

RS WA30

高精度带数显智能压力传感器
专为水行业和户外使用设计

Digital Display Pressure and Temperature Sensors,
Designed for Outdoor Use Applications



RS WA30 系列是一款带数字显示的高精度压力和温度传感器，产品专门针对消防、供水、水下作业机器、石油管道等行业潮湿环境，采用 IP68 超级密封设计，使产品长期在恶劣潮湿环境下仍能正常工作，针对户外使用不同的应用场景。

RS WA30 Series

Are the Pressure Sensors with digital monitor for temperature and pressure, products are special designed for Outdoor Use Applications, i.e., Fire Fighting, Water Supply, Oil Pipes, etc. Where needs the sensors to be well protected from water and humidity.

有 3 种输出模式可选：
3 types of output are available:

- 0.5-4.5V 电压输出
Digital Monitor with 0.5-4.5V output
- 4-20mA 电流输出
Digital Monitor with 4-20 mA output
- RS 485 数字输出，同时输出测量介质压力和温度
Digital Monitor with Pressure and Temperature outputs via RS 485



扫描下载产品规格书
Scan code for datasheet

产品特点 Product Highlights

注解 Notes:

- 1) 此精度为出厂默认海拔 0-100m 内的输出精度; TEB $\leq \pm 0.5\%$ is measured elevation between 1 -100 meters.
- 2) 配装 M12 防水电缆时实现 IP68; IP68 is achieved with M12 female cable plugged.

- ✓ -20°C~85°C 温度范围压力 TEB 总精度 $\leq \pm 0.5\%$ ¹⁾; Pressure TEB $\leq \pm 0.5\%$ ¹⁾ within -20°C~85°C
- ✓ 5 x 压力过载设计; 5 x FS Overload Pressure
- ✓ 智能诊断功能; Diagnostics Fault Signal Programable
- ✓ 0.5 ms 响应速度(电压输出款); Response time up to 0.5 ms (Voltage output)
- ✓ 0.25%高精度显示精度; Display Accuracy: $\pm 0.25\%$
- ✓ 行业首创采用一体化磁控开关设计, 实现 IP68 防护等级²⁾; Integrated Magnetic switch, IP68 protected for whole product cycle life
- ✓ 采用 OLED 显示屏, 工作温度等级达 85°C; Operation temperature up to 85°C with OLED Display;
- ✓ 0 功耗待机省电设计(电压输出款)。Energy Saving Designed(Voltage Output).

功能和应用 Features & Applications

RS WA30 系列产品专门针对水行业和户外使用的应用场景设计的一款高精度高稳定性的传感器, 传感器采用数字运算补偿标定, 利用自主研发的算法和软件, 并针对户外潮湿和日晒雨淋的工作环境以及长期耐用性的需求对产品进行严格的防潮抗老化处理, 产品在补偿温度范围内总精度(TEB)达到 $\pm 0.5\%$;

RS WA30 series high performance sensors are special designed for the uses in harsh environmental conditions, i.e., water industrials and other outdoor use applications. Transmitter are fully digitally compensated with patented right software and algorithm, TEB $\leq \pm 0.5\%$

The product is IP67 (Gauge) or IP68 (Sealed Gauge & Absolute) protected, this enables the products can use in outdoor or where may have high moistures occurred conditions.

- * 带温度和压力数字显示的传感器, 行业首创采用一体式磁控开关设计, 使机械开关与传感器电路之间实现彻底的物理隔绝, 达到 IP68 的防护等级, 浪涌等级达到 2KV, 适合于需要实地监测或查看显示温度和压力的应用场景。

Digital Monitor with Pressure and Temperature Sensors, it Integrates a Magnetic switch which isolated from electrical components and circuits, avoided the water or moistures getting inside the products during whole product cycle life(to be a real IP68 protection). This product is for applications where need the visual check the temperature and pressure while the pressure output still needs to be monitored.

全系产品有 3 种输出模式可供选择: 0.5-4.5V 电压输出、4-20mA 电流输出, RS485 数字输出。其中 0.5-4.5V 输出款的响应速度高达 0.5ms, 适合有高速采集需求的应用场景(比如水锤监控), 同时该产品具有节能设计, 按一次磁控开关, 屏幕显示 15 秒后自动关机进入省电模式, 详情请见原理图。

RS 485 输出款可以同时输出测量介质的压力和温度数据, 实现一机两用的功能。

RS WA 30 series provide 0.5-4.5V voltage output, 4-20mA output, RS 485 digital output for different applications.

For voltage output, the sensor response time is fast to 0.5 ms which is perfect for high frequency data collections requirement, product is also designed with "Power Saving" mode which is for the application where need save energy, when push the switch, the display lights for 15 seconds (time can be customized).

RS 485 output, this product can output both pressure and temperature data measured on the media.

产品通过 CE 认证。

Products are CE certified.

技术参数 Technical Data

性能指标 Performance

压力采集总误差 TEB (Total Error Band) ¹⁾	≤±0.50% FS, -20°C ~ 85°C
响应时间 Response Time	≤1 ms (电压输出, Voltage Output)
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)
温度显示精度 (带数显款) Temperature Sensor Accuracy (if with monitor)	≤±2°C

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, 默认海拔 0-100m 之间使用精度, 其他海拔高度使用需要使用罗迪专用工具软件进行现场调节。

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

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

标定压力 Pressure Range(bar)	1	2	5	10	16	25	30
过载压力 Overload Pressure (bar)	10	10	25	50	80	125	150
过载倍数 (Overload, x of FS)	10 x	5 x	5 x	5 x	5 x	5x	5 x
爆裂压力 Burst Pressure (bar)	50	50	50	300	300	300	300

*其他压力类型或更大过载需求, 可以定制。

Other pressure ranges or higher-pressure overload requirements on requested.

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 - 85 °C
补偿温度范围 Compensated temperature range	-20 - 85 °C
运输储存温度范围 Storage temperature range	-40 - 85 °C
工作环境湿度 (相对) 范围 Humidity(RH)	5% to 95%
EMC - 发射 Emission	EN55032 Class A & B
EMC - 静电防护 ESD	Contact Discharge: 8KV, Air Discharge 15KV
传感器过电压保护 Over and reverse voltage	有保护, Protected

电气规格 Electrical Specification

型号 Product Type	带数字显示款 Digital Monitor with Pressure and Temp. Sensors		
信号输出类型 Output Modes	电压输出 Voltage	电流输出 Current	485 输出 RS 485
输出信号 Signal Output	0.5-4.5V	0.5-2.5V	4-20mA
供电电压 Supply Voltage	5-12 V _{DC}	24±4 V _{DC}	5-24 V _{DC}
工作电流(亮屏状态) Current Consumption (display lighted)	8 mA	N/A	11 mA
工作电流(熄屏状态) Current Consumption (display unlighted)	2.9 mA	N/A	7.7 mA
负载 Max. Load Resistor	≥ 5 KΩ	RL ≤ (SV-18V)/0.022A	N/A
浪涌等级 Surge	2KV	2KV	2KV

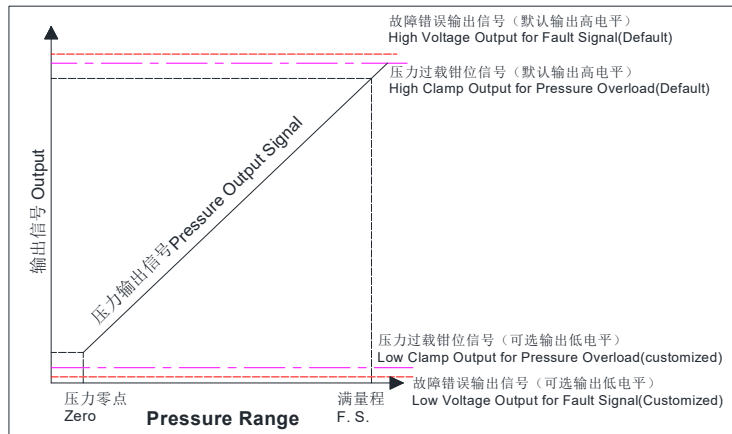
*485 输出版本的技术信息资料, 请联系罗迪传感销售。

More info for Modbus 485 Model please contact Rodee Sensors.

机械条件 Mechanical Data

材料 Material	型号 Mode	带数字显示款 Digital Monitor with Pressure and Temp. Sensors
	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 Pressure Connector	SUS 316L 不锈钢 SUS 316L S. Steel
	电气连接器 Electrical Connector	PBT+30% 玻纤 PBT+30% glass reinforced
	显示器 Display	OLED

输出与故障诊断 Output & Fault Diagnostics



- 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 Programming Tool from Rodee Sensors separately.

零点调节 Zero Offset

-压力零点归零调节¹⁾
 Zero offset can be adjustable.

过载信号输出钳位 Output Clamp Levels

-压力超出传感器量程时，钳制输出信号到一个固定值；
 钳位信号输出值可以根据客户要求调整。
 If pressure is overloaded, limits output signal to a fixed value;

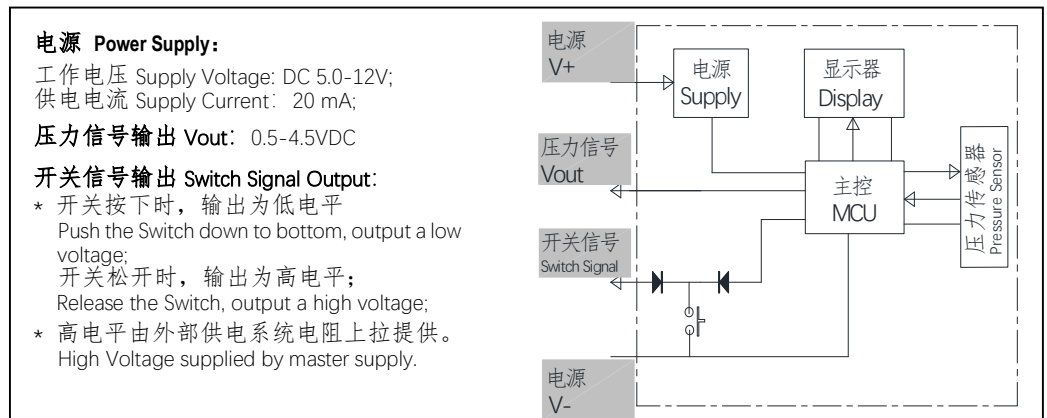
故障信号输出 Fault Signal Output

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；
 Once Pressure Sensor is broken, output a fault signal;

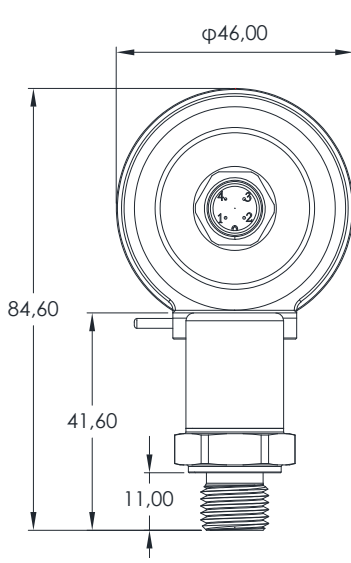
故障信号输出可设为高电平或低电平，产品默认输出高电平，具体细节请联系罗迪传感获取更多信息。

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

电压输出节能型 数显款工作原理图 Schematic Diagram for voltage output with energy saving



电气连接
Electrical
Connection

型号 Mode	带数字显示款 Digital Monitor with Pressure and Temp. Sensors	
电气连接 Output Signal -电压输出 Voltage Output	M12, 4 针连接器(公头) 4 pins Male 针/Pin 1: 电源+ V+ 针/Pin 2: 输出+ Vout 针/Pin 3: 电源- V- 针/Pin 4: 开关 Switch	
-电流输出 4-20mA Output	针/Pin 1: 电源+ V+ 针/Pin 2: 不接 N/C 针/Pin 3: 电源- V- 针/Pin 4: 不接 N/C	
-485 输出 Modbus 485 Output	针/Pin 1: 电源+ V+ 针/Pin 2: 485 A+ 针/Pin 3: 电源- V- 针/Pin 4: 485 B-	
材料 Material	304L 不锈钢 PBT+30%玻纤 铝合金 PC 塑料 针镀金	SUS304 S. Steel PBT+30%GR Aluminum Alloy Polycarbonate Gold 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	
节能功能(仅电压款适用) Energy Saving is only applied for Voltage Output Model	节能模式 (按一次屏亮 15 秒) 显示屏常亮模式 Energy Saving and Normal modes are available	
外形尺寸 Dimensions		
螺纹型号 Pressure Fitting	G1/4 A ED 圈密封, ED Seal, 19A/F	

*其他螺纹规格和其他外形尺寸压力传感器, 请联系罗迪传感销售。
 Other pressure fittings on request.

产品订购指南 Ordering Guides

例如:

RS WA30 30SN-RM1-G110
代表:
测量压力范围 0-30 bar,
密封表压,
无压力缓冲器,
0.5-4.5VDC 比例电压输出,
俯视显示, 节能模式,
G1/4A 外螺纹, 带 NBR ED 圈密封,
不带活接延长接头。

Order Example:

RS WA30 30SN-RM1-G110
Represented;
Pressure range 0-30 bar,
sealed gauge,
No pressure buffer,
Output 0.5-4.5VDC, Ratio
Top View, display lights for 15 s
G1/4 A connector with NBR ED
seal;
No 360° rotated Joint.

产品系列 Product Series	1 2 3 4	5 6 7	8 9 10 11														
RS WA30	[] [] [] N	[] [] []	[] [] [] []														
测量压力范围 Pressure Range	<table border="1"> <tr><td>0-1 bar</td><td>01</td></tr> <tr><td>0-2 bar</td><td>02</td></tr> <tr><td>0-5 bar</td><td>05</td></tr> <tr><td>0-10 bar</td><td>10</td></tr> <tr><td>0-16 bar</td><td>16</td></tr> <tr><td>0-25 bar</td><td>25</td></tr> <tr><td>0-30 bar</td><td>30</td></tr> </table>		0-1 bar	01	0-2 bar	02	0-5 bar	05	0-10 bar	10	0-16 bar	16	0-25 bar	25	0-30 bar	30	活接延长接头 360° Rotated Joint
0-1 bar	01																
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压力参考系 Pressure Reference	<table border="1"> <tr><td>表压 Gauge</td><td>G</td></tr> <tr><td>绝对压力 Absolute</td><td>A</td></tr> <tr><td>密封表压 Sealed Gauge</td><td>S</td></tr> </table>		表压 Gauge	G	绝对压力 Absolute	A	密封表压 Sealed Gauge	S	垫片/O圈材料 Sealing Material								
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压力缓冲器 Pressure Buffer	<table border="1"> <tr><td>有 With</td><td>W</td></tr> <tr><td>无 No</td><td>N</td></tr> </table>		有 With	W	无 No	N	压力连接 Pressure Connector										
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输出信号 Output Signal	<table border="1"> <tr><td>0.5-4.5V_{DC} 比例电压输出 Ratio Voltage</td><td>R</td></tr> <tr><td>0.5-2.5V_{DC} 电压输出 Voltage</td><td>V</td></tr> <tr><td>4-20 mA 电流输出</td><td>C</td></tr> <tr><td>RS485 输出 RS 485</td><td>D</td></tr> </table>		0.5-4.5V _{DC} 比例电压输出 Ratio Voltage	R	0.5-2.5V _{DC} 电压输出 Voltage	V	4-20 mA 电流输出	C	RS485 输出 RS 485	D	显示设置 Display Setting						
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			<table border="1"> <tr><td>0</td><td>无垫片或O圈, No Sealing</td></tr> <tr><td>1</td><td>丁腈胶 NBR -40 - 85°C</td></tr> <tr><td>2</td><td>氟胶 FKM -20 - 125°C</td></tr> </table>	0	无垫片或O圈, No Sealing	1	丁腈胶 NBR -40 - 85°C	2	氟胶 FKM -20 - 125°C								
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			显示方向 Display View														
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* 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;
请联系罗迪传感销售

* Other pressure ranges, pressure connectors and electrical connections;
* Other pressure sealing material;
All are available upon request.

销售联系方式

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