



econex  
nex gen R32 inverter

WATER COOLED

# Inverter Package Units



**temperzone**  
climate innovations



# Compact And Efficient, Yet Powerful

Cooling Capacity  
4.1 kW - 10.0 kW

Heating Capacity  
3.7 kW - 8.9 kW

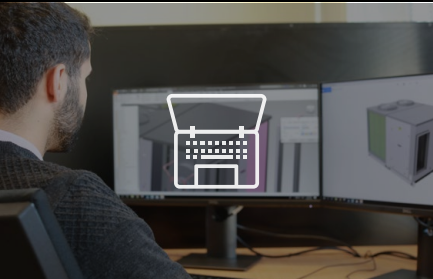


# Over 65 Years of Industry Expertise

Temperzone is dedicated to pioneering innovative new technologies and creating market-leading, easy-to-use solutions that offer precision climate control.

Temperzone is ideally positioned to play a partnering role in your commercial projects and to ensure you select the right solutions for your needs. Because our systems are all designed, manufactured and supported using home-grown expertise, you can always rely on the convenience of ready availability and easily accessible application support.

## Our core strengths in New Zealand & Australia



**Research & Development**  
Our design engineers develop local products, that provide innovative solutions designed for Australian and New Zealand conditions.



**Engineering**  
We aim to maximise performance by utilising our local team of engineers, who are able to provide the best solution for your applications.



**Logistics**  
We work closely with customers to ensure adequate stock is available and delivered when it is needed.



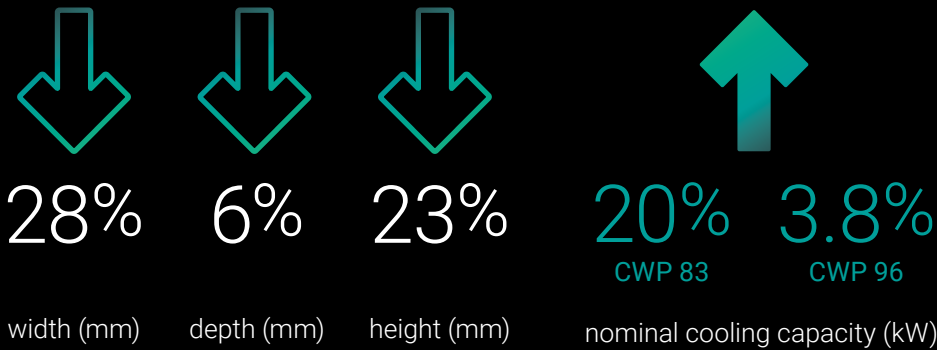
**Local Support**  
Our project engineers work with sales to make sure customers are getting the right product for the job.

# Big on Performance, Small in Size

## The Compact and Efficient Solution

The **CWP 90** has 47.9% less volume than the previous CWP 83 & 96 models and is the perfect compact and energy efficient solution for new or replacement projects.

\* Dimension comparison based on CWP 96 model



# Econex CWP 90

## Features

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**Inverter Compressor**  
Provides superior part load performance and efficiency



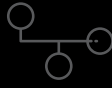
**High Efficiency EC Fan**  
Can be controlled either as a speed or by 0-10VDC



**Thermoshell**  
Lower pressure drops.  
Water loop Anti Fouling design.  
Higher Performance



**R32 Refrigerant**  
Has a significantly lower GWP than R410A



**External Control**  
Can be operated through relays. Simple terminals for compressor control On/Off and modulation, fan speed and cycle modes



**Local Key Pad**  
Can operate with selected Temperzone local controllers



**BMS**  
Can be controlled through RS485 Modbus. This also provides in-depth data



**Electronic Expansion Valve**  
Electronic expansion valves for greater control and efficiency



**Compact Design**  
Built to fit most applications



**Cooling Only**  
All CWP units are available made to order as cooling only



**Reverse Cycle**  
All CWP units are available as reverse cycle for projects that require heating from the water loop



**Cooling with Electric Heating**  
All CWP units are available as Cooling only with additional electric heaters. Heaters have double high temperature safeties

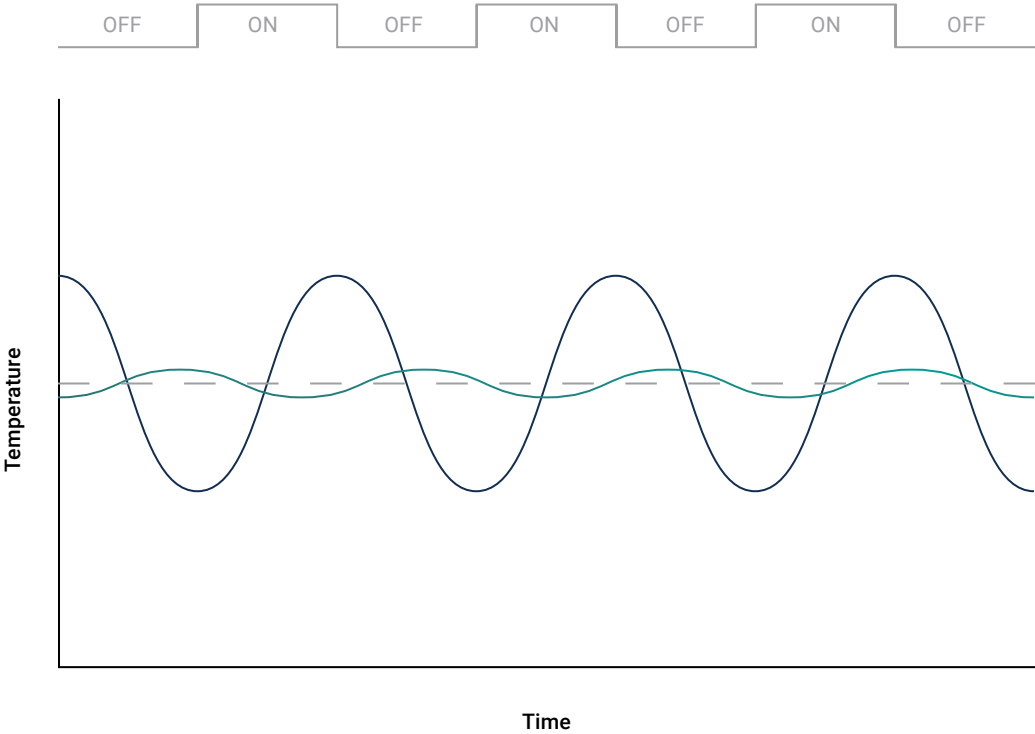


# Inverter Technology

The **CWP 90** utilises inverter compressor technology providing superior part load performance and close comfort control.

Improved Comfort Control

- Inverter
- Fixed Speed
- Set Point Temperature



Inverter Comfort Control

Fixed speed air conditioners are single speed on/off systems. Once the desired temperature is reached, they turn off, turning back on only when the temperature drops below or rises above a set level. This cycling between full or no capacity causes unnecessary waste of electricity and doesn't maintain a constant room temperature.

The use of variable capacity inverter compressors allow a precise load variation response for superior temperature control. The use of electronic expansion valves and variable speed indoor and outdoor fans further allows a more effective, and efficient, response to varying load conditions.

Energy Efficient

- CWP 90** inverter compressors only use the amount of energy to suit the operating condition maximising your SEER performance.
- › Soft starting, using much less power at start up.
  - › Matching capacity to load avoids temperature fluctuation and reduces energy input power.
  - › Full inverter compressor range from 16-100% compressor speed.
  - › Reduced amount of start/stop for long life operation.



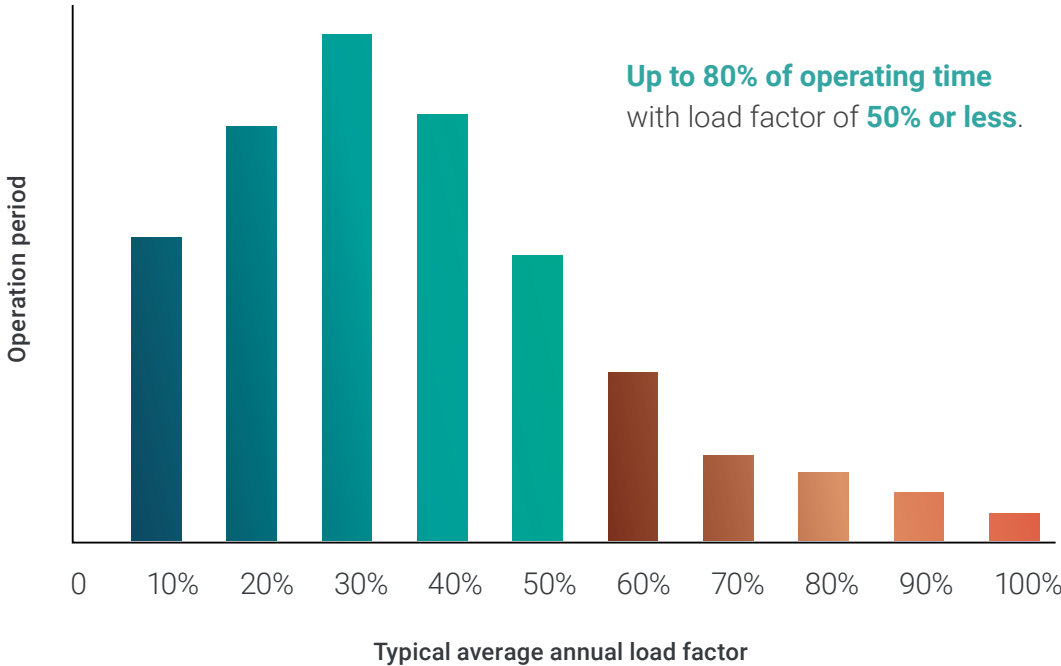
# Energy Efficient Inverter Technology

With the use of an inverter compressor combined with an electronic expansion valve the **Econex CWP 90** provides a precise load variation response and superior part load performance for closer comfort control and higher energy efficiency.

## Energy Efficient

The **CWP 90** is designed to run on an individual power supply, eliminating the need to install expensive central plants. Being internally installed packaged units, they're perfect for many installations where the use of balcony units is prohibited.

**CWP 90's** inverter compressors are more efficient at part load capacity where the system mostly operates



# Lower Global Warming Potential

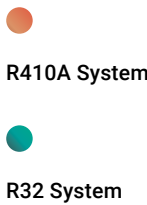
Leading the way in providing low GWP commercial R32 air conditioning solutions.

## Lower Global Warming Potential

With a smaller refrigerant charge and a GWP of 677, R32 refrigerant represents a 75-80% reduction in overall GWP per kW of cooling or heating when compared to R410A systems (GWP 2088).

## Reducing Future Costs

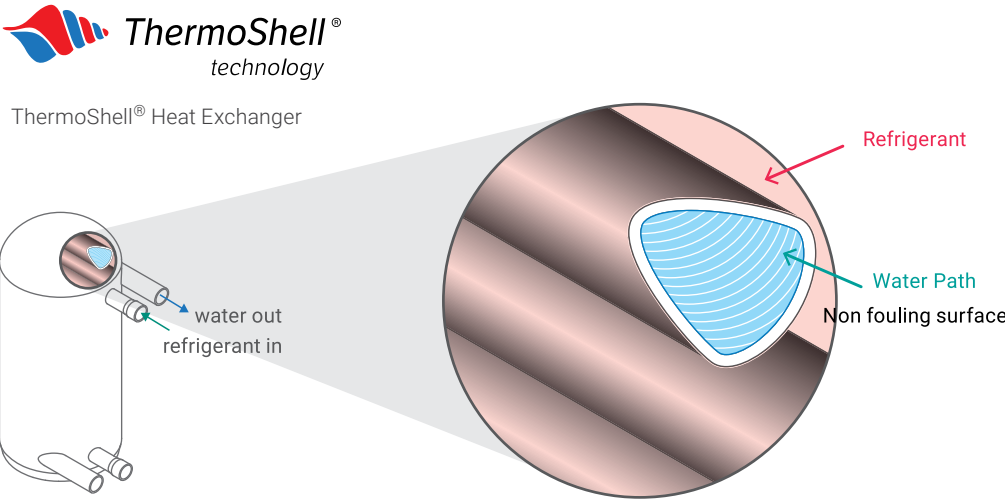
As higher GWP refrigerants face increasing cost due to emissions tax levies the specification of R32 systems will represent a significant reduction in the future costs associated with owning and maintaining these systems.





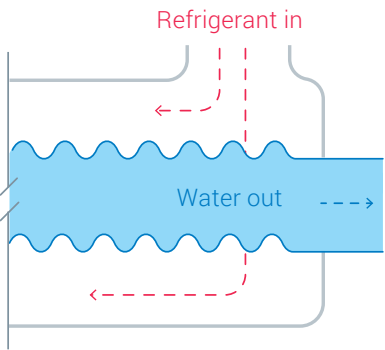
# Life Long Efficiency

Unlike coaxial and plate-type heat exchangers, ThermoShell® prevents degradation in heat transfer efficiency due to water fouling, facilitating reliable operation throughout the unit service life.



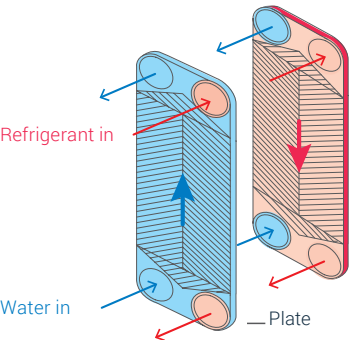
## Coaxial Heat Exchanger

Piping has a very undulated surface making it prone to extreme water fouling.



## Plate Heat Exchanger

Many plates at extremely close intervals create a very receptive fouling service.



# Cost Savings with ThermoShell® Technology

Temperzone’s state-of-the-art ThermoShell® sets new standards in water-cooled technology.

### Enabling Cost Savings

ThermoShell® technology is Temperzone’s new high performance, compact heat-exchanger for refrigerant and water systems.

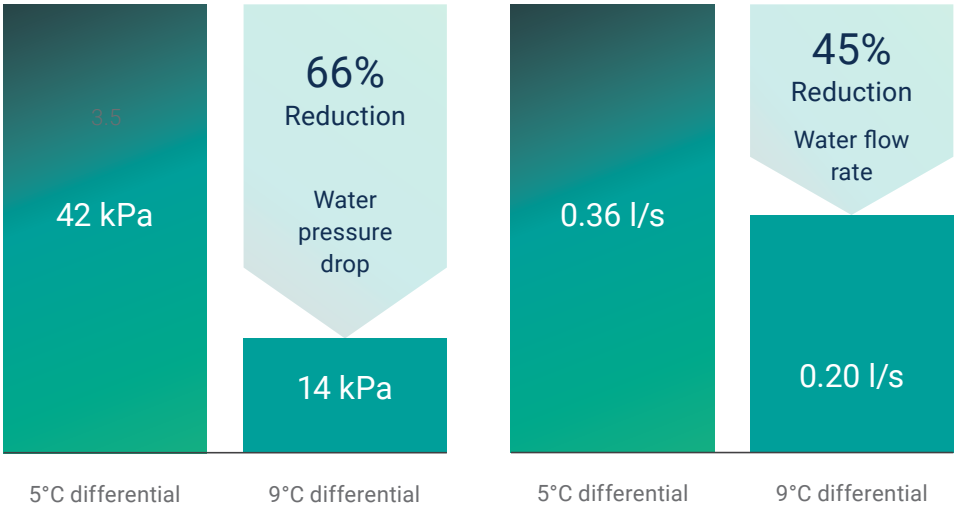
ThermoShell® enables considerably lower water flow rates and water pressure drops to be accommodated by the system, with minimal effect on duty and efficiency. This leads to a reduction in hydronic equipment size, reducing capital and operating costs.

The effect of a decreased water flow rate through a 5.9kW water cooled packaged unit with ThermoShell® was measured under laboratory conditions to examine the overall effect on duty and EER\*.

It was shown that increasing the temperature differential across the condenser to 9°C by significantly decreasing the water flow rate had only a minimal effect on the duty and EER of the unit.

Also, individual units will run much more efficiently when only a proportion of the units are operating at any one time. Therefore, real world efficiencies will be greater than design efficiencies.

\* HWP 59 was tested under typical conditions of IAT 27/19°C, EWT 30°C,



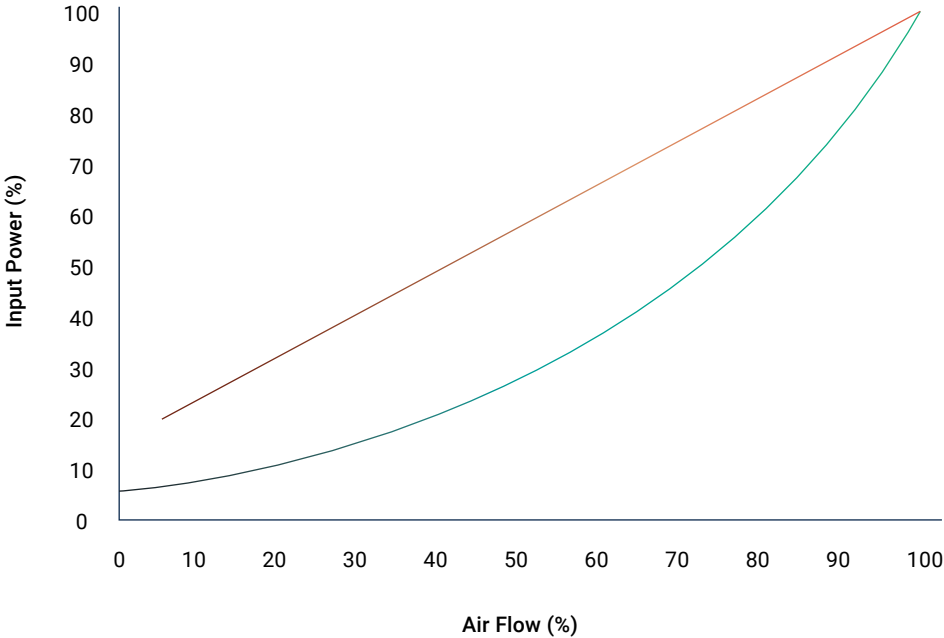
# Energy Saving Technology

Intelligent system control technology offers leading energy efficiency with precision control of the air conditioners refrigeration system.

## EC Fan Technology

Our high-efficiency EC fan motors are up to 20% more energy efficient than Belt drive or AC motor alternatives and enable quiet operation with slow ramp-up and no sudden noise changes. Achieve precise comfort with custom select fan speeds or continuously variable fan speed control.

- AC Motor
- EC Motor

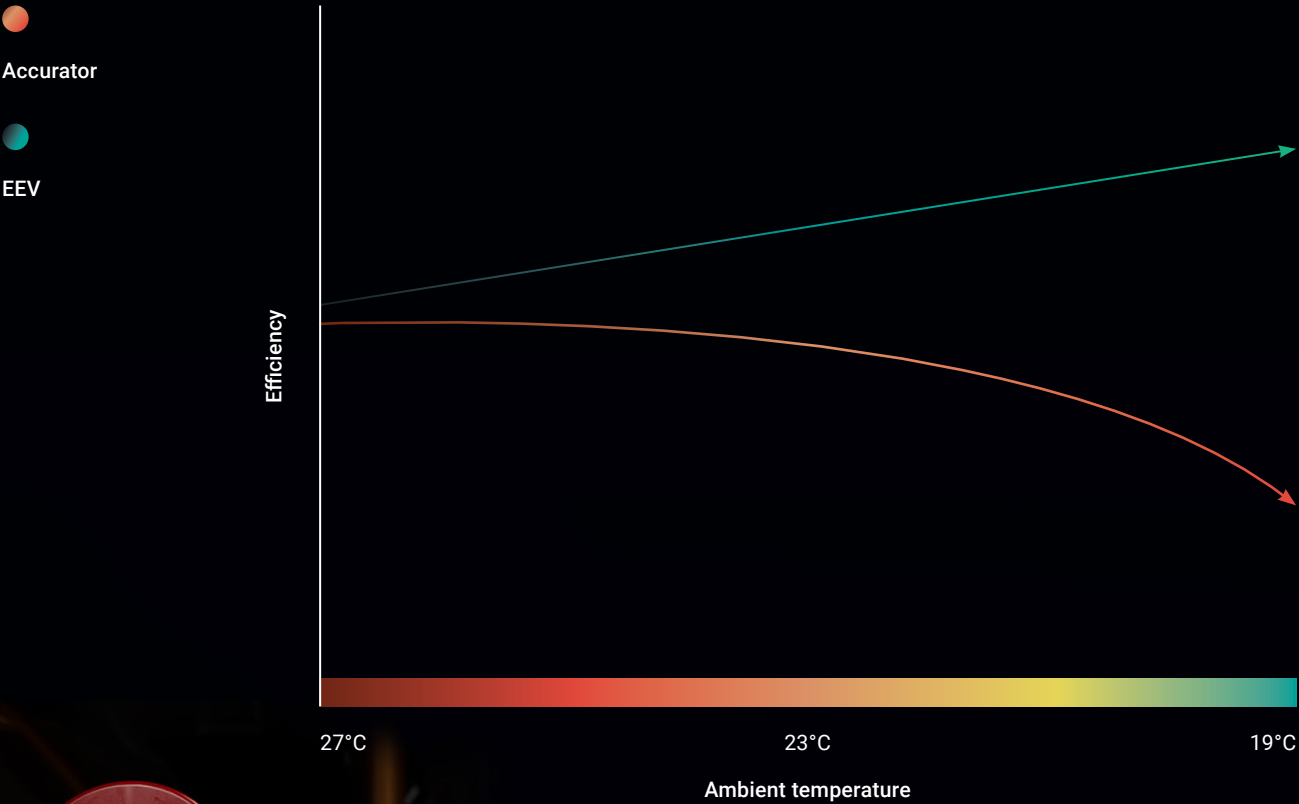


## Versatile solution for Multi-Residential Buildings



# Electronic Expansion Valves (EEV)

Temperzone Econex EEV's allow optimum control of superheat at varying load. They also provide increased efficiencies by lowering head pressure and optimum feeding of heat exchanger coils. EEV's control liquid saturation over the coils, which in turn increases the opportunity to absorb energy.



### Benefits include:

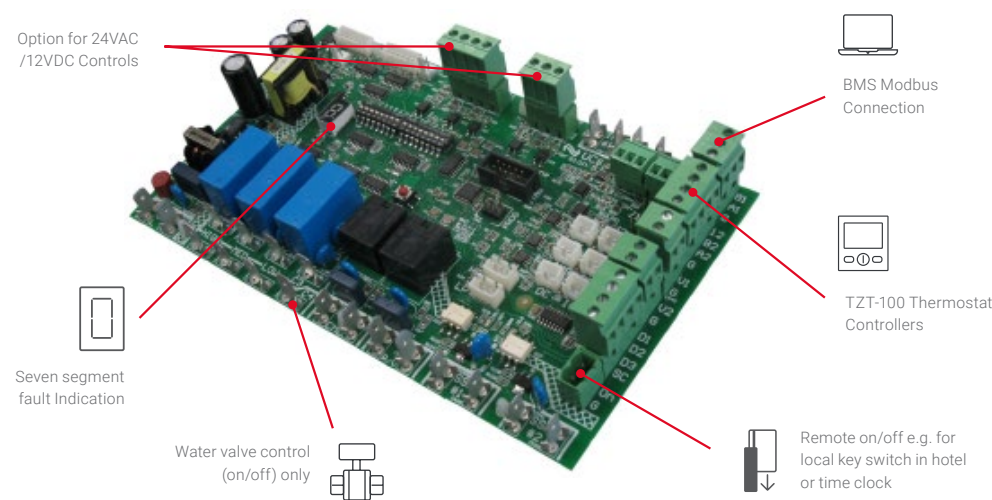
- › EEV's enable improved efficiency and reduced operating costs at part-load conditions.
- › They also facilitate maximised energy savings during the shoulder seasons – periods in which air conditioning systems often run at part-load.





# Temperzone’s Intuitive UC Technology Makes It Easy

The UC controller has many powerful features and is extremely flexible providing solutions that meet today’s requirements.



## Water Valve Control

The UC controller will operate the fitted on/off valve. When the unit is off the water valve closes and stops the water flow which can reduce pump energy consumption. When a call to cool or heat occurs the initial valve control signal fully opens the valve. The value is given 40 seconds of time to open before the compressor is started.

The other benefits of controlling the valve directly from the CWP is that no BMS card is required, less wiring and no accessing the refrigeration system.

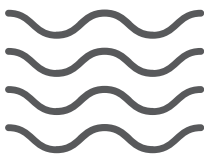


\* See technical data manual for applicable valves

## Flush Cycle

The UC controller has a flush cycle. If the valve has been closed for 24hrs it will briefly open to flush the water system and move the valve to prevent seizing.

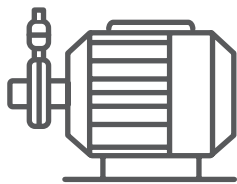
A water flush request can be remotely issued via Modbus communications over RS485 wiring. It will cause the water valve to fully open for the duration of the request. The request is only effective when the unit is off (not cooling, not heating).



## Pump Call

The UC controller has built in pump call relays that activate whenever the compressor is required to run. The pump call output is solid relay contacts. The contacts are voltage-free, suitable for 24V AC or 230V AC, maximum current is 0.25A. The solid-state relay cannot switch DC signals.

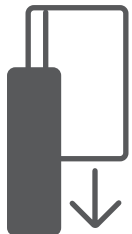
This provide a convenient way to manage the pump call other than operating through a BMS.



## Remote Start/Stop

A remote on/off signal can be connected to the “On” and “0V” terminals (input for a voltage-free switch or relay contact). To turn the unit on the remote on/off input must be **closed-circuit**. The compressor minimum run-time is 90 seconds.

Remote on/off is ideal for connection to key locks or motion detection in a hotel or apartment to automatically switch the unit off when not required.



Temperzone’s individual UC Intuitive control system makes it easy to maintain a space at the prescribed temperature.

CWP 90 offers various levels of control:

## Third Party, Low level

Simple terminals allow connection to any 12VDC /24VDC controller where fan speed, mode and operation can be controlled.



## Local Control, CWP models

Incorporating the UC8 controller the CWP 90 can be connected to the TZT-100 controller via modbus.

## TZT-100

- Auto change over between cool and heat
- 7 Day programmable time clock
- Key board and temperature locks
- 3 speed fan control
- Programmable occupancy inputs
- Auto start after power failure



# BMS Connectivity

The CWP 90 can be controlled via a BMS via Modbus/RS485 port with multi- unit control capability.

### Benefits of BMS connectivity

- › Up to 99 units can be connected on a common RS458 bus in daisy chain design

› BMS communication cable (2-wire shielded)
- › Maximum cable length of 1000m.

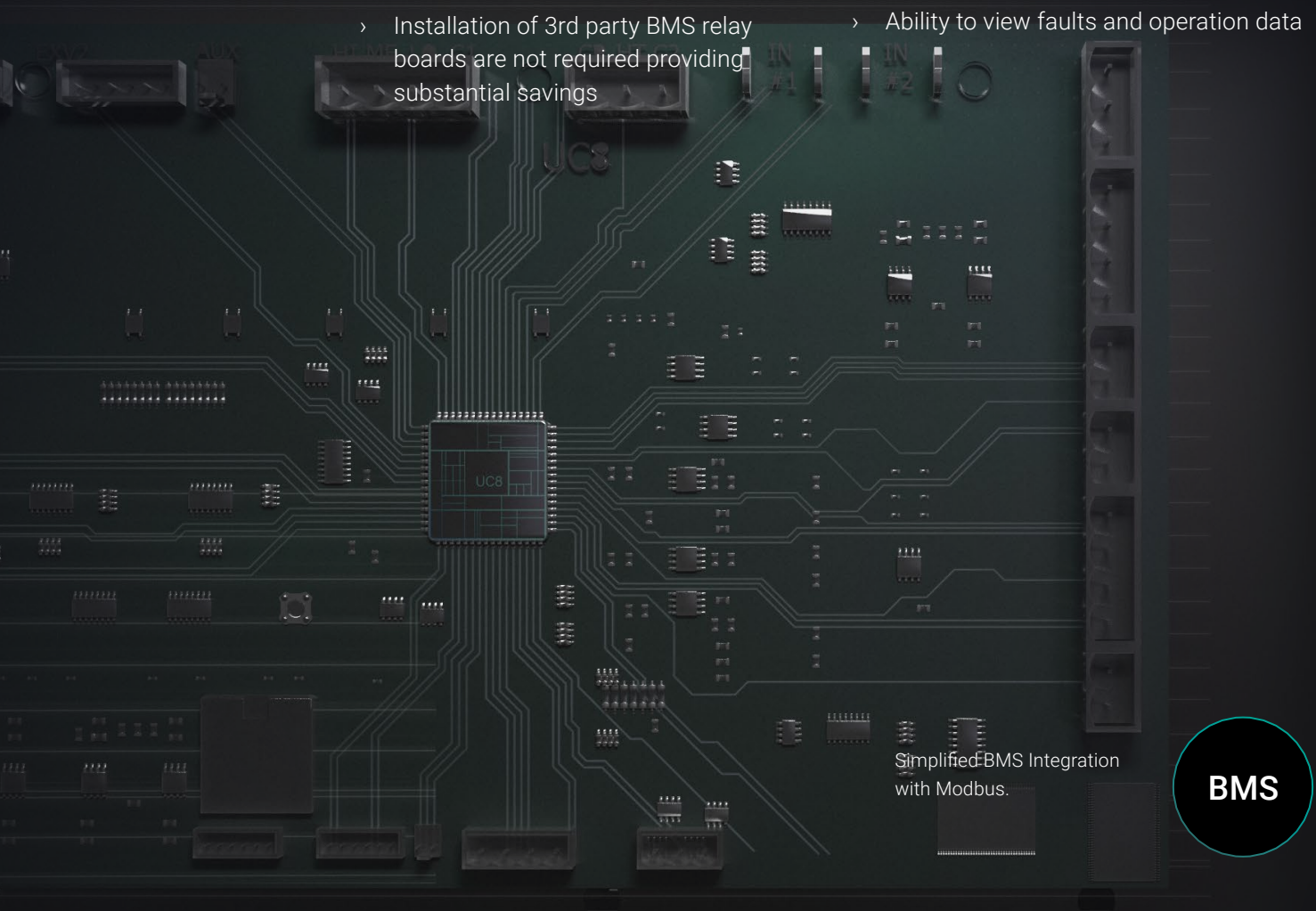
› In some applications cable requirements are reduced from 11 wires to 2 with greater level of control

› Installation of 3rd party BMS relay boards are not required providing substantial savings
- › Reduced wiring and labour

› Ability to monitor units from PC

› Ability for global scheduling

› Ability to view faults and operation data



# Econex CWP 90 Specifications

Indoor Unit

CWP 90RELSFY

Capacity (kW)	
Cooling Capacity Range (gross)	4.1 kW ~ 10.0 kW
Nominal Cooling Capacity*1	10.0 kW
Net Cooling Capacity (MEPS)	9.9 kW
EER / AEER (cooling)	3.84 / 3.76
Heating Capacity Range	3.7 kW ~ 8.9 kW
Heating Capacity*2	8.9 kW
COP / ACOP (heating)	3.74 / 3.66
Electric Heat Option (CWP-CE)	3 kW
Supply Air	
Air Flow*3	370 l/s
Filter (EU2/G2 rated)*4	Supplied
Power	
Power Source*5	Single Phase (230 - 240V 50Hz)
Run Amps at Nominal Conditions	11 A
Max. Running Amps	15.5 A
Unit Controller	UC8
Refrigerant	R32
Water	
Nominal Water Flow*6	0.6 l/s
Minimum Water Flow *7	0.17 l/s
Water Coil Pressure Drop*8 kPa (psi)	62 (9)
Water Connections	3/4" male BSP
Dimensions	
Overall (mm)	530W x 1115H x 589D
Weight	
Excl. water / incl. water	90 kg / 92 kg

Notes:

\*1

Nominal Cooling Capacity at AS/NZS 3823.1.3 conditions. Entering Water Temperature 30°C; Entering Air Temperature 27°C D.B., 19°C W.B.

\*2

Net Cooling Capacity (CWP-R version only) at AS/NZS 3823.1.3 conditions. Entering Water Temperature 20°C. Entering Air Temperature 20°C D.B.

\*3

Air flows at nominal conditions above.

\*4

Complies with AS 1324.1.

\*5

Voltage fluctuation limits: Single phase systems 200-252 V; Three phase systems 342-436 V.

\*6

Nominal water flow at EWT - LWT =5K.

\*7

At nominal Entering Water Temperature. 30°C on cooling, 20°C on heating.

\*8

At nominal water flow.





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AND MANUFACTURED



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