

INSTRUCTION SF



REV. A, 2024-09-16

Note! More information about the product can be found in the product sheet, which is available for download from www.industrietechnik.it

Caution! Read and understand the instruction before using the product.

Caution! Ensure that the installation complies with local safety regulations.

Warning! Before installation or maintenance, the power supply must first be disconnected in order to prevent potentially lethal electric shocks! Installation or maintenance of this unit should only be carried out by qualified personnel. The manufacturer is not responsible for any eventual damage or injury caused by inadequate skills during installation, or through removal of or deactivation of any safety devices.

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Application

Suitable for liquids in heating, cooling, air conditioning and industrial plants to monitoring shortage and intensive fall switches. Available version in stainless steel for aggressive media (see table, it requires to verify the compatibility of the fluid).

Function

Flow control of water and aggressive media (depending on model). Alarm signal of flow shortage. Available in brass, suitable for normal media, and in stainless steel AISI316L for aggressive media.

Technical Data

Power supply	15 (8) A; 24-250 Vac
Contacts	dust-tight microswitch with switching contacts
Housing	Base in ABS, transparent PC
Working temp.	-40°C...+85°C
	10...90% r.h. (without condensing)
Fluid temp	-40°C...+120°C
Max pressure:	see schedule behind
Max working press.	11 bar (SF2: 30bar)
Pressure loss	approx. 0,01 - 0,03 bar
Protection	IP65
Protection degree	I
Approvals	TÜV SW(SB) 21-032 on models SF1E and SF2E
CE standards	EN 60730-2-15:2010-03

Installation

The flow switch may be positioned with the casing above in horizontal or in vertical position far from elbows or narrowing and the arrow must be oriented downstream (Fig. 2). If pipe is vertical, reset range to balance paddle weight. If the device is toward bottom take care of slugs, and apply it in a straight pipe upstream and downstream at least five times the tube diameter, far from filters, valves, etc. The device will be delivered in the minimum cut off condition. After succeeded installation must be check if the paddle moves freely into the tube (Fig. 3). On the minimum necessary flow its requested to set the regulation screw until the electrical circuit turn off.

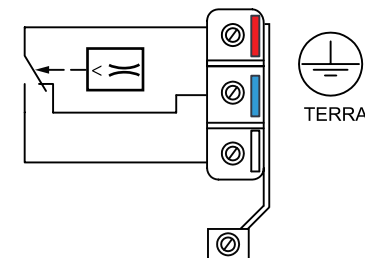
Note

- The cut-off value must be \geq of the minimum necessary flow to guarantee the protection of the system.
- After the recalibration and the verification of the switch point on the site its requested to seal the regulation screw and take note of the value.
- In case that the flow switch is used as a flow limiter, it is necessary to add another device downstream for alarm condition activation. The controller must be conform the requirements of the DIN EN 50156-1 :2016-03.
- Admitted gaskets and threads according DIN EN 10242 only

Accessory

Article	Description
DBZ-09	V4A stainless steel paddles

Wiring



Connect to red and to white contacts of the microswitch (fig. 1). The contact red-white opens when the flow drops below the set level. When the flow is missing the contact red-blue closes and can be used as a signal or alarm contact.

H₂O FLOW RATE SF1K/SF1E/SF2E

Table 1

Pipe connector	Q _{max} m ³ /h recommended	Min adjustment m ³ /h cut-off (cut-in)	Max adjustment m ³ /h cut-off (cut-in)
1"	3,6	0,6 (1,0)	2,0 (2,1)
1 1/4"	6,0	0,8 (1,3)	2,8 (3,0)
1 1/2"	9,0	1,1 (1,7)	3,7 (4,0)
2"	15,0	2,2 (3,1)	5,7 (6,1)
2 1/2"	24,0	2,7 (4,0)	6,5 (7,0)
3"	36,0	4,3(6,2)	10,7(11,4)
4"	60,0	6,1(8,0)	17,3(18,4)
4" Z	60,0	6,1 (8,0)	17,3(18,4)
5"	94,0	22,9 (28,4)	53,3(55,6)
5" Z	94,0	9,3 (12,9)	25,2 (26,8)
6"	120,0	35,9 (43,1)	81,7 (85,1)
6" Z	120,0	12,3 (16,8)	30,6 (32,7)
8"	240,0	72,6 (85,1)	165,7(172,5)
8" Z	240,0	38,6 (46,5)	90,8 (94,2)

For models with suffix "Z" the longest paddle must be used to obtain the values indicated on the table. Pressure drop at the maximum flow (Qmax): 0,08 bar

Note: the value indicated on schedule have been measured with the flow switch mounted on horizontal position.

.H₂O FLOW RATE SF1RE/SF2RE

Table 2

Pipe connector	Min. adjustment m ³ /h cut-off (cut-in)	Max. adjustment m ³ / h cut-off (cut-in)
1"	0,2 (0,6)	1,0 (1,1)
1 1/4"	0,25 (0,9)	1,4 (1,6)
1 1/2"	0,5 (1,2)	1,6 (2,2)
2"	0,9 (2,3)	3,6 (4,1)
2 1/2"	1,2 (3,1)	4,9(5,5)
3"	2,1 (4,9)	7,4 (8,2)
4"	4,9(11,3)	17,1 (19,6)
4" Z	3,3 (7,7)	11,6 (13,0)
5"	9,7 (22,4)	34,0 (37,9)
5" Z	5,0 (11,5)	17,5
6"	13,6 (31,5)	47,6 (53,2)
6" Z	6,1 (14,1)	21,4 (23,9)
8"	25,7(59,6)	90,1 (100,7)
8" Z	21,7(36,5)	55,3 (61,8)

Note: the value indicated on schedule have been measured with the flow switch mounted on horizontal position.

FLOW RATE WITH „T” PIPE FITTING SF3E /4E /6E

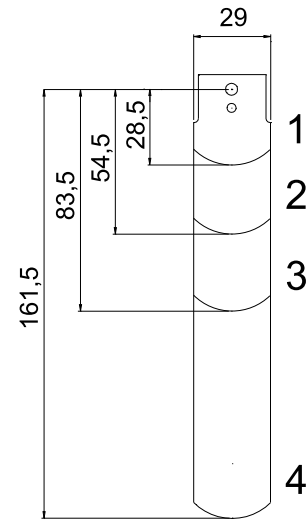
Table 3

SF-	Pipe connector with "T" pipe fitting	Min. adjustment m ³ /h cut-off (cut-in)	Max. adjustment m ³ /h cut-off (cut-in)
3E	1/2"	0,174 (0,48)	0,846 (0,948)
4E	3/4"	0,138 (0,408)	0,768 (0,858)
6E	1"	0,2 (0,6)	1,0 (1,1)

The "T" connectors have cylindrical GAS thread.

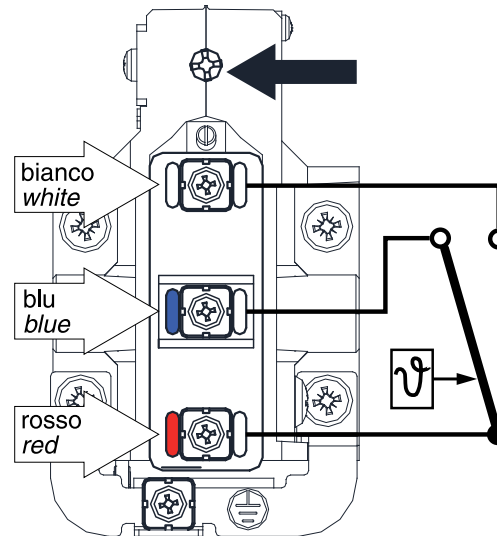
Note: the value indicated on schedule have been measured with the flow switch mounted on horizontal position.

Paddles (models without "T" pipe fitting)



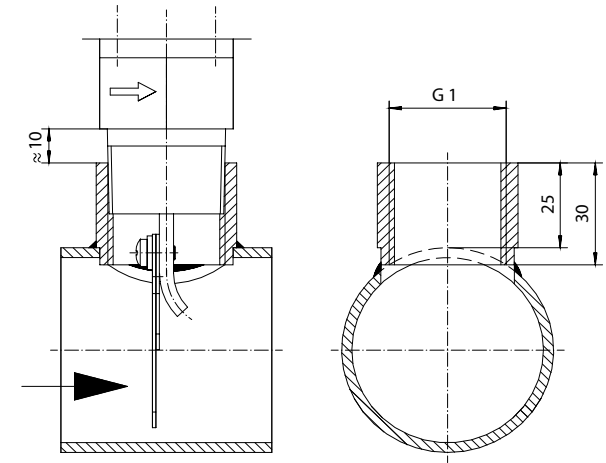
PIPE	PADDLES
1"	1
1 1/4"	1
1 1/2"	1
2"	1+2
2 1/2"	1+2
3"	1+2+3
4"	1+2+3
4"Z	1+2+3+4
5"	1+2+3
5" Z	1+2+3+4
6"	1+2+3
6" Z	1+2+3+4
8"	1+2+3
8" Z	1+2+3+4

Electrical connections



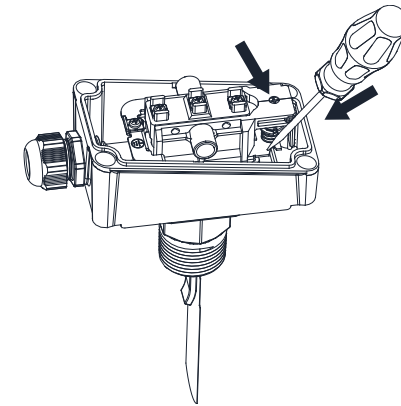
The contact red/white opens in case of lack of flow.

Mounting instructions



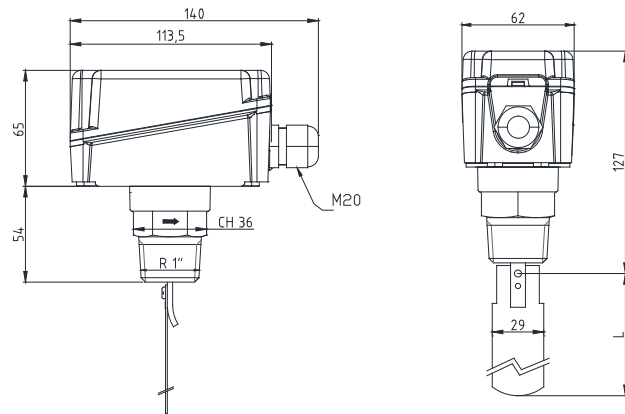
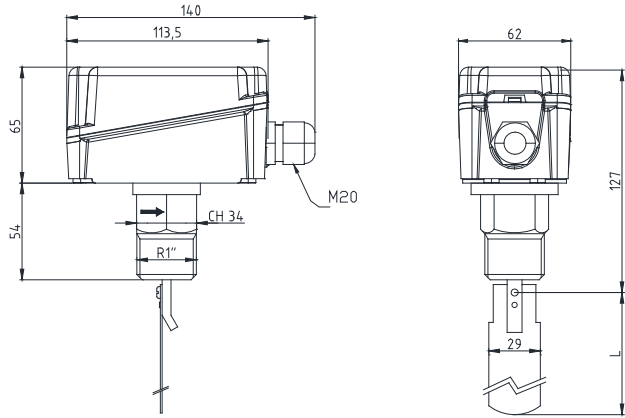
The threaded tube connection to weld (A) must be mounted as in Fig. 2. Keep attention that the connector doesn't come out of the internal circumference of the pipes (B).

Check paddle movement



After succeeded installation must be check if the paddle moves freely into the tube. With a screwdriver, as from Fig. 3, press lightly up to obtain the click of the micro switch. With the presence of flow to the admitted minimum range, regulate the screw C up to obtain the opening of the red/white contact.

Dimensions



Models

TYPE	PIPE	MAX PRES-SURE bar	NORMAL MEDIA (body in brass)	AGGRES-SIVE ME-DIA (body in stainless steel Al-SI 316L)	BODY WITH PIPE FITTING	PROTEC-TION	TABLE NUMBER
SF1K	1...8"	11	•			IP65	1
SF1E*	1...8"	11	•			IP65	1
SF1RE 1	1...8"	11	•			IP65	2
SF2E*	1...8"	30		•		IP65	1
SF2RE	1...8"	30		•		IP65	2
SF3E	1/2"	11	•		•	IP65	3
SF4E	3/4"	11	•		•	IP65	3
SF6E	1"	11	•		•	IP65	3

= models with TÜV approval

Special versions: NPT= 1" NPT connector

Subject to change without notice.



This product carries the CE-mark. More information is available at www.industrietechnik.it.

Contact

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