

Electronic Liquid and Air Flow Switches

ASW454, ASW454/24, SWF62, and SWF62L

PRODUCT DATA



GENERAL

These highly reliable compact electronic flow switches are designed for detecting the flow of liquids and gaseous media (e.g., water, coolants, or air) in pipes or ducts. The ASW454 evaluation unit monitors liquid and air flow in combination with the SWF62(L) sensor. As soon as the medium's flow speed rises above or drops below a customer-selected value, the device switches an electronic circuit.

FEATURES

- Calorimetric measuring principle – thus, no moveable parts in the detection zone.
- Remotely mounted sensor for pipes and ducts.
- 2.5 mm² screw terminals.
- Potential-free relays with changeover contact.

SPECIFICATIONS ASW

Parameter	Technical data
Media	Liquids and air
Power supply ASW454	230 / 240 VAC ±6%
Power supply ASW454/24	24 VAC/DC ±5%
Power supply indication	green "power" LED
Power consumption	4 VA
Ambient temperature	-20 ... +50 °C
Medium temperature	-15 ... +80 °C
Relay contact	SPDT
Max. contact load	250 VAC, 8 A
Min. contact load	5 VDC, 10 mA
Switch indication	yellow "flow" LED
Setpoint adjustment	2 potentiometers
Measuring range air	0.5 ... 20 m/sec
Measuring range water	0.05 ... 3 m/sec
Response time (typical)	1 ... 10 sec
Immersion depth SWF62L	45 mm
Immersion depth SWF62	25 mm
Max. pressure at sensor	20 bar
Process connection SWF62L	G 1/2"
Process connection SWF62	G 1/4"
Housing IP	IP 40
IP at screw terminals	IP 20
Protection class	II
Wiring terminals	10 x 2.5 mm ²
Housing size (L x W x H in mm)	120 x 45 x 73
Housing standard	N45
Sensor material	1.4305
Weight	400 g

MOUNTING SWF62(L)

General

The sensor tip should be placed in the middle of the pipe in order to ensure complete immersion in the medium. When installed in vertical pipes, the flow must be upwards. To ensure maximum reliability, the sensor must be mounted at least 5X (gas) or 10X (liquid) the diameter after bends at the inlet path and at least 3X (gas) or 5X (liquid) the diameter before the final bend before the outlet path. Mount the sensor using only the 17 or 27 hex screw. The sensor must be correctly connected to the evaluation unit. In the case of cable installed together with live cables (e.g., motors or solenoid valve supply), it is strongly recommended that the black shield cable be connected to the protective earth. The longer the distance between the sensor and the evaluation unit, the more important the shielding. The cable length between the sensor and the evaluation unit must not exceed 50 meters, and wires must have a cross-section of at least 1.5 mm².

Maintenance

In order to prevent malfunctioning caused by contaminated media, the formation of biofilms, etc., the sensor should be cleaned regularly. Immerse the sensor into soapy warm water for about 10 minutes and remove any contamination under warm water flow using a clean rag.

IMPORTANT

Do not use screwdrivers or other hard tools to clean the sensor!

DIMENSIONS

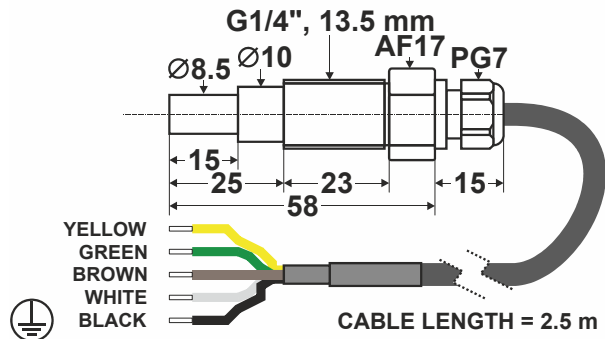


Fig. 1. SWF62, dimensions (mm)

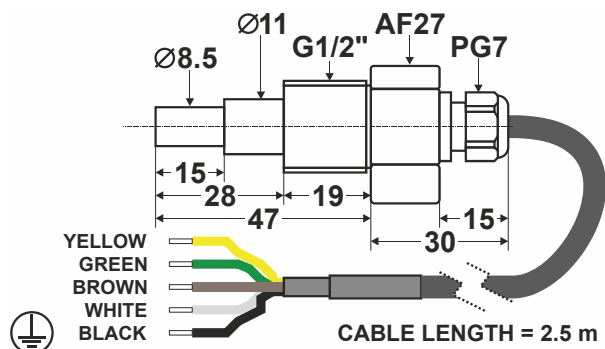


Fig. 2. SWF62L, dimensions (mm)

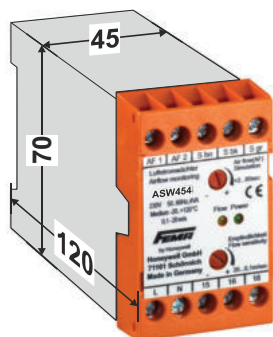


Fig. 3. ASW454, ASW454/24, dimensions (mm)
(DIN rail mounting according to EN5002)

FIELD WIRING

Connect the power supply to terminals L and N (230 VAC) or + and – (24VAC/DC). Connect Common (16), Normally Closed (15), and Normally Open (18) accordingly.

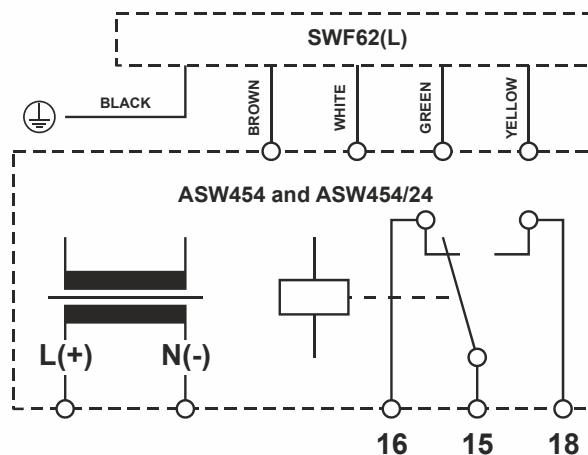


Fig. 4. Wiring diagram, ASW454 and ASW454/24

NOTE: To ensure IP rating, use only cables having diameters of 6...9 mm.

COMMISSIONING

- Set both potentiometers to the lowest sensitivity (i.e., to the left limit stop).
- Switch on mains voltage; green "Power" LED lights up; switch ON work flow.
- Turn the "Rough" potentiometer slowly CW until the "Flow" LED lights up.
- After 2-3 minutes, adjust the setting using the "Fine" potentiometer. To achieve a stable switch point, you may turn the "Fine" potentiometer slightly past the switching point.
- To check, reduce flow of medium. The yellow "Flow" LED should go dark and the relay should switch.

Attention

Connection and commissioning must be performed by properly authorized and qualified persons. Connection to line voltage (L, N) must be made by means of a protected isolating switch with the usual fuses. As a matter of principle, the General VDE regulations (VDE 0100, VDE 0113, VDE 0160) must be considered during the installation phase. If the potential-free contact is connected to an extra-low safety voltage, sufficient insulation must be provided for the connecting cables up to the terminal, since otherwise the double insulation to the mains voltage side may be impaired. The current load capacity of the potential –free contact is limited to 8 A. For protection, appropriate fuse must be installed. Excessively high glycol concentrations (above 30% may result in failure or destruction of the device!