



1.0 IMPORTANT SAFETY INFORMATION

- The provision of the electrical supply and the connection of the unit to the mains must be carried out by a qualified electrician.
- Isolate from power supply before removing any covers. During installation / maintenance ensure all covers are fitted before switching on the mains supply.
- All-pole disconnection from the mains as shown in the wiring diagram must be incorporated within the fixed wiring and shall have a minimum contact separation of 3mm in accordance with latest edition of the wiring regulations.
- This unit must be earthed.
- Ducting must be securely fixed with screws to the spigot to prevent access to live parts. Duct runs terminating close to the fan must be adequately protected by suitable guards.
- Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.
- This appliance should not be used by children or persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the safe use of the appliance by a person responsible for their safety. Children shall not play with the appliance. Cleaning and user maintenance shall not be carried out by children.

1.1 HAZARD SYMBOLS



GENERAL WARNING

Signifies a general warning regarding hazard specified by supplementary information.



ELECTRIC SHOCK

This unit must be completely electrically isolated before any panels are removed. Check mains supply and control connections.



ROTATING PARTS

This unit contains fast moving rotational parts which may start automatically. It is the sole responsibility of the installer to adequately guard these components.



REFER TO INSTRUCTION MANUAL

Read and understand the installation and maintenance manual before installing, operating or maintaining this product.

1.2 IMPORTANT INFORMATION

This manual contains important information on the safe and appropriate assembly, transport, commissioning, operation, maintenance, disassembly and simple troubleshooting of the product.

While the product has been manufactured according to the accepted rules of current technology, there is still a danger of personal injury or damage to equipment if the following general safety instructions and the warnings contained in these instructions are not complied with.

- Read these instructions completely and thoroughly before working with the product.
- Keep these instructions in a location where they are accessible to all users at all times.
- Always include the operating instructions when you pass the product on to third parties.

1.3 PERSONAL PROTECTIVE EQUIPMENT

The following minimum Personal Protective Equipment (PPE) is recommended when interacting with Nuaire product:

- **Protective Steel Toed Shoes** - when handling heavy objects.
- **Full Finger Gloves (Marigold PU800 or equivalent)** - when handling sheet metal components.
- **Semi Fingerless Gloves (Marigold PU3000 3DO or equivalent)** - when conducting light work on the unit requiring tactile dexterity.
- **Safety Glasses** - when conducting any cleaning/cutting operation or exchanging filters.
- **Reusable Half Mask Respirators** - when replacing filters which have been in contact with normal room or environmental air.

Nuaire would always recommend a site specific risk assessment by a competent person to determine if any additional PPE is required.

2.0 INTRODUCTION

Units are rectangular in section and incorporate a full size hinged access panel fitted to the top of the unit for inspection purposes.

AVT*-R are supplied with a circular end spigot and an individual terminal module including two opposed side discharge grilles.

AVT*-X have circular rigid spigots at each end.

2.1 CODE DESCRIPTION:

1	2	3	-	4	-	5
AV	T	2	-	NC	-	R

1. Range: **Aire-Volve**
2. Fan Type: **T** = Twin Fan
3. Unit Size: **1, 2, 3, 4, 4L, 5, 6, 7, 8, 9**
4. Control Type: **NC** = No Control
5. Spigot Configuration: **R** = Spigot & Weather Terminal
X = Spigot both ends of unit

3.0 HANDLING

Upon receipt of the equipment, an inspection should be made. Before commencement of lifting, ensure that normal equipment safety checks have been carried out.

A unit / module should be removed from the vehicle using a fork lift or crane. Always handle with care to avoid damage and distortion, and where lifting slings are employed use spreaders to ensure slings do not come into contact with the unit case, or control pack. Correctly position slings to avoid twisting of the unit case and observe the centre of gravity before the final lift is made.

The weight of the unit is available on the unit rating plate.

Dependent on model and size, units may be supplied in single or multi-modular sections. Handle each section individually do not stack for lifting or storage.

4.0 MECHANICAL INSTALLATION

Installation must be completed by competent persons, in accordance with good industry practice and should conform to all governing and statutory bodies i.e. IEE, CIBSE, etc.

The units are supplied for installation into In-line ductwork (internal) AVT-X/R units are suitable for internal or external use.

The unit can be mounted at a maximum angle of 20 degrees from horizontal with the units discharge blowing downwards away from the roof ridge. The unit cannot be vertically mounted.

Units should always be positioned with sufficient space to allow the access cover to open and subsequent removal of fan and motor assemblies etc. Whether internally or externally mounted, the method of fixing to the roof is the responsibility of the installer.

All units have a bottom skirt to allow for fixing directly onto a suitably sized curb or builders upstand.

Nuaire can supply matching adjustable leg supports or mounting feet with AV mounts. Please contact Nuaire for more information.

Ductwork connections must be airtight to prevent any loss of performance.

4.1 FITTING TERMINAL MODULE (AVT-R UNITS)

- Remove spigot outlet by removing end panel fixings, and release from gutter section (upward motion).
- Disassemble alignment bracket(s) and fit to main unit using M6 fixing points provided.
- Locate grille assembly onto unit. **Terminal module is to be lowered (hooked) over guttering of unit.**
- Ensure alignment brackets halves are correctly positioned and assemble using M8 Cap head bolt and nut supplied with bracket.
- Once located, tighten bolts ensuring seal between grille and seal is achieved.

Fig 1: Removing the Spigot Plate

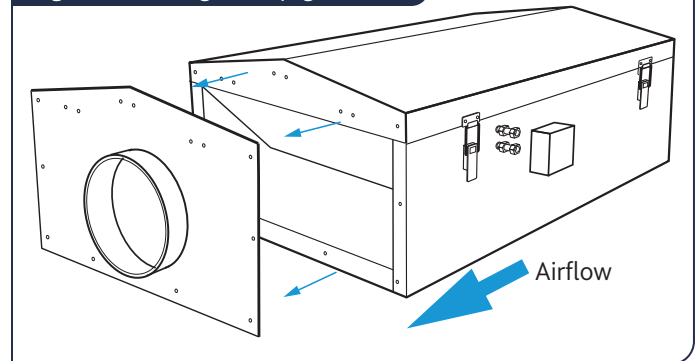


Fig 2: Positioning Terminal Alignment Brackets

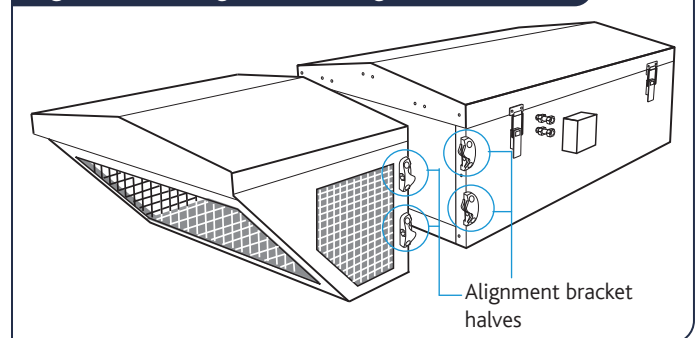
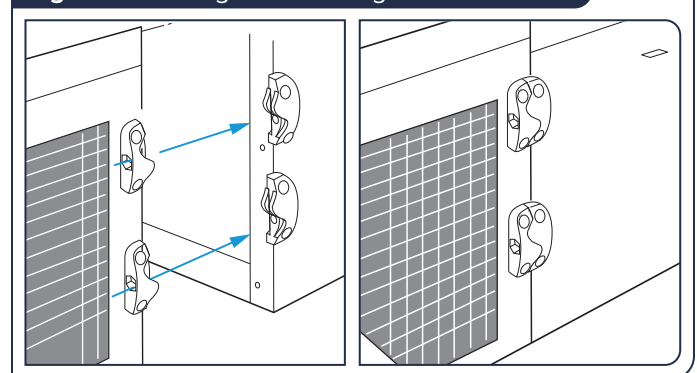


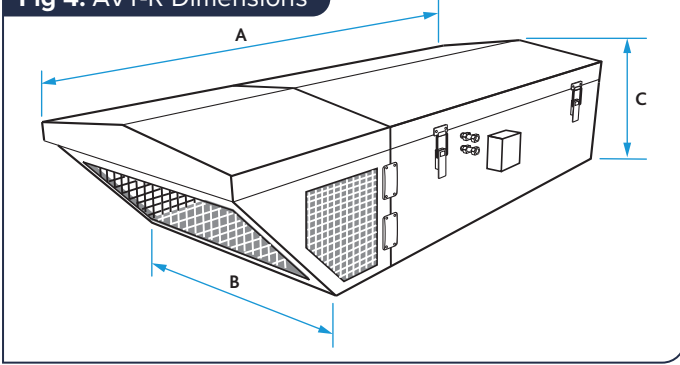
Fig 3: Positioning Terminal Alignment Brackets



4.2 DIMENSIONS (mm) & WEIGHTS (kg)

4.2.1 AVT-R UNITS

Fig 4: AVT-R Dimensions



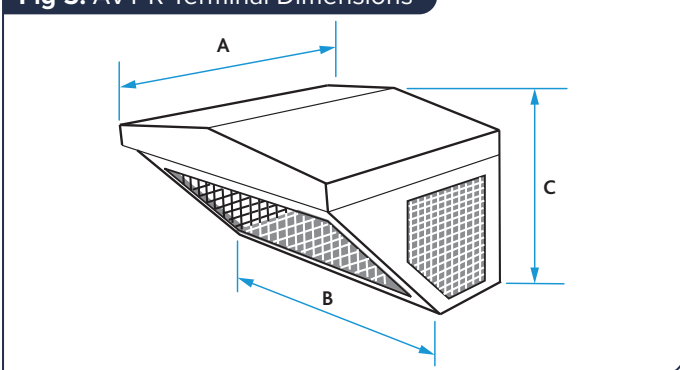
Code	A [†] (Inc. 5mm end panels)	B [‡]	C	D	Weight (kg)
AVT1-NC-R	1620	716	393	250	64
AVT2-NC-R	1620	716	393	250	65
AVT3-NC-R	1620	716	393	250	66
AVT4-NC-R	2066	857	502	315	111
AVT4L-NC-R	2066	857	502	315	110
AVT5-NC-R	2066	857	502	315	114
AVT6-NC-R	2575	1045	656	400	161
AVT7-NC-R	2575	1045	656	400	164
AVT8-NC-R	2956	1278	709	500	262
AVT9-NC-R	2956	1278	709	500	229

[†] Add 50mm for unit + spigot length.

[‡] Add 40mm for unit + control width.

4.2.2 AVT-R TERMINAL MODULE

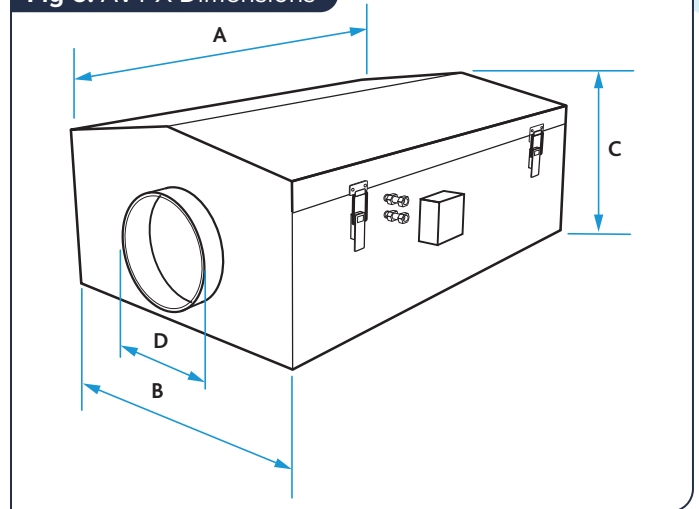
Fig 5: AVT-R Terminal Dimensions



Unit Code	Terminal Module Code	A	B	C	Weight (kg)
AVT1-NC-R	AVT1-R-MOD	500	716	393	8
AVT2-NC-R	AVT2-R-MOD	500	716	393	8
AVT3-NC-R	AVT3-R-MOD	500	716	393	8
AVT4-NC-R	AVT4-R-MOD	600	857	502	11
AVT4L-NC-R	AVT4L-R-MOD	600	857	502	11
AVT5-NC-R	AVT5-R-MOD	600	857	502	11
AVT6-NC-R	AVT6-R-MOD	744	1045	656	16
AVT7-NC-R	AVT7-R-MOD	744	1045	656	16
AVT8-NC-R	AVT8-R-MOD	784	1278	709	19
AVT9-NC-R	AVT9-R-MOD	784	1278	709	19

4.2.3 AVT-X UNITS

Fig 6: AVT-X Dimensions



Code	A [†] (Inc. 5mm end panels)	B [‡]	C	D	Weight (kg)
AVT1-NC-X	1120	716	393	250	56
AVT2-NC-X	1120	716	393	250	57
AVT3-NC-X	1120	716	393	250	58
AVT4-NC-X	1466	857	502	315	100
AVT4L-NC-X	1466	857	502	315	99
AVT5-NC-X	1466	857	656	315	104
AVT6-NC-X	1831	1045	656	400	146
AVT7-NC-X	1831	1045	709	400	149
AVT8-NC-X	2172	1278	709	500	236
AVT9-NC-X	2172	1278	709	500	203

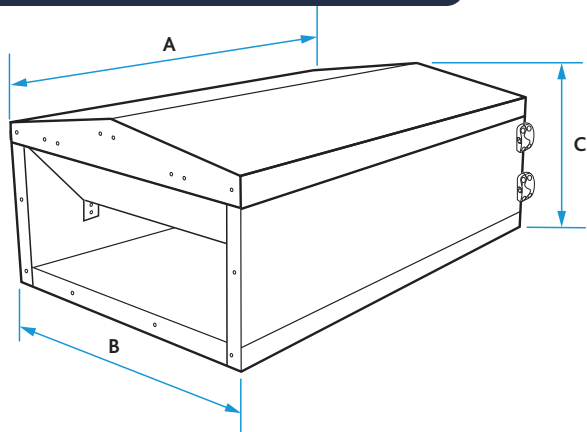
[†] Add 100mm for unit + spigot length.

[‡] Add 40mm for unit + control width.

4.2.4 MATCHED AVT SILENCERS

Matched silencers with double walled Aluzinc construction and 35mm infill acoustic lining provides the best acoustic solution.

Fig 7: Matched AVT Silencer Dimensions



Unit Code	Silencer Code	Size	A	B	C	Weight (kg)
AVT1	AVT1-MSM	Mini	500	544	260	27
	AVT1-MSS	Standard	1000	544	260	32
	AVT1-MSL	Large	1500	544	260	45
AVT2	AVT2-MSM	Mini	500	544	286	27
	AVT2-MSS	Standard	1000	544	286	32
	AVT2-MSL	Large	1500	544	286	45
AVT3	AVT3-MSM	Mini	500	681	332	30
	AVT3-MSS	Standard	1000	681	332	39
	AVT3-MSL	Large	1500	681	332	56
AVT4	AVT4-MSM	Mini	500	681	374	34
	AVT4-MSS	Standard	1000	681	374	39
	AVT4-MSL	Large	1500	681	374	56
AVT4L	AVT4L-MSM	Mini	500	827	401	34
	AVT4L-MSS	Standard	1000	827	401	42
	AVT4L-MSL	Large	1500	827	401	61
AVT5	AVT5-MSM	Mini	500	827	781	43
	AVT5-MSS	Standard	1000	827	781	44
	AVT5-MSL	Large	1500	827	781	65
AVT6	AVT6-MSM	Mini	500	921	552	43
	AVT6-MSS	Standard	1000	921	552	65
	AVT6-MSL	Large	1500	921	552	89
AVT7	AVT7-MSM	Mini	500	1019	653	43
	AVT7-MSS	Standard	1000	1019	653	71
	AVT7-MSL	Large	1500	1019	653	98
AVT8	AVT8-MSM	Mini	500	1244	753	51
	AVT8-MSS	Standard	1000	1244	753	83
	AVT8-MSL	Large	1500	1244	753	114
AVT9	AVT9-MSM	Mini	500	1244	774	92
	AVT9-MSS	Standard	1000	1244	774	116
	AVT9-MSL	Large	1500	1244	774	125

4.3 SILENCER INSTALLATION

To change orientation of attenuator pod, remove silencer roof, roll silencer over 180° and refit silencer roof, ensuring all fixings and seals are intact. Use alignment brackets to attached the silencer to fan unit as described in Section 4.1. Ensure that the attenuator pods are in the correct orientation as shown in Fig 10.

Fig 8: Remove Silencer Roof

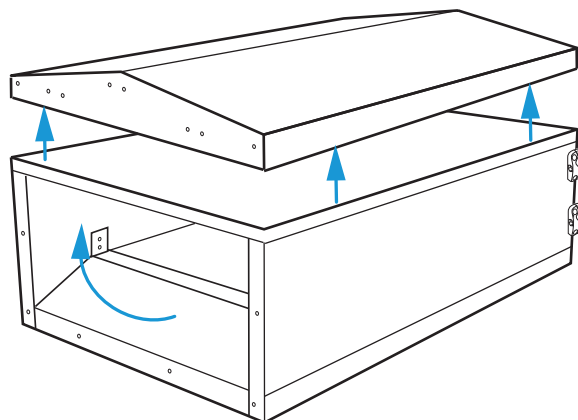


Fig 9: Refit Silencer Roof

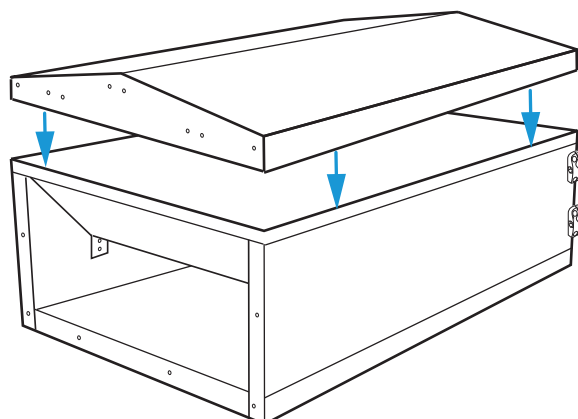
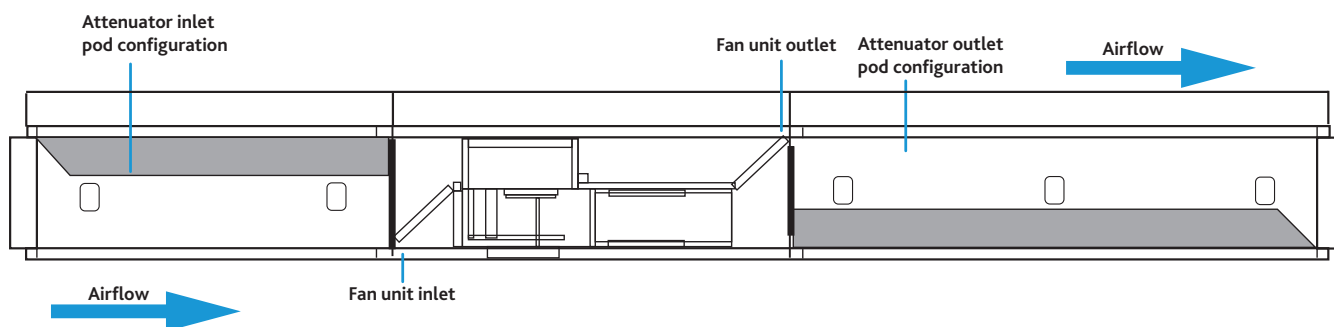
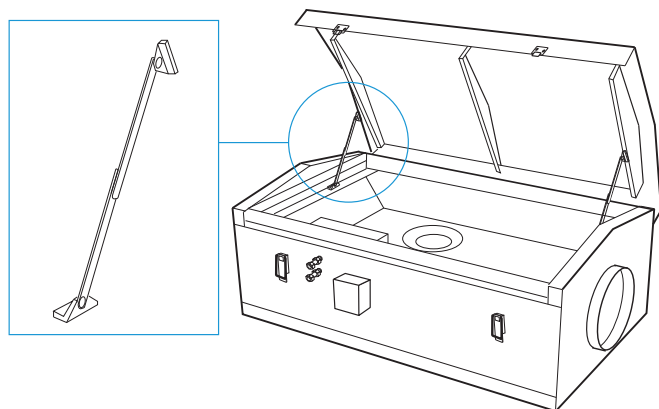


Fig 10: Typical Side Section View Of Outlet Silencer, Floor Mounted Unit And Inlet Silencer


4.4 UNIT ACCESS

To gain access to blowers for annual maintenance, and connections to control board, release tool operated latch and raise roof ensuring that the two stays are locked into place.

Make sure work is carried out only when weather conditions do not put the health and safety of workers and public in danger.
Reference: Health & Safety in Roof Work HSG33.

Fig 11: Refit Silencer Roof


5.0 ELECTRICAL INSTALLATION

Isolation - Before commencing work, make sure that the unit and Nuaire control are electrically isolated from the mains supply.

Because the run and start currents depend upon the duty and associated ductwork of an individual unit, run currents will be exceeded if the unit is operated with its cover removed. It is therefore recommended that the unit is not run for prolonged periods in this condition.

5.1 UNIT DETAILS

Unit details including Full Load Current, Voltage, fan speed etc. can be found on the unit label.

5.2 WIRING DIAGRAMS

The wiring illustrations below are for units without control. All wiring is terminated in junction boxes fitted to the side of the unit.
Local isolator (by others)

Do not wire the power supply to motor via the motor alarm relay as terminals are only closed after the motor is energized.

The alarm relay on condensate may require the use of a contactor if the host equipment supply is switched.

Fig 12: Wiring - AVT1-3-NC-(R/X)

Key:

- Pre-Wired Connection
 - Factory Connection
 - Optional External Connection
 - Mandatory External Connection
- A1: Rotary Isolating Switch (Supplied by Customer.)
A3: Close to Open IO Damper (Supplied by Customer.)
W1: Supply Fan Alarm (Open = Alarm)
W2: Twin Fan Alarm (Open = Alarm)

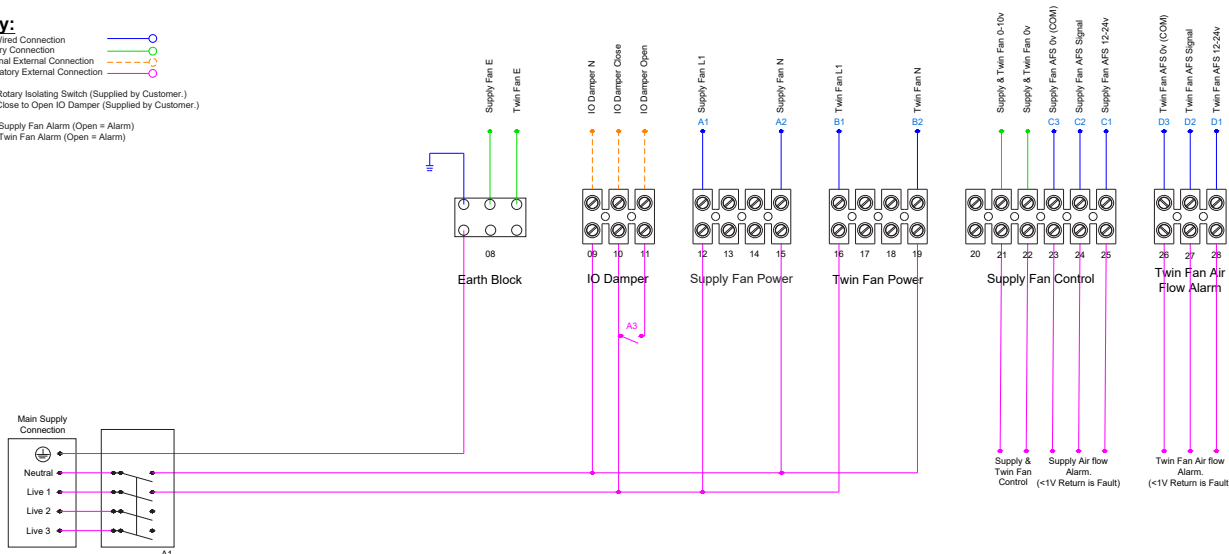
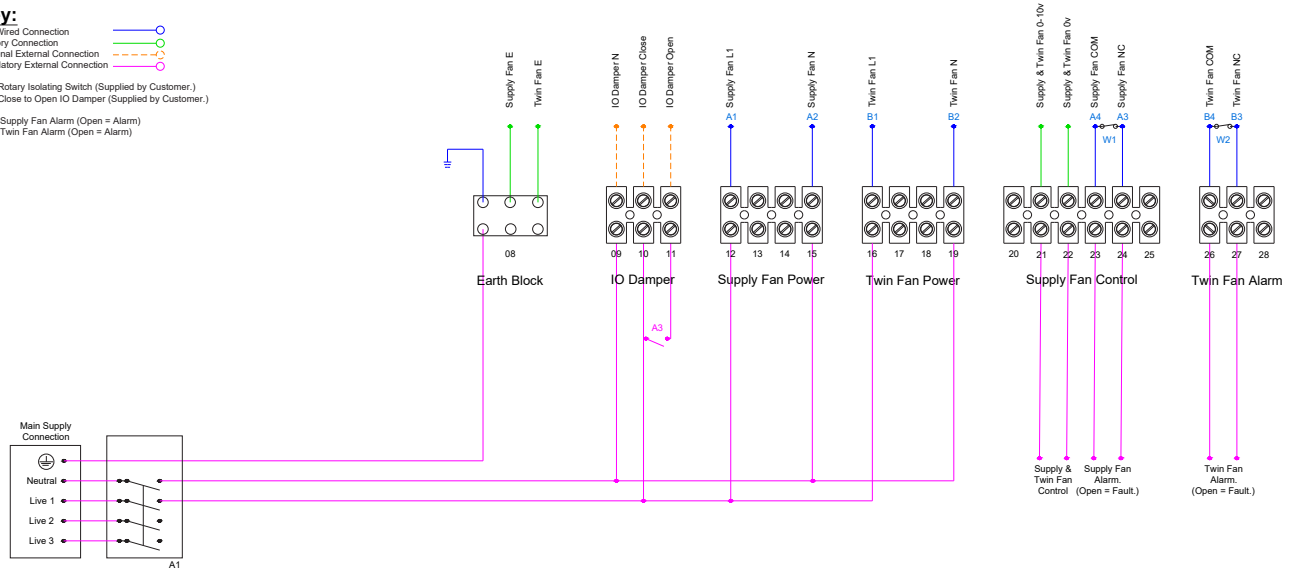
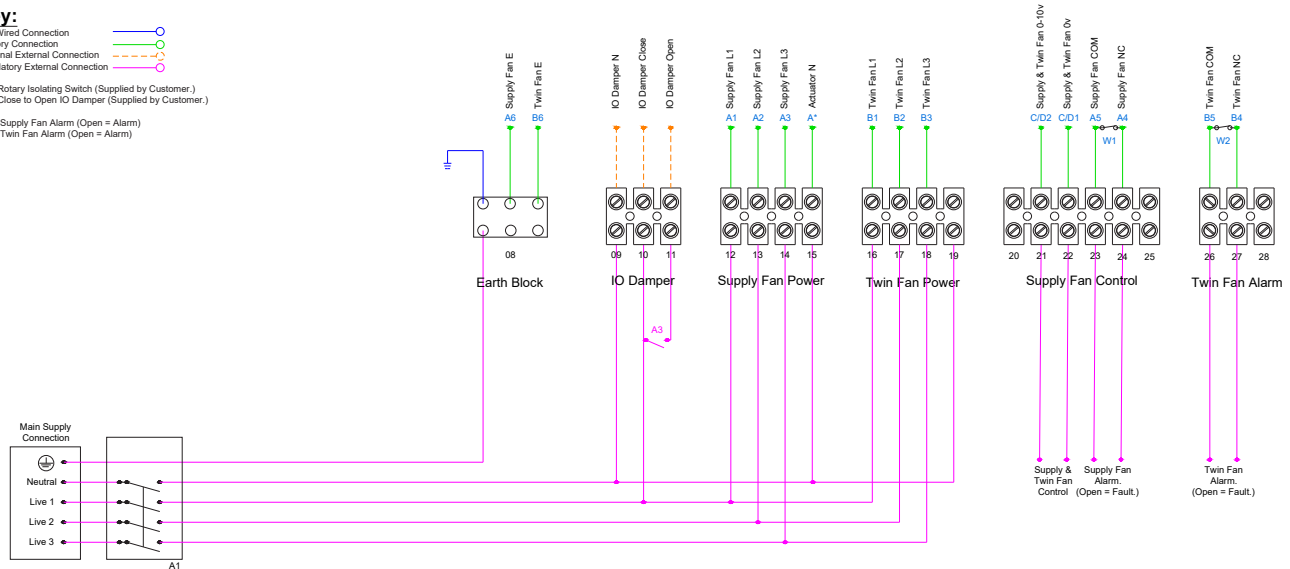


Fig 13: Wiring - AVT4-8-NC-(R/X)
Key:

- Pre-Wired Connection
 - Factory Connection
 - Optional External Connection
 - Mandatory External Connection
- A1: Rotary Isolating Switch (Supplied by Customer.)
A3: Close to Open IO Damper (Supplied by Customer.)
W1: Supply Fan Alarm (Open = Alarm)
W2: Twin Fan Alarm (Open = Alarm)


Fig 14: Wiring - AVT9-NC-(R/X)
Key:

- Pre-Wired Connection
 - Factory Connection
 - Optional External Connection
 - Mandatory External Connection
- A1: Rotary Isolating Switch (Supplied by Customer.)
A3: Close to Open IO Damper (Supplied by Customer.)
W1: Supply Fan Alarm (Open = Alarm)
W2: Twin Fan Alarm (Open = Alarm)



6.0 CONTROLS

The No Control (NC) units described in this manual are supplied without any controls. It is the installer's responsibility to select and install suitable controller(s) and circuit(s) to produce the desired output from the units while remaining within the units safe performance envelope.

7.0 MAINTENANCE

It is important that maintenance checks are recorded and that the schedule is always adhered to, in all cases, the previous report should be referred to.

7.1 ROUTINE MAINTENANCE

- Clean all areas of unit and treat any areas of corrosion.
- Check all access doors for leakage and if necessary locks should be adjusted and any replacement gasket materials should be replaced as required.

7.2 ANNUALLY

- Thoroughly inspect the unit and its components for corrosion, acting immediately to treat/restore any damaged areas.
- All electrical terminals within the unit should be tightened.
- Check all earth connections.
- Check control dampers blades.
- Check operation of damper actuators and linkages and adjust as necessary.

