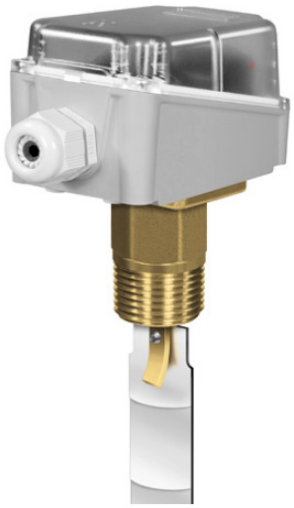
Liquid Flow Switch

Specification

Overview



Liquid Flow Switch

The liquid flow switch is a mechanical switch for the detection and verification of liquid flow. The flow switch is designed to be used in 1 to 8” (25.4 to 203.2 mm) diameter pipe sizes. The switch mounts into a 1” NPT pipe connection. The enclosure carries a IP65 rating with ½” conduit connection. The switch includes various 316 stainless steel paddles. The paddle size to install is determined by the pipe size and flow rate. When liquid pushes against the paddle, it triggers a SPDT micro switch that is controlled by a manually adjustable set point.

Common application areas include heating and air conditioning systems, refrigeration systems, heat pumps, water fire suppression, and others.

Applications: Monitoring flow in heating and air conditioning systems, refrigeration systems, heat pumps, water fire suppression

Warranty: The SF1K Series Flow Switches are covered by a Two (2) Year Limited Warranty.

Description: Liquid Flow Switch, SPDT, IP65, Paddle Kit, 1-8” Pipe Size

Part Numbers

N2-SF1K-US

Product Specifications

Contact Form:	Form 1C (SPDT Contact)
Contact Rating:	15 (8) A, 24 to 250 VAC
Pipe Size:	1 to 8” (25.4 to 203.2 mm) Diameter
Maximum Pressure:	159.5 PSI (11 bar)
Flow Rate:	See H2O Flow Rate table below
Connection:	NPT 1"
Body Material:	Brass
Paddle Material:	Stainless steel AISI 316L
Housing Material:	Base in ABS, transparent PC cover
Housing Operating Temperature | Humidity:	-40 to 85ºC (-40 to 185ºF) | 10 to 90% RH, non-condensing
Maximum Liquid Temperature:	-40 to 120ºC (-40 to 248ºF)
Recommended Storage Temperature |Humidity:	-40 to 85ºC (-40 to 185ºF) | < 95% RH, Non-Condensing
Enclosure Ratings:	IP65, Class 1
Product Dimensions (L x W x H):	5.51" (140 mm) x 2.44" (62 mm) x 2.56" (65 mm)
Approvals:	CE
Product Weight:	2.1 lbs. (0.95 kg)

H2O Flow Rate

Pipe Connector Ø	Qmax GPM (m3/h) Recommended	Min. Adjustment GPM (m3/h)		Max. Adjustment GPM (m3/h)	
		Cut-Off	Cut-In	Cut-Off	Cut-In
1"	15.9 (3.6)	2.6 (0.6)	4.4 (1.0)	8.8 (2.0)	9.2 (2.1)
1 1/4”	26.4 (6.0)	3.5 (0.8)	5.7 (1.3)	12.3 (2.8)	13.2 (3.0)
1 1/2"	39.6 (9.0)	4.8 (1.1)	7.5 (1.7)	16.3 (3.7)	17.6 (4.0)
2"	66.0 (15.0)	9.7 (2.2)	13.6 (3.1)	25.1 (5.7)	26.9 (6.1)
2 1/2"	105.7 (24.0)	11.9 (2.7)	17.6 (4.0)	28.6 (6.5)	30.8 (7.0)
3"	158.5 (36.0)	18.9 (4.3)	27.3 (6.2)	47.1 (10.7)	50.2 (11.4)
4"	264.2 (60.0)	50.2 (11.4)	64.7 (14.7)	122.0 (27.7)	127.7 (29.0)
4" Z	264.2 (60.0)	26.9 (6.1)	35.2 (8.0)	76.2 (17.3)	81.0 (18.4)
5"	413.9 (94.0)	100.8 (22.9)	125.0 (28.4)	234.7 (53.3)	244.8 (55.6)
5"Z	413.9 (94.0)	40.9 (9.3)	56.8 (12.9)	111.0 (25.2)	118.0 (26.8)
6”	528.3 (120.0)	158.1 (35.9)	189.8 (43.1)	359.7 (81.7)	374.7 (85.1)
6" Z	528.3 (120.0)	54.2 (12.3)	74.0 (16.8)	134.7 (30.6)	144.0 (32.7)
8”	1,056.7 (240.0)	319.6 (72.6)	374.7 (85.1)	729.6 (165.7)	759.5 (172.5)
8" Z	1,056.7 (240.0)	170.0 (38.6)	204.7 (46.5)	399.8 (90.8)	414.8 (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): 1.2 PSI (0.08 bar)

Product Drawings

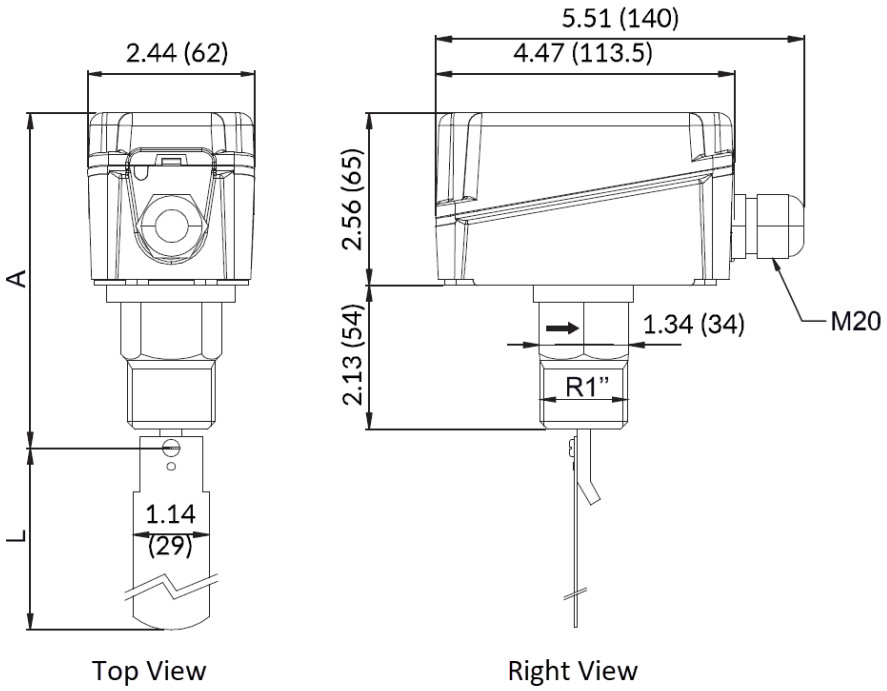
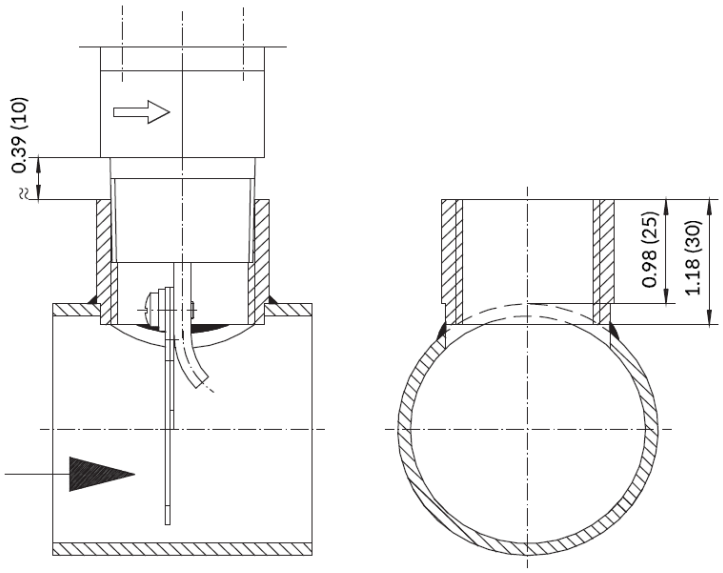


Figure 1: Product Drawing (scale in mm)

Mounting Instructions

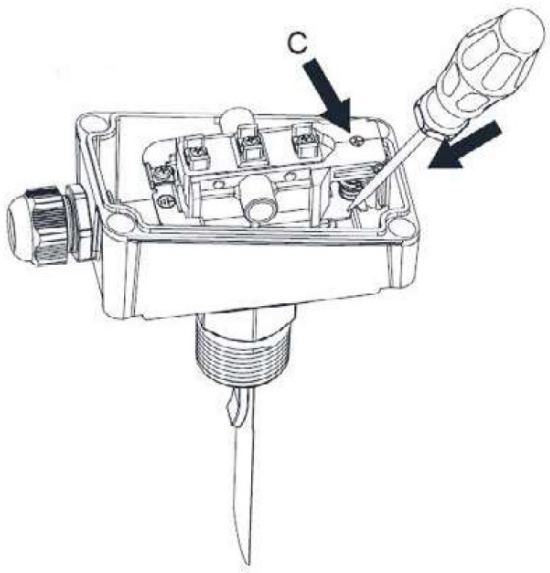
Caution	• The cut-off value must be greater than or equal to of the minimum necessary flow to guarantee the protection of the system. • In case that the flow switch is used as a flow limiter, it is necessary to add another device downstream for alarm condition activation. The controller must conform to the requirements of the DIN EN 50156-1 :2016-03. • Use gaskets and threads according to DIN EN 10242 only. • If the flow switch is used as a minimum flow controller, you must add another device downstream for alarm condition activation.

Tips	After the recalibration and the verification of the switch point on the site its recommended to seal the regulation screw and take note of the value.



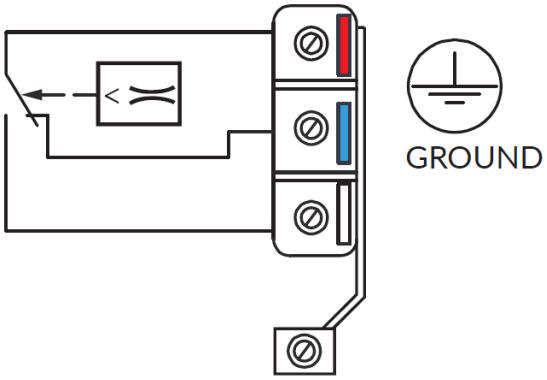
NOTE The device is delivered in the minimum cut off condition.

1. The flow switch may be positioned with the casing above in a horizontal or vertical position far from elbows or narrowing. The arrow must be oriented downstream.
2. If pipe is vertical, reset range to balance paddle weight.
3. If the device is toward the bottom, look for slags, and apply it in a straight pipe of least five times the tube diameter, both upstream and downstream, far from filters, valves, etc.
4. After successful installation, ensure the paddle moves freely into the tube. At the minimum necessary flow, set the regulation screw until the electrical circuit turns off.
5. Ensure that the connector doesn't come out of the internal circumference of the pipes.
6. With a screwdriver press lightly up to obtain the click of the micro switch.
7. With the presence of flow to the admitted minimum range, regulate the screw C up to obtain the opening of the red/ white contact.



Wiring Instructions

Connect the red and white contacts of the microswitch. The contact red-white opens when the flow drops below the set level. When there is no flow the contact red-blue closes and can be used as a signal or alarm contact.



Appendix – Symbols Key

Warning	Potential for death, serious injury, or permanent damage to a system.
Caution	Potential for injury, damage to a system, or system failure.
Tip	Useful information not related to injury or system damage.

W.E.E.E. DIRECTIVE

At the end of their useful life the packaging and product should be disposed of via a suitable recycling center. Do not dispose of with household waste. Do not burn.