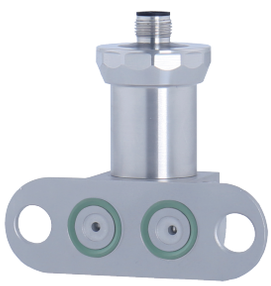
sisco

Product information

Model differential pressure transmitter



The model differential pressure transmitter is designed for use in industrial applications where differential pressure values of liquids or gases are measured, not only in a compact structure, but also of superior quality, well suited to the general industry, and cost effective.

It also has the advantages of diversity such as output signal, range, and electrical device connection, and is convenient to match the different operating condition sites.

Range: 0-2.5 MPa (see scale selection table for details)
Outputs: 4-20mA, RS485, 0-10vdc, 0-5vdc, 1-5vdc, 0.5～2.5VDC
Supply: 9 - 36 VDC, 15 - 36 VDC, 3 - 5 VDC
Precision: 0.25% FS, 0.5% FS
In addition, we can provide customized products that meet their application needs in a short time depending on the customer application.

Typical applications

▲industrial equipment
▲Pharmaceuticals and Biotechnology
▲Flow monitoring
▲Differential pressure measurement of liquid or gas, etc

Instructions

The differential pressure transmitter family is intended for differential pressure measurements in the liquid or gas and flow industries. It is the responsibility of the operator to check that the equipment is fit to the operating condition for the application. If any doubt exists, contact our sales department to ensure proper application of the transmitter. The company cannot be held responsible for the effects caused by improper selection. The user is required to ensure that the medium being measured is compatible with the transmitter contact material.

⚠ Caution!
Improper use can lead to dangerous occurrences!

Icon description

⚠ Danger! - Dangerous situations that may result in death or major injuries.

⚠ Warning! - Potentially dangerous situations that can lead to death or major injuries.

! Caution! - A potentially dangerous situation that may cause minor injuries.

☞ Reminder! - Potentially dangerous situations that may cause personal harm.

⚠ Cues! - Tips and information to ensure that the equipment is functioning without failure.

⚠ **Users**
Caution! This information applies to the skilled person.

Product characteristics

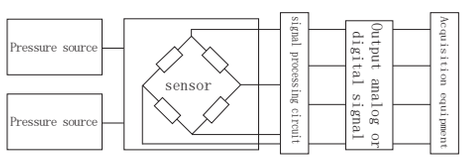
a) Patch isolation was performed
b) Integrated chip, wide voltage supply
c) Upper static pressure - one-sided - up to 25 times the maximum possible differential pressure range
d) Intercept design, high anti-interference ability and lightning protection
e) Flow limiting, pressure limiting, back splicing protection
f) High precision, stability, high response rate, and shock resistance
g) Compact structure

Product overview

The series differential pressure transmitter adopts a compact structure, and its static pressure resistance value is high, stable and reliable. And subjected to computer automatic test, zero point of wide temperature range and sensitive temperature compensation were performed by laser resistive process. It has high measurement accuracy due to its anti-interference, overloading and impact resistance, small temperature drift and stability, so the product can be applied in various occasions for performing measurements against differential pressure, including harsh corrosive media environments. Is an ideal instrument for differential pressure measurements in the field of industrial automation.

Working principle

The pressure sensor diffuses a Wheatstone bridge on the monocrystalline silicon chip. The pressure of the measured medium (gas or liquid) changes the resistance value of the bridge wall (piezoresistive effect) to generate a differential voltage signal. This signal is transformed into a standard analog signal (as shown in the figure below) or digital signal through a special amplifier.



Technical parameter

Measuring medium: liquid or gas (compatible with contact material)

Pressure means: differential pressure

Medium temperature: - 40 - 85 ° C

On time: 20 ms

Accuracy level: 0.25% FS (differential pressure range to nominal range ratio ≥ 1:2.5)

0.5% FS (differential pressure range to nominal range ratio < 1:2.5)

The table monitor shows precision 0.5% FS, and the digital tube (LED) display

Note: reference conditions temperature 15-25 ° C, atmospheric pressure 86-106 kPa, humidity 45-75% RH.

Response frequency: analog signal output ≤ 30 Hz, digital signal output ≤ 5 Hz

Stable performance: ± 0.1% FS / year

Temperature compensation: - 10-70 ° C

Temperature excursion: ± 0.01% FS / ° C

(within temperature compensation) ± 0.05% FS / ° C (outside temperature compensation)

Level of protection: IP65 (not shown) IP54 (shown)

Note: the above level of protection refers to that achieved after the electrical connection is complete

Resistance performance: 10 X10 ^{6} times (number of cycles from lower range to upper range)

Overall weight: not shown ≈ 415 G has been shown ≈ 460 g

Analog output 0.01% FS, digital output 0.05% FS

Range

Rated range (MPa)	0.035	0.1	0.25	1	2.5
Differential pressure range (MPa)	0～0.01 to 0～0.035	0～0.02 to 0～0.1	0～0.05 to 0～0.25	0～0.2 to 0～1	0～0.5 to 0～2.5
Unilateral maximum static overvoltage (MPa)	0.175	0.5	0.75	3	5

Output powering

output \ power supply	9～36VDC	15～36VDC	3～5VDC
4～20mA	No display	With display	×
RS485	With/without display	With display	No display
0～10VDC	×	With/without display	×
0～5VDC	With/without display	×	×
1～5VDC	With/without display	×	×
0.5～2.5VDC	×	×	No display

Note: The minimum overlap shall prevail.

Maximum power

output \ power	≤0.02Us(W)	≤0.015Us(W)	≤0.008Us(W)	≤0.001Us(W)
4～20mA	With/without display			
RS485	With display	No display		
0～10VDC	With display		No display	
0～5VDC	With display		No display	
1～5VDC	With display		No display	
0.5～2.5VDC				No display

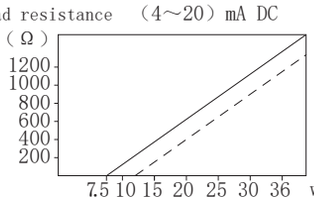
Note: Us=supply voltage.

Load characteristics

Voltage type:≥10kΩ

Current type: load ≤ {(Us-7.5) ÷ 0.02} Ω (Us=supply voltage)

Load resistance （4～20）mA DC



Note: - No display ---For display

Environment condition

Ambient temperature: - 40~85 ℃

Ambient humidity: 0%~95% RH (no condensation or condensation)

Electromagnetic compatibility (EMC)

Serial number	Test items	Basic standards	Test conditions	Performance level
1	Radiated interference (enclosure)	GB/T 9254/CISPR22	30MHz-1000MHz	qualified
2	Conducted interference (DC power port)	GB/T 9254/CISPR22	0.15MHz-30MHz	qualified
3	Electrostatic discharge (ESD)	GB/T 17626.2/IEC61000-4-2	4kV(contact), 8kV (air)	B(Note 2)
4	Radio frequency electromagnetic field immunity	GB/T 17626.3/IEC61000-4-3	10V/m(80MHz-1GHz)	A(Note 1)
5	Power frequency magnetic field immunity	GB/T 17626.8/IEC61000-4-8	30A/m	A(Note 1)
6	Electrical fast transient burst immunity	GB/T 17626.4/IEC61000-4-4	2kV(5/50ns, 100kHz)	B(Note 2)
7	Surge immunity	GB/T 17626.5/IEC61000-4-5	500V(Between lines) 1kV(Between ground wires)(1.2us/50us)	B(Note 2)
8	Immunity to conducted interference induced by RF field	GB/T 17626.6/IEC61000-4-6	3V(150kHz-80MHz)	A(Note 1)

Note 1: when the performance grade is a, the performance is normal within the limits of the technical specifications.
Note 2: when the performance level is level B, the function or performance is temporarily reduced or lost, but can be recovered by itself, and the actual operation status, storage and data will not change.

Overall material

Diaphragm: 316L stainless steel (in contact with the measured medium)
Process connection: 304 stainless steel (contact with the measured medium)
Shell: 304 stainless steel
Seal: nitrile rubber O-ring
Display housing: ABS engineering plastics (LED display)
Hesman plug: ABS engineering plastics

Mechanical stability

Seismic performance: 10g (20... 2000Hz) in accordance with IEC60068-2-6 standard
Impact resistance: 500g/ms in accordance with IEC60068-2-27 standard

Electrical protection

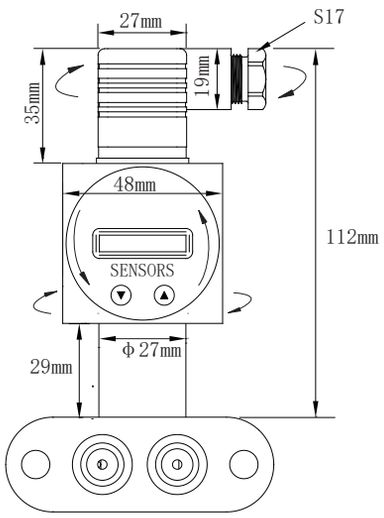
Short circuit protection: permanent
Reverse pole protection: no damage, but does not work
Insulation resistance: ≥ 100M Ω 500VDC
Insulation strength: 500VAC

Output limit

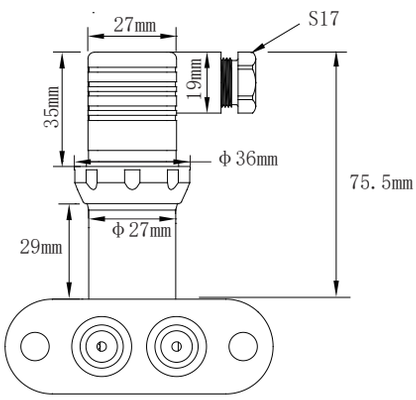
	Output minimum	Maximum output
4-20mA	4mA	20mA
RS485	0	2000
0～10VDC	0.001VDC	10VDC
0～5VDC	0.001VDC	5VDC
1～5VDC	0.001VDC	5VDC
0.5～2.5VDC	0.05VDC	5VDC

Appearance and size

Dimensional drawing of upper end

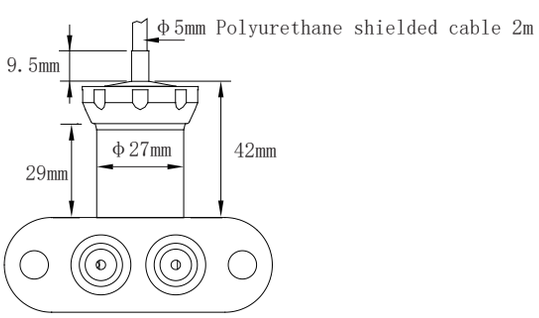


The outlet line of Hesman plug shows

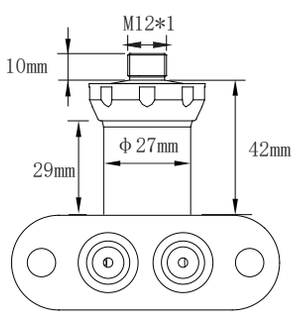


Hersman plug outlet

Note: The marked place can be rotated by 350 °

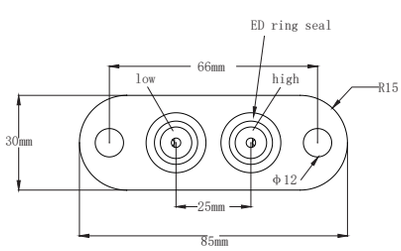


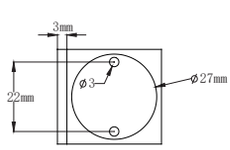
Direct outgoing line



Aviation plug outlet

Lower dimension drawing



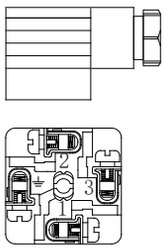


Wiring diagram

Hesman plug

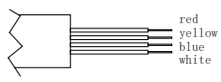
ID	2-Wire	3-Wire	4-Wire
1	Power supply+	Power supply+	Power supply+
2	Power supply-	OUT+	A
3		Power supply-	Power supply-
⏚	⏚	⏚	B

Note: the diameter of lock wire is 5 ~ 6.5mm



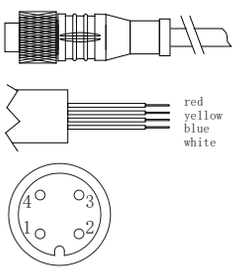
Direct outgoing line

ID	2-Wire	3-Wire	4-Wire
red	Power supply+	Power supply+	Power supply+
yellow		OUT+	A
blue	Power supply-	Power supply-	Power supply-
white			B



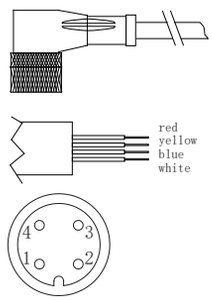
Aerial straight head belt line

ID	2-Wire	3-Wire	4-Wire
1/red	Power supply+	Power supply+	Power supply+
2/yellow		OUT+	A
3/blue	Power supply-	Power supply-	Power supply-
4/white			B



Aerial inserting elbow strip line

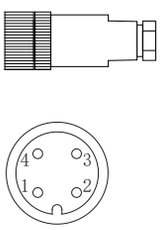
ID	2-Wire	3-Wire	4-Wire
1/red	Power supply+	Power supply+	Power supply+
2/yellow		OUT+	A
3/blue	Power supply-	Power supply-	Power supply-
4/white			B



Aerial straight head

ID	2-Wire	3-Wire	4-Wire
1	Power supply+	Power supply+	Power supply+
2		OUT+	A
3	Power supply-	Power supply-	Power supply-
4			B

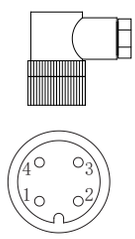
Note: the diameter of lock wire is 4 ~ 5mm



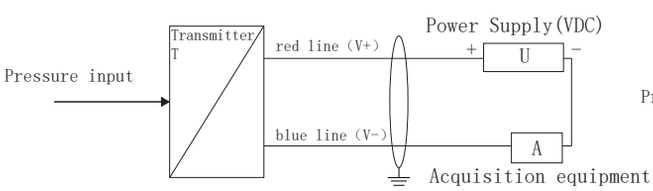
Aviation plug elbow

ID	2-Wire	3-Wire	4-Wire
1/red	Power supply+	Power supply+	Power supply+
2/yellow		OUT+	A
3/blue	Power supply-	Power supply-	Power supply-
4/white			B

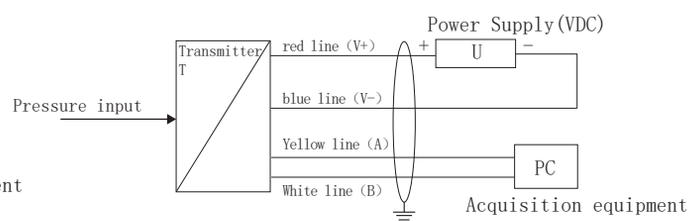
Note: the diameter of lock wire is 4 ~ 5mm



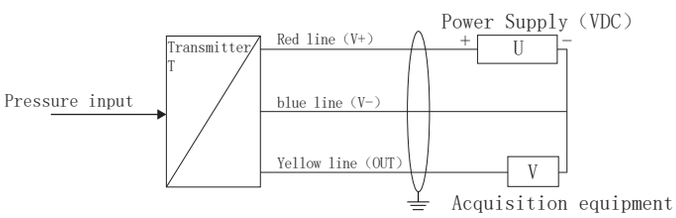
Current output wiring diagram (two-wire system)



RS485 (digital signal) output wiring diagram (four wire system)



Voltage output wiring diagram (three wire system)



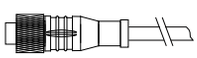
☞ Represents shielded wire, and all marked grounding points must be effectively grounded. It is recommended to select shielded twisted pair signal cable for the best effect. In order to avoid grounding loop, the shielding layer adopts single end grounding, insulated floating grounding at the end of pressure transmitter and grounding at the end of control cabinet.

☞ The transmitter shell is grounded by default, so the field equipment shall be effectively grounded. If the field equipment cannot be grounded, the marked grounding point shall be effectively grounded.

enclosure(Purchase separately)

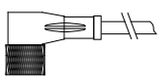
Electrical connection plug

M12-z aviation plug straight head connecting cable



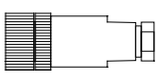
Main purpose: electrical connection

M12-w aviation plug elbow connecting cable



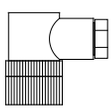
Main purpose: electrical connection

M12c-z aviation plug straight head



Main purpose: electrical connection

M12c-w aviation plug-in elbow



Main purpose: electrical connection