Energy recovery ventilation

Indoor air quality (IAQ) is a key consideration for any business owner looking to create a healthy and comfortable environment. An energy recovery ventilator (ERV) provides balanced, energy-efficient ventilation by transferring heat and moisture between incoming fresh filtered air and outgoing stale air. In the winter, an ERV keeps heat and moisture inside the building. During hot, humid summer months, it maintains cool, dry indoor air.

New advanced ERV ZY Series.

- Extended 9 model line-up including 2000 m³/h model
- DC motors
- ESP up to 150 Pa
- F7 grade filter built-in as a standard
- New intuitive remote controller
- BMS integration with RS485

ERV ZDY Series.

- Simple 5 line-up
- AC motor
- A nonwoven cloth filter
- Simple wired remote controller with black panel

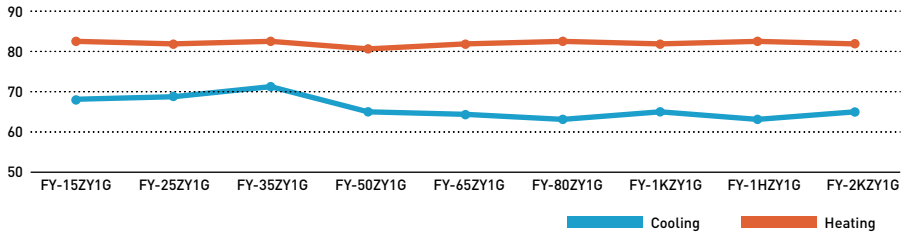
New advanced energy recovery ventilation ZY Series

Recovers up to 83% of the heat in the outgoing air

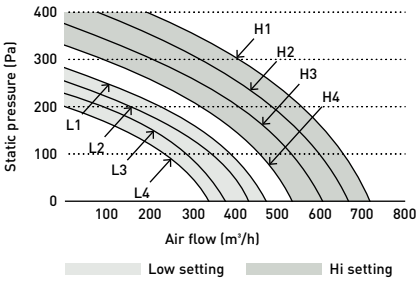
ZY Series achieves more than 80% of heat exchange efficiency in all the line-up [1]. The high recovery rate optimizes operation cost and can be considered as a sustainable solution.

1) Heating operation, H1 speed setting.

Heat exchange efficiency (%).



Ventilation volume setting PQ curve example.

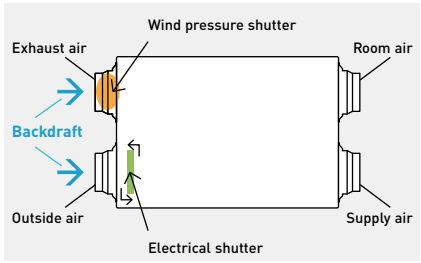


Easy adjust for air volume balance

DC motors are equipped with independent control settings for air supply and exhaust. Air volume balance can be easily adjusted with 4 speeds settings for each Hi / Low operation.

Highly efficient filter for better air supply

An effective EN F7 grade filter is built-in as a standard.
Expected cleaning maintenance cycle is once per month, with an average of 4-6 months for replacement in high demand environments.



Backdraft shutters equipped as standard

A backdraft shutter prevents air flowing in the wrong direction when the ERV system is not in operation.
The shutter at OA (outside air intake) side is inter-locked with ON / OFF switch.
The shutter at EA (exhaust air outlet) side opens with the pressure generated by air stream then closes automatically.

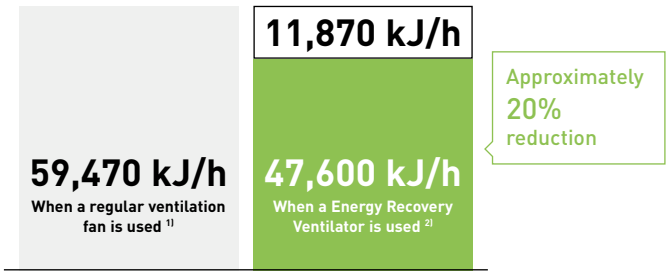
New intuitive remote controller with RS485 connection

- Simple and clean screen with white back light panel
- RS485 terminal equipped to integrate with Building Management Systems
- Metal switch box is included in the package

Energy recovery ventilation ZDY Series

Energy efficiency and ecology

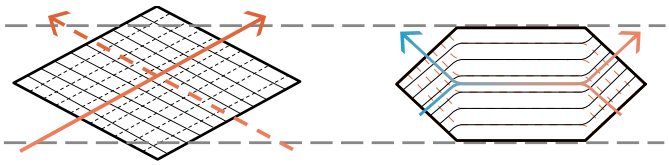
Energy consumption is dramatically reduced by using a counter-flow heat-exchange element. Air conditioning load is reduced by approximately 20%, resulting in significant energy savings.



1) Two FY-27FPK7 units. 2) One FY-500ZDY8R unit.

Comparison of former and current elements

With the counter-flow element, air flows through the element for a longer time (longer distance) than the former cross-flow element, so the heat-exchange effect remains unchanged even if the element is made thinner.



Former (cross-flow element) ZDY (counter-flow element)

More comfort

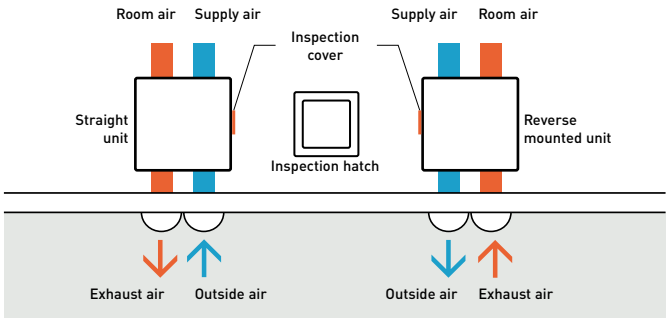
Quiet operation.
Low noise operation results in noticeably quieter units. All models with capacities below 500 m³/h run at noise levels below 32 dB (high setting) and even our largest 1000 m³/h-capacity model runs at only 37,5 dB (high setting).

Long service life of heat-exchange element

A nonwoven cloth filter has a high dust collection efficiency and redesigned the air flow passages to achieve a durable heat-exchange element.
Cleaning can be reduced to every 6 months.

Reverse mountable direct air supply / exhaust system

Adoption of straight air supply / exhaust system: Duct design is simplified because the air supply / exhaust ducts are straight.
Since each unit can be mounted in reverse position, only one inspection hole is needed for two units: Two units can share one inspection hole so duct work is easier and more flexible.



A intuitive and stylish control

- Wire controller included as standard
- Compact and flat front panel
- Filter cleaning support
  - Signal alert for clearing
  - Filter usage condition by 1/2/3/4 months
- Size (W x H x D) 116 x 120 x 40 mm

NEW advanced energy recovery ventilation

Rated flow rate			150 m³/h	250 m³/h	350 m³/h	500 m³/h	650 m³/h	800 m³/h	1000 m³/h	1500 m³/h	2000 m³/h
Indoor unit			**FV-15ZY1G**	**FV-25ZY1G**	**FV-35ZY1G**	**FV-50ZY1G**	**FV-65ZY1G**	**FV-80ZY1G**	**FV-1KZY1G**	**FV-1HZY1G**	**FV-2KZY1G**
Power supply	Voltage	V	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240	220 - 240
	Phase		Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
	Frequency	Hz	50	50	50	50	50	50	50	50	50
Motor type			DC	DC	DC	DC	DC	DC	DC	DC	DC
ERV											
Air flow	Max	m³/h	150	250	350	500	650	800	1000	1500	2000
External static pressure	Max	Pa	100	120	140	130	150	150	150	130	130
Sound power 2)	Max	dB(A)	37	38	39	43	45	45	46	49	51
Input power	Max	W	76 ~ 84	106 ~ 117	141 ~ 155,5	180 ~ 198	420 ~ 462	470 ~ 517	550 ~ 605	940 ~ 1034	1100 ~ 1210
Heat exchange efficiency 3)											
Cooling	Max	%	68,0	69,0	71,0	65,0	64,0	63,0	65,0	63,0	65,0
Heating	Max	%	83,0	82,0	83,0	81,0	82,0	83,0	82,0	83,0	82,0
Enthalpy exchange efficiency											
Cooling	Max	%	66,0	66,0	67,0	62,5	62,5	63,5	63,0	63,5	63,0
Heating	Max	%	76,0	74,0	75,0	73,0	72,0	73,0	74,0	73,0	74,0
Adapter diameter		mm	100	150	150	200	200	250	250	250	250
Dimension 3)	H x W x D	mm	289 x 610 x 860	289 x 735 x 860	331 x 874 x 968	331 x 1016 x 968	404 x 954 x 1008	404 x 1004 x 1224	404 x 1231 x 1224	808 x 1004 x 1224	808 x 1231 x 1224
Net weight		kg	23	27	37	40	48	56	64	116	139

1) Different dimensions depending on models. 2) Measurement of noise 1,5 m below the center of the main unit (anechoic chamber). 3) Heat exchange efficiency measurement standard JIS B 8628 (2003).
* JIS B 8628 (2017) is used in the measurement environment. ** Available in Autumn 2023. *** Remote controller image is tentative.

Accessories	
FV-FP15ZY1G	Replacement high efficiency filter for FV-15ZY1G
FV-FP25ZY1G	Replacement high efficiency filter for FV-25ZY1G
FV-FP35ZY1G	Replacement high efficiency filter for FV-35ZY1G
FV-FP50ZY1G	Replacement high efficiency filter for FV-50ZY1G

Accessories	
FV-FP65ZY1G	Replacement high efficiency filter for FV-65ZY1G
FV-FP80ZY1G	Replacement high efficiency filter for FV-80ZY1G and FV-1HZY1G*
FV-FP1KZY1G	Replacement high efficiency filter for FV-1KZY1G and FV-2KZY1G*

* 2 sets of filters required for those models.

Energy recovery ventilation

FY-250ZDY8R

FY-350ZDY8R

FY-500ZDY8R

FY-800ZDY8R

FY-01KZDY8R

Rated flow rate			250 m³/h			350 m³/h			500 m³/h			800 m³/h			1000 m³/h		
Indoor unit			**FY-250ZDY8R**			**FY-350ZDY8R**			**FY-500ZDY8R**			**FY-800ZDY8R**			**FY-01KZDY8R**		
Power supply	Voltage	V	220 - 240			220 - 240			220 - 240			220 - 240			220 - 240		
	Phase		Single phase			Single phase			Single phase			Single phase			Single phase		
	Frequency	Hz	50			50			50			50			50		
Notch			**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**	**Extra high**	**High**	**Low**
Input power		W	112,0 - 128,0	108,0 - 123,0	87,0 - 96,0	182,0 - 190,0	178,0 - 185,0	175,0 - 168,0	263,0 - 289,0	204,0 - 225,0	165,0 - 185,0	387,0 - 418,0	360,0 - 378,0	293,0 - 295,0	437,0 - 464,0	416,0 - 432,0	301,0 - 311,0
Air flow		m³/h	250	250	190	350	350	240	500	500	440	800	800	630	1000	1000	700
External static pressure		Pa	105	95	45	140	60	45	120	60	35	140	110	55	105	80	75
Sound power	Heat exchange	dB(A)	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	36,5 - 37,5	34,5 - 35,5	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	37,5 - 38,5	37,0 - 37,5	33,5 - 34,5
	Normal	dB(A)	30,0 - 31,5	29,5 - 30,5	23,5 - 26,5	32,5 - 33,0	30,5 - 31,0	22,5 - 25,5	37,5 - 38,5	37,0 - 38,0	31,0 - 32,5	37,0 - 37,5	36,5 - 37,0	33,5 - 34,5	39,5 - 40,5	39,0 - 39,5	35,5 - 36,5
Temperature exchange efficiency		%	75	75	77	75	75	78	75	75	76	75	75	76	75	75	79
Dimension	H x W x D	mm	270 x 599 x 882			317 x 804 x 1050			317 x 904 x 1090			388 x 884 x 1322			388 x 1134 x 1322		
Net weight		kg	29			49			57			71			83		

The noise level was measured within an acoustic chamber. Due to installation arrangement and surfaces within the space, actual noise levels may increase. The input, the current and the exchange efficiency are values relevant to the indicated air flows. The noise level is measured 1,5 m below the centre of the unit. The temperature exchange efficiency is an average of both cooling and heating operation.