

## LW5A 模拟放大输出液用低压传感器



### 特点

- ☐ 温度和压力模拟放大输出
- ☐ 集成电路 (ASIC) 补偿
- ☐ 宽温区应用
- ☐ 可测量恶劣介质

### 应用领域

- ☐ 能源和水处理
- ☐ HVAC
- ☐ 泵和压缩机
- ☐ 制冷系统

### 产品概述

LW5A 系列充油传感器是一种具有精巧外形、测量介质兼容性好的基于硅压阻原理采用不锈钢本体封装的传感器。该系列传感器通过使用板载专用集成电路 (ASIC) 针对传感器偏移、灵敏度、温度效应和非线性进行了充分校准和温度补偿, 可以提供 14 位数字输出 (LW5D) 或模拟放大输出 (LW5A) 选项。

LW5A 系列传感器兼容恶劣介质比如压缩空气、液压流体等。

LW5A 系列传感器有绝压或表压产品供选择, 根据客户的应用可以提供对测量介质的各种选项螺纹连接。

### 标准压力范围

5 PSI	表压	模拟放大输出
15 PSI	表压、绝压	模拟放大输出
30 PSI	表压、绝压	模拟放大输出
50 PSI	表压、绝压	模拟放大输出
100 PSI	表压、绝压	模拟放大输出
300 PSI	表压、绝压	模拟放大输出

## 环境规格

参数	特性
ESD 敏感度 (人体模式)	4 KV
振动	MIL-STD-202F, 方法 214, 条件 F (20.7g 随机)
冲动	MIL-STD-202F, 方法 213B, 条件 F
寿命 <sup>1</sup>	100 万次循环

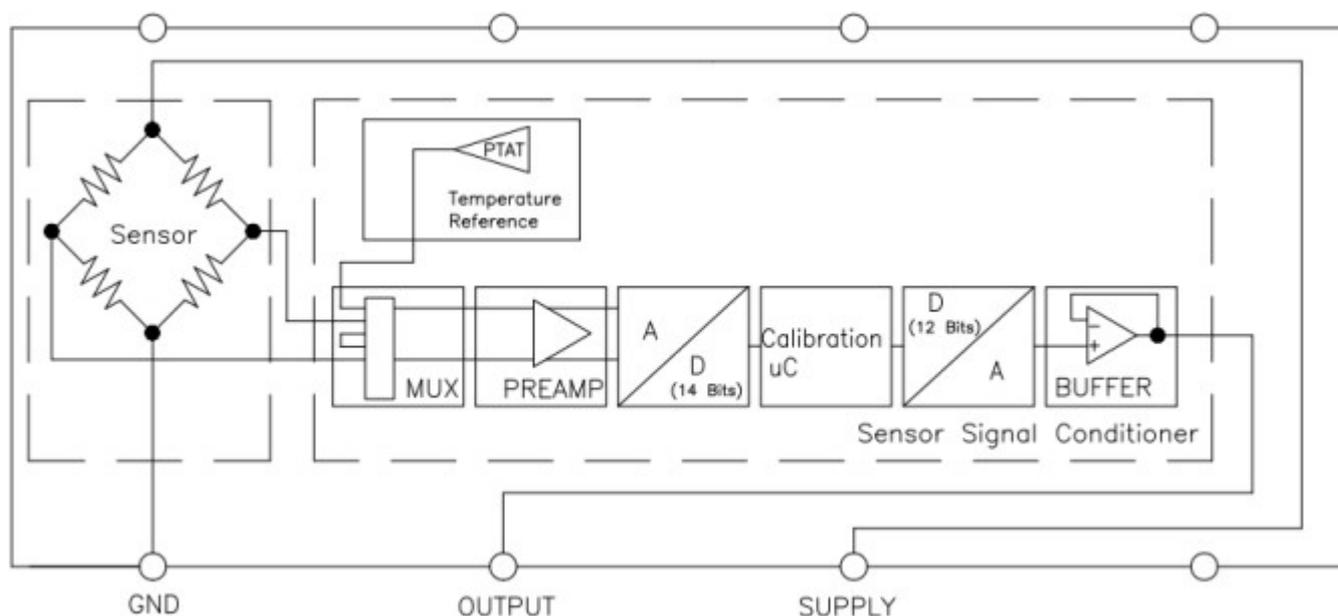
## 产品参数性能

参数	最小值	典型值	最大值	单位
电源电压 (Vsupply) (取决于所选型号)				
3.3	3.0	3.3 <sup>2</sup>	3.6	Vdc
5.0	4.75	5.0 <sup>2</sup>	5.25	
电源电压				
3.3 Vdc 电源		2.1		mA
5.0 Vdc 电源		3		
补偿温度范围 <sup>3</sup>	-20	-	85	°C
工作温度范围 <sup>4</sup>	-40	-	125	°C
启动时间 (从加电到数据准备就绪)	-	2.8	7.3	ms
响应时间	-	0.46	-	ms
精度 <sup>5</sup>	-	-	±0.25%	FSS <sup>7</sup>
综合偏差 <sup>6</sup>	-1%	-	1%	FSS
线性			±0.20%	FSS
过载压力		>3		倍
爆破压力		>5		倍

### 注释:

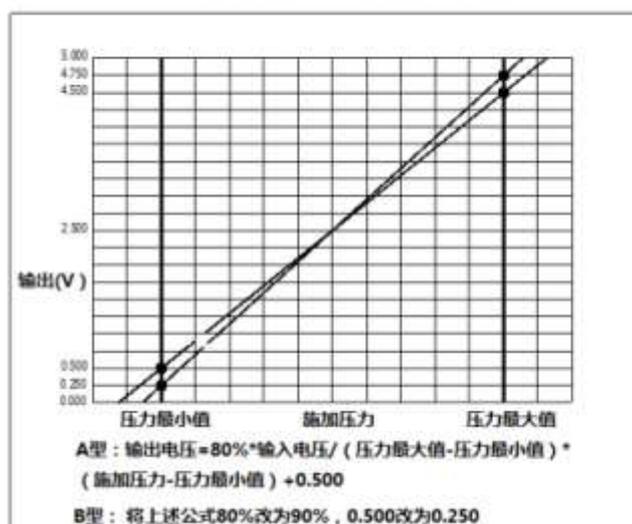
1. 寿命可能因传感器使用的特定应用而有所变化。
2. 该传感器不受反向极性保护。将错误的引脚与电源连接或者接地可能会导致电气故障。
3. 补偿温度范围: 传感器可以在特定的性能限制下产生与压力成比例的输出的温度范围。
4. 工作温度补偿: 传感器可以产生与压力成比例的输出的温度范围, 但不一定在特定性能限制范围之内。
5. 精度: 相对是用于在 25°C 时的压力范围内所测输出的最佳直线 (BFSL) 的最大输出偏差。包括因压力非线性、压力滞后和不重复性造成的误差。
6. 综合偏差: 相对整个补偿温度和压力范围内理想传递函数的最大偏差。包括所有因偏置、满刻度量程、压力非线性、压力滞后、可重复性、偏置热效应、量程热效应和热滞后造成的误差。  
差压 500 Pa, 表压 1 KPa 以下量程产品综合偏差规格为 3% FSS。
7. 满刻度量程 (FSS): 在压力范围最大限制值 (Pmax.) 和最小限制值 (Pmin.) 处测得的输出信号之间的代数差。
8. 有关详细的材料信息请联系我们。

## 等效电路

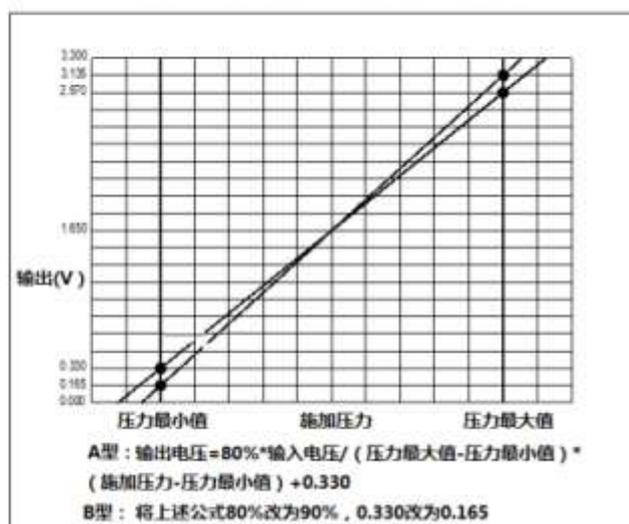


## 压力和温度输出对应公式

压力转换方程，电压输入5V



压力转换方程，电压输入3.3V



## 尺寸 [ inch ( mm ) ]

### M12x1 IEC 61076-2-101, Binder 09 0439 387 04 Protection Class (IEC 60529): IP67

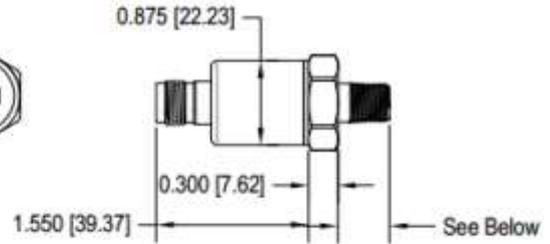
#### Mating M12x1 Connector 4 Position Female Type D

Voltage  
Regulated, Ratiometric

Pin 1: Supply +  
Pin 4: Output  
Pin 3: Common

4-20mA  
Transmitter

Pin 1: Supply+  
Pin 4: Not Connected  
Pin 3: Supply-

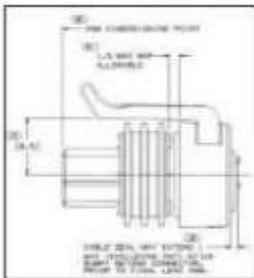


### PACKARD CONNECTOR Type A

Protection Class (IEC 60529): IP66

#### Mating Packard Connector

Housing Part Number: 12078090  
Socket Part Number: 12103881

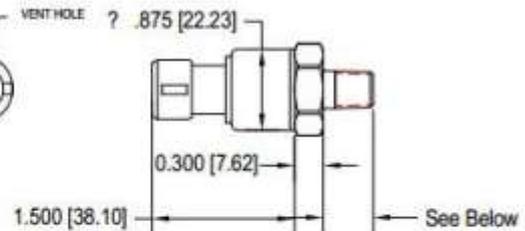


Voltage  
Regulated, Ratiometric

Pin A: Supply +  
Pin B: Common  
Pin C: Output +

4-20mA  
Transmitter

Pin A: Supply-  
Pin B: Supply+  
Pin C: Not Connected

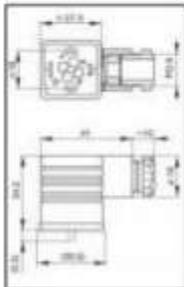


### HIRSCHMANN CONNECTOR

DIN 43650 FORM A, Part Number 933 376-100  
Protection Class (IEC 60529): IP65

#### Mating Hirschmann Connector

Part Number: 501 969-100  
Gasket (NBR) Part Number: 730 801-002  
Knurled Screw Part Number: 732 574-001

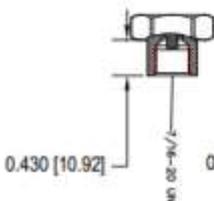
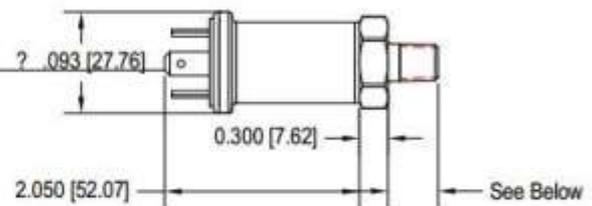
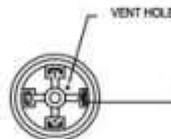


Voltage  
Regulated, Ratiometric

Pin 1: Supply+  
Pin 2: Common  
Pin 3: Output+  
Pin 4: Case

4-20mA  
Transmitter

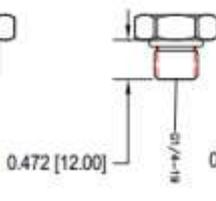
Pin 1: +Supply  
Pin 2: -Supply  
Pin 3: Not Connected  
Pin 4: Case



7/16-20 UNF SAE J1926-3

Female

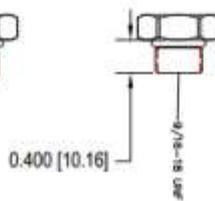
Seal: Conical  
Mating Standard: SAE J254  
Installation: 18 N m [12.3 lbf ft]



G1/4-19 ISO 1179-3

Seal: O-Ring

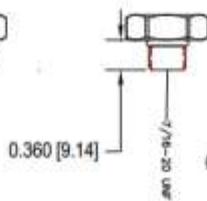
Mating Standard: ISO 1179-1  
Installation: 50 N m [36.3 lbf ft]



9/16-18 UNF SAE J1926-3

Seal: O-Ring

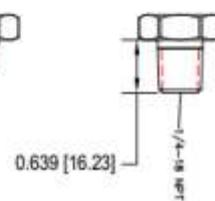
Mating Standard: SAE J1926-1  
Installation: 33 N m [24.1 lbf ft]



7/16-20 UNF SAE J1926-3

Seal: O-Ring

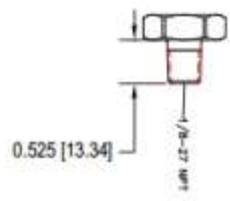
Mating Standard: SAE J1926-1  
Installation: 18 N m [12.3 lbf ft]



1/4-18 NPT ANSI B1.20.1

Seal: Pipe Threads

Mating Standard: ANSI B1.20.1  
Installation: 2-3 Turns Past Finger Tight



1/8-27 NPT ANSI B1.20.1

Seal: Pipe Threads

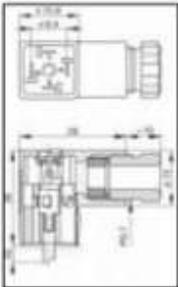
Mating Standard: ANSI B1.20.1  
Installation: 2-3 Turns Past Finger Tight

## HIRSCHMANN CONNECTOR

DIN 43650 FORM C, Part Number 933 114-100  
Protection Class (IEC 60529): IP65

### Mating Hirschmann Connector

Part Number: 933 034-100  
Gasket (NBR) Part Number: Supplied

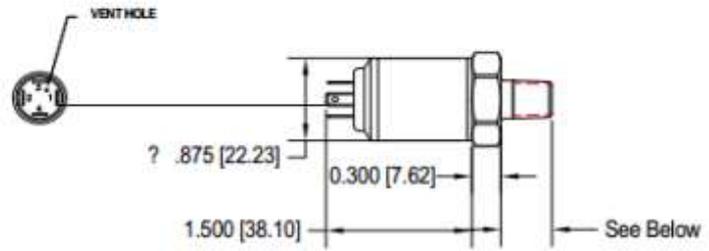


### Voltage Regulated, Ratiometric

Pin 1: Supply+  
Pin 2: Common  
Pin 3: Output+  
Pin 4: Case

### 4-20mA Transmitter

Pin 1: +Supply  
Pin 2: -Supply  
Pin 3: Not Connected  
Pin 4: Case

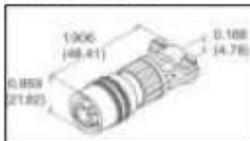


## BENDIX CONNECTOR

MIL-C-26482, Part Number PT02A-10  
Protection Class (IEC 60529): IP65

### Mating Bendix Connector

Part Number: PT06A-10465



### Digital I2C / SPI

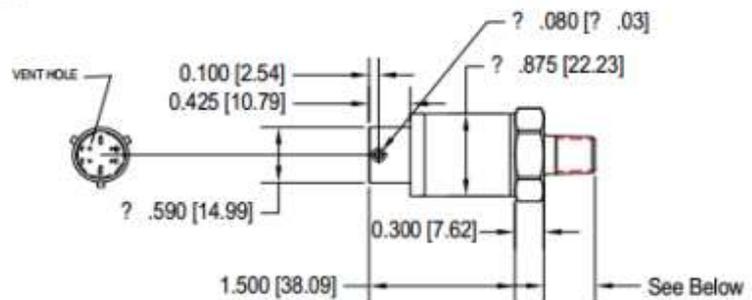
Pin A: Supply+  
Pin B: SDAMSO  
Pin C: Common  
Pin D: SCK/SCLK  
Pin E: SS/NT  
Pin F: Vent

### Voltage Regulated, Ratiometric

Pin A: Supply+  
Pin B: Output+  
Pin C: Common  
Pin D: Common  
Pin E: Not Connected  
Pin F: Vent

### 4-20mA Transmitter

Pin A, B: Supply+  
Pin C, D: Supply-  
Pin E: Not Connected  
Pin F: Vent



## FLYING LEADS

300 V Overall Foil Shield  
Multiconductor, PVC, PVC

Protection Class (IEC 60529): IP65

### Voltage Regulated, Ratiometric

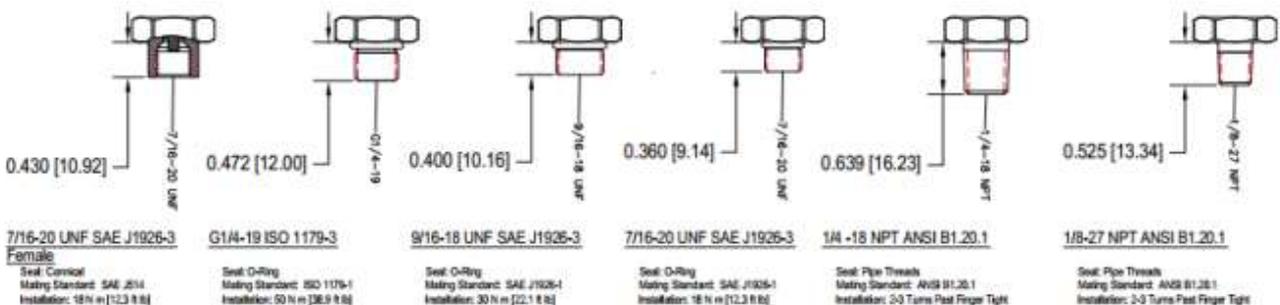
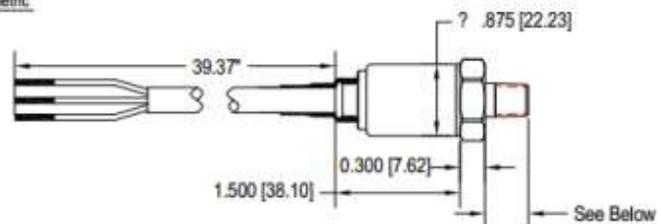
RED: Supply+  
GRN: Output+  
WHT: No Connection  
BLK: Common

### Digital I2C / SPI

Pin A: Supply+  
Pin B: SDAMSO  
Pin C: Common  
Pin D: SCK/SCLK  
Pin E: SS/NT  
Pin F: Vent

### 4-20mA Transmitter

RED: Supply+  
BLK: Supply-



## 选型表

型号	说明	
LW5A	LW5A 模拟放大输出液用低压传感器 (A=模拟放大输出)	
	<b>代码</b>	<b>接口类型</b>
	N1	1/8-27 NPT
	N2	1/4-18 NPT
	S1	7/16-20 NUF
	S2	9/16-18 UNF
	G1	G1/8
	F1	Female, 7/16-20 UNF
	<b>代码</b>	<b>压力范围</b>
	050L	50 mbar
	100L	100mbar
	...	...
	005P	5 PSI
	015P	15 PSI
	...	...
	300P	300 PSI
	005B	5 Bar
	005M	5 MPa
	<b>代码</b>	<b>输出范围</b>
	A	10-90%
	B	5-95%
	<b>代码</b>	<b>供电电压</b>
	3	3.3 VDC
	5	5.0 VDC
	<b>代码</b>	<b>压力类型</b>
	G	表压
	A	绝压
	<b>代码</b>	<b>电连接</b>
	M1	Micro M12
	P2	Packard, Power B
	HA	Hirschmann Form A
	HC	Hirschmann Form C
	B1	Bendix
	F1	Flying leads, 1 Meter
	Fx	Flying leads, x=#of Meter



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