Rodee Sensors Today, Sensing Tomorrow
专注传感，感知未来

技术规格书 Datasheet

RS PM400 系列 采用 MEMS 技术
带诊断功能高精度智能压力变送器
RS PM400 Pressure Transmitter
High Performance with Diagnostics





RS PM400 系列是一款高压款，带智能诊断的高精度、高性能传感器，产品采用模块化、小型化设计，精选进口 MEMS 压力芯片，利用自主研发具有国际领先水平的封装工艺和专利结构设计制造。

测量压力范围 0-100bar…400bar，有、密封表压和绝压可选。

RS PM400
Is a compact designed Pressure transmitter with diagnostics for high pressure ranges, use silicon piezoresistive technology, products exhibit very high TEB accuracy and long-term stability.

Pressure Range, 0-100bar … 400 bar, Gauge (sealed) and Absolute available.

功能和应用
Features & Applications

PM400 系列产品采用数字运算补偿标定，利用自主研发的算法和软件达到：

TEB*总精度：在-30°C~100°C 温度区间内 TEB≤±0.30%。

输出模式：0.5-4.5V 比例电压,1-5V, 0-10V, 1-10V 绝对电压,4-20mA 电流等；

产品具有故障诊断和现场零点调节功能[1)]，经过严苛测试反复验证，满足大多数的行业标准要求，产品具有长期可靠的稳定性。

产品压力介质接触部分采用 SUS316L 不锈钢焊接密封设计,内置脉冲压力缓冲器，保证压力传感器的可靠性和耐用性，该系列产品具有 IP67 或 IP68 等级防护，以及极强的 EMI 防护能力，能满足大多数应用环境。

PM400 pressure transmitter are digital compensated with patented algorithm, exhibit a very high accuracy:

TEB* ≤±0.30% between -30 °C ~100 °C

Output: 0.5-4.5V Ratio Voltage; 1-5V, 0-10V, 1-10V Abs. voltage, 4-20mA current, etc.

Products are with diagnostics and Zero Offset Programable[1)], also with the long-term stabilities.

Material contacts with Media are SUS316L S. steel, and welded together. Pressure buffer are available for enhancing the product reliability and durability; IP67 or IP68 and high degree of EMI protection, products can be used in most applications.

1). 应用零点调节功能需选购罗迪专用零点调节工具套装。
1). To remove the zero offset, need to order the Zero Programing Tool from Rodee Sensors separately.

产品特点：
Product Highlights:

- ✓ 采用数字补偿校准技术，-30°C~100°C 温区内 TEB 达到≤±0.2%FS（典型值）；
- ✓ IP68 防护等级 [1)]；
- ✓ 产品小型化设计，小至 22A/F,
- ✓ 标配一体式压力缓冲器
- ✓ 具有故障诊断功能；
- ✓ 产品通过 CE 认证。

1). 绝压和密封表压输出型，防护等级可达 IP68；其他型号防护等级为 IP67;

- ✓ Digital compensated, typical TEB≤±0.2%FS within temperature range -30°C~100°C
- ✓ IP68 Enclosure[1)];
- ✓ Compact designed, down to 22A/F;
- ✓ Integrated Pressure Buffer
- ✓ Diagnostics Functions;
- ✓ CE certified.

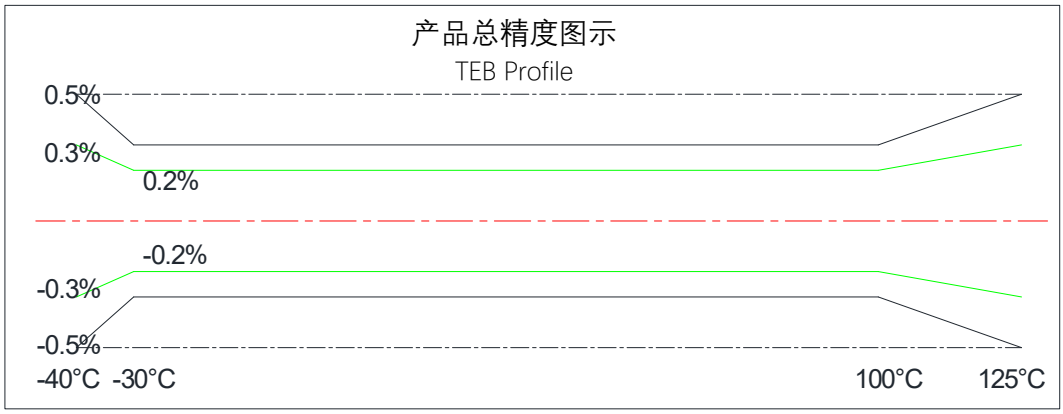
1). IP68 enclosure for Absolute and Gauge(sealed) mode, IP67 enclosure for Gauge(relative)

技术参数
Technical Data

性能指标 Performance

产品总精度，TEB (Total Error Band) [1)]	
TEB, Typical 典型值，-30°C-100°C	≤±0.20% FS
TEB, Max. 最大值，-30°C-100°C	≤±0.30% FS
TEB, Typical 典型值，-40°C-125°C	≤±0.30% FS
TEB, Max. 最大值，-40°C-125°C	≤±0.50% FS
响应时间 Response Time	1.5 ms
耐用性 Durability，压力 P：10-90% FS	>10 x 10^6 次循环 cycles
长期稳定性 Long term stability	≤0.10% FS/年 year
MTTF(平均故障时间)	>100 年 year

[1)] TEB (Total Error Band)，包括准确性、线性度、迟滞性、重复性和热影响误差。
TEB includes accuracy, Linearity, Hysteresis. Repeat and Thermal affects;



过载与爆裂压力(静态) Overload and Burst Pressure (Static)

标定压力 (bar) Pressure Range	100	160	250	400
过载压力 (bar) Overload Pressure	500	500	750	800
过载倍数 (times) Overload (x)	5x	3x	3x	2x
爆裂压力 (bar) Burst Pressure	600	800	800	1200

*其他压力类型或更大过载需求，请联系罗迪传感销售。
Other pressure range or more pressure overload requirement, please contact Rodee Sensors.

环境条件 Environment

测量介质温度范围 Temperature range (Media)	-40 – 125 °C
工作环境温度范围 Temperature range (ambient)	-40 – 125 °C
补偿温度范围 Compensated temperature range	-40 – 125 °C
运输储存温度范围 Storage temperature range	-40 – 125 °C
EMC – 发射 Emission	EN55032 Class A & B
EMC – 静电防护 ESD	Contact Discharge: 8KV, Air Discharge 15KV
EMC- 射频干扰度 EM Filed	IEC 61000-4-3, 80-100MHz – 30V/m 110-2000MHz – 100V/m
EMC- 快速脉冲群抗扰度 Electrical Fast Transient	IEC 61000-4-4, 4KV, Class B
EMC – 脉冲磁场抗干扰 Pulse Magnetic Field	IEC 61000-4-9, 300A/m
错接线保护 Miswiring	有保护 Protected
输入过电压保护 Over and reverse voltage	有保护 Protected
机械震动 Vibration IEC 60068-2-6 (正弦, Sinus) IEC 60068-2-64 (随机,Random)	正弦 Sinus: 20G, 10-2000Hz 随机 Random: 7.5G rms, 5-1000Hz
机械冲击 Shock IEC 60068-2-27	峰值 Peak: 100G

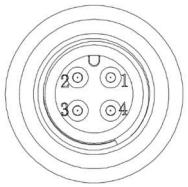
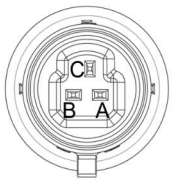
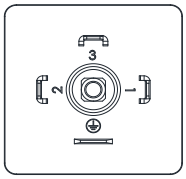
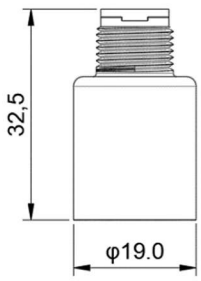
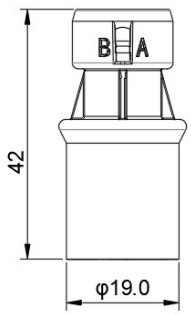
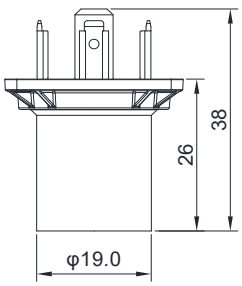
电气规格 Electrical Specification

标定输出信号 Output Signal	0.5-4.5V 比例电压, Ratio Voltage	0.5-2.5V 绝对电压, Voltage	0-5, 1-5 V 绝对电压, Abs. Voltage	0-10V, 1-10 V 绝对电压, Abs. Voltage	4-20 mA 电流输出, Current Output
供电电压 Supply Voltage(SV)	5.0±5% VDC	5.0±5% VDC	10-32VDC	10-32VDC	10-32VDC 推荐 24V
供电 -电流 Supply- current consumption	2.9 mA	2.9 mA	≤5 mA	≤8 mA	-
电源依赖度 Supply Voltage Dependency	-	-	< 0.1% FS / 10 V		< 0.1% FS / 10 V
输出限制 Output Limitation	≈输入电压 ≈Supply Volt.	2.7V	5.4V	10.8V	21.4mA
负载(连接至 0V) Max. Load Resistor(RL)	≥ 2 KΩ	≥ 5 KΩ	≥ 10 KΩ	≥ 10 KΩ	RL≤(SV-10V)/0.022A

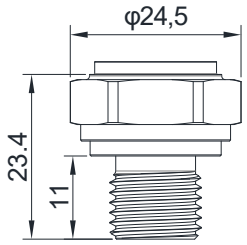
机械条件 Mechanical Data

材料 Material	接触测量液体部件 Media Contact	SUS 316L 不锈钢 SUS 316L S. Steel
	外壳防护 Enclosure Material	SUS 304L 不锈钢，PBT+30%玻纤 SUS 304L S. Steel, PBT+30% GR

电气连接 Electrical Connection

型号 Connector Type	M12x1, EN60947-5-2	Ronde Metri-Pack Packard	赫斯曼 A 型 EN175301-803-A
接线图示 Connection Figure			
比例电压/绝对电压输出 Ratio/Abs. Voltage	针脚/Pin 1：电源+/V+ 针脚/Pin 2：输出+/Vout 针脚/Pin 3：电源-/V- 针脚/Pin 4：不接/NC	针脚/Pin A：电源-/V- 针脚/Pin B：电源+/V+ 针脚/Pin C：输出+/Vout	针脚/Pin 1：电源+/V+ 针脚/Pin 2：电源-/V- 针脚/Pin 3：输出+/Vout 针脚/Pin 4：不接/NC
电流输出 Current Output	针脚/Pin 1：电源+/V+ 针脚/Pin 2：不接/NC 针脚/Pin 3：电源-/V- 针脚/Pin 4：不接/NC	针脚/Pin A：电源-/V- 针脚/Pin B：电源+/V+ 针脚/Pin C：不接/NC	针脚/Pin 1：电源+/V+ 针脚/Pin 2：电源-/V- 针脚/Pin 3：不接/NC 针脚/Pin 4：不接/NC
材料 Material	304L 不锈钢 SUS304 S. Steel PBT+30%玻纤 PBT+30%GR 针镀金 Gold Plated Pins	304L 不锈钢 SUS304 S. Steel PBT+30%玻纤 PBT+30%GR 针镀锡 Tin Plated Pins	304L 不锈钢 SUS304 S. Steel PBT+30%玻纤 PBT+30%GR 针镀锡 Tin Plated Pins
防护等级 Enclosure	IP67(表压), IP67 for Gauge IP68(绝压和密封表压) IP68 for Abs. and Sealed Gauge	IP67(表压), IP67 for Gauge IP68(绝压和密封表压) IP68 for Abs. and Sealed Gauge	IP67(表压), IP67 for Gauge IP68(绝压和密封表压) IP68 for Abs. and Sealed Gauge
外形尺寸 Dimensions			

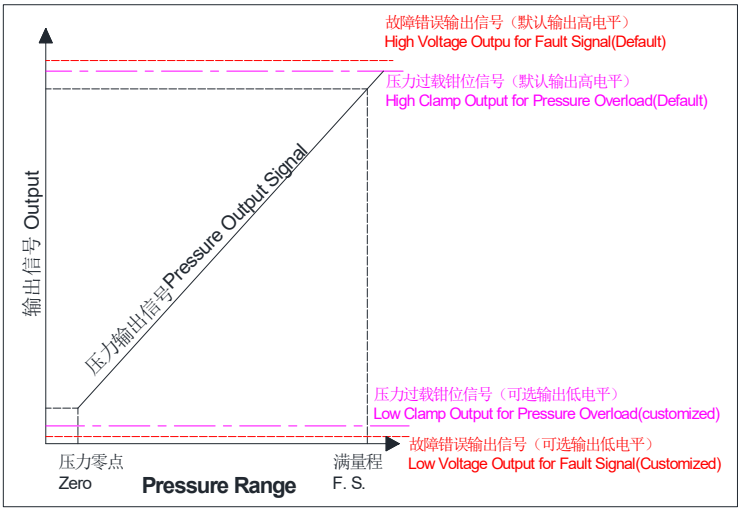
压力连接 外形尺寸 Pressure Connection

型号 Mode	G1/4 A ED 圈密封 ED Seal Ring
22A/F	

*其他螺纹规格压力连接头，请联系罗迪传感销售。
Other pressure connectors, please contact **Rodee Sensors.**

输出与故障诊断 Output Singal & Fault Diagnostics

（以电压输出为例）
Take 0.5-4.5VDC output as a sample for Explanation



零点调节
-压力零点归零调节 [1)]
过载信号输出钳位
-压力超出传感器量程时，钳制输出信号到一个固定值；

Zero Offset
Zero offset can be adjustable[1)].
Output Clamp Levels
If pressure overloaded, limits output signal to a setting value;

故障信号输出
-当压力传感器故障时，输出一个故障信号，压力恢复正常时，故障信号不会消失；

-压力超出传感器 3xFS 量程时，输出故障信号，（注意：过载超过 3x 时有可能会永久损坏压力传感器）。

故障信号输出可设为高电平或低电平，产品默认输出高电平，具体细节请联系罗迪传感获取更多信息。

Fault Singal Output
Once Pressure Sensor is broken, output a fault signal;

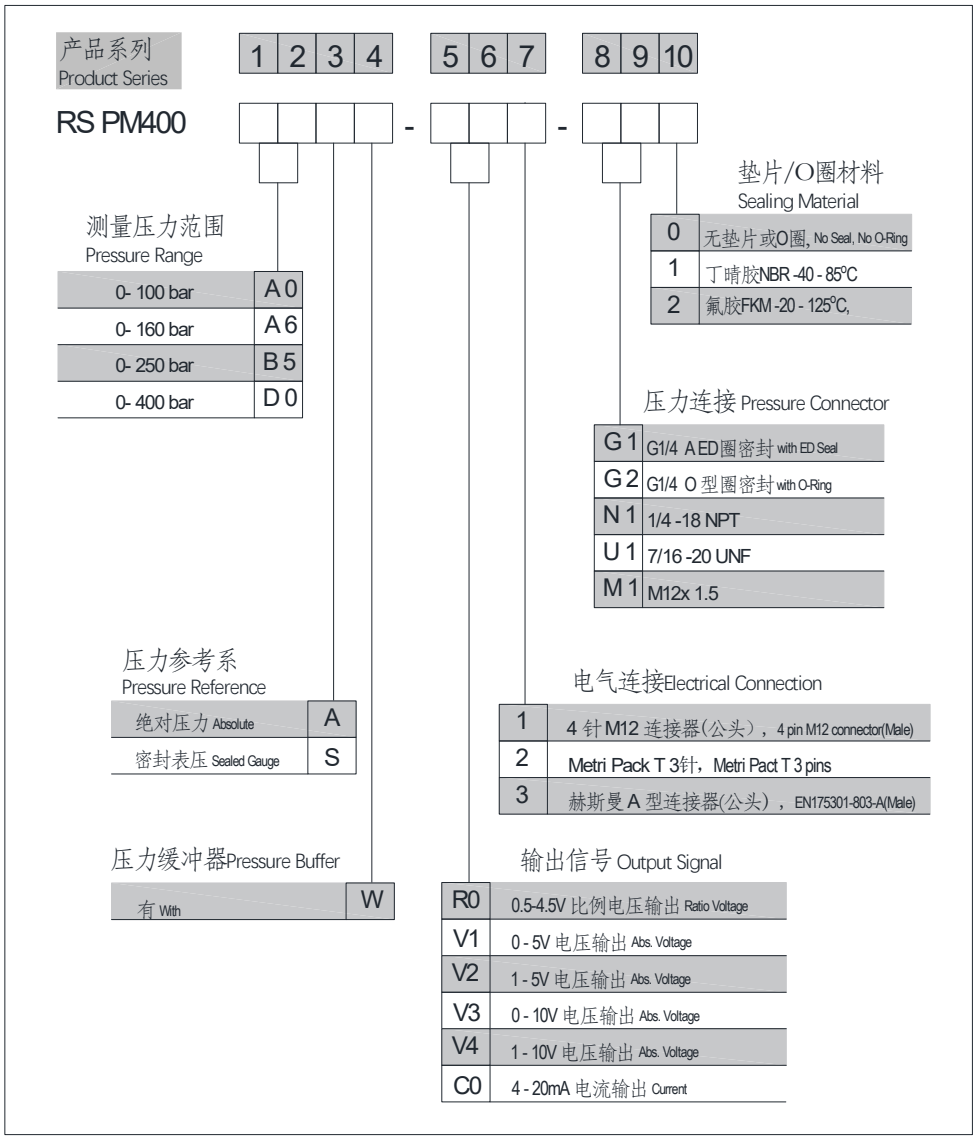
It may break the sensors if pressure is overloaded by 3 times of FS.

Fault signal can be set to high or low, default setting is high, more details please contact **Rodee Sensors.**

1). 应用零点调节功能需选购罗迪专用零点调节工具套装。
1). To remove the zero offset, need to order the Zero Programing Tool from **Rodee Sensors** separately.

标定输出信号 Output Signal	比例电压, Ratio Voltage	0-5V	1-5V	0-10V	1-10 V	4-20 mA
压力零点 Zero	10%	0V	1V	0V	1V	4mA
满量程 FS	90%	5V	5V	10V	10V	20mA
幅度 Span	80%	5V	4V	10V	9V	16mA
输出钳位-高电平 Output Clamp Level -Hi	95%	5.25V	5.25V	10.5V	10.5V	21mA
故障信号 -高电平 Fault Singal -Hi	97%	5.35V	5.35V	10.7V	10.7V	21.4mA

产品订购指南
Ordering Guides



例如：
RS PM400 100SW-R01-G11
代表：
测量压力范围 0-100 bar,
密封表压,
带压力缓冲器,
0.5-4.5VDC 比例电压输出,
4 针 M12 连接器公头,
G1/4A ED 圈密封,带 NBR 密封垫片。

Order Example:
RS PM400 100SW-R01-G11
Represented;
Pressure range 0-100 bar,
Gauge (Sealed),
With pressure buffer,
Output 0.5-4.5VDC, Ratio,
4 pins M12 male connector,
G1/4 A connector with NBR ED seal;

* 其它测量压力量程、压力连接器和信号连接型号；
* 其它温度范围密封垫片；
* 数字输出,以及其它电压输出范围；
请联系罗迪传感销售

* Other pressure ranges, pressure connectors and electrical connections;
* Other pressure sealing material;
* Digital output and other voltage modes requested, please contact **Rodee Sensors.**

销售联系方式

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