

Mechanical Ventilation with Heat Recovery (MVHR)



PRODUCT DESCRIPTION

The PA700LI was designed for larger homes up to 270m² in size. The unit includes a Touch Pad and sensors to monitor Temperature, Humidity and CO₂ for enhanced Indoor Air Quality (IAQ).

The unit also includes a Summer Bypass as standard and has a Specific Energy Consumption (SEC) rating of A+. The system uses the Humidity & Temperature sensors to automatically control both the Summer Bypass and Boost function. The PA700LI operates continuously at low speeds to minimise electrical consumption while ensuring system compliance with Part F 2019 regulations.

FEATURES SUMMARY

- Ventilation control based on CO₂ or Humidity levels
- Phone App for remote monitoring and control
- Web browser Dashboard for remote monitoring and control
- Bluetooth Connectivity
- Alarm Notification for faults
- Remote Troubleshooting Support available
- 7-Day Setup Schedule
- Summer Bypass

BENEFITS SUMMARY

- Eliminates condensation, mould growth & musty odours
- Compliant with current Building Regulations Part F 2019
- Expanded polyethylene casing to ensure high levels of insulation
- Low Energy Electronically Commutated (EC) motor

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

Model PA700LI			
Area Served (m ²)	140 to 270 (max.)	Boost Switch Control	Optional
Unit Dimensions (mm)	1025 (L) x 680 (H) x 600 (D)	Sound Power Level (L _{WA})	62 dB @ 363 m ³ /h, 70 dB @ 600 m ³ /h
Air flow Range (l/sec)	153	Summer Bypass	Standard
Thermal Efficiency of Heat Recovery (%)	95	Duct Type	Rigid
RVU or NRVU / Unidirectional or bidirectional	RVU / bi-directional	Electrical power input of the fan drive at maximum flow rate (W)	342
Type of drive (multi-speed drive or variable speed drive)	Variable speed drive	Condensate Connection Ø	32mm
Type of Heat Recovery System (recuperative, regenerative, none)	Recuperative	Weight (KG)	27
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	Maximum Flow Rate (m ³ /h)	550m ³ /h @ 100 Pa
The average annual electricity consumption (AEC) (in kWh/m ² /annum)	1.89	Reference Flow Rate (m ³ /s)	0.1075
Maximum Leakage Rates (%)	External (+250 Pa): 0.77 External (-250 Pa): 0.76 Internal (+100 Pa): 1.65	Specific Power Input (SPI) (W/ (m ³ /h))	0.323
		Control factor and control typology	1 and Combination with manual switch

Filter Details

Surface area (m ²)	Type	Dimensions (mm)	No. of filters	
0.37	G4 (Supply & Extract)	458 (L) x 210 (H) x 48 (D)	2	-

Fans

Control Input (V)	Type	Input Voltage Range (V)	No. of fans	
0-10	190mm backward curve	220/230	2	-

Controls

Protocol	Interface	Inputs	Outputs	Input Voltage (V)
Modbus RTU	Wired Touch Panel	Digital 4/ Analogue 2	-	220

Counter-Flow Heat Exchanger

Material	Surface area (m ²)	No. of Plates	Plate Thickness (mm)	
Pure Polypropylene	34.68	48	0.4	-

Counter-Flow Heat Exchanger

Counter-flow heat exchangers are capable of very high efficiency under correct conditions. Fig. 1 shows that even at very low outdoor temperatures, the supply air can be over 18°C.

Tests on the exchangers at Eindhoven University have verified the calculations. Tests on the overall system at the Building Research Establishment (BRE) in England have demonstrated that sensible efficiencies more than 90% are easily achievable.

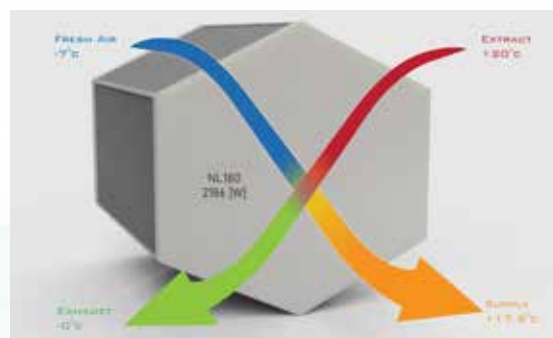



Fig. 1

SAP PCDB Specific Fan Power (SFP)

Rooms	Air Flow Rate (l/s)	SFP (W/l/s)	% Efficiency
K + 1	21.0	0.58	95
K + 2	29.0	0.55	95
K + 3	37.0	0.56	94
K + 4	45.0	0.59	93
K + 5	53.0	0.68	93
K + 6	61.0	0.75	92
K + 7	69.0	0.88	91

Specific Energy Consumption & SEC CLASS

	Cold	Average	Warm
SEC (kWh/m ² /annum)	-81.12	-42.6	-17.35



Sound Levels

Fan Speed (%)	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
DB @ 1m	37	37	37	40	43	46	50	53	56	59	61	64	67	68	69	73	72

Summer Bypass System

The bypass system is controlled by extract and fresh temperature probes reading outside and inside temperatures. When certain set points are measured, the actuator engages or disengages.

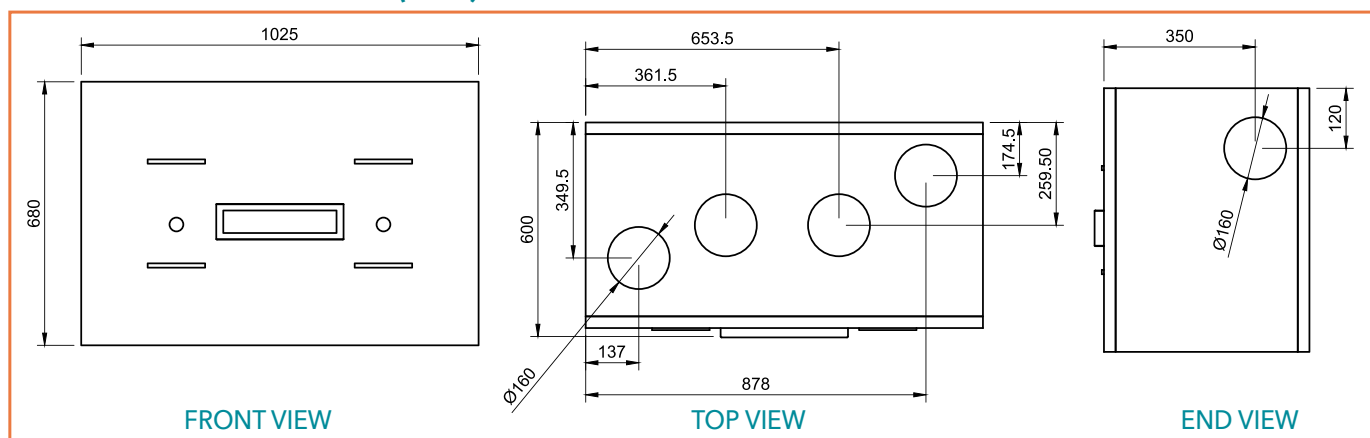
Main Control

The MVHR system is normally run at a speed to suit the application, which is set during commissioning. The controls will operate according to the level of Humidity (%) or CO₂ (ppm) present inside the treated envelope. For the automated boost mode the fan speeds will increase as Humidity or CO₂ levels rise and will return back to the commissioned set point when the levels drop.

Phone App Control

- Manual and automatic boost control
- Control ventilation flow rates
- 7 day set up schedule
- Humidity and Temperature sensor read out
- Remote Access to the Ventilation System
- System error warning indicator
- Filter change monitoring
- Remote diagnostics available

Mechanical Dimensions (mms)



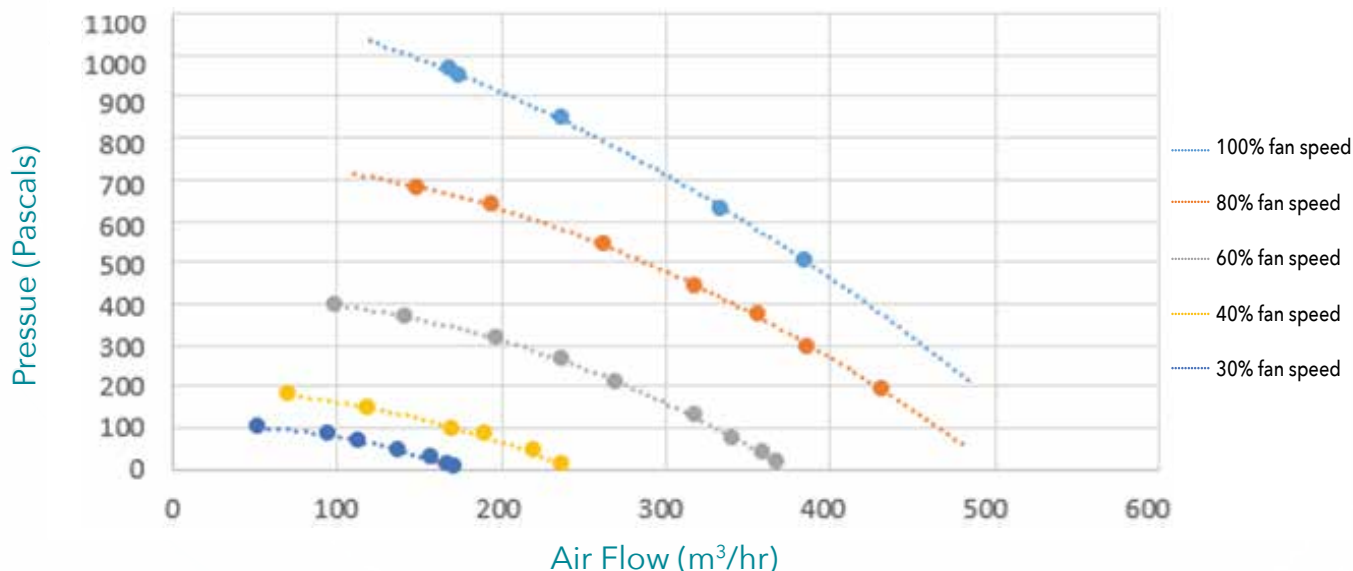
Filters

The filters installed in this product are G4 on extract and supply 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. The filters should be changed at least annually.

Fans

The fans are high efficiency backward curved 190mm diameter with light-weight plastic impellers mounted on external rotor, electronically commutated, medium voltage, EC motors and 0-10V controlled all fitted into a customised sound absorbent dense polyethylene open-scroll enclosure. The PA700LI has been connected to a simulated installation duct network in the ProAir test laboratory. The graph below shows the pressure drop across the fans when connected to the network.

Air Flow vs Pressure Curve PA700LI



GALWAY OFFICE

Unit 1,
Polkeen Industrial Estate,
Tuam Road, Castlegar,
Co. Galway H91 WYR8
T 091 739 442

DUBLIN OFFICE

Unit P26,
Greenogue Business Park,
Grants Road, Rathcoole,
Co. Dublin D24 HW44
T 01 503 4296

CORK OFFICE

Unit A11,
Millennium Park,
Youghal,
Cork. P36 A522
T 089 274 8989