

# Air Conditioning

## Multi-Head Ultra System 18.1kW

Here's an outline of what you need to know to begin installing the Emerald Multi-Head Ultra 18.1kW.

Designed to deliver outstanding performance in both residential homes and small commercial buildings, this system offers versatile climate control solutions. Follow this guide for a smooth and efficient installation process, ensuring optimal operation and comfort.



Model	Heating	Cooling	Dimensions (LxWxH)	Weight
Outdoor ACV180U	20.4kW	18.1kW	360x1080x980	97kg
Indoor ACV28W	3.3kW	2.8kW	890x1300x470	99kg
Indoor ACV45W	5.0kW	4.5kW	230x1120x315	13kg
Indoor ACV71W	8.0kW	7.1kW	230x960x315	14.5kg

### House sizing guide

Room Size	Example Room	Recommended Ultra Heating Output
Up to 30m <sup>2</sup>	Bedroom, Home Office	3.3kW
31 - 50m <sup>2</sup>	Bedroom with ensuite, small lounge	5kW
More than 51m <sup>2</sup>	Lounge, large kitchen, open plan areas, large lounges	8kW



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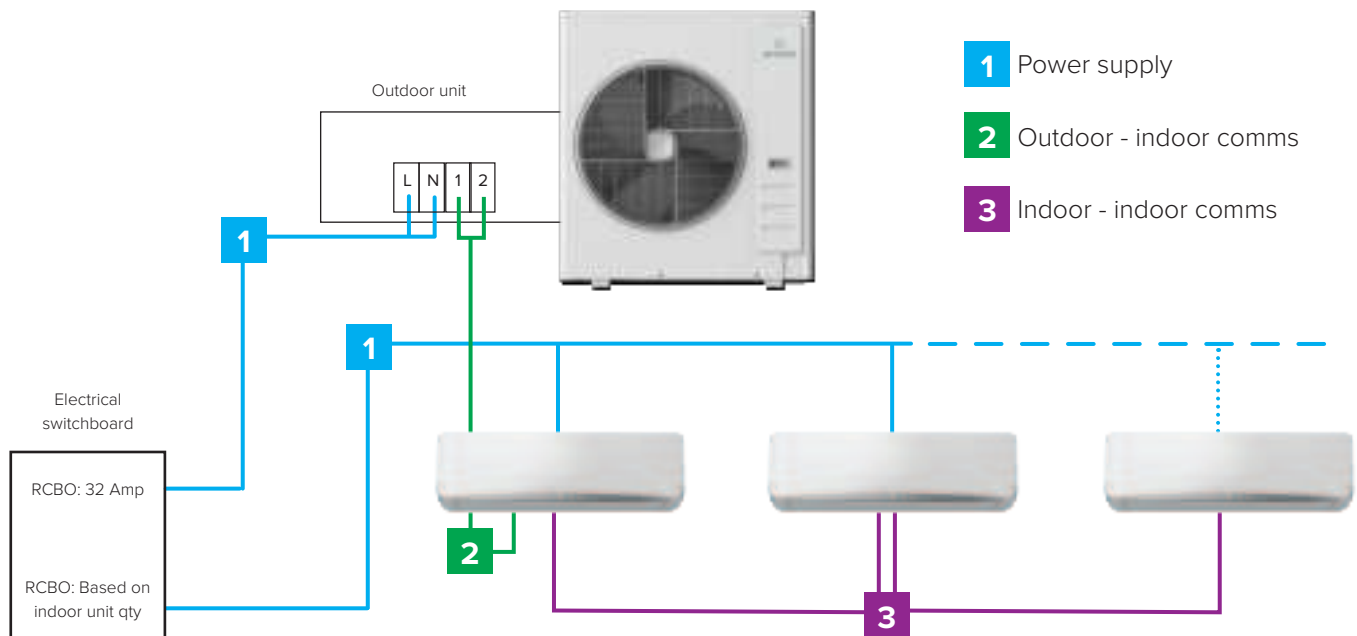
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### Electrical installation

#### Isolators and cables

Wired controller cable	0.75mm <sup>2</sup> 2 core shielded twisted pair
Outdoor unit rated current	25.09 A
Outdoor unit breaker size	32 A
Outdoor unit power cable	6.0mm <sup>2</sup> (comms and power)

Indoor unit rated current	5.24 A
Indoor unit breaker size	10 A Based on indoor unit qty
Indoor unit to indoor unit cable	2.5mm <sup>2</sup> (power)
Comms cable between IDU and ODU	0.75mm <sup>2</sup> 2 core shielded twisted pair



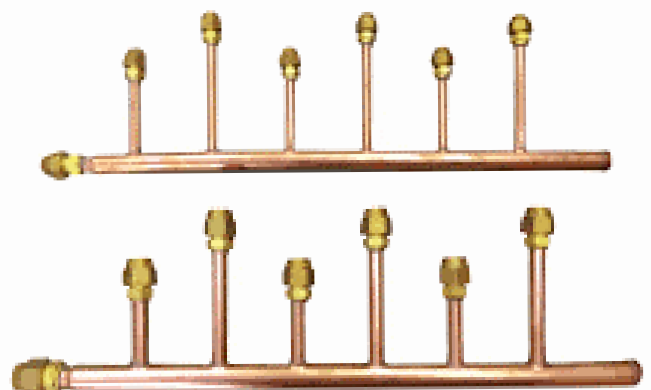
### Indoor unit connections

A pair of branch headers with 6 indoor unit connections is supplied.

- ACV28W includes adaptor: 12.7mm to 9.52mm adaptor
- ACV45W adaptor not required
- ACV71W includes adaptors: 6.35mm to 9.52mm adaptor and 12.7mm to 15.9mm



Emerald AC VRF Branch Adaptors  
(ACAV-0609AD, ACAV-1215AD, ACAV-0912AD)



AC VRF Branch Header 6 (ACAV-6BH)

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### Refrigerant piping installation

#### Required

Vacuum process  
Refrigerated handling license

#### Recommended

Nitrogen test

#### Refrigerant piping

Max indoor unit = 11  
Min indoor unit = 2  
Maximum individual pipe length ≤ 40m  
Total pipe length ≤ 120m

#### Outdoor unit piping connection sizes

Liquid line	Ø9.53mm (3/8 Inch)
Gas line	Ø19.05mm (3/4 Inch)

#### Indoor units

ACV28W	Liquid line	Ø6.35mm (1/4 Inch)
ACV28W	Gas line	Ø9.52mm (3/8 Inch)
ACV45W	Liquid line	Ø6.35mm (1/4 Inch)
ACV45W	Gas line	Ø12.7mm (1/2 Inch)
ACV71W	Liquid line	Ø9.52mm (3/8 Inch)
ACV71W	Gas line	Ø15.9mm (5/8 Inch)

All piping connections are flare connections, no welding or brazing required.

### Refrigerant piping schematic

