



# RTO-21

## Range Extender

### ○ INTRODUCTION

The RTO-21 Range Extender can increase the range of a wireless sensor network by up to 300m.

It includes an internal mains power supply which is designed to work over a wide range of voltages and the RTO-21's enclosure is fully waterproof, which is ideal for use in harsh industrial environments.

The device can be wall or pole mounted using pan & tilt brackets to achieve maximum coverage.

It is fully compatible with EpiSensor's SiCA Platform and uses secure and reliable Zigbee wireless communications.

### ○ APPLICATIONS

The RTO-21 is perfect for connecting wireless nodes to SiCA Gateways which are located at the extremities of large buildings and would not normally be within wireless range.

It can be securely wired into a mains supply to prevent tampering and will automatically route data between wireless nodes and SiCA Gateways.

Multiple RTO-21's can be used to increase the reliability of a wireless sensor network.

### ○ FEATURES

Extend wireless range by up to 300m

Easy to install and configure

Increase node-to-gateway ratio

Mains Powered

Fully Waterproof (IP67)

Fully SiCA Compatible

Secure and Reliable Zigbee Communications

Wall & Pole Mountable

Low Power Consumption

### ○ SPECIFICATION

Wireless: IEEE 802.15.4 (ZigBee PRO)

Radio Frequency: 2.4 Ghz ISM Band

Security/Encryption: 128bit AES Encryption

Power: 75V - 265V AC

Dimensions: 144 x 112 x 35 mm

Enclosure: Polycarbonate

Mounting: Wall or pole mounting flanges





## ○ RANGE EXTENDER

Parameter	Value
Power Supply	65V - 275V AC Mains
Indoor / Outdoor Range	50m / 300m
Antenna Type & Gain	Chip Antenna, 3dB Gain
Power Consumption	1.1W
Zigbee Standard	Zigbee Pro 2.4GHz
Zigbee Device Type	Zigbee Router

## ○ WIRELESS

Parameter	Value
Max Tx Power	+3dBm (+5dBm in Boost Mode)
Rx Sensitivity	-98dBm @ 1% Packet Error Rate
Radio Frequency	2.4 Ghz ISM Band
Channels	16 Channels (11 - 26)
Data Rate	up to 250 kbits/sec
Encryption	128bit AES Encryption
Indoor Range	up to 50m
Outdoor Range	up to 300m (direct line of sight)

## ○ PHYSICAL

Parameter	Value
Dimensions	144 x 112 x 35 mm
Weight	350g
Mounting	Wall Mounting Flanges
Enclosure	Polycarbonate Plastic, IP67 rated
Operating Temperature	-40°C to +85°C
Operating Humidity	up to 80% (non-condensing)

## ○ APPLICATIONS

- AMR / AMI Range Extension
- Warehouse Floor Coverage
- Outdoor Range Extension
- Wide-Area Environmental Monitoring
- Areas with high sensor granularity:

Data Centers  
Advanced Manufacturing Facilities  
Warehouses  
Food processing

## ○ APPLICATION AREAS

- Public, Commercial & Industrial Buildings
- Warehouses, Logistics, Manufacturing
- Universities, Hospitals, Clinics, Hotels
- Apartment Blocks