

- 6 Analog Channel, Battery-Powered Wireless Sensor Node
- Supports J, K, T, E, and N Type Thermocouples
- Robust IEEE 802.11b/g/n Radio
- Internal Antenna or External 2 dBi Antenna Options
- Compatible with b/g/n Access Points
- WPA2 Encryption Provides Strong Data Security
- Configuration Through the Serial Port
- Wireless Data Communication via MODBUS TCP
- FCC, Canadian IC Certified Unlicensed Operation

The SN802GRC-4M is an IEEE 802.11b/g/n-based sensor node supporting six thermocouples. Sensor data is transmitted using MODBUS TCP protocol. The Murata WSN802GPA radio used in the SN802GRC-4M can take advantage of existing Wi-Fi access points to lower deployment costs. With Wi-Fi networks widely available and well understood by IT departments, the SN802GRC-4M is easily integrated into existing networks. The SN802GRC-4M is compatible with 802.11b/g/n networks and supports WPA2 encryption, providing strong data security. The SN802GRC-4M can operate at RF data rates from 1 to 65 Mbps, providing plenty of bandwidth for sensor applications.

SN802GRC-4M Specifications

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Sensor Inputs			J, K, T, E, M Type Thermocouples Contact Closures			
TC Resolution				0.0625		°C
TC Accuracy				±1		°C
TC Measurement Data Format			16-bit Signed Value			

**SN802G
RC-4M**

**6-Channel
TC Wi-Fi
MODBUS
Sensor Node**



SN802GRC-4M Specifications

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Serial Interface			RS232C, 38.4 kbps, 8N1, no flow control			
Radio			Murata SN8205 IEEE 802.11b/g/n module			
Operating Frequency Range			2401		2474	MHz
Supported RF Data Rates			1 - 65			Mbps
Number of RF Channels				11		
RF Transmit Power, EIRP, Chip Antenna				18		dBm
RF Transmit Power, EIRP, 2 dBi Dipole Antenna				20		dBm
Internal Antenna			SMD Chip Antenna			
Optional External Antenna			2 dBi RPSMA Dipole Antenna			
Power Supply Input Voltage Range			6		24	Vdc
Power Supply Input Current					250	mA
Operating Temperature Range			-40		+85	°C
Operating Humidity Range, Non-condensing			5		95	%RH
Nominal Dimensions			5.5 x 2.5 x 1.3 inches 140x 64x 33mm			
Mounting			Left and Right Flanges, Two Pre-drilled Holes Plus Slot in Each Flange			

SN802GRC-4 Block Diagram

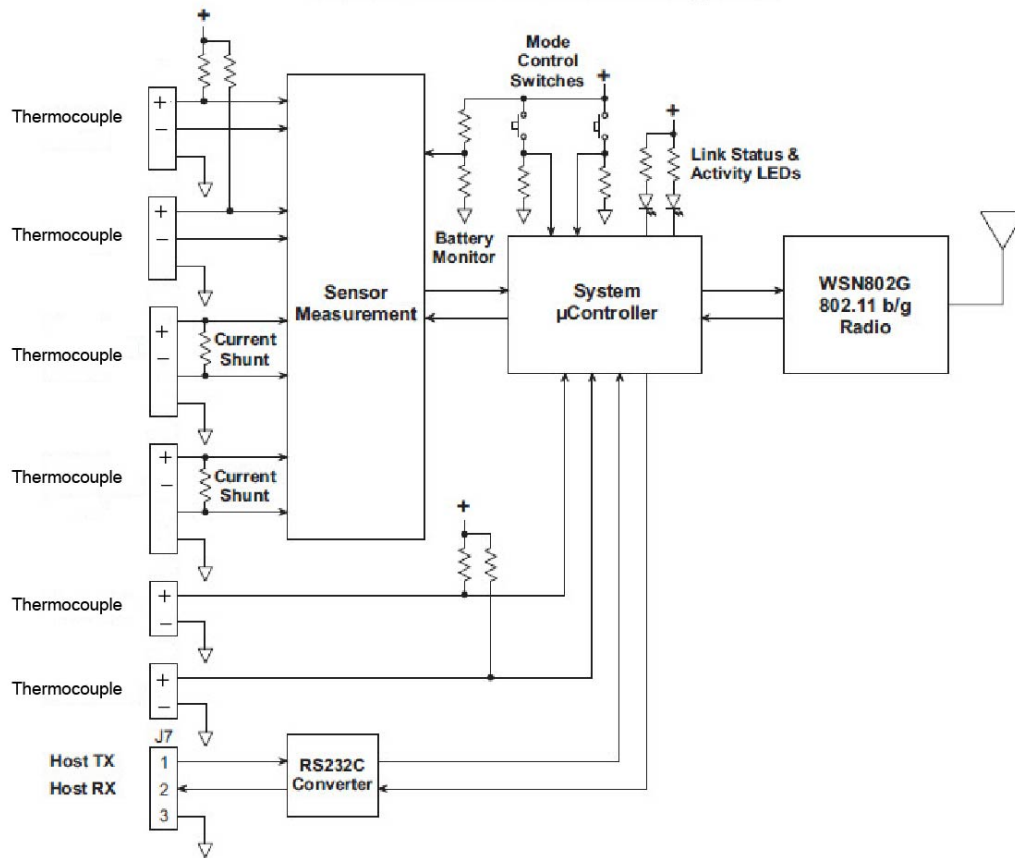


Figure 1

SN802GRC-4M Operation

The SN802GRC-4M is an IEEE 802.11b/g/n-based wireless sensor node that supports six thermocouples inputs. All six inputs are measured every 1.5 seconds, providing fresh data when requested.

Data requests and responses are based on the widely used MODBUS TCP *Read Multiple Registers* command. The SN802GRC-4M sensor node is available with either an internal antenna or an external 2 dBi dipole antenna.

The Murata WSN802G E-Series radio used in the SN802GRC-4M sensor modem communicates through Wi-Fi routers or access points. Optional WPA2 encryption provides strong data security. The SN802GRC-4M can be configured to operate on any of the eleven 2.4 GHz channels defined for 802.11 operation, allowing it to be used in most regions of the world.

The SN802GRC-4M sensor modem and radio are configured through the serial port using a standard 3-wire RS-232 connection, allowing users to configure SSIDs, security keys, destination IP addresses, serial port parameters, etc.

Connector J1, J2, J3, J4, J5, J6 Description, TC Input

Pin	Name	I/O	Description
1	TC+	I	Input for positive lead
2	TC-	I	Input for negative lead

Connector J7 Description, 3-Wire RS232

Ref	Name	I/O	Description
1	HOST TX	I	Input terminal for host RS232 TX.
2	HOST RX	O	Output terminal for host RS232 RX.
3	GND	-	RS232 ground terminal.

Connector J8 Description, Power Input

Ref	Name	I/O	Description
1	+DC	I	Power supply DC input, +6 to +24 Vdc.
2	GND	-	Power supply ground terminal.

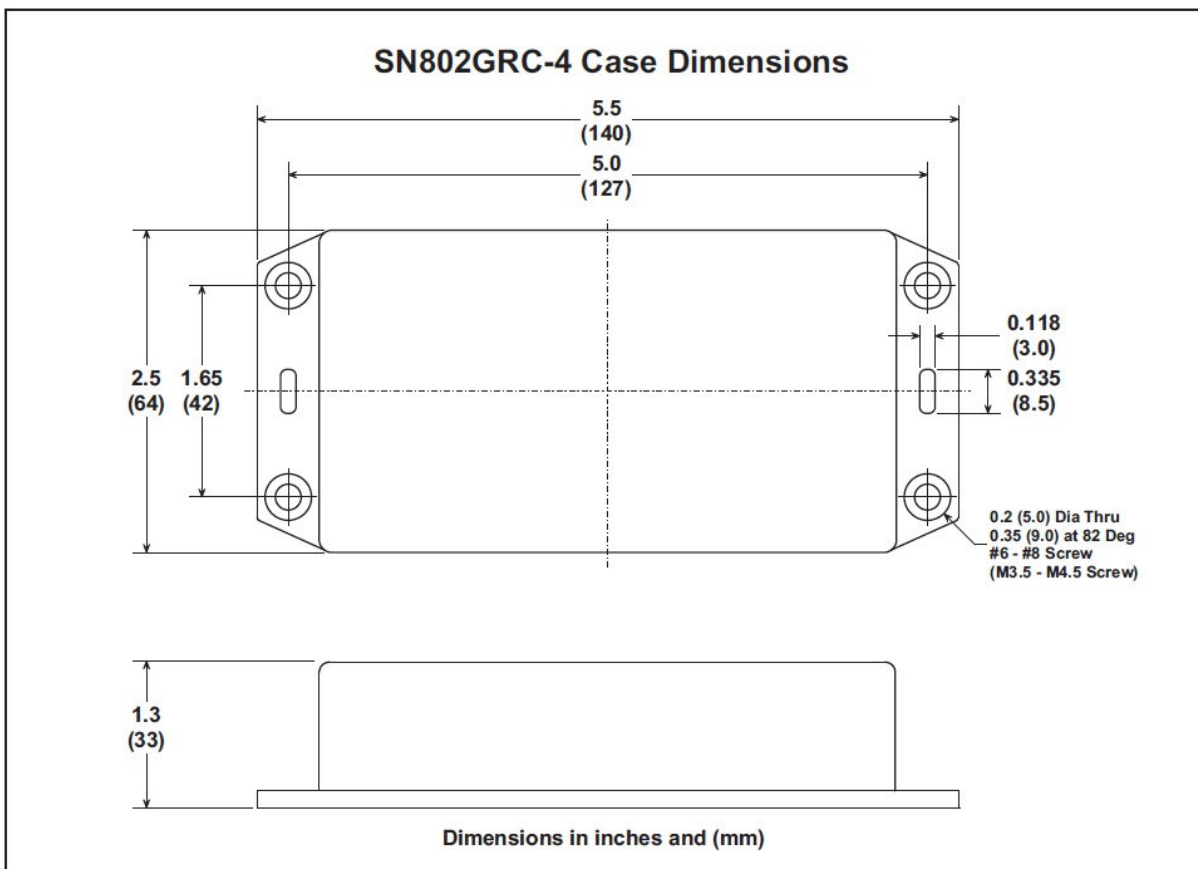


Figure 2

Note: Specifications subject to change without notice.