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energy recovery ventilation (erv)

ENERGY RECOVERY VENTILATION (ERV)

Ventilation technology the world has been waiting for. Hydor ERV provides fresh, clean and safe indoor air while helping to cut energy bills.

We spend more than 85% of our time indoors, in houses and offices.

As today's buildings embrace energy-saving ideas and high-rise designs, and their architectural structure is characterised by high density and insulation, natural ventilation cannot be utilised effectively.

Natural ventilation by opening windows brings in dust and noise, making it difficult to maintain the ideal indoor environment.

Ventilation can be compared to the respiratory system of a building — good ventilation guarantees the health of the building and the people in it.

However, if you live in a poorly ventilated house for long, you are likely to be vulnerable to sick house syndromes, e.g. dermatitis, headache and asthma.

People also encounter problems with new house syndrome. This refers to symptoms including pain in the eyes, nose and throat, headaches, nausea and allergies that affect people who spend a lot of time indoors. The main culprit is the inhalation of indoor air polluted by construction materials or smoking.

Research has shown enclosed structures where ventilation is poor are especially vulnerable to this syndrome.

The ERV ensures polluted indoor air is removed and fresh air is supplied. Clean air is sent into your home, allowing your ventilation system it become the basis for healthier living.

The technology ensures the loss of heating and cooling energy is minimised, meaning that not only are you living in a healthier environment, but you are also saving money and energy while doing it.

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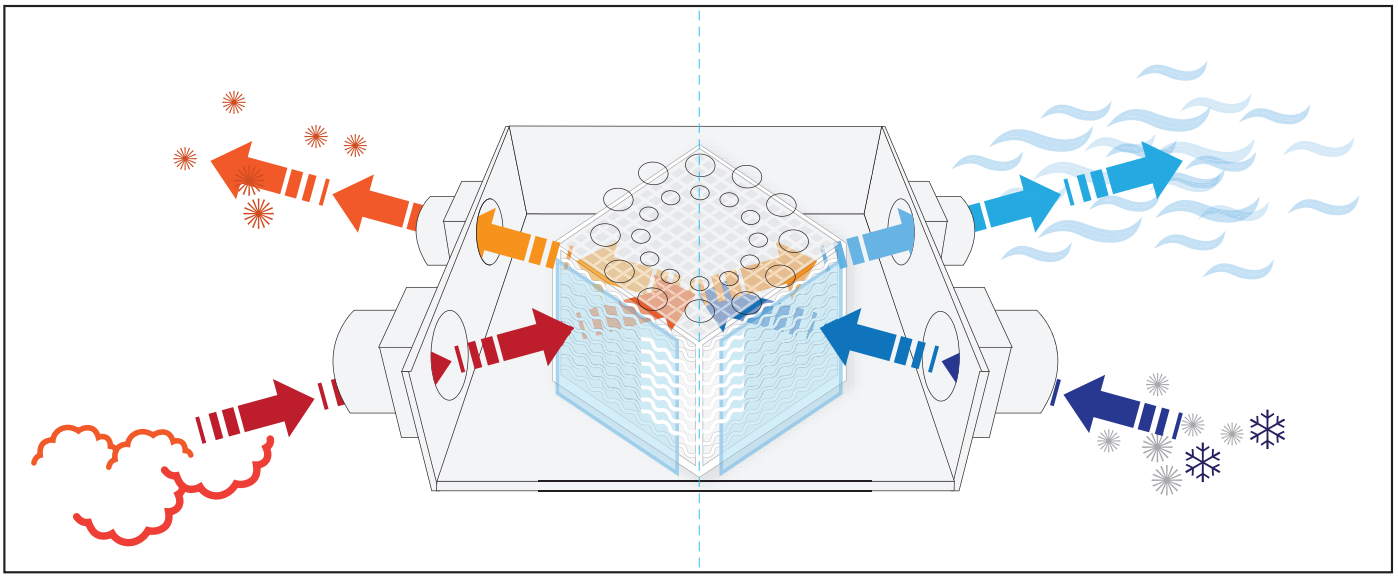
WHAT IS THE ERV & HOW DOES IT WORK?

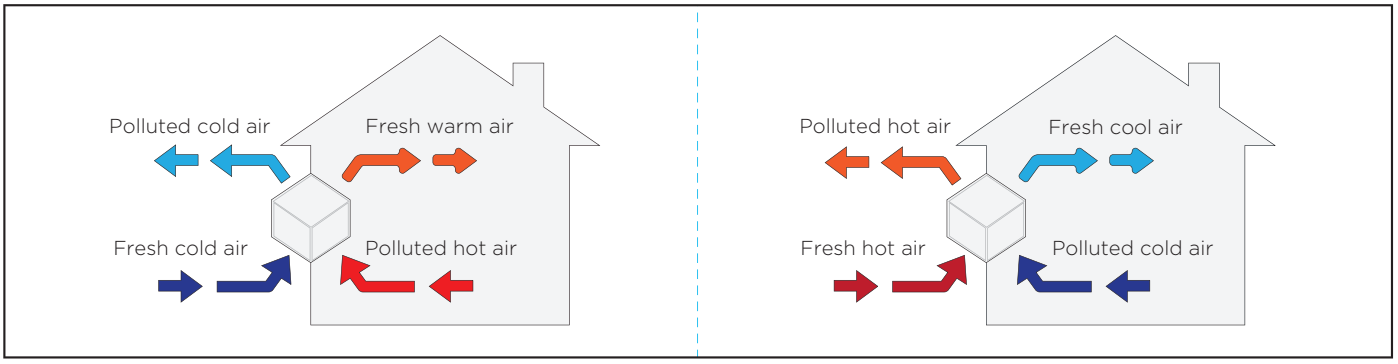
The ERV is fitted to ventilation systems for enclosed spaces and has 3 main tasks:

- Facilitates transfer of heat/cool from air expelled to air brought in, helping to conserve energy (energy recovery).
- Thoroughly filters out all air pollutants.
- Supplies a constant flow of fresh air.

Outside Inside



Heating Cooling



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AN ERV SYSTEM IS DESIGNED TO MINIMISE:

Pollutant	Source	Impact on the Human Body
Dust	Physical activity, clothes, inflow from the atmosphere	Respiratory disease, pneumoconiosis, allergic asthma, atopic dermatitis
CO_2	Respiration, combustion equipment, exhaust gas from vehicles	Tinnitus, headache, dyspnea
CO_2 Formaldehyde	Veneers, furniture, heat insulator, adhesive	Irritation in the eyes, nose and throat dizziness, cough, emotional instability
Microorganism	Humidifier, air conditioner, refrigerator (fungus, pollen, etc)	Infectious disease, allergy, pneumonia, rhinitis
Cigarette Fume / Combustion Gas	Smoking and passive smoking/heating and combustion equipment, exhaust gas from vehicles	Headache, fatigue, bronchitis, pneumonia / chronic lung disease, asthma
Radon / Asbestos	Concrete, soil, groundwater / heat insulator, insulator, asbestos tile	Lung cancer / skin disease, respiratory disease
Organic Solvent / Malodor	Paint, adhesive, spray, air freshener / malodor emitters	Fatigue, headache, nausea, vertigo, loss of appetite, nausea, allergy

WHAT ELSE DOES THE ERV OFFER?

- **Reduction in Air Conditioning Operating Costs**
- **Reduction Of Fresh Air Load up to 75%**
- **Downsizes Heating and Cooling Equipment Capacity**
- **Timer-Based, Pre-Planned Operation**
- **Total Control and Management by the Remote Controller**

Humidity Control -
Proper indoor humidity is maintained through heat exchange.

Eco-friendly Ventilation -
The innovative technology, which takes environment into account, guarantees a stable ventilation of two-way speed exhaustion.

Filtering of Dust -
Outdoor dust is filtered to make your living space cleaner and more hygienic.

Site-specific Installation -
Site-specific application and installation is possible with the diversified products — ceiling built-in, window, console types, etc.

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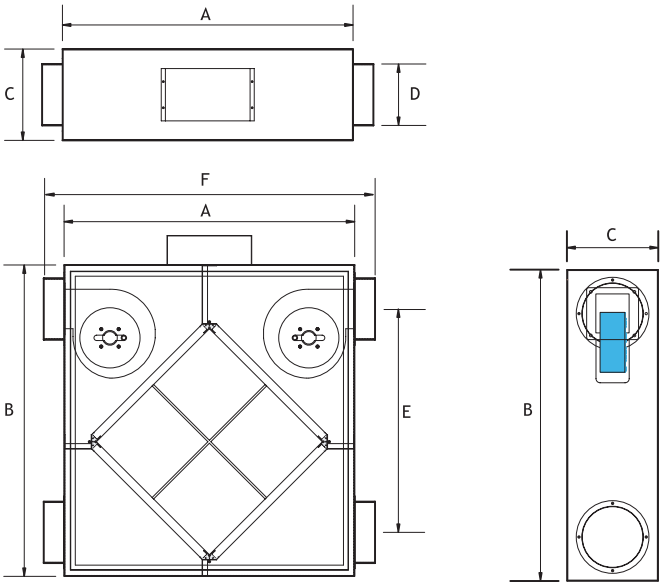
ESP-350AM



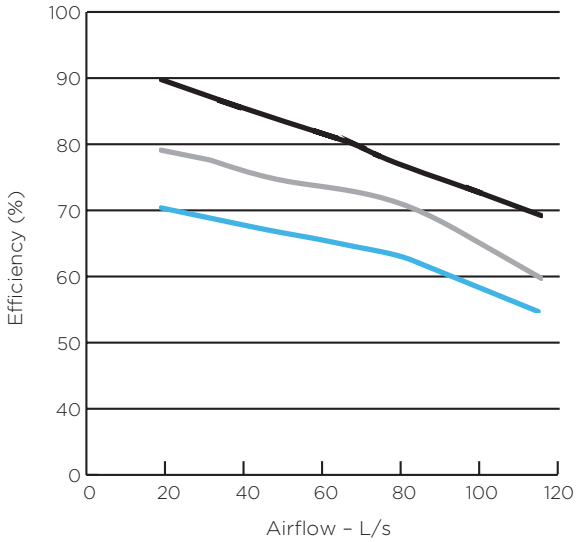
Dimensions

A	B	C	D	E	F
700	700	230	150	500	790

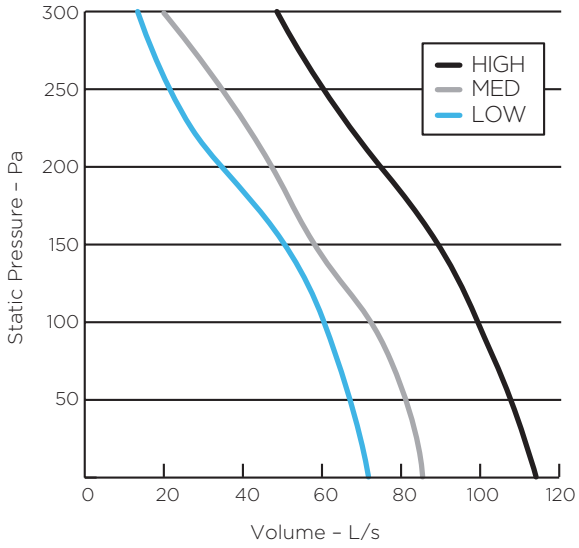
Specifications

Category		Unit	ESP-350AM		
Power		Ø, V, Hz	1Øx240Vx50Hz		
Air Velocity		-	High	Med	Low
Air Flow		L/s	97	69	61
Power Consumption		W	90	75	55
Static Pressure		Pa	150Pa		
Sensible Efficiency		%	81.4		
Effective Heat Exchange Efficiency	Heating	%	73.4		
	Cooling	%	54.1		
Filter		-	Nonwoven Filter		
Weight		kg	30		
Size (LxWxH)		mm	700x700x230 (150Ø)		

*The specifications above are subject to change without prior notice for product improvement or site conditions.



Airflow L/s @ Static Pressure Pa



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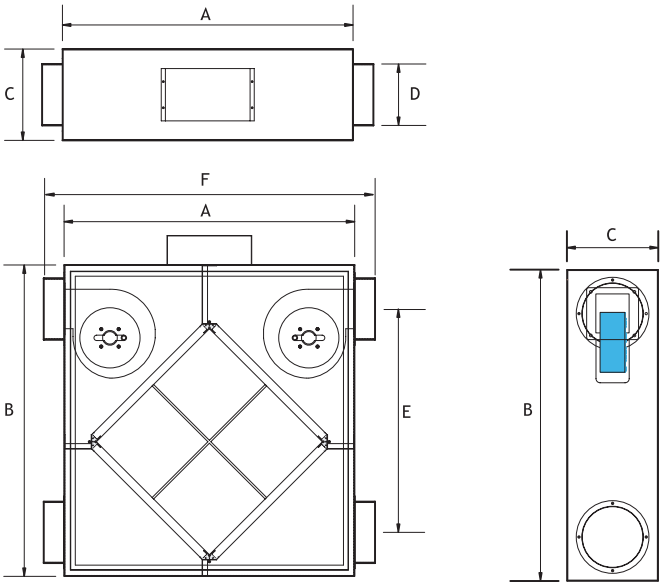
ESP-500



Dimensions

A	B	C	D	E	F
770	742	400	200	436	860

Specifications

Category		Unit	ESP-500		
Power		Ø, V, Hz	1Øx240Vx50Hz		
Air Velocity		-	High	Med	Low
Air Flow		L/s	140	125	105
Power Consumption		W	250	220	200
Static Pressure		Pa	150Pa		
Sensible Efficiency		%	82.9		
Effective Heat Exchange Efficiency	Heating	%	70.5		
	Cooling	%	45.7		
Filter		-	Nonwoven Filter		
Weight		kg	38		

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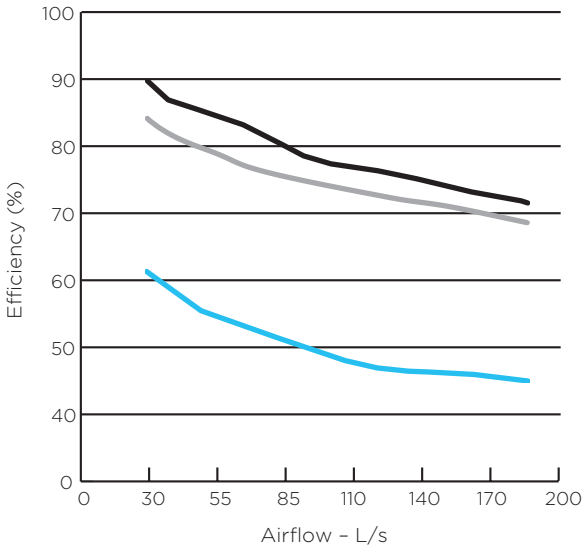
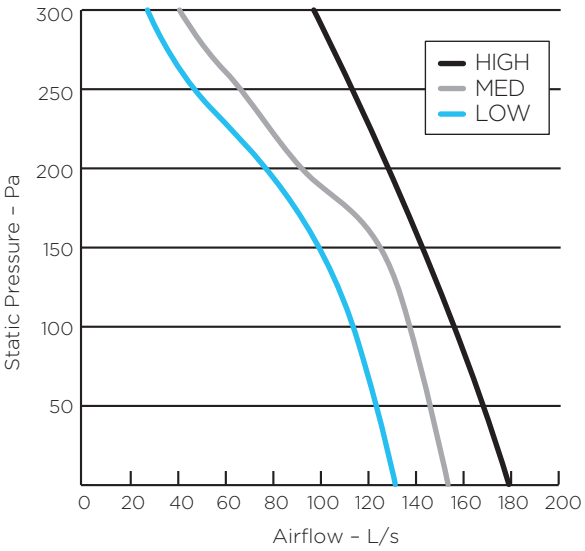


Airflow L/s @ Static Pressure Pa



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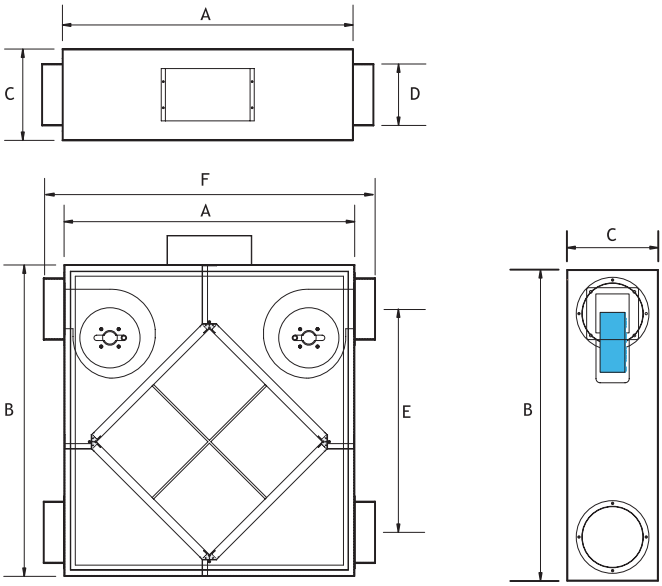
ESP-1000



Dimensions

A	B	C	D	E	F
1200	1200	400	250	720	1290

Specifications

Category		Unit	ESP-1000		
Power		Ø, V, Hz	1Øx240Vx50Hz		
Air Velocity		-	High	Med	Low
Air Flow		L/s	280	225	175
Power Consumption		W	550	530	510
Static Pressure		Pa	200Pa		
Sensible Efficiency		%	81.0		
Effective Heat Exchange Efficiency	Heating	%	70.6		
	Cooling	%	45.4		
Filter		-	Nonwoven Filter		
Weight		kg			

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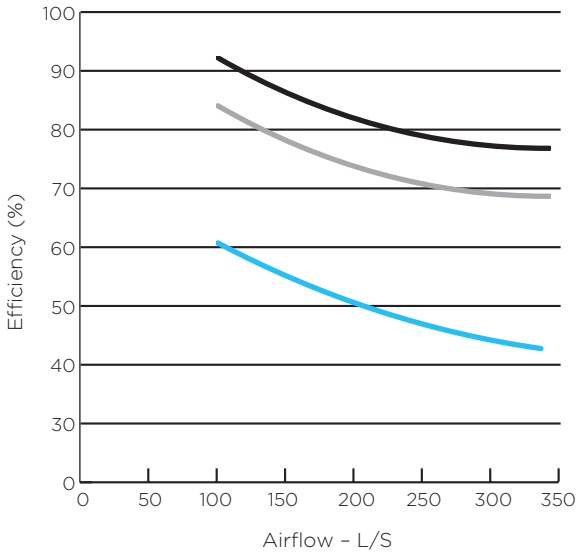
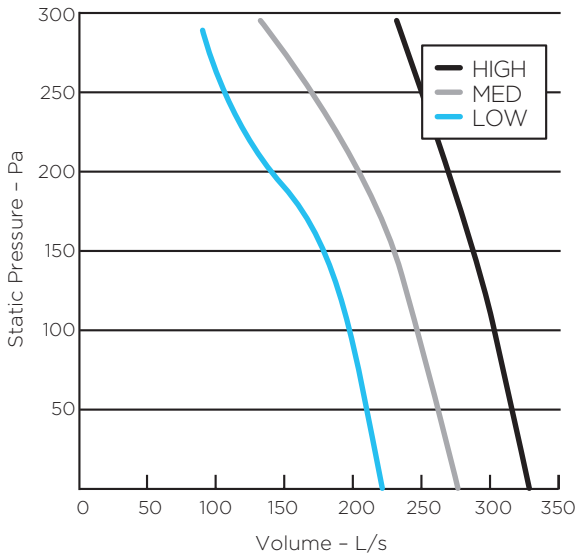


Temperature Exchange Efficiency
(Sensible thermal efficiency)

Enthalpy Exchange Efficiency
(Heating electrothermal efficiency)

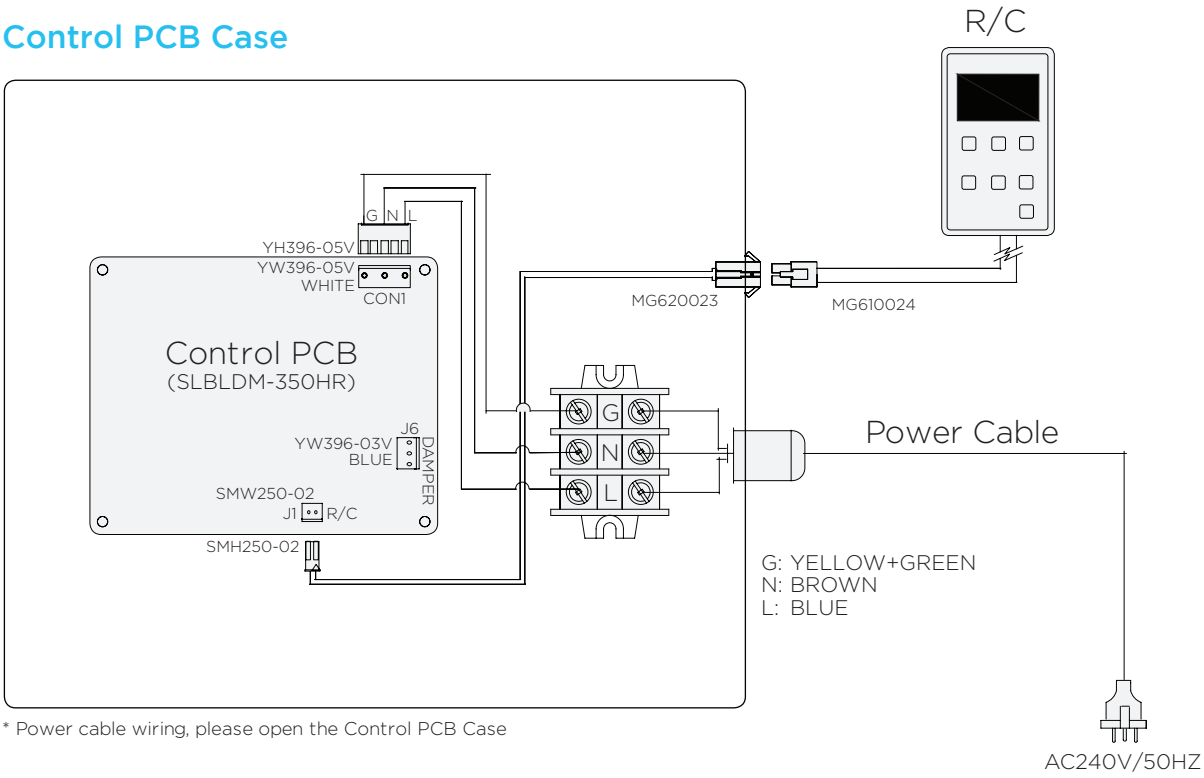
Enthalpy Exchange Efficiency
(Cooling electrothermal efficiency)

Airflow L/s @ Static Pressure Pa



ESP-350AM CONNECTION DIAGRAM

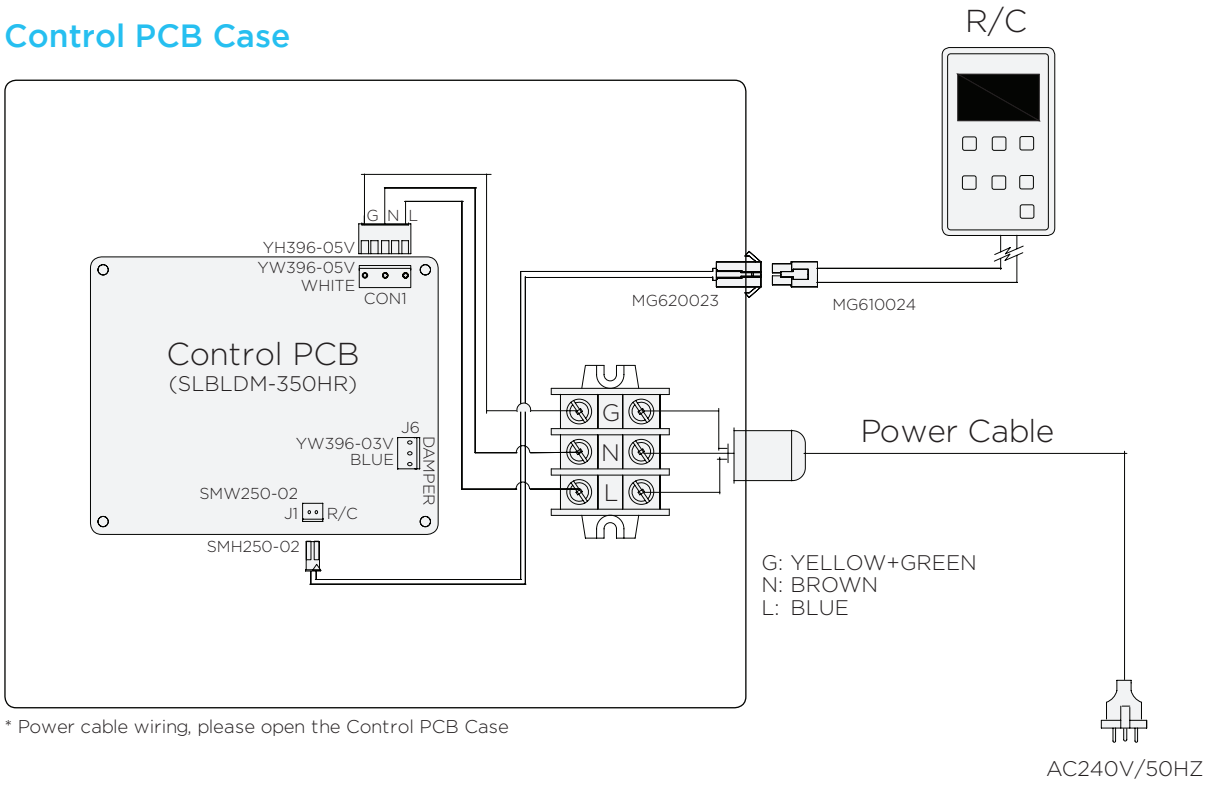
Control PCB Case



* Power cable wiring, please open the Control PCB Case

ESP-500/1000
CONNECTION DIAGRAM

Control PCB Case



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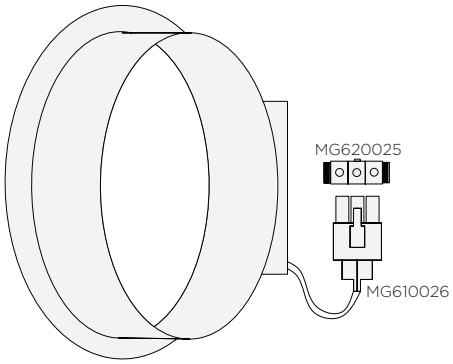
Damper Connection