Commercial

VARIABLE CAPACITY COMMERCIAL SERIES

Premium performance, flexible controls.

That's better. That's Actron.

ActronAir

ActronAir. Because Australia needs Australian air conditioning.

The year 1984 saw Advanced Australia Fair become our National Anthem, the 1 dollar coin come into circulation and a small family air conditioning business open its doors. Today, ActronAir is a proud Australian company recognised for making world-class air conditioners. Well, it stands to reason. The team at ActronAir experience our harsh Australian conditions first hand, and our climate places demands on air conditioning not found in other parts of the world.

And that's why ActronAir's engineers have developed the most advanced air conditioning systems specifically for the unique and harsh Australian environment.

Made with a superior operating range of -10°C to 50°C, and a host of innovative features, ActronAir's Variable Capacity Commercial series is engineered to withstand the hottest and coldest conditions Australia can throw at it.

Business in Australia expects quality, reliability and service as standard.

More than a quarter of a million Aussies take comfort in ActronAir

Advanced performance with flexible options.

Our Variable Capacity Commercial series has been specifically developed to provide flexible, energy efficient performance with advanced control functionality. Perfect for retail and light commercial applications it comes packed with added value and a host of advanced features included as standard.

It's been developed with flexibility in mind, with a range of configuration choices, an array of advanced control options, and a design that is easy to install and service.

SUPERIOR 50°C -10°C OPERATING RANGE

A superior operating range **made for Australia**

Most overseas air conditioners are only designed with a maximum temperature range of 43°C to 46°C. The made-for-Australia Variable Capacity Commercial series operates up to 50°C. Big deal? Yes.

Given that commercial units are typically found on the roof in the direct sun, this is important. In the Australian sun, where other air conditioners can struggle and even shut down, it's better for business to have a system you can rely on.

The Variable Capacity Commercial series not only operates at higher temperatures, it also performs at a higher capacity leading up to that peak temperature.

"Nothing beats performing under extremes. Engineered for Australia, you can trust ActronAir to be there when you need it most."

Mark 'Frosty' Winterbottom
V8 Supercars Champion & ActronAir Brand Ambassador

Better Features

Stay Safe

Phase protection

Variable Capacity Commercial systems come with Phase Protection built in, which automatically prevents the system from operating in the event of loss of power on one or more phases, or in instances of low voltage, and in so doing protects the system from potential damage.

Rain, Rain Go Away

Pitched roof

Even though the Variable Capacity Commercial series comes with superior powder coating protection, it also comes with a pitched roof^ specifically designed to prevent water from pooling on the unit in the event of rain. This minimises the chance of issues like rust, protecting your investment into the future.

Insulated Performance

25mm insulation

Unlike systems that come with thinner insulation, the Variable Capacity Commercial series features 25mm foil faced insulation included as standard on the indoor unit. This improves efficiency by reducing heat gain or loss and is also a healthier choice, as foil faced insulation is less prone to mould or mildew.

Optimal Performer

Filter notification output

This feature allows you to set timeframes for filter use* - once this timeframe is met, the system can alert you that it's time to change filters. This makes servicing the system more efficient by notifying you when action is required, while delivering greater operational efficiency by ensuring your system is running at optimal conditions at all times.

Better choice

Split Ducted

Packaged

Easy Oversight

Separate run outputs

The Variable Capacity Commercial series comes with separate run outputs for compressor and indoor fan operation. These outputs allow users to be notified as to what the current system status is.

Heads Up

Fault notification output

The fault notification output allows the system to alert you to any faults that may occur. This in turn makes servicing of the system more efficient, as the service technicians are able to quickly respond, resulting in less downtime.

Aussie Tough

Louvered grille

The Variable Capacity Commercial series is engineered using only the very best quality components. With its unique powder coated, louvered grille guard, it ensures better airflow and protection against Australia's toughest conditions.

Pick Up Where You Left Off

Auto-restart

Blackout? No problem. The Variable Capacity Commercial series has the ability to restart automatically in their last programmed setting once the power is restored, which means you don't have to take the time to reprogram your system.

*Available on packaged unit only.

*When operating with the ActronAir LC7 controller.

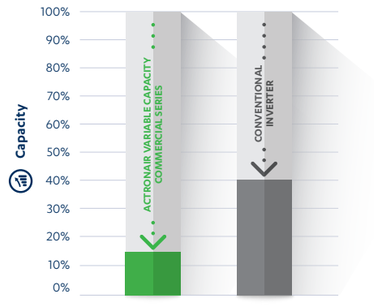
Better Performance

The Variable Capacity Commercial series is designed to provide energy efficient performance, achieved by combining quality components with a number of innovative design features.

Variable Capacity Compressor
Increase your comfort, decrease your power bills

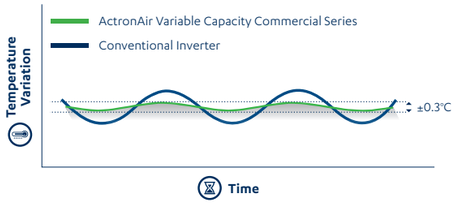
Low Capacity Operation

The Variable Capacity Commercial series comes with a digital compressor that can operate down to 15% of its total capacity, substantially outperforming conventional inverters which can typically only get down to 40%. That's a big deal, because it means you only use the amount of energy you need, saving on power costs.



Superior Comfort Control

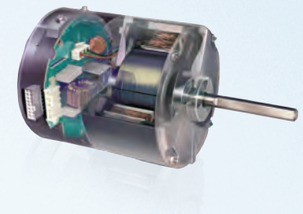
The digital compressor also allows the Variable Capacity Commercial series to better maintain the desired temperature. Because conventional inverters don't generally work below 40% capacity, when operating in low capacity conditions they simply turn off, then on, then off, then on again as they struggle to keep a set temperature. With the digital compressor, not only can the Variable Capacity Commercial series get you to your desired temperature faster, it can then operate more smoothly to accurately maintain the set temperature within +/- 0.3°C at the sensor location.



EC Indoor Fans

The Variable Capacity Commercial series comes with superior EC Indoor Fans as a standard inclusion.

Testing has shown that EC Indoor Fans can be up to 20% more energy efficient than conventional AC Induction Motor Indoor Fans, when running at full load. These EC Indoor Fans help the system deliver exact airflow requirements, resulting in improved comfort whilst minimising power usage at the same time.

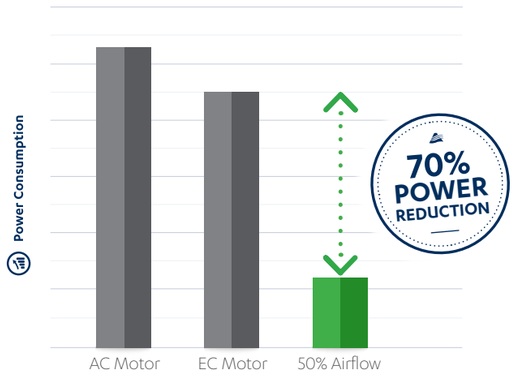


Smart Fan Control Technology

The Variable Capacity Commercial series comes with optional Smart Fan Control technology, which automatically reduces its EC Indoor Fan speed when the compressor is not in operation, maximising energy efficient performance.

Don't think this makes a difference? Think again.

We conducted a study into supply fan operation at a commercial premises, which found that even during months of high demand compressors were only put into operation for approximately 80% of the time, with the remaining 20% of time working as supply fan operation only.



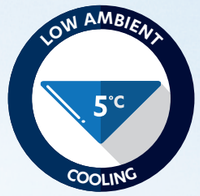
Consider a typical commercial HVAC solution – how many of the units operate during milder months, despite being sized to handle substantially higher peak loads in hotter months?

The reality is that systems often do not run at full operation, and by applying Smart Fan Control technology to real life applications, we have seen that by simply reducing the indoor fan speed by 50%, it can result in a reduction in supply fan power consumption **in excess of 70%.**

Low Ambient Cooling

Did you know that it is actually quite common for cooling to be needed even when it's cold outside? This may sound counter intuitive, but it's true. Think of a crowded gym or restaurant, even in the middle of winter they can get warm inside, and quickly.

At times like that, you really need an air conditioning system that can provide quality cooling in low ambient conditions. The Variable Capacity Commercial series can provide cooling in outside temperatures as low as 5°C, and best of all it comes with this ability included as standard - no need for additional options or modifications.



Better Control

When it comes to superior performance, control is key

The Variable Capacity Commercial series provides flexible and advanced control functionality, with a range of proprietary control options, whilst also offering comprehensive 3rd party control connectivity and BMS compatibility.

Superior **single brand controller**

The LC7 boasts an elegant design, an easy to navigate user interface and a setup process made simple with auto-address assignment.

Best of all, It comes packed with features, including mimic logic which supports the operation of up to 3 controllers, that is great for larger office spaces. The LC7 also features a wide range of scheduling options, after hours timer, filter notification, temperature setback, programmable night mode for quieter outdoor operation, and a service dashboard that assists in the service and maintenance of the system.

LC7 Controller

Making centralised control **simple and easy**

The ActronAir Group Control provides total control from a single point, allowing users to control multiple ActronAir systems on-site via a single touch screen interface.

With its simple and easy to use design, the Group Control makes advanced scheduling functions easy, while its remote access capability and integrated functions ensure it is easy to install and service.

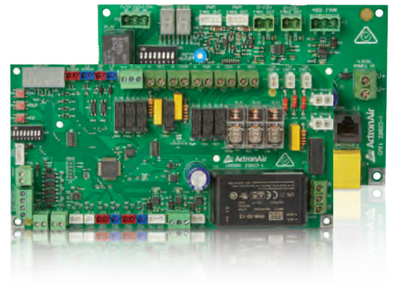
And unlike solutions that rely on 3rd party controls and components, the Group Control has been designed to deliver optimum performance from ActronAir systems, and is covered by a single manufacturer's warranty for absolute reassurance and peace of mind.

Group Control

Forward looking **control functionality**

The Variable Capacity Commercial series is built on an all new proprietary controls system, and features new outdoor and indoor PCBs.

Made in-house by ActronAir based on feedback from the market, the controls solution was developed with an eye to the future, to ensure we can continue to meet changing market needs. This means that as the market's specific control requirements change over time, the Variable Capacity Commercial series can change with it.



Updated Indoor and Outdoor PCBs

From basic functionality to customised solutions, the Variable Capacity Commercial series has the BMS connection for you

When it comes to BMS every site has different needs, which is why it's important to select a system that can meet your requirements. With the Variable Capacity Commercial series, the setup can be as simple or as sophisticated as you need it to be, as it offers either a Basic or Advanced BMS connection.

Basic BMS connection

The Basic BMS connection is perfect for those looking for a relatively simple solution, featuring an easy setup process and allowing you to operate the system in the same way our LC7 Controllers do. All system operation logic is controlled by the unit's on-board controller, which is great because we've spent years perfecting our systems and optimising their performance to achieve the best possible outcomes.

Advanced BMS connection

The Advanced BMS connection is ideal for more complex or bespoke scenarios. If the system needs to link with other products, or you require customised functions not included in the existing software or logic in the on-board controller, then the Advanced BMS connection is the solution for you. This approach allows you to control the system by using your own bespoke logic. And even though it is so highly customisable it still retains the existing safety logic, ensuring that any accidental damage to the unit from bad instructions is prevented.

Modbus BMS Card

Better Engineered

Making installation simple

Providing an all-encompassing air conditioning solution requires a system that has flexibility when it comes to installation. That's why the Variable Capacity Commercial series comes in either a Split Ducted or Packaged configuration. Furthermore, the Packaged systems are available in both Under and Over and Side-by-Side (left and right) air handing configurations for ease of application.

Installation is made easier still by adding drain connections to the condenser compartment in addition to the evaporation compartment of the packaged systems, meaning you don't need to add an additional safety drain tray to the condenser, speeding up the installation process and reducing costs.

Commissioning made easy

The commissioning and configuration of the system can be completed via the outdoor PCB, meaning you don't need to enter the roof space to adjust fan speeds for split ducted applications. If selected for use, fan commissioning can also be configured by the LC7 Controller, providing extremely easy access.

The ability for the LC7 Controller to auto address at first power up also assists in making the commissioning process easy and stress free.

Simplified **Servicing**

The Variable Capacity Commercial series comes with a range of design features aimed at simplifying the servicing process, including:

Removable grilles and panels

Access has been greatly enhanced with removable grilles and panels, reducing overall service and maintenance time and making the process easier for technicians. The use of camlocks on access panels make it quick and easy to fit and remove panels when servicing.

In-built service dashboard in the outdoor PCB

The outdoor PCB comes complete with a built-in service dashboard, providing easy access to information such as pressures and temperatures. This allows for a simple and fast diagnosis process when servicing the system.

Additional outputs such as fault, run & filter indicator outputs

These outputs can be used to provide early notification of problem areas, allowing for quick and accurate diagnosis of issues to speed up the servicing process. These outputs can also be linked with visual alert systems to bring attention to operational issues, to allow for preventive steps to be taken (e.g. changing filters) before any bigger damage or loss of operational efficiency is realised.

Better Options and Accessories

Even though the Variable Capacity Commercial series comes with so many features included as standard, it also provides access to a number of high quality options and accessories should you require them, including:

Options

Additional Coil Coat Protection

3 Phase Soft Starter

Accessories

LC7 Controller

Group Control

Modbus BMS Card

Compressor Sound Jacket

Better Service

Our Variable Capacity Commercial series is designed and manufactured in Australia. So you'll never have to call overseas or wait long for service and support.

ActronAir's call centre is based in Australia. When you call, you'll speak to someone who's responsive and knowledgeable. We also excel at fast response times and having stock on hand.

In an industry where some businesses have had to wait 12 weeks for a part to come in from overseas, service counts for a lot. Being locally based and proudly service oriented, we've always gone that extra mile to provide prompt and friendly service to our customers all over Australia.

Technical Specifications

Split Light Commercial Variable Unit Three Phase (29-33kW)

Technical Information			
OUTDOOR MODEL		CRV290T-T	CRV330T-T
INDOOR MODEL		EVA290T	EVA330T
[1] Total (Gross) Capacity (kW) (AS/NZS3823.1.2)	Cooling	30.70	33.90
	Heating	28.20	31.60
Nett (Rated) Capacity (kW) (AS/NZS3823.1.2)	Cooling	29.90	33.00
	Heating	29.00	32.50
Input Power (kW) (AS/NZS3823.1.2)	Cooling	8.40	10.05
	Heating	7.60	9.48
[2] EER Rated (AS/NZS3823.1.2) [3] COP Rated (AS/NZS3823.1.2)	Cooling	3.56	3.28
	Heating	3.82	3.43
Power Supply (V / Ph / Hz)	Outdoor	400 - 415V / 3Ph + N / 50Hz	
	Indoor	400 - 415V / 3Ph + N / 50Hz	
Rated Amps (AS/NZS3823.1.2) Full Load Amps (AS/NZS3823.1.2)	Outdoor / Indoor / Max	15.2 / 2.8 / 15.2	19.7 / 3.3 / 19.7
	Outdoor / Indoor / Max	22.6 / 5.0 / 25.0	25.5 / 5.0 / 28.0
[4] Circuit Breaker Amps (Suggested)		32.0	32.0
IP Rating	Outdoor	IP44	
	Indoor	IP20	
Compressor	Type / No. per Unit	Digital Scroll / 1	
	Starting Method	D.O.L.	
No. of refrigeration Circuits / No. Capacity Stages (Capacity range)		1 / Variable Capacity	
Refrigerant		R410a	
Fans (Type x Number per unit)	Outdoor	Axial / 6 Pole External Rotor / Direct Drive x 2	
	Indoor	Twin Deck Centrifugal / ECM Direct Drive x 1	
Airflow Indoor (l/s)	Maximum	1800	2100
	Nominal	1500	1750
	Minimum	1200	1400
External Static Pressure (Pa) @Hi	Maximum Airflow	290	178
	Nominal Airflow	300	300
Outdoor Dimensions (mm)	Depth	820	
	Height	1415	
	Width	1840	
Indoor Dimensions (mm)	Depth	820	
	Height	628	
	Width	1754	
[5] Nominal Weight (kgs)	Outdoor	263	292
	Indoor	122	126
[6] Sound Pressure Level (dBA) [7] Sound Power Level (dBA)	Outdoor (low/high fan)	55.9 / 59.9	57.8 / 61.8
	Outdoor (low/high fan)	72.9 / 76.9	74.8 / 78.8
MEPS Certified		Yes	Yes
[8] Demand Response Capability (AS4755.3)		Capable	Capable

Features		
Blue Epoxy Coat Coil Fin Protection - Indoor & Outdoor Coils	Standard	Standard
Remote ON / OFF Capability	Standard	Standard
Manual Inputs Capable for Third Party Control	Standard	Standard
Phase Sequence Protection	Standard	Standard
25mm Foil Faced PE Insulation (Indoor Unit)	Standard	Standard
Removable Louvre Guard Protection for Easy Cleaning	Standard	Standard
Fault Indication	Standard	Standard
Low Ambient Cooling (+5°C)	Standard	Standard
LC7 Wall Controller (Up to 3) (BCA Compliant)	Optional	Optional
BMS Compatibility	Optional	Optional
Compressor Sound Jacket	Optional	Optional
Remote Temperature Sensor	Optional	Optional

Variations			
Additional Fully Immersed Coil Coat Protection	Indoor	Optional	Optional
	Outdoor	Optional	Optional
Compressor 3-Phase Soft Starter (Outdoor Unit)		Optional	Optional

Field Piping and Connections			
Refrigerant Charge	Factory Charge - (g)	9000	11300
	Pre-Charge Length - (m)	5	5
	Additional Refrigerant Charge - (g/m)	165	165
Maximum Field Pipe Length Range - (m)		0 - 60	0 - 60
Maximum Vertical Height Differential - (m) included in max length		20	20
Field Pipe Size	Liquid Pipe - mm (inch)	15.9 (5/8)	15.9 (5/8)
	Gas Pipe - mm (inch)	28.6 (1-1/8)	28.6 (1-1/8)
Outdoor Unit	Liquid Pipe - mm (inch)	15.9 (5/8) swaged	15.9 (5/8) swaged
	Gas Pipe - mm (inch)	28.6 (1-1/8) swaged	28.6 (1-1/8) swaged
Indoor Unit Connection	Liquid Pipe - mm (inch)	15.9 (5/8) swaged	15.9 (5/8) swaged
	Gas Pipe - mm (inch)	28.6 (1-1/8) swaged	28.6 (1-1/8) swaged
Condensate Drain Connection - Size		25mm ID	
Air Duct Connection	Supply Duct H x W - (mm)	282 x 1098	
	Return Duct H x W - (mm)	533 x 1451	

Foot Notes 1-8

1. Based on unit rating excluding indoor fan kW.
2. EER Rated = Energy Efficiency Ratio (Rated Capacity Cooling / Rated Input Cooling).
3. COP Rated = Coefficient of Performance (Rated Capacity Heating / Rated Input Heating).
4. Suggested minimum cable size. This should be used as a guide only. Refer to AS/NZS 3000 "Australian/New Zealand Wiring Rules" for more details.
5. Refer to Catalogue Unit Weight Distribution Guide section for details of weight points.
6. Sound Pressure Level at 3m distance is determined as the measured sound pressure at 3m perpendicular to the coil side of the condenser.
7. Determination of Sound Power Levels of Noise Sources, AS1217.2 - Precision Methods for Broad-Band Sources in Reverberation Rooms.
8. When Demand Response capability is chosen, the air conditioner will fully comply.

Important Notes:

- The Local Electricity Supply Authority may require limits on - starting current, running current and voltage drop, please check prior to purchase.
- When the outdoor temperature exceeds the rated conditions, the cooling/heating capacities may decrease the rated nett values.
- Specifications subject to change without notice.

Rated Conditions:

Cooling: 35°C DB Outdoor / Air Entering Indoor 27°C DB, 19°C WB

Heating: 7°C DB, 6°C WB Outdoor / Air Entering Indoor 20°C DB

Warranty:

For full terms and conditions of ActronAir warranty, please refer to warranty terms document - www.actronair.com.au

2 YEAR Warranty Conditions Apply

Certified System Quality ISO 9001 SAI GLOBAL

ARC Refrigerant Trading Authorisation No.: AU06394

MEPS COMPLIANT

BCA COMPLIANT

AUSTRALIAN DESIGNED & BUILT

Technical Specifications

Package Light Commercial Variable Unit Three Phase (29-33kW)

Technical Information					
		PKV290T-T	PKV290T-L/R	PKV330T-T	PKV330T-L/R
[1]Total (Gross) Capacity (kW) (AS/NZS3823.1.2)	Cooling	30.70	30.05	33.90	33.20
	Heating	28.20	28.85	31.60	32.70
Nett (Rated) Capacity (kW) (AS/NZS3823.1.2)	Cooling	29.90	29.20	33.00	32.40
	Heating	29.00	29.70	32.50	33.50
Input Power (kW) (AS/NZS3823.1.2)	Cooling	8.40	8.74	10.05	9.99
	Heating	7.60	8.50	9.48	10.00
[2]) EER Rated (AS/NZS3823.1.2) [3] COP Rated (AS/NZS3823.1.2)	Cooling	3.56	3.34	3.28	3.24
	Heating	3.82	3.49	3.43	3.35
Power Supply - (V / Ph / Hz)		400V / 3Ph + N / 50Hz			
Rated Amps (AS/NZS3823.1.2)		15.2	15.2	19.7	19.7
Full Load Amps (AS/NZS3823.1.2)		25.0	25.0	28.0	28.0
[4] Circuit Breaker Amps (Suggested)		32.0	32.0	32.0	32.0
IP Rating		IP44			
Compressor	Type / No. per Unit	Digital Scroll / 1			
	Starting Method	D.O.L.			
No. of refrigeration Circuits / No. Capacity Stages (Capacity range)		1 / Variable Capacity			
Refrigerant		R410A			
Fans (Type x Number per unit)	Outdoor	Axial / 6 Pole External Rotor / Direct Drive x 2			
	Indoor	Single Deck Centrifugal / ECM Direct Drive x 2			
Airflow Range Indoor (l/s)	Maximum	1800		2100	
	Nominal	1500		1750	
	Minimum	1200		1400	
External Static Pressure (Pa)@Hi	Maximum Airflow	290	300	180	100
	Nominal Airflow	300	300	300	300
Unit Dimensions (mm)	Depth	1440			
	Height	1420			
	Width	1840			
[5] Nominal Weight (kgs)		400	399	433	432
[6] Sound Pressure Level (dBA) [7] Sound Power Level (dBA)	Outdoor (low/high fan)	56.9 / 60.9		58.8 / 62.8	
	Outdoor (low/high fan)	73.9 / 77.9		75.8 / 79.8	
MEPS Certified		Yes	Yes	Yes	Yes
[8] Demand Response Capability (AS4755.3)		Capable	Capable	Capable	Capable

Features				
Blue Epoxy Coat Coil Fin Protection - Indoor & Outdoor Coils	Standard	Standard	Standard	Standard
Remote ON / OFF Capability	Standard	Standard	Standard	Standard
Manual Inputs Capable for Third Party Control	Standard	Standard	Standard	Standard
Phase Sequence Protection	Standard	Standard	Standard	Standard
25mm Foil Faced PE Insulation (Indoor Unit)	Standard	Standard	Standard	Standard
Removable Louvre Guard Protection for Easy Cleaning	Standard	Standard	Standard	Standard
Fault Indication	Standard	Standard	Standard	Standard
Low Ambient Cooling (+5°C)	Standard	Standard	Standard	Standard
LC7 Wall Controller (Up to 3) (BCA Compliant)	Optional	Optional	Optional	Optional
BMS Compatibility	Optional	Optional	Optional	Optional
Compressor Sound Jacket	Optional	Optional	Optional	Optional
Remote Temperature Sensor	Optional	Optional	Optional	Optional

Variations			
Additional Fully Immersed Coil Coat Protection	Indoor	Optional	Optional
	Outdoor	Optional	Optional
Compressor 3-Phase Soft Starter (Outdoor Unit)		Optional	Optional

Installation Information					
Refrigerant Factory Charge - (g)		8500	9000	10800	12600
Condensate Drain Connection - Size		25mm ID			
Air Duct Connection	Supply Duct H x W - (mm)	283 x 1098 mm	788 x 368 mm	283 x 1098 mm	788 x 368 mm
	Return Duct H x W - (mm)	547 x 1453 mm	753 x 1072 mm	547 x 1453 mm	753 x 1072 mm

Foot Notes 1-8

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