

Product Specification Sheet

ECOMM Series

WC21 Full Function Device Controller Router Repeater

The WC21 is a Full Function Device with two configurable inputs for thermistor, dry contact or pulse and two Form C relay outputs for up to 30VAC or DC at up to 1 amp. The WC21 also has an RS485 ModBus RTU communication port for support of third party devices that have been characterized to be accepted and operate on the ECOMM Sensor Link Mesh Network.

Physical Characteristics / Dimensions



2 15/16 In.
74.6 mm

Chassis Depth
1 3/8 In.
34.9 mm

Mounting Holes
3/16 in./4.7 mm dia.
3 5/16 in./84.1mm
apart

- Enclosure ABS-VO Plastic
- Operating Temperature -6.5C to 62.5C
- Storage Temperature -40C to 80C
- Operating RH 5-95% Non-Condensing
- Storage RH 5-95% Non-Condensing

2 1/2 In.
63.5 mm

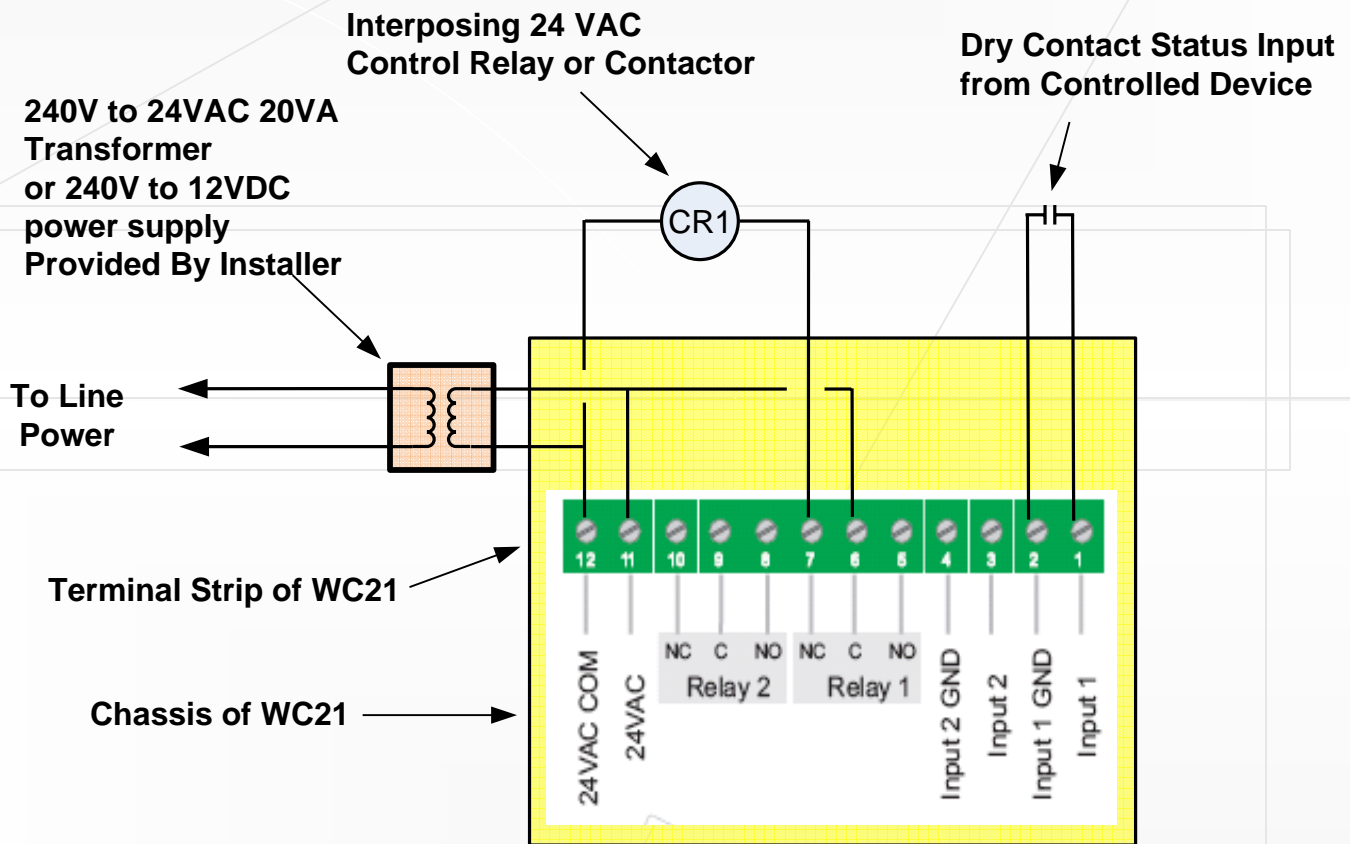
Detailed Specifications

Detailed Specifications	
RF	
RF Classification	802.15.4 ISM Band Device (Instrument / Scientific / Medical)
Frequency	2.4 GHz 16 Channels
Network Architecture	Star Mesh PAN Coordinator
Firmware	Upgradeable over SensorLink Mesh Network
Transmit Sensitivity	12 dBm
Receive Sensitivity	-94 dBm
Device Classification	Full Function Device / Mesh Router Repeater
Hardware	
Power Requirements	Operates on 24 VAC 50/60 Hz (+/- 15%) or 12 VDC (+/- 5%)
Inputs (Two Discrete)	Configurable via Mesh / Dry Contact-Pulse or 30 K Ohm Thermistor
Outputs (Two Discrete)	Form C Relays (Com/NC/NO) Rated at 1 Amp - 30 VAC VDC
Transmit Power	35 ma @12 VDC
Communication Port	RS 485 RTU ModBus 9.6 to 19.2 Kbaud for connected Slave Device
Transmission Update Interval (Data)	Selectable 10-3,600 Seconds
Line of Sight Range	1,400 Feet / 425 Meters
LED Status Indicator	Associated with Mesh Network
Pulse Input Configuration	
Period	Pulse accumulation period adjustable 60-3,600 Seconds
Accumulation	Continuously appended for both Discrete Inputs
Local Storage on WC21	8 Bin Interval Storage Periods per Input
Frequency Resolution on Pulses	10 Hz (10 Pulses per second)
Period	50 Milliseconds
Pulse Duration	30 Milliseconds

Application Examples

WC21 Full Function Device Router Repeater

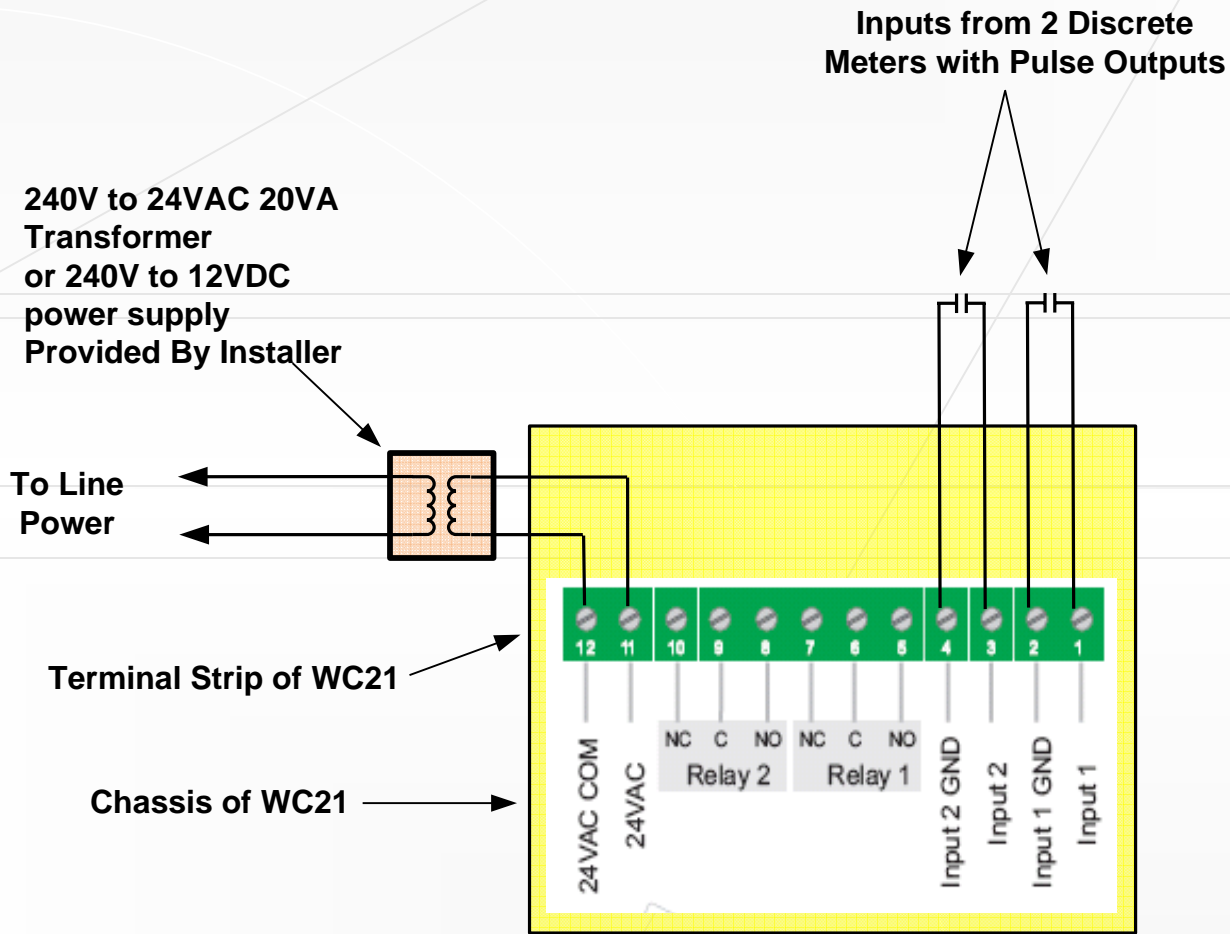
- Comply with all Local and National Electrical Codes
- If installing the WC21 inside an enclosure use only Plastic or Fiberglass
- **Do not install WC21 inside a Metal Enclosure**
- **Observe 1 Amp 30 VAC VDC Rating of WC21 Contacts**



Application Examples

WC21 Full Function Device Router Repeater

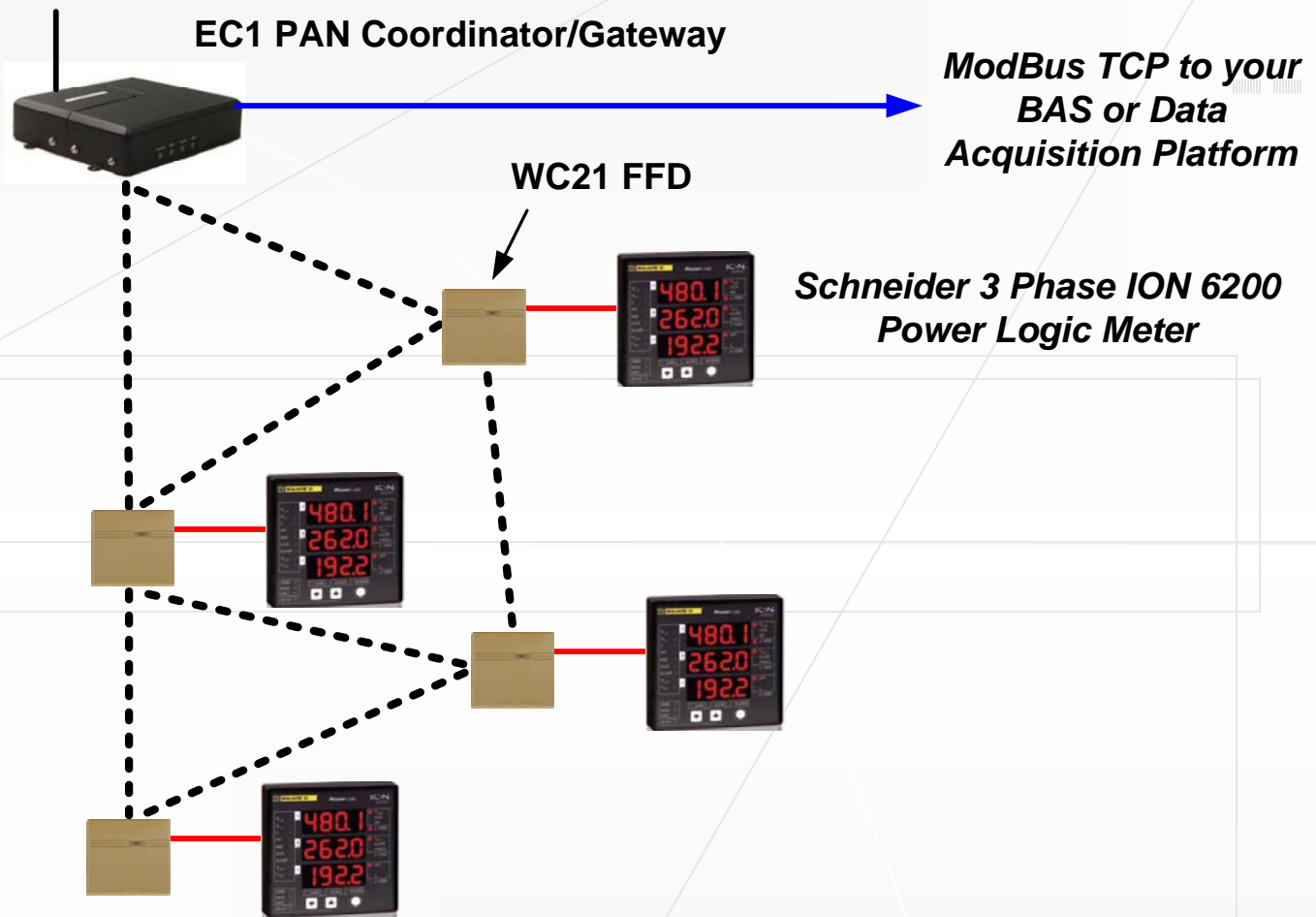
In this example the Inputs of the WC21 are configured as Dry/Contact – Pulse Inputs connected to two separate meters with Pulse Outputs. The WC21 provides 8 interval storage bins per Input configurable between 60-3,600 seconds per bin, as well as total pulse accumulation.



Application Examples

WC21 Full Function Device Router Repeater

In this application the WC21 FFD's are connected to characterized 3rd Party products in the form of ModBus Slave RTU RS485 devices. The WC21 automatically recognizes the device to which it is connected and presents the register map of the device to the EC1 Gateway.



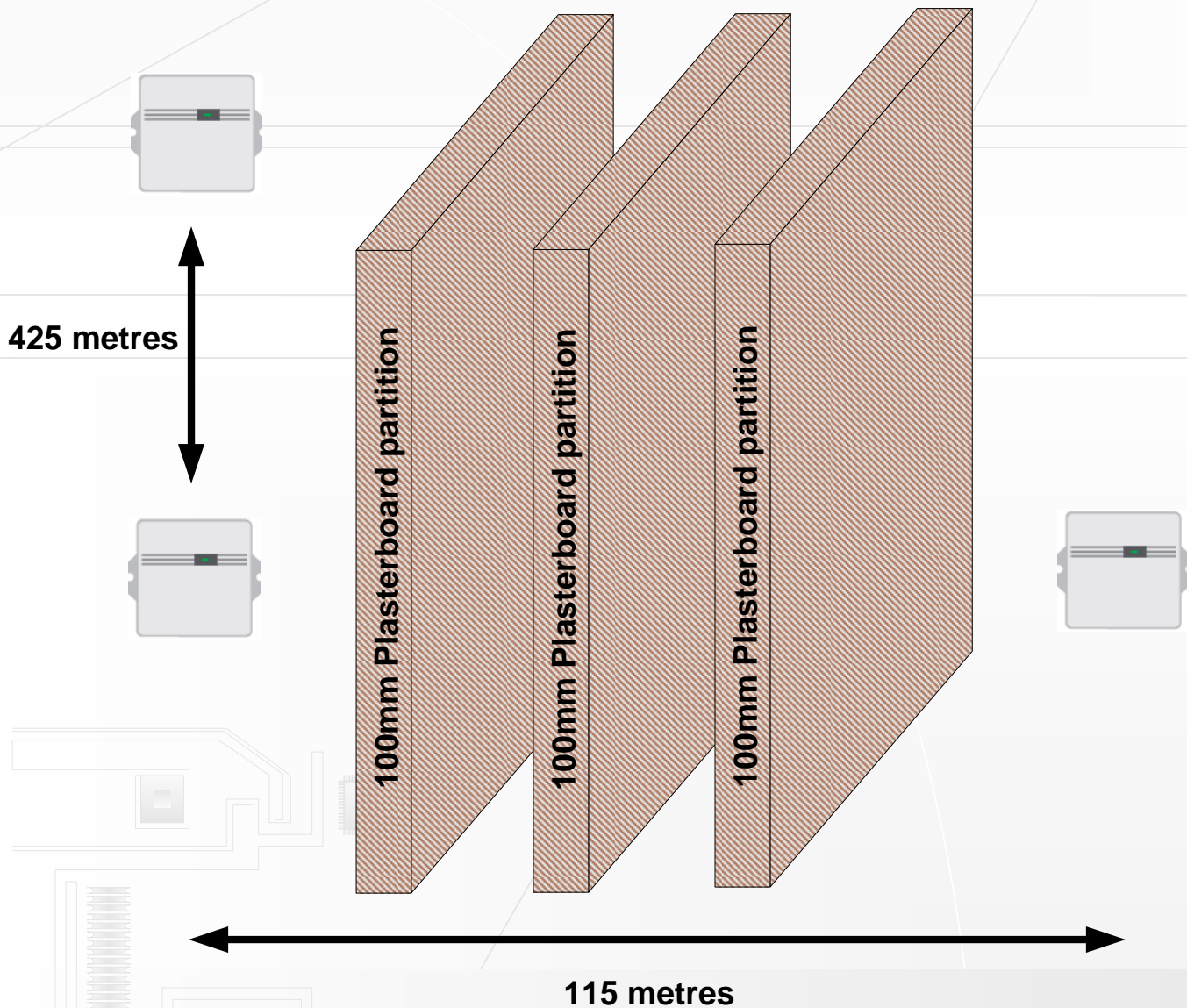
- Connection Between WC21 and Meter is RS485 RTU ModBus
- 75 FFD Nodes Per Network
- 5,925 Discrete Registers
- 60 Second Data Latency on fully populated Network
- WC21 can be powered from 12 VDC or 24 VAC 50/60 Supply
- Any combination of ECOMM FFD's can reside on the Network
- Multiple Networks can co-exist in the same Geography
- When WC21 RTU port is connected to 3rd Party Device the on Board I/O of WC21 are not functional.

Application Examples

WC21 Full Function Device Router Repeater

Range Metrics

Effective range between nodes on the Mesh Network will vary depending upon what type of material is between the nodes and how many individual barriers exist. The example below indicates common signal degradation with 3, 100mm Plasterboard partitions separating the 2 Full Function Devices.

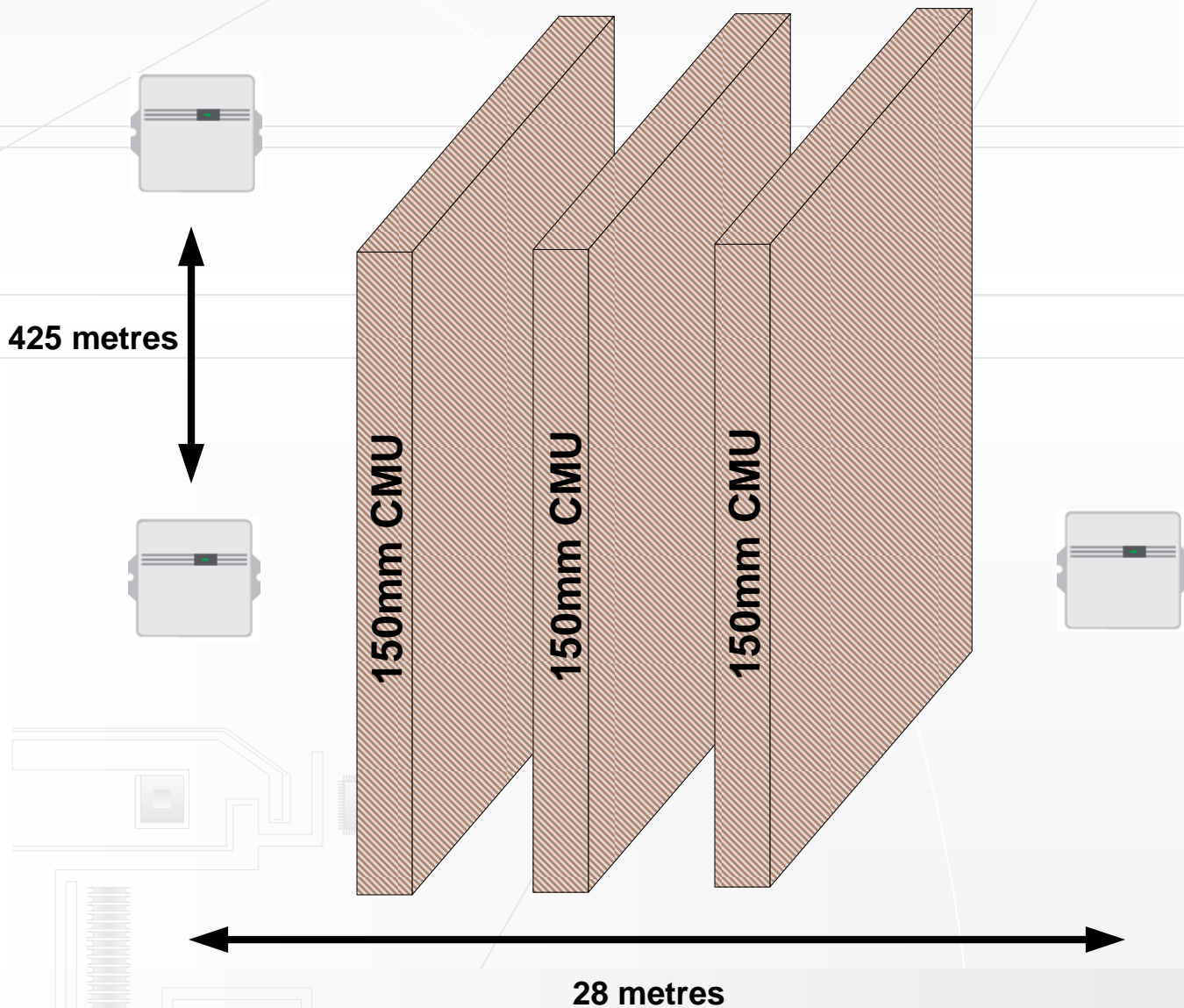


Application Examples

WC21 Full Function Device Router Repeater

Range Metrics

Effective range between nodes on the Mesh Network will vary depending upon what type of material is between the nodes and how many individual barriers exist. The example below indicates common signal degradation with 3, 150mm Concrete Masonry Unit (CMU) or Breeze Block partitions separating the 2 Full Function Devices.



Application Examples

WC21 Full Function Device Router Repeater

Range Metrics

Effective range between nodes on the Mesh Network will vary depending upon what type of material is between the nodes and how many individual barriers exist. The example below indicates common signal degradation with 2, 250mm Reinforced Concrete partitions separating the 2 Full Function Devices.

