 NI/h	PE 2021	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	1,6 ... 16 NI/h	PE 2022	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	4 ... 40 NI/h	PE 2023	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	6 ... 60 NI/h	PE 2025	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	10 ... 100 NI/h	PE 2027	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	25 ... 250 NI/h	PE 2029	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	50 ... 500 NI/h	PE 2031	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	80 ... 800 NI/h	PE 2033	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	100 ... 1000 NI/h	PE 2035	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	180 ... 1800 NI/h	PE 2037	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	400 ... 4000 NI/h	PE 2039	160.00
DK 800R	Stainless steel	Air 20 °C 1,2 bara	500 ... 5000 NI/h	PE 2040	160.00
DK 800R	Stainless steel	Gas	Special scale	PV 2001	195.00

Order Data Options PM 2000

Type	Option	Article-No.	€/Piece
K1 mono	1 monostable limit switch incl. terminal box	PM 1030	128.00
K2 mono	2 monostable limit switches incl. terminal box	PM 1031	218.00
K1 bi	1 bistable limit switch incl. terminal box	PM 1032	206.00
K2 bi	2 bistable limit switches incl. terminal box	PM 1033	394.00
	Support bracket for wall mounting	PM 1010	12.00
	Set for panel mounting	PM 1012	39.00
ATEX	Approval acc.to ATEX II2G	PM 1050	18.00
N/REN	Flow controller for inlet pressure fluctuations made of brass suitable for gases and liquids	PM 1105	173.00
R/RER	Flow controller for inlet pressure fluctuations made of stainless steel suitable for gases and liquids	PM 1106	362.00
N/RAN	Flow controller for outlet pressure fluctuations made of brass for gases	PM 1107	194.00
R/RAR	Flow controller for outlet pressure fluctuations made of stainless steel for gases	PM 1108	389.00

MG 2200

For liquids and gases

- Great pressure resistance
- Wetted parts are made out of stainless steel and PTFE
- ATEX approval



The all-metal flowmeter MG 2200 for small flowrates of liquids and gases works according to float principle.

The flowmeter is suitable for a safe observation and control of the flowrate even if the medium is aggressive, poisonous, inflammable, muddy or opaque. Caused by the rugged stainless steel design the monitoring of the measured value is also possible at high pressure and high temperature. MG 2200 can be equipped with limit switches.

Technical Data

Connection	1/4 NPT optionally G 1/4
Output	Max. 2 limit switches
Pressure	Max. 130 bar
Installation length	90 mm
Accuracy	4 %
Measuring span	10 : 1
Measuring cone	Stainless steel 316L
Scale length	40 mm
Temperature	-80 °C up to +150 °C
Valve seat and shaft	Stainless steel / Viton, PTFE
Approval	ATEX
Add. order information	For special scale: medium, pressure, temperature

Order Data MG 2200

Type	Medium	Measuring range	Article-No.	€/Piece
DK 32	Water	0,3 ... 3 l/h	MF 2211	378.00
DK 32	Water	0,5 ... 5 l/h	MF 2213	378.00
DK 32	Water	1 ... 10 l/h	MF 2215	378.00
DK 32	Water	2,5 ... 25 l/h	MF 2216	378.00
DK 32	Water	4 ... 40 l/h	MF 2217	378.00
DK 32	Water	6 ... 60 l/h	MF 2219	378.00
DK 32	Water	8 ... 80 l/h	MF 2220	378.00
DK 32	Water	10 ... 100 l/h	MF 2221	378.00
DK 32	Air 20 °C 1,2 bara	5 ... 50 NI/h	MG 2210	378.00
DK 32	Air 20 °C 1,2 bara	10 ... 100 NI/h	MG 2212	378.00
DK 32	Air 20 °C 1,2 bara	15 ... 150 NI/h	MG 2214	378.00
DK 32	Air 20 °C 1,2 bara	40 ... 400 NI/h	MG 2216	378.00



Order Data MG 2200

Type	Medium	Measuring range	Article-No.	€/Piece
DK 32	Air 20 °C 1,2 bara	80 ... 800 NI/h	MG 2217	378.00
DK 32	Air 20 °C 1,2 bara	125 ... 1250 NI/h	MG 2218	378.00
DK 32	Air 20 °C 1,2 bara	200 ... 2000 NI/h	MG 2219	378.00
DK 32	Air 20 °C 1,2 bara	250 ... 2500 NI/h	MG 2220	378.00
DK 32	Air 20 °C 1,2 bara	340 ... 3400 NI/h	MG 2221	378.00

Order Data Options MG 2200

Type	Option	Article-No.	€/Piece
K1 MIN M12x1,5	1 MIN limit switch incl. terminal box	MG 2250	141.00
K1 MAX M12x1,5	1 MAX limit switch incl. terminal box	MG 2251	141.00
K2 MIN/MAX M12x1,5	2 MIN / MAX limit switches incl. terminal box	MG 2252	190.00
ATEX	ATEX II2G approval	MG 2253	18.00

VA 4000**For liquids and gases**

- Accuracy 1%
- Robust stainless steel housing
- Max. 2 limit switches



The high precise flowmeter type VA 4000 for large amount of liquids and gases works according to the float principle.

The flowmeter VA 4000 has a robust stainless steel housing and a built-in shatterproof viewing window. On the glass measuring tube a customize scale in flow unit is applied. Caused by a multitude of connections VA 4000 can be used in all industrial areas.

**Technical Data**

Connection*	Screwing G 1/2 up to G 2
Output	Max. 2 limit switches
Gasket*	Buna (NBR)
Pressure	Max. 10 bar
Installation length	375 mm
Plug-in units	Stainless steel 316L
Accuracy	1 %
Measuring span	10 : 1
Measuring cone	Stainless steel 316L
Scale length	300 mm
Temperature	-40 °C up to +100 °C
Approval	ATEX
Add. order information	For special scale: medium, pressure, temperature

Order Data VA 4000

Type	Connection*	Medium	Measuring range	Article-No.	€/Piece
VA 40V/R	G 1/2	Water	4 ... 40 l/h	VA 4122	221.00
VA 40V/R	G 1/2	Water	6,3 ... 63 l/h	VA 4123	221.00
VA 40V/R	G 1/2	Water	10 ... 100 l/h	VA 4124	221.00
VA 40V/R	G 1/2	Water	16 ... 160 l/h	VA 4125	221.00
VA 40V/R	G 1/2	Water	25 ... 250 l/h	VA 4126	221.00
VA 40V/R	G 1/2	Water	40 ... 400 l/h	VA 4127	221.00
VA 40V/R	G 1/2	Liquid	Special scale	VA 4140	221.00
VA 40V/R	G 1	Water	63 ... 630 l/h	VA 4101	252.00
VA 40V/R	G 1	Water	100 ... 1000 l/h	VA 4102	252.00
VA 40V/R	G 1	Water	160 ... 1600 l/h	VA 4103	252.00
VA 40V/R	G 1	Water	250 ... 2500 l/h	VA 4104	252.00

*Other connections and gaskets on request

Order Data VA 4000

Type	Connection*	Medium	Measuring range	Article-No.	€/Piece
VA 40V/R	G 1	Liquid	Special scale	VA 4150	252.00
VA 40V/R	G 1 1/2	Water	160 ... 1600 l/h	VA 4105	300.00
VA 40V/R	G 1 1/2	Water	250 ... 2500 l/h	VA 4106	300.00
VA 40V/R	G 1 1/2	Water	400 ... 4000 l/h	VA 4107	300.00
VA 40V/R	G 1 1/2	Liquid	Special scale	VA 4160	300.00
VA 40V/R	G 2	Water	400 ... 4000 l/h	VA 4108	397.00
VA 40V/R	G 2	Water	630 ... 6300 l/h	VA 4109	397.00
VA 40V/R	G 2	Water	1000 ... 10000 l/h	VA 4110	397.00
VA 40V/R	G 2	Liquid	Special scale	VA 4170	397.00
VA 40V/R	G 1/2	Air 20 °C 1,2 bara	0,15 ... 1,5 Nm³/h	VA 4131	221.00
VA 40V/R	G 1/2	Air 20 °C 1,2 bara	0,22 ... 2,2 Nm³/h	VA 4132	221.00
VA 40V/R	G 1/2	Air 20 °C 1,2 bara	0,3 ... 3 Nm³/h	VA 4133	221.00
VA 40V/R	G 1/2	Air 20 °C 1,2 bara	0,5 ... 5 Nm³/h	VA 4134	221.00
VA 40V/R	G 1/2	Air 20 °C 1,2 bara	0,8 ... 8 Nm³/h	VA 4135	221.00
VA 40V/R	G 1/2	Gas	Special scale	VA 4145	221.00
VA 40V/R	G 1	Air 20 °C 1,2 bara	1,8 ... 18 Nm³/h	VA 4112	252.00
VA 40V/R	G 1	Air 20 °C 1,2 bara	2,8 ... 28 Nm³/h	VA 4113	270.00
VA 40V/R	G 1	Air 20 °C 1,2 bara	4,9 ... 49 Nm³/h	VA 4114	270.00
VA 40V/R	G 1	Gas	Special scale	VA 4155	270.00
VA 40V/R	G 1 1/2	Air 20 °C 1,2 bara	4,5 ... 45 Nm³/h	VA 4116	300.00
VA 40V/R	G 1 1/2	Air 20 °C 1,2 bara	7 ... 70 Nm³/h	VA 4117	325.00
VA 40V/R	G 1 1/2	Gas	Special scale	VA 4165	325.00
VA 40V/R	G 2	Air 20 °C 1,2 bara	12 ... 120 Nm³/h	VA 4119	397.00
VA 40V/R	G 2	Air 20 °C 1,2 bara	19 ... 190 Nm³/h	VA 4120	422.00
VA 40V/R	G 2	Gas	Special scale	VA 4175	422.00

Order Data Options VA 4000

Type	Option	Article-No.	€/Piece
K1 MS 14I	1 REED switch incl. terminal box	VA 4180	176.00
K2 MS 14I	2 REED switches incl. terminal box	VA 4181	352.00
K1 TG 21	1 NAMUR contact (proximity type) from G1	TG 4100	268.00
K2 TG 21	2 NAMUR contacts (proximity type) from G1	TG 4101	526.00
ATEX	ATEX II2G approval	VA 4190	18.00
APZ 3.1 B	PMI test of stainless steel process connection incl. APZ 3.1	VA 4196	84.00

*Other connections and gaskets on request

MF 1600**For liquids and gases**

- Rugged pressure resistant version
- Limit switch, analog output
- ATEX approval



4-20 mA



The all-metal flowmeter MF 1600 for liquids and gases works according to the float principle

The rugged stainless steel measuring part ensures a high level of security at an operating pressure up to 40 bar and a temperature less than 200 °C. Controlling of measured value by means of MIN and MAX limit switches is possible just as a linear current output in 2-wire-technique. The mounting position is vertical and the flow direction is from bottom to top. Special instruments for food and pharma industry as well with wetted parts made of ceramic (Al₂O₃) are available on request.

Technical Data

Connection*	Flanges acc. to DIN
Output	Optionally 4 – 20 mA, Profibus PA, limit switch
Pressure	PN 16 – PN 100
Installation length	250 mm
Housing	Aluminium, optionally stainless steel
Accuracy	1,6 %
Measuring span	10 : 1
Measuring cone	Stainless steel
Temperature	-70 °C up to +200 °C (higher on request)
Approval	ATEX
Add. order information	For special scale: medium, pressure, temperature

Order Data MF 1600

Type	Medium	Measuring range	Connection*	Article-No.	€/Piece
H 250 RR M9	Water	2,5 ... 25 l/h	DN 15 PN 40	MF 1601	458.00
H 250 RR M9	Water	6,3 ... 63 l/h	DN 15 PN 40	MF 1603	458.00
H 250 RR M9	Water	10 ... 100 l/h	DN 15 PN 40	MF 1604	458.00
H 250 RR M9	Water	25 ... 250 l/h	DN 15 PN 40	MF 1606	458.00
H 250 RR M9	Water	63 ... 630 l/h	DN 15 PN 40	MF 1608	458.00
H 250 RR M9	Liquid	Special scale	DN 15 PN 40	MF 1650	458.00
H 250 RR M9	Water	100 ... 1000 l/h	DN 25 PN 40	MF 1610	502.00
H 250 RR M9	Water	160 ... 1600 l/h	DN 25 PN 40	MF 1611	502.00
H 250 RR M9	Water	400 ... 4000 NI/h	DN 25 PN 40	MF 1613	502.00
H 250 RR M9	Liquid	Special scale	DN 25 PN 40	MF 1651	502.00
H 250 RR M9	Water	1 ... 10 m³/h	DN 50 PN 40	MF 1615	632.00
H 250 RR M9	Water	1,6 ... 16 m³/h	DN 50 PN 40	MF 1616	632.00

*Other connections on request



Order Data MF 1600

Type	Medium	Measuring range	Connection*	Article-No.	€/Piece
H 250 RR M9	Water	2,5 ... 25 m³/h	DN 50 PN 40	MF 1617	632.00
H 250 RR M9	Liquid	Special scale	DN 50 PN 40	MF 1652	632.00
H 250 RR M9	Water	2,5 ... 25 m³/h	DN 80 PN 16	MF 1619	997.00
H 250 RR M9	Water	4 ... 40 m³/h	DN 80 PN 16	MF 1620	997.00
H 250 RR M9	Liquid	Special scale	DN 80 PN 16	MF 1653	997.00
H 250 RR M9	Water	6,3 ... 63 m³/h	DN 100 PN 16	MF 1621	1,273.00
H 250 RR M9	Liquid	Special scale	DN 100 PN 16	MF 1654	1,273.00
H 250 RR M9	Air 20 °C 1,2 bara	0,065 ... 650 NI/h	DN 15 PN 40	MG 1601	458.00
H 250 RR M9	Air 20 °C 1,2 bara	0,15 ... 1,5 Nm³/h	DN 15 PN 40	MG 1603	458.00
H 250 RR M9	Air 20 °C 1,2 bara	0,22 ... 2,2 Nm³/h	DN 15 PN 40	MG 1604	458.00
H 250 RR M9	Air 20 °C 1,2 bara	0,55 ... 5,5 Nm³/h	DN 15 PN 40	MG 1606	458.00
H 250 RR M9	Air 20 °C 1,2 bara	1,4 ... 14 Nm³/h	DN 15 PN 40	MG 1608	458.00
H 250 RR M9	Gas	Special scale	DN 15 PN 40	MG 1650	458.00
H 250 RR M9	Air 20 °C 1,2 bara	2,2 ... 22 Nm³/h	DN 25 PN 40	MG 1610	502.00
H 250 RR M9	Air 20 °C 1,2 bara	3,5 ... 35 Nm³/h	DN 25 PN 40	MG 1611	502.00
H 250 RR M9	Air 20 °C 1,2 bara	5 ... 50 Nm³/h	DN 25 PN 40	MG 1613	502.00
H 250 RR M9	Gas	Special scale	DN 25 PN 40	MG 1651	502.00
H 250 RR M9	Air 20 °C 1,2 bara	8 ... 80 Nm³/h	DN 50 PN 40	MG 1615	632.00
H 250 RR M9	Air 20 °C 1,2 bara	11 ... 110 Nm³/h	DN 50 PN 40	MG 1616	632.00
H 250 RR M9	Air 20 °C 1,2 bara	14 ... 140 Nm³/h	DN 50 PN 40	MG 1617	632.00
H 250 RR M9	Gas	Special scale	DN 50 PN 40	MG 1652	632.00
H 250 RR M9	Air 20 °C 1,2 bara	40 ... 400 Nm³/h	DN 80 PN 16	MG 1619	997.00
H 250 RR M9	Air 20 °C 1,2 bara	50 ... 500 Nm³/h	DN 80 PN 16	MG 1620	997.00
H 250 RR M9	Gas	Special scale	DN 80 PN 16	MG 1653	997.00

Order Data Options MF 1600

Type	Option	Article-No.	€/Piece
K1 MIN SC 3,5-NO	1 MIN limit switch	MF 1680	156.00
K1 MAX SC 3,5-NO	1 MAX limit switch	MF 1681	156.00
K2 MIN/MAX SC 3,5-NO	2 MIN / MAX limit switches	MF 1682	225.00
ATEX	ATEX II2G approval	MF 1690	18.00
ESK II	Analog output 4 – 20 mA	MF 1691	477.00
ESK 3-PA	Profibus PA	MF 1692	621.00
ESK II-Z	Analog output 4 – 20 mA incl. flow counter non-Ex	MF 1694	883.00
APZ 3.1 B	Material confirmation of pressure retaining parts APZ 3.1	MF 1696	48.00

*Other connections on request

MF 3000**New!****For liquids and gases**

- Explosion-proof version EEx d
- Pulse output, limit switch, analog output
- Operator control by way of 3 keys or magnet bar



4-20 mA



The variable-area flowmeter MF 3000 is equipped with an explosion-proof EEx d transducer.

The measured value is transmitted force-free and without any hysteresis to the digital indicator. The float position is directly detected. Programming at site can be done by a magnetic bar without opening of the indicator housing. Alternatively the menu can be operated via HART.

**Technical Data**

Connection*	Flanges acc. to DIN
Output	4 – 20 mA, limit switch or pulse output
Pressure	PN 16 – PN 100
Installation length	250 mm
Housing	Aluminium die-cast
Accuracy	1,6 %
Measuring span	10 : 1
Measuring cone	Stainless steel
Protection class	IP 67
Ambient temperatur	-25 °C up to +75 °C
Power supply	24 V DC
Approval	EEx d IIC T6
Add. order information	For special scale: medium, pressure, temperature

Order Data MF 3000

Type	Medium	Measuring range	Connection*	Article-No.	€/Piece
H 250 RR M10	Water	2,5 ... 25 l/h	DN 15 PN 40	MF 3001	1,119.00
H 250 RR M10	Water	6,3 ... 63 l/h	DN 15 PN 40	MF 3003	1,119.00
H 250 RR M10	Water	10 ... 100 l/h	DN 15 PN 40	MF 3004	1,119.00
H 250 RR M10	Water	25 ... 250 l/h	DN 15 PN 40	MF 3006	1,119.00
H 250 RR M10	Water	63 ... 630 l/h	DN 15 PN 40	MF 3008	1,119.00
H 250 RR M10	Liquid	Special scale	DN 15 PN 40	MF 3050	1,119.00
H 250 RR M10	Water	100 ... 1000 l/h	DN 25 PN 40	MF 3010	1,164.00
H 250 RR M10	Water	160 ... 1600 l/h	DN 25 PN 40	MF 3011	1,164.00
H 250 RR M10	Water	400 ... 4000 NI/h	DN 25 PN 40	MF 3013	1,164.00
H 250 RR M10	Liquid	Special scale	DN 25 PN 40	MF 3051	1,164.00
H 250 RR M10	Water	1 ... 10 m³/h	DN 50 PN 40	MF 3015	1,293.00

*Other connections on request

Order Data MF 3000

Type	Medium	Measuring range	Connection*	Article-No.	€/Piece
H 250 RR M10	Water	1,6 ... 16 m³/h	DN 50 PN 40	MF 3016	1,293.00
H 250 RR M10	Water	2,5 ... 25 m³/h	DN 50 PN 40	MF 3017	1,293.00
H 250 RR M10	Liquid	Special scale	DN 50 PN 40	MF 3052	1,293.00
H 250 RR M10	Water	2,5 ... 25 m³/h	DN 80 PN 16	MF 3019	1,658.00
H 250 RR M10	Water	4 ... 40 m³/h	DN 80 PN 16	MF 3020	1,658.00
H 250 RR M10	Liquid	Special scale	DN 80 PN 16	MF 3053	1,658.00
H 250 RR M10	Water	6,3 ... 63 m³/h	DN 100 PN 16	MF 3021	1,935.00
H 250 RR M10	Water	Special scale	DN 100 PN 16	MF 3054	1,935.00
H 250 RR M10	Air 20 °C 1,2 bara	0,065 ... 650 NI/h	DN 15 PN 40	MG 3001	1,119.00
H 250 RR M10	Air 20 °C 1,2 bara	0,15 ... 1,5 Nm³/h	DN 15 PN 40	MG 3003	1,119.00
H 250 RR M10	Air 20 °C 1,2 bara	0,22 ... 2,2 Nm³/h	DN 15 PN 40	MG 3004	1,119.00
H 250 RR M10	Air 20 °C 1,2 bara	0,55 ... 5,5 Nm³/h	DN 15 PN 40	MG 3006	1,119.00
H 250 RR M10	Air 20 °C 1,2 bara	1,4 ... 14 Nm³/h	DN 15 PN 40	MG 3008	1,119.00
H 250 RR M10	Gas	Special scale	DN 15 PN 40	MG 3050	1,119.00
H 250 RR M10	Air 20 °C 1,2 bara	2,2 ... 22 Nm³/h	DN 25 PN 40	MG 3010	1,164.00
H 250 RR M10	Air 20 °C 1,2 bara	3,5 ... 35 Nm³/h	DN 25 PN 40	MG 3011	1,164.00
H 250 RR M10	Air 20 °C 1,2 bara	5 ... 50 Nm³/h	DN 25 PN 40	MG 3013	1,164.00
H 250 RR M10	Gas	Special scale	DN 25 PN 40	MG 3051	1,164.00
H 250 RR M10	Air 20 °C 1,2 bara	8 ... 80 Nm³/h	DN 50 PN 40	MG 3015	1,293.00
H 250 RR M10	Air 20 °C 1,2 bara	11 ... 110 Nm³/h	DN 50 PN 40	MG 3016	1,293.00
H 250 RR M10	Air 20 °C 1,2 bara	14 ... 140 Nm³/h	DN 50 PN 40	MG 3017	1,293.00
H 250 RR M10	Gas	Special scale	DN 50 PN 40	MG 3052	1,293.00
H 250 RR M10	Air 20 °C 1,2 bara	40 ... 400 Nm³/h	DN 80 PN 16	MG 3019	1,658.00
H 250 RR M10	Air 20 °C 1,2 bara	50 ... 500 Nm³/h	DN 80 PN 16	MG 3020	1,658.00
H 250 RR M10	Gas	Special scale	DN 80 PN 16	MG 3053	1,658.00

Order Data Options MF 3000

Type	Option	Article-No.	€/Piece
ATEX	Approval ATEX II2G	MF 3090	18.00
APZ 3.1 B	Material confirmation for pressure retaining parts APZ 3.1	MF 3096	48.00

*Other connections on request

KS 2000**New!****For fluids**

- Accuracy 2.5%
- Direct flow indication
- Limit switch or analog output



4-20 mA

Flowmeter KS 2000 for liquids operates according to the float principle.

The flowmeters are complete made of plastic. The flow rate is direct readable from the measuring cone. Controlling of measured value is possible by using MIN or MAX contacts or a REED-chain with analog output 4 – 20 mA. Mounting position is vertical and flow direction is from bottom to top.

**Technical Data**

Connection	G 1/2 up to G 2 inner thread or bonding sleeve
Output	Max. 2 limit switches or REED-chain
Gasket	EPDM
Pressure	Max. 10 bar
Installation length	376 mm
Plug-in units	Polysulfon (PSU)
Accuracy	2,5 %
Measuring span	10 : 1
Measuring cone	Polysulfon (PSU)
Scale length	300 mm
Temperature	-10 °C up to +60 °C
Add. order information	Connection: inner thread or bonding sleeve

Order Data KS 2000

Type	Connection	Medium	Measuring range	Float material	Article-No.	€/Piece
K 20	G 1/2	Water	5 ... 60 l/h	PVC	KS 2101	53.00
K 20	G 1/2	Water	11 ... 110 l/h	Stainless steel	KS 2102	53.00
K 20	G 1	Water	65 ... 650 l/h	Stainless steel	KS 2111	58.00
K 20	G 1	Water	100 ... 1000 l/h	Stainless steel	KS 2112	58.00
K 20	G 1	Water	250 ... 2500 l/h	Stainless steel	KS 2113	79.00
K 20	G 2	Water	0,65 ... 6,5 m³/h	Stainless steel	KS 2121	126.00
K 20	G 2	Water	4 ... 16 m³/h	Stainless steel	KS 2122	188.00
K 20	G 2	Water	8 ... 25 m³/h	Stainless steel	KS 2123	188.00

Order Data Options KS 2000

Type	Option	Article-No.	€/Piece
Magnet	Price adder for float with magnet	KS 2190	15.00
K1 MIN	1 MIN REED contact	KS 2191	59.00
K1 MAX	1 MAX REED contact	KS 2192	59.00

KS 9000**For gases**

- Accuracy 2,5 %
- Direct flow indication
- 2 set point indicators



4-20 mA

Flowmeter KS 9000 for gases operates according to the float principle.

The flowmeters are complete made of plastic. The flow rate is direct readable from the measuring cone. Controlling of measured value is possible by using MIN / MAX contacts or a REED-chain with analog output 4 – 20 mA. Mounting position is vertical and flow direction is from bottom to top.

**Technical Data**

Connection	Bonding sleeve, inner thread on request
Output	On request
Gasket	EPDM
Pressure	Max. 6 bar
Installation length	376 mm
Plug-in units	Trogamid
Accuracy	2,5 %
Measuring span	10 : 1
Measuring cone	Trogamid
Floating body	PVC-U
Scale length	300 mm
Temperature	-10 °C up to +40 °C

Order Data KS 9000

Type	Connection	Medium	Measuring range	Article-No.	€/Piece
DFM 786	DN 15	Air	0,14 ... 1,4 Nm³/h	KS 9110	91.00
DFM 786	DN 15	Air	0,34 ... 3,4 Nm³/h	KS 9111	91.00
DFM 786	DN 25	Air	0,7 ... 7 Nm³/h	KS 9112	102.00
DFM 786	DN 25	Air	1,1 ... 11 Nm³/h	KS 9113	102.00
DFM 786	DN 25	Air	1,8 ... 18 Nm³/h	KS 9114	131.00
DFM 786	DN 25	Air	2,8 ... 28 Nm³/h	KS 9115	131.00
DFM 786	DN 50	Air	4,5 ... 45 Nm³/h	KS 9116	196.00
DFM 786	DN 50	Air	7,5 ... 75 Nm³/h	KS 9117	196.00
DFM 786	DN 50	Air	12 ... 120 Nm³/h	KS 9118	196.00
DFM 786	DN 50	Air	45 ... 190 Nm³/h	KS 9119	313.00
DFM 786	DN 50	Air	75 ... 240 Nm³/h	KS 9120	313.00
DFM 786	DN 50	Air	100 ... 300 Nm³/h	KS 9121	313.00

SA 3100

For conductive liquids

- Well priced solution
- Maintenance free
- Flangeless sandwich design

4-20 mA



The compact magnetic-inductive flowmeter SA 3100 is useful for conductive liquids.

The sandwich version allows an easy installation of the flowmeter by clamping between two flanges. Caused by the special designed liner construction (self-sealing) no further gaskets are necessary. The converter SA 3100 offers the advantage of a good readable LCD-display as well a free adjustable analog and pulse output.



Technical Data

Connection	Sandwich DN 10 up to DN 150
Output	Current, pulse, status output
Coating	PFA
Pressure	Max. 16 bar
Electodes	Hastelloy C4
Housing	Malleable cast iron, > DN 50 steel
Accuracy	0,3 %
Conductivity	Min. 5 µS/cm, water min. 20 µS
Temperature	-25 °C up to +120 °C
Ambient temperatur	-25 °C up to +60 °C
Power supply	See below

Order Data SA 3100

Type	Connection	Power supply	Measuring range*	Overall length	Article-No.	€/Piece
Optiflux 1010C	DN 10 PN 40	230 V AC	0 ... 850 l/h	68 mm	SA 3110	987.00
Optiflux 1010C	DN 15 PN 40	230 V AC	0 ... 2 m³/h	68 mm	SA 3115	987.00
Optiflux 1010C	DN 25 PN 40	230 V AC	0 ... 5 m³/h	54 mm	SA 3125	955.00
Optiflux 1010C	DN 40 PN 40	230 V AC	0 ... 13 m³/h	78 mm	SA 3140	955.00
Optiflux 1010C	DN 50 PN 40	230 V AC	0 ... 21 m³/h	100 mm	SA 3150	955.00
Optiflux 1010C	DN 80 PN 40	230 V AC	0 ... 54 m³/h	150 mm	SA 3180	1,000.00
Optiflux 1010C	DN 100 PN 16	230 V AC	0 ... 85 m³/h	200 mm	SA 3200	1,089.00
Optiflux 1010C	DN 150 PN 16	230 V AC	0 ... 190 m³/h	200 mm	SA 3250	1,217.00
Optiflux 1010C	DN 10 PN 40	24 V DC	0 ... 850 l/h	68 mm	SD 3110	1,124.00
Optiflux 1010C	DN 15 PN 40	24 V DC	0 ... 2 m³/h	68 mm	SD 3115	1,124.00
Optiflux 1010C	DN 25 PN 40	24 V DC	0 ... 5 m³/h	54 mm	SD 3125	1,091.00
Optiflux 1010C	DN 40 PN 40	24 V AC	0 ... 13 m³/h	78 mm	SD 3140	1,091.00
Optiflux 1010C	DN 50 PN 40	24 V DC	0 ... 21 m³/h	100 mm	SD 3150	1,091.00
Optiflux 1010C	DN 80 PN 40	24 V DC	0 ... 54 m³/h	150 mm	SD 3180	1,137.00

*Other ranges are adjustable.
Other versions on request.

Order Data SA 3100

Type	Connection	Power supply	Measuring range*	Overall length	Article-No.	€/Piece
Optiflux 1010C	DN 100 PN 16	24 V DC	0 ... 85 m³/h	200 mm	SD 3200	2,225.00
Optiflux 1010C	DN 150 PN 16	24 V DC	0 ... 190 m³/h	200 mm	SD 3250	1,353.00

FA 2000

For conductive liquids

- Specialized in water and waste water
- Approval for potable water
- Overall length in accordance to DVGW

4-20 mA 

This magnetic-inductive flowmeter is the optimal solution for all water and waste water applications.

Caused by the robust flange version the high-class liner material and electrodes made of Hastelloy C4. FA 2000 is the perfect instrument for these applications. According to the type of converter FA 2000 is applicable as compact or as a separated version. This unit is available up to a pipe size of DN 3000.

Technical Data

Connection	Flanges DN 25 up to DN 3000
Output	Current, pulse, status output
Coating	Polypropylene, > DN 200 Hard rubber
Pressure	Max. 16 bar
Electodes	Hastelloy C4
Housing	Melleable cast iron, > DN 50 steel
Accuracy	0,3 %
Conductivity	Min. 5 µS/cm, water min. 20 µS
Temperature	-5 °C up to +90 °C
Ambient temperatur	-25 °C up to +60 °C
Power supply	See below

Order Data FA 2000

Type	Connection	Power supply	Measuring range*	Overall length	Article-No.	€/Piece
Optiflux 2010C	DN 25 PN 40	230 V AC	0 ... 5 m³/h	150 mm	FA 2125	1,145.00
Optiflux 2010C	DN 32 PN 40	230 V AC	0 ... 8 m³/h	150 mm	FA 2132	1,145.00
Optiflux 2010C	DN 40 PN 40	230 V AC	0 ... 13 m³/h	150 mm	FA 2140	1,145.00
Optiflux 2010C	DN 50 PN 40	230 V AC	0 ... 21 m³/h	200 mm	FA 2150	1,117.00
Optiflux 2010C	DN 65 PN 16	230 V AC	0 ... 36 m³/h	200 mm	FA 2165	1,122.00
Optiflux 2010C	DN 80 PN 40	230 V AC	0 ... 54 m³/h	200 mm	FA 2180	1,131.00
Optiflux 2010C	DN 100 PN 16	230 V AC	0 ... 85 m³/h	250 mm	FA 2200	1,227.00
Optiflux 2010C	DN 125 PN 16	230 V AC	0 ... 132 m³/h	250 mm	FA 2225	1,254.00
Optiflux 2010C	DN 150 PN 16	230 V AC	0 ... 190 m³/h	300 mm	FA 2250	1,320.00
Optiflux 2010C	DN 25 PN 40	24 V DC	0 ... 5 m³/h	150 mm	FD 2125	1,279.00
Optiflux 2010C	DN 32 PN 40	24 V DC	0 ... 8 m³/h	150 mm	FD 2132	1,279.00
Optiflux 2010C	DN 40 PN 40	24 V DC	0 ... 13 m³/h	150 mm	FD 2140	1,279.00
Optiflux 2010C	DN 50 PN 40	24 V DC	0 ... 21 m³/h	150 mm	FD 2150	1,253.00
Optiflux 2010C	DN 65 PN 16	24 V DC	0 ... 36 m³/h	200 mm	FD 2165	1,259.00

*Other ranges are adjustable.
Other versions on request.

Order Data FA 2000

Type	Connection	Power supply	Measuring range*	Overall length	Article-No.	€/Piece
Optiflux 2010C	DN 80 PN 40	24 V DC	0 ... 54 m³/h	200 mm	FD 2180	1,268.00
Optiflux 2010C	DN 100 PN 16	24 V DC	0 ... 85 m³/h	250 mm	FD 2200	1,363.00
Optiflux 2010C	DN 125 PN 16	24 V DC	0 ... 132 m³/h	250 mm	FD 2225	1,390.00
Optiflux 2010C	DN 150 PN 16	24 V DC	0 ... 190 m³/h	300 mm	FD 2250	1,457.00

SA 5000

New!

For conductive liquids

- Highest accuracy and reproducibility
- Accuracy < +/- 0.15 %
- 100 % leak-proof

4-20 mA



The magnetic-inductive flowmeter type SA 5000 for conductive liquids is especially suitable for extreme operating conditions.

The high accurate flowmeter is particularly qualified for acids, caustics, pasts and sludges also for liquids with high content of solids. Because of the adamantine ceramic liner a very good temperature stability and service life is guaranteed. On ground of the sealed-in cermet or platinum electrodes a 100 % leak-proof is ensured. The converter type IFC 300 is offered with basic IO as standard.



Technical Data

Connection	Sandwich: DN 2.5 up to DN 10 – flanges DN 15 PN 40
Output	Current, pulse, status output
Coating	Ceramic
Pressure	PN 40, when DN 100 PN 16
Electodes	Cermet, > DN 25 platinum
Housing	Stainless steel
Accuracy	0,15 %
Conductivity	Min. 1 µS/cm, water min. 20 µS
Temperature	-60 °C up to +140 °C
Ambient temperatur	-25 °C up to +60 °C
Power supply	24 V DC or 230 V AC (please advise when ordering)

Order Data SA 5000

Type	Nominal size	Measuring range*	Overall length	Article-No.	€/Piece
Optiflux 5300C	DN 2,5 PN 40	0 ... 50 l/h	65 mm	SA 5002	1,569.00
Optiflux 5300C	DN 4 PN 40	0 ... 150 l/h	65 mm	SA 5004	1,569.00
Optiflux 5300C	DN 6 PN 40	0 ... 350 l/h	65 mm	SA 5006	1,569.00
Optiflux 5300C	DN 10 PN 40	0 ... 850 l/h	65 mm	SA 5010	1,518.00
Optiflux 5300C	DN 15 PN 40	0 ... 2 m³/h	65 mm	SA 5015	1,518.00
Optiflux 5300C	DN 25 PN 40	0 ... 5 m³/h	58 mm	SA 5025	1,518.00
Optiflux 5300C	DN 40 PN 40	0 ... 13 m³/h	83 mm	SA 5040	1,585.00
Optiflux 5300C	DN 50 PN 40	0 ... 21 ³/h	103 mm	SA 5050	1,819.00
Optiflux 5300C	DN 80 PN 40	0 ... 54 m³/h	153 mm	SA 5080	2,095.00
Optiflux 5300C	DN 100 PN 16	0 ... 85 m³/h	203 mm	SA 5100	2,251.00
Price adder for EEx Zone 1 per instrument					295.00

*Other ranges are adjustable.
Other versions on request.

WF 6000

For gases

- Direct measurement - no by-pass
- Accuracy < 3 %
- Measuring ranges from 0.1 up to 7500 NI/min

4-20 mA

The thermal mass flow meter do not need any compensation even when operating conditions like pressure and temperature changes.

Caused by the simple and rugged construction and its precision WF 6000 is suitable for a high range of applications from analysis to the server industrial plant. The small dimensions as well the possibility of an integrated LCD-display permit a smooth installation.

Technical Data

Connection	G 1/4 up to G 1
Output	4 – 20 mA (standard), 0 – 5 V DC
Gasket	Viton, other on request
Pressure	Max. 10 bar
Accuracy	3 %
Options	Digital indication, Profibus, RS 232
Protection class	IP 40 (IP 65 on request)
Temperature	0 °C up to 70 °C
Power supply	24 V DC
Add. order information	Medium, pressure, temperature, measuring range

Order Data WF 6000

Type	Connection	Measuring range	Material	Article-No.	€/Piece
D-5110	G 1/4	from 0,005 ... 0,1 up to 0,1 ... 2 NI/min	Aluminium	WF 6010	658.00
D-6210	G 1/4	from 0,25 ... 5 up to 1 ... 20 NI/min	Aluminium	WF 6015	639.00
D-6230	G 1/4	from 2,5 ... 50 up to 5 ... 100 NI/min	Aluminium	WF 6018	658.00
D-6250	G 1/2	from 10 ... 200 up to 20 ... 400 NI/min	Aluminium	WF 6020	775.00
D-6270	G 1	from 25 ... 500 up to 100 ... 2000 NI/min	Aluminium	WF 6022	986.00
D-6280	G 1	from 150 ... 3000 up to 250 ... 5000 NI/min	Aluminium	WF 6025	1,445.00
D-6290	G 1	from 300 ... 6000 up to 375 ... 7500 NI/min	Aluminium	WF 6028	1,680.00
D-5110	G 1/4	from 0,005 ... 0,1 up to 0,1 ... 2 NI/min	Stainless steel	WF 6110	770.00
D-6210	G 1/4	from 0,25 ... 5 up to 1 ... 20 NI/min	Stainless steel	WF 6115	751.00
D-6230	G 1/4	from 2,5 ... 50 up to 5 ... 100 NI/min	Stainless steel	WF 6118	770.00
D-6250	G 1/2	from 10 ... 200 up to 20 ... 400 NI/min	Stainless steel	WF 6120	937.00
D-6270	G 1	from 25 ... 500 up to 100 ... 2000 NI/min	Stainless steel	WF 6122	1,137.00
D-6280	G 1	from 150 ... 3000 up to 250 ... 5000 NI/min	Stainless steel	WF 6125	1,736.00
D-6290	G 1	from 300 ... 6000 up to 375 ... 7500 NI/min	Stainless steel	WF 6128	2,319.00



Order Data Options WF 6000

Type	Article-No.	€/Piece
3.1/2-digit flow indication in %	WF 6080	119.00
8-digit display for totalizing	WF 6081	159.00

LB 5000

For gases

- Accuracy < 1 %
- High pressure resistance up to 400 bar
- Low position sensitivity

4-20 mA

The thermal mass flowmeter LB 5000 is tailored to laboratory use.

In opposite to volumetrical flowmeters thermal mass flowmeters do not need any additional sensor technology for temperature and pressure for correct measurement of mass flow. LB 5000 type covers from 0 ... 5 Nml/min and 0 ... 1250 NI/min at on operating pressure between vacuum and 100 bar in the same series (special version up to 400 bar).



Technical Data

Connection	6 mm or 12 mm compression ring joint
Output	0/4 – 20 mA, 0 – 5/10 V DC
Gasket	Viton, other on request
Pressure	100 bar, 400 bar on request
Accuracy	1 %
Protection class	IP 20
Sensor	Stainless steel
Temperature	-10 °C up to +70 °C
Power supply	24 V DC
Add. remark	All models are also available as a compact regulator or as a digital version
Add. order information	Medium, pressure, temperature, minimum and maximum flow

Order Data LB 5000

Type	Measuring range N2	Connection	Overall length	Article-No.	€/Piece
F-110C	0,1 ... 5 Nml/min	6 mm compression ring joint	97 mm	LB 5010	1,222.00
F-111C	0,3 ... 15 Nml/min	6 mm compression ring joint	97 mm	LB 5012	1,146.00
F-111C	0,3 ... 15 NI/min	6 mm compression ring joint	97 mm	LB 5014	1,070.00
F-112AC	1 ... 50 NI/min	6 mm compression ring joint	115 mm	LB 5016	1,217.00
F-112AC	4 ... 200 NI/min	12 mm compression ring joint	115 mm	LB 5018	1,466.00
F-113AC	6 ... 300 NI/min	12 mm compression ring joint	181 mm	LB 5020	1,807.00
F-113AC	10 ... 500 NI/min	12 mm compression ring joint	181 mm	LB 5022	1,983.00
F-113AC	14 ... 700 NI/min	12 mm compression ring joint	181 mm	LB 5024	2,159.00
F-113AC	18 ... 900 NI/min	12 mm compression ring joint	181 mm	LB 5026	2,336.00
F-113AC	22 ... 1100 NI/min	12 mm compression ring joint	181 mm	LB 5028	2,511.00
F-113AC	25 ... 1250 NI/min	12 mm compression ring joint	181 mm	LB 5030	2,669.00

LB 6000

For gases

- Accuracy < 1 %
- High pressure resistance up to 700 bar
- Protection class IP 65

4-20 mA

The thermal mass flowmeters series LB 6000 are instruments of rugged construction for use under industrial conditions.

Protection class is IP 65. In opposite to volumetrical flowmeters thermal mass flowmeters do not need any additional sensor technology for temperature and pressure for correct measurement of mass flow. LB 6000 type covers the flow ranges from 0 ... 15 Nl/min and 0 ... 660 Nm³/h at an operating pressure between vacuum and 100 bar in the same series (special version up to 700 bar).

Technical Data

Connection	Compressing ring joint or sandwich
Output	0/4 – 20 mA, 0 – 5/10 V DC
Gasket	Viton, other on request
Pressure	100 bar, up to 700 bar on request
Accuracy	1 %
Protection class	IP 65
Sensor	Stainless steel
Temperature	-10 °C up to +70 °C
Power supply	24 V DC
Add. remark	All models are also available as compact regulator, with Ex-approval or as digital
Add. order information	Medium, pressure, temperature, minimum and maximum flow

Order Data LB 6000

Type	Measuring range N2	Connection	Overall length	Article-No.	€/Piece
F-110MI	0,3 ... 15 Nl/min	6 mm compression ring joint	106 mm	LB 6053	1,447.00
F-111MI	0,1 ... 5 Nl/min	6 mm compression ring joint	114 mm	LB 6054	1,311.00
F-112AI	0,6 ... 30 Nl/min	6 mm compression ring joint	115 mm	LB 6056	1,311.00
F-112AI	2 ... 100 Nl/min	6 mm compression ring joint	115 mm	LB 6058	1,449.00
F-113AI	6 ... 300 Nl/min	12 mm compression ring joint	181 mm	LB 6061	1,951.00
F-113AI	10 ... 500 Nl/min	12 mm compression ring joint	181 mm	LB 6063	2,121.00
F-113AI	14 ... 700 Nl/min	12 mm compression ring joint	181 mm	LB 6065	2,295.00
F-113AI	18 ... 900 Nl/min	12 mm compression ring joint	181 mm	LB 6067	2,465.00
F-113AI	22 ... 1100 Nl/min	12 mm compression ring joint	181 mm	LB 6069	2,638.00
F-113AI	25 ... 1250 Nl/min	12 mm compression ring joint	181 mm	LB 6071	2,768.00
F-116AI	4 ... 200 Nm ³ /h	12 mm compression ring joint	241 mm	LB 6072	3,286.00
F-116BI	10 ... 500 Nm ³ /h	25 mm compression ring joint	280 mm	LB 6073	3,559.00



Order Data LB 6000

Type	Measuring range N2	Connection	Overall length	Article-No.	€/Piece
F-106AI	4 ... 200 Nm ³ /h	Connection flange DN 40	125 mm	LB 6240	2,435.00
F-106BI	10 ... 500 Nm ³ /h	Connection flange DN 50	125 mm	LB 6245	2,636.00
F-106CI	20 ... 1000 Nm ³ /h	Connection flange DN 80	125 mm	LB 6250	2,817.00

OM 7300

New!

For liquids and gases

- Coriolis based flowmeter
- High accurate mass measurement with single straight tube
- Measuring ranges from 15 kg/h up to 430 t/h

4-20 mA



OM 7300 is setting new standards for Coriolis flowmeters with straight measuring tube.

Beside the wide measuring span and the accuracy (liquids 0.1 %, gases 0.5 %) the instrument offers all assumptions of an ultra-modern measuring system. It works in accordance with the Coriolis force and is able to measure the mass directly in kilogram independent from density, viscosity and temperature.

Technical Data

Indication	Large graphics display
Output	4 – 20 mA, HART, Pulse/Frequency
Pressure	Titanium 63 bar, stainless steel 40 bar
Flanges	Stainless steel 1.4435
Accuracy	Liquids 0.1 %, gases 0.5 %
Parameters	Mass flow, density, temperature
Temperature	Titanium -30 °C up to +150 °C, stainless steel 0 °C up to +100 °C
Power supply	24 V DC or 230 V AC (please advise when ordering)
Add. remark	Also available: made from Hastelloy C-22 or ATEX approved
Add. order information	Medium, pressure, temperature, density and viscosity

Order Data OM 7300

Type	Tube	Measuring range	Connection*	Article-No.	€/Piece
Optimass 7300 T06	Titanium	0 ... 950 kg/h	Flanges DN 10 PN 40	OM 7311	4,340.00
Optimass 7300 T10	Titanium	0 ... 2700 kg/h	Flanges DN 10 PN 40	OM 7312	4,575.00
Optimass 7300 T15	Titanium	0... 11250 kg/h	Flanges DN 15 PN 40	OM 7313	4,885.00
Optimass 7300 T25	Titanium	0 ... 34,5 t/h	Flanges DN 25 PN 40	OM 7314	5,275.00
Optimass 7300 T40	Titanium	0 ... 91,5 t/h	Flanges DN 40 PN 40	OM 7315	5,744.00
Optimass 7300 T50	Titanium	0 ... 180 t/h	Flanges DN 50 PN 40	OM 7316	7,110.00
Optimass 7300 T80	Titanium	0 ... 430 t/h	Flanges DN 80 PN 40	OM 7317	10,152.00
Optimass 7300 S06	Stainless steel	0 ... 950 kg/h	Flanges DN 10 PN 40	OM 7331	3,878.00
Optimass 7300 S10	Stainless steel	0 ... 2700 kg/h	Flanges DN 10 PN 40	OM 7332	4,077.00
Optimass 7300 S15	Stainless steel	0... 11250 kg/h	Flanges DN 15 PN 40	OM 7333	4,365.00
Optimass 7300 S25	Stainless steel	0 ... 34,5 t/h	Flanges DN 25 PN 40	OM 7334	4,673.00

*Other connections on request

Order Data OM 7300

Type	Tube	Measuring range	Connection*	Article-No.	€/Piece
Optimass 7300 S40	Stainless steel	0 ... 91,5 t/h	Flanges DN 40 PN 40	OM 7335	5,070.00
Optimass 7300 S50	Stainless steel	0 ... 180 t/h	Flanges DN 50 PN 40	OM 7336	6,231.00
Optimass 7300 S80	Stainless steel	0 ... 430 t/h	Flanges DN 80 PN 40	OM 7337	8,819.00

OM 3300

New!

For liquids and gases

- Integrated base plate
- High accurate mass flow metering using single tube only
- Measuring span from 0.3 up to 350 kg/h

4-20 mA



OM 3300 makes Coriolis mass flow measurement possible for more applications as ever before.

The mass flow meter offers with one measuring tube, the high measuring span and the accuracy (liquids 0.1% and gases 0.5%) all presumptions for an ultra-modern measuring system. An integrated base plate permits an easy horizontal or vertical installation without any special clamping device. It works in accordance with the Coriolis force and is able to measure the mass directly in kilogram independent from density, viscosity and temperature.



Technical Data

Connection	Stainless steel 1.4435
Indication	Large graphics display
Output	4 – 20 mA, HART, Pulse/Frequency
Pressure	-1 up to 150 bar
Accuracy	Liquids 0.1 %, gases 0.5 %
Parameters	Mass, density, temperature
Temperature	-40 °C up to +150 °C
Power supply	24 V DC or 230 V AC (please advise when ordering)
Add. remark	Also available as ATEX version, optional with heating device
Add. order information	Medium, pressure, temperature, density and viscosity

Order Data OM 3300

Type	Tube	Measuring range	Connection*	Article-No.	€/Piece
Optimass 3300 H01	Hastelloy C-22	0 ... 15 kg/h	1/4 NPT	OM 3111	4,470.00
Optimass 3300 H03	Hastelloy C-22	0 ... 100 kg/h	1/4 NPT	OM 3112	4,470.00
Optimass 3300 H04	Hastelloy C-22	0 ... 350 kg/h	1/4 NPT	OM 3113	4,470.00
Optimass 3300 S01	Stainless steel	0 ... 15 kg/h	1/4 NPT	OM 3121	3,559.00
Optimass 3300 S03	Stainless steel	0 ... 100 kg/h	1/4 NPT	OM 3122	3,559.00
Optimass 3300 S04	Stainless steel	0 ... 350 kg/h	1/4 NPT	OM 3123	3,559.00

*Other connections on request

UM 3000

New!

For liquids

- 3-beam ultra-sonic flowmeter
- Also for use in Ex-approved areas
- Available from DN 25 up to DN 2000

4-20 mA



Ultra-sonic flowmeters are suitable for nearly all fluids, the only requirement is the acoustical permeability of the medium.

The highlights in detail are: the measurement is independent from electrical conductivity, viscosity, temperature, density and pressure. The free flow cross-section prevents deposits, pressure lost and wear. An exact calibration is realized by a direct comparison of the volumes. An intrinsically-safe version for Zone 0 is also available. Small rate of power consumption and maintenance free operation keeps the running cost down.

Technical Data

Connection	Standard DIN-flange, other on request
Indication	3-line LCD-display
Output	4 – 20 mA, HART, Pulse/Frequency, Profibus on request
Pressure	See data sheet under www.tablar.com
Flanges	Up to DN 65 stainless steel, from DN 80 steel, other on request
Accuracy	< 0,5 % of measured value
Temperature	-25 °C up to +140 °C (standard)
Power supply	100 – 230 V AC, 24 V DC against price adder
Add. remark	Also available as ATEX approved instrument or as separate version
Add. order information	Medium, pressure, temperature, density and viscosity

Order Data UM 3000

Type	Nominal size	Measuring range*	Article-No.	€/Piece
UFM 3030K	DN 25 PN 40	0 ... 5 m³/h	UM 3001	1,925.00
UFM 3030K	DN 32 PN 40	0 ... 8 m³/h	UM 3002	1,986.00
UFM 3030K	DN 40 PN 40	0 ... 13 m³/h	UM 3003	2,046.00
UFM 3030K	DN 50 PN 40	0 ... 23 m³/h	UM 3004	2,127.00
UFM 3030K	DN 65 PN 40	0 ... 35 m³/h	UM 3005	2,246.00
UFM 3030K	DN 80 PN 40	0 ... 50 m³/h	UM 3006	2,367.00
UFM 3030K	DN 100 PN 16	0 ... 75 m³/h	UM 3007	2,524.00
UFM 3030K	DN 125 PN 16	0 ... 150 m³/h	UM 3008	2,727.00
UFM 3030K	DN 150 PN 16	0 ... 220 m³/h	UM 3009	2,808.00
UFM 3030K	DN 200 PN 10	0 ... 300 m³/h	UM 3010	3,170.00

*Other measuring ranges are adjustable

Order Data UM 3000

Type	Nominal size	Measuring range*	Article-No.	€/Piece
UFM 3030K	DN 250 PN 10	0 ... 500 m³/h	UM 3011	3,330.00
UFM 3030K	DN 300 PN 10	0 ... 800 m³/h	UM 3012	3,531.00

*Other measuring ranges are adjustable

CO 7100

For liquids

- No process interruption
- Easy clamp-on to existing pipe work
- Large LCD-display, data logger and RS 232 interface

4-20 mA



The ultra-sonic flowmeter type CO 7100 offers an economical flow and volumetric measurement for clean, homogenous liquids with small content of gas and solids.

At the measuring point two ultra-sonic sensors are attached from outside to the pipe by aid of a mounting device. Each sensor emits and receives sonic pulses which are digitally converted in the signal transducer. Data output in metric or US units are read out via display, current, frequency as well via RS 232 interface to the PC.

Technical Data

Connection	Standard 13 up to 1000 mm, optional up to 5000 mm
Indication	LCD-display
Output	Current and pulse output, RS 232
Accuracy	2 %
Protection class	IP 65
Temperature	0 °C up to +200 °C
Ambient temperatur	-25 °C up to +60 °C
Power supply	230 V AC, storage battery (max. 8 hours)

Order Data CO 7100

Type	Version	Article-No.	€/Piece
UFM 610P	Portable instrument	CO 7100	5,990.00



ZA 2500

For liquids

- Nylon version for de-ionized water
- New as stainless steel version
- For liquids up to 500 cP



Disc meters type ZA 2500 are measuring the volume directly.

Therefore they are suitable for liquids with a viscosity up to 500 cP and an operating temperature of max. 50 °C with PPO measuring chamber respectively 120 °C in a Vectra version. Optionally all versions are also available with pulse output and integrated digital display.



Technical Data

Output	Pulse output as an option
Pressure	Max. 16 bar
Installation length	190 mm
Housing	Nylon, bronze or stainless steel
Accuracy	1.5 %
Metering box	PPO or Vectra
O-ring	Buna or Viton
Temperature	0 °C up to +50 °C, Vectra up to +120 °C
Ambient temperatur	-25 °C up to +60 °C

Order Data ZA 2500

Type	Connection	Housing	Measuring range	Article-No.	€/Piece
M25 Plastic/PPO	R 3/4	Nylon	1 ... 100 l/min	ZA 2502	202.00
M25 Bronze/PPO	3/4 NPT	Bronze	1 ... 100 l/min	ZA 2510	202.00
M25 Plastic/PPO	R 1	Nylon	1 ... 100 l/min	ZA 2503	202.00
M25 Bronze/PPO	1 BSP	Bronze	1 ... 100 l/min	ZA 2501	202.00
M25 Stainless steel/PPO	1 BSP	Stainless steel	1 ... 100 l/min	ZA 2511	1,095.00
M25 Bronze/Vectra	R 1	Bronze	3 ... 100 l/min	ZA 2504	458.00
M25 Stainless steel/Vectra	R 1 BSP	Stainless steel	3 ... 100 l/min	ZA 2512	1,385.00
M35 Bronze/PPO	R 1	Bronze	2 ... 132 l/min	ZA 2513	329.00
M40 Plastic/PPO	R 1 1/4	Nylon	2 ... 160 l/min	ZA 2514	329.00
M40 Stainless steel/PPO	1 1/4 BSP	Stainless steel	2 ... 160 l/min	ZA 2515	1,162.00
M70 Bronze/PPO	R 1 1/4	Bronze	4 ... 265 l/min	ZA 2516	480.00

Order Data Options ZA 2500

Type	Options	Article-No.	€/Piece
PM 5	Pulse output without drum counter	ZA 2530	366.00
PM 5-LCD	Pulse output and totalizer	ZA 2531	609.00

Other versions on request

DP 2000

For liquids and gases

- Horizontal or vertical flow direction
- Medium specific scale
- Explosion proof optionally



4-20 mA



Caused by the use of different materials and arbitrary mounting positions the flap flow indicator Type DP 2000 is flexible applicable.

The flowmeter works nearly independent from viscosity and is suitable for flow indication of water, acids, solutions and gases. Each instrument is individually calibrated on customers request and is equipped with a medium specific scale. For process control the measuring instrument can be provided with limit switches or with an analog output.

Technical Data

Connection	Connection flange
Armature	Inner parts: stainless steel, ring: steel or stainless steel, optional PVC
Output	Optional 4 – 20 mA, limit switch
Pressure	10 bar, optional PN16/25/40
Installation length	50 mm
Protection class	IP 65
Scale length	Max. 95 mm
Temperature	-70 °C up to +200 °C
Add. order information	Flow direction and pipe inner diameter

Order Data DP 2000

Type	Material	Connection	Measuring range: water*	Article-No.	€/Piece
SDA RN M9	Ring steel	DN 25	from 0,5 ... 6 up to 1 ... 10 m³/h	DP 2401	799.00
SDA RN M9	Ring steel	DN 32	from 0,5 ... 8 up to 1,5 ... 15 m³/h	DP 2402	799.00
SDA RN M9	Ring steel	DN 40	from 0,5 ... 6 up to 4 ... 40 m³/h	DP 2403	799.00
SDA RN M9	Ring steel	DN 50	from 0,5 ... 6 up to 5 ... 50 m³/h	DP 2404	799.00
SDA RN M9	Ring steel	DN 65	from 1,5 ... 16 up to 10 ... 100 m³/h	DP 2405	815.00
SDA RN M9	Ring steel	DN 80	from 1,5 ... 16 up to 10 ... 100 m³/h	DP 2406	819.00
SDA RN M9	Ring steel	DN 100	from 4 ... 40 up to 20 ... 200 m³/h	DP 2407	875.00
SDA RN M9	Ring steel	DN 125	from 6 ... 60 up to 25 ... 250 m³/h	DP 2408	975.00
SDA RN M9	Ring steel	DN 150	from 8 ... 80 up to 50 ... 300 m³/h	DP 2409	1,087.00
SDA RN M9	Ring steel	DN 200	from 14 ... 140 up to 30 ... 3000 m³/h	DP 2410	1,283.00
SDA RN M9	Ring steel	DN 250	from 15 ... 150 up to 35 ... 350 m³/h	DP 2411	1,636.00
SDA RN M9	Ring steel	DN 300	from 20 ... 200 up to 40 ... 400 m³/h	DP 2412	1,713.00
SDA RR M9	Ring stainless steel	DN 25	from 0,5 ... 6 up to 1 ... 10 m³/h	DP 2450	999.00
SDA RR M9	Ring stainless steel	DN 32	from 0,5 ... 8 up to 1,5 ... 15 m³/h	DP 2451	999.00
SDA RR M9	Ring stainless steel	DN 40	from 0,5 ... 6 up to 4 ... 40 m³/h	DP 2452	999.00

*Detailed measuring ranges on request or under www.tablar.com



Order Data DP 2000

Type	Material	Connection	Measuring range: water*	Article-No.	€/Piece
SDA RR M9	Ring stainless steel	DN 50	from 0,5 ... 6 up to 5 ... 50 m³/h	DP 2453	999.00
SDA RR M9	Ring stainless steel	DN 65	from 1,5 ... 16 up to 10 ... 100 m³/h	DP 2454	1,084.00
SDA RR M9	Ring stainless steel	DN 80	from 1,5 ... 16 up to 10 ... 100 m³/h	DP 2455	1,200.00
SDA RR M9	Ring stainless steel	DN 100	from 4 ... 40 up to 20 ... 200 m³/h	DP 2456	1,330.00
SDA RR M9	Ring stainless steel	DN 125	from 6 ... 60 up to 25 ... 250 m³/h	DP 2457	1,546.00
SDA RR M9	Ring stainless steel	DN 150	from 8 ... 80 up to 50 ... 300 m³/h	DP 2458	1,622.00
SDA RR M9	Ring stainless steel	DN 200	from 14 ... 140 up to 30 ... 3000 m³/h	DP 2459	1,998.00
SDA RR M9	Ring stainless steel	DN 250	from 15 ... 150 up to 35 ... 350 m³/h	DP 2460	2,345.00
SDA RR M9	Ring stainless steel	DN 300	from 20 ... 200 up to 40 ... 400 m³/h	DP 2461	2,527.00

Order Data DP 2000

Type	Material	Connection	Measuring range: air, 20 °C, 1 bara*	Article-No.	€/Piece
SDA RN M9	Ring steel	DN 25	from 10 ... 100 up to 30 ... 300 Nm³/h	DP 2501	799.00
SDA RN M9	Ring steel	DN 32	from 10 ... 100 up to 30 ... 300 Nm³/h	DP 2502	799.00
SDA RN M9	Ring steel	DN 40	from 10 ... 100 up to 40 ... 400 Nm³/h	DP 2503	799.00
SDA RN M9	Ring steel	DN 50	from 10 ... 100 up to 60 ... 750 Nm³/h	DP 2504	799.00
SDA RN M9	Ring steel	DN 65	15 ... 180 Nm³/h	DP 2505	815.00
SDA RN M9	Ring steel	DN 80	from 45 ... 450 up to 100 ... 1000 Nm³/h	DP 2506	819.00
SDA RN M9	Ring steel	DN 100	from 50 ... 500 up to 260 ... 2400 Nm³/h	DP 2507	875.00
SDA RN M9	Ring steel	DN 125	60 ... 600 Nm³/h	DP 2508	975.00
SDA RN M9	Ring steel	DN 150	from 80 ... 800 up to 500 ... 3400 Nm³/h	DP 2509	1,087.00
SDA RN M9	Ring steel	DN 200	from 150 ... 1500 up to 250 ... 2600 Nm³/h	DP 2510	1,283.00
SDA RN M9	Ring steel	DN 250	from 160 ... 1600 up to 400 ... 4500 Nm³/h	DP 2511	1,636.00
SDA RN M9	Ring steel	DN 300	280 ... 2800 Nm³/h	DP 2512	1,713.00
SDA RR M9	Ring stainless steel	DN 25	from 10 ... 100 up to 30 ... 300 Nm³/h	DP 2551	999.00
SDA RR M9	Ring stainless steel	DN 32	from 10 ... 100 up to 30 ... 300 Nm³/h	DP 2552	999.00
SDA RR M9	Ring stainless steel	DN 40	from 10 ... 100 up to 40 ... 400 Nm³/h	DP 2553	999.00
SDA RR M9	Ring stainless steel	DN 50	from 10 ... 100 up to 60 ... 750 Nm³/h	DP 2554	999.00
SDA RR M9	Ring stainless steel	DN 65	from 15 ... 180 up to 100 ... 1000 Nm³/h	DP 2555	1,084.00
SDA RR M9	Ring stainless steel	DN 80	from 45 ... 450 up to 100 ... 1000 Nm³/h	DP 2556	1,200.00
SDA RR M9	Ring stainless steel	DN 100	from 50 ... 500 up to 260 ... 2600 Nm³/h	DP 2557	1,330.00
SDA RR M9	Ring stainless steel	DN 125	from 60 ... 600 up to 300 ... 3000 Nm³/h	DP 2558	1,546.00
SDA RR M9	Ring stainless steel	DN 150	from 80 ... 800 up to 500 ... 3400 Nm³/h	DP 2559	1,622.00
SDA RR M9	Ring stainless steel	DN 200	from 150 ... 1500 up to 250 ... 2600 Nm³/h	DP 2560	1,998.00
SDA RR M9	Ring stainless steel	DN 250	from 160 ... 1600 up to 400 ... 4500 Nm³/h	DP 2561	2,345.00
SDA RR M9	Ring stainless steel	DN 300	280 ... 2800 Nm³/h	DP 2562	2,527.00

Order Data Options DP 2000

Type	Option	Article-No.	€/Piece
K1 MIN	1 limit switch MIN	DP 2991	153.00
K1 MAX	1 limit switch MAX	DP 2992	153.00
K2 MIN/MAX	2 limit switches MIN/MAX	DP 2993	241.00
ESK II	Analog output 4 – 20 mA	DP 2990	559.00
ATEX II 2 G	Approval ATEX II G (gas zone 1)	DP 2995	49.00

*Detailed measuring ranges on request or
see under www.tablar.com

WY 4000**New!****For liquids and gases**

- Temperature compensation for saturated steam integrated
- 2-wire technique
- Easy start-up - plug & play

4-20 mA



Vortex flowmeter of the latest generation.

WY 4000 is the only Vortex flowmeter with integrated pressure and temperature compensation in 2-wire technique. Thereby WY 4000 determine reliable the actual flow, normal volume and the mass flow of liquids, gases and vapours even at varying pressure and temperature.

Technical Data

Indication	2-line display
Output	4 – 20 mA, HART, pulses
Pressure	Max. 100 bar
Housing transducer	Aluminium
Accuracy	0.75 % for liquids
Readings recorder	Stainless steel 1.4404
Temperature	-40 up to +240 °C
Power supply	14 – 36 V DC
Add. remark	Flanged instruments and Ex version on request
Add. order information	Medium, pressure, temperature, density and viscosity

Order Data WY 4000

Type	Nominal size	Measuring range: water*	Article-No.	€/Piece
Optiswirl 4070	Sandwich DN 15	0 ... 5 m³/h	WY 4015	1,472.00
Optiswirl 4070	Sandwich DN 25	0 ... 11 m³/h	WY 4025	1,472.00
Optiswirl 4070	Sandwich DN 40	0 ... 28 m³/h	WY 4040	1,582.00
Optiswirl 4070	Sandwich DN 50	0 ... 49 m³/h	WY 4050	1,582.00
Optiswirl 4070	Sandwich DN 80	0 ... 108 m³/h	WY 4080	1,668.00
Optiswirl 4070	Sandwich DN 100	0 ... 185 m³/h	WY 4100	1,755.00

Order Data Options WY 4000

Type	Article-No.	€/Piece
Density compensation for overheated steam	WY 4001	488.00
Density compensation for gases	WY 4002	488.00
4 – 20 mA input for an external pressure sensor	WY 4003	40.00

*Other ranges are adjustable



Order Data Options WY 4000

Type	Article-No.	€/Piece
Integrated pressure sensor	WY 4004	360.00
Integrated pressure sensor incl. shutt-off valve	WY 4005	650.00

**Half
full or
half
empty.**



Type	Data logging	Liquids	Bulk solids
OS 4500	limiting value	x	
OS 5100	limiting value	x	
OS 5200	limiting value	x	
OS 3000	limiting value		x
KF 2100	limiting value	x	x
OS 3100	continuous	x	x
DF 7200	continuous	x	



Limits of application	Electric output	Approval	Page
high viscous products			E / 58
high viscous products		 WHG 	E / 59
high viscous products		 WHG 	E / 61
solids content up to > 0,008 g/cm³			E / 63
liquids with an Epsilon R up to 2,0			E / 64
foam, degassing products	4~20 mA		E / 65
density variation of the product	4~20 mA		E / 66

OS 4500

New!

For liquids

- Short tuning fork for small installation depth
- Minor compact stainless steel housing
- High functionality for a low price



OS 4500 is a level sensor with tuning fork for level detection.

Is the level height in your vessel correct? Do you protect your plant? Do you control all your level data? The compact level switch OS 4500 gives you an answer to all these questions. It is provided with a stainless steel housing for use at a multitude of liquids. Examples for application are: pump protection, overflow protection, pump control, leakage monitoring.



Technical Data

Connection*	See below
Pressure	Max. 16 bar
Hysteresis	2 mm
Cable connection	Acc. to DIN 43650
Material housing	316L
Material sensor	316L
Switching function	See below
Protection class	IP 65
Sensor length	40 mm
Temperature	-40 °C up to +100 °C, optional up to +150 °C
Power supply	See below
Approval	WHG and for ships on request

Order Data OS 4500

Type	Connection*	Switching function	Power supply	Article-No.	€/Piece
Optiswitch 4500	G 3/4	Contactless switch	20 – 253 V AC/DC	OS 4511	149.00
Optiswitch 4500	G 1	Contactless switch	20 – 253 V AC/DC	OS 4512	159.00
Optiswitch 4500	3/4 NPT	Contactless switch	20 – 253 V AC/DC	OS 4513	149.00
Optiswitch 4500	1 NPT	Contactless switch	20 – 253 V AC/DC	OS 4514	159.00
Optiswitch 4500	G 3/4	Transistor output PNP	10 – 55 V DC	OS 4521	149.00
Optiswitch 4500	G 1	Transistor output PNP	10 – 55 V DC	OS 4522	159.00
Optiswitch 4500	3/4 NPT	Transistor output PNP	10 – 55 V DC	OS 4523	149.00
Optiswitch 4500	1 NPT	Transistor output PNP	10 – 55 V DC	OS 4524	159.00

*Other connections on request

OS 5100

New!

For liquids

- 40 mm sensor length
- High-precise switch point
- Manifold process connection



WHG



Germanischer Lloyd
CERTIFIED SAFETY

The vibration level switch

OS 5100 is available with EEx and GL approval as well acc. to WHG.

OS 5100 for liquids can be used as overfill protection or dry running protection. The complete instrument incl. tuning fork and integrated electronic unit is optionally available up to an operating temperature of +250 °C. Different types of connection and materials are possible on request.



Technical Data

Connection*	See below
Pressure	Max. 64 bar
Hysteresis	2 mm
Cable connection	M 20 x 1,5
Material housing	PBT
Material sensor	316L
Switching function	See below
Protection class	IP 67
Sensor length	40 mm
Temperature	-40 °C up to +150 °C, optional up to +250 °C
Power supply	See below
Approval	Ex, WHG, German Lloyd (other on request)

Order Data OS 5100

Type	Connection*	Switching function	Power supply	Article-No.	€/Piece
Optiswitch 5100	G 3/4	Contactless switch	20 – 253 V AC/DC	OS 5111	309.00
Optiswitch 5100	G 1	Contactless switch	20 – 253 V AC/DC	OS 5112	319.00
Optiswitch 5100	3/4 NPT	Contactless switch	20 – 253 V AC/DC	OS 5113	309.00
Optiswitch 5100	1 NPT	Contactless switch	20 – 253 V AC/DC	OS 5114	319.00
Optiswitch 5100	G 3/4	Transistor output PNP	10 – 55 V DC	OS 5121	322.00
Optiswitch 5100	G 1	Transistor output PNP	10 – 55 V DC	OS 5122	333.00
Optiswitch 5100	3/4 NPT	Transistor output PNP	10 – 55 V DC	OS 5123	322.00
Optiswitch 5100	1 NPT	Transistor output PNP	10 – 55 V DC	OS 5124	333.00

*Other connections on request

Order Data Options OS 5100

Type	Option	Article-No.	€/Piece
WHG	Overfill protection acc. to WHG, NAMUR signal	OS 5140	47.00
EEx ia	Approval EEx ia IIC T6 acc. 1/2G, WHG NAMUR signal	OS 5141	62.00

OS 5200

New!

For liquids

- Sensor length
150 – 4000 mm
- Simple start-up without
adjustment
- Switch point independent
from product



WHG



Germanischer Lloyd
CERTIFIED SAFETY

The vibration level switch type OS 5200 is available with approvals for EEx, WHG and German Lloyd and custom made sensor length.

OS 5200 for liquids can be used as overflow protection or dry running protection. The complete instrument incl. tuning fork and integrated electronic unit is optionally available up to an operating temperature of +250 °C. Different types of connection and materials are possible on request.

Technical Data

Connection*	See below
Pressure	Max. 64 bar
Hysteresis	2 mm
Cable connection	M 20 x 1,5
Material housing	PBT
Material sensor	1.4435, other on request
Switching function	See below
Protection class	IP 67
Sensor length	150 up to 4000 mm
Temperature	-40 °C up to +150 °C, optional up to +250 °C
Power supply	See below
Approval	Ex, WHG, German Lloyd (other on request)

Order Data OS 5200

Type	Connection*	Switching function	Power supply	Article-No.	€/Piece
Optiswitch 5200	G 3/4	Contactless switch	20 – 253 V AC/DC	OS 5211	465.00
Optiswitch 5200	G 1	Contactless switch	20 – 253 V AC/DC	OS 5212	475.00
Optiswitch 5200	DN 25 PN 40	Contactless switch	20 – 253 V AC/DC	OS 5213	540.00
Optiswitch 5200	DN 50 PN 40	Contactless switch	20 – 253 V AC/DC	OS 5214	649.00
Optiswitch 5200	G 3/4	Transistor output PNP	10 – 55 V DC	OS 5221	480.00
Optiswitch 5200	G 1	Transistor output PNP	10 – 55 V DC	OS 5222	490.00
Optiswitch 5200	DN 25 PN 40	Transistor output PNP	10 – 55 V DC	OS 5223	555.00
Optiswitch 5200	DN 50 PN 40	Transistor output PNP	10 – 55 V DC	OS 5224	664.00

*Other connections on request

Order Data Options OS 5200

Type	Option	Article-No.	€/Piece
WHG	Overfill protection acc. to WHG, NAMUR signal	OS 5140	47.00
EEx ia	Approval Eex ia IIC T6 acc. 1/2G, WHG NAMUR signal	OS 5141	62.00
Sensor length	Standard 150 mm, price adder for each further 100 mm		11.00

OS 3000

New!

For bulk material

- Very robust tuning fork
- Insensitive to deposits
- Start-up without filling



OS 3000 is a level sensor with tuning fork for level detection.

It is designed for industrial applications in all ranges of process engineering and will be used preferably for bulk material. Typical utilizations are overfill and dry running protection. Caused by it's simple and robust measuring system OS 3000 is applicable nearly independent from the chemical and physical properties of the bulk material.



Technical Data

Connection	G 1 1/2
Pressure	Max. 6 bar
Material housing	PBT
Material sensor	316L
Switching function	See below
Protection class	IP 67
Sensor length	150 mm
Temperature	-40 °C up to +80 °C
Power supply	See below
Approval	Without

Order Data OS 3000

Type	Switching function	Power supply	Article-No.	€/Piece
Optiswitch 3000C	Contactless switch	20 – 253 V AC/DC	OS 3011	249.00
Optiswitch 3000C	Relay (DPDT)	20 – 72 V DC/20 – 253 V AC	OS 3012	249.00
Optiswitch 3000C	Transistor (NPN / PNP)	10 – 55 V DC	OS 3013	249.00
Optiswitch 3000C	2-wire system 8/16 mA	10 – 36 V DC	OS 3014	249.00

KF 2100

For liquids and bulk material

- Capacitive level switch
- Housing made of PTFE
- Compact design



The capacitive level switch KF 2100 is a control unit for liquids and solids.

The sensors are suitable to detect liquid, viscous and solid media. The sensor comes in operation when it was touched by the medium. By an internal decoupling electrode interferences like droplet formation or liquid film are far-reaching eliminated.



Technical Data

Connection	G 1
Working point	Medium in contact
Output	See below
Pressure	Max. 3 bar
Sensitivity	Adjustable by potentiometer
Hysteresis	Approx. 2 mm (water)
Cable connection	2 m PVC cable
Material housing	Made of PTFE complete
Protection class	IP 67
Sensor length	68 mm
Temperature	-25 °C up to +75 °C
Power supply	See below

Order Data KF 2100

Type	Power supply	Output	Article-No.	€/Piece
KGFR 100 WS	20 – 250 V AC	Load relay NO	KF 2101	129.00
KGFR 100 WO	20 – 250 V AC	Load relay NC	KF 2102	129.00
KGFR 100 GSP	10 – 55 V DC	Transistor NO	KF 2150	112.00
KGFR 100 GOP	10 – 55 V DC	Transistor NC	KF 2151	112.00

OS 3100

New!

For liquids and bulk material

- Very robust sensor
- Insensitive to deposits
- Start-up without filling

4-20 mA



The ultrasonic sensor OS 3100 type serves for a continuous level measurement of liquids and bulk material.

OS 3100 is provided with a signal processing with FUZZY-logic for an echo analysis as well an integrated temperature sensor for a running time correction. The instruments differ from each other in measuring range, in the design of the sonic transducer and in the process connection. The handling can be done optionally by a clip-on module or via a PC or handheld communicator at a HART version.



Technical Data

Connection	See below
Output	4 – 20 mA, HART
Pressure	-0,2 up to 2 bar
Material housing	PBT
Sonic converter	PVDF
Protection class	IP 68
Sensor length	63 mm
Temperature	-40 °C up to +80 °C
Power supply	Loop powered, 4-wire system on request
Approval	See below, other on request

Order Data OS 3100

Type	Connection	Measuring range	Article-No.	€/Piece
Optisound 3010C	G 1 1/2	Liquids 0.25 ... 5 m, Solids 0.25 ... 2.0 m	OS 3110	565.00
Optisound 3010C	1 1/2 NPT	Liquids 0.25 ... 5 m, Solids 0.25 ... 2.0 m	OS 3111	565.00
Optisound 3020C	G 2	Liquids 0.40 ... 8 m, Solids 0.40 ... 3.5 m	OS 3120	649.00
Optisound 3020C	2 NPT	Liquids 0.40 ... 8 m, Solids 0.40 ... 3.5 m	OS 3121	649.00

Order Data Options OS 3100

Type	Option	Article-No.	€/Piece
Indication	Display and user interface	OS 3101	90.00
EEx ia	Approval ATEX II 1G, 1/2G, 2G EEx ia IIC T6	OS 3102	162.00

DF 7200

Suspended pressure transducer for level measurement

- Compact unit with integrated electronics
- Integrated overvoltage protection
- Up to 150-fold overload protection

4-20 mA 

The suspended pressure transducer DF 7200 is suitable for level measurement in wells, tanks or open waters.

The sensor converts the hydrostatic pressure values into an impressed current signal. Caused by the sturdy construction the instrument is especially applicable to operation under difficult requirements in the chemical industry, marine navigation as well for normal process technology.



Technical Data

Connection	Anchor clamp, options see below
Output	4 – 20 mA, HART on request
Accuracy	0.25 %
Cable connection	Messenger cable PE, other on request
Length of messenger cable	6 m, optional 12 m or 27 m
Readings recorder	Stainless steel 1.4435
Detector gasket	Viton, other on request
Protection class	IP 68
Sensor length	227 mm, diameter 32 mm
Temperature	-20 °C up to +60 °C
Power supply	Loop powered
Approval	ATEX II 2G EEx ia IIC T6

Order Data DF 7200

Type	Measuring range	Article-No.	€/Piece
Vegawell 72	0 ... 0,1 bar	DF 7201	455.00
Vegawell 72	0 ... 0,2 bar	DF 7202	455.00
Vegawell 72	0 ... 0,4 bar	DF 7203	455.00
Vegawell 72	0 ... 1,0 bar	DF 7204	455.00
Vegawell 72	0 ... 2,5 bar	DF 7205	455.00
Vegawell 72	0 ... 5,0 bar	DF 7206	455.00
Vegawell 72	0 ... 10,0 bar	DF 7207	455.00
Vegawell 72	0 ... 25,0 bar	DF 7208	455.00

Order Data Options DF 7200

Type	Article-No.	€/Piece
Process connection G 1 1/2	DF 7250	45.00
Process connection 1 1/2 NPT	DF 7251	45.00
12 m PE cable	DF 7252	48.00
27 m PE cable	DF 7253	108.00
ATEX approval	DF 7254	27.00

**Pure
concentration.**



Thorton 200 CR



770 MAX

Type	Application
Thornton 200CR	Measuring system Thornton 200 CR for conductivity, temperature, concentration and total salt content.
770 MAX	The measuring system Thornton 770 MAX combines the measurement of conductivity, temperature, flow, pressure, pH and level in one unit.



Electric output		Approval	Page
	 4-20 mA		E / 70
	4-20 mA		E / 72

Converter 200 CR

Conductivity measuring system type Thornton 200 CR

- USP conform
- Sensors, converter and measuring cable acc. to IP 65
- Adjustment verifiable acc. to NIST



4-20 mA

Measuring system Thornton 200 CR for conductivity, specific resistance, temperature, concentration and total salt content.

The rugged instrument in pancake design is suitable as well for cleanrooms class 1 at the production of semiconductors and medicine as for the hard industrial enterprise where protection class IP 65 is required. The measuring system is consisting of the converter, the sensor and the connection cable.

Technical Data

Indication	Single-line, 16-digit LCD
Output	4 – 20 mA
Accuracy	0.5 %
Cable length	Max. 60 m
Measuring range	Cell constant 0.1: 0.02 uS/cm up to 600 uS/cm Cell constant 10: 100 uS/cm up to 40 mS/cm
Installation	Panel mounting 96 x 192 mm
Relay output	2 changeover or 4 transistor relays
Repeatability	0.1 %
Interface	RS 232, RS 422
Protection class	IP 65
Sensor input	2
Temperature	Pt 1000 inside sensor
Power supply	180 – 230 V AC, 24 V DC

Order Data Converter 200 CR

Type	Technical data	Description	Article-No.	€/Piece
6222-2	2 analog and 2 relay output	Thornton 200 CR	CR 2222	879.00
6242-2	2 analog and 4 transistor output	Thornton 200 CR	CR 2242	948.00

Order Data Measuring cable 200 CR

Type	Length	Article-No.	€/Piece
1001-66	30.5 cm	CK 0001	57.00
1005-66	1.5 m	CK 0005	70.00
1010-66	3.0 m	CK 0010	76.00



Order Data Measuring cable 200 CR

Type	Length	Article-No.	€/Piece
1015-66	4.5 m	CK 0015	84.00
1025-66	7.6 m	CK 0025	96.00
1050-66	15.2 m	CK 0050	126.00
1100-66	30.5 m	CK 0100	247.00
1115-66	45.6 m	CK 0115	336.00

Order Data Sensor 200 CR*

Type	Connection	Electrode	Length of electrode	Constant	Article-No.	€/Piece
240-201	¾ NPTM	Titanium	34.3 mm	0.1 / cm	CS 0201	320.00
240-401	¾ NPTM	Graphite	85.9 mm	10 / cm	CS 0401	332.00
243E223	1.5 TRI-clamp	AISI 316 L	85.9 mm	0.1 / cm	CS 0223	644.00
243E227	2 TRI-clamp	AISI 316 L	104.9 mm	0.1 / cm	CS 0227	714.00

Order Data Options 200 CR

Type	Description	Article-No.	€/Piece
1000-62	IP 65 cover for wall mounting	CA 0062	97.00
1865-01	Calibration set for low conductivity	CA 0006	222.00
1865-02	Calibration set for high conductivity	CA 0007	222.00

*Other sensors on request.

Converter 770 MAX

Multi-parameter system with 4 SMART sensor channels

- 4-line LCD-display
- Optional 8 analog and 4 relay outputs
- USP conform



4-20 mA

The measuring system Thornton 770 MAX combines the measurement of conductivity, temperature, flow, pressure, pH and level in one unit.

Thornton 770 MAX is specially designed for application of ultrapure water. The range of applications for this instrument is e.g. the production of semiconductors (where high accuracy is required), in the pharmaceutical industry (here are calibration and reproducibility of high importance) in heat and power plants as well for many other applications.



Technical Data

Indication	4-line, 20-digit LCD
Output	4 – 20 mA
Accuracy	0.3 %
Cable length	Max. 91 m
Measuring range	Cell constant 0.1: 0.01 uS/cm up to 3000 uS/cm Cell constant 10: 10 uS/cm up to 200 mS/cm
Installation	Panel mounting 96 x 96 mm
Relay output	4 changeover
Interface	RS 232
Protection class	IP 65
Sensor input	4 channels for SMART sensors, 2 pulse inputs
Temperature	Pt 1000, accuracy 0.2 °C
Power supply	90 – 230 V AC, 24 V DC

Order Data Converter 770 MAX

Type	Technical data	Description	Article-No.	€/Piece
775-LA0	4 analog outputs	Thornton 770 MAX	MX 7701	1,799.00
775-LA1	4 analog and 4 relay outputs	Thornton 770 MAX	MX 7702	2,027.00
775-LA2	8 analog and 4 relay outputs	Thornton 770 MAX	MX 7703	2,268.00

Order Data Measuring cable 770 MAX

Type	Length	Article-No.	€/Piece
1001-79	30.5 cm	MK 0001	69.00
1005-79	1.5 m	MK 0005	76.00

Order Data Measuring cable 770 MAX

Type	Length	Article-No.	€/Piece
1010-79	3.0 m	MK 0010	83.00
1015-79	4.5 m	MK 0015	95.00
1025-79	7.6 m	MK 0025	102.00
1050-79	15.2 m	MK 0050	127.00
1100-79	30.5 m	MK 0100	203.00

Order Data Sensor 770 MAX*

Type	Connection	Constant	Electrode	Article-No.	€/Piece
230-211	¾ NPTM	0.1 / cm	Titanium	MS 0211	422.00
233E223	1.5 TRI-clamp	0.1 / cm	AISI 316 L	MS 0223	800.00
233E227	2 TRI-clamp	0.1 / cm	AISI 316 L	MS 0227	986.00

Order Data Options 770 MAX

Type	Description	Article-No.	€/Piece
1875	770 MAX calibration unit	MA 1875	1,144.00

*Other sensors on request.

Pressure & Temperature

**We can take
the heat and
handle the
pressure.**



BA 5000



CB 4000

New!



CB 6000



CB 7000

New!



MW 2500



TE 7000



TE 9000



TE 8000

Type	Measurement	Application
BA 5000	Pressure	Bourdon tube pressure gauge Manometer with limiting value transmitter on request
CB 4000	Pressure	Pressure transducer with ceramic measuring cell
CB 6000	Pressure	Compact pressure transducer with inner or front embedded diaphragm
CB 7000	Pressure	Pressure transducer with modular technique HART or Profibus on request
MW 2500	Pressure	Pressure switch for overpressure and non-aggressive liquide and gaseous media
TE 7000	Temperature	Pt 100 for caloric measurement Paired version
TE 9000	Temperature	Pt 100 in 2- and 3-wire version Ex-version on request
TE 8000	Temperature	Pt 100 including converter and integrated digital display



	Electric output	Approval	Page
	 on request		E / 76
			E / 78
			E / 79
	 		E / 81
			E / 83
			E / 84
			E / 85
			E / 86

BA 5000

For liquids and gases

- Bourdon tube pressure gauge
- Housing and measuring system made of stainless steel
- With liquid filling as an option

The bourdon type pressure gauge BA 5000 is equipped with a safety case for instruments greater than Ø 100 mm.

The pressure gauge BA 5000 is suitable for universal use in areas with heightened safety requirements. The instrument is designed to measure gaseous, liquid and aggressive media and therefore qualified for applications in the chemical, petrochemical and food industries.



Technical Data

Connection*	Ø 63 mm G 1/4, Ø 100/160 mm G 1/2
Gasket housing	Buna
Accuracy	Ø 63 mm class 1.6, Ø 100/160 mm class 1
Material housing	Stainless steel 1.4301
Material process connection	Stainless steel 1.4571
Material measuring element	Stainless steel 1.4571
Protection class	Ø 63 mm IP 54, filled IP 65; Ø 100/160 mm IP 65, filled IP 66
Temperature	-20 °C up to +60 °C
Overload protection	1.3-times

Order Data BA 5000

Type	Measuring range*	Diameter	Connection*	Article-No.	€/Piece
BA 4100	-1 ... 0 bar	Ø 63 mm	G 1/4	BA 5001	50.00
BA 4100	-1 ... 0.6 bar	Ø 63 mm	G 1/4	BA 5002	50.00
BA 4100	-1 ... 1.5 bar	Ø 63 mm	G 1/4	BA 5003	50.00
BA 4100	0 ... 0.6 bar	Ø 63 mm	G 1/4	BA 5004	50.00
BA 4100	0 ... 1 bar	Ø 63 mm	G 1/4	BA 5005	50.00
BA 4100	0 ... 1.6 bar	Ø 63 mm	G 1/4	BA 5006	50.00
BA 4100	0 ... 2.5 bar	Ø 63 mm	G 1/4	BA 5007	50.00
BA 4100	0 ... 4 bar	Ø 63 mm	G 1/4	BA 5008	50.00
BA 4100	0 ... 6 bar	Ø 63 mm	G 1/4	BA 5009	50.00
BA 4100	0 ... 10 bar	Ø 63 mm	G 1/4	BA 5010	50.00
BA 4100	0 ... 16 bar	Ø 63 mm	G 1/4	BA 5011	50.00
BA 4100	0 ... 25 bar	Ø 63 mm	G 1/4	BA 5012	50.00
BA 4100	0 ... 40 bar	Ø 63 mm	G 1/4	BA 5013	50.00

*Other ranges and connections on request

Order Data Options BA 5000

Type	Description	Diameter	Connection*	Article-No.	€/Piece
BA 4500	Price adder	Ø 100 mm	G 1/2	BA 5051	58.00
BA 4600	Price adder	Ø 160 mm	G 1/2	BA 5052	105.00
BA 4120	Price adder case filling	Ø 63 mm		BA 5061	13.00
BA 4540	Price adder case filling	Ø 100 mm		BA 5062	23.00
BA 4640	Price adder case filling	Ø 160 mm		BA 5063	42.00

CB 4000

New!

For liquids and gases

- Pressure transducer with ceramic measuring cell
- Operating temperature up to 100 °C
- Excellent durability

4-20 mA

The pressure transducer CB 4000 is an economical small instrument for standard applications.

CB 4000 is designed for measurement of gases, steam/vapours and liquids. The main application field is mechanical engineering plant construction. The sensor element of CB 4000 is a ceramic-capacitive measuring cell.



Technical Data

Connection*	G 1/2
Output	4 – 20 mA
Gasket housing	Viton
Accuracy	< 0.5%
Material housing	Brass, nickel plated
Material process connection	Stainless steel 316L
Measuring system	Ceramic measuring cell
Protection class	IP 65, optional IP 67
Temperature	-20 °C up to +100 °C, optional -40 °C
Power supply	12 – 30 V DC

Order Data CB 4000

Type	Measuring range*	Connection*	Article-No.	€/Piece
Vegabar 14	0 ... 100 mbar	G 1/2	CB 4001	136.00
Vegabar 14	0 ... 250 mbar	G 1/2	CB 4002	136.00
Vegabar 14	0 ... 400 mbar	G 1/2	CB 4003	136.00
Vegabar 14	0 ... 600 mbar	G 1/2	CB 4004	136.00
Vegabar 14	0 ... 1 bar	G 1/2	CB 4005	136.00
Vegabar 14	0 ... 1.6 bar	G 1/2	CB 4006	136.00
Vegabar 14	0 ... 2.5 bar	G 1/2	CB 4007	136.00
Vegabar 14	0 ... 4 bar	G 1/2	CB 4008	136.00
Vegabar 14	0 ... 6 bar	G 1/2	CB 4009	136.00
Vegabar 14	0 ... 10 bar	G 1/2	CB 4010	136.00
Vegabar 14	0 ... 16 bar	G 1/2	CB 4011	136.00
Vegabar 14	0 ... 25 bar	G 1/2	CB 4012	136.00
Vegabar 14	0 ... 40 bar	G 1/2	CB 4013	136.00
Vegabar 14	0 ... 60 bar	G 1/2	CB 4014	136.00

*Other ranges and connections on request

CB 6000

For liquids and gases

- Compact pressure transducer for general applications
- Also available with front embedded diaphragm
- Process temperature up to 140 °C

4-20 mA 

The pressure transducer CB 6000 is equipped with a piezoresistive measuring system which is resistant and safety against overload.

The electronic converts the measuring signal into an impressed current signal of 4 – 20 mA (0 – 20 mA on request). By means of the sturdy construction these converters are specially suited for use under difficult conditions. The max. allowed operating temperature can come up to +140 °C.

Technical Data

Connection*	G 1/2
Output	4 – 20 mA
Electr. connection	Right angle plug
Gasket housing	Without
Accuracy	0.3 %
Material housing	Stainless steel 1.4404
Material process connection	Stainless steel 1.4404
Measuring system	Piezoresistive
Protection class	IP 65
Temperature	0 °C up to +80 °C, optional +140 °C
Power supply	12 – 30 V DC
Approval	Optional IIG EEx ib IIC T6

Order Data CB 6000

Type	Measuring range*	Connection*	Article-No.	€/Piece
CB 6010	0 ... 1 bar	G 1/2	CB 6000	180.00
CB 6010	0 ... 1.6 bar	G 1/2	CB 6001	180.00
CB 6010	0 ... 2.5 bar	G 1/2	CB 6002	180.00
CB 6010	0 ... 4 bar	G 1/2	CB 6003	180.00
CB 6010	0 ... 6 bar	G 1/2	CB 6004	180.00
CB 6010	0 ... 10 bar	G 1/2	CB 6005	180.00
CB 6010	0 ... 16 bar	G 1/2	CB 6006	180.00
CB 6010	0 ... 25 bar	G 1/2	CB 6007	180.00
CB 6010	0 ... 40 bar	G 1/2	CB 6008	180.00
CB 6010	0 ... 60 bar	G 1/2	CB 6009	180.00
CB 6010	-1 ... 0 bar	G 1/2	CB 6024	180.00
CB 6010	-1 ... 0.6 bar	G 1/2	CB 6025	180.00
CB 6010	-1 ... 1.5 bar	G 1/2	CB 6026	180.00

*Other ranges and connections on request

Order Data CB 6000

Type	Measuring range*	Connection*	Article-No.	€/Piece
CB 6010	-1 ... 3 bar	G 1/2	CB 6027	180.00
CB 6010	-1 ... 5 bar	G 1/2	CB 6028	180.00
CB 6010	-1 ... 9 bar	G 1/2	CB 6029	180.00
CB 6010	-1 ... 15 bar	G 1/2	CB 6030	180.00
CB 6010	0 ... 1 bar abs	G 1/2	CB 6010	180.00
CB 6010	0 ... 1.6 bar abs	G 1/2	CB 6011	180.00
CB 6010	0 ... 2.5 bar abs	G 1/2	CB 6012	180.00
CB 6010	0 ... 4 bar abs	G 1/2	CB 6013	180.00
CB 6010	0 ... 6 bar abs	G 1/2	CB 6014	180.00
CB 6010	0 ... 10 bar abs	G 1/2	CB 6015	180.00
CB 6010	0 ... 16 bar abs	G 1/2	CB 6016	180.00
CB 6010	0 ... 25 bar abs	G 1/2	CB 6017	180.00

Order Data Options CB 6000

Type	Description	Article-No.	€/Piece
CB 6020	Process temperature up to +140 °C	CB 6042	20.00
CE 6110	Front flat diaphragm	CB 6043	10.00
CE 6120	Front flat diaphragm up to +140 °C	CB 6044	30.00
	IIG EEx ib IIC T6	CB 6040	38.00
	Field housing	CB 6041	69.00

*Other ranges and connections on request

CB 7000

New!

For liquids and gases

- Pressure transducer modular type
- Multi-functional indication with digital display and bargraph
- Adjustable measuring span turndown 5 : 1



4-20 mA



The pressure transducer **CB 7000** is suitable to measure the relative and absolute pressure of gases, vapours and liquids.

The pressure transducer is provided with a SMART modular technique for indicating, switching and communicating. These functional moduls are exchangeable or upgradable with small effort only. Remove from the process is not necessary. Versions for food, pharma, bioengineering or chemical industry are also available on request.

Technical Data

Connection	G 1/2
Output	4 – 20 mA
Electr. connection	M 12 x 1
Gasket housing	Viton
Accuracy	< 0.15 %
Material housing	Stainless steel 1.4301
Material process connection	Stainless steel 1.4404
Measuring system	Piezoresistive
Protection class	IP 65
Temperature	-20 °C up to +90 °C, optional +160 °C
Power supply	12 – 40 V DC, PA 9 – 32 V DC
Approval	Optional II2G EEx ib IIC T6

Order Data CB 7000

Type	Measuring range	Connection	Article-No.	€/Piece
CV 3100	-0.4 ... 0.4 bar	G 1/2	CB 7001	369.00
CV 3100	-1 ... 1 bar	G 1/2	CB 7002	369.00
CV 3100	-1 ... 1 bar	G 1/2	CB 7003	369.00
CV 3100	-1 ... 4 bar	G 1/2	CB 7004	369.00
CV 3100	-1 ... 16 bar	G 1/2	CB 7005	369.00
CV 3100	-1 ... 100 bar	G 1/2	CB 7006	369.00
CV 3100	0 ... 4 bar abs	G 1/2	CB 7007	369.00
CV 3100	0 ... 16 bar abs	G 1/2	CB 7008	369.00
CV 3100	-1 ... 1 bar	G 1/2 front-flat	CB 7051	369.00
CV 3100	-1 ... 1 bar	G 1/2 front-flat	CB 7052	369.00
CV 3100	-1 ... 4 bar	G 1/2 front-flat	CB 7053	369.00
CV 3100	-1 ... 16 bar	G 1/2 front-flat	CB 7054	369.00
CV 3100	0 ... 4 bar abs	G 1/2 front-flat	CB 7055	369.00
CV 3100	0 ... 16 bar abs	G 1/2 front-flat	CB 7056	369.00



Order Data Options CB 7000

Type	Description	Article-No.	€/Piece
Switching modul	With limit switches, plug-in	CB 7090	55.00
Profibus	Modul Profibus PA Profile 3.0 non-Ex	CB 7091	228.00
Ex protection	II 2G EEx ia IIC T4/6	CB 7092	31.00
Ex protection	II 1/2G EEx ia IIC T4/6	CB 7093	31.00

MW 2500

For liquids and gases

- Mechanical pressure switch
- Switching difference adjustable
- Pressure-gauge connection and G 1/4 inner thread

The pressure switch MW 2500 is suitable for overpressure and non-aggressive liquids and gaseous media.

MW 2500 is screwed directly into the pressure pipe. The switching pressure and the switching difference can be adjusted from outside by means of a screwdriver.

The wetted material of type MW 2501 – 2503 is brass and copper and for model MW 2504 and higher the material is stainless steel.

Technical Data

Connection	G 1/2
Pressure bellows	MW 2501 – MW 2503 copper, from MW 2504 stainless steel 1.4104
Sensor	MW 2501 – MW 2503 copper and brass
Material housing	Aluminium die-cast
Switching difference	Adjustable
Breaking capacity	250 V AC / 8 A, 24 V DC / 8 A
Protection class	IP 54
Temperature	-25 °C up to +75 °C

Order Data MW 2500

Type	Adjustment range	Switching difference	Article-No.	€/Piece
DCM 025-203	0.04 ... 0,25 bar	0.03 ... 0.4 bar	MW 2501	129.00
DCM 06-203	0.1 ... 0.6 bar	0.04 ... 0.5 bar	MW 2502	129.00
DCM 1-203	0.2 ... 1.6 bar	0.07 ... 0.55 bar	MW 2503	129.00
DCM 3-203	0.2 ... 2.5 bar	0.15 ... 1.5 bar	MW 2508	132.00
DCM 6-203	0.5 ... 6 bar	0.25 ... 2.0 bar	MW 2504	132.00
DCM 10-203	1 ... 10 bar	0.5 ... 2.8 bar	MW 2509	140.00
DCM 16-203	3 ... 16 bar	0.7 ... 3.5 bar	MW 2505	149.00
DCM 25-203	4 ... 25 bar	1.3 ... 6.0 bar	MW 2510	167.00
DCM 40-203	8 ... 40 bar	2.6 ... 6.6 bar	MW 2506	167.00
DCM 63-203	16 ... 63 bar	3.0 ... 10 bar	MW 2507	195.00



TE 7000

Pt 100 for caloric measurement

- Paired version
- For temperatures from 0 °C up to 200 °C
- Protection tube made of stainless steel

The resistance thermometer type TE 7000 for caloric measurement.

TE 7000 is directly connected in 4-wire-technique without converter. Because the instrument is used for caloric measurement. TE 7000 is available in paired version. Protection tube made of stainless steel protect the measuring unit against chemical influences and mechanical damage. Calibrated version on request.



Technical Data

Connection	G 1/2 incl. 2 sealing screws M 4
Terminal box	Form C made of light metal
Special feature	Paired version
Accuracy	Class A
Neck-/protection tube Ø	7.5 x 6.5 mm
Measuring range	Max. 200 °C
Protection cover	Stainless steel 1.4571
Sensor	Pt 100

Order Data TE 7000

Fitting length	Nominal length	Electrical connection	Article-No.	€/Piece
120 mm	140 mm	4-wire Pt 100	TE 7001	69.00
175 mm	195 mm	4-wire Pt 100	TE 7002	72.00
210 mm	230 mm	4-wire Pt 100	TE 7003	75.00

TE 9000

For liquids and gases

- Resistance thermometer optional with converter
- Detection of sensor failure
- Protection tube made of stainless steel

4-20 mA Ξ_x

The resistance thermometer TE 9000 including or without converter for measurement of temperature in liquid or gaseous media.

The 2-wire converter of TE 9000 is directly mounted into the terminal box of the resistance thermometer and supplies a temperature-linear output signal of 4 – 20 mA.

TE 9300 converter can be connected directly in 3-wire technique. A protection tube made of stainless steel protect the electronics against chemical attack and mechanical damage.

Technical Data

Connection	G 1/2 A
Terminal box	Form B made of light metal
Accuracy	Class A
Neck-/protection tube Ø	9 x 7 mm
Length of neck tube	100 mm
Measuring range	See below
Protection cover	Stainless steel 1.4571
Sensor	Pt 100
Power supply	8 – 35 V DC when analog output

Order Data TE 9000

Fitting length	Measuring range	Electrical connection	Article-No.	€/Piece
160 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 9001	135.00
160 mm	0 ... 200 °C	2-wire 4 – 20 mA	TE 9002	135.00
160 mm	0 ... 400 °C	2-wire 4 – 20 mA	TE 9003	135.00
250 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 9011	140.00
250 mm	0 ... 200 °C	2-wire 4 – 20 mA	TE 9012	140.00
250 mm	0 ... 400 °C	2-wire 4 – 20 mA	TE 9013	140.00
160 mm	0 ... 100 °C	3-wire Pt 100	TE 9301	75.00
160 mm	0 ... 200 °C	3-wire Pt 100	TE 9302	75.00
160 mm	0 ... 400 °C	3-wire Pt 100	TE 9303	75.00
250 mm	0 ... 100 °C	3-wire Pt 100	TE 9311	79.00
250 mm	0 ... 200 °C	3-wire Pt 100	TE 9312	79.00
250 mm	0 ... 400 °C	3-wire Pt 100	TE 9313	79.00

TE 8000

For liquids and gases

- Integrated 3 1/2-digit LCD-display
- Detection of sensor failure
- Protection tube made of stainless steel

4-20 mA

The resistance thermometer TE 8000 including converter and integrated digital display for temperature measurement in liquid and gaseous media.

The 2-wire converter of TE 8000 is directly installed in the terminal box of the resistance thermometer and supplies a temperature-linear output signal of 4 – 20 mA. The terminal box is additionally equipped with a 3 1/2-digit display. A protection tube made of stainless steel protect the measuring unit against chemical impact and mechanical damage.

Technical Data

Connection	G 1/2 A
Terminal box	Form B made of light metal
Indication	3 1/2-digit LCD
Resolution	Up to 200 °C 0.1 °C otherwise 1 °C
Accuracy	Class A
Neck-/protection tube Ø	6 x 5 mm
Measuring range	See below
Protection cover	Stainless steel 1.4571
Sensor	2 x Pt 100
Power supply	24 V DC

Order Data TE 8000

Fitting length	Measuring range	Electrical connection	Article-No.	€/Piece
50 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 8001	285.00
100 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 8002	290.00
160 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 8003	294.00
250 mm	0 ... 100 °C	2-wire 4 – 20 mA	TE 8004	298.00





Accessory



AF 5000



LL 3000

New!



VL 8000



LY 4300



LY 4400



LY 2300

New!



VS 8000



LY 4140

New!



TV 4100

New!



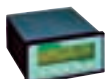
ST 5100



MV 6000



NV 1000



UF 2200



LC 5000



LY 4500



LY 2200



DE 2000



PA 6400



NE 1340



MK 3300



KH 2400



PS 1000



KH 4000

**We
make
life
easy.**



Type	Application
Computer AF 5000 UF 2200	Heat meter Compact computer for pressure and temperature compensation
Recorder / Data logger LL 3000 LC 5000 VL 8000	Pen recorder Screen recorder Display and data logger
Digital display with pulse input LY 4500 LY 4300 LY 2200	Totalizer Totalizer and actual value display Totalizer and actual value display
Digital display with analogue input LY 4400 DE 2000 LY 2300 PA 6400 VS 8000	Loop powered digital display Digital display in a stainless steel enclosure Ex-approved digital indicator Intelligent digital display Multi-channel display
Preset counter NE 1340 LY 4140	Preset counter digital batch controller
Measuring contact MK 3300 TV 4100	Measuring contact Isolated amplifier, limiting value transmitter
Switch amplifier KH 2400 ST 5100 PS 1000	Isolated switch amplifier Isolation amplifier universal Power supply unit
Mounting parts MV 6000 KH 4000 NV 1000	Solenoid valve Ball valve Needle valve

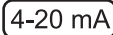


Electric input	Electric Output	Approval	Page
Pt100 Pt100	M-Bus 		E / 90 E / 91
0-10 V Pt100 0-10 V 8 x	pulse		E / 92 E / 93 E / 94
 	 Contact		E / 95 E / 96 E / 97
 8 x	Profibus		E / 98 E / 99 E / 100 E / 101 E / 102
 	 		E / 103 E / 104
 Pt 100	 		E / 105 E / 106
acc. to NAMUR 230 V AC	 24 V DC	 	E / 107 E / 108 E / 109
			E / 110 E / 112 E / 113

AF 5000

Heat meter

- With expansion modules
- Standard version with M-Bus interface and pulse output
- Now also with 4 – 20 mA current output

Pt100  4-20 mA 

The AF 5000 is a communication energy counter for demanding measuring duties.

The heat meter is available as a remote (split) version for energy measuring points fitted with passive pulsed volumetric flowmeters and 2- or 4-wire Pt 100/500 temperature sensors. The option “glycol-based heat carriers” offers the possibility to have high accurate measurements in cooling systems. An overview about the stored heat carriers and concentration please take from data sheet you will find under www.tablar.com

Technical Data

Dimensions	120 x 163 x 49 mm
Indication	Multifunctional display
Output	Standard 2 transistor outputs, options see below
Input	Pulse
Installation	DIN rail or wall mounting
Interface	Standard M-Bus
Protection class	IP 54
Temperature	0 °C up to +183 °C
Temperature sensor	Pt 100/500 paired
Ambient temperature	+5 °C up to +55 °C
Power supply	230 V AC

Order Data AF 5000

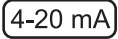
Type	Version	Article-No.	€/Piece
Calec ST Netz	Calculator with M-Bus 230 V AC power supply	AF 5000	290.00
Calec ST Netz	Calculator with 2 analogue outputs 230 V AC power supply	AF 5001	469.00
Calec ST Netz	Calculator with LON interface 230 V AC power supply	AF 5002	480.00
M-Bus	Option: second M-Bus interface	AF 5003	120.00
BDE	Software option: bi-directional energy measurement	AF 5004	82.00
GLY	Software option: water / glycol mixture	AF 5005	105.00
Mass	Software option: display and output signal in mass units	AF 5006	36.00
Verification	Verification of energy calculator acc. to scale of fees	AF 5007	on request
DIN	Supporting rail – DIN rail	AF 5010	15.00



UF 2200

Compact computer

- For gaseous and liquid media
- 1 or 2 analogue output signals
- Protection class IP 64 front

Pt100  4-20 mA 

The compact computer UF 2200 corrects the pressure- and temperature dependent error of flow measurements and calculates mass flow or volumetric flows under standard conditions.

In the heat carriers UF 2200 determines the heat content of the medium and then uses this to calculate the thermal output and the dissipated heat, taking into account the temperature of the water in the return line. For further processing of the determined values 1 or 2 analogue outputs, 1 frequency output, 3 relay outputs as well a RS 232 interface are available.



Technical Data

Dimensions	144 x 72 x 178 mm
Indication	2-line LCD
Output	Analogue: 1 or 2 galvanically separated, Pulse: Open collector NPN, Relay: 1 x fail, 2 x configurable (250 V AC, 5 A)
Input	8, of which 6 can be used simultaneously, current 4 – 20 mA, Pt 100 3-wire
Installation	Panel mounting
Interface	RS 232 bi-directional
Protection class	IP 64 front
Sensor supply	24 V DC 100 mA
Power supply	230 V AC

Order Data UF 2200

Type*	Version*	Article-No.	€/Piece
μFlow100-SSSSS	Compact computer with 1 analogue output signal	UF 2221	995.00
μFlow100-SSS2S	Compact computer with 2 analogue output signals	UF 2222	1,179.00

*Other versions on request

LL 3000

Pen recorder

- Inputs 0/4 – 20 mA, 0 – 1/10 V
- LED dot-matrix display
- Accuracy class 0.1

0-10V 4-20 mA

The pen recorder offers up to three measurement inputs.

Channel 1 can be used to output text in addition to the measurement trace. All parameters can be configured via keys on the front side. A 7-segment display is available to monitor the parameters. All parameters can be programmed from the 6 instrument keys. The configuration data are stored permanently in EEPROM. For LL 3000 text printing is limited to time, date, recording start and end, print test and service print.



Technical Data

Dimensions	144 x 144 x 227 mm
Number of channels	1, 2 or 3
Input	0/4 – 20 mA, 0 – 1/10 V
Accuracy	Class 0.5
Measuring time	240 ms for all three channels
Installation	Panel mounting
Cart overall width	120 mm, linear %-scaling
Chart speed	Free programmable
Protection class	IP 54 front
Power supply	230 V AC

Order Data LL 3000

Type	Version	Article-No.	€/Piece
LL1v-44uj	1 channel pen recorder	LL 3001	710.00
LL2v-44uj	2 channel pen recorder	LL 3002	820.00
LL3v-44uj	3 channel pen recorder	LL 3003	931.00

LC 5000

Screen recorder (paperless)

- Storage medium
Compact-Flash card
- Life-cycle data
management
- Three relay output signals
as option

0-10V Pt100 4-20 mA



The appearance of the LC 5000 is dominated by a 5-inch color display, in which the measurement data can be displayed in a vertical direction, similar to ordinary chart recorder.

But unlike to ordinary recorders, the LC 5000 does not need any chart paper for recording. Measurement data are stored electronically, and are available for evaluation at site as well as in the PC. According to choice, the LC 5000 can be fitted with 3 or 6 electrically isolated measurement inputs, optionally with 4 binary inputs and 3 relay outputs.



Technical Data

Dimensions	144 x 144 x 214 mm
Number of channels	3 or 6
Software	Setup program and PC-evaluation software
Screen	5 inch STN color screen
Input	Current, voltage, Pt 100, thermocouples
Accuracy	Class 0.5
Installation	Panel mounting
Interface	RS 232/485 optional
Protection class	IP 54 front
Storage medium	Compact-Flash card not in scope of delivery
Power supply	110 – 230 V AC

Order Data LC 5000

Type	Version	Article-No.	€/Piece
Logoscreen 500 CF	3 measurement inputs	LC 5001	1,008.00
Logoscreen 500 CF	3 measurement inputs, 4 binary inputs, 3 relays, RS 232/485	LC 5002	1,045.00
Logoscreen 500 CF	6 measurement inputs, 4 binary inputs, 3 relays, RS 232/485	LC 5003	1,219.00
Logoscreen 500 CF	Mathematics modul, integration and totalizer	LC 5010	129.00
Logoscreen 500 CF	PC-interface-cable and adapter	LC 5011	66.00

VL 8000**New!****Display and data logger**

- Storage medium
Compact-Flash card
- Up to 8 analogue inputs
- PC or PDA programming
software optional

4-20 mA

The Varilog VL 8000 serves the visualisation of up to 8 independently parameterized analogue signals, which can be initialized independently with simultaneous data logger function in a panel-mount case.

Each channel has a current input and a voltage input and can be completely freely scaled over 24 x/y points acc. to customers requirements. The data logger create in freely adjustable memory cycles a text file on a commercial SD or MMC-memory board. Programming can be carried out via front keys or by a programming software.

**Technical Data**

Number of channels	Up to 8 not galvanically separated input signals
Screen	Backlighted graphics-LCD
Input	Current (max. 20 mA) or voltage (max. 10 V)
Features	Display and notation of each channel, Free physical scaling, Linearisation over 24 x/y points, Follow-up pointer function, Number or quasi-analogue indication
Installation	Panel mounting
Protection class	IP 20 front
Storage medium	SD or MMC card (max. 512 MB)
Power supply	20 – 253 V DC or 50 – 253 V AC

Order Data VL 8000

Type	Version	Article-No.	€/Piece
VL8 A1	1-channel (without memory drive)	VL 8001	239.00
VL8 A4	4-channel (without memory drive)	VL 8002	339.00
VL8 A8	8-channel (without memory drive)	VL 8003	469.00
Program. software	For WINDOWS incl. interface cable	VL 8010	60.00
Program. software	For PDS incl. interface cable	VL 8011	99.00
Memory drive	Type SD 512 MB	VL 8012	59.00
PDA	With installed programming software incl. interface cable	VL 8013	505.00

LY 4500

Totalizer

- 6-digit LCD
- Backlighting optional
- Standard LCD with internal battery



The totalizer LY 4500 type adds pulses up to an input frequency of 5 kHz.

The instrument is powered by an internal Lithium battery, but the backlighted version require power from external supply. Three displays with 12 mm high digits are selectable: standard LCD as well as backlighted green or red LCD digits.



Technical Data

Dimensions	75 x 39 x 35 mm
Indication	6-digit standard or backlighted LCD display
Input	Pulses up to 5 kHz
Installation	Panel cut-out 68 x 33 mm
Options	Screw-on power supply
Reset	Front or external
Protection class	IP 65 front
Power supply	Internal Lithium battery, lifetime approx. 10 years

Order Data LY 4500

Type	Version	Power supply	Article-No.	€/Piece
CUB4L000	Standard LCD	Lithium battery	LY 4500	71.00
CUB4L010	Red digits, backlighted	24 V DC	LY 4510	95.00
CUB4L020	Green-yellow digits, backlighted	24 V DC	LY 4520	95.00
MLPS0000	Screw-on power supply	230 V AC	LY 4530	36.00

LY 4300

Totalizer and actual value display

- Easy programming by clear text
- Relay output card or interface optional
- 8-digit LCD display



The LY 4300 display is an eight-figure one, has 12 mm high digits and a dual counter input with which it is possible to determine the difference of two measuring instruments.

The backlighted version is user selectable for green or red backlight. The front bezel of the digital indicator is IP 65 sealed. A power supply unit can be fixed at the rear optionally.

Technical Data

Dimensions	75 x 39 x 44 mm
Indication	8-figure standard LCD or backlighted LCD
Input	Pulses up to 10 kHz
Installation	Panel cut-out 68 x 33 mm
Reset	Front or external
Protection class	IP 65 front
Power supply	24 V DC or 230 V AC with power supply unit

Order Data LY 4300

Type	Version	Power supply	Article-No.	€/Piece
CUB5R000	Standard LCD	24 V DC	LY 4300	100.00
CUB5B000	Red-yellow digits backlighted	24 V DC	LY 4330	123.00
MLPS1000	Screw-on power supply	230 V AC	LY 4340	36.00
CUB5RLY0	Relay output card change-over		LY 4341	25.00
CUB5COM1	Serial interface RS 485		LY 4342	25.00
CUB5COM2	Serial interface RS 232		LY 4343	25.00
CUB5COM3	Serial interface RS 232, projection software, connection cable		LY 4344	40.00

LY 2200

Totalizer and instantaneous value display

- ATEX and CSA approved
- Internal battery
- Instantaneous value and totalizer visible



The LY 2200 displays the total sum and the instantaneous value at the same time.

The intrinsic safety approvals and its internal power supply enables the instrument for universal use. In order to display physical units a decimal point position and a K-factor is fully user programmable. The IP 67 display consists of a 7-digit totalizer and a 4-digit instantaneous value read out. Other installation modes like panel mounting or pipe mounting on request.



Technical Data

Dimensions	152 x 98 x 43 mm
Indication	7-digit totalizer, 4-digit actual value
Input	Pulses 0.01 up to 10 kHz
Installation*	Wall mounting
Reset	Front
Protection class	IP 67
Power supply	Lithium battery

Order Data LY 2200

Type	Version	Article-No.	€/Piece
202Di.2.0.M	Ex-approval ATEX II 2G EEx ia IIB T3	LY 2200	435.00
202Di.2.0.C	Ex-approval CSA Class 1, Groupe C and D	LY 2201	435.00

*Other installation modes on request

LY 4400**Loop powered digital display**

- Powered by signal input
- 3 1/2-digit LCD display
- Zero point scaling

4-20 mA

The indicator LY 4400 is a 3 1/2-digit process indicator with span and offset capability.

The input range is between 4 – 20 mA and 10 – 50 mA selectable. The LY 4400 uses the input signal to power the unit and is therefore independent from external power supply. The LY 4410 has a red backlighting and dark digits. At LY 4420/4430 the LCD-digits display in an bright red or green. But these instruments need an external power supply of 9 – 28 V DC e.g. type LY 4440 (85 – 250 V AC)

**Technical Data**

Dimensions	75 x 39 x 44 mm
Indication	3 1/2-digit, 15 mm high, optional backlighted
Input	4 – 20 mA or 10 – 50 mA
Installation	Panel cut-out 68 x 33 mm
Protection class	IP 65 front
Scaling	By potentiometer
Power supply	See below

Order Data LY 4400

Type	Version	Power supply	Article-No.	€/Piece
CUB4LP00	Standard-LCD	Loop	LY 4400	102.00
CUB4LP40	Red LCD	Loop	LY 4410	109.00
CUB4CL10	Green-yellow digits	9 – 28 V DC	LY 4420	129.00
CUB4CL20	Red digits	9 – 28 V DC	LY 4430	129.00
MLPS1000	Screw-on power supply	85 – 250 V AC	LY 4440	36.00

DE 2000

Digital display in a stainless steel enclosure

- Loop powered
- Protection class IP 67
- Scaling by potentiometer

4-20 mA

The digital indicator DE 2000 with a scaling range of the 3 1/2-digit LCD display has been integrated in a sturdy housing made of stainless steel.

The input range is 4 – 20 mA and scaling is set by a potentiometer. The DE 2000 is powered by the 4 – 20 mA input signal and therefore mains-independent.

The display is also available with an integrated 2-wire measuring transducer for Pt 100 connection as an option.

Technical Data

Dimensions	89 mm diameter
Indication	3 1/2-digit LCD
Input	4 – 20 mA
Housing	Stainless steel incl. holding device
Protection class	IP 67
Scaling	By potentiometer
Power supply	Loop powered

Order Data DE 2000

Type	Version	Article-No.	€/Piece
doh-va	Digital display in stainless steel housing	DE 2000	159.00



LY 2300**Ex-approved digital indicator**

- ATEX and CSA certified
- Loop powered
- 4 1/2-digit LCD display

4-20 mA



LY 2300 is a 4 1/2-digit process indicator with zero-adjustment and range scaling.

The indicator is powered by the 4 – 20 mA input signal. Caused by Ex-approval and protection class IP 67 this unit is applicable for each application. Other mode of installation like panel mounting or pipe mounting are available on request.

**Technical Data**

Dimensions	152 x 98 x 43 mm
Indication	4 1/2-digit LCD
Input	4 – 20 mA
Installation*	Wall mounting
Protection class	IP 67
Scaling	By potentiometer
Power supply	Loop powered

Order Data LY 2300

Type	Version	Article-No.	€/Piece
210i.2.M	Ex-approval ATEX II 2G EEx ia IIB T6	LY 2300	250.00
210i.2.C	Ex-approval CSA Class 1, Groups A,B,C,D	LY 2301	250.00

*Other installation modes on request

PA 6400

Intelligent digital display

- Option card retrofittable
- Bright 5-digit display
- Input signals
20 mA or 10 V



The PA 6400 can be used either as indicator or as indicator and totalizer.

Limit switches, interfaces and analogue output, relay output, transistor output or Profibus DP are also available as option cards. A sensor supply for e.g. a transducer is also available. Programming mode is entered by using the 5 front panel keys or by a PC.



Technical Data

Dimensions	97 x 50 x 107 mm
Indication	5-digit red LCD
Input	4 – 20 mA
Installation	Panel cut-out 92 x 45 mm
Options	Plug-in output cards see below
Protection class	IP 65 front
Sensor supply	24 V DC, 50 mA
Scaling	Via front panel keys or PC
Power supply	24 V DC or 85 – 230 V AC

Order Data PA 6400

Type	Version	Article-No.	€/Piece
PAXP0000	Digital display with 85 – 230 V AC supply	PA 6401	209.00
PAXP0010	Digital display with 24 V DC supply	PA 6402	219.00
PAXCDC10	Plug-in interface card RS 485	PA 6411	68.00
PAXCDC20	Plug-in interface card RS 232	PA 6412	58.00
PAXCDL10	Plug-in analogue output card 0/4 – 20 mA	PA 6413	89.00
PAXCDS10	Plug-in relay output card 2 x change-over	PA 6414	49.00
PAXCDS20	Plug-in relay output card 4 x NO switch	PA 6415	59.00
PAXCDS30	Plug-in transistor output card 4 x NPN	PA 6416	49.00
PAXCDS40	Plug-in transistor output card 4 x PNP	PA 6417	49.00
PAXCDS50	Plug-in Profibus DP-card	PA 6418	183.00
PAXCDC30	Plug-in interface card DeviceNet	PA 6419	152.00
PAXOEMS	programming tool consisting of software, connection cable, PC and interface card PA 6412	PA 6420	65.00
PAXOEMS1	Same as PA 6420 but incl. converter cable RS 232-USB	PA 6421	108.00

VS 8000

New!

Multi-channel display

- Freely scalable dimension and units
- Different display modes
- PC or PDA programming software optional

4-20 mA

The VS 8000 serves the visualisation of up to 8 analogue signals which can be initialized independently in a panel mount case.

Each display channel has a current input signal and a voltage input signal and can be sized completely free over 24 x/y points according to customers request. Programming can be carried out via front keys or by a programming software.



Technical Data

Number of channels	Up to 8 not galvanically isolated input signals
Indication	Backlighted graphics-LCD
Input	Max. 20 mA or max. 10 V
Features	Display and store-up of each channel, Free physical scaling, Linearisation over 24 x/y points, Follow-up pointer function, Number or quasi-analogue display
Installation	Panel cut-out 48 x 96 mm
Protection class	IP 20 front
Power supply	20 – 253 V DC or 50 – 253 V AC

Order Data VS 8000

Type	Version	Article-No.	€/Piece
VS8 A1	1-channel	VS 8001	125.00
VS8 A4	4-channel	VS 8002	190.00
VS8 A8	8-channel	VS 8003	289.00
Program. Software	For WINDOWS incl. Interface cable	VS 8010	60.00
Program. Software	For PDA incl. Interface cable	VS 8011	99.00
PDA	With integrated programming software incl. interface cable	VS 8013	505.00

NE 1340

Multi-function preset counter

- Front protection class IP 65
- Two relay signal outputs
- Two presets



The NE 1340 is a multi-function counter with one or two presets.

By the two-line LCD-display the actual value and the set value are always visible by the integrated front membrane. NE 1340 is also usable for aggressive environment. The preset counter is also available with an interface RS 485 in request.



Technical Data

Dimensions	48 x 48 x 100 mm
Indication	LCD display
Output	2 x relay change-over (250 V AC, 1 A) programmable as momentary or permanent signals
Operation modes	Programmable by short stroke keys
Input	Pulses from NPN, PNP, CMOS, NAMUR or limit switch
Installation	Panel cut-out 45 x 45 mm
Reset	Front or external
Protection class	IP 65 front
Sensor supply	12 – 26 V DC, 60 mA
Power supply	See below

Order Data NE 1340

Type	Power supply	Article-No.	€/Piece
NE 134.011 AX01	24/48 V AC	NE 1341	199.00
NE 134.012 AX01	115/230 V AC	NE 1342	199.00
NE 134.013 AX01	12 – 30 V DC	NE 1343	189.00

LY 4140

Batch controller

- Automatic learning
overrun compensation
- External drive possible
- Pressure-resistant
enclosure optional



The batch controller LY 4140 type is equipped with dual relay outputs.

These relays provide control for single or dual stage valve operation. Functions like forward/backward measurement, automatic restart and detection of missing pulses are additionally selectable. The automatic learning overrun compensation enables a high accurate dosing. A field housing and pressure-resistant enclosure are optionally available.



Technical Data

Dimensions	144 x 72 x 178 mm
Indication	6-digit LCD
Output	Pulse: open collector, Relay: 1 x fail, 2 x configurable (250 V AC, 5 A)
Input	See below
Installation*	Panel mounting
Interface	RS 232/422 optional
Protection class	IP 65 front
Sensor supply	24 V DC, 50 mA
Power supply	See below

Order Data LY 4140

Type	Input signal	Power supply	Article-No.	€/Piece
414D.10E0	Pulse	220 – 240 V AC	LY 4141	786.00
414D.10D0	Pulse	12 – 28 V DC	LY 4142	786.00
414D.10A0	Pulse	110 – 120 V AC	LY 4143	786.00
414D.10J0	Pulse	100 V AC	LY 4144	786.00
414D.10E0	4 – 20 mA	220 – 240 V AC	LY 4151	865.00
414A.10D0	4 – 20 mA	12 – 28 V DC	LY 4152	865.00
414A.10A0	4 – 20 mA	110 – 120 V AC	LY 4153	865.00
414A.10J0	4 – 20 mA	100 V AC	LY 4154	865.00

*Other installation modes on request

MK 3300

Measuring contact

- Limit switches adjustable via keys
- MK 3300 broad-range power supply
- MK 3350/51 with sensor supply



The measuring contact compares the measuring value applied at the input with the measuring value set at the push-bottom encoder switch.

If the measuring signal exceeds or falls below the set value, the appropriate output relay reacts to pre-set function. As analogue input value all three standard signals are possible without additional communication. The feeder measuring contact MK 3350 supplies additionally a 2- or 3-wire transmitter with 24 V DC.



Technical Data

Output	2 relays change-over
Input	MK 3300: 0/4 – 20 mA, 0 – 10 V, MK 3350 / 3351: 4 – 20 mA
Features	Selectable MIN or MAX
Accuracy	1 %
Installation	On DIN rail
Breaking capacity	Max. 100 VA
Sensor supply	MK 3350 / 3351 24 V DC, 30 mA
Power supply	See below

Order Data MK 3300

Type	Power supply	Article-No.	€/Piece
MK 330 GS	20 – 253 V AC/DC	MK 3300	135.00
SMK 330 GS	230 V AC	MK 3350	165.00
SMK 330 GS	24 V DC	MK 3351	165.00

TV 4100**New!****Isolated amplifier**

- Universal power supply
- Universal input
- Removable front display

Pt100 4-20 mA

Type TV 4100 is a low budget series with an universal input.

The instruments are programmable via detachable illuminated front display. The three-line display shows the process values, the sensor status, the process unit and gives you much more information. The removable display enables the duplication of the configuration into other instruments. Detailed information about the different instruments please take from the data sheet.

**Technical Data**

Output	2 relay change-over type 4114/4116, 0/4 – 20 mA type 4116/4131
Input	0/4 – 20 mA, 0 – 1/5/10 V, Pt 100 in 2-, 3- and 4-wire technique Thermocouples type B ... W5, Poti 10 Ohm – 10 kOhm, linear 10 Ohm – 10 kOhm
Sensor supply	16 – 25 V DC, 0 – 20 mA
Power supply	21.6 – 253 V AC, 19.2 – 300 V DC

Order Data TV 4100

Type	Version	Article-No.	€/Piece
PR 4114	Relay output signals	TV 4114	117.00
PR 4116	Relay and mA output signal	TV 4116	126.00
PR 4131	mA output signal	TV 4131	108.00
PR 4501	Display / programming front unit	TV 4501	30.00

KH 2400

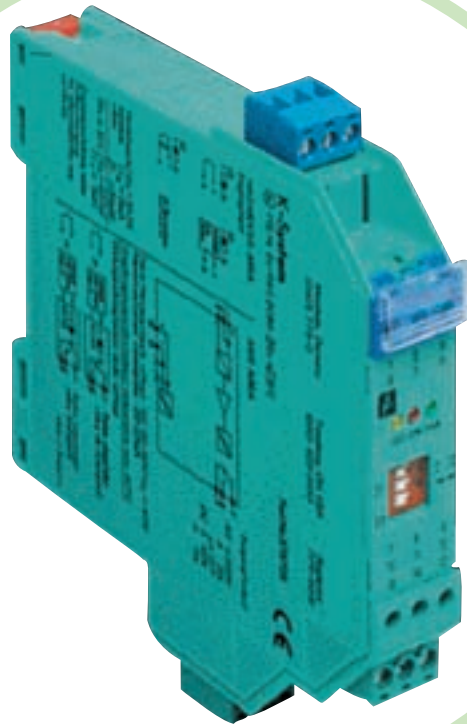
Isolated switch amplifier

- Control circuit Eex ia IIC
- Compact installation housing
- Qualified acc. to SIL 2



The isolated switch amplifier KH 2400 serves for evaluation and supply of NAMUR sensors.

For the operation of limit switches transistor relays are necessary. They consist of power supply, transistor amplifier and relay output. Isolated switch amplifier transfer digit signals from hazardous area. The inputs are designed for connection of sensors acc. to NAMUR resp. DIN 19234.



Technical Data

Output	Contact rating 250 V AC / 2 A resp. 30 V DC / 2 A
Input	Intrinsically safe acc. to DIN 19234 or NAMUR
Installation	On Norm-rail
Power supply	See below
Approval	Control circuit EEx ia IIC

Order Data KH 2400

Type	Power supply	Version	Article-No.	€/Piece
KFA6-SR2-EX1.W	230 V AC	1-channel 1 change-over	KH 2401	89.00
KFA6-SR2-EX2.W	230 V AC	2-channel 2 change-over	KH 2402	119.00
KFD2-SR2-EX1.W	24 V DC	1-channel 1 change-over	KH 2411	99.00
KFD2-SR2-EX2.W	24 V DC	2-channel 2 change-over	KH 2412	129.00

ST 5100**New!****Isolation amplifier
universal**

- 2-wire supply > 17 V DC
- For Ex-applications also
- 1- or 2-channel version

4-20 mA



The ST 5100 meet all requirements for power supply and signal isolation with 2-way HART communication for 2-wire transmitters.

By an universal AC/DC supply only one instrument version is necessary. Series ST 5100 is available as 1- or 2-channel version as well for Ex-applications.

**Technical Data**

Output	4 – 20 mA
Input	4 – 20 mA
Installation	On Norm-rail
Sensor supply	17 – 25 V DC
Power supply	21.6 – 253 V AC, 19.2 – 300 V DC
Approval	Control circuit EEx ia IIC

Order Data ST 5100

Type	Version	Article-No.	€/Piece
5106AB2A	1-channel	ST 5101	182.00
5106AB2B	2-channel	ST 5102	265.00
5106BB2A	1-channel ATEX II(1)G	ST 5103	195.00
5106BB2B	2-channel ATEX II(1)G	ST 5104	278.00

PS 1000

Power supply unit

- Tropics-proof
- Smoothed DC voltage
- Input voltage
115/230 V AC

The power supply unit PS 1000 and PS 1010 feed the measuring instruments with 24 V DC.

The power supply units transform the supply voltage into a smoothed DC voltage with a ripple of < 2%. The units are completely embedded with resin and therefore tropics-proof. The output signals are potential-free and the operation is displayed by a LED.



Technical Data

Output voltage	24 V DC
Output current	PS 1000 100 mA, PS 1010 1.5 A
Short circuit proof	PS 1000 yes, PS 1010 no
Effective power	PS 1000 2.4 W, PS 1010 38 W
Power supply	115/230 V AC

Order Data PS 1000

Type	Dimensions	Article-No.	€/Piece
PSU0124	22.5 x 75 x 100 mm	PS 1000	59.00
PSLC242	55 x 75 x 100 mm	PS 1010	49.00

MV 6000

Solenoid valve

- For neutral fluids
- Currentless closed
- Housing material brass or stainless steel

The solenoid valves **MV 6100 (stainless steel)** and **MV 6300 (brass)** are suitable for all applications with pressed air, neutral gases and easily flowing neutral fluids.

Due to the Viton gasket material and the maximum operating temperature of 130 °C series MV 6000 covers most of the applications.



Technical Data

Gasket	Viton
Housing	Brass or stainless steel
Inner parts	Stainless steel
Currentless closed	Currentless closed
Protection class	IP 65
Temperature	Max. 130 °C

Order Data MV 6000

Type	Connection	Material	Power supply	Article-No.	€/Piece
MV 120 ES	G 1/8	Stainless steel	230 V AC	MV 6101	72.00
MV 120 ES-G	G 1/8	Stainless steel	24 V DC	MV 6102	72.00
MV 121 ES	G 1/4	Stainless steel	230 V AC	MV 6103	94.00
MV 121 ES-G	G 1/4	Stainless steel	24 V DC	MV 6104	94.00
MV 122 ES	G 1/2	Stainless steel	230 V AC	MV 6105	470.00
MV 122 ES-G	G 1/2	Stainless steel	24 V DC	MV 6106	485.00
MV 1224	G 1/8	Brass	230 V AC	MV 6301	59.00
MV 1224 G	G 1/8	Brass	24 V DC	MV 6302	62.00
MV 1225	G 1/4	Brass	230 V AC	MV 6303	69.00
MV 1225 G	G 1/4	Brass	24 V DC	MV 6304	71.00
MV 1226	G 3/8	Brass	230 V AC	MV 6305	81.00
MV 1226 G	G 3/8	Brass	24 V DC	MV 6306	95.00
MV 1227	G 1/2	Brass	230 V AC	MV 6307	81.00
MV 1227 G	G 1/2	Brass	24 V DC	MV 6308	95.00
MV 1228	G 3/4	Brass	230 V AC	MV 6309	120.00
MV 1228 G	G 3/4	Brass	24 V DC	MV 6310	134.00
MV 1229	G 1	Brass	230 V AC	MV 6311	199.00
MV 1229 G	G 1	Brass	24 V DC	MV 6312	211.00
MV 1230	G 1 1/4	Brass	230 V AC	MV 6313	258.00

Order Data MV 6000

Type	Connection	Material	Power supply	Article-No.	€/Piece
MV 1230 G	G 1 1/4	Brass	24 V DC	MV 6314	270.00
MV 1231	G 1 1/2	Brass	230 V AC	MV 6315	359.00
MV 1232 G	G 1 1/2	Brass	24 V DC	MV 6316	375.00

KH 4000

Ball valve

- Made of stainless steel
- Teflon gasket
- Max. operating temperature 230 °C

Series KH 4000 type ball valve are made from stainless steel 1.4401/1.4408.

Due to the Teflon gasket material and max. operating temperature of 230 °C series KH 4000 meet most of the applications.



Technical Data

Gasket	Teflon
Pressure	Max. 70 bar
Material	Housing: stainless steel 1.4401 / 1.4408, Lever handle: steel
Protection class	IP 65
Temperature	Max. 230 °C

Order Data KH 4000

Type	Connection	Article-No.	€/Piece
395.01	G 1/4	KH 4001	32.00
395.02	G 3/8	KH 4002	32.00
395.03	G 1/2	KH 4003	35.00
395.04	G 3/4	KH 4004	44.00
395.05	G 1	KH 4005	54.00
395.06	G 1 1/4	KH 4006	69.00
395.07	G 1 1/2	KH 4007	86.00
395.08	G 2	KH 4008	129.00

NV 1000

Needle valve

- Teflon gasket
- Temperature resistant up to 150 °C
- Max. operating pressure 400 bar

The needle valve NV 1000 type is made out of stainless steel type 1.4571.

Due to the Teflon gasket material and the max. operating temperature of 150 °C series NV 1000 meets most of the applications.



Technical Data

Gasket	PTFE / Teflon
Pressure	Max. 400 bar
Material	Stainless steel 1.4571
Protection class	IP 65
Temperature	Max. 150 °C

Order Data NV 1000

Type	Connection	Article-No.	€/Piece
240.81 ES	G 1/8	NV 1004	51.00
240.82 ES	G 1/4	NV 1001	60.00
240.83 ES	G 3/8	NV 1005	67.00
240.84 ES	G 1/2	NV 1002	85.00
240.85 ES	G 3/4	NV 1006	110.00
240.86 ES	G 1	NV 1003	169.00

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