UNITY M RANGE ACOUSTIC ENCLOSURE

OPERATING AND MAINTENANCE MANUAL

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SITE DETAILS

Client: **Nationwide Cooling & Heating Ltd**
Site Location: **56 Elsworthy Road**

SITE SPECIFIC ENCLOSURE DETAILS

1# EG-UMS2-TSB3

ENVIRON GROUP - UNITY ACOUSTIC ENCLOSURE SYSTEM

Environ Group Unity acoustic enclosure systems normally contain Air Source Heat Pumps, AC Plant, Refrigeration plant or air cooled condensers/chillers. Designed to allow plant items to be operated in noise sensitive areas without the need for further noise attenuation measures, the additional benefits – unobtrusive appearance and the opportunity to locate in public areas - has led to wide acceptance of the product range as an effective method of controlling noise. The Unity enclosure range is designed to meet the air flow requirements of the plant whilst providing exceptional noise attenuation

ENCLOSURE DESIGN

The acoustic enclosure is designed to DIN ISO 8015 standards

Air flow is paramount in the design of acoustic solutions for ASHP/AC/Refrigeration plant items – without sufficient air the plant will not work efficiently or effectively. Equally important is that air recirculation within the enclosure must be avoided so as to maintain operational integrity – Air On to the plant has to be at ambient temperature

Environ Group Unity enclosures are designed with air flow in mind by providing internal plenum and septum panels to separate the air flows, on and off the plant. Constricting air flow is also a negative as the plant fans cannot cope with additional static pressure, so Unity designs are based on maximizing air flow within the enclosure design

All Unity enclosures are supplied with Anti Vibration Mounts to help mitigate vibration transmission to the building structure. All internal plenum panels have rubber gasket interface with the plant item to stop any metal to metal contact and provide air tight seals

ASHP and AC Plant operating in Heating Mode produce Condensate Water, this can be up to 1 Litre per kW per hour of Heating Capacity. Unity enclosures are supplied with Condensate Drain Trays to allow the water that is produced during each defrost cycle to be routed out of the enclosure to a suitable drainage point

ENCLOSURE MANUFACTURE

Unity Acoustic Enclosure panels and parts are fabricated in Zintec Cold Rolled sheet steel to DIN ISO 9001 manufacturing standards. All exterior panels have a Polyester Powder Coat finish. All relevant internal faces have 25mm or 50mm waterproof and UV stable acoustic foam applied. Engineered fixings are used to facilitate simple panel removal and replacement

Unity enclosures can be supplied factory built or in ‘flat pack’ form for on site assembly – comprehensive instructions are provided showing the build process

ENCLOSURE POSITIONING, ACCESS AND VENTILATION

The Unity Acoustic Enclosure should either be installed on a flat and level surface capable of supporting the full operational weight, which includes the enclosed plant items, or on a suitable alternative framework – if applicable a structural engineer should be consulted

Environ Group Unity enclosures can be supplied with optional mounting feet to facilitate access under the enclosures – the mounting feet system is fully adjustable from 25mm up to 750mm and is designed to work on uneven surfaces

For satisfactory operation it is important that access and ventilation requirements are met. There must be sufficient space to fully remove the access doors, which also ensures correct inlet and discharge ventilation.

All services entry points, mechanical, electrical and drainage, shall be sealed correctly to ensure that the acoustic integrity of the enclosure is maintained.

ACOUSTIC PERFORMANCE – Standard Configuration

INSERTION LOSS DATA – Environ Group Unity Standard Configuration							
Octave Frequency in Hertz (db ref 2 x 10^{-5} Pascal's)							
63	**125**	**250**	**500**	**1K**	**2K**	**4K**	**8K**
12	13	20	29	36	37	39	41
Transmission Loss equates to an overall reduction of up to 26 dB(A)							

Options are also available to incorporate high performance acoustic foam to improve the acoustic performance if the situation demands

ACOUSTIC PERFORMANCE – High Performance Configuration (Cost Option)

INSERTION LOSS DATA – Environ Group Unity Standard Configuration							
Octave Frequency in Hertz (db ref 2 x 10^{-5} Pascal's)							
63	**125**	**250**	**500**	**1K**	**2K**	**4K**	**8K**
15	18	24	34	39	38	41	41
Transmission Loss equates to an overall reduction of up to 32 dB(A)							

IMPORTANT SAFETY INFORMATION

The acoustic enclosure system covered by this manual has been designed to be selected, installed, serviced, and maintained by competent persons only.

This manual does not cover normal safety precautions to be taken during the installation, pressure testing, evacuation or commissioning procedures associated with the enclosed Air Conditioning or Refrigeration plant. It is assumed that persons responsible for working on a refrigeration system are qualified and fully conversant with all necessary safety precautions and best industry practice.

MECHANICAL PLANT INSTALLATION PROCEDURES

Refrigeration pipe work and Electrical cabling should enter the enclosure in the correct areas provided – cut out sections can be included in the enclosure outer walls if requested. Where services enter the enclosure, it is the responsibility of the installing contractor to provide/fit Gland/Grommet fittings in line with best practice installation.

It is the responsibility of the installing contractor to provide for any Condensate produced by the mechanical plant. This must be routed from the integrated drain tray to outside of the enclosure via flexible or rigid drain pipe work.

MECHANICAL PLANT SERVICING PROCEDURES

IMPORTANT – Lift Off or Hinged panels allow access for service and maintenance – if appropriate suitable access platforms are to be used to comply with Working at Height legislation

Upon completion of servicing of plant items by designated contractor, it is important that the operative ensures that all relevant panels, plenum seals and access doors are fitted correctly

It is recommended that during the prescribed maintenance of the mechanical plant, that all internal airways of the enclosure are cleared of any dust and debris to ensure optimum performance

The exterior powder coated finish can be washed with non-abrasive/corrosive cleaning materials

EQUIPMENT REFERENCE SECTION

See attached selection sheet for further details of enclosures on the site referenced above