### **QR400A**



### CENTRALISED HEAT RECOVERY UNIT

IPX4

Modbus

**ErP** 

2018

#### APPLICATION

Whole-house heat recovery unit, suitable for vertical installation.

#### **SPECIFICATION**

Outer fan casing manufactured from powder coated galvanised sheet steel providing long lasting and robust construction. The unit is finished in white RAL 9010.

**Internal structure** manufactured from EPP (expanded polypropylene) providing reduced sound emissions and maximised air tightness and thermal insulation.

**EC external rotor motors** fitted as standard for energy saving. Provided with integral thermal protection, mounted on sealed for life ball bearings.

Backward curved centrifugal impeller dynamically balanced and directly driven by the motor to provide a smooth airflow through the unit.

Highly	effic	ient	counterflo	w heat
exchan	ger	to	maximise	thermal
recovery	/.			

#### **FEATURES & BENEFITS**

Ease of installation: fixing bracket supplied to hang the unit easily on the wall.

Simplified electric wiring: the unit is supplied pre-cabled.

ISO Coarse 60% (G4) filters easy removable for cleaning. The unit is also provided with the ISO ePM1 60% (F7) filter accessory at the intake side.

**Integral automatic bypass** for free cooling during the summer season.

Automatic anti-frost protection to prevent frost building up on the exhaust side of the heat exchanger.

Two drainage holes to meet climate requirement.

Left/right configuration of the unit for mounting flexibility.

Tested to the latest standards: units are tested in the TÜV Rheinland accredited internal laboratory according to the operating document IEC OD 2048 (level CTF1) for the IEC 60335-1 and IEC 60335-2-80 Standards, meaning accurate, up to date information on electrical safety, performance and noise level that can be relied upon. Unit thermal efficiency, air-leakage and energy efficiency measured at independent laboratory BRE (UK).

Designed and manufactured in accordance with EN60335-2-80 (Low Voltage Directive) and the EMC Directive (Electromagnetic Compatibility).

#### OPERATION

The unit is supplied with a multi-function LCD display (CTRL-DSP) for automatic control and convenience, providing:

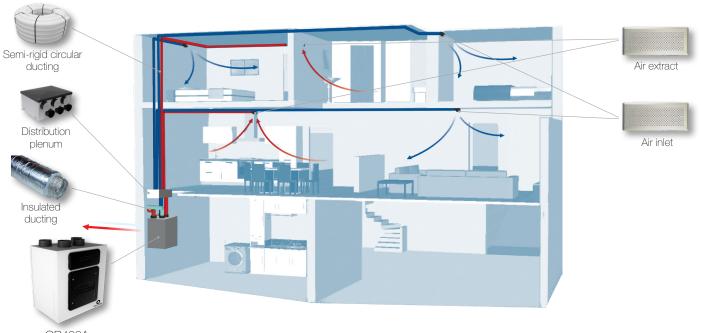
- 3 speed settings (adjustable).
- Boost option.
- Holiday mode.
- Night mode.
- Weekly timer.
- Bypass setting.
- Airflow balancing.
- Filter replacement and fan failure indicator.
- Working hour counter.
- Setting saving and loading.
- Suitable for remote ambient sensors (SEN-HY, SEN-PIR).
- ModBus interface.
- Connection to remote pre/post heating element.
- Connection to remote water coil for heating.
- Left or Right hand configuration (air connection).



CTRL-DSP (supplied as standard)

# QR400A

#### Example of a complete ventilation system



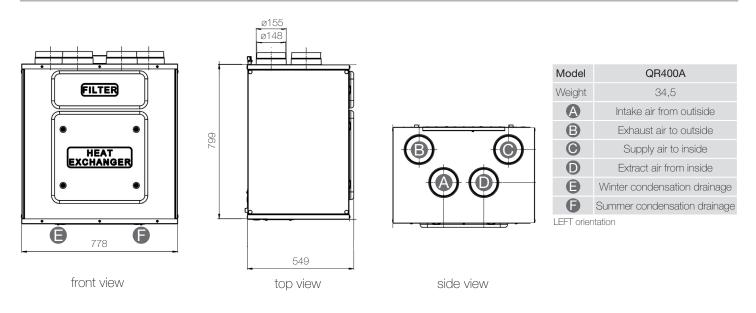
QR400A

How it works: a continuous running heat recovery unit (QR400A) transfers heat from humid air extracted from wet rooms to warm incoming fresh air which is ducted to habitable rooms. Thanks to the easy-to-fit air distribution system each single ambient can be properly ventilate: the boost function enables rapid extract of increased moisture or pollutant levels. It also provides discrete installation and very quite operation.

**Energy saving:** the preheated/precooled fresh air and continuous air changes reduce the demand for additional heating/airconditioning. The EC brushless motors significantly reduce the electricity consumption.

**Indoor Air Quality:** a correctly specified mechanical ventilation system can ensure the quality of the indoor air is constantly maintained for the health and well-being of the occupants as well as of the building. Duly maintained filters ensure that incoming air is suitably filtered of dust and pollen before if enters the home.

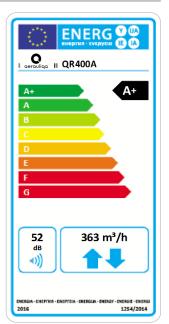
#### Dimensions (mm) and Weight (kg)



## **QR400A**

### Product fiche - ErP Directive, Regulations 1253/2014 - 1254/2014

w2) AHS - Annual heating saved - average climates kWh 46,1 45,2 44,5	a)	Mark	-		AERAULIQA	A		
rd rd rd sectorSEC warm alimatesRMM m²a rd sector-17.3 rd rd rd rd rd sector-17.3 rd	b)	Model	-	QR400A				
cc2SEC average climatesKWh/m².a-42,1-38,7-36,7GSEC cold climatesKWh/m².a-80,8-76,6-72,9Energy label-Residentional-72,9d)Unit typology-Residentional-f)Type of drive-Variable spece drive-g)Thermal efficiency of heat recovery%A-g)Thermal efficiency of heat recovery%Maximum flow rate Q 100 Pam²h363.7g)Electric power input (maximum flow rate)WIf160-g)Sound power level (twp)dBA52.7-g)Specific power input (SPI)Wm²h-0.650.851g)Control factorPa0.650.8511g)Control factorf0.650.8511g)Maximum internal leakage rate%0.4-0.671g)Internal mixing rate%0.41g)Internal mixing rate%01g)Internal mixing rate%1.42.43.4g)Internal mixing rate%1.42.43.4g)Internal mixing rate%1.42.43.4g)Internal mixing rate%1.42.43.4g)Internal mixing rate%1.42.43.4g)Internal mixing rate<	C)	SEC class	-	A+	А	А		
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Sound pressure @ 3m <sup>(1)</sup> dB(A) 26   Ambient temperature max °C +40   Degree of protection IP - X4	w2)	AHS - Annual heating saved - average climates	kWh	46,1	45,2	44,5		
Ambient temperature max°C+40Degree of protection IP-X4	W3)	AHS - Annual heating saved - cold climates	kWh	90,2	88,5	87,1		
Degree of protection IP - X4		Sound pressure @ 3m <sup>(1)</sup>	dB(A)		26			
		Ambient temperature max	°C		+40			
Marking - CE		Degree of protection IP	-		X4			
		Marking	-		CE			



- 220-240V ~ 50/60Hz.

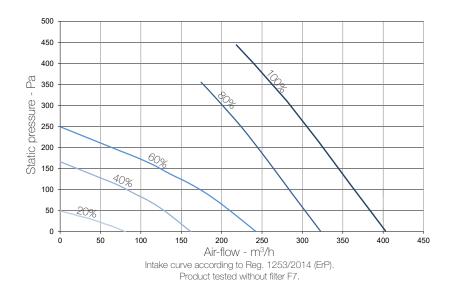
- air performance measured according to ISO 5801 a 230V 50Hz, air density 1,2 Kg/m<sup>3</sup>.

- data measured in the TÜV Rheinland accredited internal laboratory according to the operating document IEC OD 2048 (level CTF1) for the IEC 60335-1 and IEC 60335-2-80 Standards.

(1) sound pressure level @ 3m in free field, breakout, speed 40%, for comparative purposes only.



#### Performance curve



Speed %	W max	m³/h max
20	10	84
40	22	162
60	48	243
80	90	322
100	160	403

#### Sound level

		Lw dB - SOUND POWER OCTAVE BAND						Lp dB(A)			
	Speed 100%	63	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
Intake		73	61	67	69	59	56	50	43	75	47
Supply		72	61	63	65	56	50	41	31	74	43
Extract		73	60	63	65	57	51	42	31	74	44
Exhaust		73	61	66	67	58	55	49	41	75	46
Breakout		71	64	62	67	59	53	45	33	74	45
		Lw dB - SOUND POWER OCTAVE BAND							Lp dB(A)		
	Speed 80%	63	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
Intake		65	61	68	67	58	56	49	41	72	46
Supply		63	59	63	64	55	49	40	29	69	42
Extract		64	59	63	63	56	51	41	30	69	42
Exhaust		64	60	66	67	57	54	48	41	71	45
Breakout		59	64	63	65	57	51	43	31	70	44
								Lp dB(A)			
				LVV UD	0001						
	Speed 60%	63	125	250	500	1 K	2 K	4 K	8K	Tot	@.3m
Intake	Speed 60%	63 55	125 55	250 67	500 55	1 K 49	2 K 47	4 K 40	8K 31	Tot 68	@3m 39
Intake Supply	Speed 60%	55	55	67	55	49	47	40	31	68	39
Intake Supply Extract	Speed 60%										
Supply	Speed 60%	55 53	55 53	67 62	55 52	49 47	47 41	40 32	31 22	68 63	39 35
Supply Extract	Speed 60%	55 53 58	55 53 52	67 62 60	55 52 51	49 47 47	47 41 42	40 32 32	31 22 22	68 63 63	39 35 34
Supply Extract Exhaust	Speed 60%	55 53 58 55	55 53 52 54	67 62 60 66 59	55 52 51 55 52	49 47 47 49 48	47 41 42 47 43	40 32 32 40 33	31 22 22 31 23	68 63 63 67	39 35 34 39 34
Supply Extract Exhaust		55 53 58 55 54	55 53 52 54 53	67 62 60 66 59 Lw dB	55 52 51 55 52 - SOUN	49 47 47 49 48 D POWE	47 41 42 47 43 ER OCT/	40 32 32 40 33 AVE BAN	31 22 22 31 23	68 63 63 67 62	39 35 34 39 34 Lp dB(A)
Supply Extract Exhaust Breakout	Speed 60% Speed 40%	55 53 58 55 54 63	55 53 52 54 53 125	67 62 60 66 59 Lw dB 250	55 52 51 55 52 - SOUN 500	49 47 47 49 48 D POWE 1 K	47 41 42 47 43 ER OCTA 2 K	40 32 40 33 AVE BAN 4 K	31 22 22 31 23 ID 8K	68 63 63 67 62 Tot	39 35 34 39 34 Lp dB(A) @3m
Supply Extract Exhaust Breakout		55 53 58 55 54 63 50	55 53 52 54 53 125 50	67 62 60 66 59 Lw dB 250 57	55 52 51 55 52 - SOUN 500 46	49 47 47 49 48 D POWE 1 K 39	47 41 42 47 43 ER OCT/ 2 K 37	40 32 40 33 AVE BAN 4 K 27	31 22 22 31 23 ID 8K 20	68 63 63 67 62 Tot 59	39 35 34 39 34 Lp dB(A) @3m 30
Supply Extract Exhaust Breakout Intake Supply		55 53 58 55 54 63 50 52	55 53 52 54 53 53 125 50 50	67 62 60 59 Lw dB 250 57 56	55 52 51 55 52 - SOUN 500 46 43	49 47 49 48 D POWE 1 K 39 36	47 41 42 47 43 ER OCTA 2 K 37 30	40 32 40 33 AVE BAN 4 K 27 22	31 22 21 31 23 ID 8K 20 15	68 63 67 62 Tot 59 58	39 35 34 39 34 Lp dB(A) @3m 30 28
Supply Extract Exhaust Breakout Intake Supply Extract		55 53 58 55 54 63 63 50 52 52	55 53 52 54 53 125 50 50 47	67 62 60 66 59 Lw dB 250 57 56 54	55 52 51 55 52 - SOUN 500 46 43 43	49 47 49 48 D POWE 1 K 39 36 37	47 41 42 47 43 ER OCTA 2 K 37 30 31	40 32 40 33 WE BAN 4 K 27 22 21	31 22 22 31 23 ID 8K 20 15 15	68 63 67 62 Tot 59 58 57	39 35 34 39 34 Lp dB(A) @3m 30 28 26
Supply Extract Exhaust Breakout Intake Supply		55 53 58 55 54 63 50 52	55 53 52 54 53 53 125 50 50	67 62 60 59 Lw dB 250 57 56	55 52 51 55 52 - SOUN 500 46 43	49 47 49 48 D POWE 1 K 39 36	47 41 42 47 43 ER OCTA 2 K 37 30	40 32 40 33 AVE BAN 4 K 27 22	31 22 21 31 23 ID 8K 20 15	68 63 67 62 Tot 59 58	39 35 34 39 34 Lp dB(A) @3m 30 28

Lp dB(A) @3m for comparative purposes only

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