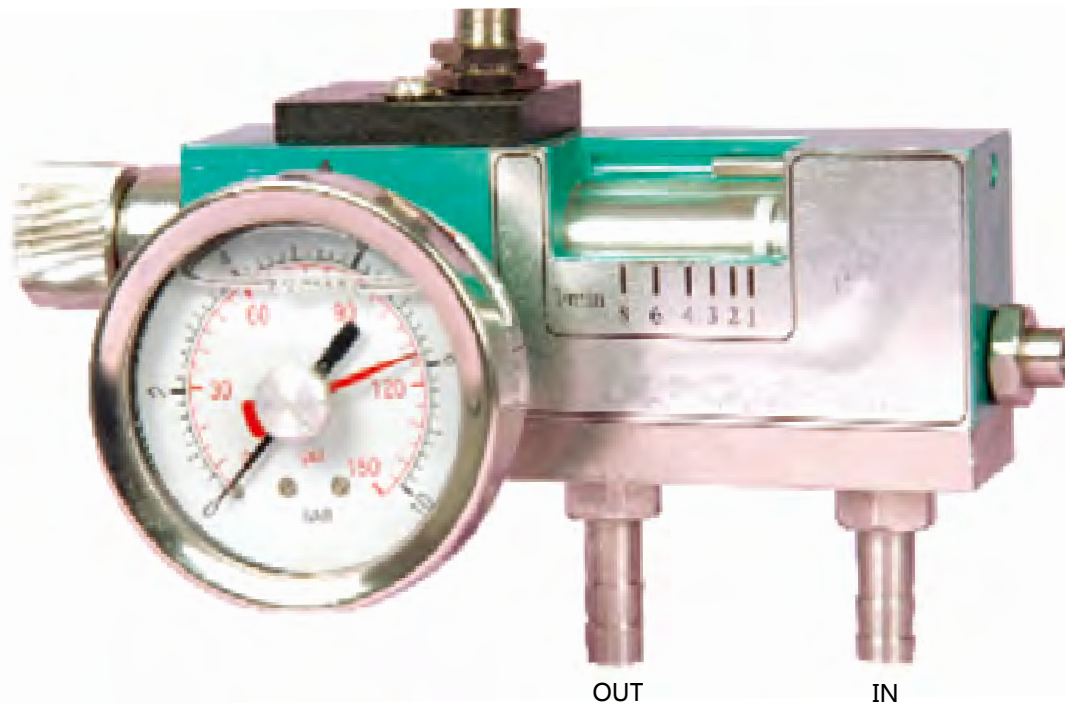


TDS Seal Water Control and Monitoring System

TDS

The *TDS* Seal Water Control and Monitoring System is used to monitor and control the flow and pressure of seal water in seals and systems. It will create the best operating environment for seals and maximize the efficiency of the process. It's designed for various sealing systems (including packing and mechanical seal applications) like pumps, mixers and agitators. The system includes the flow test equipment, pipes, and joints which can be installed around the pump. Low flow alarm sensors can be used for automatic monitoring of the seal water flow and pressure control.



Working Theory

As shown in this illustration, filtered cooling lubricating seal water enters the valve plate connection and goes into the measuring system. Within the measuring system there is a transparent flow indicator and a cylindrical floater with a white ring (flow memory pin). The white ring will drift left when struck by seal water, and when the flow is stable the white ring will stay static and point at a fixed scale value.

This stable seal water then flows out of the controller and enters the seal and system, achieving the seal and system cooling and lubricating.

For a double seal application system seal water can flow back to the valve plate and the pressure gauge with memory pin will tell the pressure value. After discharge, the seal water can be recycled.

Application Field

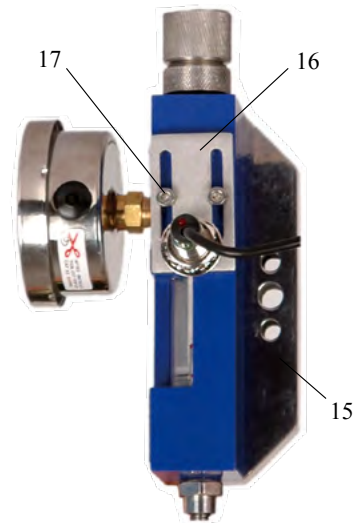
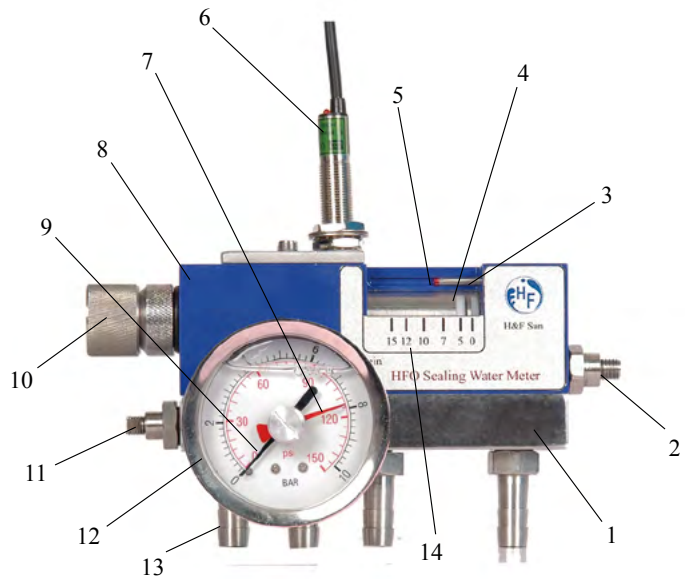
The *TDS* Seal Water Control and Monitoring System is widely used in cooling and lubricating mechanical seals. Different sealing systems have a different fixed flow value, with larger flows sometimes increasing water consumption. The seal water is supposed to be filtered to keep it clean. In industrial applications, there are several ways to control water flow. Using a control valve is a simple one, however using a seal water control and monitoring system can more efficiently produce the maximum desired results.

Saving Resource

The *TDS* Seal Water Control and Monitoring System is not only able to cool and lubricate seal faces, it also can monitor and control the seal water flow and pressure. It's proven that the system can reduce water consumption by up to 80%.

Parts List

- 1- Valve plate
- 2- Flow controlling knob
- 3- Target flow regulating
- 4- Actual flow memory pin indicator
- 5- Target flow mark (red)
- 6- Switch
- 7- Target pressure memory pin indicator
- 8- Measuring instrument
- 9- Actual pressure memory pin indicator
- 10- Cleaning knob
- 11- Pressure regulating knob
- 12- Pressure gauge
- 13- Pipe joint
- 14- Flow scale plate
- 15- Installation support hole
- 16- Switch seat
- 17- Screw

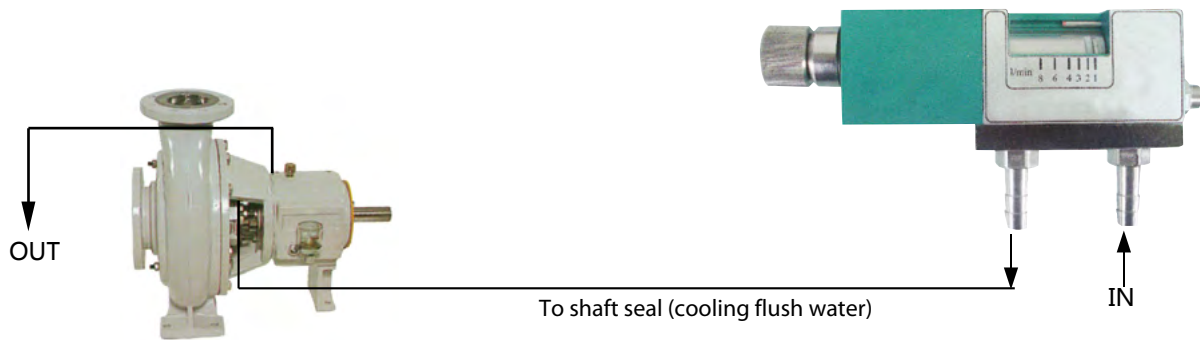


TDS Seal Water Control and Monitoring System

TDS

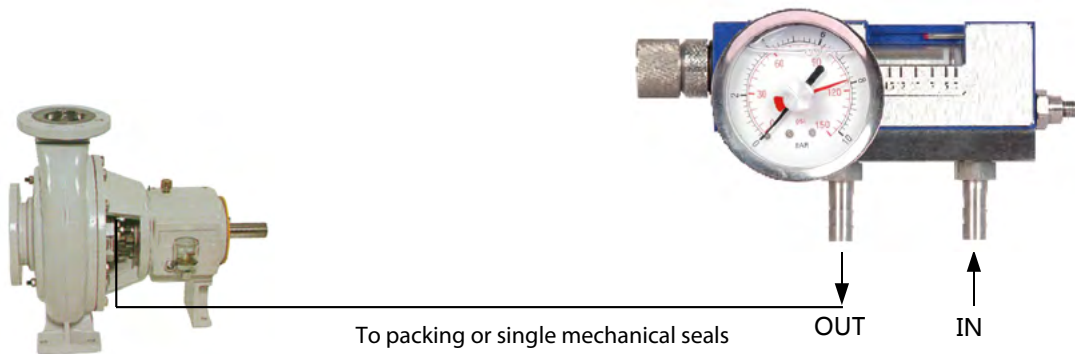
TDS1

For Single Mechanical Seal without a Pressure Regulating Knob or a Pressure Gauge.



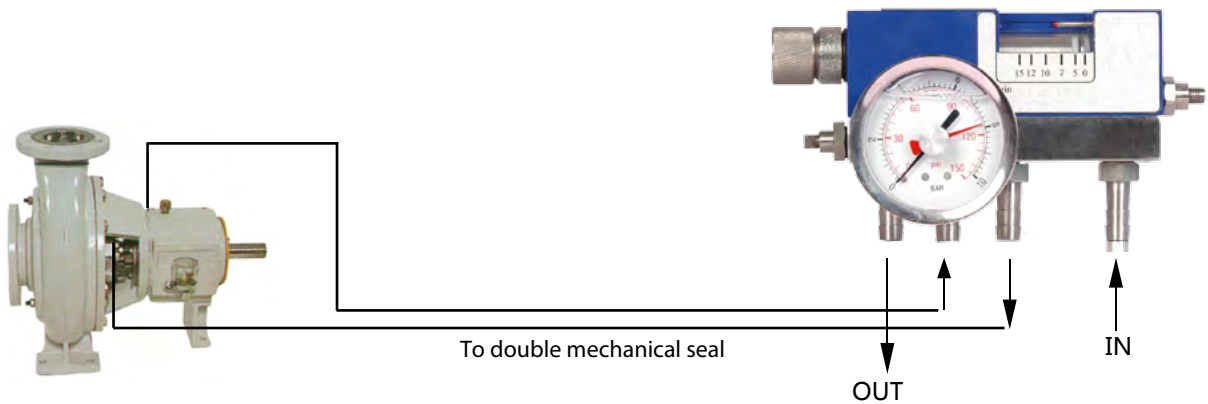
TDS2

For Single Mechanical Seal without a Pressure Regulating Knob but with a Pressure Gauge.



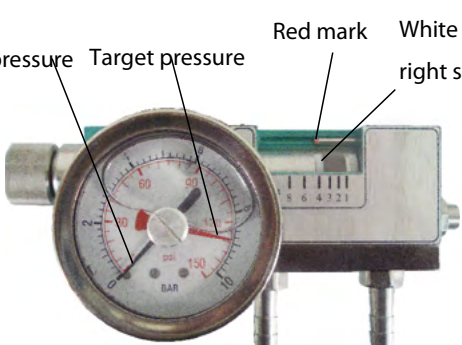
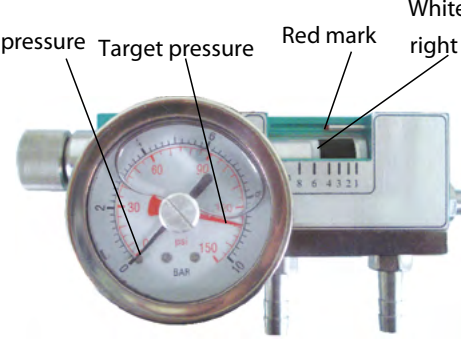
TDS3

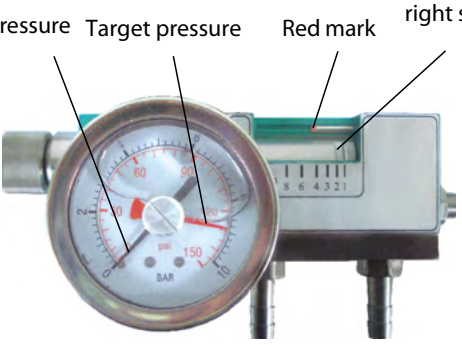
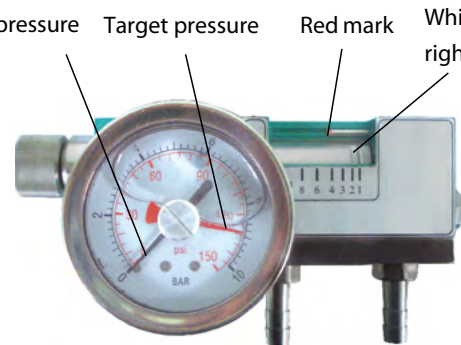
For Single Mechanical Seal with a Pressure Regulating Knob & a Pressure Gauge.



TDS Seal Water Control and Monitoring System

Compare the actual flow value and target flow value to detect shaft seal leakage or block.

 <p>In normal operation actual flow value equals the target flow value.</p>	 <p>There is leakage when the actual flow value is less than the target flow value.</p>
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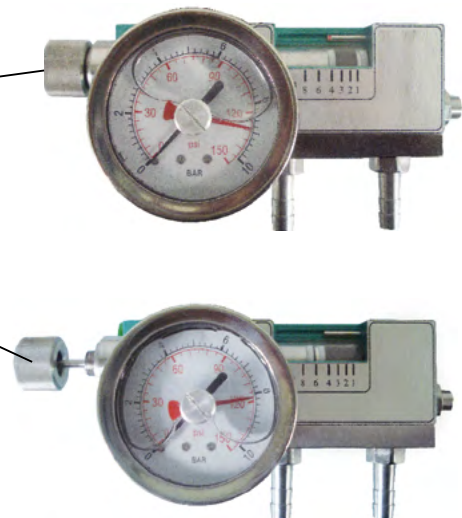
 <p>There is a blockage when the actual flow value is greater than the target value or the actual pressure value is greater than the target value.</p>	 <p>There is a water supply problem when the actual flow value and actual pressure value less than target value.</p>
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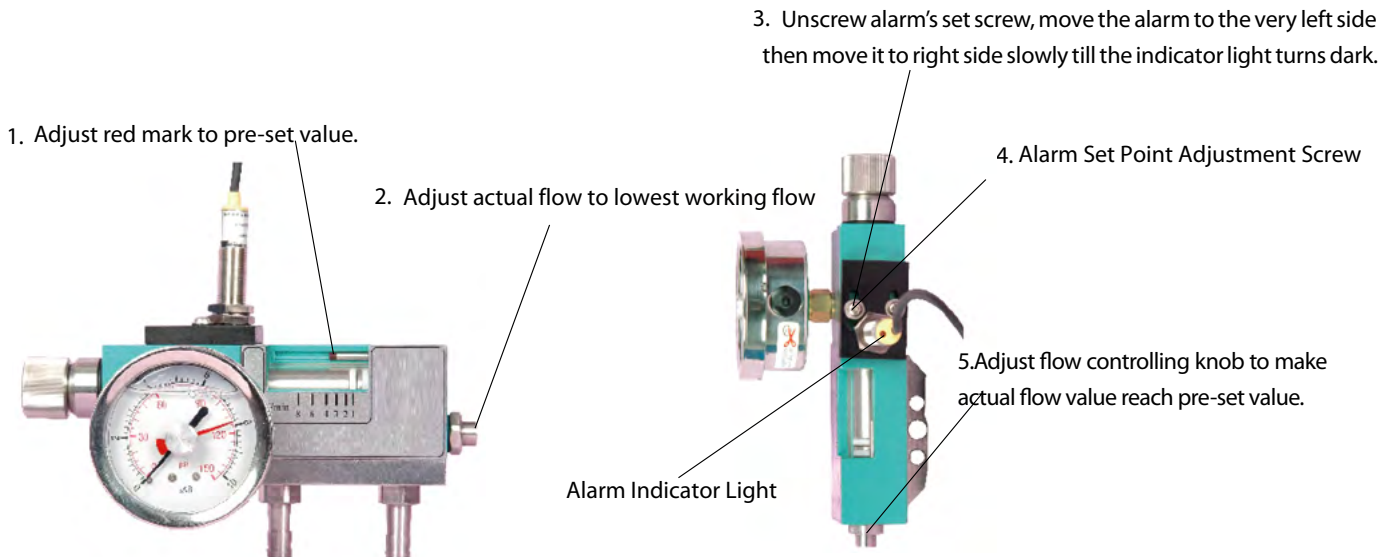
Cleaning

The cleaning process will not interrupt seal water control and monitoring system's normal work.

Steps:

- (1) Unscrew the cleaning knob.
- (2) Twisting the cleaning knob makes the connected cleaning ring clean up the whole flow tube. Tighten the cleaning knob after finishing cleaning. Note:
 - (1) During cleaning process, flow and pressure will not change.
 - (2) Will not cause false alarm when get close to alarm sensor during cleaning.





Low-flow Alarm indicator light brightens when actual flow value falls to alarm value.

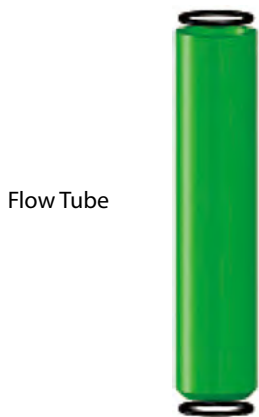
Measuring Instrument & Flow Tube

There are five interchangeable flow measuring parts

Flow Range:

- 1.5L/min
- 3L/min
- 6L/min
- 8L/min
- 15L/min

Changing between different measuring instruments and flow tubes will change the flow range.



Flow Tube



Measuring Instrument

Installation & Start

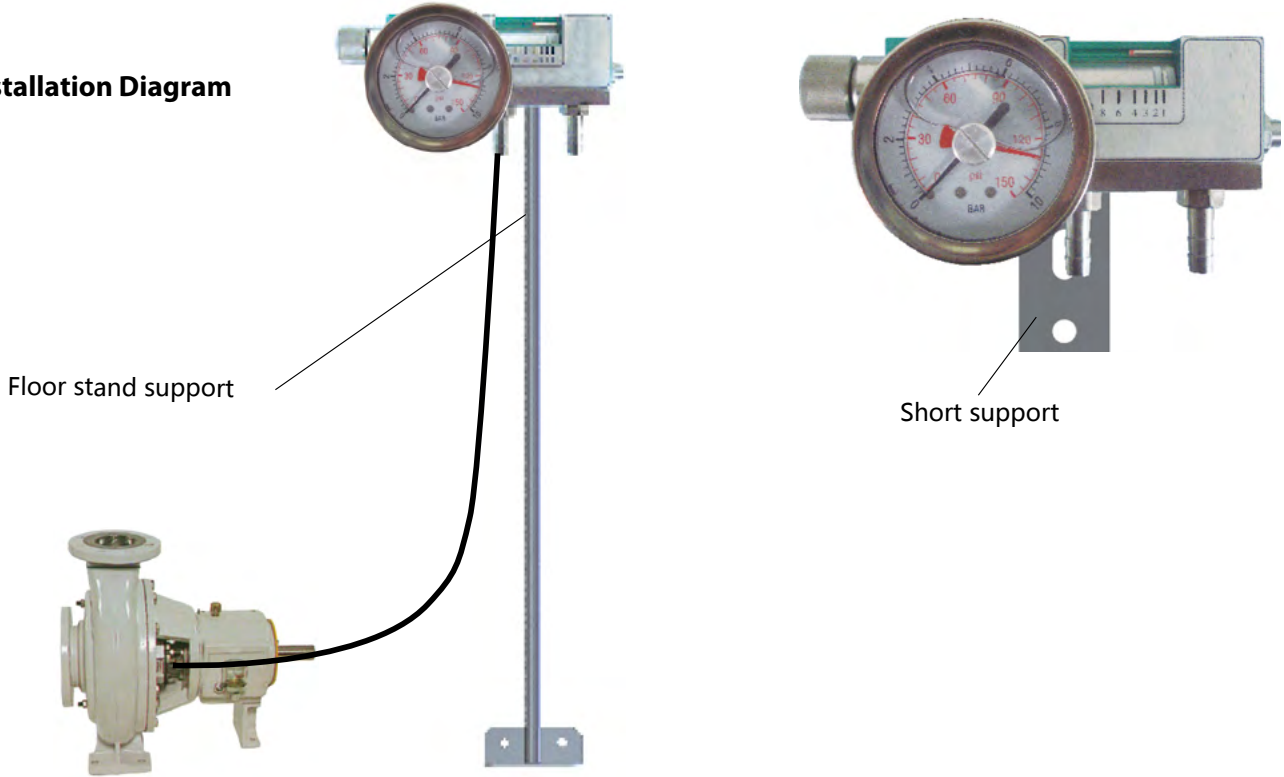
To install and start the Seal Water Control and Monitoring System, please refer to the following steps.(refers to Picture 02)

Newly installed or replacement tubes should be flushed completely to make sure any metal particles or other materials have been removed.

1. Find a proper place around pump to install the system. Open the knob of seal water system.
2. Adjust target flow regulating knob by wrench to set up a target flow value.
3. Open flow controlling knob, water push white ring(flow memory pin) to left, white ring tells actual flow value.

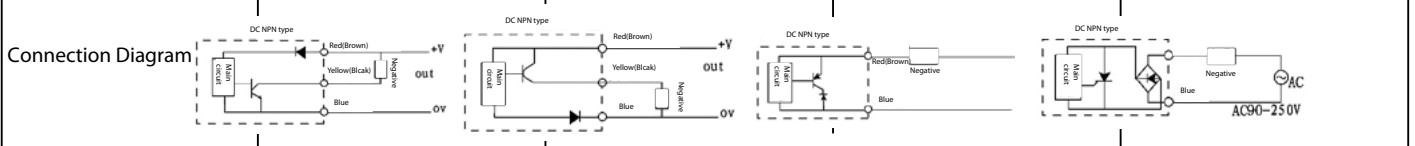
Adjust flow controlling knob to make actual flow value reach target flow value.
4. Set up a target pressure value.
5. Connect alarm sensor(optional), see details in

Installation Diagram



Alarm Parameter & Electric Connection

Switch Code	HL-M12-N4PO/PC	HL-M12-N4NO/NC	HL-M12-N4TO/TC	HL-M12-N4AO/AC
Output Form	DC PNP	DC NPN	DC	AC
Working Distance	4 mm	4 mm	4 mm	4 mm
Switch Output	ON/OFF	ON/OFF	ON/OFF	ON/OFF
Voltage	10-30 VDC	10-30 VDC	10-30 VDC	90-250 VAC
Working Current	150 mA	150 mA	100 mA	100 mA
Frequency	400 Hz	400 Hz	500 Hz	20 Hz
Working Temperature	-25 - +70°C	-25 - +70°C	-25 - +70°C	-25 - +70°C
Protection Level	IP67	IP67	IP67	IP67
Case Material	Bras Nickel-plated	Bras Nickel-plated	Bras Nickel-plated	Bras Nickel-plated
Sense surface	plastic	plastic	plastic	plastic
Wire Material	Cable	Cable	Cable	Cable
Indicator light	Yes	Yes	Yes	Yes
Wiring connection	three-wire DC	three-wire DC	two-wire DC	two-wire DC

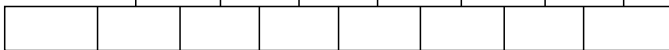


TDS Seal Water Control and Monitoring System

Model Code



1. Model : TDS	
1	Single mechanical seal : 1. Without pressure regulating knob,. 2. without pressure gauge
2	Single mechanical seal : 1.without pressure regulating knob , 2. with pressure gauge
3	Double mechanical seal : 1. witht pressure regulating knob, 2. with pressure gauge
2.Flow range (special flow range please contact producer to customize)	
1.5	0.5-1.5 l/min
3.0	0.5-3.0 l/min
6.0	1.0-6.0 l/min
8.0	1.0-8.0 l/min
15	3.0-15.0 l/min
3.Pressure gauge	
10	Maximum range : 10bar
16	Maximum range : 16bar
25	Maximum range 25bar (Only suits Aluminium case)
4.Gauge case material	
P	PP Material polipropileno
A	Aluminium
5.Connection	
O	Pipe connection 1/4", 3/8" or 1/2" NPT
NPT	Threaded connection , size : 1 / 4 " , 3 / 8 " OR 1 / 2 " NPT
G	Threaded connection , size : G 1 / 4 " , G 3 / 8 " or G 1 / 2 "
6.Installation Support	
L	Floor stand support
X	Cantilever support
7.Alarm Sensor (optional)	
A	AC 90~250V ON/OFF
D	DC 10~30V; D1:NPN; D2: PNP; D3: two-wire



Example TDS2-8.0-10-P-O1/4"-L-D3

Single mechanical seal, with pressure Gauge

Flow range : 1.0-8.0 l/min

Maximum range of pressure gauge : 10 bar Gauge

Case Material : PP

Joint Specification : pipe connection O1/4"

Installation Support: Cantilever support

Alarm Sensor: two-wire DC alarm sensor .