

Product Information

Sensors and Instrumentation

Flow Switch FM-...GR

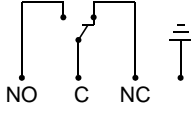


- Adjusted switching value
- Highly reproducible
- Insensitive to dirt
- High switching power

Characteristics

The volume flow raises a piston (fitted with a magnet) out from a valve seat against a spring force. The piston uses a magnetic coupling to actuate a hermetically separated micro switch.

Technical data

Switch	micro switch	
Nominal width	DN 8..15 (DN 20..80 available on request)	
Process connection	female thread G 1/4..G 1/2	
Adjustment range	0.4..12 l/min	for details see table "Ranges"
Q_{max.}	to 20 l/min	
Tolerance	±3 % of the switching value, minimum ±0.3 l/min	
Pressure resistance	PN 200 bar	
Medium temperature	-20..+90 °C	
Ambient temperature	-20..+70 °C	
Media	Water (oils and gases available on request)	
Wiring	changeover no. 0.450 	
Switching voltage	max. 250 V AC	
Switching current	max. 6 A	
Protection class	1 - PE connection	
Ingress protection	IP 65	
Electrical connection	plug-in connection on the microswitch 2.8 x 0.5, cable screw gland Pg 9. optionally DIN 43650-A plug	
Materials medium-contact	Rg 5 nickelled, 1.4310, CW614N nickelled, CW614N, NBR, hard ferrite	
Non-medium-contact materials	PS, PA	
Weight	see table "Dimensions and weights"	

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

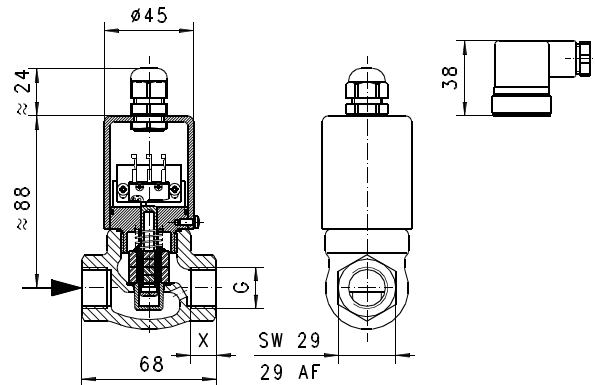
Details in the table correspond to horizontal inwards flow with decreasing flow rate.

G	DN	Switching point l/min H ₂ O Choose between	Types	Q _{max.} recommended
G 1/4	DN 8	0.4 - 9	FM-008GR009	10
G 3/8	DN 10	0.4 - 10	FM-010GR010	15
G 1/2	DN 15	0.4 - 12	FM-015GR012	20

Special ranges are available

Dimensions and weights

G	Types	X	Weight kg
G 1/4	FF-008GR...	12	0.65
G 3/8	FF-010GR...		
G 1/2	FF-015GR...	13	0.60



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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 switched 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.
 FM -

1. Nominal width	
008	DN 8 - G 1/4
010	DN 10 - G 3/8
015	DN 15 - G 1/2
2. Process connection	
G	female thread
3. Connection material	
R	red bronze
4. Switching point H ₂ O can be set as desired between	
009	0.4 - 9 l/min
010	0.4 - 10 l/min
012	0.4 - 12 l/min

Options

- Nominal width DN 20..80
- Adjustment for oil or gas
- Special values
- Plug DIN 43650-A / ISO 4400
- Signal lamp red or red / green in the plug

Ordering information

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