

Product Catalog

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DFC

Daghigh Farayand Control

مهندسی دقیق فرایند کنترل



FIELD INSTRUMENTS ACCESSORIES

درباره ما

شرکت دقیق فرایند کنترل از پیش‌تازان صنعت تامین و تولید تجهیزات ابزار دقیق در ایران، با سابقه بیش از دو دهه فعالیت مستمر، مفخر است که با توسعه ظرفیت و همچنین افزایش کیفیت محصولات خود، گام مهمی در رفع نیاز صنایع کشور به این ادوات برداشته است. تمامی محصولات این شرکت مطابق با استانداردهای بین‌المللی تولید شده است، بهبود مستمر کارایی و فناوری تجهیزات با تکیه بر بنیة علمی و تجربی شرکت، از اهداف اصلی این مجموعه می‌باشد.

محصولات تولیدی این شرکت در وندورلیست جامع نفت و گاز بوده و الزامات استاندارد تولید، ایمنی و محیط زیستی در الویت قرار داد.



Diaphragm Seal With Threaded Connection

Diaphragm seals are designed to isolate the sensing element of pressure gauges, pressure switches and electronic pressure transmitter from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature.

Diaphragm seal with threaded connection

Model	Diaphragm Type
DS-100	Diaphragm seal with threaded connection
Instrument Connection Size	
A	1/4" BSP
B	1/4" NPT
C	1/2" BSP
D	1/2" NPT
Thread	
1	MALE
2	FEMALE
Memberance Size	
1	Ø50
2	Ø60
3	Ø80
Process Connection	
A	1/4" BSP
B	1/4" NPT
C	1/2" BSP
D	1/2" NPT
E	Option: Specify (up to 2")
Thread	
1	MALE
2	FEMALE
Upper Flange Material	
1	S.S.304
2	S.S.316
Lower Flange Material	
A	S.S.304
B	S.S.316
Diaphragm Material	
1	S.S.304
2	S.S.316



Welded Diaphragm Seals

DS- 200 :

Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature.

Detail

Industries: Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)

Construction (EPC)

Specific applications: Crystallizing fluids, Viscous fluids, Corrosive fluids, High process temperature, Sedimentous fluids

Conformity: EN 1092, ASME B16.5

Material: Stainless steel and special materials

Process connection: Flanged

Range: 0...50 mbar / 0...400bar

Sensing element: Welded diaphragm

Process connection material: S.S304, AISI 316, AISI 316L

Sensing element material: S.S304, S.S316, AISI 316L, Hastelloy C276, Monel 400



Welded Diaphragm Seals

Model	Diaphragm Type
DS-200	Welded diaphragm seals

Instrument Connection Size

A	1/4" BSP
B	1/4" NPT
C	3/8" BSP
D	3/8" NPT
E	1/2" BSP
F	1/2" NPT

Process Connection

1	2"
2	2 1/2"
3	3"
4	4"

Flange Rating

1	#150
2	#300
3	#600
4	#900
5	Option-Specify

Flange Material

1	S.S.304
2	S.S.316
3	S.S.316L

Membrane Material

1	S.S.304
2	S.S.316
3	S.S.316L
4	Hastelloy C276
5	Monel 400

Installing type

A	Direct
B	Remote

Capillary Length

1	1 mt
2	2 mt
3	3 mt
4	4 mt
5	5 mt
6	6 mt

Extended Diaphragm Seals

DS- 600 :

Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature and pressure. The Extended diaphragm seal is available in place of a blind flange for all commonly used standard flanges. Due to the extended diaphragm (tube version), the diaphragm seal can be used at thick-walled or insulated locations in pipeline and vessel construction.

Detail

Industries: Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)
 Specific applications: Crystallizing fluids, Viscous fluids, Corrosive fluids, High pressure, High process temperature

Conformity: EN 1092, ASME B16.5

Material: Stainless steel and special materials

Process connection: Flanged

Range: Up to 0...250bar

Sensing element: Diaphragm

Process connection material: AISI 316, AISI 316L

Sensing element material: S.S304, S.S316, S.S316L, Hastelloy C276, Monel 400



Extended Diaphragm Seals

Model	Diaphragm Type
DS-600	Extended diaphragm seals
Instrument Connection Size	
A	1/4" BSP
B	1/4" NPT
C	3/8" BSP
D	3/8" NPT
E	1/2" BSP
F	1/2" NPT
Process Connection	
1	2"
2	3"
3	4"
Flange Rating	
1	#150
2	#300
3	#600
4	#900
5	Option-Specify
Flange Material	
1	S.S.304
2	S.S.316
3	S.S.316L
Membrane Material	
1	S.S.304
2	S.S.316
3	S.S.316L
4	Hastelloy C276
5	Monel 400
Extension Length	
A	50 mm (Standard)
B	100 mm (3.937 in)
C	150 mm (5.905 in)
D	200 mm (7.874 in)
Extended Diameter	
48.3 ≤ ED ≤ 120, customer to specify	

Back Side Diaphragm Seal

DS-400 :

Diaphragm seals are designed to isolate the sensing element of pressure gauges and pressure switches from process fluids which may be corrosive, viscous, sedimentous and/or with a high temperature .

Detail

Industries: Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)

Specific applications: Crystallizing fluids, Viscous fluids, Corrosive fluids, High pressure, High process temperature, Sedimentous fluids

Conformity: EN 1092, ASME B16.5

Material: Stainless steel and special materials

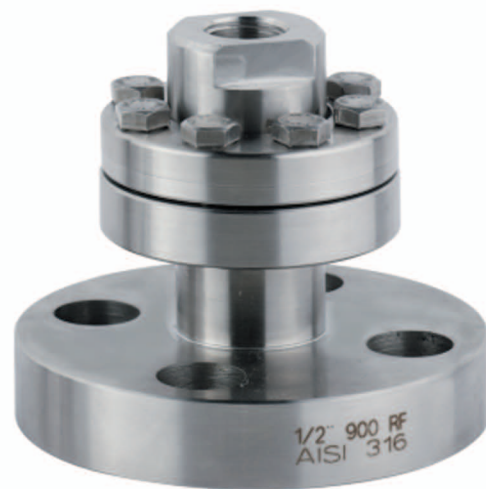
Process connection: Flanged

Range: Up to 0...250bar

Sensing element: Diaphragm

Process connection material: AISI 316, AISI 316L

Sensing element material: S.S304, S.S316, S.S316L, PTFE



Back Side Diaphragm Seal

Model	Diaphragm Type
DS-400	Back side diaphragm seals

Instrument Connection Size

A	1/4" BSP
B	1/4" NPT
C	3/8" BSP
D	3/8" NPT
E	1/2" BSP
F	1/2" NPT

Memberance Size

A	Ø60
B	Ø50

Process Connection

1	1/2"
2	3/4"
3	1"
4	1 1/4"
5	1 1/2"

Flange Rating

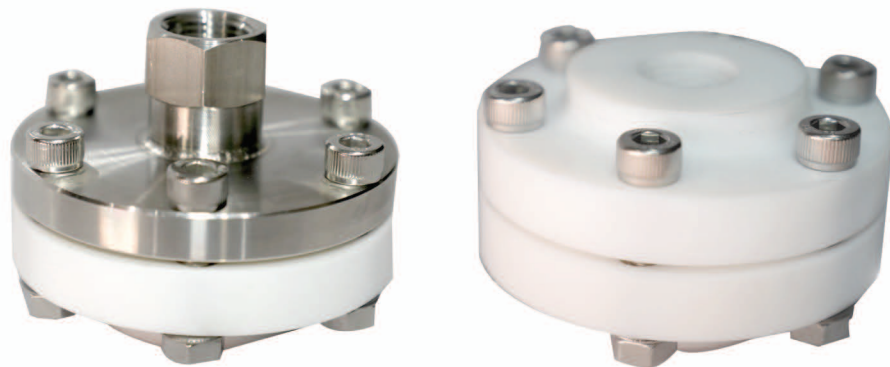
1	#150
2	#300
3	#600
4	#900
5	Option-Specify

PTFE Diaphragm Seals

Diaphragm seals PTFE are used for the protection of pressure measuring instruments in applications with Corrosive media. In diaphragm seal, There is an Interface Diaphragm Which act as Separator between pressure instrument and the media.

PTFE Diaphragm Seal With Threaded Connection

Model	Diaphragm Type
DS-300	Diaphragm seal with threaded connection
Instrument Connection Size	
A	1/4" NPT Female
B	1/2" NPT Female
Memberance Size ≤ 16 bar	
1	Ø50
2	Ø60
Process Connection	
A	1/4" NPT
B	3/8" NPT
C	1/2" NPT
D	3/4" NPT
D	1" NPT
Thread	
1	MALE
2	FEMALE
Upper Flange Material	
1	S.S.304
2	S.S.316
3	PTFE
Lower Flange Material	
A	PTFE
Diaphragm Material	
1	PTFE



Orifice Meter

An Orifice Meter is basically a type of flow meter used to measure the rate of flow of Liquid or Gas, especially Steam, using the Differential Pressure Measurement principle. It is mainly used for robust applications as it is known for its durability and is very economical.

As the name implies, it consists of an Orifice Plate which is the basic element of the instrument. When this Orifice Plate is placed in a line, a differential pressure is developed across the Orifice Plate. This pressure drop is linear and is in direct proportion to the flow-rate of the liquid or gas.

Technical Data

Line Size: 15 mm to 800 mm

Accuracy: +/-3.0%

Operating Temperature (Max.): Up to 800 deg C

Operating Pressure (Max.): Up to 400 bar

Service: Air, Gases, Water and other liquids

Material: S.S 304, S.S 316, S.S 316 L

Model

OP | INLINE ORIFICE PLATE/ RO

MATERIAL

A | S.S.304

B | S.S.316

C | S.S.316L

MEDEIUM STATE

A | GAS

B | LIQUID

TO COMPLETE ORDER SPECIFY BELOW ITEMS:

WORKING PRESSURE

WORKING TEMPERATURE

DENSITY

PIPE SCH

FLOW RATE

PIPE SIZE

VISCOSITY



Flanged Thermowell

Thermowells are used to protect the measuring instrument from corrosion, high pressure or high fluid velocity and to allow the measuring instrument removal for recalibration or replacement without affecting the process system. The FTW100 series includes bar-stock thermowells with flanged process connection and they are suitable for heavy work conditions. These thermowells have a conic immersion length.

Detail

Industries : Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)



Flanged Thermowell

#1	Type		
FTW100	Flanged Thermowell		
#2	Configuration		
A	Step Stem		
S	Straight Stem		
T	Tapered Stem		
B	Built-up Thermowell (Over 40" Use Built Up Design)		
X	Other, Specify		
#3	Bore size		
1	6.6 mm		
2	8.6 mm		
3	10 mm		
4	11 mm		
#4	U (Insertion) (mm)	Standard Lag Extension	Sensor Length
A	50 mm	60 mm	100 mm
B	100 mm	60 mm	150 mm
C	150 mm	60 mm	200 mm
D	200 mm	60 mm	250 mm
E	250 mm	60 mm	300 mm
F	300 mm	60 mm	350 mm
X	Other-Specify		
#5	Well Material		
C	Carbon Steel		
H	S.S.304		
K	S.S.316		
L	S.S.316L		
A	Alloy 800H		
N	Inconel 600		
M	Monel 400		
O	Incoloy 800		
#6	Size Of Flange		
3	1"		
4	1 1/2"		
5	2"		
X	Other, specify		
#7	Flange Rating As Per ASME B16.5		
A	150	D	900
B	300	E	1500
C	600	X	Other, Specify
#8	Facing		
1	Raised		
2	Flat		
3	Ring Joint Type		
4	Other, Specify		
#9	Flange Material		
C	Carbon Steel		
H	S.S.304		
K	S.S.316		
L	S.S.316L		

Threaded, Weld-In & Socket Weld Thermowells

Thermowells are used to protect the measuring instrument from corrosion, high pressure or high fluid velocity and to allow the measuring instrument removal for recalibration or replacement without affecting the process system. The TTW200 series includes thermowells with threaded process connection. These thermowells are suitable for low/medium work intensity. The STW 300 and WDI 300 series includes bar stock thermowells with weld-in socket process connection and they are suitable for heavy work conditions.

These thermowells have a conic immersion length.

Detail:

Industries : Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)

Socket weld
STW 300



Threaded
TTW-200



Weld-In
WDI-300



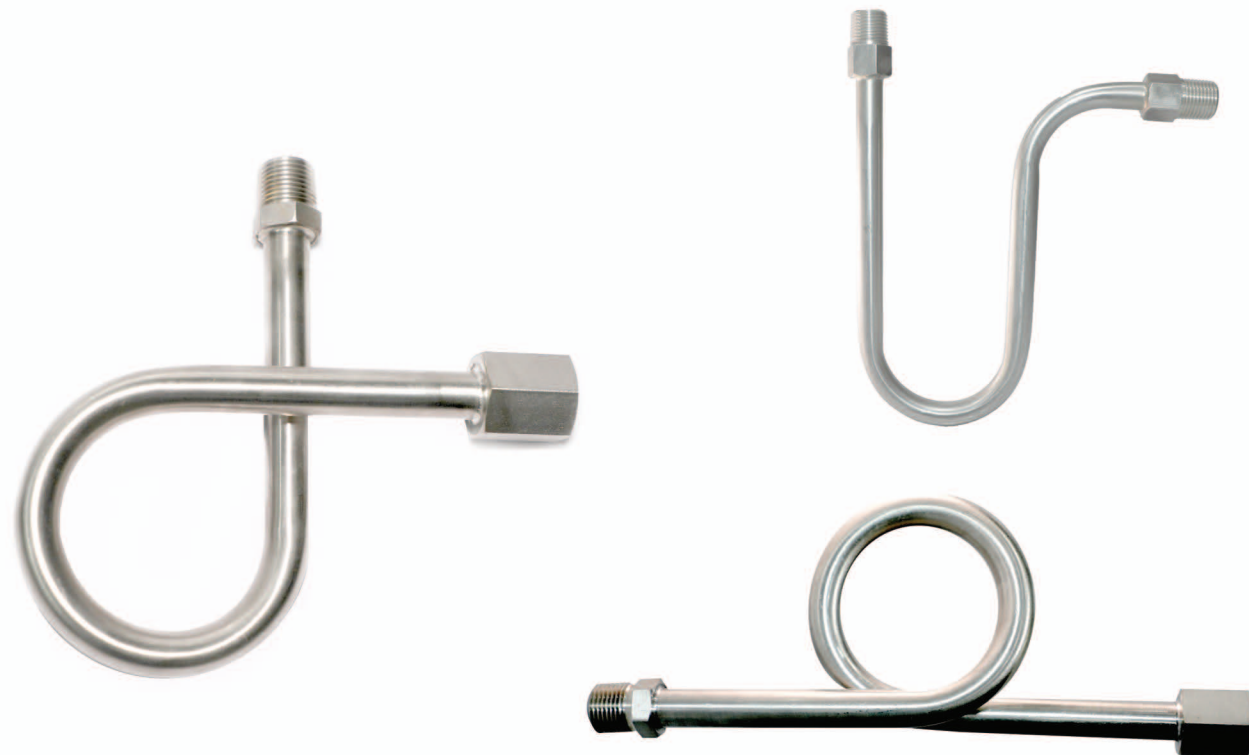
Threaded, Weld-In & Socket Weld Thermowells

#1		Type		
TTW200		Threaded Thermowell		
STW 300		Socket Weld Thermowell		
WDI 300		Weld IN Thermowell		
#2	Threaded Wells External Thread	Socket Weld Nominal Size	Actual OD	Weld In Well Size
1	1/2" NPT	N/A	N/A	N/A
2	3/4" NPT	3/4" Pipe	1.050" ϕ	0.75" ϕ
3	1" NPT	1" Pipe	1.315" ϕ	1.00" ϕ
4	1-1/2" NPT	1-1/2" Pipe	1.900" ϕ	1.50" ϕ
5	1-1/4" NPT	1-1/4" Pipe	1.660" ϕ	1.25" ϕ
6	Other, Specify	--	--	--
#3	Stem Style			
A	Step Stem			
S	Straight Stem			
T	Tapered Stem			
B	Built up Stem (Recommended for over 40" overall length)			
X	Other, Specify			
#4	Bore size			
2	6.6 mm			
3	8.6 mm			
#5	U (Insertion)	Standard Lag Extension	Sensor Length	
B	50 mm	60 mm	100 mm	
C	100 mm	60 mm	150 mm	
D	150 mm	60 mm	200 mm	
E	200 mm	60 mm	250 mm	
F	250 mm	60 mm	300 mm	
G	300 mm	60 mm	350 mm	
X	Other-Specify			
#6	Well Material			
C	Carbon Steel			
H	S.S.304			
K	S.S.316			
L	S.S.316L			
A	Alloy 800H			
N	Inconel 600			
M	Monel 400			
O	Incoloy 800			

Syphon

The pig tails and coil syphons are used for measurement of pressure with vapour and are mounted between the instrument (pressure gauge, pressure switch, pressure transmitter) and the process. A part of the pipe remain always filled of condensation and this avoid the direct contact between the high temperature vapour and the instrument. Another use of these accessories is the heating dispersion, this avoid also to the instrument to work at dangerous temperature.

Model	Types
SY-p	Pig tails syphons
Sy-u	U type syphons
Pipe Schedule	
1	Sch 40
2	Sch 80
Material	
1	S.S.304
2	S.S.316
Connection	
1	1/2" NPT
2	1/4" NPT



Cooling Tower

Cooling towers are intended to protect the pressure gauge/Switch/Transmitter from excessively high process media temperatures.

Recommended for process temperatures +100°C

Detail:

Industrial sector: Chemical, Petrochemical, Energy Oil & Gas Machine building (OEM), Engineering Procurement Construction (EPC)

Function: Temperature Reducer

Material: Stainless steel and special materials

Max Temperature: up to temperatures of 600 °C

Working Pressure: up to 600 bar

Cooling Tower	
Type	Description
CT	Cooling Tower
Material	
A	S.S.304
B	S.S.316
C	S.S.316L
Connection	
1	1/2" NPT
2	1/4" NPT
3	Other- Specify
Number of Plate	
1	5
2	6
3	Other- Specify



Condensate Pot

The primary use for condensate pots is for maximising the accuracy of differential pressure flow measurement on steam (or vapour) applications. They are used to ensure that the condensation of steam in the impulse lines does not impair the ability to accurately sense differential pressure fluctuations and to minimise gauge line error because of differences between pairs of impulse lines.

Condensate Pot

Model	Description
Pot	Condensate Pot
Material	
A	S.S.304
B	S.S.316
C	S.S.316L
Pipe Size	
1	2"
2	3"
3	Other -Specify
Pipe Schedule	
1	Sch 10
2	Sch 40
3	Sch 80
4	Sch 160
Connection	
1	1/2" NPT
2	1/4" NPT
3	Other -Specify



Air Distribution Manifold

Instrument air distribution manifold is a pipe shaped chamber (manifold) with several branches of outlets for delivering instrument air to multiple consumers such as control valve, actuated valve or other pneumatic operated instrument. The number of outlet of an instrument air distribution manifold may vary depend on the number of nearby pneumatic instrument or valve. Each outlet is fitted with block valve which could be of ball valve or needle valve type. Each outlet should have instrument tag number to which the outlet delivered the instrument air.

Detail

Industries : Chemical, Petrochemical, Mineral, Steel, Energy, Water treatment, Oil & Gas, Machine building (OEM), Engineering Procurement Construction (EPC)

Air Distribution Manifold

#1	Description
8	Air distribution manifolds AISI 316
#2	Number of Outlet
2	2 outlet connections
4	4 outlet connections
6	6 outlet connections
8	8 outlet connections
10	10 outlet connections
12	12 outlet connections
20	20 outlet connections (only available with 1/4" outlet connections)
#3	Inlet Size
1	1/4-18 NPT (F)
2	1/2-14 NPT (F)
3	3/4-14 NPT (F)
4	1-11.5 NPT (F)
#4	Vent Size
0	None
1	1/4-18 NPT (F)
2	1/2-14 NPT (F)
3	3/4-14 NPT (F)
4	1-11.5 NPT (F)
#5	Type of valve on outlets
B01	Ball valve with PTFE stempacking
1	Needle with PTFE Stempacking



Thermocouple MI 5004 / MI 5005

Thermocouple is an electrical device that measures temperature and consisting of two different type of electrical conductors forming an electrical junction. When the junction of the two metals is heated or cooled, a voltage is created that can be correlated back to the temperature. Thermocouples are widely used as temperature sensors. The majority common are the "Base Metal" thermocouples known as Types J, K, T, E and N.

MI 5004 / 5005 Spring loaded Replacement Thermocouple Insert

Protection tube

Construction	Mineral insulator
Material	"S" for SS. 316 / "I" for inconel 600
Insertion length "L" in mm	Customer to specify
Outside diameter "D" in mm	Customer to specify (3mm, 6mm)

Sensor lead wire termination

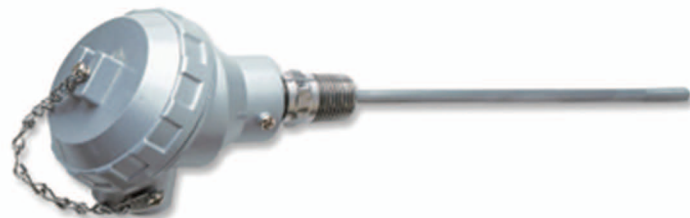
1	Basic Insert
2	Fix Sensor Insert
3	Flying Lead
4	Terminal Block
5	Spring Loaded Adapter

Element

Calibration	K, J, E
For duplex	KK, JJ, EE
Accuracy	According IEC 584-1 / DIN 43710

Orderig code

Model	MI 5004 / MI 5005
Calibration	
Outside diameter "OD"	
Insertion length "L" in mm	
Protection tube material	
Special option specify by customer	



RTD(PT100) Sensors

Most resistance temperature detectors (RTDs) consist of a fine wire (typically platinum) wrapped around a ceramic core, exhibiting a linear increase in resistance as temperature rises. With a measuring range of -200 to 600 degrees C, RTDs generally have higher accuracy and repeatability than thermocouples, but their response times are slower.

Technical Information

Construction: Closed End Tube

Protection Tube Material: S.S 304, S.S 316

Insertion Length: Customer to specify

Outside Diameter: Customer to Specify

Accuracy: Class B, Class A

Electrical Connection: 2-4 Wire

Model

TS-RTD-1	Basic Insert
TS-RTD-2	Fix Sensor Insert
TS-RTD-3	Flying Lead
TS-RTD-4	Terminal Block
TS-RTD-5	Spring Loaded Adapter

Connection Head

1	without
2	with Head Ex d
3	with Head non Ex

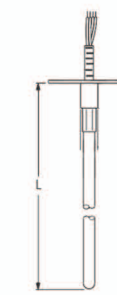
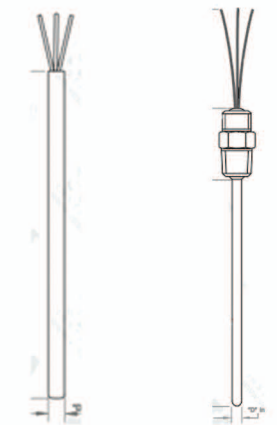
Insertion Length(mm)

/.../	Customer to specify
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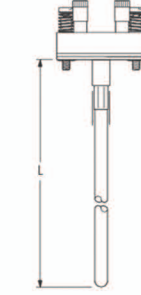
Protection Tube

A	S.S. 316
B	S.S. 304

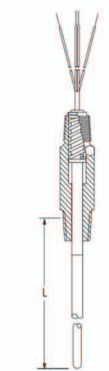
Basic Insert Fix Sensor Insert



Flying leads



Terminal block



Spring loaded Adapter

Level Switch LS720

Magnetic float level switches are suitable for the control of liquid levels in tanks, vats and boilers, and for the control of pumps, valves, and alarm systems. They can be mounted vertically directly within the process environment or in a lateral containment chamber external to the process.

One, or up to six, magnetically actioned contacts (reed switches) are located within a blind vertical tube integral to the lower part of its mounting bracket. One or more floats are free to slide up and down the guide tube, magnetically actioning the contacts by switching their state according to the level of liquid in the tank.

The contact points can be set at specific levels.

Function:

Measuring principle: magnetic

Measuring range: up to 5000 mm

Output signal: 1 to 6 Microswitch

Materials: All Stainless Steel

Temperature: up to 150°C

Pressure: up to 40 bar



Level Switch

Type	Description
LS720	Level Switch
Rod Material	
A	S.S.304
B	S.S.316
C	S.S.316L
Float	
B	S.S.304
Connection Size:	
1	2" NPT
2	1" FLG
3	2" FLG
4	3" FLG
5	4" FLG
6	Other- Specify
Pressure Rating	
1	# 150
2	# 300
3	# 600
4	# 900
5	Other- Specify
Contact	
1	1 Reed Switch
2	2 Reed Switch
3	3 Reed Switch
4	4 Reed Switch
5	5 Reed Switch
6	6 Reed Switch

Bypass Chambers

For level Measuring

The Bypass Chambers are used for installation in side of Tanks to mount of contact or non-contact radars, displacer-type transmitters and Magnetic Level Switches. This is ideal for level measurement in difficult process conditions, e.g. turbulence, foam.

Our company can produce the chambers in a wide range of dimensions and process conditions.

Model

BP100

Body Material

A	Carbon Steel
B	S.S.304
C	S.S.316
D	S.S.316L
E	Others (Please Specify)

Side Connections Size

A	1 1/2"
B	2"
C	3"
D	4"
E	Others (Please Specify)

Side Connections Rating/Facing

1	#150 RF
2	#300 RF
3	#600 RF
4	#900 RF
5	Others (Please Specify)

Vent

1	Same as Side Connections
2	1/2" NPT Female
3	Option-Specify

Drain

1	Same as Side Connections
2	1/2" NPT Female
3	Option-Specify

Side Flange C-C Length

1	...
---	-----



Level Gauge

Level indicators are devices used in the measurement of level of fluids at various industrial applications. These devices are used to determine the level of liquid in tanks, drums, Pressure vessels etc. Depending on the type of application used, the type of level indicator should be selected.

Types of Level Indicators

There are many different types of level indicators, each with its own application.

Transparent level indicators are highly useful in chemical industries and petrochemical fertilizers. As the fluid is stored in high pressure and high temperature, the transparent level indicator is very useful to find the fluid level.

Reflex level indicators are for applications that involve high temperature, high pressure and use of corrosive fluids. The colorless fluid used in this apparatus gives better clarity to level indication.

Magnetic level indicators are red followers that need magnetic level indicators. Cylindrical floats and powerful magnets are used to find the level of the fluid. The float movement is followed by magnetic capsules, and thus, the level is indicated. This type of indicator has good visibility and is absolutely safe to use as it contains non-fragile metal chamber.

Technical Information

Center to Center: By Customer Requested,
 Process Rating: Thread or Flange end available,
 Temperature Range: Max 150°C
 Pressure Range: Max 70 bar

×Transparent type is not suitable for colorless liquids.

Ordering Information

Model

SGLT	TRANSPARENT LEVEL INDICATOR
SGLR	REFLEX LEVEL INDICATOR
SGLM	MAGNETIC LEVEL INDICATOR

CONNECTION SIZE TO VESSEL

A	1/2"
B	3/4"
C	1"
D	1 1/2"
E	2"
F	3"
G	ON REQUEST

RATING

1	NPTM
2	ANSI #150
3	ANSI #300
4	PN 16
5	PN 40
6	ON REQUEST

COVER MATERIAL

A	CARBON STEEL
B	S.S. 304
C	S.S. 316
D	S.S.316 L

BODY MATERIAL

1	CARBON STEEL
2	S.S. 304
3	S.S. 316
4	S.S. 316 L

CENTER TO CENTER LENGTH(L) IN MM

/.../ ... MM

VISIBLE LENGTH (V) IN MM

/.../ ... MM

BODY LENGTH (G) IN MM

/.../ ... MM

VENT/DRAIN CONNECTION

A	1/4"
B	1/2"
C	3/4"

GAUGE VALVE MATERIAL

A	S.S. 304
B	S.S. 316