技术规格书 Datasheet

RS PM350-RTU

无线传输高精度智能压力和温度传感器
专为物联网和在线监控设计

Pressure & Temperature Sensors with Remote Transmission Unit
Designed for IoT and On-line Monitoring Applications

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



数据精准 Precision

实时监控 On-line

高速采集 Fast

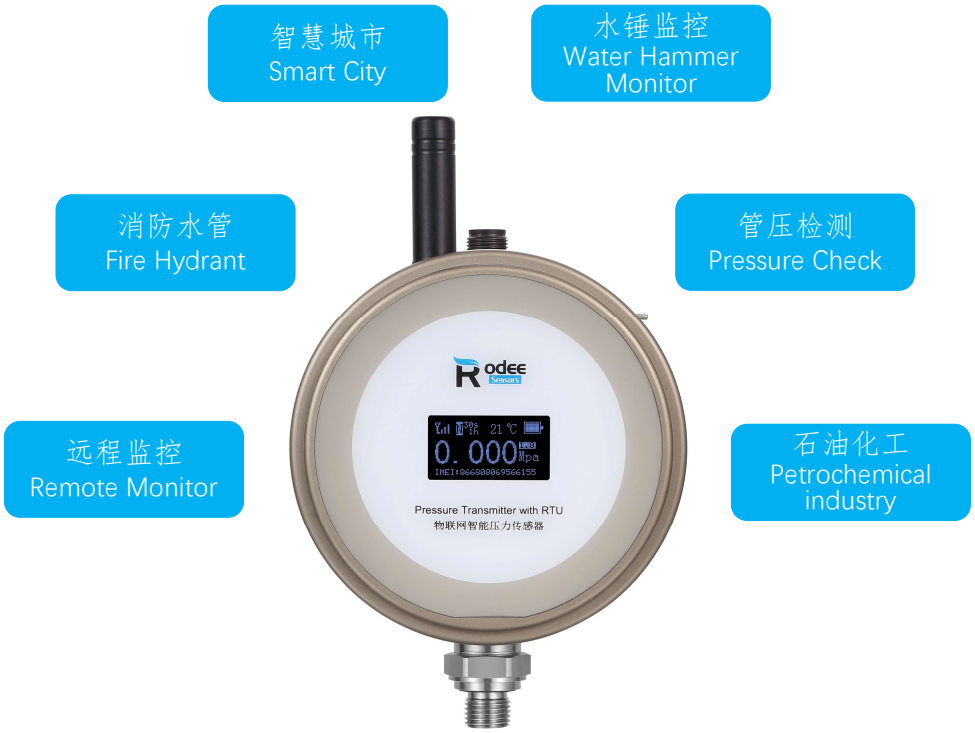
稳定可靠 Reliable

专业智能 Intelligent

物联网智能压力传感器
Pressure Sensor with RTU

精准可靠 Precision & Reliable | 智能诊断 Intelligent & Diagnostics | 远程监控 On-line & Monitoring

应用场景
Applications



多种场景应用 时刻精准测量
Multiple Applications, Accurate and Reliable

产品特点
Product Features

- 配备高精度传感器，超高速快速采集(800 Hz)
  Precision Output and Fast Acquisition Rate
- 一机两用，同时测量压力和介质温度
  Dual output for Pressure and media temperature
- 自带云端和 APP，数据实时监控，支持在线数据分析
  Real-time monitoring via internet or APP
- 多元频段通信，NB-IoT/4G 全网通
  Multiband Communication
- 支持远程和现场参数配置，小尺寸更智能
  Smaller and Smarter，Remote Device Configuration
- 长续航，支持外部供电，可选充电版本
  Support External Power Supply
- IP67/IP68 防护设计
  IP67/IP68 Enclosure Protection

产品介绍 Product Introduction

RS PM350-RTU 系列物联网压力和温度传感器，是一款集数据采集、无线传输、数据在线处理、在线实时监控于一体的设备，产品尺寸小，功能齐全，采用超低功耗 MCU，高分辨率 OLED 显示，无线模块采用 NB-IoT/4G 网络，内置大容量锂电池，支持优先使用外接供电，可连续工作五年以上 [1)] 是为消防、供水管网、水利、智慧城市、能源化工等多领域户外环境使用设计的专业监测终端。

RS PM350-RTU IoT pressure and temperature transmitter is a device that integrates data acquisition and wireless data transmission. The product is small in size, fully functional, uses ultra-low power MCU, high-resolution OLED display, wireless module adopts NB IoT/4G network, built-in large capacity lithium battery, supports priority use of external power supply, and can work continuously for more than five years[1)]. It is a professional monitoring terminal designed for outdoor environment use in multiple fields such as fire protection, water supply network, water conservancy, smart city, energy and chemical industry.

产品采用罗迪传感专利数字压力和温度双输出传感器，采用数字运算补偿标定，产品具有故障智能诊断功能；产品温度输出为测量介质的温度，实现对介质压力和温度双监控。

This RTU adopts Rodee Sensors patented digital pressure and temperature dual output sensors, and adopts digital compensation and calibration. The product has intelligent fault diagnosis function; The product temperature output measures the temperature of the medium, achieving dual monitoring of medium pressure and temperature.

产品支持快速接入客户云端系统，同时产品自带云端系统和手机 APP 可供客户选择，实现实时远程监控，提供数据在线处理功能方便客户对管网运行情况做进一步分析。

The RTU supports quick access to customer cloud systems, and comes with a cloud system and mobile app for customers to choose from, enabling real-time remote monitoring and providing online data processing functions for customers to further analyze the operation of the pipeline network.

1)当完全使用内部电池供电时，可工作时间取决于采集和发射频率，以及安装位置的信号强度;
When fully powered by internal batteries, the working time depends on the acquisition and transmission frequencies, as well as the signal strength at the installation location.

数据采集、发射和数据在线处理功能 Product Functions

- 全网通设计，可选 NB-IoT、4G 全网通无线网络通讯，适用等多场景
  Multi Networks: NB-IoT, 4G
- 超高速快速采集，可用于水锤检测，最快采集频率达 800 Hz
  Acquisition Rate up to 800 Hz,
- 产品自备云端支持系统和手机 APP，随时随地实时数据处理和监控数据变化
  Ontime and real-time monitor via Internet Cloud Platform and RS APP
- 支持第三方平台对接 （默认可接入 RS 物联大数据平台，支持 MQTT/UDP 主流协议，可 1 分钟接入第三方平台）
  Support the connections to the network platform of third party(default connected to JR IoT data platform, support MQTT/UDP mainstream protocols, 1 minute fast connections to the network platform of third party.
- 支持本地数据存储，以防信号不佳时数据丢失现象，具有自动数据补发功能，在数据有效保存期内的数据都能补发或通过 RS 485 通讯手动传输到电脑
  Safe data protection, data is stored at local memory and can be re-transmitted while the network is restored before the local memory is full.
- 支持压力逢变则报、压力上下限报警、低电压报警，报警数据可传送至平台及用户手机 APP
  Support Alarm for pressure changes, pressure exceed lower or high limit, and support low voltage alarm, alarm can be sent to cloud platform or APP.
- 采集频率、发送间隔和数据警报线可以通过 APP、网络云平台或电脑直联进行配置；
  Data acquisition rate, data transmission intervals and data alert limits can be setup via RS App, internet or computer.
- 可采集和发送外接模拟量、I^2C 和 485 输入信号（选配）
  Support external data （Analogue, I^2C or 485 Modbus）collections and transmissions via the RTU
- 终端具有 OLED 显示、按键操作功能，可实时查看终端采集的数据和设备运行状态
  The RTU is built with OLED display, on-site check the data and the RTU operation status.
- 内置一体式大容量锂电池，支持外接电源优先供电
  A large capacity of battery built inside, ... while support external power supply as priority.
- 配备充电电池版本可选，应对不同工况需求
  Rechargeable Battery Version is available upon request

技术参数
Technical Data

规格参数（低功耗版本）Specifications(Low power version)

压力测量范围 Press Measurement Range	0-1bar … 350bar
工作环境温度范围 Temperature range (ambient)	-40°C ~ 85°C
运输储存温度范围 Storage temperature range	-50°C ~ 85°C
补偿温度范围 Compensated temperature range	-20°C ~ 85°C
温度测量范围 Temperature Measurement Range	-20°C ~ 85°C
网路制式 Network	NB-IOT/4G
通讯协议 Communication Protocol	MQTT, UDP
采集间隔时间 Data Collection Interval Time	6 秒 - 5 分钟可选，默认 5 分钟 Interval time range from 6 seconds -5 minutes, default 5 minutes
发送间隔时间 Data Transmission Interval Time	10 分钟 - 24 小时可设，默认 12 小时 Interval time range from 10 minutes-24 hours, default 12 hours
唤醒模式 System Wake-up	按键、定时、告警唤醒 By press switch, at regular time, Alarm wake-up
配置模式 Setting Method	远程配置和现场配置 Remote configuration
上传信息 Transmission Information	采集信息、电量信息、网路状态、按键次数 Collected data, Battery and Network status, no. of switch worked
供电 [1] Supply Voltage	内部供电： 一次性锂电池 Internal Supply: Non-chargeable battery integrated. 外部供电： 5.0-7.2VDc External Supply: 5.0-7.2VDc
功耗 Supply Current	发送平均电流 Transmission-average ≤100mA@7.2V, 休眠电流 Sleep Mode ≤10uA@7.2V DC
电源 V+/V-错接线保护 Power Miswiring	有保护, Protected
工作环境湿度（相对）范围 Humidity (RH)	5% - 95%
防护等级 Enclosure	IP67/IP68
显示 Display	OLED 数码液晶屏 OELD
压力传感器信号输出类型 Pressure Sensor output	I^2C 数字型号输出 I^2Cdigital Interface
压力接口螺纹 [2] Pressure connection	G1/4 A 外螺纹带 ED 圈密封 G1/4 A Outer Thread with ED Seal Ring
无线输出信号 RTU output	实际压力值、温度值 Pressure and Temperature Data
485 输出信号 RS 485 Modbus Output	实际压力值 Output Pressure Data only
压力测量介质 Media -Pressure Contact	适合对 316/316L 无腐蚀的液体或者气体 Liquids and gases compatible with 316/316L Stainless Steel
外部传感器输入(需选配) Additional Input	6 路脉冲量、1 路模拟量、1 路 I^2C, 1 路 RS485 6 Pulses, 1 Analogue, 1 I^2C and RS485 input
给外部传感器供电电压 Power supply to external sensors	3.3V/5.0V/12VDc

[1]当使用外部供电时，设备会优先使用外部供电，为了设备的稳定性，建议外部供电>5.0VDc, <7.2VDc;
Unit will use external power in priority, suggested external voltage: >5.0VDc and <7.2VDc
[2]其它螺纹类型，请联系罗迪传感销售；
Other fitting types are available upon request.
高性能版本（高速采集版本或可充电版本规格书），请联系罗迪传感销售；
High Performance Version(Fast response version, or rechargeable battery version), please contact Rodee Sensors;

传感器性能指标 Sensor Performance

产品压力总精度 TEB (Total Error Band)[1)] -20°C ~ 85°C	≤±0.50% FS,
响应时间 Response Time	≤2 ms（低功耗版本，Low power version） ≤1 ms（高频采集版本，high performance version）
耐用性 Durability (10-90% of FS pressure)	>10 x 10^6 次循环(cycles)
长期稳定性 Long term stability	≤0.10% FS/Year
平均故障时间 MTTF	> 100 年(Years)
温度精度 – 测量被测介质 Temperature Accuracy (Measured on Media) -20°C ~ 85°C	≤±2°C,
压力过载倍数（静态） Static Pressure Overload, x of FS	≥3 x
爆裂压力（静态） Static Burst Pressure(bar)	≥5 x 或最大 800 Bar Max.（取最小值）

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≤±0.5% is measured elevation between 1 -100 meters, the elevation higher than 100 meters will affect the TEB accuracy for IP68 versions, contact Rodee Sensors for more info.

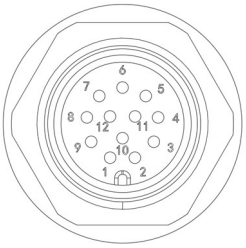
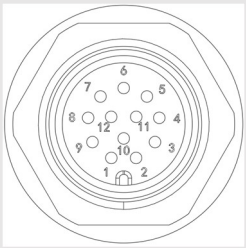
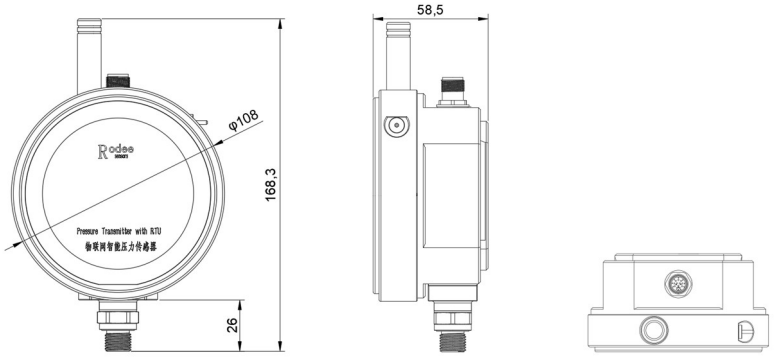
*更大过载需求，请联系罗迪传感销售。

Higher-pressure overload are available upon request.

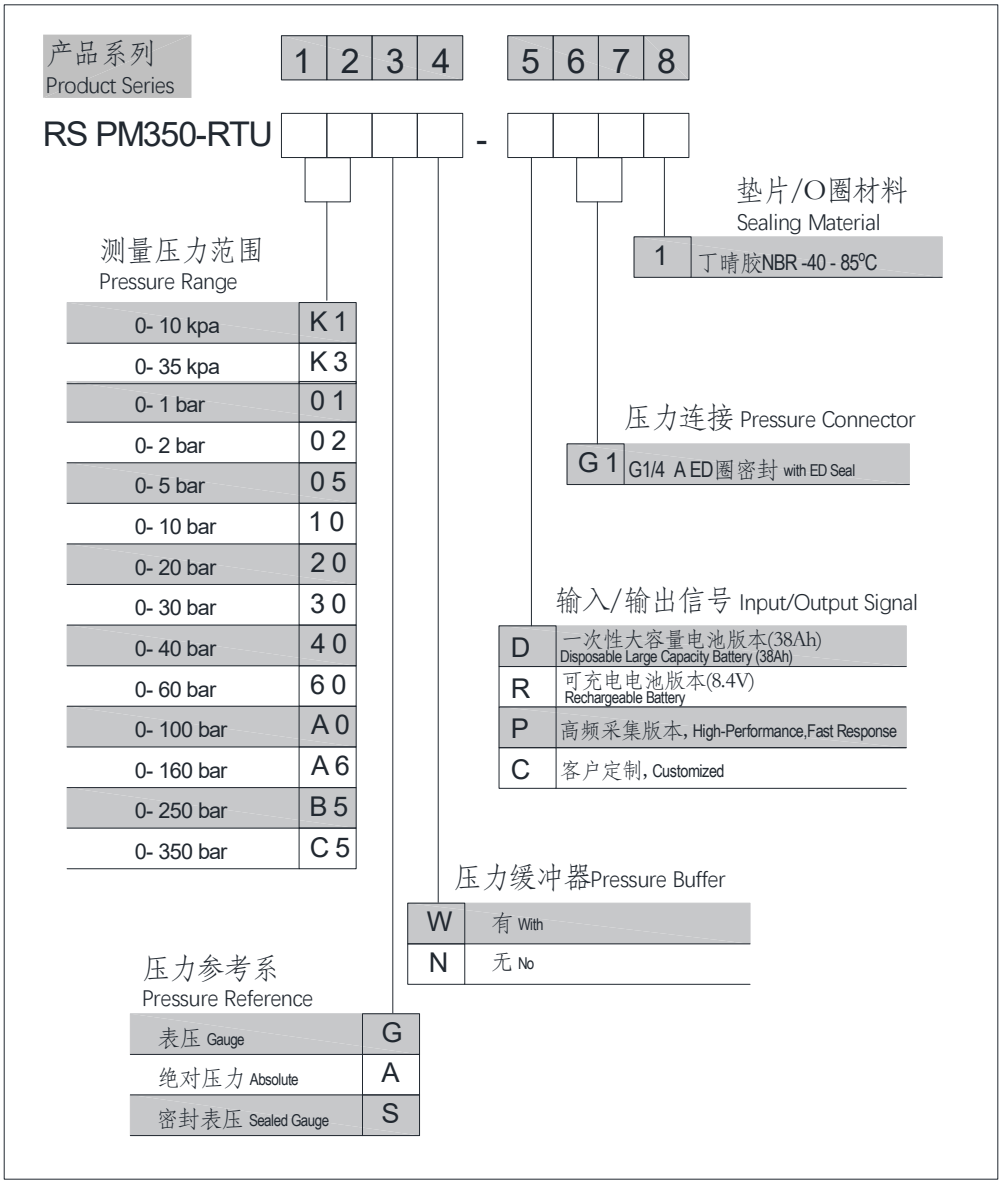
机械条件 Mechanical Data

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 S. Steel 铝合金 Aluminum Alloy PC 塑料 Polycarbonate
	压力连接头(接触介质部分) Pressure Connector(Media Contact)	SUS 316L 不锈钢 SUS 316L S. Steel
	电气连接器（外部电气连接） Electrical Connector (Outer connection)	PBT+30% 玻纤 PBT+30% glass reinforced
	显示器 Display	OLED

电气连接
Electrical Connection

型号 Mode	M12x1.0, 12 针连接器(公头) M12x1.0, 12 pins Male connector
D 型 一次性大容量电池 Disposable Large Capacity Battery (19Ah)	针脚 1：外部供电输入电源+ Pin 1: Power Input V+ 针脚 2：外部供电输入电源– Pin 2: Power Input V- 针脚 3：485(A) Pin 3: 485(A) 针脚 4：485(B) Pin 4: 485(B) 针脚 5：3.3Vdc 输出+ Pin 5: 3.3V Output + 针脚 6：SCL Pin 6: SCL 针脚 7：Gnd Pin 7: Gnd 针脚 8：SDA Pin 8: SDA 针脚 9：复位 Pin 9: SCL 针脚 10：ADC In Pin 10: ADC In 针脚 11：SWCLK Pin 11: SWCLK 针脚 12：SWDIO Pin 12: SWDIO 
R 型 可充电版本（8.4V） Rechargeable Battery	针脚 1：外部充电输入电源+ Pin 1: Power Input V+ 针脚 2：外部充电输入电源– Pin 2: Power Input V- 针脚 3：485(A) Pin 3: 485(A) 针脚 4：485(B) Pin 4: 485(B) 针脚 5：3.3Vdc 输出+ Pin 5: 3.3V Output + 针脚 6：SCL Pin 6: SCL 针脚 7：Gnd Pin 7: Gnd 针脚 8：SDA Pin 8: SDA 针脚 9：复位 Pin 9: SCL 针脚 10：ADC In Pin 10: ADC In 针脚 11：SWCLK Pin 11: SWCLK 针脚 12：SWDIO Pin 12: SWDIO Pin 
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
其它选项 Others	节能模式（按一次屏亮 15 秒）,产品默认配置 Energy Saving for Default, press switch OLED lighted for 15 seconds.
外形尺寸 Dimensions	 正面视图 Front View　侧面视图 Side View　顶面视图 Top View
螺纹型号 Pressure Fitting	G1/4 A 外螺纹带 ED 圈密封, G1/4 A Outer Thread with ED Seal,

产品订购指南
Ordering Guides



例如：
RS PM350-RTU 30SN-DG11
代表：
测量压力范围 0-30 bar,
密封表压,
标配一次性大容量电池(38Ah),
压力连接头为 G1/4A 外螺纹,带NBR ED 密封圈。

Order Example:
RS PM350-RTU 30SN-DG11
Represented;
Pressure range 0-30 bar,
Sealed gauge,
No pressure buffer,
Disposable Large Capacity Battery (38Ah)
G1/4 A male connector with FKM ED seal;

扫描下载产品规格书
Scan code for datasheet

此技术规格书的信息和描述仅供用户参考，深圳市罗迪传感科技有限公司有权随时更新或更正此规格书上的任何内容。
Shenzhen Rodee Sensors Ltd. reserves the right to make any kind of design or functional modification at any moment without prior notice. Once any difference occurred between English and Chinese, see Chinese information as final explanation.



更多的产品信息，请访问我们的官方网站下载。
More product info, please visit at https://www.szrodee.com/zcyxz
如需定制产品，请联系罗迪传感技术顾问。
Customization is available upon Request.

国际标准、一流性能、自主专利、深圳制造、全球营销

International Standard | World-class Performance | Patented Products | Made in China | Global Sales & Marketing

销售联系方式

深圳市罗迪传感科技有限公司
联系人：唐先生
电话：+86 755 8296 5400
手机：+86 139 2348 5400
Email: tangzhongshan@szrodee.com
网址：www.szrodee.com
地址：深圳市龙岗区坂田街道宝能科技园 10 栋 10F

Contact Us

Shenzhen Rodee Sensors Co., Ltd.
Contact: Tomy Tong
Tel: +86 755 8296 5400
Mobile: +86 139 2348 5400
Email: tangzhongshan@szrodee.com
Web: www.szrodee.com
Address: 10F, Building 10, Baoneng Tech. Park, Bantian, Longgang District, Shenzhen, PR China