

UB1, CRE, CRG, VM, UZ, TZ1

Лопастные реле и индикаторы потока с микропереключателем

GHM MESSTECHNIK



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<http://ghm.nt-rt.ru> || gmg@nt-rt.ru

Flow Switch CRE



- Can be used from nominal width DN 25..200
- Suitable for media with ferritic particles

Characteristics

The devices function via the principle of a paddle supported by a metal bellows, and the triggering of a micro switch.

Technical data

Switch	micro switch	
Nominal width	DN 25..200	
Process connection	male thread R 1 "	
Switching range	0.19..165.7 m ³ /h	for details see table "Ranges"
Q_{max.}	up to 240 m ³ /h	
Tolerance	±15 % of full scale value	
Pressure resistance	brass construction	PN 8 bar , reduced switching range PN 5 bar
	stainless steel construction	PN 13 bar , reduced switching range PN 5 bar
Medium temperature	-20..+120 °C	
Ambient temperature	-20..+85 °C	
Media	water (oils and aggressive media available on request)	
Wiring	changeover no. 0.374	
Switching voltage	250 V DC	
Switching current	15(8) A	
Protection class	1 - PE connection	
Ingress protection	IP 65	
Electrical connection	cable screw gland M16x1.5	
Materials medium-contact	Brass construction:	Stainless steel construction:
	CW614N, 1.4571, Tombak	1.4571
Non-medium-contact materials	ABS	
Weight	Brass construction:	0.95 kg
	Stainless steel construction:	1.1 kg

Installation location

Standard: horizontal inwards flow; switching unit not recommended underneath; other installation positions are possible; the installation position affects the switching point and range.

Ranges

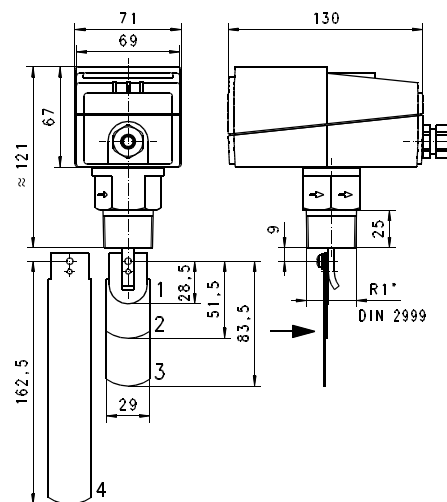
Details in the table correspond to horizontal inwards flow with decreasing flow rate.

● = Standard ○ = Option for reduced switching range

DN	Switching range m ³ /h H ₂ O				Q _{max. recommended}
	Paddle 1	Paddle 1,2*	Paddle 1,2,3*	Paddle 1,2,3,4*	
25	○ 0.19 - 1.0				3.6
	● 0.55 - 2.0				
32	○ 0.24 - 1.4				6.0
	● 0.82 - 2.8				
40	○ 0.50 - 1.9				9.0
	● 1.10 - 4.0				
50	○	0.9 - 3.6			15.0
	●				
65	○	1.2 - 4.9			24.0
	●				
80	○		2.1 - 7.4		36.0
	●				
100	○		4.9 - 17.1	3.3 - 11.6	60.0
	●				
125	○		9.7 - 34.0	5.0 - 17.5	90.0
	●				
150	○		13.6 - 47.6	6.1 - 21.4	120.0
	●				
200	○		25.7 - 90.1	21.7 - 55.3	240.0
	●				

*must be used together

Dimensions



Adapt paddle 1 for DN 25.
From DN 100, adapt paddle 4:
DN 100 Paddle length 92
DN 125 Paddle length 117
DN 150 Paddle length 143
from DN 175 unshortened

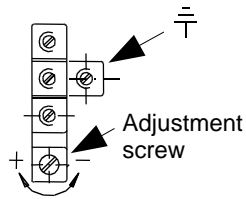
Handling and operation

Note

- Attention! Paddle fixing unsecured. For critical conditions (e.g. vibration), fit a bolted fixing.
- Include straight calming section of 10 x DN in inlet and outlet
- If the media are dirty, install a filter.
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads.
Capacitive and inductive loads must be operated using a protective circuit.

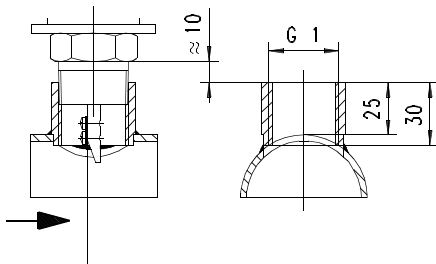
Loosen adjustment

Screw, and remove hood; set the desired switching value using the adjustment screw, and refasten the hood.



Installation recommendation

Use a tube with standard wall thickness as per DIN 2448



Ordering code

1. 2. 3. 4.
CRE - 025H S

○=Option

1. Process connection	
025H	threaded connection DN 25 - R 1 "
2. Connection material	
M	brass
K	stainless steel
3. Cable screw gland	
S	to the side
4. Switching range	
R	<input type="checkbox"/> reduced

Options

- TÜV certification
CRE-025HMS / CRE-025HKS TÜV.SW.09-28
CRE-025HMSR / CRE-025HKSР TÜV.SW.09-29
- Switching ranges for oil
- Special values



Ordering information

- Specify direction of flow, medium, and switching range.
- For oils, state viscosity, temperature and designation (e.g. ISO VG 68) (enquire about range).

Flow Switch CRG



- Can be used from nominal width DN 25..200
- Suitable for media with ferritic particles.

Characteristics

The devices function via the principle of a paddle supported by a metal bellows, and the triggering of a micro switch.

Technical data

Switch	micro switch	
Nominal width	DN 25..200	
Process connection	male thread R 1"	
Switching range	0.2..165.7 m ³ /h	for details see table "Ranges"
Q_{max.}	up to 240 m ³ /h	
Tolerance	±15 % of full scale value	
Pressure resistance	PN 11 bar	
Medium temperature	-20..+120 °C	
Ambient temperature	-20..+85 °C	
Media	water (oils and aggressive media available on request)	
Wiring	changeover no. 0.374 	
Switching voltage	250 V DC	
Switching current	15(8) A	
Protection class	1 - PE connection	
Ingress protection	IP 65	
Electrical connection	cable screw gland M20x1.5	
Materials medium-contact	Brass construction: CW614N, 1.4571, Tombak	Stainless steel construction: 1.4571
Non-medium-contact materials	ABS, PC transparent	
Weight	Brass construction:	0.95 kg
	Stainless steel construction:	1.1 kg

Installation location	Standard: horizontal inwards flow; switching unit not recommended underneath; other installation positions are possible; the installation position affects the switching point and range.
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Ranges

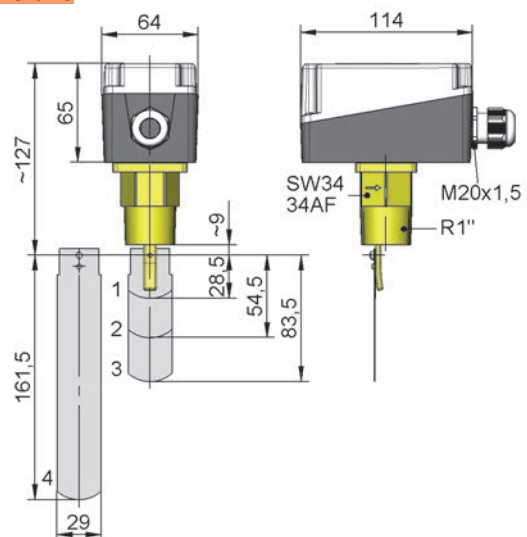
Details in the table correspond to horizontal inwards flow with decreasing flow rate.

● = Standard ○ = Option for reduced switching range

DN	Switching range m ³ /h H ₂ O				Q _{max. recommended}
	Paddle 1	Paddle 1,2*	Paddle 1,2,3*	Paddle 1,2,3,4*	
25	○ 0.20 - 1.0				3.6
	● 0.60 - 2.0				
32	○ 0.25 - 1.4				6.0
	● 0.80 - 2.8				
40	○ 0.50 - 1.6				9.0
	● 1.10 - 3.7				
50	○	0.9 - 3.6			15.0
	●				
65	○	1.2 - 4.9			24.0
	●				
80	○		2.1 - 7.4		36.0
	●				
100	○		4.9 - 17.1	3.3 - 11.6	60.0
	●				
125	○		9.7 - 34.0	5.0 - 17.5	90.0
	●				
150	○		13.6 - 47.6	6.1 - 21.4	120.0
	●				
200	○		25.7 - 90.1	21.7 - 55.3	240.0
	●				

*must be used together

Dimensions



Adapt paddle 1 for DN 25.
From DN 100, adapt paddle 4:
DN 100 Paddle length 92
DN 125 Paddle length 117
DN 150 Paddle length 143

From DN 175 unshortened

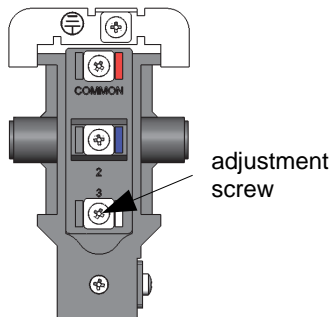
Handling and operation

Note

- Attention! Paddle fixing unsecured. For critical conditions (e.g. vibration), fit a bolted fixing.
- Include straight calming section of 10 x DN in inlet and outlet
- If the media are dirty, install a filter.
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive and inductive loads must be operated using a protective circuit.

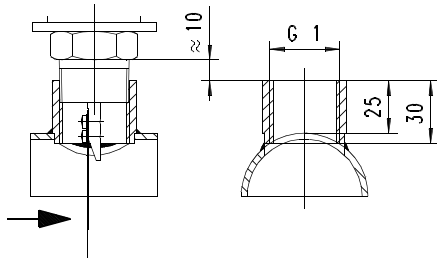
Loosen adjustment

Screws, and remove hood; set the desired switching value using the adjustment screw, and refasten the hood.



Installation recommendation

Use a tube with standard wall thickness as per DIN 2448



Ordering code

CRG - 1. 025H 2. 3. S 4.

○=Option

1. Process connection	2. Connection material	3. Cable screw gland	4. Switching range
025H	threaded connection DN 25 - R 1 "		
M	brass		
K	stainless steel		
S	to the side		
R	○ reduced		

Options

- Switching ranges for oil
- Special values

Ordering information

- Specify direction of flow, medium, and switching range.
- For oils, state viscosity, temperature and designation (e.g. ISO VG 68) (enquire about range).

Flow Meter UZ

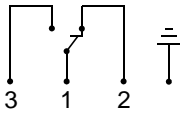


- Monitor and display
- Simple switching point adjustment by means of drag indicator
- Insensitive to dirt
- Suitable for media with ferritic particles.

Characteristics

With the UZ paddle flow display, the flow strength of the medium presses the paddle against a spring force. Hermetically separated by the bellows, the paddle's deflection is transmitted to a display movement, and may optionally be monitored with an adjustable micro switch. There is no magnet in the area of flow.

Technical data

Switch	optionally micro switch	
Nominal width	DN 15..50	
Process connection	female thread G 1/2..G 2	
Metering range	2..500 l/min	for details see table "Ranges"
Q_{max.}	to 600 l/min	
Tolerance	±3 % of full scale value	
Pressure resistance	Dynamic PN 6 bar	Static PN 16 bar
Medium temperature	-20..+100 °C	
Ambient temperature	-20..+70 °C	
Media	water (oils and aggressive media available on request)	
Wiring	changeover no. 0.342	
Switching voltage	max. 250 V AC	
Switching current	max. 5 A	
Protection class	2	
Ingress protection	IP 65	

Electrical connection	plug DIN 43650-A / ISO 4400
Materials medium-contact	<i>Brass construction:</i> CW614N nickelled, 1.4571, 1.4305 <i>Stainless steel construction:</i> 1.4571, 1.4305
Non-medium-contact materials	CW614N chromed, steel chromed, acrylic, FKM
Weight	see table "Dimensions and weights"
Installation location	Standard: horizontal inwards flow; display downwards not recommended; other installation positions are possible; the installation position affects the switching point and display range.

Ranges

Details in the table correspond to horizontal inwards flow with increasing flow rate.

Flow from the left.

G	Nominal width	Metering range l/min H ₂ O	Q _{max.} recommended	Type
G 1/2	DN 15	3 - 50	60	UZ-015G.050
G 3/4	DN 20	4 - 60	100	UZ-020G.060
G 1	DN 25		200	UZ-025G.060
G 1 1/4	DN 32	10 - 100	300	UZ-025G.100
		20 - 200		UZ-032G.100
G 1 1/2	DN 40	10 - 300	400	UZ-032G.200
				UZ-040G.200
G 2	DN 50	20 - 300	600	UZ-040G.300
		30 - 500		UZ-050G.300
				UZ-050G.500

Special ranges are available

Optional: Flow from the right (please specify when ordering)

G	Nominal width	Metering range l/min H ₂ O	Q _{max.} recommended	Type
G 1/2	DN 15	2 - 35	60	UZ-015G.035
G 3/4	DN 20	4 - 45	100	UZ-020G.045
		6 - 70		UZ-020G.070
G 1	DN 25	4 - 50	200	UZ-025G.050
		10 - 100		UZ-025G.100
G 1 1/4	DN 32	20 - 200	300	UZ-032G.100
				UZ-032G.200
G 1 1/2	DN 40	10 - 300	400	UZ-040G.200
				UZ-040G.300
G 2	DN 50	60 - 300	600	UZ-050G.300
		100 - 500		UZ-050G.500

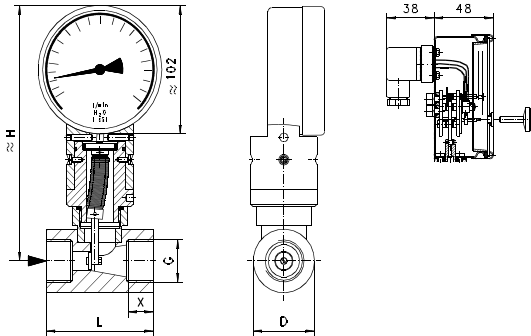
Special ranges are available

Product Information

Sensors and Instrumentation

Dimensions and weights

G	Types	H	L	SW	X	Weight kg
G 1/2	UZ-015G.	201	70	30	16	2.0
G 3/4	UZ-020G.	206	74	36	18	
G 1	UZ-025G.	201	87	46	19	2.5
G 1 1/4	UZ-032G.	209	104	55	22	3.0
G 1 1/2	UZ-040G.	215	111	65	24	4.5
G 2	UZ-050G.	227	130	70	28	5.0



Handling and operation

Note

- Include straight calming section of 5 x DN in inlet and outlet
- If the media are dirty, install a filter.
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive and inductive loads must be operated using a protective circuit.

Adjustment

The micro switch (optional) is adjusted by means of the knurled adjusting screw provided. The screw allows the drag indicator to be set to the desired switching value. The value displayed corresponds to a switching point for a decreasing flow rate.



Ordering code

1. 2. 3. 4. 5.
UZ

○=Option

1. Additional devices									
-	only analog display								
M-	with integrated micro switch								
P-	○ with potentiometer								
M2-	○ with 2 x normally open (n.o.)								see „Additional devices for UZ“
M3-	○ with 2 x normally closed (n.c.)								
2. Nominal width									
015	DN 15 - G 1/2								
020	DN 20 - G 3/4								
025	DN 25 - G 1								
032	DN 32 - G 1 1/4								
040	DN 40 - G 1 1/2								
050	DN 50 - G 2								
3. Process connection									
G	female thread								
4. Connection material									
M	brass								
K	stainless steel								
5. Metering range H ₂ O for horizontal inwards flow									
035	from the right	2 - 35 l/min							●
045	from the right	4 - 45 l/min							●
050	from the left	3 - 50 l/min							●
	from the right	4 - 50 l/min						●	
060	from the left	4 - 60 l/min						●	●
070	from the right	6 - 70 l/min							●
100	from left/right	10 - 100 l/min						●	●
200	from left/right	20 - 200 l/min						●	●
	from left/right	10 - 300 l/min						●	
	from the left	20 - 300 l/min						●	
300	from the right	60 - 300 l/min						●	
	from the left	30 - 500 l/min						●	
500	from the right	100 - 500 l/min						●	

Options

- Metering ranges for oil or gas
- Special values
- Gold contact 125 V AC / 30 V DC, 100 mA
- Special Harting plug

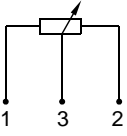
Ordering information

- Specify direction of flow, medium, and metering range.
- For oils. State viscosity, temperature and designation (e.g. ISO VG 68) (enquire about metering range).
- For gases, state pressure (relative or absolute), temperature and medium (e.g. air) (request metering range)

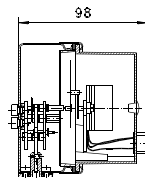
Additional Devices For UZ

UZP - 10 kOhm potentiometer

Technical data

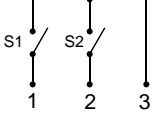
Switch/sensor	potentiometer
Wiring	no. 0.269
	
Switching voltage	max. 50 V DC
Switching current	max. 100 mA
Switching capacity	max. 1.5 W
Protection class	2 - safety insulation
Additional Tolerance	±3 %
Resistance tolerance	±1 %
Linearity tolerance	±0,3 %
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions

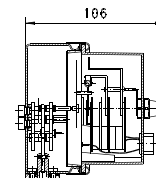


UZM2 - 2-pole normally open (n.o.)

Technical data

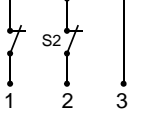
Switch/sensor	micro switch
Wiring	2 x normally open (n.o.) no. 0.268
	
Switching voltage	max. 250 V AC
Switching current	max. 0.6 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions

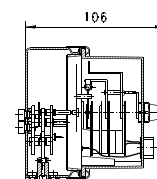


UZM3 - 2-pole normally open (n.o.)

Technical data

Switch/sensor	micro switch
Wiring	2 x normally closed (n.c.) wiring 0.285
	
Switching voltage	max. 250 V AC
Switching current	max. 0.6 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions



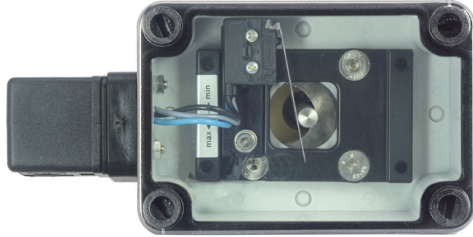
Handling and operation

Note

- Attention! Paddle fixing unsecured. For critical conditions (e.g. vibration), fit a bolted fixing.
- Include straight calming section of 10 x DN in inlet and outlet
- If the media are dirty, install a filter.
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads.
Capacitive and inductive loads must be operated using a protective circuit.

Loosen adjustment

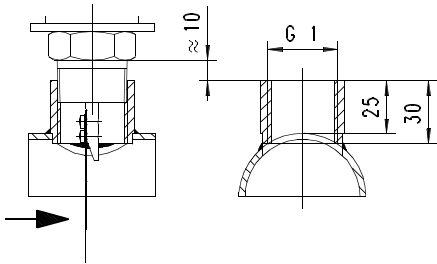
Open cover, loosen the screw slightly on the micro switch fixing. Push the switch into the desired position. Retighten the screw.



Installation recommendation

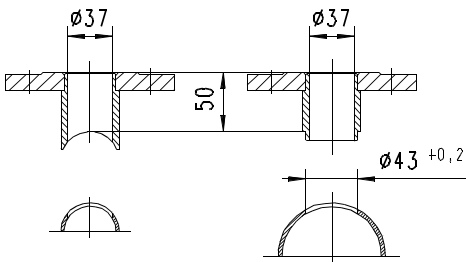
Threaded type

Use a tube with standard wall thickness as per DIN 2448



Flanged type

Use a tube with standard wall thickness as per DIN 2448



The type FL installation flanges are available as an accessory.

HONSBERG

Member of GHM GROUP

UB1-025HM / K ; UB1-032EM / K

Ordering code

UB1 - 1. 2.

1. Process connection	
025H	threaded connection DN 25 - R 1 "
032E	flange DN 32
2. Connection material	
M	brass
K	stainless steel

Options

- Signal lamp red or red/green in the plug DIN 43650-A
- Double contact
- Aluminium hood with IP 67
- Opaque cover
- Switching ranges for oil
- Special values
- TÜV-certification 0000021402

Ordering information

- Specify direction of flow, medium, and switching range.
- For oils, state viscosity, temperature and designation (e.g. ISO VG 68) (enquire about range).

Flow Meter UZ

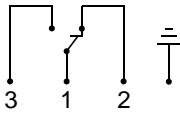


- Monitor and display
- Simple switching point adjustment by means of drag indicator
- Insensitive to dirt
- Suitable for media with ferritic particles.

Characteristics

With the UZ paddle flow display, the flow strength of the medium presses the paddle against a spring force. Hermetically separated by the bellows, the paddle's deflection is transmitted to a display movement, and may optionally be monitored with an adjustable micro switch. There is no magnet in the area of flow.

Technical data

Switch	optionally micro switch	
Nominal width	DN 15..50	
Process connection	female thread G 1/2..G 2	
Metering range	2..500 l/min	for details see table "Ranges"
Q_{max.}	to 600 l/min	
Tolerance	±3 % of full scale value	
Pressure resistance	Dynamic PN 6 bar	Static PN 16 bar
Medium temperature	-20..+100 °C	
Ambient temperature	-20..+70 °C	
Media	water (oils and aggressive media available on request)	
Wiring	changeover no. 0.342	
Switching voltage	max. 250 V AC	
Switching current	max. 5 A	
Protection class	2	
Ingress protection	IP 65	

Electrical connection	plug DIN 43650-A / ISO 4400
Materials medium-contact	<i>Brass construction:</i> CW614N nickelled, 1.4571, 1.4305 <i>Stainless steel construction:</i> 1.4571, 1.4305
Non-medium-contact materials	CW614N chromed, steel chromed, acrylic, FKM
Weight	see table "Dimensions and weights"
Installation location	Standard: horizontal inwards flow; display downwards not recommended; other installation positions are possible; the installation position affects the switching point and display range.

Ranges

Details in the table correspond to horizontal inwards flow with increasing flow rate.

Flow from the left.

G	Nominal width	Metering range l/min H ₂ O	Q _{max.} recommended	Type
G 1/2	DN 15	3 - 50	60	UZ-015G.050
G 3/4	DN 20	4 - 60	100	UZ-020G.060
G 1	DN 25		200	UZ-025G.060
G 1 1/4	DN 32	10 - 100	300	UZ-025G.100
		20 - 200		UZ-032G.100
G 1 1/2	DN 40	10 - 300	400	UZ-032G.200
				UZ-040G.200
G 2	DN 50	20 - 300	600	UZ-040G.300
		30 - 500		UZ-050G.300
				UZ-050G.500

Special ranges are available

Optional: Flow from the right (please specify when ordering)

G	Nominal width	Metering range l/min H ₂ O	Q _{max.} recommended	Type
G 1/2	DN 15	2 - 35	60	UZ-015G.035
G 3/4	DN 20	4 - 45	100	UZ-020G.045
		6 - 70		UZ-020G.070
G 1	DN 25	4 - 50	200	UZ-025G.050
		10 - 100		UZ-025G.100
G 1 1/4	DN 32	20 - 200	300	UZ-032G.100
				UZ-032G.200
G 1 1/2	DN 40	10 - 300	400	UZ-040G.200
				UZ-040G.300
G 2	DN 50	60 - 300	600	UZ-050G.300
		100 - 500		UZ-050G.500

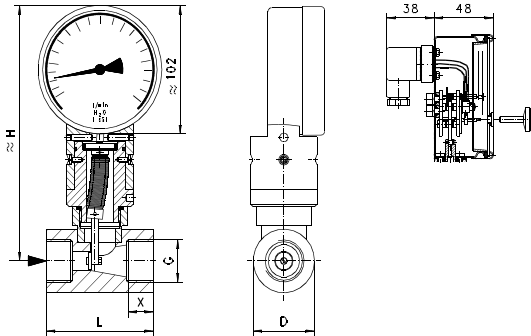
Special ranges are available

Product Information

Sensors and Instrumentation

Dimensions and weights

G	Types	H	L	SW	X	Weight kg
G 1/2	UZ-015G.	201	70	30	16	2.0
G 3/4	UZ-020G.	206	74	36	18	
G 1	UZ-025G.	201	87	46	19	2.5
G 1 1/4	UZ-032G.	209	104	55	22	3.0
G 1 1/2	UZ-040G.	215	111	65	24	4.5
G 2	UZ-050G.	227	130	70	28	5.0



Handling and operation

Note

- Include straight calming section of 5 x DN in inlet and outlet
- If the media are dirty, install a filter.
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive and inductive loads must be operated using a protective circuit.

Adjustment

The micro switch (optional) is adjusted by means of the knurled adjusting screw provided. The screw allows the drag indicator to be set to the desired switching value. The value displayed corresponds to a switching point for a decreasing flow rate.



Ordering code

1. 2. 3. 4. 5.
UZ

○=Option

1. Additional devices									
-	only analog display								
M-	with integrated micro switch								
P-	○ with potentiometer								
M2-	○ with 2 x normally open (n.o.)								see „Additional devices for UZ“
M3-	○ with 2 x normally closed (n.c.)								
2. Nominal width									
015	DN 15 - G 1/2								
020	DN 20 - G 3/4								
025	DN 25 - G 1								
032	DN 32 - G 1 1/4								
040	DN 40 - G 1 1/2								
050	DN 50 - G 2								
3. Process connection									
G	female thread								
4. Connection material									
M	brass								
K	stainless steel								
5. Metering range H ₂ O for horizontal inwards flow									
035	from the right	2 - 35 l/min							●
045	from the right	4 - 45 l/min							●
050	from the left	3 - 50 l/min							●
	from the right	4 - 50 l/min						●	
060	from the left	4 - 60 l/min						●	●
070	from the right	6 - 70 l/min							●
100	from left/right	10 - 100 l/min						●	●
200	from left/right	20 - 200 l/min						●	●
	from left/right	10 - 300 l/min						●	
300	from the left	20 - 300 l/min	●						
	from the right	60 - 300 l/min	●						
500	from the left	30 - 500 l/min	●						
	from the right	100 - 500 l/min	●						

Options

- Metering ranges for oil or gas
- Special values
- Gold contact 125 V AC / 30 V DC, 100 mA
- Special Harting plug

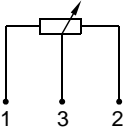
Ordering information

- Specify direction of flow, medium, and metering range.
- For oils. State viscosity, temperature and designation (e.g. ISO VG 68) (enquire about metering range).
- For gases, state pressure (relative or absolute), temperature and medium (e.g. air) (request metering range)

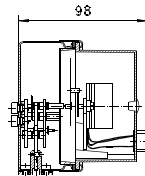
Additional Devices For UZ

UZP - 10 kOhm potentiometer

Technical data

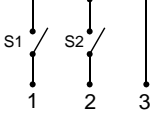
Switch/sensor	potentiometer
Wiring	no. 0.269
	
Switching voltage	max. 50 V DC
Switching current	max. 100 mA
Switching capacity	max. 1.5 W
Protection class	2 - safety insulation
Additional Tolerance	±3 %
Resistance tolerance	±1 %
Linearity tolerance	±0,3 %
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions

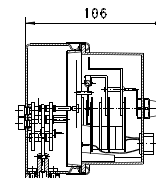


UZM2 - 2-pole normally open (n.o.)

Technical data

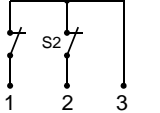
Switch/sensor	micro switch
Wiring	2 x normally open (n.o.) no. 0.268
	
Switching voltage	max. 250 V AC
Switching current	max. 0.6 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions

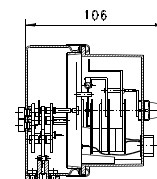


UZM3 - 2-pole normally open (n.o.)

Technical data

Switch/sensor	micro switch
Wiring	2 x normally closed (n.c.) wiring 0.285
	
Switching voltage	max. 250 V AC
Switching current	max. 0.6 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 60
Electrical connection	plug Hirschmann G 4
Additional Weight	0.3 kg

Dimensions



Flow Switch VM-...E

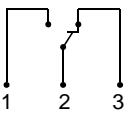


- Can be used from nominal width DN 40..200
- Precise, stepless adjustment of the switching value

Characteristics

The paddle movement of the flow switch is transmitted via a magnetic coupling to an adjustably arranged micro switch.

Technical data

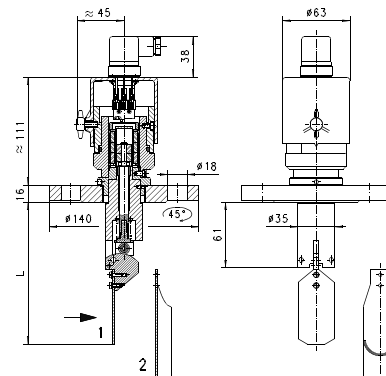
Switch	micro switch	
Nominal width	DN 40..200	
Process connection	installation flange DIN 2527 DN 32 PN 16 sealing surface as per DIN 2526 form C	
Switching range	40..3600 l/min	for details see Table "Ranges and dimensions"
Q_{max.}	up to 5400 l/min	
Tolerance	±5 % of full scale value	
Pressure resistance	PN 16 bar	
Medium temperature	-20..+90 °C, optionally -20..+200 °C, type VMX on request	
Ambient temperature	-20..+70 °C	
Media	water (oils available on request)	
Wiring	changeover no. 0.213	
Switching voltage	max. 250 V AC	
Switching current	max. 6 A	
Protection class	2 - safety insulation	
Ingress protection	IP 65	
Electrical connection	plug DIN 43650-A / ISO 4400	
Materials medium-contact	<i>Brass construction:</i> Rg 5, CW614N nickelled, 1.4305, 1.4301, 1.4310, 1.4571, NBR, hard ferrite	<i>Stainless steel construction:</i> 1.4305, 1.4301, 1.4310, 1.4571, FKM, hard ferrite
Non-medium-contact materials	ABS, PA	

Weight	DN 40..150 DN 200	3.0 kg 3.5 kg
Installation location	Standard: horizontal inwards flow; display downwards and inwards flow from above not recommended; other installation positions are possible; the installation position affects the switching point and display range.	

Ranges and dimensions

Details in the table correspond to horizontal inwards flow with decreasing flow rate.

DN	Switching range l/min H ₂ O	Q _{max.} recommended	Types	Paddle form	L
DN 40	40 - 150	250	VM-040E.150	1	93
DN 50	50 - 150	450	VM-050E.150		104
	100 - 300		VM-050E.300	96	
DN 65		550	VM-065E.300	2	115
	125 - 375		VM-065E.375		90
DN 80	150 - 400	900	VM-080E.400	2	118
	200 - 600		VM-080E.600		115
DN 100	250 - 750	1400	VM-100E.750	2	158
	300 - 900		VM-100E.900		122
DN 150	500 - 1500	2700	VM-150E.1500	2	198
	600 - 1800		VM-150E.1500		198
DN 200	1000 - 3000	5400	VM-200E.3000	2	213
	1200 - 3600		VM-200E.3600		213



Attention! Flange seal not included in scope of delivery

Handling and operation

Note

- Include straight calming section of 10 x DN in inlet and outlet
- If the media are dirty, install a filter (use magnetic filter for ferritic components).
- It must be ensured that the values given for voltage, current, and power are not exceeded.
- When switched on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive and inductive loads must be operated using a protective circuit.

Adjustment

To adjust the switching point, the fixing screw for the switching head must be loosened. The switching head can then be rotated. Turning to the right increases the switching point, and vice-versa. Then retighten the fixing screw.



Installation recommendation

Use a tube with standard wall thickness as per DIN 2448
The type FL installation flanges are available as an accessory.

Ordering code

VM - 1. 2. 3. 4. 5. E

1. Nominal width	
040	DN 40
050	DN 50
065	DN 65
080	DN 80
100	DN 100
150	DN 150
200	DN 200
2. Process connection	
E	installation flange
3. Connection material	
M	brass
K	stainless steel
4. Switching range H ₂ O for horizontal inwards flow	
150	40 - 150 l/min
	50 - 150 l/min
300	100 - 300 l/min
375	125 - 375 l/min
450	150 - 450 l/min
600	200 - 600 l/min
750	250 - 750 l/min
900	300 - 900 l/min
1500	500 - 1500 l/min
1800	600 - 1800 l/min
3000	1000 - 3000 l/min
3600	1200 - 3600 l/min
5. Optional for ATEX	
A	for switching head ATEX A-V2 or A-V3 (The switching head is ordered in addition)

Options

- Special plugs, Tichel / Harting
- Signal lamp red or red / green in the plug DIN 43650-A
- Signal lamp, miscellaneous
- Temperature display
- Temperature monitoring
- Temperature up to 150 °C
- Metal cap
- Gold contact micro switch 125 V AC / 30 V DC, 100 mA
- Germanischer Lloyd
- Switching ranges for oil
- Special values

Ordering information

- Specify direction of flow, medium, and switching range.
- For oils, state viscosity, temperature and designation (e.g. ISO VG 68) (enquire about range).

Архангельск (8182)63-90-72	Иваново (4932)77-34-06	Липецк (4742)52-20-81	Пенза (8412)22-31-16	Ставрополь (8652)20-65-13
Астана (7172)727-132	Ижевск (3412)26-03-58	Магнитогорск (3519)55-03-13	Пермь (342)205-81-47	Сургут (3462)77-98-35
Астрахань (8512)99-46-04	Иркутск (395)279-98-46	Москва (495)268-04-70	Ростов-на-Дону (863)308-18-15	Тверь (4822)63-31-35
Барнаул (3852)73-04-60	Казань (843)206-01-48	Мурманск (8152)59-64-93	Рязань (4912)46-61-64	Томск (3822)98-41-53
Белгород (4722)40-23-64	Калининград (4012)72-03-81	Набережные Челны (8552)20-53-41	Самара (846)206-03-16	Тула (4872)74-02-29
Брянск (4832)59-03-52	Калуга (4842)92-23-67	Нижний Новгород (831)429-08-12	Санкт-Петербург (812)309-46-40	Тюмень (3452)66-21-18
Владивосток (423)249-28-31	Кемерово (3842)65-04-62	Новокузнецк (3843)20-46-81	Саратов (845)249-38-78	Ульяновск (8422)24-23-59
Волгоград (844)278-03-48	Киров (8332)68-02-04	Новосибирск (383)227-86-73	Севастополь (8692)22-31-93	Уфа (347)229-48-12
Вологда (8172)26-41-59	Краснодар (861)203-40-90	Омск (3812)21-46-40	Симферополь (3652)67-13-56	Хабаровск (4212)92-98-04
Воронеж (473)204-51-73	Красноярск (391)204-63-61	Орел (4862)44-53-42	Смоленск (4812)29-41-54	Челябинск (351)202-03-61
Екатеринбург (343)384-55-89	Курск (4712)77-13-04	Оренбург (3532)37-68-04	Сочи (862)225-72-31	Череповец (8202)49-02-64
				Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47 Казахстан (772)734-952-31 Таджикистан (992)427-82-92-69