



1. Application

- Flow supervision of liquid media used in the machine and apparatus engineering field including supervision of oil-, cooling- and lubricating circuits or for the prevention of lack of water in sprinkling or heating installations and steam boilers, waterchillers and heat pumps.
- The model type JSF-2xx is suitable for use with aggressive types of media.
- Design tested by the Technical Control Association (TÜV), "Flow 100" compliant up to 6".

2. Technical data

	JSFxxE
Switching current	15(8)A / 150 mA min. at 24 Vac
Switching voltage	24 ... 250 Vac / 50 Hz
Contact	potential-free change-over contact
Cross section for connection	1,0 ... 2,5 mm ²
Switching value	see switching value table
Max. operating pressure	see the table below
Specific pressure drop	see the table below
Ambiant temperature	-40°C ... +85°C
Temperature of the medium	-50°C ... +120°C
Accuracy	±15% of the adjusted valve. The accuracy depends on the actual tube diameter, the actual shortening of the additional paddle and on the installation depth of the flow switch.
Paddle	V4 A
Connection	1"
Housing	impact-resistant ABS plastic
Weight	690 g
Protection	IP 65 according to DIN EN 60529 at connecting cable diameter 5 ... 10 mm, classe I according to VDE 0100
Test	TÜV

Type	Pipe	Max operating pressure	Specific pressure drop	Medium	Equipment	Carrier body
JSF3E	1/2"	5 bar	22 ... 200 mbar	normal	attached T-piece (grey cast iron)	brass
JSF4E	3/4"	5 bar	21 ... 100 mbar	normal	attached T-piece (grey cast iron)	brass
JSF1E	1" ... 8"	8 bar	5 ... 22 mbar	normal		brass
JSF2E	1" ... 8"	13 bar	5 ... 22 mbar	aggressive*		V4 A

Caution !

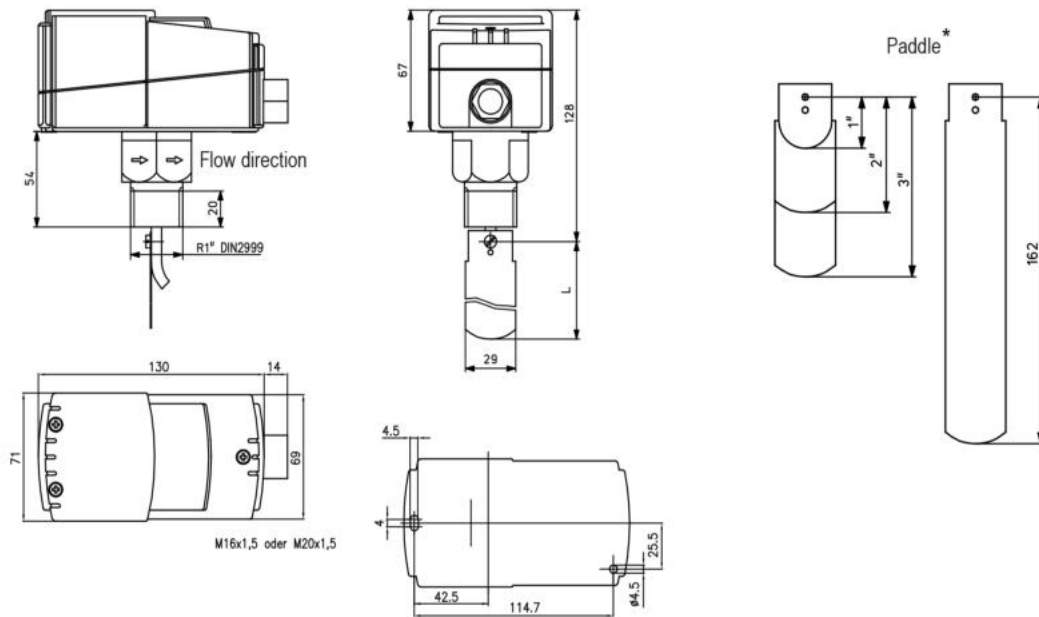
A licensed electrician only is permitted to open this device and to install it according to the circuit diagram in the casing lid / mounting instruction.

The relevant safety instructions have to be observed hereby.

Keep these operating instructions at a place that can be accessed freely by the operators and maintenance personnel.

*Aggressive types of media : all parts of the flow monitor in contact with the medium are made of V4 A

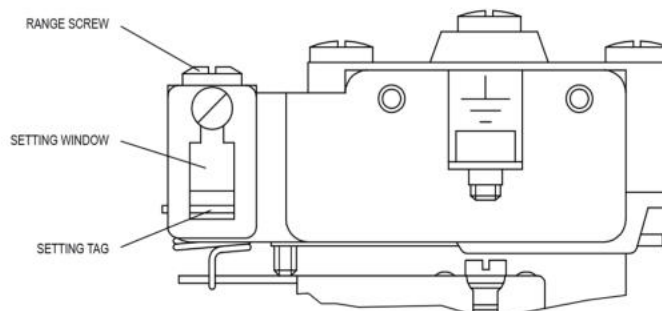
Dimensions



Wiring diagrams



3. Function



The devices have been factory preset to a minimum turn-off value. Turning the adjusting screw (*see above*) in clockwise direction enables to set a higher turn-off value. When adjusting a switching value that deviates from the factory setting, this new value must be entered in the free field underneath of the switching table in these operating instructions. As soon as the setting tag (*see above*) has reached the minimum or maximum limit stop in the setting window, the adjusting screw must not be turned any further, as, if otherwise, this would result in a misadjustment.

The actual flow rate must, in any event, be higher than the turn-on value indicated in the switching value table, but is subject to no limitations upscale.

The values indicated apply to the volume related mass (density) of water. In the event of a flow drop below the adjusted value, the contacts 1 and 2 and the contacts 1 and 4 are closing (*see wiring diagrams*).

4. Installation

When installing it, care must be taken in regard to the flow direction and the correct length of the paddle. The correct flow direction is marked by arrows imprinted on the screw-in body. All data and dimensions realised with these devices base on the utilisation of DIN EN 10242 compliant T-pieces and on the supposed vertical installation into a horizontal tube line. When installing it horizontally in a vertical tube line, the switch point must readjusted to compensate for the weight of the paddle.

Caution : As the switching values will change when installing the device in this installation position, this may result in an operating failure of the flow switch!

With larger tube diameters, the shorter tags must, for reasons of stability, also remain fitted. The paddle 4 must, after shortening, be adapted to the inside radius of the tube (*see dimensions**). In front of and after the place of installation, a moderation distance equivalent to min. 5-fold the tube diameter must be provided for. The device needs no attendance.

Accessories

The types JSF-3 and JSF-4 are delivered with attached grey cast iron T-piece. When placing an order for spare paddles, please indicate the type designation JZ-09.

5. Table

DN nominal	Ø pipe
6	1/8"
8	1/4"
10	3/8"
15	1/2"
20	3/4"
25	1"
32	1"1/4
40	1"1/2
50	2"
65	2"1/2
80	3"
100	4"
125	5"
150	6"

Switching value (in m³/h)

type	Ø pipe	minimum setting (factory setting)		maximum setting	
		turn-off value	turn-on value	turn-off value	turn-on value
E	1"	0.55	0.86	2.00	2.10
E	1"1/4	0.82	1.30	2.80	3.00
E	1"1/2	1.10	1.70	4.00	4.20
E	2"	2.10	3.20	7.30	7.80
E	2"1/2	2.80	4.30	9.80	10.50
E	3"	4.00	6.10	13.80	14.70
E	4"	10.40	15.40	32.00	33.90
E	4" Z	7.00	10.50	21.70	23.10
E	5"	20.80	30.60	63.50	67.30
E	5" Z	10.70	15.80	33.30	34.70
E	6"	29.20	43.00	89.10	94.50
E	6" Z	13.10	19.30	39.90	42.40
E	8"	72.60	85.10	165.70	172.50
E	8" Z	38.60	46.50	90.80	94.20

Switching value (in l/h for JSF3E et JSF4E)

3E	1/2	174	480	846	948
4E	3/4	138	408	768	858

E = standard type

Z = values applicable only when using an additional paddle