

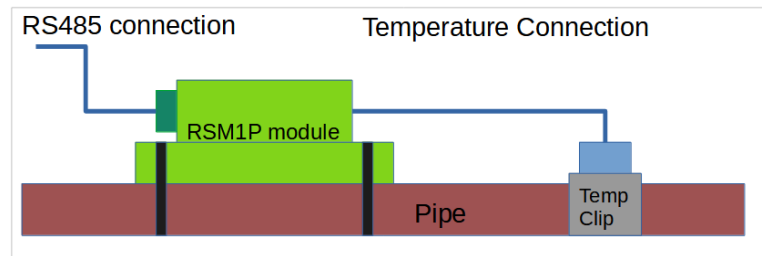
V1.2

RS Series

Model: RSM1P

RS485 Modbus Sensor

Pipe mount



Description:

RSM1P is an RS485 Modbus pipe mounted temperature sensor.

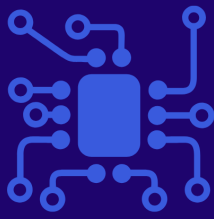
It is predominantly used for Thermistor integration and converts the exponential characteristics of thermistors into an easy interface Modbus protocol. The temperature can be requested via Modbus commands.

In addition to the pipe mounted temperature sensor there can also be an in built Humidity and temperature sensor on the RSM1P module.

The temperature data is obtained via RS485 Modbus RTU , there is also the ability to set the device ID and 8 memory locations to store user data , Modbus command examples can be supplied.

packaged into a convenient case ideal for pipe mounting and has a pipe mounted clip ready to attach to pipes to monitor pipe temperatures

Customization are available on request



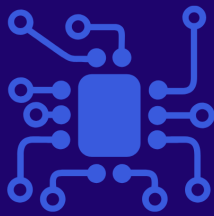
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Product Highlights:

- RS485 Modbus RTU
- Standard Version Thermistor 0.5°C resolution (standard)± 0.5°C
- PCB mounted Temp + Humidity Versions with 1% RH and +/-0.1°C
- I2C output for custom sensors
- Accurate and versatile.
- 1 second sample rate
- Full application and engineering support
- Customization considered

Applications include, but not limited to:

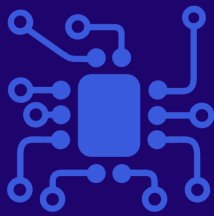
- Server Rooms
- IoT Projects
- Chamber and fridge monitoring
- Water pipe monitoring
- Weather Station
- Temperature control
- PC and Raspberry Pi temperature monitoring
- Thermostatic controls
- Industrial systems
- Any thermal sensitive system
- Engineering and Development
- Aquarium , vivarium and formicarium monitoring



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Specification:

RSM Series :- Specification Overview	
Sensor technology	NTC
Output Versions	RS485 Modbus RTU
Supply voltage	5Vdc (Higher Voltages available)
Temperature ranges	-24 °C to +100 °C
Pipe sensor Accuracy	±0.5 °C (0°C to 45°C)
Operating temperature	-24°C to +50°C
Enclosure temperature(ABS)	-15°C to 75°C
Storage temperature	0 °C to +50 °C
Probe material	TBC
Permissible media	Non aggressive/corrosive
Cable sheath material	TBC
Environmental Protection	TBC
Sample Speed	1 Second
PCB Dimensions	67mmx 29.2mmx21.8mm



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Part Numbering system

RSM1P – Pipe mounted temperature sensor

Modbus Poll example

RSM1p

Tx = 66: Err = 0: ID = 1: F = 04: SR = 1000ms

Input registers 04

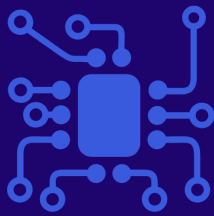
	Name	00000	Name	00010
0	SerialNumber	14614751	Module Humidity	52.8283
1		--		--
2		16	Module Humidity x100	5282
3	Module Temperature	21.8277	Major V	1
4		--	Minor V	6
5	Module Temperature 100	2182		
6	Pipe Temperature x 10	390		
7	Flow Detect*	0		
8		390		
9	Humidity*100	425		

Mbpoll2

Tx = 8: Err = 0: ID = 1: F = 03: SR = 1000ms

Holding registers 03

	Name	00000
0	Reset CMD	16383
1	RSM ID	1
2	General Purpose	2
3	General Purpose	3
4	General Purpose	4
5	General Purpose	5
6	General Purpose	6
7	General Purpose	7
8	General Purpose	8
9	General Purpose	9



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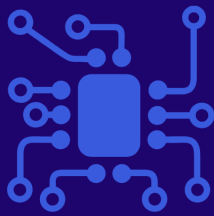
Register Summary

04 Inputs	Description	type
0	Serial number	uint16 (low)
1	Serial number	uint16 (high)
2	Status	uint16
3	RSM PCB Temp	32 bit float little endian
4	RSM PCB Temp	32 bit float big endian
5	RSM on PCB Temp x 100 eg.2626 = 26.26	int
6	RSM Pipe temp x10 e.g. 255 =25.5	int
7	Flow counter propriety algorithm for rudimentary flow detection *	uint16
8	Minimum Pipe Temperature**	uint16
9	Maximum Pipe Temperature**	uint16
10	RSM on PCB Humidity	32 bit float little endian
11	RSM on PCB Humidity	32 bit float big endian
12	RSM on PCB Humidity x 100 e.g. 4969 = 49.69	
13	Major Version	
14	Minor Version	
15		

*Internal algorithm on sensor data can detect internal water flows this is currently in Beta stage of testing,

** Minimum and maximum temperatures are stored

To reset the 7 8 and 9 register a reset command can be sent this is detailed in the holding registers please note all counter registered will be reset once issue.



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Register Summary

03 Holding registers	Description	type
0	Reset command write 1 to reset device	int
1	Modbus ID	int
2	General Purpose	TBC
3	General Purpose	TBC
4	General Purpose	TBC
5	General Purpose	TBC
6	General Purpose	TBC
7	General Purpose	TBC
8	General Purpose	TBC
9	General Purpose	TBC

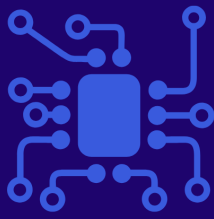
Command Summary

Communication specification

9600 Baud
8 Data bits
1 Stop Bytes
Parity None

Pipe Clip example



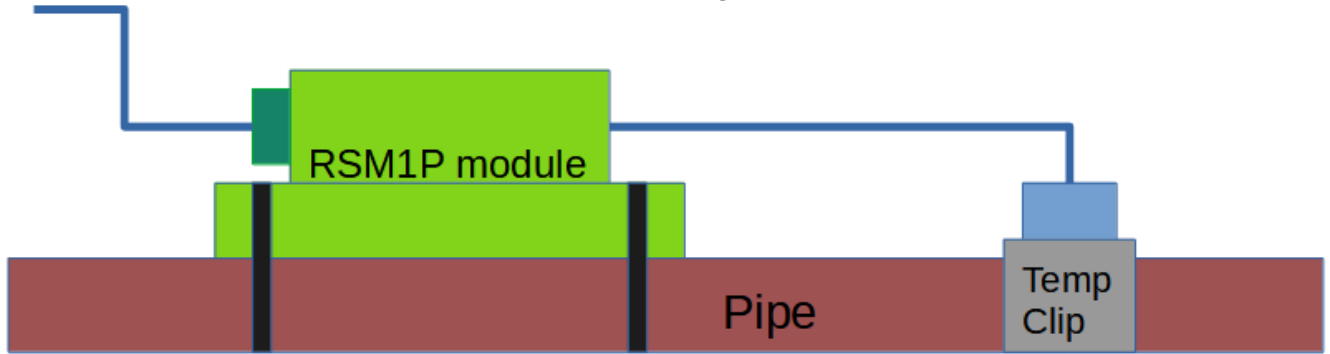


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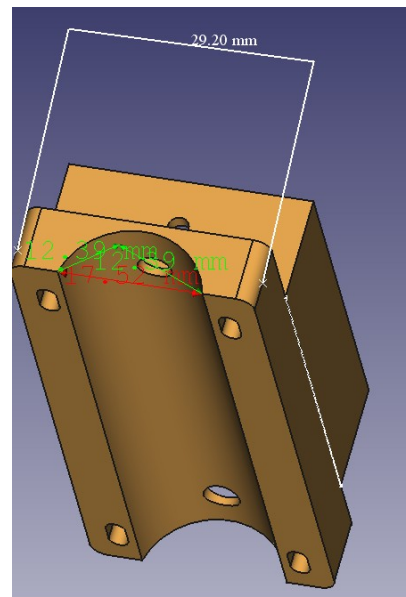
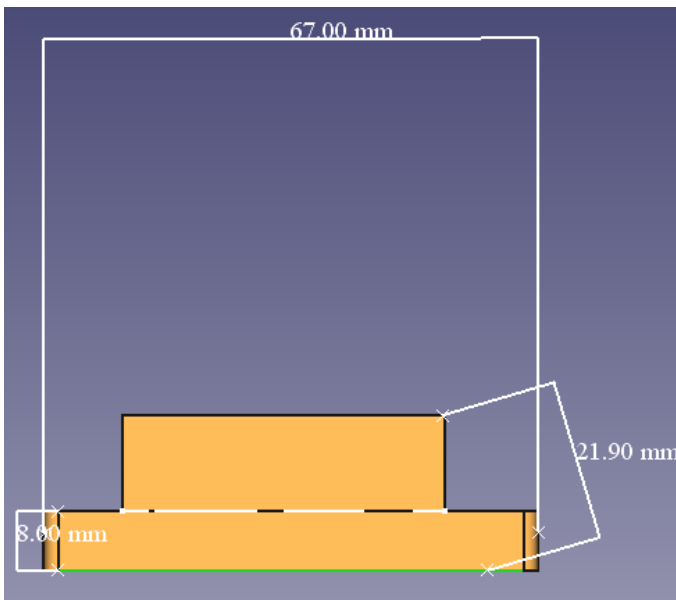
Installation example

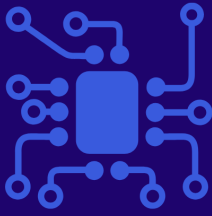
RS485 connection

Temperature Connection



Dimensional Drawing

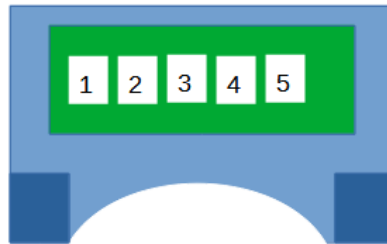




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Wiring

TOP



1	2	3	4	5
GND Screen (optional)	5V	A	B	0V