



PS350

Hermetic Analog Pressure Transmitter

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About Us

1987

Founded With
Headquarters in
Switzerland

30

Million CHF
Turnover / Year
(2024)

135

Employees
Worldwide

8

Locations
Globally

About STS Sensors

STS is a global specialist in the development and production of high precision sensor technology for the process industry. Our innovative product portfolio includes pressure, level, flow, and temperature sensors for the highest requirements in industrial automation.

From The Ocean to Outer Space

Our sensors are robust and precise, making them capable of being utilized in environments such as -3,000 m below sea level to +1,200,000 m in space.



STS Worldwide



- 📍 Switzerland
- 📍 France
- 📍 Italy
- 📍 China
- 📍 USA
- 📍 Germany
- 📍 India

Benefits and Features

Customer Benefits

Micro-Fused Strain Gauge Technology

Exceptional Long-Term Stability

Micro-fused bonding ensures minimal signal drift over time, reducing recalibration needs and lowering total cost of ownership.

High Precision and Repeatability

Get accurate and consistent measurements, even under fluctuating conditions.

Outstanding Shock and Vibration Resistance

The robust fused design tolerates mechanical stress, ensuring reliable performance in harsh and dynamic settings.

Compact, High-Performance Design

Ideal for space-constrained applications without compromising measurement performance.

Fast Response Times

Perfect for applications that demand dynamic pressure tracking, such as test benches and automated control systems.

Product Features



Features

Sensor Technology: Micro-Fused Strain Gauge

Pressure Measuring Range: 0–600 bar (0–8702 psi)

Temperature Range: -40°–125°C (-40°–257°F)

High Capabilities

With the PS350, get high proof and burst pressure capabilities such as an operating pressure range from 0-600 bar.

Unmatched Durability

A stainless steel design with a hermetic port and an O-ring free seal makes the PS350 compatible with harsh environments. The transmitter provides exceptional shock and vibration resistance.

Easy Integrations

The PS350 includes a wide range of ports, connectors, and analog electrical outputs for ease of integration.

Accuracy: $\pm 0.25\%$ FS @25°C

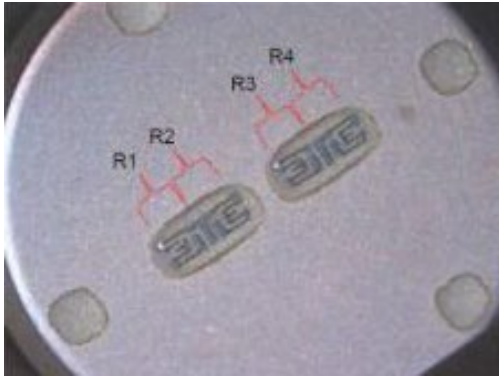
Output Signal: 4-20mA, 0–10 VDC, 0.5–4.5 VDC

Packing Size: 50 pieces or a multiple of it (MOQ 500).

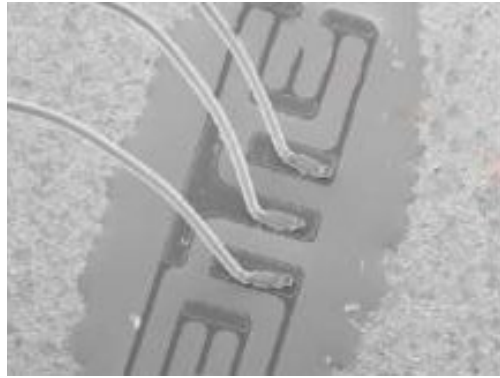
Technology and Assembly

Technology

Micro-fused strain gauge (MSG) is a pressure sensor technology with piezo resistors glass bonded onto a hermetic steel membrane.



4 Piezo resistors on 2 “half bridges” per port



Wire bonds to electrically connect 4 piezo resistors as full Wheatstone bridge

Process Overview:

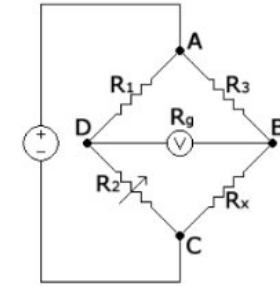
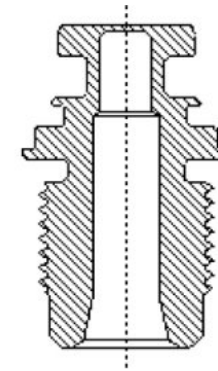
1. Pressure is applied to the steel diaphragm
2. This causes mechanical stress on the bonded silicon
3. The stress changes the resistance of the piezo resistors (Silicon Piezoresistive Effect)
4. These changes are detected via a Wheatstone bridge configuration
5. The signal is processed by conditioning electronics
6. The result is a precise analog output

Technology

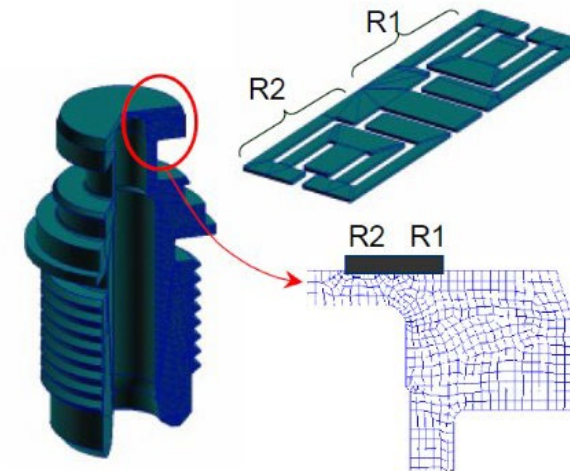
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Details

- Two $\frac{1}{2}$ Wheatstone bridges are glass bonded to diaphragm creating a full bridge
- Elements bonded to port with 'low' temp glass (500°C firing temp)
- Piezoresistive characteristic of silicon yields change in resistivity proportional to element stress
- ASIC conditions output of bridge: Compensation of initial and temperature error



Port material: 17-4PH stainless steel.

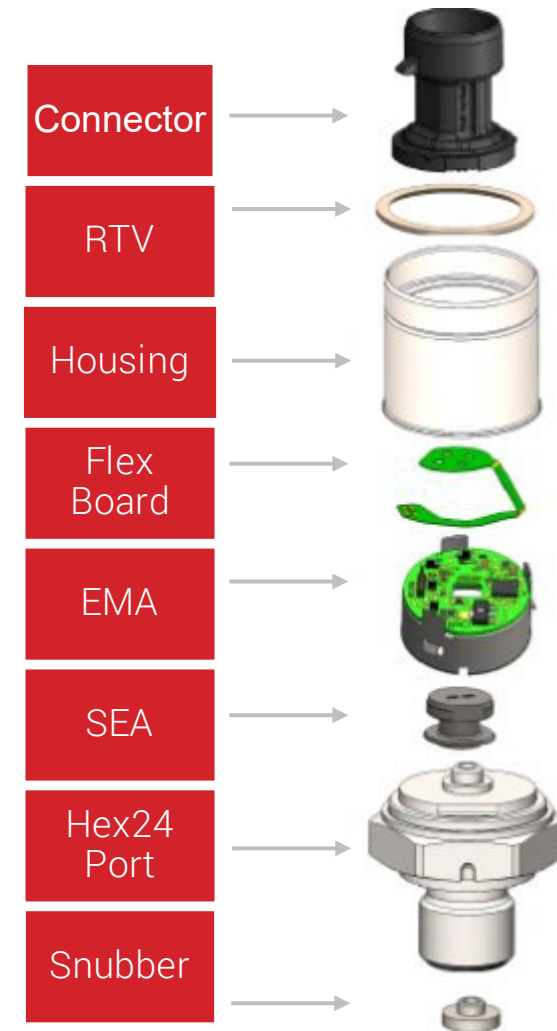


Assembly

Modular Design

Assembly Steps

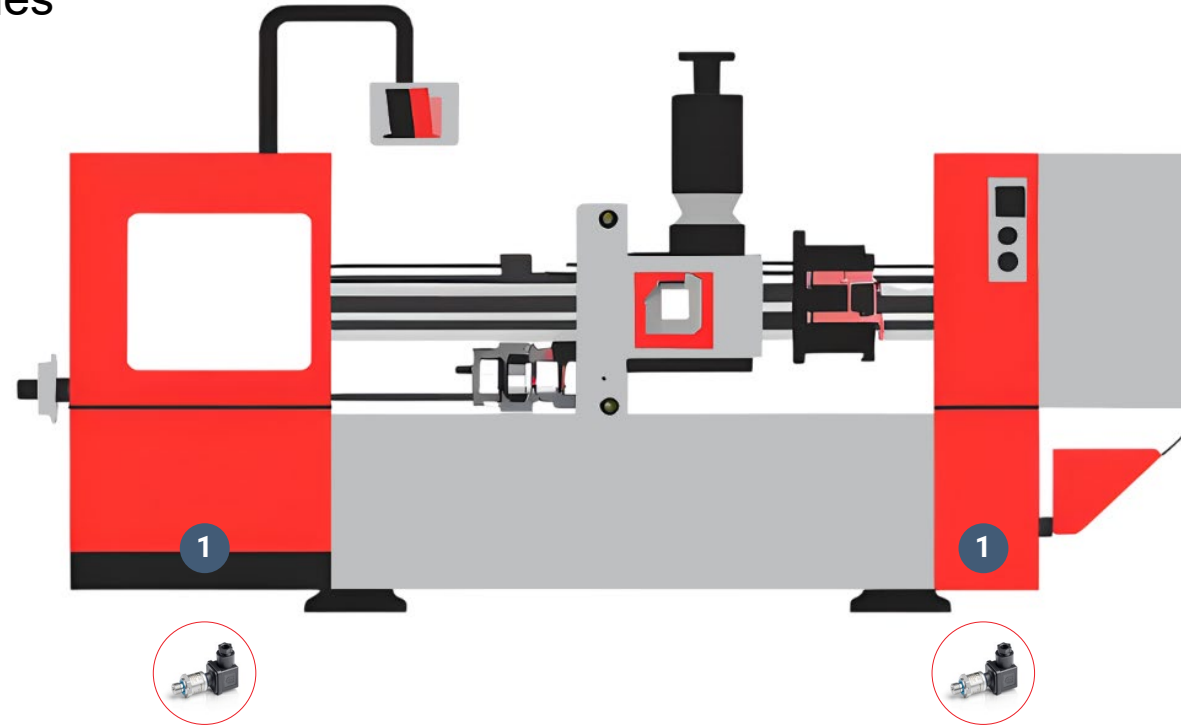
- Port to SEA: Laser Welding
- EMA to port/SEA: Wire bonding
- Housing to port: Laser welding
- Flex to con/EMA: Soldering
- Connector to housing: Crimping
- RTV: Dispensed around connector
- RTV: Room temp vulcanization
- EMA: Electronic module assembly
- SEA: Sensing element assembly



Applications

Application

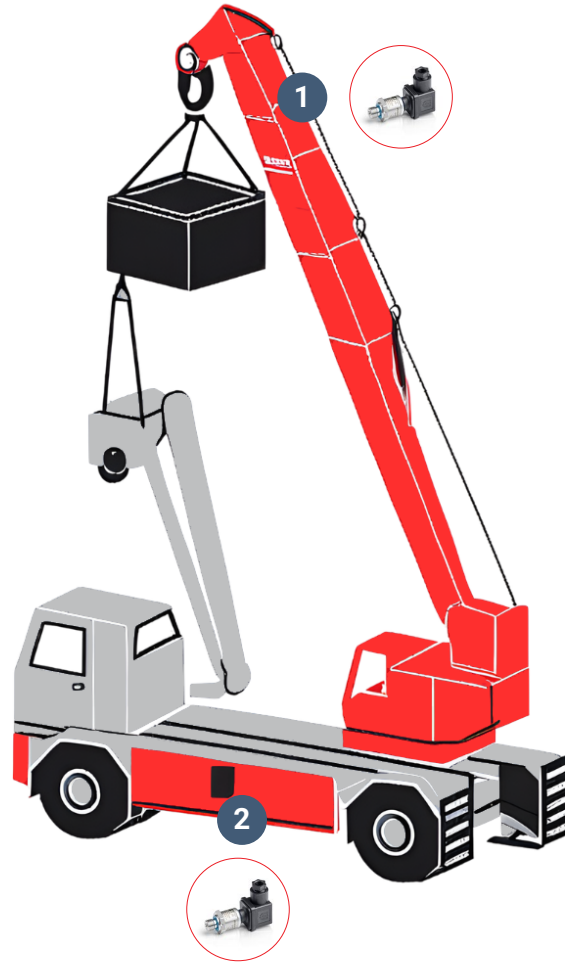
Injection Molding Machines



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–50 bar to 0–600 bar (0–725 psi to 0–8700 psi) • $\pm 0.25\%$ BFSL accuracy • High shock (500g) and vibration (30g) • Multiple connector and port options • High burst pressures ($\geq 10X$ for full scale pressure ≤ 400 bar)	Measure clamping unit and injection unit pressures

Application

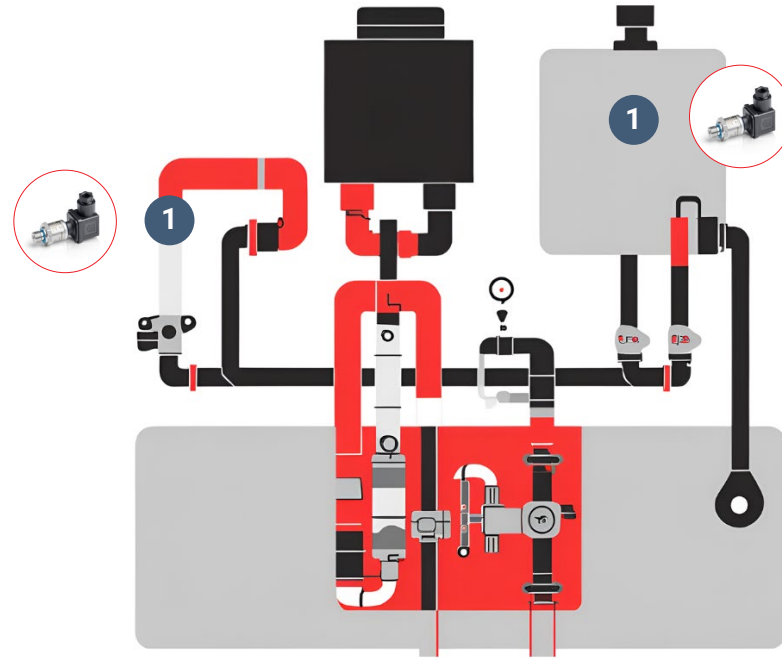
Lift Applications



Reference on Diagram	Features	Function
1	• 0–50 bar to 0–600 bar (0–725 psi to 0–8702 psi) • -40 + 100°C	Measure hydraulic pressure circuits
2	• 0–50 to 0–600 bar • -40 + 100°C	Measure hydraulic ram extensions

Application

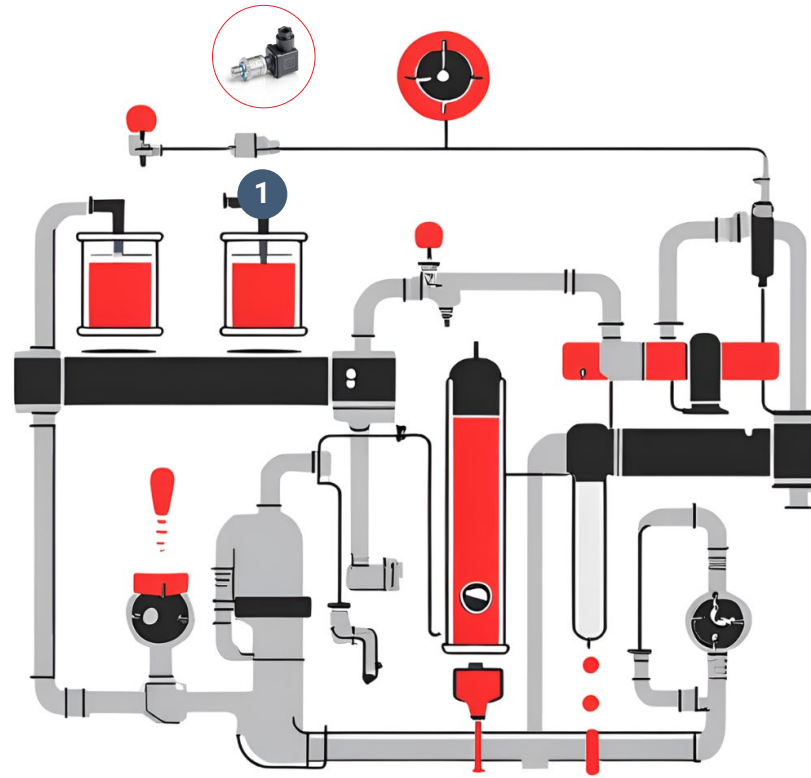
Fluid Power Systems



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–50 bar to 0–600 bar (0–725 psi to 0–8702 psi) • $\pm 0.25\%$ BFSI accuracy • High shock (500g) and vibration (30g) • Multiple connector and port options • High burst pressures ($\geq 10X$ for full scale pressure ≤ 400 bar)	Measure hydraulic power pack pressure

Application

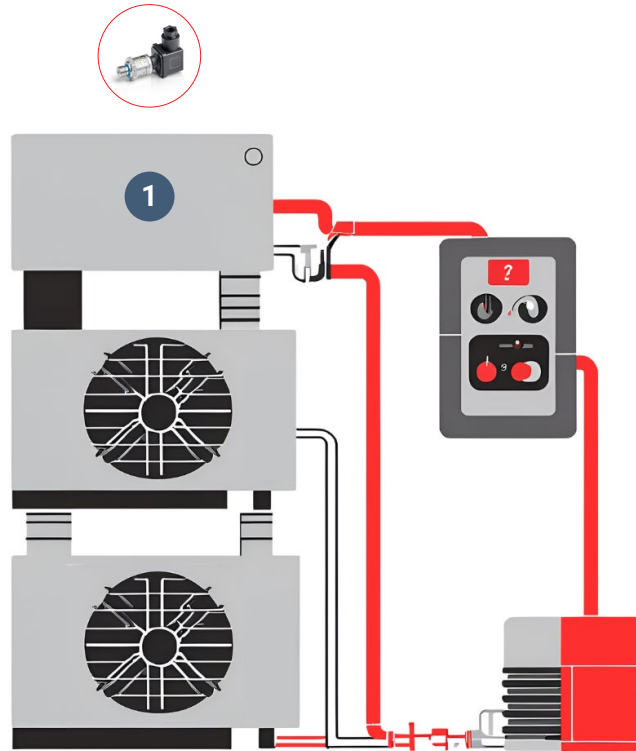
Fluid Management



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–50 bar to 0–600 bar (0–725 psi to 0–8702 psi) • $\pm 0.25\%$ BFSI accuracy • High shock (500g) and vibration (30g) • Multiple connector and port options • High burst pressures ($\geq 10X$ for full scale pressure ≤ 400 bar)	Measure pump pressure

Application

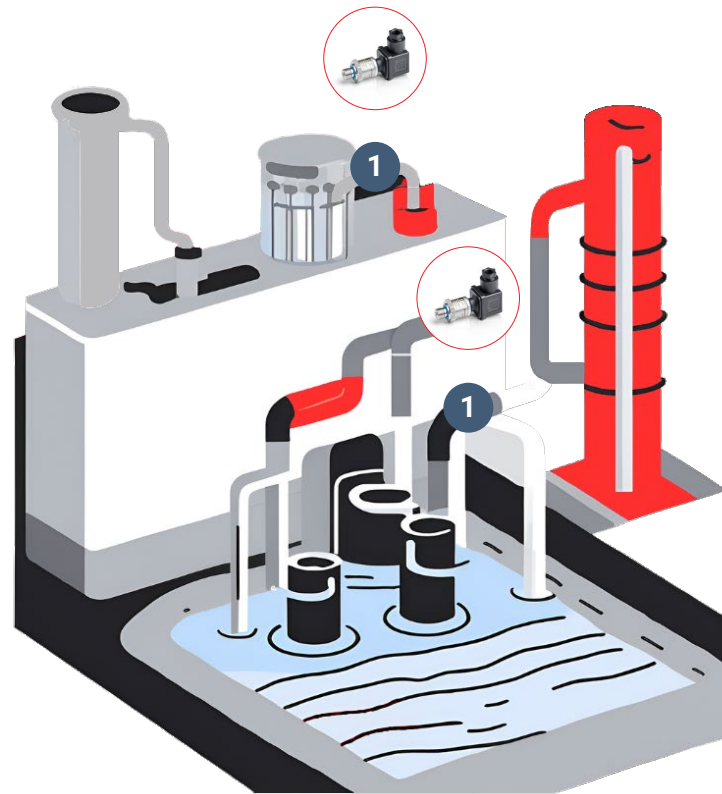
HVAC Systems



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–50 bar to 0–600 bar (0–725 psi to 0–8702 psi) • $\pm 0.25\%$ BFSI accuracy • IP65–IP67 (Depending on connector) • Multiple connector and port options • >10M cycle life	Measure refrigerant pressure

Application

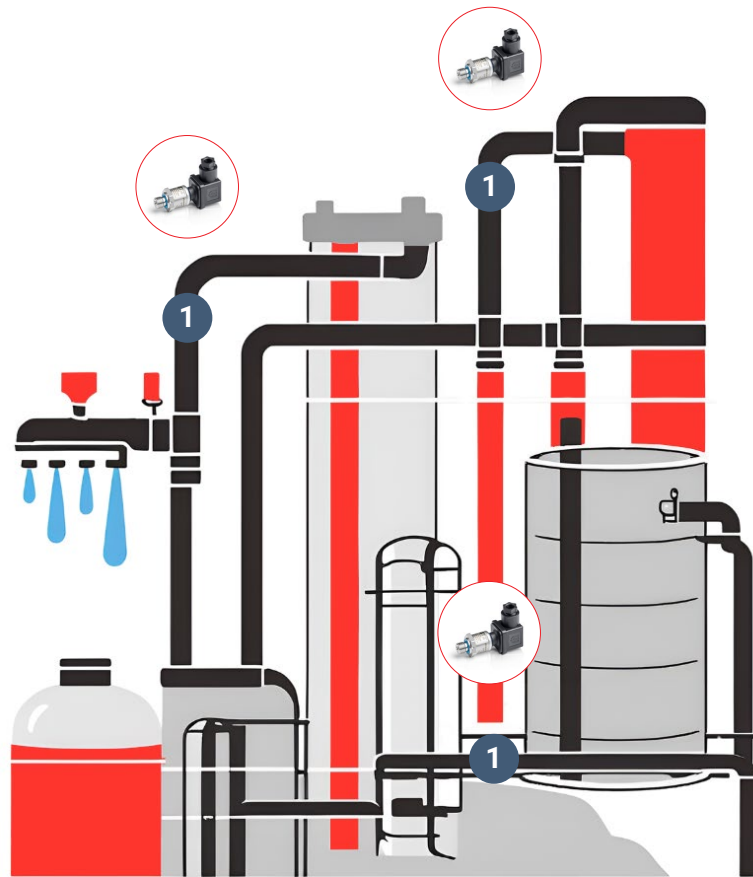
Water Treatment Plants



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–10 bar, 0–16 bar, 0–25 bar (0–145 psi, 0–232 psi, 0–363 psi) • $\pm 0.25\%$ BFSI accuracy • IP65–IP67 (Depending on connector) • Multiple connector and port options • >10M cycle life	Measure pressure in filtration systems, pipelines, and chemical dosing systems to ensure efficient treatment processes

Application

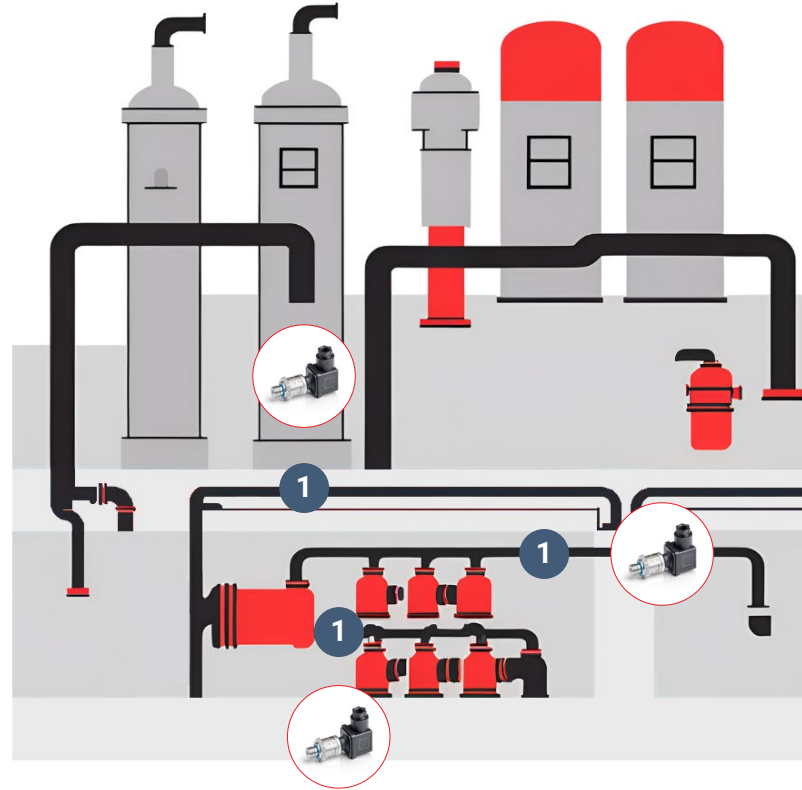
Water Distribution



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–10 bar, 0–16 bar, 0–25 bar (0–145 psi, 0–232 psi, 0–363 psi) • $\pm 0.25\%$ BFSI accuracy • IP65–IP67 (Depending on connector) • Multiple connector and port options • >10M cycle life	Ensures stable pressure in water supply networks, preventing leaks, optimizing pump performance, and maintaining consistent water delivery

Application

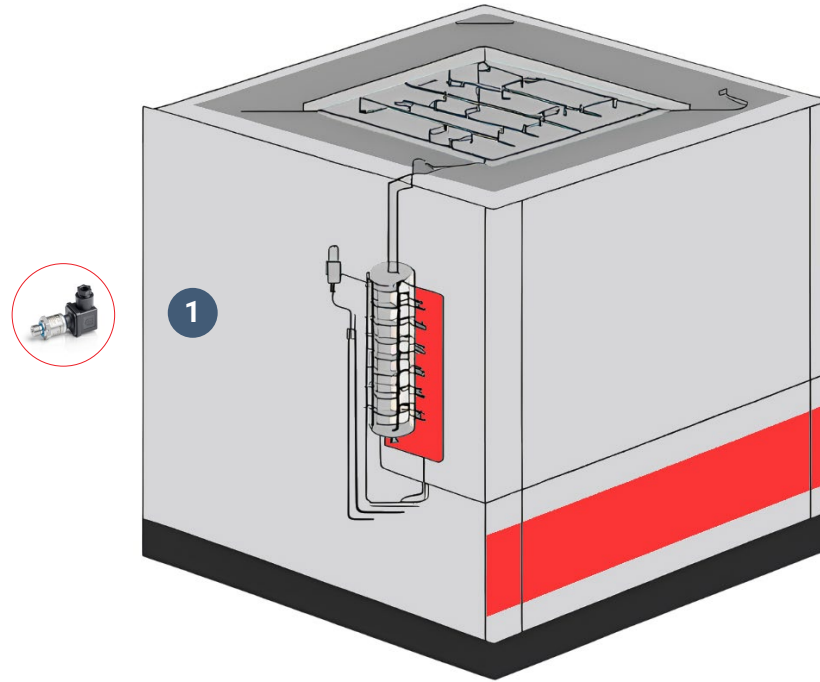
Water Pumping Stations



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–10 bar, 0–16 bar, 0–25 bar (0–145 psi, 0–232 psi, 0–363 psi) • $\pm 0.25\%$ BFSI accuracy • IP65–IP67 (Depending on connector) • Multiple connector and port options • >10M cycle life	Measure inlet and outlet pressure in pumps, helping to regulate flow, prevent cavitation, and optimize energy efficiency

Application

Semiconductor Equipment Chillers



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–6.89 bar to 0–20.7 bar (0–100 psi to 0–300 psi) • $\pm 0.25\%$ BFSI accuracy • IP67 • Multiple connector and port options	Monitor temperature changes of semiconductor equipment chillers.

Application

Data Centers



Reference on Diagram	Features	Function
1	• Operating pressure range: 0–10 bar to 0–30 bar (0–145 psi to 0–435 psi) • Output Signal: 4-20mA • Process Connector: G1/4M • Electric Connector: M12*1 4pin/Packard Metripack	Monitor cooling pressure ranges when pressure is down to an extent where the pipeline may have leakage or blocking risk.

Performance Specifications

Performance Specification (1/2)

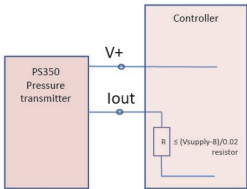
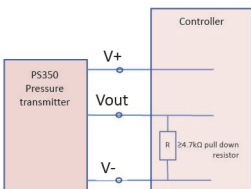
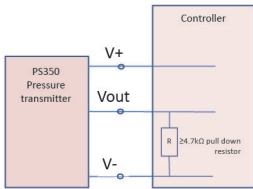
Specification	Measuring Range 1	Measuring Range 2	Measuring Range 3	Measuring Range 4	Measuring Range 5	Measuring Range 6
Measuring Range	0–10 bar (0–145 psi)	0–16 bar (0–232 psi)	0–25 bar (0–362 psi)	0–250 bar (0–3625 psi)	0–400 bar (0–5801 psi)	0–600 bar (0–5702 psi)
Overpressure	60 bar (870 psi)	60 bar (870 psi)	60 bar (870 psi)	500 bar (7251 psi)	800 bar (11603 psi)	1200 bar (17404 psi)
Burst Pressure	200 bar (2900 psi)	200 bar (2900 psi)	200 bar (2900 psi)	2500 bar (36259 psi)	4000 bar (58015 psi)	4000 bar (58015 psi)
Accuracy [$\pm$ %FS] @25°C ⁽¹⁾	$\pm 0.25\%$ FS	$\pm 0.25\%$ FS	$\pm 0.25\%$ FS	$\pm 0.25\%$ FS	$\pm 0.25\%$ FS	$\pm 0.25\%$ FS
Response Time	< 2 ms	< 2 ms	< 2 ms	< 2 ms	< 2 ms	< 2 ms
Long-term Stability	$\leq 0.1\%$ FSR/a	$\leq 0.1\%$ FSR/a	$\leq 0.1\%$ FSR/a	$\leq 0.1\%$ FSR/a	$\leq 0.1\%$ FSR/a	$\leq 0.1\%$ FSR/a

(1) Best fit straight line accuracy includes errors from non-linearity, non-repeatability, and hysteresis

Performance Specification (2/2)

Environmental Specifications	
Media Temperature	-40°–125°C \ -40°–257°F
Ambient Temperature Range Temperature	-40°–100°C \ -40°–212°F
Storage Temperature	-40°–100°C \ -40°–212°F
Protection Class	IP65–IP69
Notes	See connector options
Vibration Resistance	IBC 60068-2-6, 30g (10–2000 Hz)
Shock Resistance	BN 60068-2-27, 500g
Load Change	> 10 Mio Cycles

Material Specifications	
Transducer	Stainless Steel (AISI 630/1.4542)
Housing	Stainless Steel (AISI 630/1.4542)
Seals	FKM (Viton)
Weight ⁽¹⁾	70g

Electrical Specifications			
Output Signal	4–20 mA	0–10 VDC	0.5–4.5 VDC
Operating Supply Voltage	8–32 VDC	12–32 VDC	8–32 VDC
Overvoltage Protection	MIN 36 VDC	MIN 36 VDC	MIN 36 VDC
Load Resistance	≤ (Vs-8 VDC)/(20 mA)	≥ 4.7 kΩ (Pull Down)	≥ 4.7 kΩ (Pull Down)
Circuit Diagram			

Ordering Options

Ordering Options

Example: PS350-31AA-1A250BA

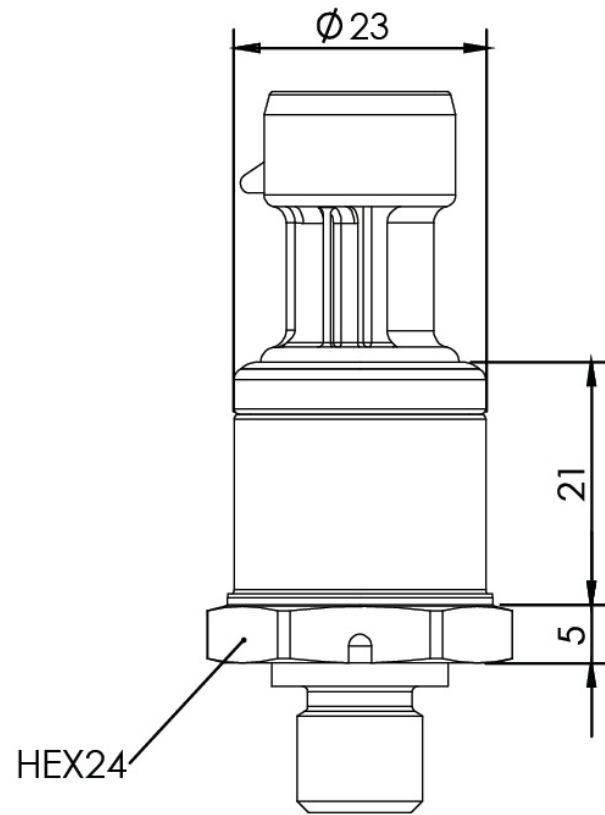
This example comes with a G1/4A thread with an external FKM O-ring seal, DIN A connector, 4-20 mA output, and 0–250 bar pressure range (gauge).

*Further pressure ranges, connectors, and pressure ports on requests

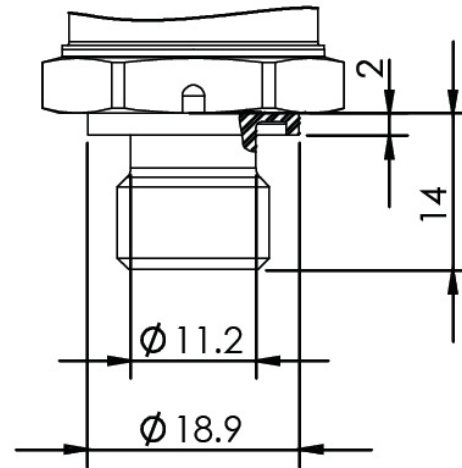
PS350		3	1	A	A	-	1	A	250	B	A
Family	PS350										
SEA Type	0–29 bar	1									
	101–250 bar	3									
	251–400 bar	4									
	401–600 bar	5									
EMA Type	Current output		1								
	Vreg output		3								
Pressure Port	G1/4A DIN 3852-E			A							
	1/4-18NPT			D							
Electrical Connector	DIN 175301-803 Form A (18mm)				A						
	GTMS M12x1 4-Pole				H						
External Sealing	FKM (Viton) O-ring (only for G1/4 pressure port)						1				
Electrical Output/Input	4-20 mA / 8–32Vdc							A			
	0-10Vdc / 12-32Vdc							D			
	0.5-4.5Vdc / 8–32VDC							F			
Pressure Range	0–10 bar								10		
	0–16 bar								16		
	0–25 bar								25		
	0–250 bar								250		
	0–400 bar								400		
	0–600 bar								600		
Pressure Type	Non seal gauge									B	
	Seal gauge (when GTMS connector (H) is selected)									S	
Mating Connector & Snubber	Mating connector and snubber with 0.5 damping hole										A
	None										N

Pressure Ports

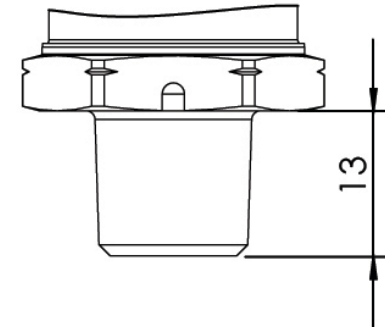
OVERALL DIMENSIONS



G1/4A DIN 3852-E

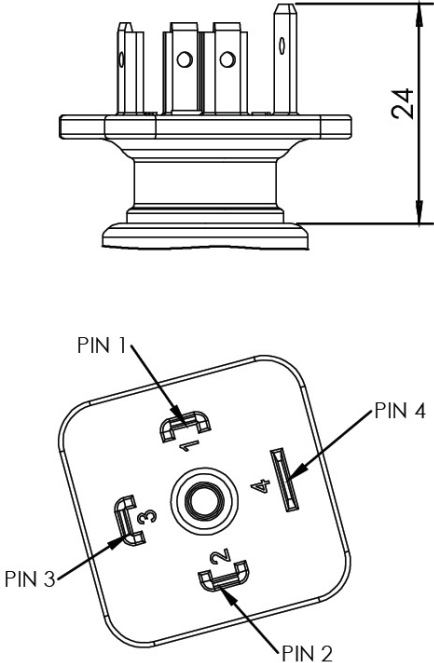


1/4-18 NPTF



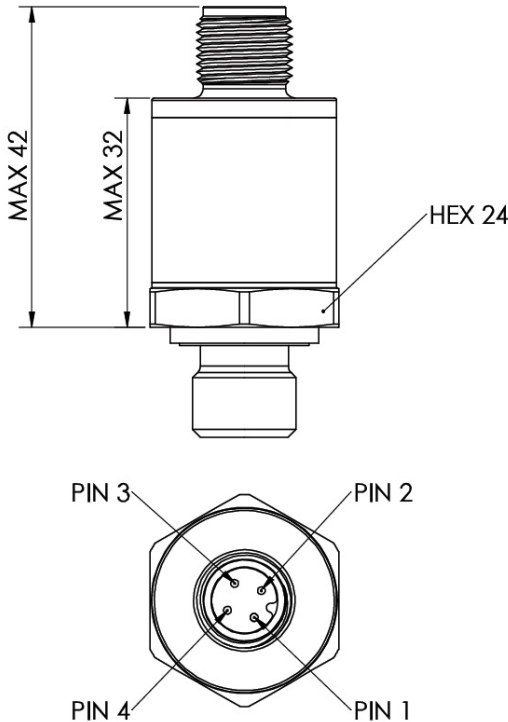
Electrical Connectors

A: DIN 175301-803 FORM A(18mm)
IP65



Output Type	Pin 1	Pin 2	Pin 3	Pin 4
Voltage	V+	V-	Vout	...
Current	V+	lout	...	...

GTMS-4POLE M12x1 CONNECTOR
IP69



Output Type	Pin 1	Pin 2	Pin 3	Pin 4
Voltage	V+	...	V-	Vout
Current	V+	...	lout	...



Let's Connect

Connect with our sensor experts today to see how we can accelerate your application needs.

Learn more about STS Sensors at www.stssensors.com.
Contact us at sales@stssensors.com.

