PUMA
PRODUCTS

Fresh Air Makeup and Fire Extinguishant Gas Extract Units

For Data Centres and Electronic Data Processing Areas (EDP)

Model S MK 3 Unit - Under floor model or ducted

- Manufactured from high quality zintec mild steel
- Satin black powder coat finish RAL 9005
- Filtration grade Coarse 65-70% as standard
- Volt free contacts (VFC) for airflow indication
- Low profile Ceiling Mounted or under floor design
- Electric top up heater with integral control
- Only 152mm high!
- 2 hour rated Fire/Smoke Damper (FSD) & actuator

Model Q Unit - Through wall mounted

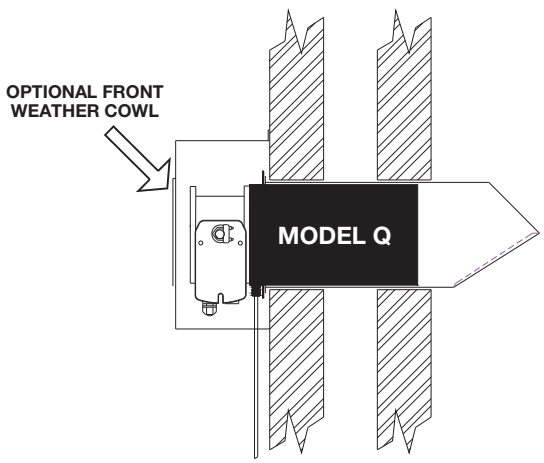
- Linear aluminium cover grille
- Compact high quality design
- Designed for rooms with limited or no void space
- Volt free contacts for airflow indication
- Weatherproof sleeve as standard

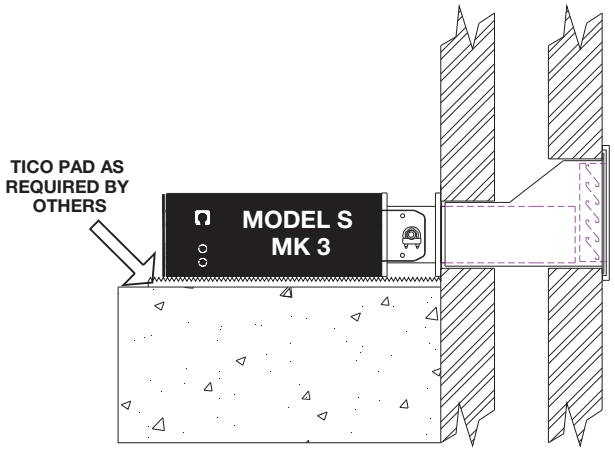
The Puma range of fresh air makeup and fire extinguishant gas extract units are designed to meet the specific requirements of Electronic Data Processing areas (EDP), data hall or server rooms - quietly and efficiently.

Ventilate your environment with PUMA FIRE

www.pumafire.co.uk

Two Mounting Style Arrangements - Ducted/Underfloor or through Wall/Window

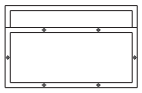


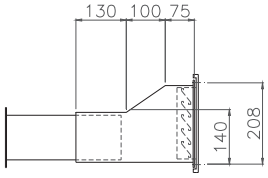


Model S units may be fitted vertically and ducted to an external wall, the fire/smoke damper must be fitted as close to the wall as possible

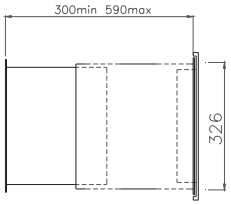
Model Q units are available with room/floor void extension duct, this enables simultaneous extract from room and floor void.

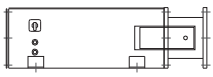
Model S Mk 3



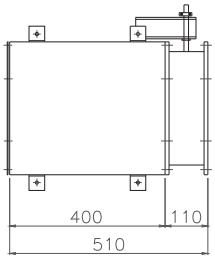


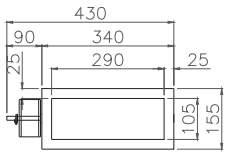
Telescopic Duct
External Wall
Cut Out
340 x 210mm
(Internal Wall Cut Out
340 x 145)



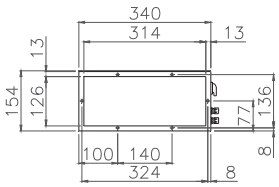


Fresh Air
Or
Extract



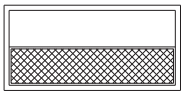


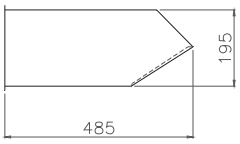
View on FSD



View on Unit

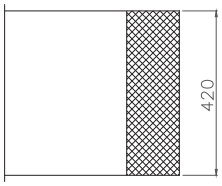
Model Q

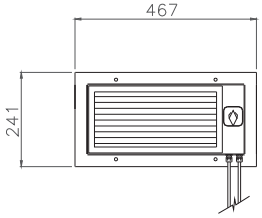


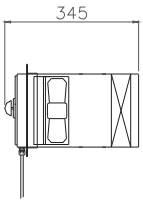


Weatherproof
Wall Sleeve

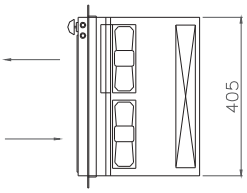
Wall Cut Out
424 x 197mm







Fresh Air
Or
Extract



Quick Selection Guide for Fresh Air and Gas Extract Units

To enable the designer to choose the correct unit, the following information is an example guide.
Fresh Air Requirement: Room Volume m3 = Rm Vol m3 = 1 ACH (Air Change per Hour)

3600

Gas Extract Requirements

BS EN 14520:2006 and 15004:2008 Part h states that “means of extraction must be considered”.
Our professional recommendation is a time between 15 and 20 minutes i.e. 4 ACH = 15 mins, 3 ACH = 20 mins.

Fresh Air Makeup and Fire Extinguishant Gas Extract Units

The Puma range of **Fresh Air Makeup** and **Fire Extinguishant Extract Units** are designed to meet the specific requirements of Electronic Data Processing areas (EDP), Data Hall or Server Rooms - quietly and efficiently!

FRESH AIR MAKE UP ... If this area is air conditioned, it may need a quantity of fresh air for pressurisation and ventilation. The Puma units will provide the correct amount of air, filtered and heated to match individual room requirements.

Fire Extinguishant Gas Extract ... If this area is fitted with a 'Fire Protection System' utilising any Synthetic or Chemical Agent , it will need a positive extraction unit in the event of discharge.- BS EN 15004 Part 1 (2008)

The Puma units will provide these two important functions and when operated together, create an effective ventilated environment to prevent the settling of air/gas discharge or any products of decomposition from a fire in the room, floor voids, and ducts. They fit comfortably under raised modular floors or discreetly in external walls, ideal when trying to save valuable floor space.

When operated simultaneously with Puma air make-up dampers, (a separate Fire Smoke Damper & Motor), or a matching Puma Fresh Air input unit, the room will be ventilated completely in an efficient manner – (refer to COMMS Room – 001 drawing)

For energy efficient operation – we recommend controlling the ventilation with occupancy sensors (PIR) and a simple Puma control panel, together with twin speed controllers,. The fresh air and extract fan units can be set to 'trickle' ventilation on a timer and 'boost' ventilation after a fire and gas release situation.

Method of Operation

Principally, all fresh air units will provide filtered, tempered air, as required. Control of the heater is via an adjustable thermostat sensing the incoming air. It is factory set to switch the heater on when the ambient temperature falls below 10°C (50°F). Heater protection is provided in the form of an airflow failure switch connected to a heater power relay, this will de-energise if there is insufficient airflow across the heater battery. An element overheat thermostat is also fitted as a second form of over heat protection.

Both fresh air and fire extinguishant extract units incorporate a Fire/Smoke Damper (FSD) and 230V ac motor (actuator) rated to BS EN 1634-1:2008 for 120 minutes. This FSD is fitted with high temperature silicone blade seals to provide an excellent seal to the room. The FSD is held in the closed position, and commences opening simultaneously with the extract fan, and similarly closes when the fresh air unit power is shutdown.

Installation Data

Model S Units must be located where access to the top panel is not hindered. Bottom access or ceiling mounted versions can be made by inverting the unit, controls & isolator access now on left-hand side. (When ordering denote CM).

Model Q Units when located in external walls or windows, require a weatherproof wall sleeve.

This enables the unit to be withdrawn for filter replacement and servicing. Standard depth = 325mm, 475 & 625 available.

With FA or FE Units, two supply cables are provided. The first supply cable will require 230V ac single phase as it is connected to the fan, FSD motor and optional heater. The second cable is connected to the airflow failure switch for indication by volt free contacts.

Refer to operating and maintenance instructions and wiring diagram for further details.

Room Pressure Testing & Leakage Requirements

Room integrity testing is conducted in all gas protected areas, BS EN 14520-1:2006 and BS EN 15004-1:2008 regulate this requirement. All rooms are effectively sealed tight and leakage is kept to a minimum to pass this test. The FIA also publish guidelines in this regard.

The Fire/Smoke Dampers fitted to the Puma units and air makeup assemblies provide an excellent seal to these wall openings. In fresh air only & extract only units, the fan & damper commence opening immediately and opens fully in 75 seconds. On removal of power, the damper will close within 20 seconds.

All applications regarding fire integrity must comply with local authority regulations. Certified drawings and wiring diagrams available on request.

For details of options and descriptions of all ancillaries and electrical control options, please consult sales@pumaproducts.co.uk.

British Standard

BS EN 15004-1:2008 (5.3 h) states that a means for prompt natural or forced draft ventilation of such areas after any discharge of extingushant is required. Forced-draft ventilation will often be necessary.

Technical Performance & Specification	FRESH AIR INPUT AIR VOLUMES at given External Static Pressures (ESP)					FIRE EXTINGUISHANT EXTRACT VOLUMES at given External Static Pressures (ESP)				FA FAN & ELECTRIC HEATER		FE EXTRACT FAN ONLY	FILTRATION EFFICIENCY		WEIGHT		DIMENSIONS			FAN NOISE LEVELS	
MODEL NUMBER	0 Pa m^3/S	25 Pa m^3/S	50 Pa m^3/S	75 Pa m^3/S	100 Pa m^3/S	0 Pa m^3/S	50 Pa m^3/S	75 Pa m^3/S	100 Pa m^3/S	kW	Running Current @ 230 V ac 1 PH 50Hz	Running Current @ 230 V ac 1 PH 50Hz	Eurovent 4/5 ASHRAE 52-76 BS 6540 STD	Eurovent 4/5 ASHRAE 52-76 BS 6540 OPTION	Kg	lbs	Length (mm)	Width (mm)	Height (mm)	dB(A)	Nr
FA 100 S MK 3	0.038	0.034	0.031	0.029	0.024	-	-	-	-	0.75	3.65 A	-	G 3	M6	6	13	400	340	154	48	45
FA 150 S MK 3	0.048	0.038	0.034	0.032	0.03	-	-	-	-	1	4.55 A	-	G 3	M6	6	13	400	340	154	58	55
FA 200 S MK 3	0.068	0.063	0.06	0.057	0.055	-	-	-	-	1.5	6.81 A	-	G 3	M6	6	13	400	340	154	58	55
FA 250 S MK 3	0.125	0.116	0.094	0.091	0.086	-	-	-	-	2	9.16 A	-	G 4	M6	7	15	400	340	154	59	55
FA 300 S MK 3	0.14	0.135	0.131	0.125	0.12	-	-	-	-	2.5	12.2 A	-	G 4	M6	7	15	400	340	154	62	60
FE 100 S MK 3	-	-	-	-	-	0.048	0.04	0.036	0.031	-	-	0.11 A	No		6	13	400	340	154	38	35
FE 150 S MK 3	-	-	-	-	-	0.075	0.068	0.063	0.06	-	-	0.2 A	No		6	13	400	340	154	48	45
FE 200 S MK 3	-	-	-	-	-	0.094	0.084	0.081	0.067	-	-	0.2 A	No		6	13	400	340	154	58	55
FE 250 S MK 3	-	-	-	-	-	0.118	0.094	0.084	0.081	-	-	0.35 A	No		6	13	400	340	154	60	58
FE 300 S MK 3	-	-	-	-	-	0.135	0.125	0.12	0.1	-	-	0.46 A	No		7	15	400	340	154	59	55
FE 350 S MK 3	-	-	-	-	-	0.15	0.14	0.13	0.125	-	-	0.77 A	No		7	15	400	340	154	62	60
FA 80 Q	0.038	0.034	0.031	0.029	0.026	-	-	-	-	0.5	2.32 A	-	G 3	M6	7	15	325	410	185	38	35
FA 150 Q	0.072	0.058	0.055	0.052	0.05	-	-	-	-	1.5	6.64 A	-	G 3	M6	7	15	325	410	185	53	48
FA 300 Q	0.144	0.1	0.086	0.074	0.072	-	-	-	-	2	8.98 A	-	G 3	M6	7	15	325	410	185	56	49
FE 100 Q	-	-	-	-	-	0.048	0.04	0.036	0.031	-	-	0.11 A	No		7	15	325	410	185	48	45
FE 200 Q	-	-	-	-	-	0.094	0.062	0.055	0.048	-	-	0.14 A	No		7	15	325	410	185	55	58
FE 350 Q	-	-	-	-	-	0.181	0.149	0.1	0.086	-	-	0.28 A	No		7	15	325	410	185	53	47

Abbreviations: FA = Fresh Air FE = Fire Extinguishant Extract See Large Range Leaflet for Higher External Static Pressures

Units used for External Static Pressure (ESP):

Pa = Pascal's m3/^{s} = cubic metres per second.

Fan sound power levels are available on Fan Motor Details data sheets.

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