



OPERATING AND MAINTENANCE INSTRUCTIONS

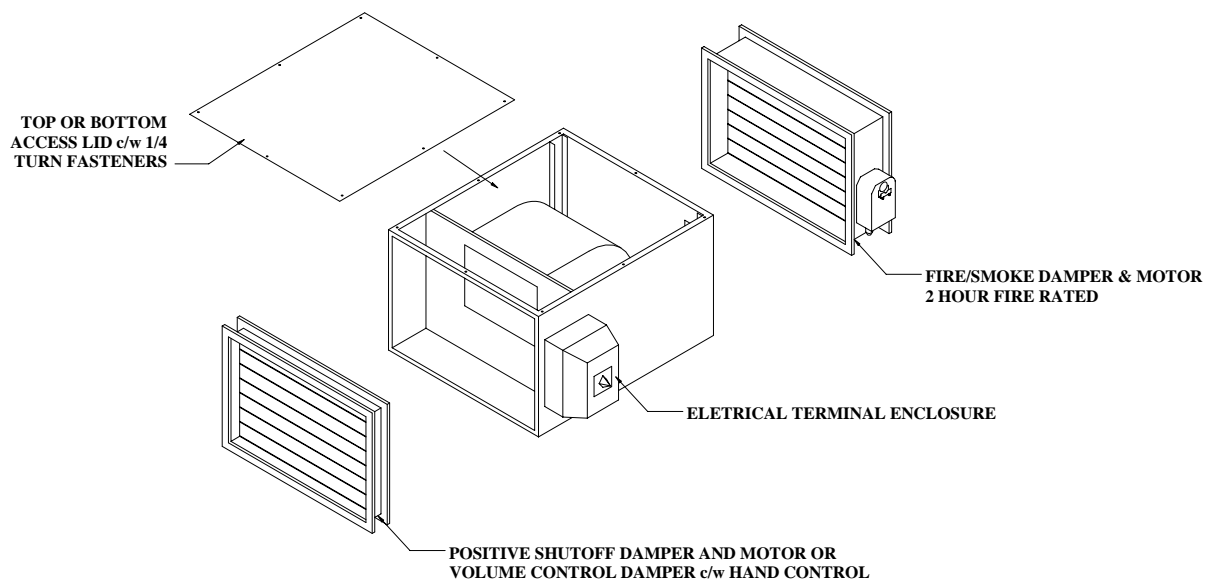
PERMANENT EXTRACT UNITS – LARGE RANGE DIRECT DRIVEN

DESCRIPTION

All units are manufactured to a very high standard of construction and come in three types:

Monocoque Construction - MO

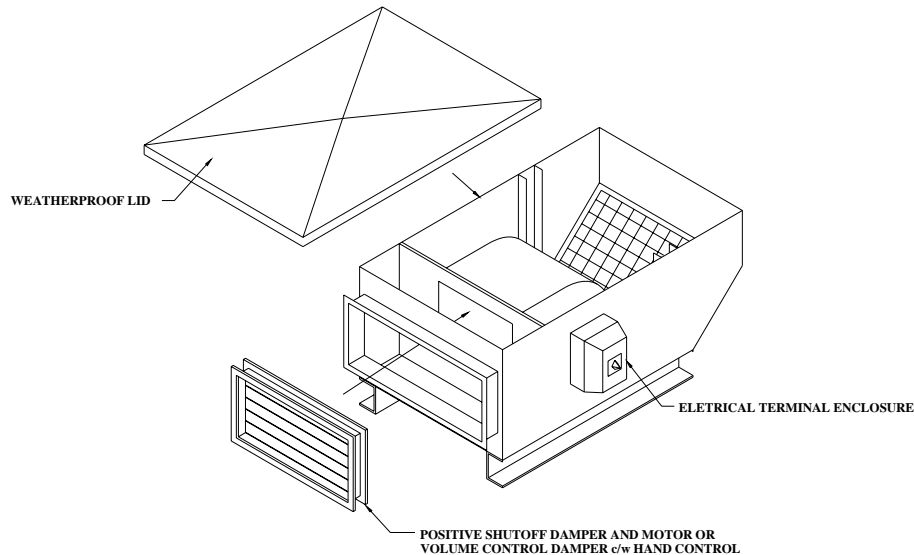
Punched and folded from one sheet of 18, 16 or 14 Swg zintec mild steel. Single Skin Only. Lined with 25mm Pyrosorb insulation for anti-condensation purposes and some minor sound proofing. Access is available top or bottom only via a flat lid. The units are finished in Satin Black, polyester powder coat paint to RAL 9005 as standard. Also available as a double skin option.



Wall Mounted Units are fitted with an Aluminium surround that provides a fixing directly into the Weatherproof Wall Sleeve. The intake section (room side) is fitted with a 4 way Front Grille primarily for decorative purposes.

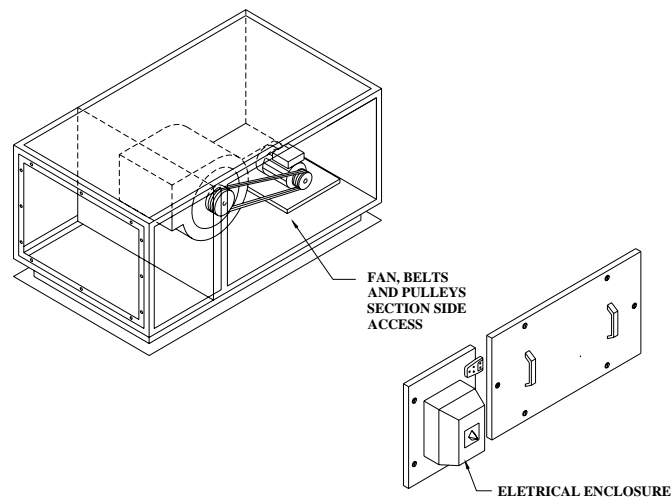
Weatherproof Roof Mounted Unit - Channel & Tray Construction – CT

The Channel & Tray (CT) series is used for the Single Skin Only Weatherproof units using folded 18 or 16 Swg zintec mild steel trays riveted together and construction for the Double Skin (DSK) Internal Duct Mounted Range, in-filled with 60kg/m³ Rockwool insulation for field noise reduction. Access is available top or bottom only. Weatherproof Roof Mounted Units are finished in Mid Blue to RAL 5017.



Pentapost Construction – PP

The frame is pre-formed from Aluminium Extrusion and Moulded Corners forming a versatile box section frame which allows panel access from top, bottom, left or right side as on request. Single Skin Panels (SSK) are lined with 25mm Pyrosorb insulation. Double Skin Panels (DSK) are formed from 20 Swg Galvanised Steel plate, in-filled with 60kg/m³ Rockwool insulation for additional noise reduction. Galvanised Panels for internal duct mounted units (Optional powder coat finish available on request). Mid Blue polyester powder coat to RAL 5017 for Weatherproof Roof Mounted Units as standard.



The discharge section on standard ducted Units is fitted with a ½” square Weld Mesh as a Finger Guard. Both ends of the Unit are Internally Flanged and supplied with M6 Nutserts as standard. These are for connection to a suitable Duct or the optional PUMA Telescopic Wall Sleeve and External Weather Louvre.

Ducted Units are available with Silencers for intake and discharge sections. These are formed from 18 SWG Mild Steel Plate and 20 SWG 30% free area Perforated Plates, all Powdercoated to match the Unit. Sound absorption material is Rockwool Slab to a density of 80KG/CM².

OPERATION

Speed Controllers

Speed Controllers can be fitted to most single phase fans for commissioning purposes. It is generally accepted that great care must be taken when reducing airflow when electronic heater batteries are fitted.

A sufficient amount of air should pass across the elements to prevent overheating. This is normally 30 to 40% of maximum fan speed. Safety is provided by the Airflow Failure Switch (A.F.S.) which will drop out the Heating Relay (H.R.) when the airflow is too low. The element overheat thermostat will act as a fail safe.

Speed Controllers are generally single phase internal mounting type, located on individual fan casings. Remote wall mounting types are available on request.

Three phase speed Control can be provided by Inverters. (Details on request)

When Internal Fan Speed Controllers are supplied loose or as a retrofit please refer to data sheet OSI 002 which gives details of On Site Installation.

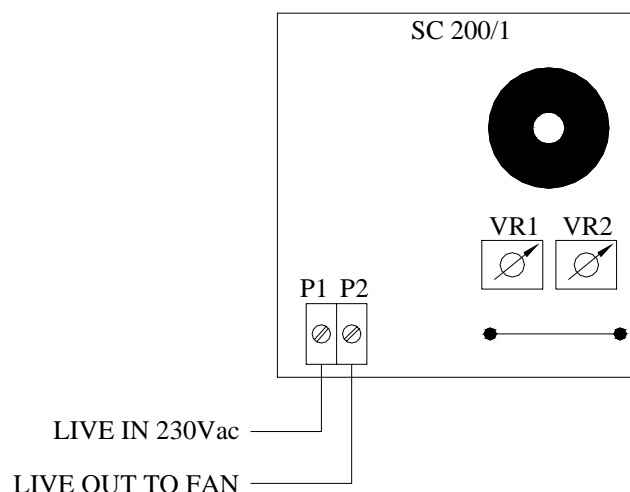
Factory fitted devices are normally located on the Fan Casing, the device is approximately 75mm square with two distinct adjustable potentiometers visible (see drawing).

VR1 – Minimum speed set.

This potentiometer is used to determine the lowest speed setting for VR2.

VR2 – Running speed adjust.

This potentiometer is used to adjust the running Speed of the Fan motor.



Warning: Care must be taken when adjusting Fan Speed as this device is live 240Vac when the unit is running.

Adjustments to the speed of the Fan motor are achieved by turning potentiometers VR1 & VR2.

Clockwise for maximum, Anti-clockwise for minimum.

Setting VR1 will determine the speed range for VR2, care must be taken not to set VR1 too low otherwise this may cause the Fan motor to stall on start up.

Considerations for Heating must also be given when setting the minimum speed potentiometer (VR1). Sufficient Airflow across the elements must be maintained to prevent the Element from overheating.

If component failure occurs or there is no voltage at output (P2), Isolate at source, remove Speed Controller and return to Puma Products Limited, use warranty procedure.

Damper and Motor

When a Damper and Motor is fitted to the Puma Unit, the damper motor is wired lieu with the fan controls and proceeds to open when power is supplied to the Fan Unit. The motor takes approximately 40-75 seconds to fully open and will then 'Spring Return' on power failure at approximately 20 seconds.

INSTALLATION

All Permanent Extract Units require a 240 V ac 1PH & Neutral 50 Hz supply or 380/415 V ac 3 Ph & N where specified. The main ON/OFF Isolator is fitted for Commissioning purposes only.

The Unit must be situated in a position with sufficient access to the top of the Unit or in the case of Wall Mounted Units sufficient room to slide the Unit from its associate Wall Sleeve. A height of at least the units' own height above must be allowed, as access to all the Units components are via the Flat Plate Lid. The clearance height is not necessary when the Units are located under raised modular floors as it is assumed that the appropriate floor tile/s are accessible and removable. The Mains Supply to all Units must be disconnected at source before removing the Lid. Anti-Vibration Isolators may be fitted to Ducted Units if required (by others).

All Wall Mounted Units are fitted with a suitably sized Black 3 Core Cable of 1½ metres in length connected through a Cable Gland located at the front of the Unit under the Aluminium Surround. The Airflow Failure Switch (A.F.S.) is supplied with a White 3 Core Cable clearly marked with Common, Normally Open & Normally Closed Labels (please refer to Wiring Diagram for connection to Remote Alarm Indication).

All Ducted Units are fitted with a Mains Supply Terminal Block for on site connection by others. The A.F.S. is also wired to a suitable Terminal Block.

Speed Controllers for 1, 2 or 3 speeds are available on request.

SERVICE & MAINTENANCE

Permanent Extract Units are virtually maintenance free. Fans used have sealed for life bearings that require no maintenance. The Air Flow Failure Circuit Device should provide

sufficient warning of any impending Fan problem. The air flow failure switch should be checked for free movement and electrical conductance.

Drive Arrangement must be checked for correct Belt & Pulley Alignment and Tension. Refer to PUMA colour Technical Sales Leaflet for further information regarding Dimensions, Weight and Unit Performance etc.

FUSE & FAULT FINDING

Check fuse/Circuit Breaker first in the event of fan failure. Appropriately sized fused switched isolators are still required for main supplies. All Single phase units & Three phase units up to 3 Amps are fitted with panel mounted fuses, denoted FS1 on Wiring Diagrams. These are located adjacent to ON/OFF Isolator or in Weatherproof Units fitted to the Fan Plate. Miniature Circuit Breakers are fitted to all Three Phase units above 3 amps.

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