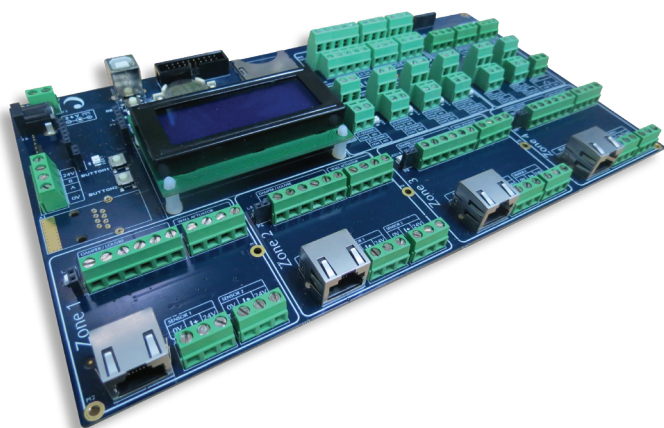


iNVent 2

Intelligent Natural Ventilation Control

Product Specification Sheet



Product Concept

The Monodraught iNVent 2 system is a Natural Ventilation management system for up to 4 zones, each consisting of up to 3 systems.





It utilises seasonally adjusted proportional controls based on internal temperature and CO₂ levels. With built in data logging, Fire Alarm and Heating Interlock facilities, Alarm Fault signal connection and further configurable functions, the iNVent2 system can control natural ventilation systems to suit any building application.

The panel is supplied with a remote transformer, requiring a 230V 3A wall socket or switched spur. The panel will be supplied with temperature and CO₂ control options and override controls for all the zones it is serving, as detailed within the zonal wiring diagrams below.

Benefits

- Supports all Monodraught natural ventilation products
- USB access for configuration & monitoring
- Configurable sensor, strategy & actuator mapping
- External cooling and heating zone control
- Fully backwards compatible with iNVent
- Automatically resets if power is interrupted using watchdog timer
- Built-In data logging
- Seasonal control strategy, influenced by internal & external temperatures, as well as CO₂ levels

Cable Specification (to be used throughout)

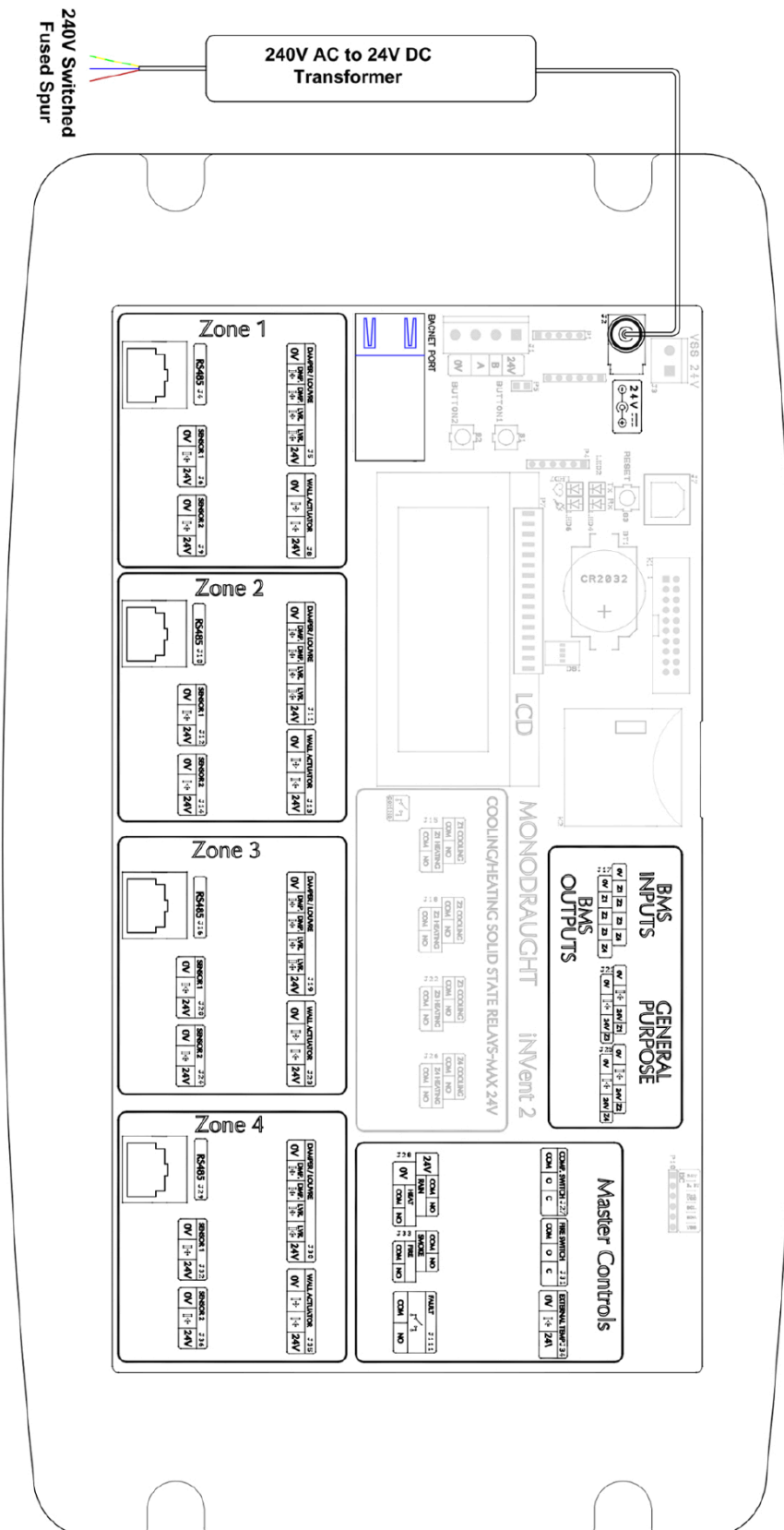
Specification				
Farnell	2827541	2827536	2827531	2827523
RS	827 - 4170	827 - 4164	444 - 0575	827 - 4139
No. Cores	7	5	4	2
CSA	1mm ²	1mm ²	1mm ²	1mm ²
Screened	No	No	No	No
Voltage Rating	250VAC or better	250VAC or better	250VAC or better	250VAC or better
Insulation Material	PVC	PVC	PVC	PVC

Please note:

- With cable specifications advised, the maximum recommended cabling distance from the iNVent2 panel is 50m. If the cable run is longer than 50m, please contact Monodraught for further assistance.
- Redundant core to be suitable terminated.

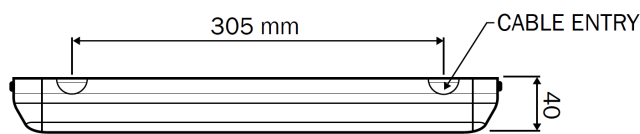
Internal View

(image shown vertically, actual mounting position to be horizontal)

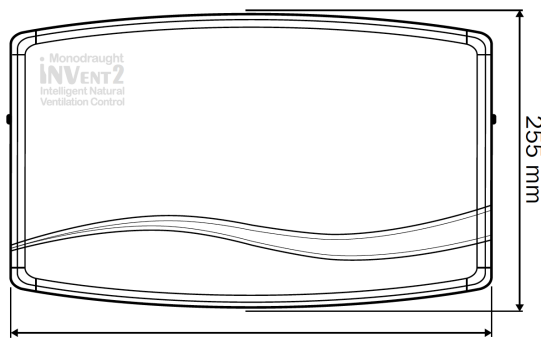


Panel Installation Instructions

1. The iNVent2 control panel should be located in an area without obstructions to facilitate the electrical connections.
2. The panel requires a mains 3A connection for the 230V AC / 24V DC transformer from either a conventional switched plug socket or fused spur.
3. The panel should be mounted with the length of the system mounted horizontally.
4. The iNVent2 system should be secured to a wall or partition using the four supplied screws. The correct wall plug for the type of wall must also be used.
5. The four fixings should be 366mm apart with a 110mm vertical distance.
6. Connect the Zone terminations as per the zonal wiring diagrams previously listed. The cables can be routed through the top two sections and routed along the cable trays at both sides and bottom of the case.

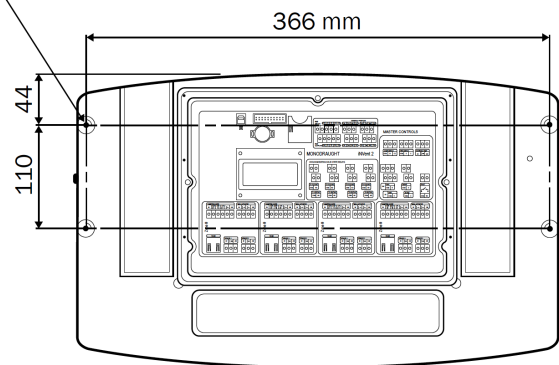


PLAN



385 mm
EXTERNAL

FIXING HOLES

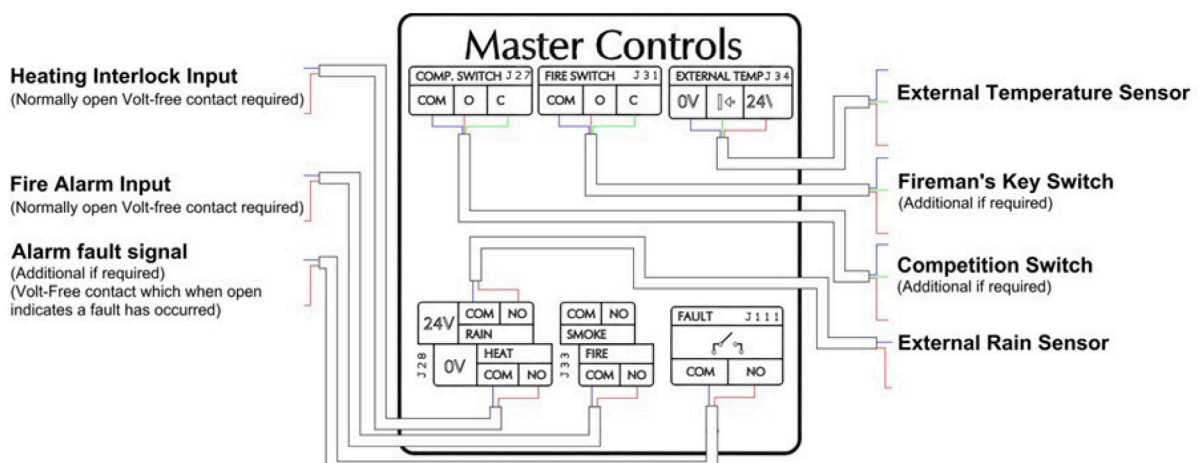


INTERNAL

Note: Care should be taken to ensure that the correct cable terminations are followed as incorrect connections can cause damage to the system.

Master Control Inputs

The Master Control Inputs allow for the connection of extra functionalities of the iNVent2 board. To function correctly iNVent2 must be connected to a suitable external temperature and rain sensor. These are typically supplied by Monodraught but alternative products may be used, please contact us for further details.



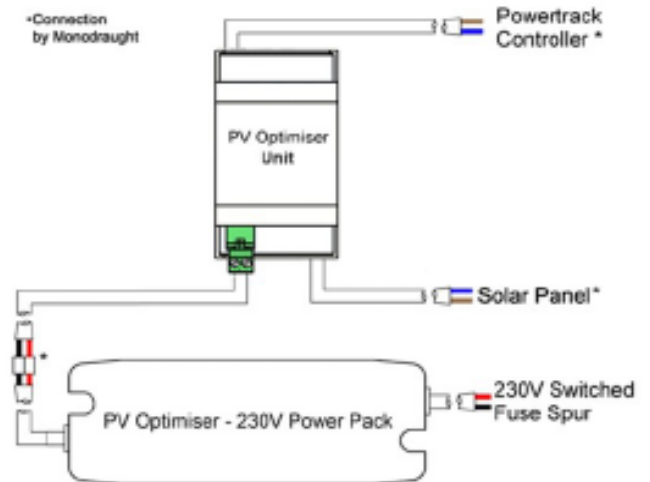
PV Optimisers

(If required)

The PV Optimisers consists of two components; the Optimiser Unit and the 230V Power Pack.

The Optimiser unit will be connected and mounted by Monodraught.

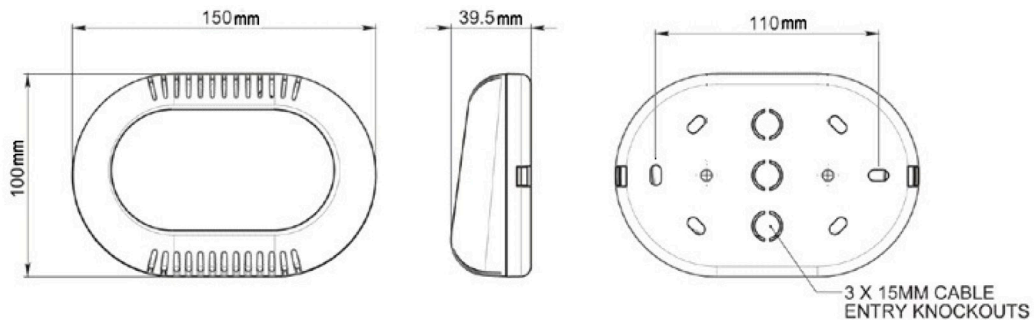
The Power Pack will require a 230V Mains supply connection via a 5A switched fused spur. Both the Power Pack and fused spur will require locating adjacent to each system within the roof void and the Power Pack will require connection to the Optimiser unit as detailed.



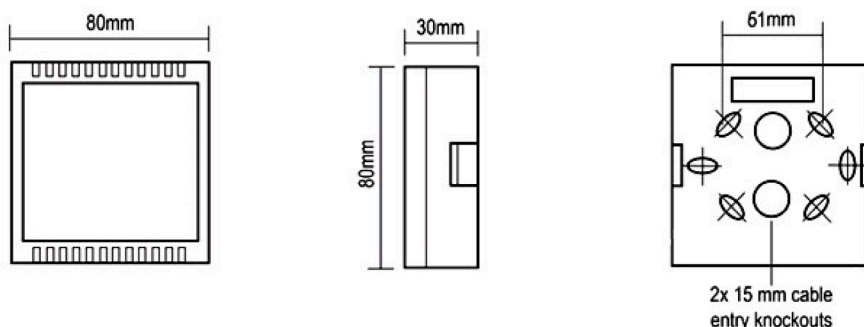
Mounting Wall Controllers and Additional Sensors

1. Separate the two piece moulding by pressing the side clips in.
2. Screw the base plate to the wall taking care to ensure that the Top arrow is in the correct position.
3. Secure to the wall using a minimum of two fixings which should be horizontal and a distance of approximately 110mm apart for Wall Controllers and 61mm for Additional Sensors.
4. Use the two screws supplied with the correct wall plug for the type of wall construction where the controller is being mounted.
5. The controllers and temperature sensors should be mounted between 1.2 and 2.1m above floor level.
6. The controllers contain a temperature sensor and care should be taken with the location to ensure that they are not mounted above a heat source, in direct sunlight or in an area where draughts may occur.
7. Connect the Cable terminations as per the zonal wiring diagrams previously listed. The cables can be routed through the back of the case.

Wall Controller



Additional Sensors

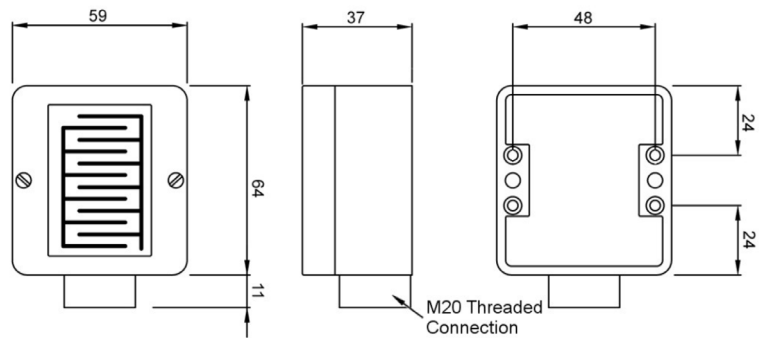


External Rain Sensor Mounting & Connections

The rain sensor consists of three main components; the Sensor Unit, the Control Module and the Control Module Din Rail IP55 Case.

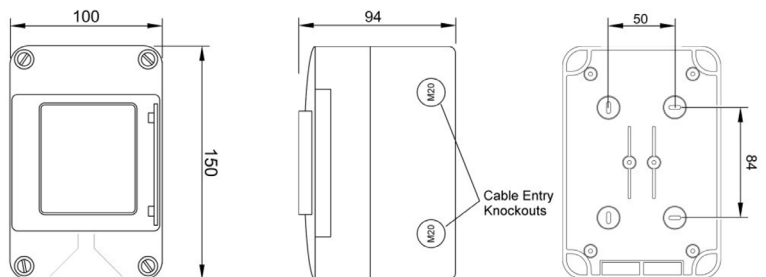
Sensor unit

The Sensor Unit should be mounted externally at roof level, in an exposed location, with the rain sensor facing skywards to give a true reading. The sensor can be secured in place by; using suitable conduit fixed securely into the M20 fixing at the end of the unit, removing the top of the sensor unit and using at least two fixings through the fixing holes or using suitable weatherproof sealant to glue the sensor securely in place.



Control Module Din Rail IP55

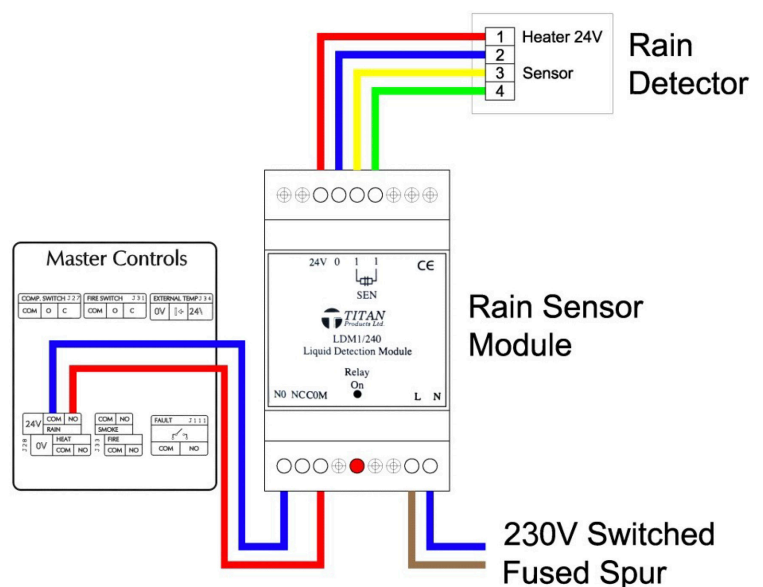
The Control Module Din Rail IP55 Case should be mounted internally in a location close to the Sensor Unit. Secure in place using a minimum of two fixings which should be horizontal and a distance of approximately 50mm apart. Once secured in place the Din rail can be attached, using the two self-tapping screws provided and the Control Module attached centrally to the rail.



Control Module Connections

Connect the Cable terminations to the Control Module as detailed, removing the cable entry knockouts as required and securing in place with suitable grommet to ensure the cables are tamper proof. A 230V Mains supply connection via a 3A switched fused spur to the terminals marked 230V L – N is required.

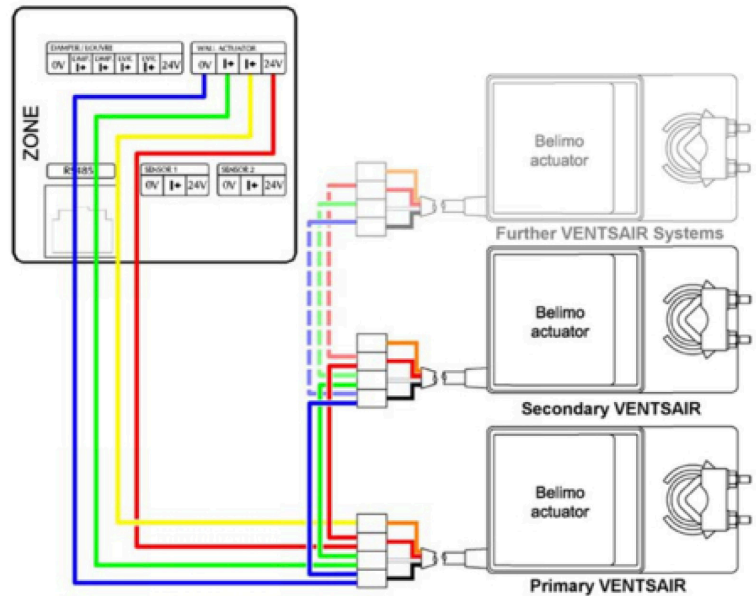
The Control Module should be connected to the Sensor Unit using the 4 core (16-2-4A) cable and to the iNVent2 panel using the 2 core (16-2-2A) cable specified on page 2.



Additional VENTSAIR systems (If required)

Monodraught VENTSAIR wall mounted natural ventilation systems are often installed within a zone to work in conjunction with roof mounted WINDCATCHER and SOLA-BOOST systems to provide cross ventilation and usually consist of three main components: the external louvres, actuated dampers and an internal grille.

The Primary VENTSAIR system should be connected to the Wall Actuator Connector of the relevant Zonal iNVent Connection terminal using the 4-core (16-2-4A) cable specified on page 1. If secondary VENTSAIR systems are to be utilised, the systems can be daisy chained from the preceding actuators connection block. Secondary systems will only require the connection of the 0V, 24V and Signal Out wires using the 3-core (16-2-3A) cable specified on page 1.

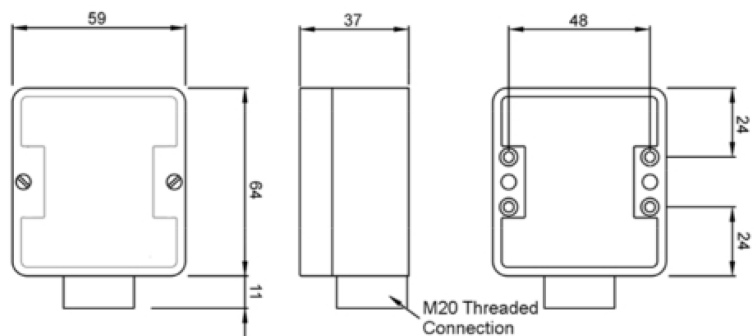


External Temperature Sensors Mounting and Connections

Sensor unit

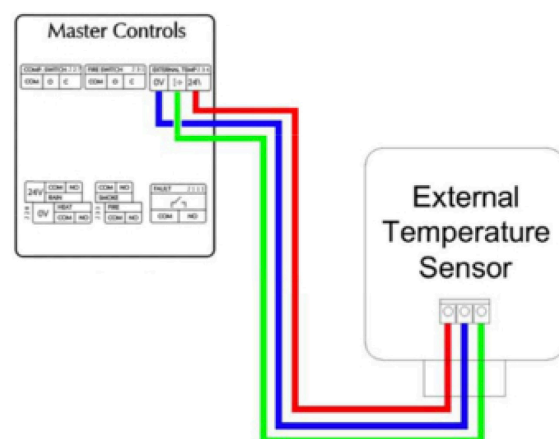
The external temperature sensor is a key component to the control system. The sensor should be mounted on a north-facing wall shaded by a soffit or similar or in a position where it will be free from direct solar radiation all year round.

The sensor can be secured in place by: using suitable conduit fixed securely into the M20 fixing at the end of the unit; removing the top of the sensor unit and using at least two fixings through the fixing holes; or using suitable waterproof sealant to glue the sensor securely in place.



External Temperature Connections

The sensor should be connected to the iNVent panel as shown below with the 3-core (16-2-3A) cable specified on page 1.



BACnet Connectivity

BACnet connectivity offers Building Management Systems (BMS) visibility on the individual values and operational status of the iNVent2 control system. The information provided includes:- time and date, external temperature, global status, local status and the values for sensors, dampers, louvres and wall actuators, as well as control position such as Fire, Smoke, Rain, Heat and Fault status.

The BACnet module requires an RJ45 Ethernet connection (by others) from the BACnet/IP network to the iNVent2 control panel via a 10/100BaseT Ethernet connection (RJ45 Terminated, CAT5 or better rated cable).

Each iNVent2 system has its own unique IP address on the BACnet/IP network. We require a fixed IP address to pre-programme into the BACnet module prior to delivery. Specifically, the IP address, subnet mask and default gateway of each system in IPv4 format. This must be provided to Monodraught two weeks prior to delivery.

If an IP address is not provided by the client, the default range of 192.168.0.100 - 192.168.0.200 will be used, with a subnet mask of 255.255.255.0. The default gateway will also be set to 192.168.0.1.

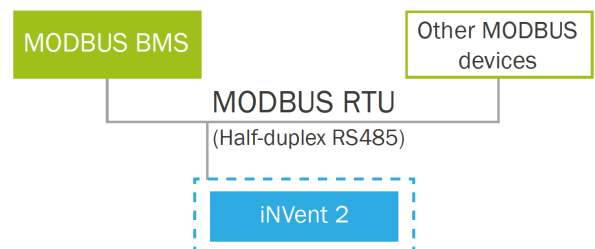
Please see our 'iNVent 2 - Optional BACnet Module' Product card for further details.

MODBUS Connectivity

The MODBUS module allows an iNVent 2 system to be installed on to a MODBUS RTU network and make the state of the system visible to the master MODBUS device. The MODBUS module for iNVent 2 plugs into the iNVent 2 Control Panel and interfaces with the on-board micro-controller to provide MODBUS RTU visibility of the iNVent 2 system over a half-duplex RS485 link.

Each iNVent 2 system has its own unique MODBUS number allocated 1 to 247 through the iNVent 2 configuration tool. The MODBUS module requires a 1.5 or 2 pair shielded cable daisy chained between each of the Modbus modules located in the iNVent 2 panel. Cable is to be supplied and installed by others.

MODBUS





We are pioneers in the design and manufacture of advanced sustainable ventilation, cooling, heating and lighting solutions for new and refurbished commercial and public buildings. We deliver outstanding temperature-control and indoor air quality whilst minimising the consumption of both electricity and refrigerants so as to reduce our carbon footprint. Monodraught have over 45 years' experience and our products have saved the equivalent of nearly 390,000 tonnes CO₂ over the last two decades.

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