ProAir

HEAT RECOVERY VENTILATION SYSTEMS

Irish Innovation in Indoor Air

ProAir FRPRO

Mechanical Extract Ventilation

(MEV)

PRODUCT DESCRIPTION

Mechanical extract ventilation (MEV) means continuous extraction of stale interior air from wet rooms and kitchen, this stale is replaced by the fresh air through humidity-controlled wall vents.

Your home is ventilated even when the windows are closed. You can open them but in seasons when it is desirable to maintain thermal energy inside, your family can still enjoy fresh air without any condensation risk thanks to the FRPRO.

The FRPRO System automatically adapts the ventilation rate to meet the requirements for indoor air quality based on the information provided by the sensors installed (Temperature, Humidity and Total Volatile Organic Compounds - TVOC).

BENEFITS & FEATURES SUMMARY

- Humidity sensors controlling the ventilation rate
- TVOC (Total Volatile Organic Compounds) & Humidity sensors for improved Indoor Air Quality (IAQ)
- Eliminates condensation, mould growth & musty odours
- Area served 150m² maximum
- Compliant with current Building Regulations Part F 2019
- Expanded polyethylene casing to ensure high levels of insulation
- Low energy Electronically Commutated (EC) motor
- Remote Monitoring optional

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Technical Parameters (Product Fiche According to Commission Regulation (EU) 1254/2014)

Model FRPRO	
Maximum Area Served (m²)	150
Unit Dimensions (mm)	552 (L) x 412 (H) x 340 (D)
Thermal Efficiency of Heat Recovery (%)	N/A
Maximum Air flow range (l/sec)	177
Maximum Flow Rate (m³/h)	637 @ 100 Pa
RVU or NRVU / Unidirectional or bidirectional	RVU / Unidirectional
For unidirectional ventilation systems, instructions to install regulated supply/exhaust grilles in the façade for natural air supply/extraction	For any design air permeability, controllable background ventilators having a minimum equivalent area of 2500mm² should be fitted in each room except wet room, from which air is extracted. As an alternative, where the designed air permeability is leakier than 5m³/ h.m2 at 50 Pa, background ventilators are not necessary.
Type of Heat Recovery System (recuperative, regenerative, none)	None
Position and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit	Refer to installation and maintenance instructions supplied with the unit
The annual electricity consumption (AEC) (in kWh/m²/annum)	0.74
Maximum Leakage Rates (%)	External (+250 Pa): <3
Boost Switch control	Automatic
Sound Power Level (L_{WA})	55 dB @ 363 m³/h 65 dB @ 637 m³/h
Summer Bypass	Standard
Duct Type	Rigid
Electrical power input of the fan drive at maximum flow rate (W)	163
Condensate Connection Ø	32mm
Weight (KG)	7.5
Type of drive (multi-speed drive or variable speed drive)	Variable speed drive
Reference Flow Rate (m³/s) Reference Pressure	0.124
Difference (Pa)	50
Specific power input (SPI) (W/ (m³/h))	0.14
Control factor and control typology	0.65 and local demand
Type of drive (multi-speed drive or variable speed drive)	Variable speed drive

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Filter Details				
Surface area (m²)	**Type**	**Dimensions (mm)**	**No. of filters**	**-**
0.15	G4 (Extract)	310 (L) x 168 (H) x 25 (D)	2	-

Fans				
Control Input	**Type**	**Input Voltage Range (V)**	**No. of fans**	**-**
MODBUS-RTU	190mm backward curve	220/230	1	-

Controls				
Protocol	**Interface**	**Inputs**	**Outputs**	**Input Voltage (V)**
Modbus	-	-	-	24 DC

Foam Specification					
Material	**Tensile Strength (KPa)**	**Density (KG/m3)**	**Elongation (%)**	**Thermal Conductivity (W/mk)**	**Temperature Range (°C)**
Impregnated fireproof Polyurethane foam	70	95±7	115	0.044	-30 to +130

SAP PCDB Specific Fan Power (SFP)

Results with Rigid Oval Ducting DJ15 (150mm x 60mm)

Rooms	Air Flow Rate (l/s)	SFP (W/l/s)	Fan Speed Setting (%)
K + 1	21.0	0.31	30
K + 2	29.0	0.30	34
K + 3	37.0	0.28	36
K + 4	45.0	0.29	39
K + 5	53.0	0.30	42
K + 6	61.0	0.34	46

Specific Energy Consumption & SEC CLASS

	Cold	Average	Warm
SEC (kWh/m²/annum)	-53.51	-26.50	-10.94

Sound Levels

Fan Speed (%)	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
dB	33	33.5	34	36	38	41	45	48	51	53	55	58	60	61	62	63	65	65	65

Main Control

The MEV is controlled via a duct sensor on the extract duct line. This records the level of Relative Humidity (RH) % present in the duct system. When the RH levels rise, the fan within the MEV will rise accordingly to remove the condensation quickly within the Wet Rooms and Kitchen. A small wall LED visual unit is fixed in a hallway or somewhere the user can see it as an indicator to how the system is running.

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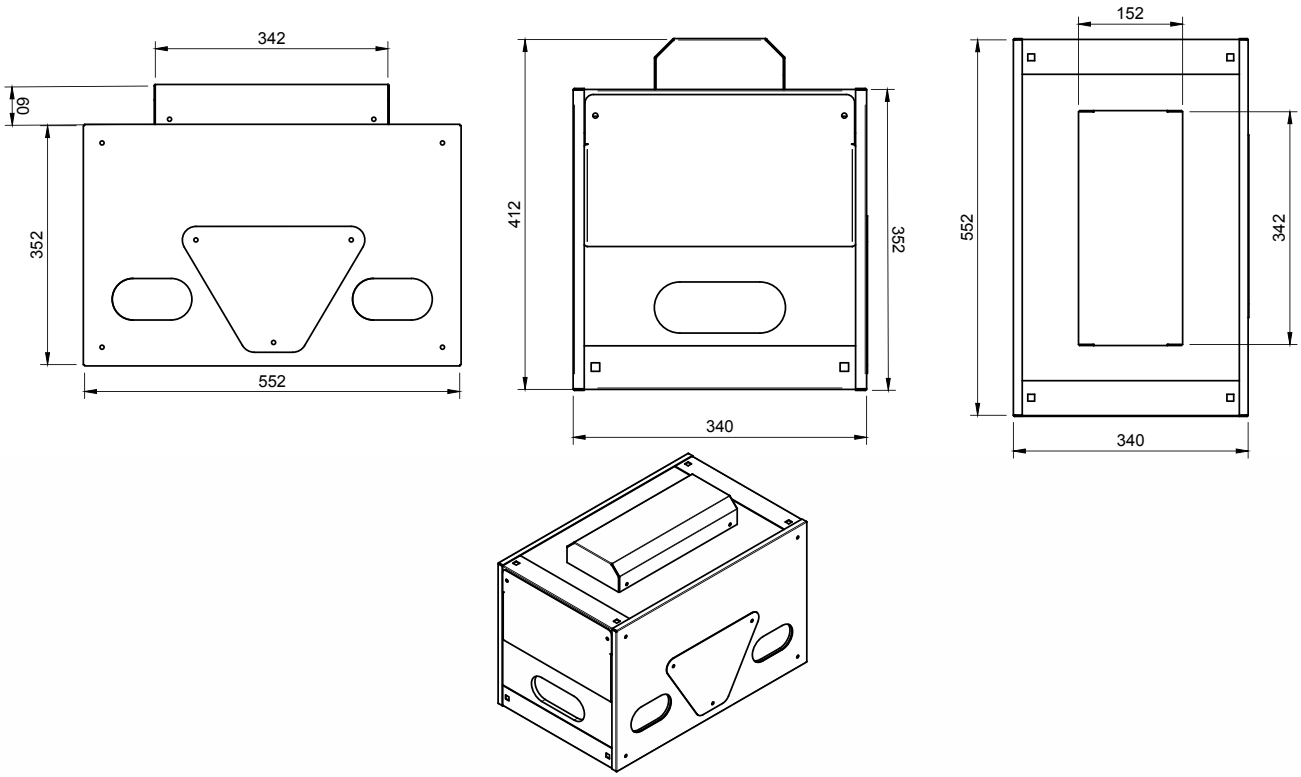
Mechanical Dimensions



Filters

The filters installed in this product are G4 on extract side, with an option to install a higher grade relative to the application.

Access to the filters is by removing access hatches that are secured with thumb screws. No tools are required to inspect or change the filters.

Fans

The fans are high efficiency backward curved 190mm diameter light-weight plastic impellors mounted on external rotor, electronically commutated MODBUS, medium voltage, EC motors, all fitted into a customised sound absorbent dense polyurethane open-scroll enclosure.

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