



# Sentinel™



## Range from 6 to 110kW

The Sentinel series from Aqua Chiller is a reliable range of outdoor chillers, designed to handle capacities from 6 kW to 110 kW. Tailored for Australian conditions and built with European precision, these units incorporate top-tier components like Danfoss/Copeland compressors and Carel controllers to ensure dependable and consistent cooling performance.

## Benefits

Engineered for outdoor reliability, the Sentinel series combines durable construction with industry-leading components, making it the ideal solution for long-term, efficient operation. The efficient brazed plate heat exchanger reduces refrigerant charge, while the thermally insulated stainless steel water tank ensures steady and reliable cooling. Designed with a focus on ease of maintenance, these chillers feature practical elements such as an internal pump, flow switch protection, and a fan speed controller, all contributing to enhanced usability. Each unit undergoes rigorous testing to guarantee optimal performance right out of the box. With a 3-year warranty the Sentinel series provides peace of mind, making it a solid and dependable choice for outdoor cooling needs.

## Features

- Range 6kW to 110kW.
- European built and designed for Australian conditions.
- Onsite commissioning included (a).
- 3 year warranty included as standard (b).
- Compact, space saving design, suitable for indoor or outdoor installation with an electrical panel protected by a double enclosure.
- Galvanized steel frame further protected with polyester powder paint.
- Heavy duty adjustable feet to provide stability.
- High efficiency and quiet operation with scroll compressors.
- Less refrigerant charge by using an efficient brazed plate heat exchanger as the evaporator.
- Equipped with a thermostatic expansion valve.
- Includes a generously sized copper pipe aluminum finned condenser coil for high efficiency.
- Includes fan speed controller.
- Features the Carel  $\mu$ Chiller microprocessor controller with Carel APPLICA NFC technology - connects your mobile phone to the chiller for parameter monitoring and easy changes.
- Optional Modbus capability and remote control panel.
- Thermally insulated stainless steel water tank.
- Internal stainless steel pump with 4 bar of pressure.
- Convenient pressure gauge included on the case for water pressure, high and low refrigerant pressures.
- Easy to service design.
- Non corrosive pipe material.
- Flow switch protection.
- High and low pressure protection.

- Thermal overloads on motors.
- Phase Rotation, Fail, and Frequency protection.
- Alarm output contact.
- Remote on/off contact.
- Anti Freezing Alarm to protect evaporator.
- All models are tested under real conditions before shipment.
- Installation and maintenance plans are available.

### 3 year warranty

All Aqua Chiller units are tested throughout the manufacturing process followed by a substantial and comprehensive test upon completion. Coupled with the world's most trusted component brands, Aqua Chiller's products are designed and built to last.



## Notes

- (a) Onsite commissioning included in metro areas only. Additional travel fees apply for areas outside of metro regions and will be specified on quotation.
- (b) 3 year warranty valid when unit installed to our specifications verified by Aqua Chiller commissioning visit. 6 month maintenances must be completed and logged on our website by qualified personel. Annual water treatment and filter changes must occur with proof provided. Aqua Chiller can offer install and maintenance packages to suit.

# Specifications: 6.1-109.4 kW

Aqua Chiller Model code	Units	AC-SEN-VMP-65-TP	AC-SEN-VMP-85-TP	AC-SEN-VMP-100-TP	AC-SEN-VMP-130-TP	AC-SEN-VMP-250-TP
Cooling Capacity +7C supply +35C ambient	kW	6.1	7.7	9.0	11.8	23.3
Compressor Power Input	kW	2.2	2.6	2.9	3.5	7.5
Fan Power Input	kW	0.16	0.25	0.25	0.76	0.76
Pump Power Input	kW	0.37	0.75	0.75	0.75	1.5
Combined Power Input	kW	2.73	3.6	3.9	5.01	10.52
Power Supply	V/Ph/Hz	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50
Operating Current	Amp	4	4.6	5.0	6.1	12.3
Max Current Draw	Amp	6	7	8	10.3	25
Locked Rotor Amps	Amp	38	46	43	51.5	142
Type of Refrigerant		R410a	R410a	R410a	R410a	R410a
Outdoor Installation		Suitable	Suitable	Suitable	Suitable	Suitable
Expansion Device		Thermostatic Expansion Valve				
Condenser Type		Copper Pipes, Aluminum Fins				
Fan Type		Axial (Ø40)	Axial (Ø45)	Axial (Ø45)	Axial (Ø45)	Axial (Ø45)
No. of Fans		1	1	1	1	2
Fan Motor Power	kW	0.16	0.25	0.25	0.76	2x0.76
Fan Speed Control		Yes	Yes	Yes	Yes	Yes
Condenser Air Flow Rate	m3/h	3500	4500	4500	8000	2x8000
Compressor Type		Scroll	Scroll	Scroll	Scroll	Scroll
No. Compressors		1	1	1	1	1
Compressor Capacity Control Steps	%	0 or 100%	0 or 100%	0 or 100%	0 or 100%	0 or 100%
Number of Refrigerant Circuits		1	1	1	1	1
Nominal Compressor Power	HP	2.2	3	3.4	4.6	9
Evaporator Type		Braze Plate Heat Exchanger				
Evaporator Flow Rate	m3/h	1.1	1.3	1.6	2.0	4.0
Evaporate fouling factor		0.000043	0.000043	#N/A	0.000043	0.000043
Tank		Included, non-pressurised				
Tank Material		AISI 304 Stainless Steel				
Tank Volume	L	50	50	60	100	200
No of Pumps		1	1	1	1	1
Pump Type		Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
Pump Power Input	kW	0.37	0.75	0.75	0.75	1.5
Pump Pressure	bar	4 bar	4 bar	4 bar	4 bar	4 bar
Flow Protection		Flow-switch	Flow switch	Flow switch	Flow-switch	Flow-switch
Water Inlet Connection Size	DN	20	25	25	25	40
Water Outlet Connection Size	DN	20	25	25	25	40
Type of Controller		Carel µChiller	Carel µChiller	Carel µChiller	Carel µChiller	Carel µChiller
HP Control		Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch
HP Gauge		Yes	Yes	Yes	Yes	Yes
LP Control		Transducer	Transducer	Transducer	Transducer	Transducer
LP Gauge		Yes	Yes	Yes	Yes	Yes
Dimensions		600 W x 960 D x 900 H	600 W x 960 D x 950 H	750 W x 960 D x 1100 H	900 W x 1000 D x 1620 H	1000 W x 1660 D x 1830 H
Dry Weight	Kg	150	170	200	300	480

## Notes

- Nominal cooling capacity is calculated with 7°C chilled-water supply and 35°C inlet cooling air temperature at system flow rate and pressure
- Recommended temperature range of chilled fluid: 3°C and 25°C. Use of glycol recommended for set points under 6°C.
- Temperature difference between inlet and outlet chilled fluid between 4°C and 7°C. Contact us for temperature splits outside of this range
- All figures are at the rating point of 7c supply in 35c ambient.
- We recommend the use of R134a when ambient temperatures are expected to reach 42°C+

AC-SEN-VMP-350-TP	AC-SEN-VMP-430-TP	AC-SEN-VMP-560-TP	AC-SEN-VMP-700-TP	AC-SEN-VMP-910-TP	AC-SEN-VMP-1160-TP
34.0	39.3	54.8	65.0	83.9	109.4
11.0	11.8	15.9	19.2	24.2	30.0
0.76	0.6	1.2	1.2	1.2	1.2
1.5	2.2	2.2	2.2	3	4
14.02	15.2	20.5	23.8	29.6	36.4
415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50
17.7	22.5	28.8	34.3	41.4	54.7
30	38.6	51	62	79	106
147	197	227	260	294	389
R410a	R410a	R410a	R410a	R410a	R410a
Suitable	Suitable	Suitable	Suitable	Suitable	Suitable
Thermostatic Expansion Valve					
Copper Pipes, Aluminum Fins					
Axial (Ø50)	Axial (Ø63)	Axial (Ø80)	Axial (Ø80)	Axial (Ø80)	Axial (Ø80)
2	2	2	2	2	2
2x0.76	2x0.6	2x1.2	2x1.2	2x1.2	2x1.2
Yes	Yes	Yes	Yes	Yes	Yes
2x8000	2x11000	2x15600	2x15600	2x22500	2x22500
Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
1	1	1	1	1	1
0 or 100%	0 or 100%	0 or 100%	0 or 100%	0 or 100%	0 or 100%
1	1	1	1	1	1
12	15	20	25	30	40
Brazen Plate Heat Exchanger					
5.8	6.8	9.4	11.2	14.4	18.8
0.000043	0.000043	0.000043	0.000043	0.000043	0.000043
Included, non-pressurised					
AISI 304 Stainless Steel					
200	200	300	300	400	-
1	1	1	1	1	1
Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal	Centrifugal
1.5	2.2	2.2	2.2	3	4
4 bar	4 bar	4 bar	4 bar	4 bar	4 bar
Flow-switch	Flow-switch	Flow-switch	Flow-switch	Flow-switch	Flow-switch
40	40	40	50	50	65
40	40	40	50	50	65
Carel µChiller	Carel µChiller	Carel µChiller	Carel µChiller	Carel µChiller	Carel µChiller
Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch	Semi Auto Reset Switch
Yes	Yes	Yes	Yes	Yes	Yes
Transducer	Transducer	Transducer	Transducer	Transducer	Transducer
Yes	Yes	Yes	Yes	Yes	Yes
1000 W x 1660 D x 1830 H	1050 W x 1900 D x 1850 H	1080 W x 2450 D x 2200 H	1080 W x 2450 D x 2200 H	1130 W x 2710 D x 2500 H	1130 W x 3900 D x 2500 H
500	550	800	885	1200	1520

## Features

- Flow switch protection.
- High and low pressure protection.
- Thermal overloads on motors.
- Phase Rotation, Fail, and Frequency protection.
- Alarm output contact.
- Remote on/off contact.
- Anti freezing alarm to protect evaporator.
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