Sight Glass Flow Indicator

UFJ

- Connection: G¼ ... G1½
- Setting range:
  Water: 10 - 8000 l/h
  Gas: 0.2 - 250 Nm³/h
- p_{max}: 6 bar; t_{max}: 120 °C
- Material:
  stainless steel, PVC or POM-C
- Accuracy: ±4% of set value

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Description

The flow indicator model UFJ for liquids and gases operates on the suspended float principle; i.e. the installation position is vertical and the direction of flow is from bottom to top.

The instrument consists of a measuring tube in which a section around the set value is cut out. It has a marking in its slot comprising of a set value/switching point and ranging from approximately -1 % ... +5 %, whereby the float indicates the presence of flow.

The apparatus is configured in such a way that when the flow is less than approximately -1 % of the set value, only the float head is visible through the slot. When the flow is around the set value or greater, the float appears in the sight glass.

Set value: The value given by the customer corresponds to the flow of the medium, where the float top edge is aligned with a line on the sight glass.

Slot range: It is the surroundings of the switching point, which are visible on the sight glass.

Possible setting range: The customer can select the set value/switching point within this setting range (see order details).

Limit switches (option)

The flow indicator can be fitted with a limit switch as an option. These limit switches are cylindrical proximity switches. The electrical connection is via 2 m cable.

The monostable switch types are used as N/O or N/C contacts but with bistable behaviour, depending in which contact opening they are placed. There are two openings available at bottom and top behind the slot in order to implement the N/C or N/O function (see function overview table).

Technical Data

Installation position:	vertical, flow from bottom
Max. pressure:	6 bar
Process temperature:	UFJ-0: 65 °C UFJ-1: 100 °C UFJ-3: 120 °C UFJ-5: 120 °C
Protective category:	IP 65
Connections:	G ¼ ... G 1½
Accuracy:	± 4% of set value

Materials

Housing:	stainless steel (1.4404, 1.4301) or POM-C or PVC
Measuring tube:	borosilicate glass
Float:	stainless steel (1.4404,1.4301)
Gasket:	NBR, FPM,

Contact (optional)

Proximity open collector (monostable):	PNP
Ambient temperature:	-25 ... +70 °C
Supply voltage:	12 ... 24 V_{DC}
Current consumption:	max. 10 mA
Cable:	2 m, PVC
Protection:	IP 67
Hysteresis:	approx. 1% of reading

Material Combinations

Model	Housing	Connection	Float	Gaskets	Measuring tube
UFJ-0	PVC	PVC	1.4301	NBR	borosilicate glass
UFJ-1	POM-C	POM-C	1.4301	NBR	
UFJ-3	1.4301	1.4301	1.4301	FPM	
UFJ-5	1.4404	1.4404	1.4404	FPM	

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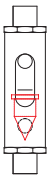
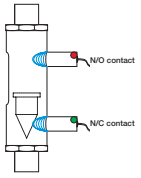
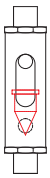
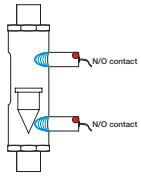
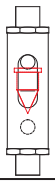
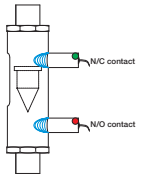
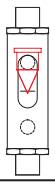
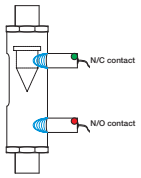
Function Overview

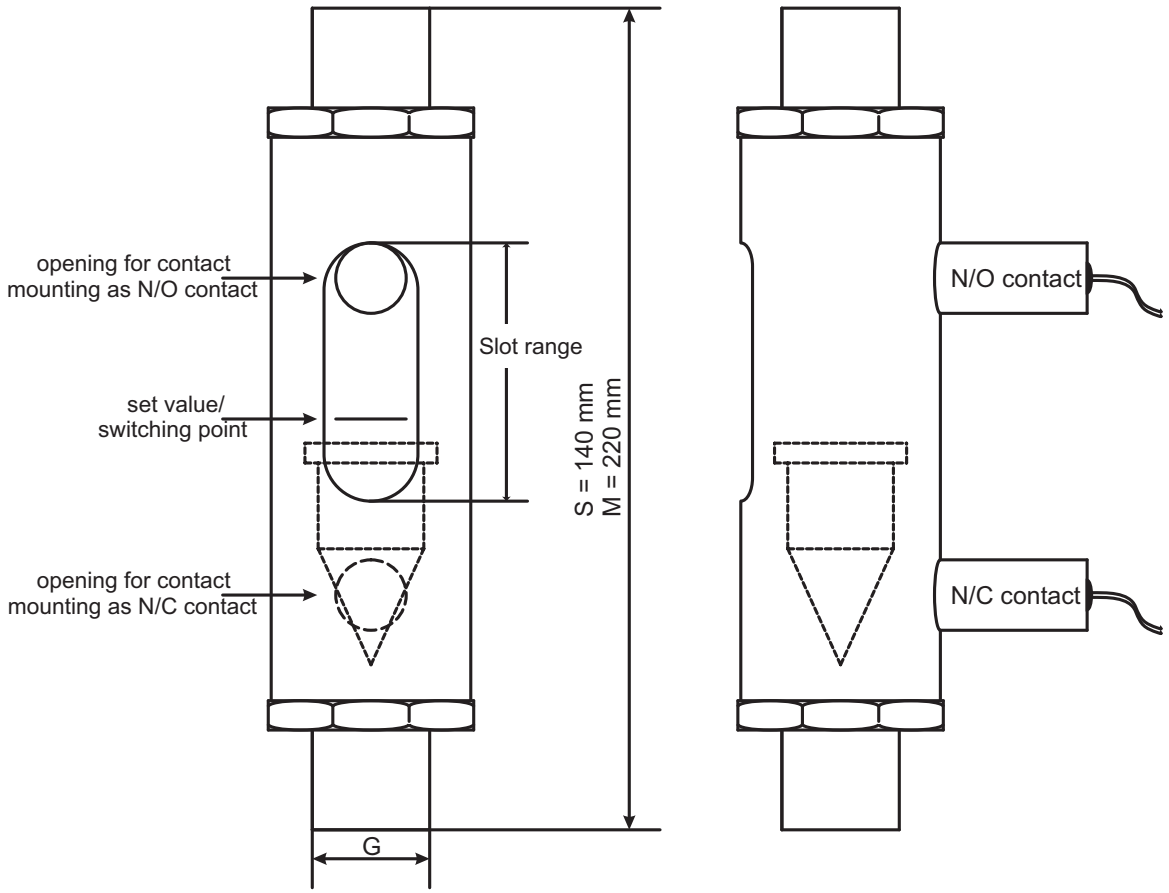
Serial number	Description	Front	Side
1	**Bottom switch point / lower limit point** · The flow is less than the set value indicated by a line on the scale · The switch in top holder is inactive · The switch in bottom holder is active		
2	**Set value** · The flow is equal to the set value indicated by a line on the scale · The switch in top holder is inactive · The switch in bottom holder is inactive		
3	**Top switch point** · The flow is a little bit more than the set value indicated by a line on the scale · The switch in top holder is active · The switch in bottom holder is inactive		
4	**Upper limit point** · The flow is more than even 20 times of the set value indicated by a line on the scale · The switch in top holder is active · The switch in bottom holder is inactive		

Order Details (Example: **UFJ-0 S 11H G2 0**)

Model	Length	Possible setting ranges[1]		Connection (male)	Connection (female)	Options
		Water [l/h]	Gas [Nm³/h]			
UFJ-0 **UFJ-1**	**S** = 140 mm	**11H** = 10 - 63	**11L** = 0.2-2	**G2** = G ¼ **G3** = G ⅜ **G4** = G ½ **G5** = G ¾	**I2** = G ¼ **I3** = G ⅜ **I4** = G ½	**0** = none **P**[1] = 1 PNP contact
		21H = 63 - 250	**21L** = 2-8	**G4** = G ½ **G5** = G ¾ **G6** = G 1 **G7** = G 1 ¼	**I4** = G ½ **I5** = G ¾ **I6** = G 1	
		31H = 250 - 1000	**31L** = 8-32	**G6** = G 1 **G7** = G 1 ¼ **G8** = G 1 ½	**I5** = G ¾ **I6** = G 1 **I7** = G 1 ¼	
UFJ-3 **UFJ-5**	**S** = 140 mm	**11H** = 10 - 63	**11L** = 0.2-2	**G2** = G ¼ **G3** = G ⅜	**I2** = G ¼	**0** = none **P**[1] = 1 PNP contact
		21H = 63 - 250	**21L** = 2-8	**G3** = G ⅜ **G4** = G ½	**I2** = G ¼ **I3** = G ⅜	
		31H = 250 - 1000	**31L** = 8-32	**G4** = G ½ **G5** = G ¾	**I3** = G ⅜ **I4** = G ½	
		41H = 1000 - 3200	**41L** = 32-100	**G5** = G ¾ **G6** = G 1	**I4** = G ½ **I5** = G ¾	
	M = 220 mm	**51H** = 3200 - 8000	**51L** = 100-250	**G6** = G 1 **G7** = G 1 ¼ **G8** = G 1 ½	**I5** = G ¾ **I6** = G 1 **I7** = G 1 ¼	

[1] Set value / switching point within possible setting range should be specified in clear text, while ordering

Dimensions [mm]



Model (plastic)	Male							Female					
	G ¼	G ⅜	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G ¼	G ⅜	G ½	G ¾	G 1	G 1 ¼
UFJ-xxx11x	yes	yes	yes	yes	-	-	-	yes	yes	yes	-	-	-
UFJ-xxx21x	-	-	yes	yes	yes	yes	-	-	yes	yes	yes	yes	-
UFJ-xxx31x	-	-	-	-	yes	yes	yes	-	-	-	yes	yes	yes
Model (stainless steel)	**Male**							**Female**					
	G ¼	G ⅜	G ½	G ¾	G 1	G 1 ¼	G 1 ½	G ¼	G ⅜	G ½	G ¾	G 1	G 1 ¼
UFJ-xxx11x	yes	yes	-	-	-	-	-	yes	-	-	-	-	-
UFJ-xxx21x	-	yes	yes	-	-	-	-	yes	yes	-	-	-	-
UFJ-xxx31x	-	-	yes	yes	-	-	-	-	yes	yes	-	-	-
UFJ-xxx41x	-	-	-	yes	yes	-	-	-	-	yes	yes	-	-
UFJ-xxx51x	-	-	-	-	yes	yes	yes	-	-	-	yes	yes	yes

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