

**Flow switch with nozzle
type 776 for DN 15
type 778 for DN 15 - 32**



These units are mostly suitable for applications where vibration is likely to occur and where contaminated media have to be controlled in either horizontal or vertical pipes. The internal nozzle installed enables to control low flow velocities. The flexible sealing bellows protects the unit from metal parts which may be found in the medium when controlling lubricating oil in large gear boxes. The units can be supplied with either flanged connection or threaded process.

Operation

When the medium enters in the direction of flow indicated by the arrow it produces a pressure head inside the chamber situated in front of the nozzle. This moves the diaphragm system into the direction of flow. A bellows sealed lever transfers the movement to operate the switch contact. The flow switch type 776 is available with a fixed set point and the flow switch type 778 is available with either a fixed or an adjustable set point.

Advantages

- Units operate in any position.
- Vibration proof construction.
- Units suitable for contaminated media.
- Models available for the use in intrinsically safe circuits.
- Suitable for set points from 0.5 l/min.
- Models available for the use in maritime and humid tropical climates.
- Simple installation and connection.
- Units virtually maintenance free.
- Long-term continuity of spares availability.

Suitability

Lubricating oil control in wheel excavators, ships, shredders, compressors etc.

- Flow control of cooling water in hot-rolling mills.
- Protection of pumps running dry.
- Models unaffected by magnetic fields for the control of cooling circulation in large electro-magnets.
- Control of hydraulic circulation systems.
- Control of fuel-oil supply in burners.

Special models of type 778

Type 778RBW ind. Sturdy construction with inductive proximity sensor.

Type 778KHD Vibrationproof to be used for large compressors, inlet connection G 1, outlet connection flange DN 25 PN 16.

Type 778S Compatible with oil flow switch 496.20 of former VEB MERTIK for the installation in TAKRAF excavators.

Type 778(Ex)i Unit with micro switch or inductive proximity sensor for the use in intrinsically safe circuits.

Tropical model (Humid tropical with termites)

The switch housing is made of sea-water resistant gun metal Rg10 with suitable ventilation holes, the terminal connections are porcelain insulated and the litz wire is silicone-insulated with a woven glass coating.

Type 776

With threaded process G 1/2 factory set fixed set point, alteration of set point by changing the nozzle.

Technical data

Media All liquids, including viscous and contaminated.
Pipe sizes DN 15 to DN 32
Set points min. 0.5 l/min
max. DN 15 30.0 l/min
DN 20 50.0 l/min
DN 25 80.0 l/min
DN 32 100.0 l/min

Adjusting range of set point type 778 in l/min (H₂O)
0.5 - 1; 1 - 2.5; 2 - 5; 4 - 10; 8 - 20; 15 - 40; 30 - 80.
Other ranges on request.

Set point variation type 776 by changing the nozzle or boring the nozzle. Note: A special key is needed.

Inner nozzle-Ø for water

Set point with falling flow

1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	l/min
2.7	3.6	4.4	5.1	5.7	6.3	6.8	7.2	7.6	7.9	Ømm

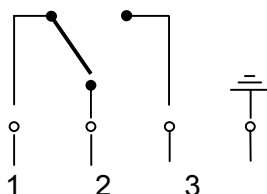
12.0	14.0	16.0	18.0	20.0						l/min
8.4	8.7	8.9	9.0	9.1						Ømm

<i>Admissible deviation of actual set point</i>	+/- 5 % of required set point.
<i>Repeatability of adjusted set point</i>	+/- 2 % of switch value.
<i>Hysteresis</i>	between on and off 10 - 20 % of the max. flow rate.
<i>Pressure range</i>	PN 10, higher values on request.
<i>Operating temperature</i>	Standard model up to 80 °C medium temperature. Special model ht up to 150 °C medium temperature, also for intrinsically safe circuits.
<i>Ambient air temperature</i>	-20 to + 80 °C:
<i>Pressure loss</i>	≤ 0.2 bar, if set point ≥ 25 % of the max. flow rate.
<i>Materials type 776</i>	The housing is made of sea-water resistant gun metal Rg10, the nozzle is made of brass; the lever and the bellows are made of stainless steel, material no. 1.4571 (similar to AISI 316 Ti); the diaphragm is a fabric with a Viton-coating; the switch housing is made of aluminium.
<i>Materials standard type 778</i>	The housing is made of grey cast iron, the nozzle is made of brass; the bellows and the lever are made of stainless steel, material no. 1.4571 (similar to AISI 316 Ti); the switch housing is made of aluminium.
<i>Alternative materials</i>	The housing is made of sea-water resistant gun metal Rg10 or stainless steel, material no. 1.4408 (similar to AISI CF-8M), the other wetted parts are made of material no. 1.4571, the diaphragm is a fabric with Viton coating; the switch housing is made of sea-water resistant gun metal.
<i>Protection class of switch housing</i>	according to DIN 40 050: IP 54 special model IP 65.
<i>Cable entry</i>	to suit customers requirements.
<i>Switch contacts</i>	Either one or two S.P.C.O. micro switches (with same set point). <i>Capacity up to 100 °C:</i> max. 250 V, 50/60 Hz and max. 10 A. <i>Capacity over 100 °C:</i> max. 250 V, 50/60 Hz and max. 1 A. One inductive proximity sensor (type 778 only).

Note

If the units are for use with media containing impurities, they can be equipped with two drain-screws on the flow housing, one in front of the diaphragm and the other behind it.

Wiring diagram



Further special models on request.