

## MULTI-ZONE HEATING CONTROLLER

### MZ-503 FEATURES

- Up to 4 zones of independent heating control
- High Temperature floor protection settings when used for UFH applications
- Setback / Frost protection settings
- Heat enable relay outputs for HIU/Boilers/Heat Pump with output delay option
- 8 x Temperature inputs
- Ability to connect 4 x RDU interfaces (requires RDU-T/Hub)
- Fully compatible with Titan Products residential control solution

Designed to provide independent heating control for up to 4 zones, the MZ-503 can be used as a stand-alone controller or part of the Titan Products residential control solution.

Each zone can be allocated a control output, a control sensor to monitor the heating demand, and a high limit floor sensor to protect the flooring in underfloor heating (UFH) applications if required.

A common enable for plant such as HIUs, Boilers or Heat Pumps is provided as standard.

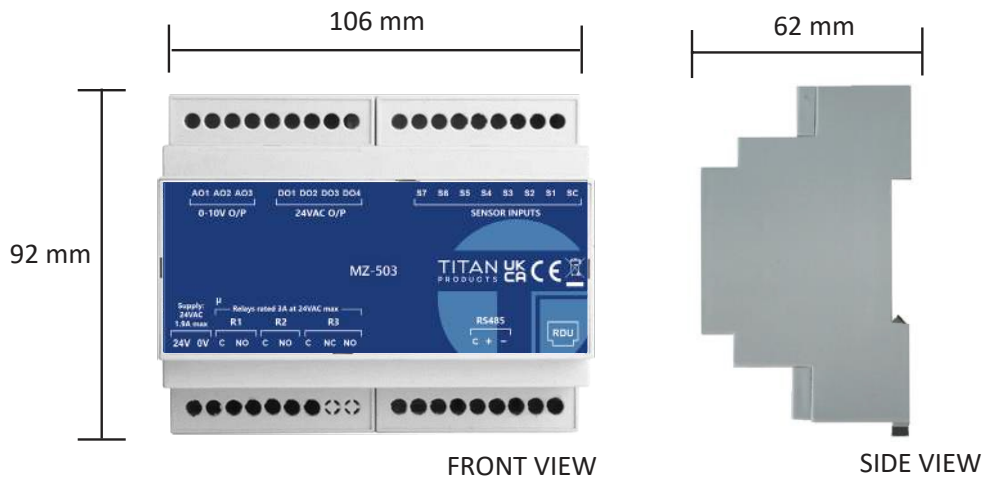
Setback and frost protection settings are available as standard and the controller is supplied with BACnet MS/TP communications for links to a BMS, Third Party Solutions or integration into Titan Residential solutions.

### SPECIFICATION

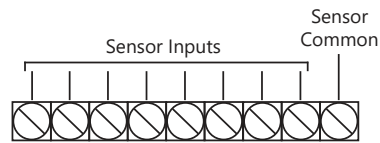
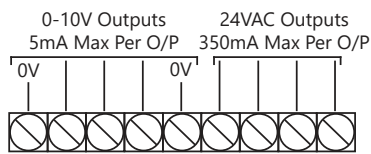
Power Supply	24V AC/DC +/-10%
Power Consumption	400mA excludes outputs @ 24V (includes 1x RDU)
Inputs/Outputs	4 x Digital Outputs 3 x Analogue Outputs 2 x Relay Outputs 7 x 10K3A1 Temperature Inputs 1 x RDU Temperature Sensor (up to 4 RDU Temp Sensors if using with RDU-T/Hub)
24VAC Digital Outputs	350mA max
0-10V Analogue Outputs	5mA max
Relay Outputs	5amp at 240V max
Temperature Inputs	10K3A1
Communications	BACnet MS/TP (RS485)
Indication	Tx/Rx
Operating Temperature	5–40°C
Operating Humidity	20 – 80% RH Non-condensing
IP Rating	IP20
Mounting	DIN Rail
Dimensions	106 (w) x 92 (h) x 62 (d) mm
Country of Origin	UK
Product Code	MZ-503



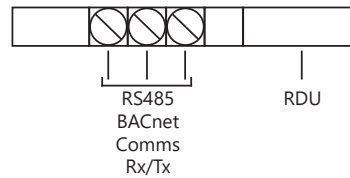
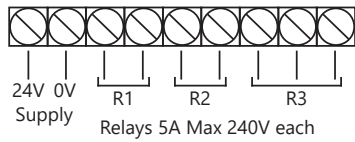
## DIMENSIONS



## CONNECTIONS

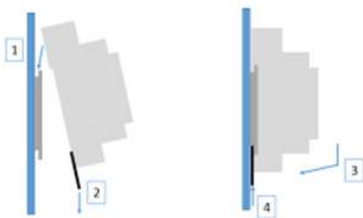


Note:  
24VAC Outputs to be referenced  
to supply 0V



## MOUNTING

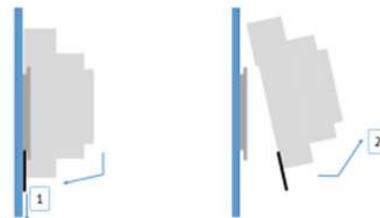
### Fixing to DIN rail



1. Fix top clips over DIN rail
2. Pull down bottom clips using screwdriver
3. Close controller towards DIN rail
4. Push up bottom clip to fix securely to DIN rail

*Must be mounted horizontally*

### Removing from DIN rail

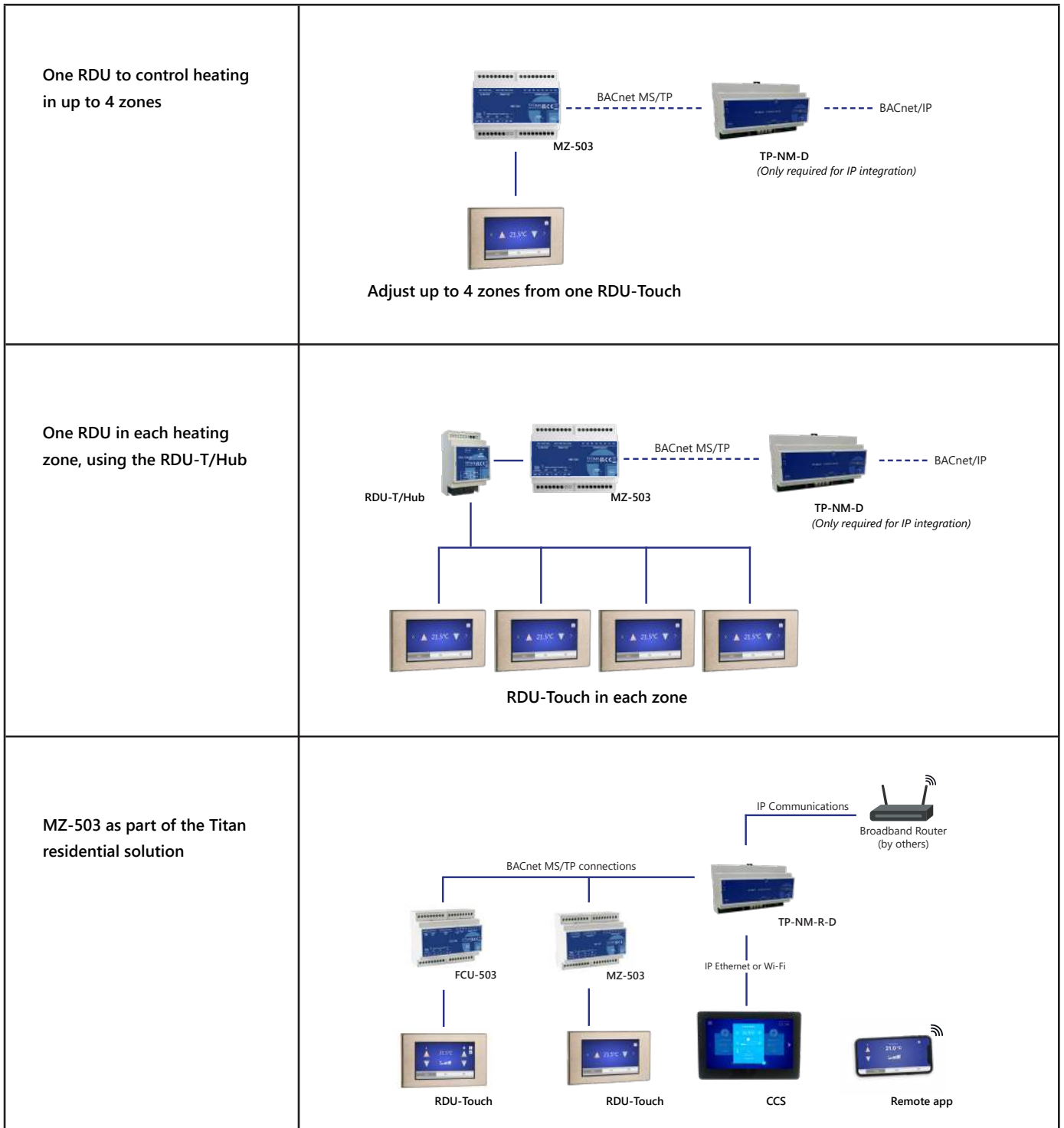


1. Pull down bottom clip with screwdriver
2. Lift controller away from DIN rail

*This product must be installed by competent and suitably qualified person and mounted in an enclosure rated for the intended environment.*

For install and setup information please contact [technical@titanproducts.com](mailto:technical@titanproducts.com)

## SYSTEM OPTIONS



For install and setup information please contact [technical@titanproducts.com](mailto:technical@titanproducts.com)

## CABLE RECOMMENDATIONS

Item	Cable Spec & Reference	Requirements
BACnet Communications to BMS Router and between Master - Slave Controllers	Belden 9841 (0.2mm <sup>2</sup> ) Twisted Pair with Drain wire and foil wrap or equivalent.  <b>Note: Drain wire can be used to as a common connection.</b> <b>Note: Must be suitable for RS485 Standard</b>	Daisy chain network configuration only. The cable shield must be connected to Earth ground at the network router end only. <b>Note: Ensure a 120 ohms resistor is fitted to end of line controller.</b>
Plug In lead between MZ-503 & RDU-Touch	RJ45 CAT5 cable (unbooted recommended) <b>Note: Titan Products can supply premade leads to length</b>	Max Cable length 100m Straight-Through cable type.
Resistive 2 Wire Temperature Sensors	2 Core twin twisted screened:- 0.75mm -1mm Belden 8760 (0.82mm <sup>2</sup> ) or Equivalent	Screen Earthed at Controller end only
0-10V Sensors	2 Core twin twisted screened:- 0.75mm -1mm Belden 8760 (0.82mm <sup>2</sup> ) or Equivalent	Screen Earthed at Controller end only
Valve and Damper Actuators	4 Core Screened:- 2 x Twisted Pair:- 0.75mm -1mm Belden (0.82mm <sup>2</sup> ) or Equivalent <b>Note: This depends on the type and number of actuators being used. Check requirements with actuator manufacturer before installation</b>	Screen Earthed at Controller end only
Digital inputs :- PIR's / Condense Sensor / Fan prove/ On-Off Switch	2 Core twin twisted screened:- 0.75mm -1mm Belden 8760 (0.82mm <sup>2</sup> ) or Equivalent	Screen Earthed at Controller end only

- All low voltage cables must be segregated from any mains carrying inductors and they should not be run in the same containment system
- All low voltage cables must not run in close proximity to any mains AC inductive loads such as florescent fittings and electric motors

### BACnet Network Configuration

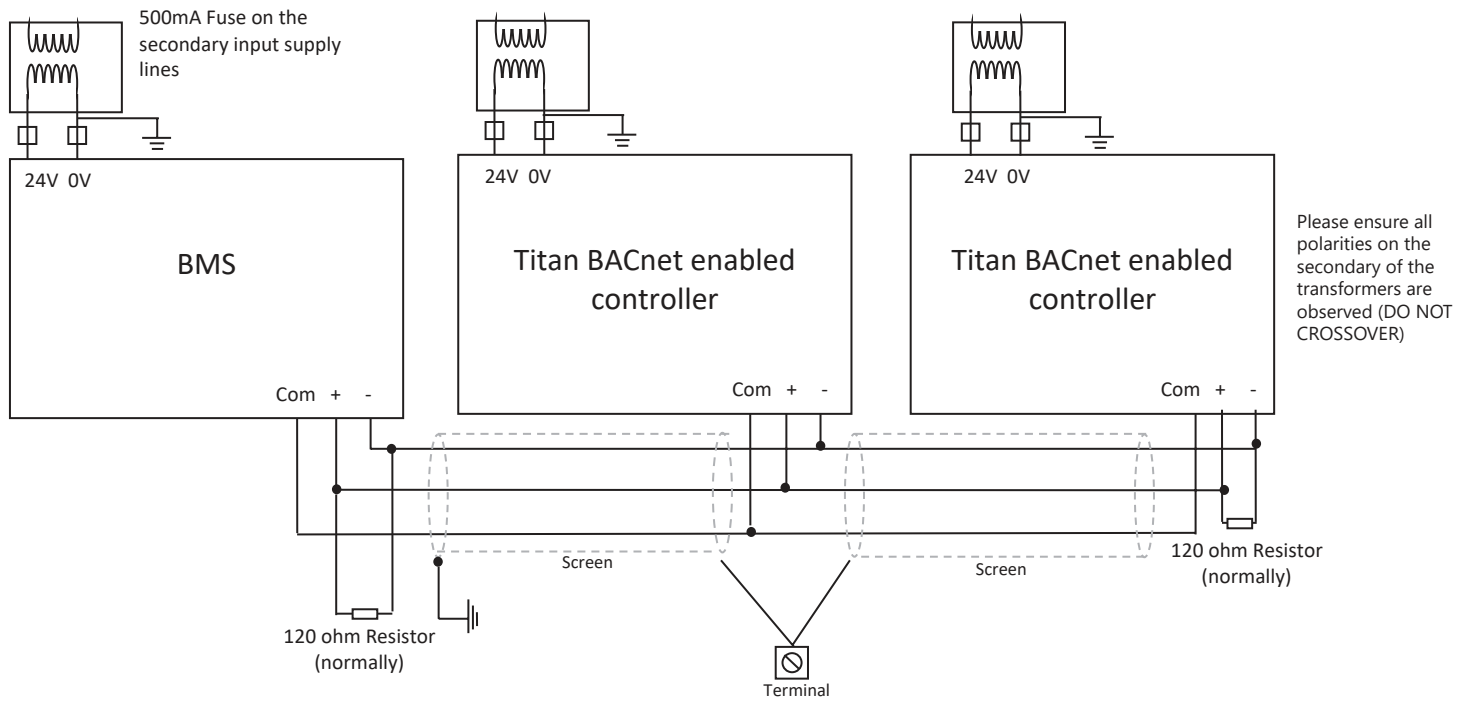
Based on the standards for RS485 networks a BACnet MS/TP network layer allows for only a daisy-chained network configuration, consisting of a single cable routed between controllers. Star and Ring network topologies are not supported.

The network electrically supports a maximum of 127 nodes, however BUS network size capability is determined by factors such as network traffic and BMS capabilities and we recommend maximum network size of 32 devices.

To comply with the EIA-485 standard, the maximum number of nodes per segment shall be 32 and any additional nodes will require the use of repeaters. If only Titan controllers are on the MS/TP network, the number of controllers may be increased but this will depend on the network traffic, the baud rate being used and the length/route of the cable.

A termination resistor of 120 ohms should be connected at each of the end devices, when a network is connected to a Router or BMS this becomes one of the end devices. Please check with the Router/BMS manufacturer if the 120 ohms end of line resistor is fitted internally.

## BACNET CONNECTIONS



The above diagram shows a typical 3-wire daisy chain configuration. For all BACnet standard wiring variants please consult ASHRAE wiring standards.