

Node 1

Location

Node 1 is located in the void behind Bedroom 2 and Bathroom 1 in the eaves space. Additional ventilation to be considered and each wiring enclosure has fans with temperature control.

The cabinets and dimmers are to be mounted on a backing sheet of chipboard attached to the studwork. Access is via the rear of the cupboard in Bedroom 2.

Cabinet 1

Within this cabinet are the distribution rails for the lighting and the 12V electronic transformers for the LV Halogen lighting. Of the 12 available 4 amp dimmer channels, 8 are reserved for LV lighting. This leaves 8 channels for 230V lighting and 8 channels for CFL lighting. If this proves insufficient then a further 12 4 amp channels can be added.

The cabinet holds 8 electronic transformers, 4 of which are 200VA and 4 50VA units.

Connection schedule to be determined on site. 150 Din rail connections available.

Cabinet 2

This cabinet controls the lighting and heating for the majority of the house. It contains two controller boards which support 20 inputs and 16 outputs. Both controllers are connected via Ethernet to the main HA computer in the ground floor equipment cupboard.

The 24V feeds to the radiator actuators are from controller 1. The c/o relays have +24V on the normally open contact and a feed from a thermostat located on the landing on the normally closed contact. In the event of failure of the HA system then this stat may be used to control the radiators. Individual room control is lost if this happens. A 24V failure detect line goes into the second controller. There is no fallback for the failure of the 24V PSU – this is a Siemens SITOP industrial unit.

The compact fluorescent light ballasts are fed 230V via relays to allow complete turn off – the 10V dimming signal is derived from the 8 channel DMX controller - 1

A number of sensors are connected to collect data for use by the HA system.

The 230V bathroom fans are controlled by the HA system with input from the humidistats as well as the house occupancy signals. The run times for the fans is determined by a number of factors, including time of day.

Connections are as follows:

Description	Cab 2 connection
230V AC in L from GF UPS supported	Rail C – 1
230V AC in N	Rail C – 11
230V AC in E	Rail C – 7
230V AC out L to Dynalite controller	Rail C – 2
230V AC out N to Dynalite controller	Rail C – 12
230V AC out E to Dynalite controller	Rail C – 8
230V AC in L lighting feed	Rail C – 50&51
230V AC in N	Rail C – 52
230V AC in E	Rail C – 8
230V AC out L to DPX12/4 controller	Rail C – 50
230V AC out N to DPX12/4 controller	Rail C – 52
230V AC out E to DPX12/4 controller	Rail C – 9
230V AC out L to DPX4/10 controller	Rail C – 50
230V AC out N to DPX4/10 controller	Rail C – 52
230V AC out E to DPX4/10 controller	Rail C – 10
230V AC out L to CFL ballast 1	Rail C – 20
Interconnect	Rail C – 51 & 21
230V AC out L to CFL ballast 2	Rail C – 22
Interconnect	Rail C – 51 & 23
230V AC out L to CFL ballast 3	Rail C – 24
Interconnect	Rail C – 51 & 25
230V AC out L to CFL ballast 4	Rail C – 26
Interconnect	Rail C – 51 & 27
230V AC out L to CFL ballast 5	Rail C – 28
Interconnect	Rail C – 51 & 29
230V AC out L to CFL ballast 6	Rail C – 30
Interconnect	Rail C – 51 & 31
230V AC out L to CFL ballast 7	Rail C – 32
Interconnect	Rail C – 51 & 33
230V AC out L to CFL ballast 8	Rail D – 34
Interconnect	Rail C – 51 & 35
230V AC out Bath 1 Fan	Rail C – 36
Interconnect	Rail C – 51 & 37
230V AC out Bath 2 Fan	Rail C – 38
Interconnect	Rail C – 51 & 39
24V to Radiator Actuator 1	Rail A - 4
0V to Radiator Actuator 1	Rail A – 23
24V to Radiator Actuator 2	Rail A – 5
0V to Radiator Actuator 2	Rail A - 23
24V to Radiator Actuator 3	Rail A – 6
0V to Radiator Actuator 3	Rail A - 23
24V to Radiator Actuator 4	Rail A – 7
0V to Radiator Actuator 4	Rail A - 23
24V to Radiator Actuator 5	Rail A – 8
0V to Radiator Actuator 5	Rail A - 23

24V to Radiator Actuator 6	Rail A – 9
0V to Radiator Actuator 6	Rail A - 24
24V to Radiator Actuator 7	Rail A – 10
0V to Radiator Actuator 7	Rail A - 24
24V to Radiator Actuator 8	Rail A – 11
0V to Radiator Actuator 8	Rail A - 24
24V to Radiator Actuator 9	Rail A – 12
0V to Radiator Actuator 9	Rail A - 24
24V to Radiator Actuator 10	Rail A – 13
0V to Radiator Actuator 10	Rail A - 24
Rain Sensor status	Rail A – 30
Rain Sensor 0V	Rail A – 25
Rain Sensor +5V	Rail A – 22
External Light Sensor status	Rail A – 47
Light Sensor 0V	Rail A – 25
Light Sensor +5V	Rail A – 22
Bathroom 1 Humidistat status	Rail A – 32
Bathroom 1 Humidistat 0V	Rail A – 25
Bathroom 1 Humidistat +24V	Rail A – 2
Bathroom 2 Humidistat status	Rail A – 33
Bathroom 2 Humidistat 0V	Rail A – 25
Bathroom 2 Humidistat +24V	Rail A – 2
Bathroom 1 floor wet/overflow sensor status	Rail A – 34
Bathroom 1 floor wet/overflow sensor 0V	Rail A – 25
Bathroom 1 floor wet/overflow sensor +5V	Rail A – 22
Bathroom 2 floor wet/overflow sensor status	Rail A – 35
Bathroom 2 floor wet/overflow sensor 0V	Rail A – 25
Bathroom 2 floor wet/overflow sensor +5V	Rail A – 22
Cab 2 internal temperature sensor status	Rail A – 48
Temp Sensor 0V	Rail A – 25
Temp Sensor +5V	Rail A – 22
Doorbell Sense	Rail A – 36
Doorbell 0V	Rail A - 25
Cab 2 blower fan –ve	Rail D – 24
Cab 2 blower fan +ve	Rail A – 3
24V HA fail override stat	Rail A – 1
24V HA fail override stat	Rail A – 2
Interconnect 24V fail	R divider network A2 to D18
Bed 1 Rooflight open	Rail D – 25
Bed 1 Rooflight close	Rail D – 26
Bed 1 Rooflight limit switch open	Rail D – 1
Bed 1 Rooflight limit switch close	Rail D – 2
Bed 1 Rooflight 0V + screen	Rail D – 35
Bed 1 Rooflight 24V	Rail A – 3
Ethernet 1	Controller 1 Ethernet
Ethernet 2	Controller 2 Ethernet