

<u>wRemote</u> is a new concept of Wireless Telemetry, based on mesh networking technology.

The system was designed for industrial or open field, where you need to collect remote and dispersed information in a reliable and low cost per point.

## **Benefits**

- Secure Wireless Communication
- Multiple Remote nodes in one area
- Low cost of installation by point
- Mesh Network technology (redundancy and better range)
- Connecting Transducers directly



# GENERAL CHARACTERISTICS

- Models: Concentrator and Remote Nodes
- Suitable for industrial environments
- Communication IEEE 802.15.4 in 2.4GHz
- Mesh Network between devices
- Digital Inputs and Outputs
- Analog I /O of 0-10V and 4-20mA
- Serial Port RS232/485 for Modbus slaves
- Ethernet Port for Modbus slaves TCP and configuration
- Port USB for Modbus slaves and configuration
- Access to I/O and Serial Port in Modbus

# wRemote

#### **RF Wireless**

- Protocol: IEEE 802.15.4
- Frecuency: 2.4000 to 2.4835 Ghz Free Band
- Channels: 16
- Separation between channels: 5 MHz
- Transmission Power: +20 dBm (100 mW)
- Reception Sensitivity: -104 dBm
- Antenna: 2dBi Connector RP-SMA (other antennas optional)
- Scope: 2Km between nodes, with antenna of 2dBi and line of sight
- Module Certifications: FCC, IC, Europe/ETSI, Australia/Ctick
- Mesh Network Amount of Nodes: Up to 50 max.
- Mesh Network Repetition between nodes: Up to 4
- Product approved by the CNC

#### General

- Indicators of Leds: On / Link / Data
- Cabinet: Industrial, Rail DIN
- Dimensions: 70 x 90 x 65 mm (Width x Height x Depth)
- Operation Temperature: -15°C to +65°C

**AVAILABLE MODELS** 

• Guarantee: 1 year

#### Power

- Power Input: +10Vdc min. to +30 Vdc max.
- Average Consumption: 15mA@24Vdc, 25mA@12Vdc
- Maximum Consumption: 20mA@24Vdc, 30mA@12Vdc

#### **Communications**

- Serial Port: 1 Port RS232 / RS485, Modbus Protocol RTU/ASCII
- USB Port: 1 Port for configuration or Modbus slave (in the Concentrator)
- Ethernet Port 10/100Mbps: 1 Port for configuration or Modbus slave TCP or Modbus ASCII/RTU over TCP (only in model 1500-ETH-CN)
- Configuration: For USB or for radio for the remote nodes.
- Modbus Slaves: 239 maximum slaves
- Encryption of information: Owner

### Inputs and Outputs

- Analog Inputs: Up to 2, configurables in 0-10V or 4-20mA
- Analog Inputs in 0-10Vdc: Precision 10mV, Impedance of input 10.7 Kohm
- Analog Inputs in 4-20mA: Precision 10uA, Resistence of Shunt 68 Ohms. Protection in the input against tension spikes
- Analog Outputs in 0-10Vdc: Precision 10V, load min. 500  $\Omega.$
- Analog Outputs in 4-20mA: Precision 10 $\mu$ A, Shunt max. between 650  $\Omega$  & 1500  $\Omega$  depending on the power (13 to 30 Vdc)
- Digital Inputs: 4 to Transistor, Activation: +3,5Vdc min. to +28Vdc Max.-, Impedance: 2 Kohm, Max. pulse frequency: 1Khz.
- Digital Outputs: 2 to Transistor Open collector, +45Vdc max. input, 50mA max. Current

MODEL	FUNCTION	SERIAL PORT	EXTRAS	ANALOG INPUTS	ANALOG OUTPUTS	DIGITAL INPUTS	DIGITAL OUTPUTS	NODES (max)	
WRemote-1000-CN	Concentrator	RS232/485	USB					50	1 1 1
wRemote-1500-ETH-CN	Concentrator	RS232/485	USB/ETHERNET	 4x Configurables				50	1 1 1 1 1
WRemote-3005-ND	Node	RS232/485	USB	0-10V / 4-20mA		4	2		1 1 1
WRemote-5005-ND	Node	RS232/485	USB	2x Configurables 0-10V / 4-20mA	2x Configurables 0-10V / 4-20mA	4	2		

#### **Mesh Network**



#### Advantages of Mesh Network

- It is possible to carry messages from one node to another by different paths.
- Each node has its own communications with the others.
- Each node extends the scope of communications.
- It is much safer. If a node fails, another will take over the traffic.

## Other family devices



- Inputs and Outputs tunnel
- Tunnel ports RS232 and RS485
- Digital I/O , 0-10V and 4-20mA
- The entry of a computer, reflected in the output of the other

#### Monitoring of Inputs and Outputs

This solution allows us to monitor the physical inputs / outputs of the "Nodes" to conduct MODBUS to the interal slave (ID 247) that has the "Concentrator" referring to the same table by the configuration software.



This solution allows us to connect MODBUS devices to the "Nodes" either through the port RS232 or RS485 and make queries to the "Concentrator" that is in charge of referring them according to their configuration.







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