



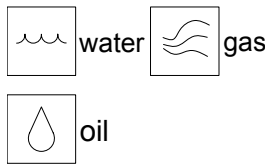
Overview

The series differential pressure flow switch with adjustable set point is designed for the field has different requirements on differential pressure, for applications involving in differential pressure monitoring of filter、pump、heat exchanger and water chilling unit. It outputs a warning or cut off signal when the flow exceed or drop below a specific value.

It is also can be used for monitoring of pump and filter. The value could be calibrated directly by professionals according to customer's requirement, and printed the calibrated value on the label of product, so user needs not readjust in the field. The OEM customer could calibrate by professional instrument according to the differential pressure required by equipment, and ACOL could provide relevant service.

Differential pressure flow switch with adjustable set point in HVAC system has the same performance with fixed set point switch, they are substitutes of target flow switch, avoid repairing or changing the target flow switch every year. In order to meet user's requirements, we developed the differential pressure flow switch with double adjustable set points to control the high and low pressure difference. In HVAC system, used for controlling of water-cooled condenser and evaporator and monition of the dirty and blocking and indicating application, the status light is optional.

Metering substances

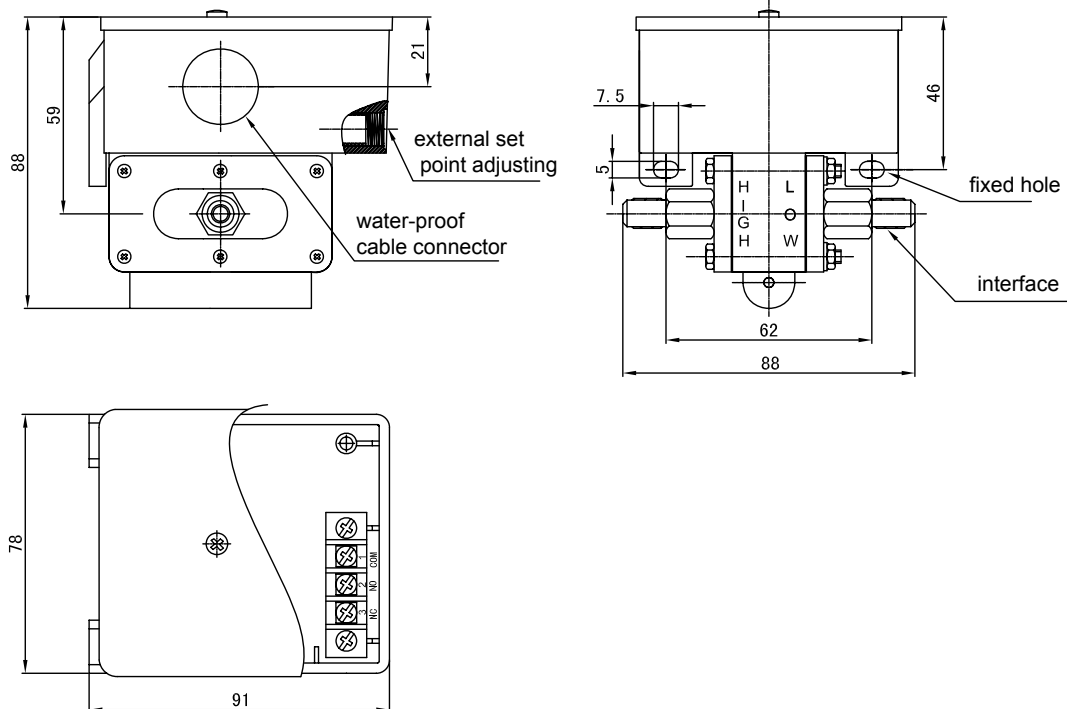


Please indicate your metering substances with your order.

Technical parameters

- △ Storage temperature: $-29^{\circ}\text{C} \sim 82^{\circ}\text{C}$
- △ Ambient temperature: $-20^{\circ}\text{C} \sim 71^{\circ}\text{C}$
- △ Media temperature range: $-20^{\circ}\text{C} \sim 93^{\circ}\text{C}$
- △ Pressure connection: 1/4" SAE(7/16" -20UNF)G、1/4"NPT etc for optional
- △ Max. static pressure: 10/16/20 bar
- △ Max. pressure difference: 10/16/20 bar
- △ Set point repeatability: $\pm 1\%$
- △ Output mode: WFS11--- one SPDT dry contact output, terminal block wiring
WFS14--- two SPDT dry contact output, terminal block wiring
- △ Switch: 3A (max) 125/250VAC

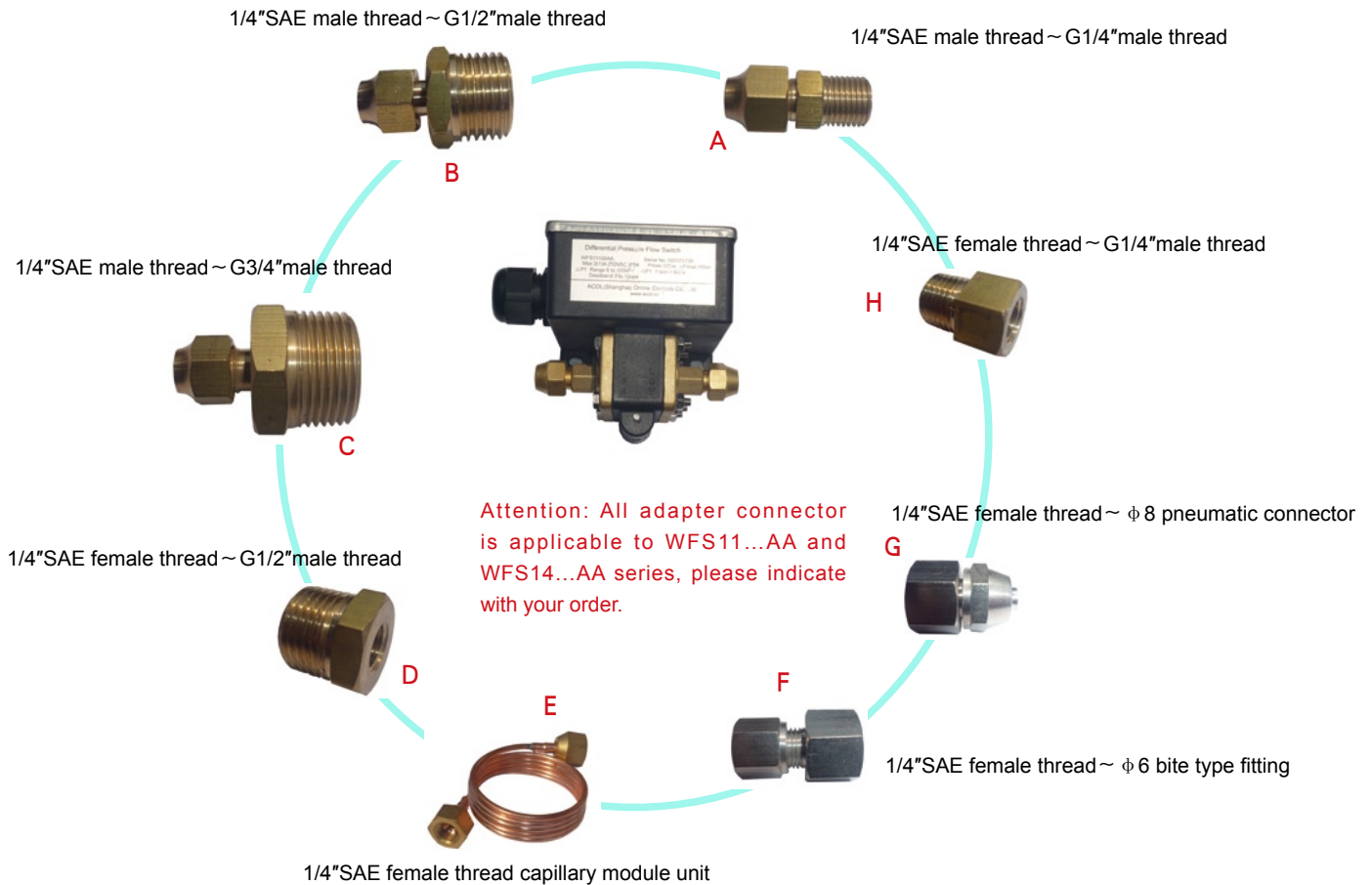
Dimensional drawing



Set point parameters

Model	Set point range 1/Set point range 2	Hystersis 1/Hystersis 2
Differential pressure flow switch with single fixed setpoint		
WFS11015	5~15kPa	3kPa
WFS11030	5~30kPa	3kPa
WFS11070	6~70kPa	5kPa
WFS11100	6~100kPa	6kPa
WFS11200	10~200kPa	10kPa
WFS11300	20~300kPa	15kPa
WFS11400	30~400kPa	20kPa
Differential pressure flow switch with double adjustable setpoint		
WFS14030	5~30kPa/6~100kPa	3kPa/6kPa
WFS14070	6~70kPa/6~100kPa	5kPa/6kPa
WFS14100	6~100kPa/6~100kPa	6kPa/6kPa
WFS14120	6~70kPa/10~200kPa	5kPa/10kPa
WFS14150	6~100kPa/10~200kPa	6kPa/10kPa
WFS14200	10~200kPa/10~200kPa	10kPa/10kPa
WFS14300	20~300kPa/20~300kPa	15kPa/15kPa

Optional connector



Monition of the dirty and blocking and indicating appliction

The pressure difference will increase with filtering, switch is on and output a signal when reached the pre-pressure value. If it automatically clean, the signal would be transmitted to controlling disk and then the controlling disk start to clean and open the waste valve. If worker to clean, the warning signal will remind operator to clean.



hand-operated filter
differential pressure flow switch installation



automatic filter
differential pressure flow switch installation

Pump status and feed back to automatic controlling system

The pressure difference is stable when the flow is constant, it would be changed when the system resistance is changed. The relation of pressure difference and flow, can refers to the pump performance data. So the differential pressure flow switch used for pump monitoring as well as the minimum flow control. When the actual pressure exceeds the set value, the switch output a dry contact signal for controlling system to indicate the pump has flow. The status light will indicates the pump status if it has. It is the substitute of target flow switch.



pump status detecting
differential pressure flow switch installation

Heat exchanger flow controlling

The differential pressure flow switch used for flow controlling is one of the most important applications in HVAC system. It is the best substitutes of target type flow switch. The reset flow is the minimum value used to check whether satisfy the requirement or not. The disconnect flow is protected instrument from decreasing flow. Following we take plate and extension-type heat exchanger, shell and tube type heat exchanger examples to introduce the characteristics of differential pressure flow switch.

Plate and extension-type heat exchanger:

Plate heat exchanger with compact size and high heat transmission performance, has been widely used in water chilling unit as evaporator and condenser. It is necessary to prevent plate heat exchanger from frost damage. A great deal of experimentation show that there is a possibility of freezing when the current flow less than the rated flow about 50%, so it is important to keep the current flow not less than 50% of rated flow. The pressure of 50% rated flow is the protection value of plate type heat exchanger, according to this value to choose differential pressure flow switch. We suggested to buy the fixed set point switch to ensure the value is right(the pressure difference can be tested by our professionals)

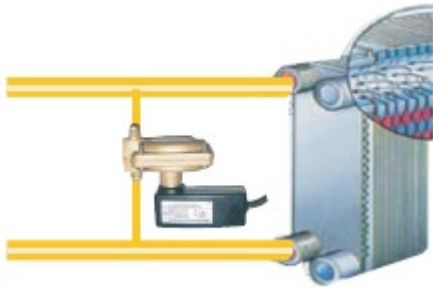


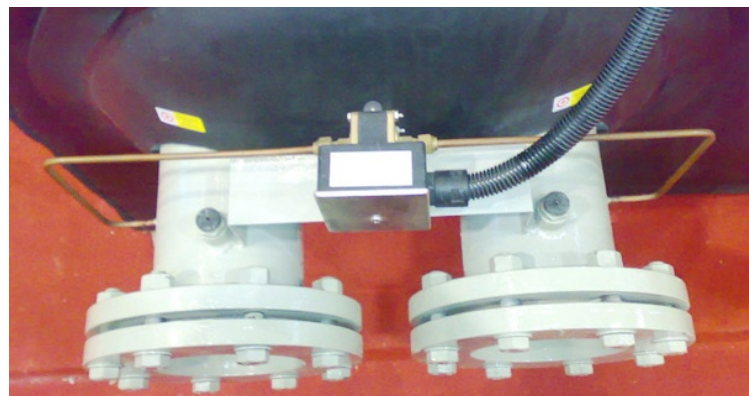
plate type heat exchanger
differential pressure flow switch installation



extension-type exchanger
differential pressure flow switch installation

Shell and tube type heat exchanger:

Shell and tube type heat exchanger used in water cooling unit as evaporator and condenser. The unstable flow directly influence the mainframe, so it is important to control the flow to ensure mainframe work normally. The pressure of 70% (recommended) rated flow is the lower limit of protection value, we can obtain it according to the pressure and flow curve or measure in the field. You can consult the professionals of the ACOL for specific method. We suggest to buy double set points adjustable differential pressure flow switch, one of them can be used to indicate the heat exchanger cleaning status. Set the reasonable pressure difference and choose the status light, when the waste is overmuch, the status light is on to remind the user to clean heat exchanger. Avoid energy waste because of the heat transfer effect drops and influence main engine work.



shell and tube type heat exchange
differential pressure flow switch installation