

# SGPS Series: Servo-Grade Pressure Sensors

When a direct force measurement is either impossible or unnecessary, a pair of pressure transducers can be mounted on the opposing sides of the piston to develop a differential pressure measurement used to estimate the force generated.

## The SGPS Series Offer:

- Quick dynamic response required for servo control applications
- Integrated signal conditioning
- Reliable over a wide temperature range
- Robust stainless steel design
- Thrive in harsh / high-shock / high-vibration environments



### Force Estimation Uncertainty

	Temperature Range		
	70° to 74°F	-4° to 185°F	-40° to 221°F
Calibrated Accuracy of Pressure Sensor ( $\pm\%$ FS)	0.25	1.50	2.00
Combined Uncertainty of Force Estimate* ( $\pm\%$ FS)	0.59	3.50	4.75

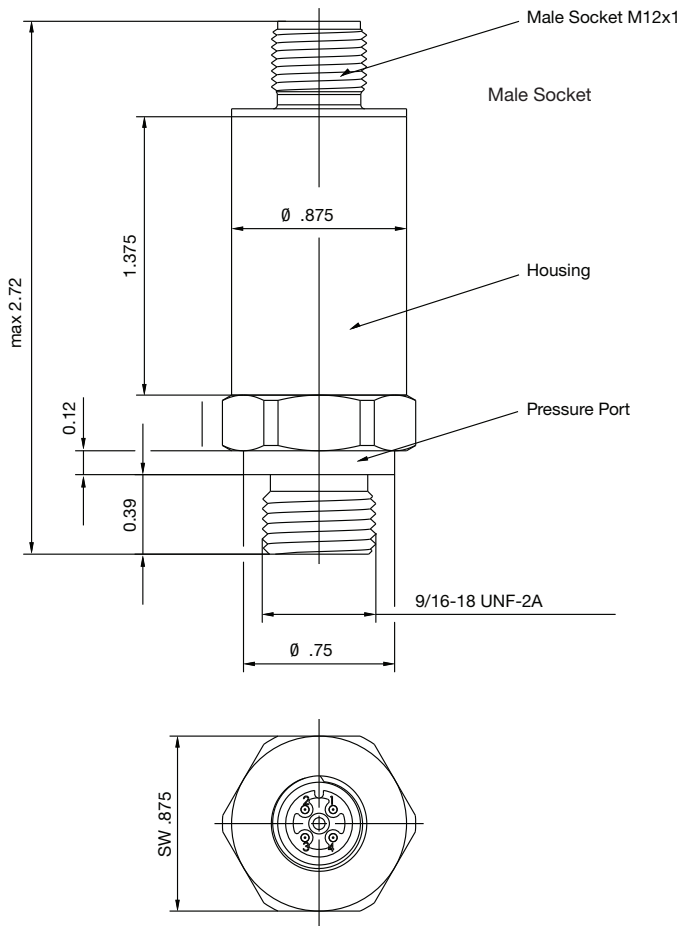
\*Uncertainty Estimate assumes: two SGPS transducers used to develop differential pressure measurement; maximum force (FS) at 3000PSI cylinder input pressure; no internal cylinder friction; diameter of steel piston measured to  $\leq \pm 0.02\%$  at 72°F; insignificant error contribution from ADC electronics.

### SPECIFICATIONS

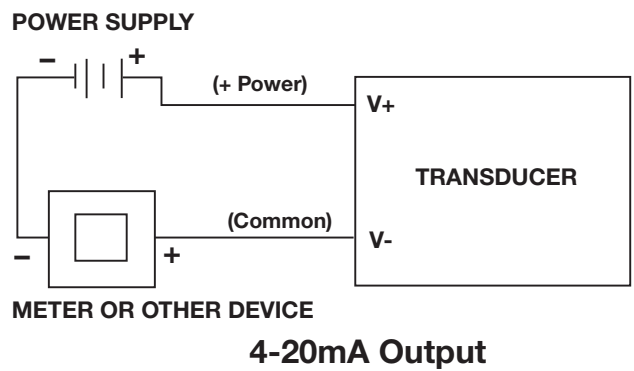
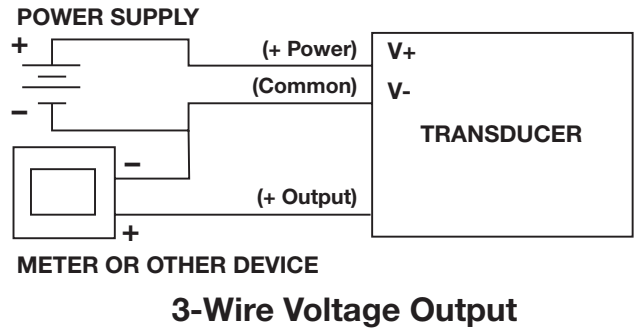
MATERIALS	
Housing	Stainless Steel
Pressure Connection	304 SS
Sensor Diaphragm	17-4PH SS
PROTECTIONS	
IP Ingress Rating	67
Reverse Polarity Protect	Yes
Miswired Protect	Yes
DURABILITY	
Overpressure (psi)	10,000
Burst Pressure (psi)	25,000
Vibration	IEC 68-2-6 / IEC 68-2-36
Shock	IEC 68-2-32
Drop Height (ft)	3.3
Duty Life (cycles)	10,000,000
IMPLEMENTATION	
Pressure Connection	9/16-18 UNF-2A Male
Electrical Connection	4-Pin with M12 Male
Power Supply (VDC)	12 to 32
Power Supply (max mADC)	24
SENSOR RESPONSE	
Dynamic Response (Hz)	> 1000
Bandwidth (ms)	< 1

Product Series	Output Suffix	Output At		Number of Wires
		0 psi	5000 psi	
SGPS	-V	0 V	10 V	3
	-A	4 mA	20 mA	2

SGPS Series are sold in pairs; quantity 1 is an order for 2 transducers.



**Wiring Diagrams:**



Connections* Plug M12x1
<b>0-10 Voltage</b>
1: V in 2: none 3: GND 4: V out
<b>4-20mA Current</b>
1: V in 2: none 3: GND/Signal 4: none

nc = not connected \*

The electrical connection must be made in accordance with the respective connection diagram unless otherwise agreed upon.

\* Custom-made adjustments are possible.

**Power Supply Requirements:**

Output Signal	Min Supply	Max Supply
0-10V	12Vdc	32Vdc
4-20mA**	12Vdc	32Vdc