

2.4 GHz

# w Tunnel



## Wireless Tunnel - Analog, I/O and Serial Port with ZigBee radio Technology

### Contact

[www.exemys.com](http://www.exemys.com)

Av. Juan B. Justo 4054 - C1416DJU  
Ciudad Autónoma de Buenos Aires  
Argentina

Tel: (+5411) 4585-7585

Fax: (+5411) 4585-7278

E-mail: [info@exemys.com](mailto:info@exemys.com)

- Argentine Business, founded in 1998
- Certification ISO9001:2008 (Quality)
- Certification of Products UL 60950 (Electrical Safety)
- Certification of Products CE (European Community suitable)
- Global Product Exportation
- Own Designs and Know How

**ISO 9001:2008**  
Certification



GESTION DE LA CALIDAD  
RI-9000-6174  
Acreditado por OAA



**UL 60950**  
Products Certification



**SOFTWARE PROMOTION LAW**  
Company Approved





# wTunnel

## Wireless Tunnel with ZigBee Radio Technology

2.4 GHz

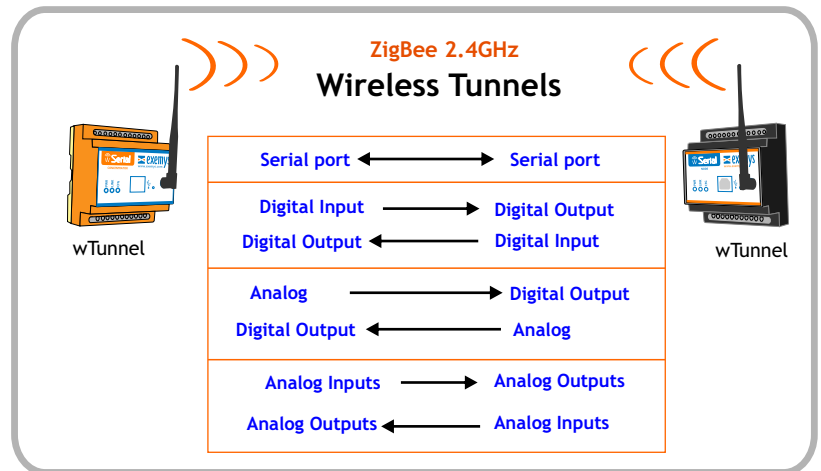
- Wireless Communication 802.15.4
- I/O Tunnel
- Analog to Digital Tunnel
- Serial Port Transparent Tunnel

**wTunnel** is an innovative product that enables reflect device inputs as outputs in the other, completely wireless and through technology ZigBee 802.15.4 Radio.

The system was designed to be a true Point to Point Tunnel to reflect conditions and field values, reliably and at low cost.

### General Characteristics

- Communication IEEE 802.15.4 in 2.4GHz
- 2 Analog Inputs, 0-10V and 4-20mA
- 2 Digital Inputs
- 2 Digital Outputs
- 1 Serial Port RS232/485/USB
- 2 Analog Outputs (NEW)



## Technical Specifications

### RF Wireless

- Protocol: IEEE 802.15.4
- Frequency: 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

### 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
- Guarantee: 1 year

### Communications

- Serial Port: 1 Port RS232 / RS485, Modbus Protocol RTU/ASCII
- USB Port: 1 Port for configuration or Modbus slave (in the Concentrator)
- Configuration: For USB or for radio for the remote nodes.
- Modbus Slaves: 239 maximum slaves
- Encryption of information: Owner

### Inputs and Outputs

- Analog Inputs: 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, Resistance of Shunt 68 Ohms. Protection in the input against tension spikes
- Digital Inputs: 2, Transistor, Activation: +3,5Vdc min. to +28Vdc Max.-, Impedance: 2 Kohm
- Digital Outputs: 2, Transistor Open collector, +45Vdc max. input, 50mA max. Current

### Power

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

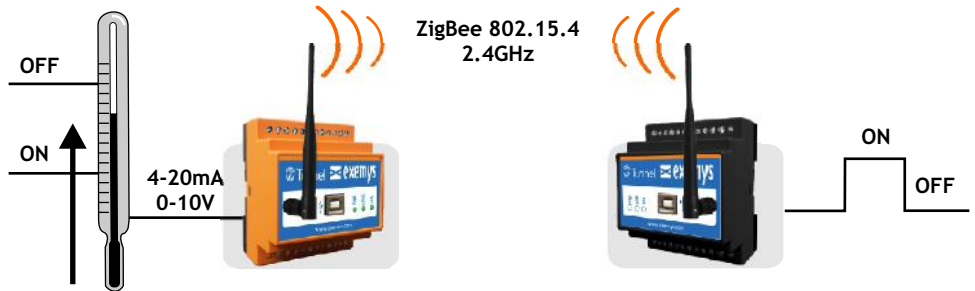
## I/O Tunnel

With this tunnel can replicate the activation of an input as an output the other end, and vice versa.



## 0-10V and 4-20mA with Digital Output, Tunnel

2 values are set at the inputs of 0-10V or 4-20mA from one end, which they shoot at the other end, on or off, of a digital signal.



## Serial Tunnel

It replicates the information flowing through the serial port on one end, on the other end. The device has a serial port RS232, RS485 or USB



## Analog I / O Tunnel (NEW)

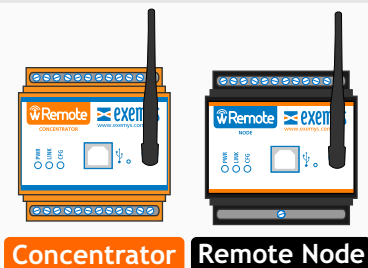
The value of an input analog will be reflected in the analog output of the team remote.



## Available Models

Model	Serial Port	USB	Analog Inputs	Analog Outputs	Digital Inputs	Digital Outputs
wTunnel-2002	RS232/RS485	Yes	---	---	2	2
wTunnel-3001	RS232/RS485	Yes	2 Configurables 0-10V / 4-20mA	---	2	2
wTunnel-5003	RS232/RS485	Yes	2 Configurables 0-10V / 4-20mA	2	2	2

## Other family devices: wRemote - Telemetry System with Wireless Mesh Networks



### wRemote Industrial

- Industrial Model Dash
- Red Mesh between remote devices
- Inputs and Outputs own
  - Digital and Analog
- Serial Port RS232/485
- MODBUS Protocol