NH1, NO, NJ/NJV

Датчики протока поршневого типа

GHM MESSTECHNIK

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Flow Indicator / Switch NH1

- **Optionally switching contact**
- **Rotatable scale**
- **Visual range 360 °**

Characteristics

The NH1 flow indicator provides a reliable visual display of the present flow of a transparent fluid. The medium moves the indicator against the force of a spring, and in this way provides a quantitative determination of the flow, by reading the scale. The measurement tube is equipped with a dovetail guide which can optionally hold an NH1K limit value unit.

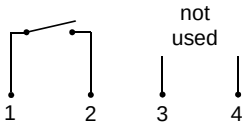
Technical data

Flow indicator NH1

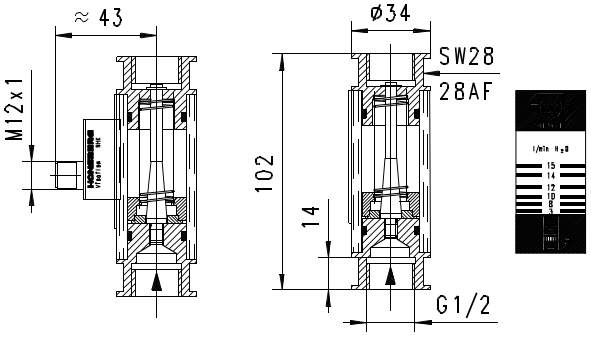
Nominal width	DN 15
Process connection	female thread G $^1/_2$ (further process connections available on request)
Display range	3..15 l/min - the display range corresponds to horizontal inwards flow with increasing flow rate.
$Q_{max.}$	20 l/min
Tolerance	±10 % of full scale value
Pressure resistance	PN 10
Media temperature	-20..+65 °C
Ambient temperature	-20..+65 °C
Media	water
Materials medium-contact	CW614N nickelled, acrylic XT, POM, 1.4310, FKM. with hard ferrite switching head
Non-medium-contact materials	CW614N nickelled, acrylic XT
Weight	0.35 kg
Installation location	vertical inwards flow from below

Switching contact NH1K

Switch	reed switch
Switching range	3..15 l/min - the switching range corresponds to horizontal inwards flow with decreasing flow rate.
Tolerance	±10 % of full scale value
Ambient temperature	-20..+65 °C

Wiring	maker no. 0.378 
Switching voltage	max. 250 V AC
Switching current	max. 0.5 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 65
Electrical connection	for round plug connector M12x1, 4-pole
Materials	POM
Weight	0.02 kg

Dimensions



Handling and operation

- Include straight calming section of 5 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 switch on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive, inductive and lamp loads must be operated using a protective circuit.

Ordering code

	1.	2.	3.	4.	5.
NH1		**015**	**G**	**M**	**015**

1.	**Switching contact**	
	-	flow indicator without switching contact
	K-	flow indicator with switching contact
2.	**Nominal width**	
	015	DN 15 - G $^1/_2$
3.	**Process connection**	
	G	female thread
4.	**Connection material**	
	M	brass
5.	**Display range/switching range H_2O for vertical inwards flow**	
	015	3 -15 l/min

Ordering information

- Specify direction of flow, medium, and display range.

Flow Indicator/ Switch NJ / NJV

- **Scale for various viscosities or viscosity stabilised from 30 to 200 mm²/s**
- **Also for dark or dirty media**
- **Robust construction**

Characteristics

Mechanical flow meter with spring-supported piston for fluid media. The measured value is transferred to a display ring via a magnetic coupling. Because of this separation, the display cannot become dirty. Robust construction in brass or stainless steel.

Technical data

Switch	optional reed switch	
Nominal width	DN 8..25	
Process connection	female thread G 1/4..G 1 (further process connections available on request)	
Display range	2..80 l/min	for details see table "Ranges"
$Q_{max.}$	to 80 l/min	
Tolerance	±8 % of the full scale value, minimum 1 l/min	
Pressure resistance	PN 100 bar	
Media temperature	-20..+100 °C	
Ambient temperature	-20..+70 °C	
Media	water (NJ only), oils (aggressive media available on request)	
Wiring	for options, see "Switch contact options"	
Switching voltage		
Switching current		
Switch performance		
Protection class		
Protection class		
Electrical connection		
Materials medium-contact	*Brass construction*: CW614N nickelled, CW614N, 1.4310, hard ferrite, NBR	*Stainless steel construction only with NJ*: 1.4571, 1.4310, hard ferrite PTFE-coated, FKM
Non-medium-contact materials	Acrylic HS	
Weight	see table "Dimensions and weights"	
Installation location	Standard: Vertical inwards flow from below; 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 increasing flow rate.

Standard NJ

G	Display range l/min H_2O	$Q_{max.}$ recommended	Types
G 1/4	2 - 10	10	NJ-008G.010
G 3/8		20	NJ-010G.010
	4 - 20		NJ-010G.020
G 1/2	2 - 10	40	NJ-015G.010
	4 - 20		NJ-015G.020
	10 - 40		NJ-015G.040
G 3/4	2 - 10	60	NJ-020G.010
	4 - 20		NJ-020G.020
	10 - 40		NJ-020G.040
G 1	2 - 10	80	NJ-025G.010
	4 - 20		NJ-025G.020
	10 - 40		NJ-025G.040
	20 - 80		NJ-025G.080

Special ranges are available.

Multi-scale display ranges

1	20-45	75-120	180-250	mm²/s
2 - 10	0.6 - 8	0.2 - 7	0.1 - 4	l/min
4 - 20	2.0 - 19	1.0 - 17	0.5 - 15	
10 - 40	7.0 - 38	6.0 - 37	4.0 - 36	
20 - 80	19.0 - 73	17.0 - 68	13.0 - 63	

Viscosity stabilised NJV

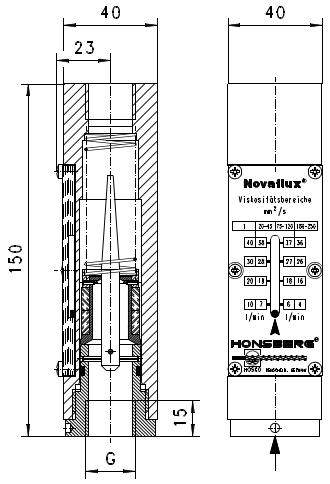
Viscosity compensated devices are measured in the factory as per ISO VG100.

G	Display range l/min oil 30..200 mm²/s	$Q_{max.}$ recommended	Types
G 1/4	2 - 10	10	NJV-008G.010
G 3/8		20	NJV-010G.010
	4 - 20		NJV-010G.020
G 1/2	2 - 10	40	NJV-015G.010
	4 - 20		NJV-015G.020
	10 - 40		NJV-015G.040
G 3/4	2 - 10	60	NJV-020G.010
	4 - 20		NJV-020G.020
	10 - 40		NJV-020G.040
	10 - 60		NJV-020G.080
G 1	2 - 10	80	NJV-025G.010
	4 - 20		NJV-025G.020
	10 - 40		NJV-025G.040
	10 - 60		NJV-025G.080

Special ranges are available.

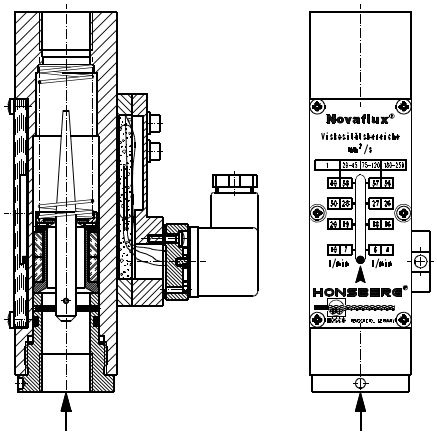
Dimensions and weights

G	Types	Weight kg		
		without switching head NJ- / NJV-	With switching head Plastic NJK / NJVK	with metal switching head NJM / NJVM
G 1/4	...-008G....	1.5	1.65	1.95
G 3/8	...-010G....	1.4	1.55	1.85
G 1/2	...-015G....	1.3	1.45	1.75
G 3/4	...-020G....			
G 1	...-025G....	1.2	1.35	1.65



Switch contact options

Plastic switch contacts



Switch contact K1

Wiring	maker no. 0.338 diode green 1+ 2 3-
Switching voltage	max. 250 V AC
Switching current	max. 0.5 A
Switch performance	max. 10 VA
Protection class	2 - safety insulation
Ingress protection	IP 65
Electrical connection	DIN 43650-A plug
Non-medium-contact materials	PA
Additional weight	0.2 kg

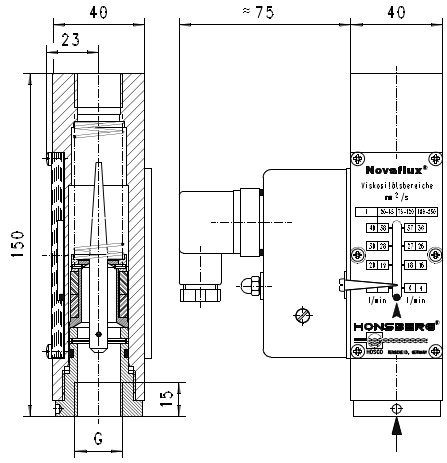
Switch contact K2

Wiring	normally open (n.o.) no. 0.445 2 1
Switching voltage	max. 250 V AC
Switching current	max. 0.5 A
Switching capacity	max. 10 VA
Protection class	2 - safety insulation
Ingress protection	IP 65
Electrical connection	DIN 43650-A plug
Non-medium-contact materials	PA
Additional Weight	0.2 kg

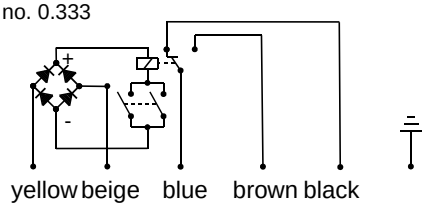
Switch contact K3

Wiring	changeover no. 0.347 green red 1(-) 2(+) 3(-) 4(-)
Switching voltage	max. 24 V DC
Protection class	2 - safety insulation
Ingress protection	IP 65
Electrical connection	plug Hirschmann G 4
Non-medium-contact materials	PA
Additional weight	0.2 kg

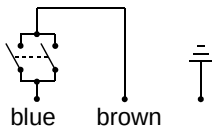
Switching contacts made of metal



Switch contact M1

Wiring	no. 0.333  Attention! Only hood is earthed, not the body of the flow indicator
Switching voltage	max. 250 V AC
Switching current	max. 5 A
Supply voltage	230 V AC, optionally 125 V AC, 24 V DN (10 mA)
Protection class	1 - PE connection
Ingress protection	IP 65
Electrical connection	cable 2.5 m
Non-medium-contact materials	steel, rilsan-coated, PA
Additional weight	0.35 kg

Switch contact M2

Wiring	normally open (n.o.) no. 0.215  Attention! Only hood is earthed, not the body of the flow indicator
Switching voltage	max. 250 V AC
Switching current	max. 0.5 A
Switch performance	max. 10 VA
Protection class	1 - PE connection
Ingress protection	IP 65
Electrical connection	cable 2.5 m
Non-medium-contact materials	steel, rilsan-coated, PA
Additional weight	0.3 kg

Handling and Operation

Note

- Include straight calming section of 5 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 switch on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive, inductive and lamp loads must be operated using a protective circuit.

Adjustment

If it is necessary to set the switching value, the switching head can be adjusted lengthways. When the switching value is reached, the switch contact is fixed in place by fastening bolts.

Ordering code

1.	2.	3.	4.	5.	6
			G		

❍=Option

1.	**Construction**			
	NJ	standard		
	NJV	viscosity compensated		
2.	**Switching contact**			
	-	without switch contact		
	K1-	with switch contact K1 - wiring 0.338		
	K2- ❍	with switch contact K2 - wiring 0.445		
	K3- ❍	with switch contact K3 - wiring 0.347		
	M1- ❍	with switch contact M1 - wiring 0.333		
	M2- ❍	with switch contact M2 - wiring 0.215		
3.	**Nominal width**			
	008	DN 8 - G $^1/_4$		
	010	DN 10 - G $^3/_8$		
	015	DN 15 - G $^1/_2$		
	020	DN 20 - G $^3/_4$		
	025	DN 25 - G 1		
4.	**Process connection**			
	G	female thread		
5.	**Connection material**			
	M	brass		
	K ❍	stainless steel		
6.	**NJ - display range H_2O for vertical inwards flow**			
	010	2 - 10 l/min		●
	020	4 - 20 l/min		●
	040	10 - 40 l/min		●
	080	20 - 80 l/min		●
	NJV - display range oil 30..200 mm²/s for vertical inwards flow			
	010	2 - 10 l/min	●	
	020	4 - 20 l/min	●	
	040	10 - 40 l/min	●	
	060	20 - 60 l/min	●	

Options

- Special quantities/special scaling

Ordering information

- Specify direction of flow, medium, and display range.
- For viscous media specify viscosity, temperature, and medium (e.g. ISO VG 68) (enquire about display range).
- For gases, state pressure (relative or absolute), temperature and medium (e.g. air) (request display range).

Flow Indicator / Switch NO

- **Optionally switching contact**
- **Also for dark and dirty media**
- **Rotatable scale**
- **Visual range 360 °**

Characteristics

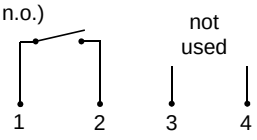
Mechanical flow meter with spring-supported pistons for fluid or gaseous media. The measured value is transferred to a display ring via a magnetic coupling. Because of this separation, the display cannot become dirty. Robust construction in brass or stainless steel.

Technical data

Flow indicator NO

Nominal width	DN 8..25	
Process connection	female thread G $^1/_4$..G 1 (further process connections available on request)	
Display range	3..60 l/min	for details see table "Ranges"
$Q_{max.}$	60 l/min	
Tolerance	±10 % of the full scale value, minimum 1 l/min	
Pressure resistance	PN 50 bar	
Media temperature	-20..+90 °C	
Ambient temperature	-20..+70 °C	
Media	water (oils, gases and aggressive media available on request)	
Materials medium-contact	Brass construction: CW614N nickelled, CW614N, 1.4310, hard ferrite, NBR, FKM	
Non-medium-contact materials	Acrylic XT	
Weight	see table "Dimensions and weights"	
Installation location	Standard: Horizontal inwards flow from the left; other installation positions are possible; the installation position affects the switching point and range.	

Switch contact NOK

Switch	reed switch
Switching range	3..50 l/min, for details see table "Ranges"
Tolerance	±5 % of the full scale value, minimum 1 l/min
Ambient temperature	-20..+70 °C
Wiring	normally open (n.o.) no. 0.378 
Switching voltage	max. 250 V AC
Switching current	max. 1 A
Switching capacity	max. 50 VA
Protection class	2 - safety insulation
Ingress protection	IP 65
Electrical connection	for round plug connector M12x1, 4-pole
Materials	POM
Weight	0.02 kg

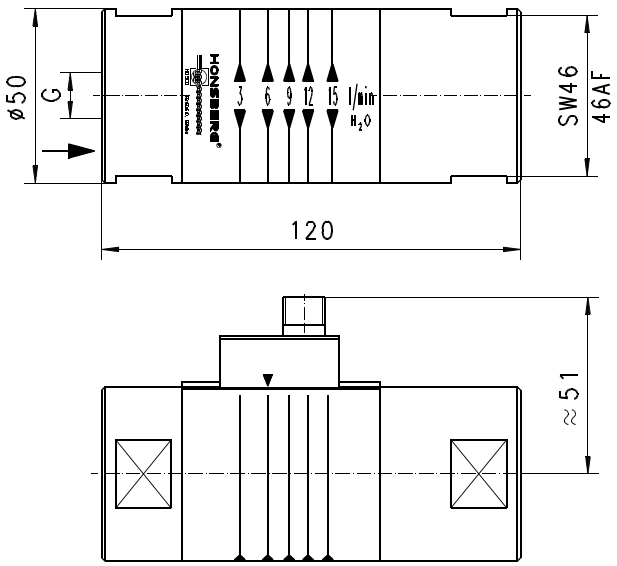
Ranges

For switching ranges, the details in the table correspond to horizontal inwards flow and decreasing flow rate; for display ranges they correspond to horizontal inwards flow and increasing flow rate.

G	**Display range** l/min H_2O	**Switching range** l/min H_2O	**$Q_{max.}$** recommended	**Types**
G $^1/_4$	3 - 15	3 - 12	15	NO.-008G.015
G $^3/_8$				NO.-010G.015
G $^1/_2$	5 - 30	5 - 25	30	NO.-015G.030
G $^3/_4$	5 - 50	5 - 40	50	NO.-020G.030
G 1	10 - 60	10 - 50	60	NO.-025G.060

Dimensions and weights

G	**Types**	**X**	**Weight** kg
G $^1/_4$	NO.-008G.015	13	1.30
G $^3/_8$	NO.-010G.015		1.25
G $^1/_2$	NO.-015G.030	15	
G $^3/_4$	NO.-020G.030	18	1.15
G 1	NO.-025G.060		1.05



Handling and Operation

- Include straight calming section of 5 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 switch on, a load must be connected in series.
- The electrical details apply to ohmic loads. Capacitive, inductive and lamp loads must be operated using a protective circuit.
- Remove the transport lock (white plastic screw in acrylic body) before starting operation. Then seal the threaded hole with the sticker (included in the shipment).

Ordering code

	1.	2.	3.	4.	5.
NO			G		

❍=Option

1.	**Switching contact**	
	-	flow indicator without switching contact
	K-	flow indicator with switching contact
2.	**Nominal width**	
	008	DN 8 - G 1/4
	010	DN 10 - G 3/8
	015	DN 15 - G 1/2
	020	DN 20 - G 3/4
	025	DN 25 - G 1
3.	**Process connection**	
	G	female thread
4.	**Connection material**	
	M	brass
5.	**Display range/switching range H_2O for vertical inwards flow**	
	015	3 -15 l/min
	030	5 -30 l/min
	050	5 -50 l/min
	060	10 -60 l/min

Options

- Display range 20..100 %
- Special values

Ordering information

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

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