



## DWSC & DWDC C Series

Centrifugal compressor water cooled chillers



The new water-cooled centrifugal chiller with low GWP refrigerant  
An extremely reliable, efficient, flexible and environmentally friendly solution

# DWSC

## Single Compressor Unit



DWSC C up to 3350kW (1000RT) with R-1234ze and up to 4500kW (1250RT) with both R-134a and R-513A, with single centrifugal compressor.

### Single Compressor Unit

- › Capacity range
- › 750 – 3350kW with R-1234ze\*
- › 1050 – 4500kW with R-134a/R-513A\*

### Daikin Centrifugal Chiller

- › High Efficiency Flooded Type Heat Exchangers
- › Unloading to 10% of full load
- › Best efficiency with up to 30% less refrigerant than previous series
- › Daikin Centrifugal Compressor technology



# DWDC

## Dual Compressor & Single Circuit Unit



DWDC C up to 6700kW (1900RT) with R-1234ze and up to 9000kW (2500RT) with both R-134a and R-513A, with dual centrifugal compressor.

### Dual Compressor Unit

- › Capacity range
- › 1500 – 6700kW with R-1234ze\*
- › 2100 – 9000kW with R-134a/R-513A\*

### Outstanding part load performance

Unloading to 5% of full load

### Two of everything connected to the evaporator and condenser

- › Two compressors
- › Two lubrication systems
- › Two control systems
- › Two starters

Duplicate components for excellent reliability



# The new water-cooled centrifugal chiller with low GWP refrigerant

## DWSC & DWDC C Series

The use of R-1234ze(E) offers an environmentally friendly solution, combining a low Global Warming Potential (GWP) with high energy efficiency. R-1234ze(E) is an HFO refrigerant (Hydro Fluoro Olefins) with an Ozone Depletion Potential (ODP) is equal to zero (0). The introduction of the new R-1234ze(E) range provides a long-term solution that supports the HFC phase down schedule of the F-gas Regulation.

The range offers a choice of three different refrigerants – R134a, R513A and R1234ze – and all machines require less refrigerant than previous series. The new Daikin C Series **centrifugal compressor**

**water-cooled chiller**, replaces the previous water-cooled Series B and will be available with as a customer-specific solution for even higher performance ranges.



### Daikin Centrifugal Compressor

- › No compromises in application flexibility
- › Proven compressor technology (Daikin centrifugal compressor design)



### Daikin Heat Exchangers: optimizing performance and reducing refrigerant charge

- › Thanks to the new high efficiency tubes and more compact heat exchanger design
- › Shortest chiller on the market thanks to the new Heat Exchanger design by Daikin.



#### Evaporator pipes

- › Outside: cavities for optimized nucleate boiling
- › Inside: helical structure



#### Condenser tubes

- › Outside: optimized for condensation
- › Inside: helical structure



### Electronic Expansion valve: fast, accurate response to load and water temperature changes

Offering superior refrigerant management throughout the entire chiller operating range and for achieving precise control of refrigerant mass flow.



## New Microtech IV controller installed as standard



- > Main parameters visualization and easy modification
- > Best efficiency operating point tracker
- > Critical components' protection thanks to fast response
- > Precise monitoring of the system and sub-system
- > New options included
- > Improvements compared to MicroTech III

Best efficiency with up to 30% less refrigerant than previous series



### Control solutions

#### 1. Advanced logic & touch screen operator Interface



#### 2. Touch screen operator panel

Touch screen operator panel is graphically intuitive and easy to use for enhanced operator productivity. Important status and control information is available at a glance or a touch.

#### 3. Unit mounted electrical panel

- > 'Right-sizing' chiller selection
- > Compact frequency drive due to refrigerant cooling



#### 4. Dismountable electrical panel and On-site disassembly

Dismountable electrical panel and On-site disassembly for suitability to all installation site needs and dimensions requirements.



### Free cooling operation

Allows to reduce the power consumption generated by traditional mechanical cooling.

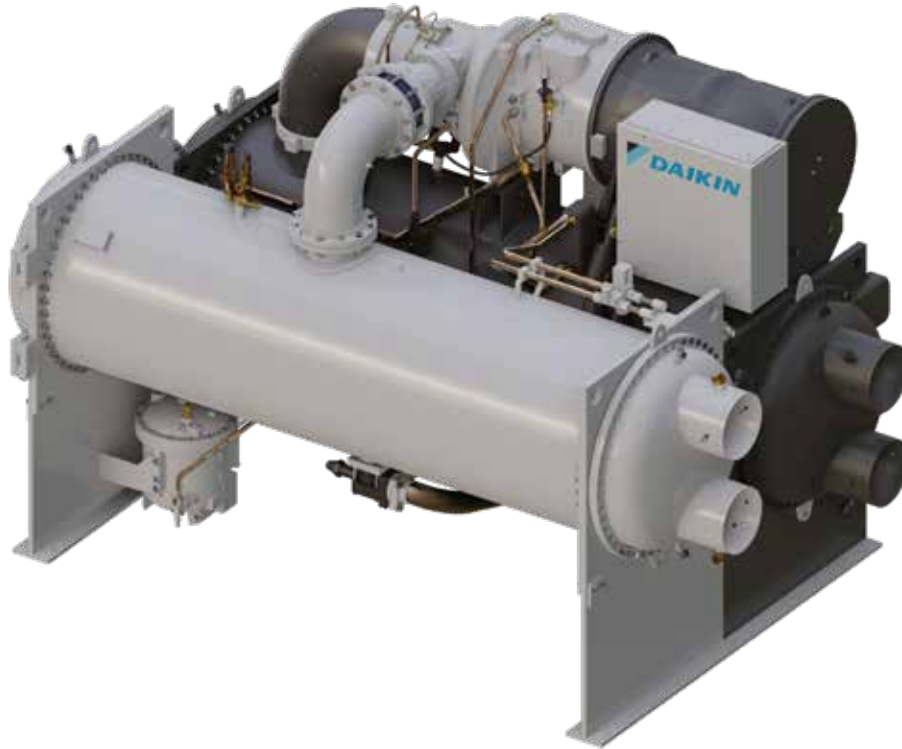


### Soft Starter Unit

Soft Starter Unit Mounted for Fixed Speed application in the new compact electrical panel for plug and play solution.

Why choose

# DWSC, DWDC C series?



## Focus on inverter Daikin

- › State-of-the-art engineering
- › Unique design of Daikin's inverter for optimal unit performance
- › Designed to ensure low in-rush currents and greater reliability
- › Daikin Refrigerant cooled Inverter technology
- › Unit Mounted Electrical Panel
- › Inverter also available in a 'Low Harmonic-LH' version
- › Unique inverter design allowing to adjust the Harmonic Current based on the specific application to achieve < 3% THDi.



## Rapid restart for fast start-up after power loss

- › The UPS keeps the controller switched on enabling the unit to quickly reach the full load
- › Focused on data center and all applications where the cooling capacity supply is crucial.



## Sound level reduction

Achieved thanks to dedicated acoustic insulation installed on the unit and available as option.



## Heat pump mode

With reversibility on water side whenever a heating load is demanded thus improving suitability for applications with changing load during the year.







Designed to help “right-sizing” and offer reduced installation costs

Extensive list of options to satisfy any customer requirement



Variable Frequency Drive and Low Harmonics VFD

- › Variable Frequency Drive designed and manufactured by Daikin in the new Daikin center of Excellence located in Italy
- › VFD optimizes part load efficiency, a key performance feature since most chillers operate at part load 99% of their life
- › Low Harmonics VFD designed and manufactured by Daikin in accordance to the standards EC61000-2-4, IEC61000-3-4, IEEE 519, G5/4 achieving THD < 5%. Standard VFD and LH VFD are unit mounted and refrigerant cooled, ensuring higher efficiency and reliability.



Further customization is feasible in order to meet every customer needs:

- › Cu-Ni condenser tubes to operate with sea water application
- › Halogen free cables and insulation
- › Most common marine power supply 690V/60Hz, 690V/50Hz, 440V/60Hz, and others...
- › IT-system for the Inverter
- › Holding charge for long term storage necessities before operation
- › Marine Certification for heat exchanger (i.e. DNV, Lloyd’s Register, RINA, Bureau Veritas, etc.)
- › Heat exchangers suitability for Marine thanks to Marine water box, hinged covers, flanged water connections
- › Chiller designed for extreme pitching and rolling operation.



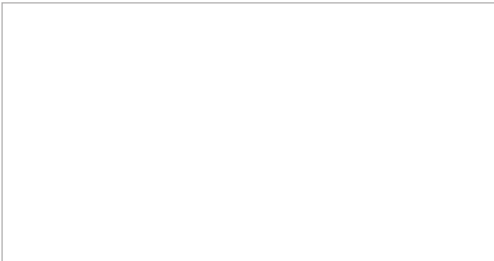
Test stand capabilities

- › Voltage (V): 380 - 400 - 440 - 460 - 480 - 690 - 6000 - 6600 - 10000 - 11000
- › Frequency (Hz): 50 - 60
- › 11 MW capacity test stand AHRI approved
- › Run Test execution for every chiller manufactured.





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