



Energy-saving Ventilation Systems

HR01 Appliance Guide

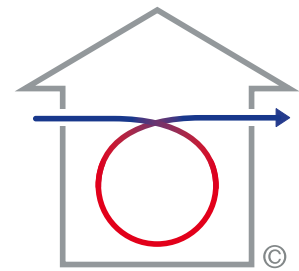
Energy-saving ventilation systems



Polypipe Ventilation systems combine energy-efficient appliances with premium duct systems to deliver the most efficient whole system solutions available.

- HR01 SAP Appendix Q registered and EST Best Practice Compliant high efficiency MVHR appliances
- Installer-friendly and energy-saving duct systems
- Integrated fire stopping and sound attenuation system components
- Universal mounting and suspension products for simple installation
- Advanced control systems to help balance energy usage and air quality
- On-line and bespoke design capability

Our integrated systems help our customers to achieve higher levels of the Code for Sustainable Homes and the best possible SAP ratings.



Heat Recovery

Legislation

The Code for Sustainable Homes

The Code for Sustainable Homes (CSH) aims to reduce carbon emissions for new domestic buildings by setting target levels.

- Code level 1 requires energy consumption in line with 2006 Building Regulations and Level 6 requires homes to be Zero Carbon
- Code levels rise to Code 6 in 2016
- Code level 3 is currently mandatory for private new homes and requires a 25% energy saving on homes built to 2006 regs
- Code level 4 requires a 44% energy saving and is currently EST recommended for social housing

The EST

The Energy Saving Trust (EST) provides independent sustainability recommendations to businesses and individuals. They are accepted by Government as the authority on many environmental issues.

SAP

SAP is the Government Standard Assessment Procedure for the energy rating dwellings.

SAP Appendix Q

SAP Appendix Q enables performance of new technologies including MVHR to be used in SAP calculations. EST set higher standards for performance.

Polypipe HR01 MVHR appliances are >92% efficient and easily satisfy the requirements of SAP Appendix Q and the EST higher requirements of $\leq 1W/l/s$ and 85% heat recovery efficiency.

To achieve the highest CSH level, a SAP heat loss parameter (HLP) of $0.8W/m^2K$ is required. According to work carried out by Fontenergy.com, these efficient houses will not be possible without MVHR.



Benefits of heat recovery



Modern buildings lose 25% of heat due to uncontrolled ventilation and air leakage.

On average a bathroom full of moist air, contains over 600 watts of heat energy and is exhausted twice every hour.

1.2kWh heat wasted

Polypipe HR01 appliances can recover more than 92% of this heat directly saving cost and carbon emissions.

MVHR power saving calculation:

$$\text{Power saving} = \frac{V \cdot c_p h}{3600} (p \cdot shc \cdot dT \cdot \text{eff} \cdot sfp)$$



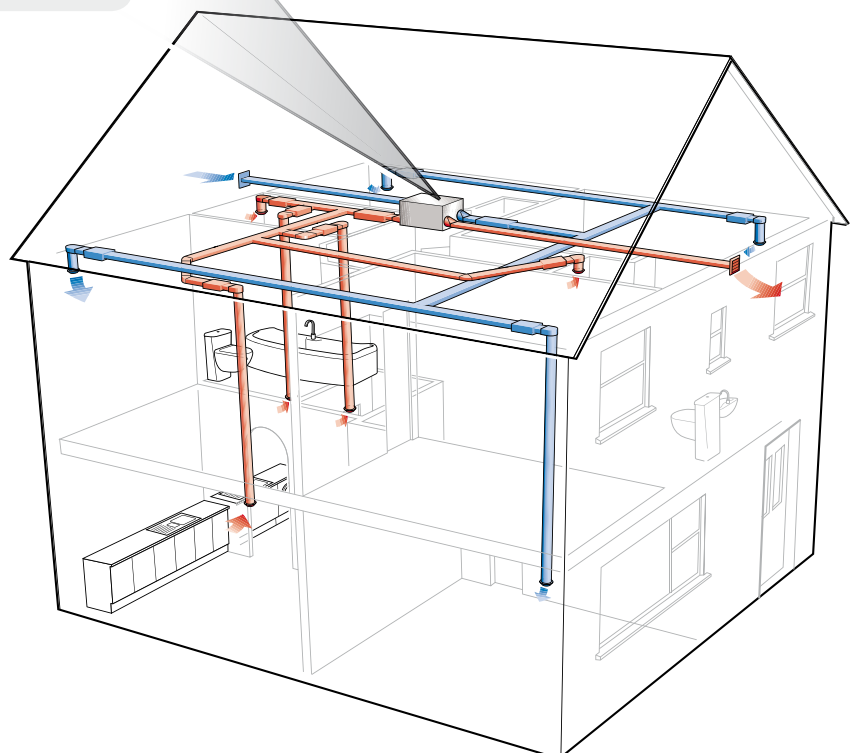
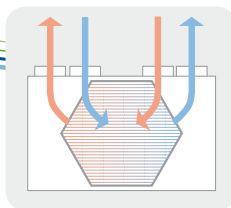
- Planar elements
- Ventilation and air leakage
- Thermal bridges

Data taken from Part L 2010
Consultation Workshop
July 2009
Ian Mawditt, Building Sciences

HR01 Heat recovery

Polypipe HR01 appliances warm fresh air drawn into the building with the heat from waste stale air using the efficient counter flow heat exchanger. This reduces the need for heating.

HR01 appliances also significantly increase quality of life within the home by delivering fresh, oxygenated, pre-warmed and filtered air to the living and sleeping areas through Polypipe duct systems.



HR01 Heat recovery ventilation

HR01 is a high efficiency range of Mechanical Ventilation with Heat Recovery (MVHR) appliances which forms part of Polypipe's energy-saving, sustainable ventilation systems.

The units are among the quietest on the market and are light weight and compact for simple, easy installation in kitchen eye-level cupboards or lofts.

HR01 appliances installed with Polypipe high flow duct systems enable house builders and developers to reduce fuel costs significantly particularly when needed the most during winter months.

A range of tamperproof control sensors ensure the system runs optimally all year round and all appliances are offered with a three year warranty as standard.

HR01 appliances have been approved as Best Practice compliant by the EST.



There are four appliances available.






- HR01W is a wall mounted appliance and is available with a summer bypass variant HR01WB. The filters in these appliances are designed for annual servicing.
- HR01L is a loft mounted unit with more ducting options. Available with a summer bypass variant HR01LB, filters require servicing every 5 years to keep the unit functioning efficiently.



HR01 Features

Feature	Advantage	Benefit
• Polymer heat exchanger	• High efficiency at all performance levels	• Reduces whole life cost
	• Frost proof to -20°C	
• Energy Savings Trust Best Practice compliant	• Guarantees appliance performance	
• Tamperproof easy-change filters	• Eases servicing	
• Powder coated steel case	• Avoids opportunist damage by tenants	
• Three year warranty as standard	• Provides piece of mind	
• Summer bypass variant	• Reduces running costs during summer months	
• High efficiency duct systems available	• Calculable end-to-end system efficiency	• Protects building fabric
• Integral run on timer	• Removes pollutants after bathing	
• Range of sensors available to optimise performance.	• Controls noise	• Improves quality of life
• High grade filtration	• Improves air quality	
• High SAP Q efficiency figures (92%-95%)	• Reduces points required to achieve CSH level	• Reduces build costs
• Fixing brackets supplied	• Easy installation	
• Lightweight		
• Supplied with Flying lead		
• Loft appliance fits through standard loft hatch		
• Wall appliance fits in eye-level kitchen cupboard		
• Adjustable standard and boost flow rates	• Simplifies commissioning	• Reduces design time
• Dual diameter duct connections (spigots)	• Eases system specification	
• Loft and wall variants		

HR01 Appliance details

Appliances	Code	Installation	Spigot Dia.	Fan Speed	Kitchen plus 1 additional Wet Room			Kitchen plus 2 additional Wet Rooms			Kitchen plus 3 additional Wet Rooms		
					W/l/s@min	Heat ex(%)	max l/s	W/l/s@min	Heat ex(%)	max l/s	W/l/s@min	Heat ex(%)	max l/s
	HR01W	Wall/cupboard	100/125	100% Variable	0.59	92	15	0.68	91	21	0.83	93	27
	HR01WB	Wall/cupboard - summer bypass	100/125	100% Variable	0.69	92	15	0.76	92	21	0.76	90	27
	HR01L	Loft	125/150	100% Variable	0.69	92	15	0.76	92	21	0.76	90	27
	HR01LB	Loft - summer bypass	125/150	100% Variable	0.69	92	15	0.76	92	21	0.76	90	27
Controls and Filters													
	HR01P	PIR sensor	-	-	-	-	-	-	-	-	-	-	-
	HR01H	Humidity sensor	-	-	-	-	-	-	-	-	-	-	
	HR01M	System monitor	-	-	-	-	-	-	-	-	-	-	
	HR01FG4	Spare filter G4	-	-	-	-	-	-	-	-	-	-	
	HR01FG2	Spare filter G2	-	-	-	-	-	-	-	-	-	-	



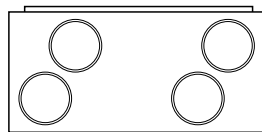
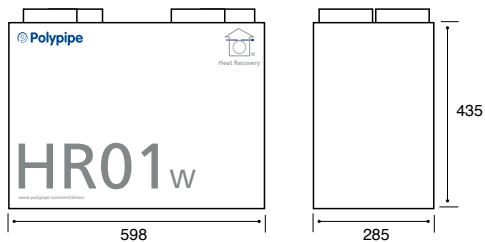
All HR01 appliances are EST Best Practice compliant.

Electrical detail

Voltage:	240V 1ph 50Hz
Consumption:	75W (max) 0.6 Amp
Fuse rating:	3 Amp
NOTE: Must be earthed.	

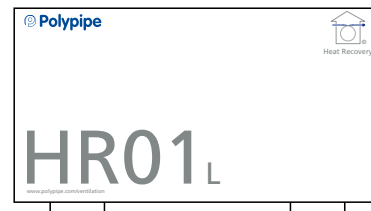
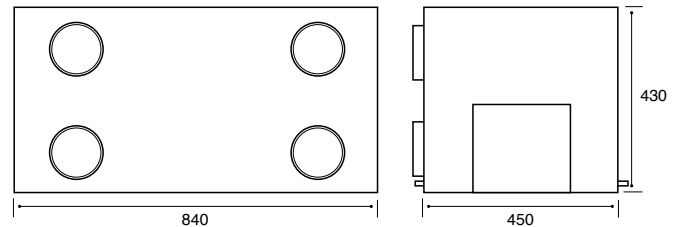
HR01 Dimensions

Wall appliance



Weight 13Kg

Loft appliance



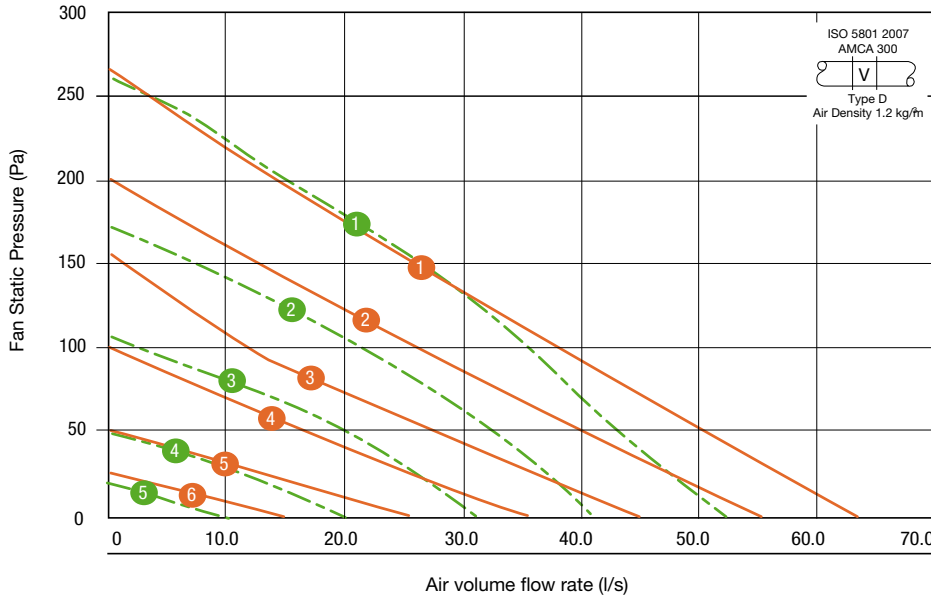
Weight 21Kg

All dimensions in mm

HR01 Performance

Wall variants

Loft variants



Electrical and sound

Graph curves	Max. power consumption (Watts)			Sound Power levels dB re 1pW																	
	Wall	Loft		63	125	250	500	1K	2K	4K	8K	dB A @3m									
				Wall	Loft	Wall	Loft	Wall	Loft	Wall	Loft	Wall	Loft	Wall	Loft	Wall	Loft				
1	71	73	Open inlet	45	38	41	42	48	48	47	43	41	42	39	32	24	29	24	29	30	28
			Open outlet	48	40	51	56	57	56	59	59	54	54	47	51	39	45	33	34	41	42
			Breakout	51	43	50	55	53	53	51	51	43	43	38	42	30	36	26	31	33	34
2	39	51	Open inlet	44	37	39	41	46	46	44	41	36	38	34	28	20	25	19	25	26	25
			Open outlet	44	39	48	55	52	54	53	57	48	50	41	47	29	41	25	30	36	39
			Breakout	50	42	48	54	51	51	48	49	38	39	33	38	25	32	21	27	30	32
3	21	31	Open inlet	42	34	38	40	43	43	37	35	31	37	26	28	20	22	17	19	21	23
			Open outlet	42	38	46	49	49	51	49	52	42	48	35	43	23	35	19	30	31	35
			Breakout	48	38	46	48	47	48	44	44	32	37	27	34	19	26	15	27	26	27
4	10	20	Open inlet	40	33	35	38	39	44	32	32	23	32	18	23	12	17	9	14	16	20
			Open outlet	40	37	43	48	44	49	43	49	33	43	20	38	14	30	13	25	24	32
			Breakout	46	37	43	46	43	46	38	41	23	32	18	29	10	21	6	22	21	24
5	5	12	Open inlet	35	30	29	34	30	38	20	23	5	19	-	10	-	4	-	-	<10	13
			Open outlet	36	34	38	44	37	43	33	40	18	30	11	25	-	17	-	12	15	22
			Breakout	42	34	38	42	36	40	28	42	8	19	3	16	-	8	-	9	13	22
6		7	Open inlet	-	28	-	32	-	32	-	20	-	14	-	5	-	-	-	-	-	<10
			Open outlet	-	32	-	41	-	40	-	37	-	25	-	20	-	12	-	7	-	19
			Breakout	-	32	-	40	-	37	-	29	-	14	-	11	-	3	-	4	-	<10

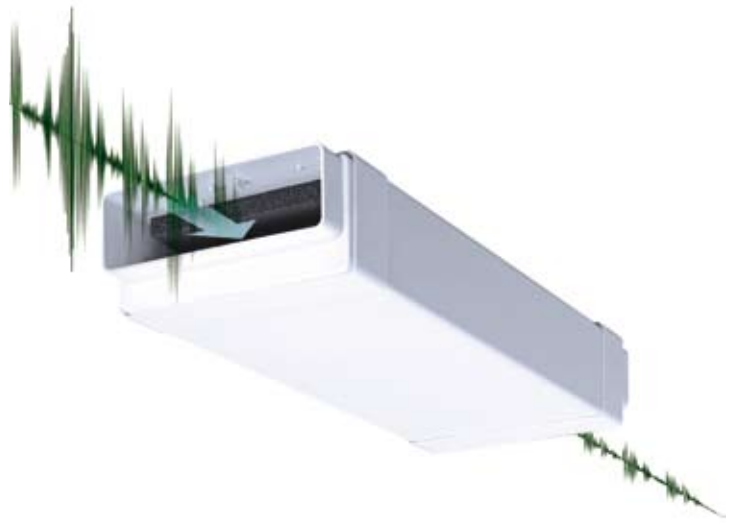
The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Appendix Q testing.

Hemispherical free field dBA.

HR01 System solution

Polypipe's Domus duct systems have been designed and manufactured to optimise airflow energy-efficiency.

- Highest air tightness of any available system ensures optimum appliance performance
- Engineered joints ease sealing, reduce installation time and future reworks
- Eliminates moisture leakage protecting the building fabric and reducing whole-life costs
- Largest range of industry leading profiles, fitting and fixing accessories enables duct to be correctly installed to avoid system noise, retain heat and retain fire compartment integrity



HR01 VSP on-line system specification

The VSPweb On-line Planner provides a bespoke duct system to match the chosen appliance.

Either manually select the appliance from the SAP Appendix Q database or allow the planner to specify the most appropriate high efficiency Polypipe HR01 unit.

Using the information you provide about the property and the selected appliance, a Duct Pack is specified to match the number of inhabitants, size and type of the property as well as the installation and termination location of the appliance and average room sizes based on current building practice.

Duct Packs include:

- Correctly specified high capacity duct, fittings and accessories matched with to the building and appliance
- Adjustable 100mm air valves for installation in all 'habitable' and 'wet' rooms
- 100mm duct, joints, clips and distribution system connections to run vertically between separate air valves on all floors and the distribution system
- External terminals, duct adapters, ventilation duct, fittings and accessories matched to your appliance to enable correct exhaust and supply air flow
- 1m silencers to minimise appliance noise along ducts running into the home and a 0.5m unit to be mounted in the duct run next to each air valve for reducing cross-talk noise between rooms
- High efficiency thermal insulation and joint tape to ensure heat energy is retained when duct is installed in unheated spaces and minimise the risk of condensation developing
- Duct sealant to ensure to ensure system integrity

www.polypipe.com/ventilation

Ground Floor

Energy-saving Ventilation Systems



Distributed by

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E & EO We reserve the right to alter product specification without prior notice.

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