



# EWYD 4Z-B

Air to water multipurpose unit with inverter screw technology

4-pipe system solution for simultaneous heating and cooling



- AHUs
- CHILLERS
- PROJECTS
- SERVICE

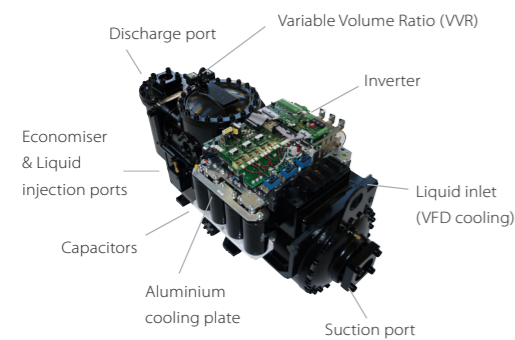
# Why choose EWYD 4Z-B chiller series

Daikin Applied were the among first to pioneer the use of inverters in air cooled screw chillers, and today, our next generation of inverter technology makes both comfort and process cooling even more efficient and cost-effective.

## 1 Top class efficiency:

Total Energy Ratio (TER) up to 8.58

### Full inverter technology: the best choice for every application



#### ✓ New generation of Daikin Applied inverter screw compressors

The inverter integrated in the compressor is refrigerant cooled:

- › Safe and robust cooling system, totally independent from outdoor ambient conditions and air quality
- › Suitable even for aggressive installation such an industrial application

#### ✓ VVR (Variable Volume Ratio)

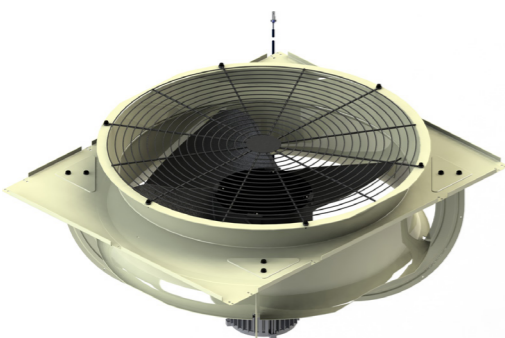
The operating conditions of a chiller are subjected to sensible changes due to the variation of ambient temperature and load request from the plant.

Screw compressors increase the pressure of the refrigerant by forcing it into a progressive smaller volume, from the suction to the discharge port. Once the geometry of the compressor is defined the volume ratio is also defined.

Daikin Applied compressors can modify their own geometry thanks to variable volume ratio (VVR). The volume ratio will change by moving the sliding valves. VVR changes the point at which the gas leaves the compressor, and therefore changes the pressures at discharge which will be optimised for any condition.

#### ✓ New Daikin High Efficiency Inverter fans

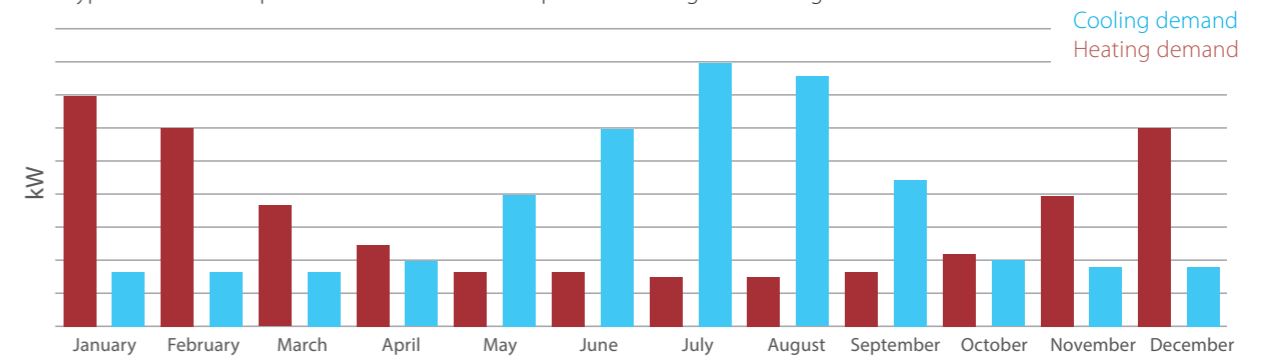
The new high efficiency fan developed by Daikin Applied with optimised geometry ensures the best ratio between airflow and power input. The inverter control ensures the optimum airflow in every condition.



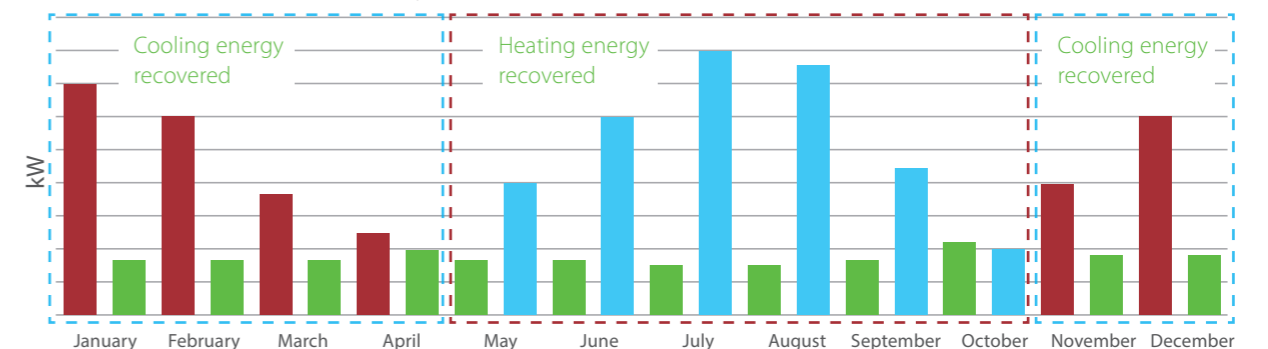
## 2 Best solution for simultaneous cooling and heating

### ✓ Big multipurpose buildings, hotels and hospitals are just a few examples of applications for multipurpose units

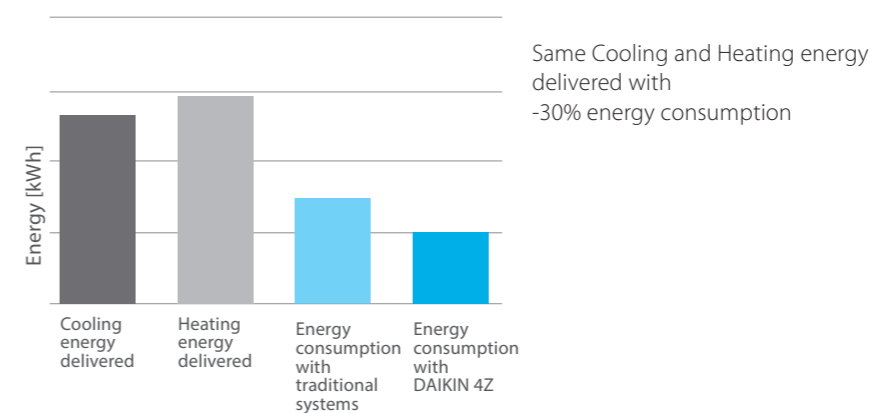
A typical annual load profile with simultaneous request for cooling and heating



Recovered cooling and heating energy



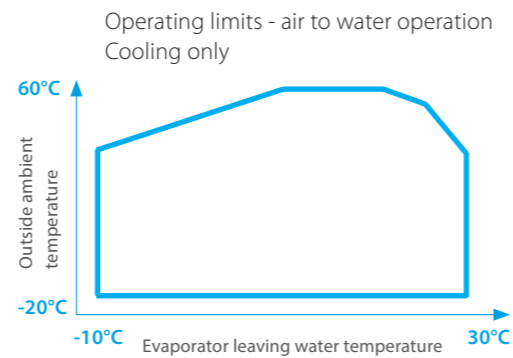
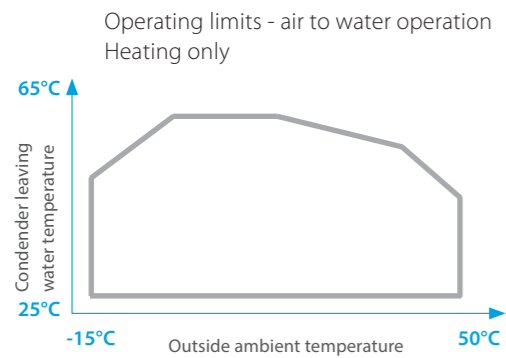
### ✓ Lower energy consumption compared to traditional systems





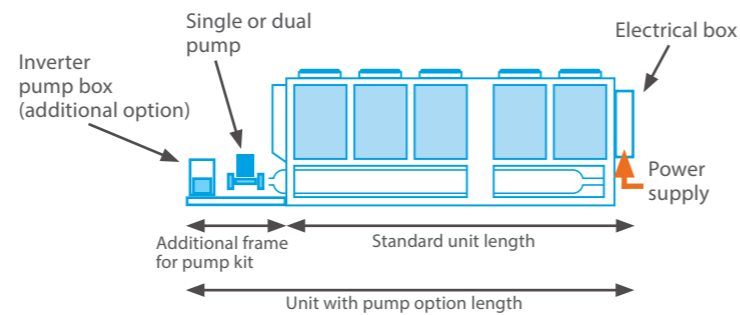
### 3 Application flexibility

#### ✓ Wide operating envelope for cooling and heating



#### ✓ Onboard pump solutions

The hydronic kits are mounted on an additional base frame connected to the standard unit base frame. The length of the unit is increased compared to the standard unit by 1500 mm. In case the inverter kit for pumps is selected the inverters are included in a dedicated electrical box on the additional frame.



Model	400	450	500	550	600	650	700	800
Unit length (mm)	7330	7330	8230	8230	9130	10030	10030	10030

Note: Hydronic kit option includes pumps on both cooling and heating systems

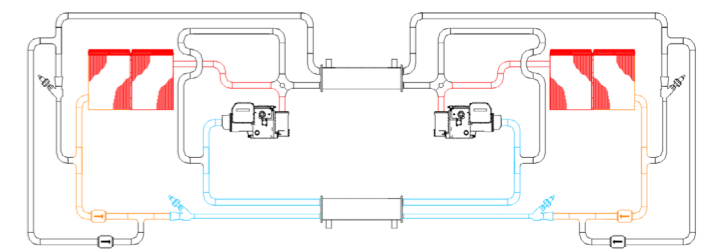
#### ✓ Rapid Restart functionality

In case of power failure the Daikin Applied 4Z is able to restart in less than 30 seconds. The UPS installed in electrical box keeps the unit controller always powered. It is also possible to give (if needed) priority to restore the cooling or the heating load.



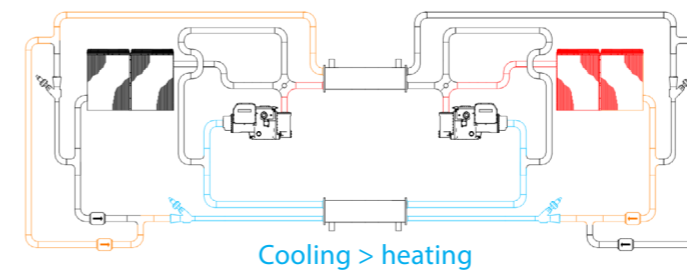
### EWYD-4Z: How does it work

DAIKIN 4Z is provided with two Shell & Tube heat exchangers on water side: one operating always as evaporator (cold heat exchanger) and the other one always as condenser (hot heat exchanger). The fins & tubes Cu/Al coils are used to reject the exceeding cooling or heating energy. Below the functional scheme of 4Z.



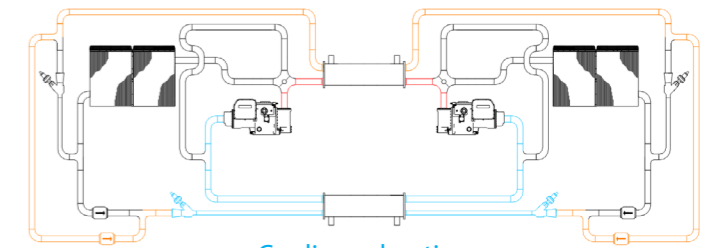
Cooling only

The 4Z unit operates as a chiller providing only chilled water while the hot heat exchanger is OFF and the heating energy is rejected to the air.



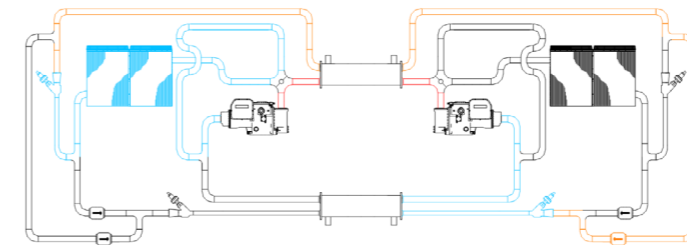
Cooling > heating

In this case, a circuit operates in water to water mode providing the heating load and part of the cooling load while the other circuit provides the remaining part of cooling load operating in air to water mode and the excess heating energy is rejected to the air.



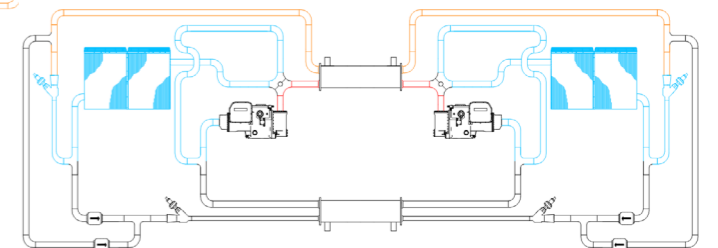
Cooling ≈ heating

The unit operates only in water to water mode providing chilled and hot water while the air side Heat Exchanger is OFF.



Cooling < heating

In this case, a circuit operates in water to water mode providing the cooling load and part of the heating load; the other circuit provides the remaining part of heating load operating in air to water mode while the excess cooling energy is rejected to the air.



Heating only

The 4Z operates as a heat pump providing only hot water while the Cold Heat Exchanger is OFF and the Cooling energy is rejected to the air.

EWYD~4ZXS2 – standard unit and EWYD~4ZXS2 + OPT76b - Sound proof system (compressor)										
MODEL	notes		400	450	500	550	600	650	700	800
Cooling Capacity - C/O	(1)	kW	402.4	438.4	502.8	523.4	602.4	653.7	702.9	785.7
Power Input - C/O	(1)	kW	126.9	139.1	154.7	169.5	185.4	204.9	208.6	238.6
EER - C/O	(1)	kW/kW	3.17	3.15	3.25	3.08	3.25	3.19	3.37	3.29
Minimum Capacity - C/O	(1)	%	17	15	15	13	13	12	11	10
Heating Capacity - H/O	(2)	kW	402.7	439.7	503.5	545.2	600.9	654.7	702.4	803.0
Power Input - H/O	(2)	kW	120.9	128.8	145.9	158.7	174.2	193.6	197.9	226.8
COP - H/O	(2)	kW/kW	3.33	3.41	3.45	3.44	3.45	3.38	3.55	3.54
Cooling Capacity - C+H	(3)	kW	313.2	355.7	393.9	430.4	474.8	511.4	54.9	629.8
Heating Capacity - C+H	(3)	kW	402.4	454.6	503.4	549.4	603.4	652.9	703.7	803.4
Power input - C+H	(3)	kW	89.1	98.9	109.4	118.9	128.7	141.5	154.7	173.5
TER - C+H	(3)	kW/kW	8.03	8.19	0.82	8.24	8.38	8.23	8.10	8.26
Evaporator water flow rate	(1)	l/s	19.3	21.0	24.1	25.1	28.8	31.3	33.6	37.6
Evaporator pressure drop	(1) (4)	kPa	42.0	50.8	40.1	47.8	48.0	34.2	40.7	37.1
Evaporator minimum water flow rate	(8)	l/s	9.1	9.1	13.4	13.4	14.6	19.5	20.8	26.1
Condenser water flow rate	(2)	l/s	19.4	2,114.6	24.3	2,633.4	2.9	31.6	33.9	38.7
Condenser pressure drop	(2) (4)	kPa	38.3	45.3	34.5	38.3	36.1	26.5	30.8	29.5
Condenser minimum water flow rate	(8)	l/s	9.1	9.1	13.4	13.4	14.6	19.5	20.8	26.1
EWYD~4ZXS2 – standard unit										
Sound Power	(1) (5)	dB(A)	99	98	99	99	100	100	102	102
Sound Pressure @ 1 meter	(1) (6)	dB(A)	78	77	77	78	78	79	80	80
EWYD~4ZXS2 + OPT76b - Sound proof system (compressor)										
Sound Power	(1) (5)	dB(A)	96	95	96	96	97	96	98	98
Sound Pressure @ 1 meter	(1) (6)	dB(A)	75	74	74	75	75	75	76	76
Oil charge		lt	28	28	28	28	28	28	38	38
Refrigerant Charge	(7)	kg	170	190	200	200	235	260	270	290
Unit length	(7)	mm	5825	5825	6725	6725	7625	8525	8525	8525
Unit width	(7)	mm	2285	2285	2285	2285	2285	2285	2285	2285
Unit height	(7)	mm	2465	2465	2465	2465	2465	2465	2465	2465
Unit weight - shipping	(7)	kg	6075	6095	6870	6870	7850	8435	9405	9430
Unit weight - operation	(7)	kg	6540	6560	7560	7560	8935	9540	10785	10820
Electrical Information										
Compressor starting method		-	Variable Frequency Drive							
Nominal Running Current C/O	(1) (3)	A	239	279	288	337	350	384	384	456
Max. running current	(3) (4)	A	335	374	396	451	473	524	550	656
Max. current for wire sizing	(3) (5)	A	369	411	436	496	520	576	605	722

EWYD~4ZXR2 – standard unit										
MODEL	notes		400	450	500	550	600	650	700	800
Cooling Capacity - C/O	(1)	kW	357.9	400.4	451.9	496.2	548.0	596.5	619.1	690.0
Power Input - C/O	(1)	kW	117.3	130.8	144.8	162.2	176.2	194.3	194.1	224.0
EER - C/O	(1)	kW/kW	3.05	3.06	3.12	3.06	3.11	3.07	3.19	3.08
Minimum Capacity - C/O	(1)	%	20	18	17	14	14	13	12	11
Heating Capacity - H/O	(2)	kW	358.3	398.7	452.2	493.4	550.7	60.1	620.9	690.8
Power Input - H/O	(2)	kW	103.0	109.2	123.9	135.9	153.4	169.3	169.2	186.2
COP - H/O	(2)	kW/kW	3.48	3.65	3.65	3.63	3.59	3.55	3.67	3.71
Cooling Capacity - C+H	(3)	kW	279.6	312.7	354.7	387.6	435.2	473.1	486.1	543.8
Heating Capacity - C+H	(3)	kW	359.2	399.5	452.8	493.5	550.5	602.1	623.4	693.3
Power input - C+H	(3)	kW	79.6	86.9	98.1	105.9	115.3	129.1	137.3	149.6
TER - C+H	(3)	kW/kW	8.03	8.20	8.23	8.32	8.55	8.33	8.08	8.27
Evaporator water flow rate	(1)	l/s	17.1	19.2	21.6	23.7	26.2	28.5	29.6	33.0
Evaporator pressure drop	(1) (4)	kPa	31.8	37.1	31.7	38.7	3.9	2.7	33.7	28.1
Evaporator minimum water flow rate	(8)	l/s	9.1	9.1	13.4	13.4	14.6	19.5	20.8	26.1
Condenser water flow rate	(2)	l/s	17.3	19.2	21.8	23.8	26.6	29.0	30.0	33.3
Condenser pressure drop	(2) (4)	kPa	31.8	38.5	27.7	33.6	3.2	23.8	28.5	24.4
Condenser minimum water flow rate	(8)	l/s	9.1	9.1	13.4	13.4	14.6	19.5	20.8	26.1
Sound Power	(1) (5)	dB(A)	87	86	87	87	88	88	90	90
Sound Pressure @ 1 meter	(1) (6)	dB(A)	66	66	66	66	66	66	68	69
Oil charge		lt	28	28	28	28	28	28	38	38
Refrigerant Charge	(7)	kg	170	190	200	200	235	260	270	290
Unit length	(7)	mm	5825	5825	6725	6725	7625	8525	8525	8525
Unit width	(7)	mm	2285	2285	2285	2285	2285	2285	2285	2285
Unit height	(7)	mm	2465	2465	2465	2465	2465	2465	2465	2465
Unit weight - shipping	(7)	kg	6240	6260	7035	7035	8015	8600	9690	9715
Unit weight - operation	(7)	kg	6705	6725	7725	7725	9100	9705	11075	11110
Compressor starting method		-	Variable Frequency Drive							
Nominal Running Current C/O	(1) (3)	A	199	228	245	297	305	321	344	385
Max. running current	(3) (4)	A	335	374	396	451	473	524	550	656
Max. current for wire sizing	(3) (5)	A	369	411	436	496	520	576	605	722

Notes: (1) – (standard conditions Air to water - Cooling Only) evaporator water in/out = 12/7°C; ambient = 35.0°C; unit at full load operation in Cooling Only; operating fluid: Water; fouling factor = 0°C/W  
 (2) – (standard conditions Air to water - Heating Only) condenser water in/out = 40/45°C; ambient = 7.0°C; unit at full load operation in Heating Only; operating fluid: Water; fouling factor = 0°C/W  
 (3) – (standard conditions Water to water - Cooling + Heating) evaporator water out = 7°C; condenser water out = 45°C operating fluid: Water; fouling factor = 0°C/W  
 (4) - not including filter pressure drop. The installation of the filter is mandatory.  
 (5) - sound power level referred to standard conditions in Air to water - Cooling Only; full load operation is measured in accordance with ISO 9614  
 (6) - sound pressure level referred to standard conditions in Air to water - Cooling Only; full load operation is measured in accordance with ISO 3744  
 (7) – data subject to change in case of options or unit with customizations. Refer to unit's name plate for actual value.  
 (8) – minimum flow rate applicable in variable flow application when the unit is running at minimum load. The above data are referred to the unit without additional optional.  
 Unit Length subject to change when onboard pump option is considered.  
 All the data are subject to change without notice. For updated information on project base refer to Chiller Selection Software and unit's certified drawing.

Why choose

# Service & Maintenance

Daikin Applied Service offers full after-sales support for the maintenance and repair of ALL brands of HVAC systems including, chillers, Air Handling Units, split Air Conditioning, VRF and heat pumps.

## Service capabilities

- › Flexible maintenance contracts
- › 24/7 Emergency call out service
- › 4 hour response time
- › Site dedicated service engineers
- › F-Gas Register
- › Daikin on Site remote monitoring
- › On site training for 'front line' service requirements
- › Agreed service level requirements
- › Full chiller running logs taken on every service visit
- › Full spares availability & management
- › Retrofitting & refurbishments

## Benefits

- › ALL manufacturers HVAC equipment maintained
- › Lower energy use for maintained systems
- › Reduce breakdown costs and business impact
- › Tailor made packages to suit your business needs
- › Extends the useful life-cycle of assets decreasing the need for capital replacements
- › Equipment downtime is decreased and the number of major repairs are reduced

## Service Packages



	BUSINESS Saver	BUSINESS Standard	BUSINESS Plus
Conforms to SFG20 maintenance standard	✓	✓	✓
F-Gas leak test	✓	✓	✓
Unit controller set points, safeties and running conditions logged	✓	✓	✓
Equipment condition report	✓	✓	✓
Four visits per annum (1 major / 3 minor)		✓	
Calibration of all sensors, probes and safety switches		✓	✓
System Diagnostics		✓	✓
Oil Analysis		●	✓
Thermography	✓	●	●
Multi-site visits & bespoke offering			●
Daikin on Site remote monitoring			●
1 point vibration analysis			●
System water analysis			●
Condenser coil cleaning			●

● Optional extras that can be tailored to your needs.

# Daikin on Site

## Standard on all new installations

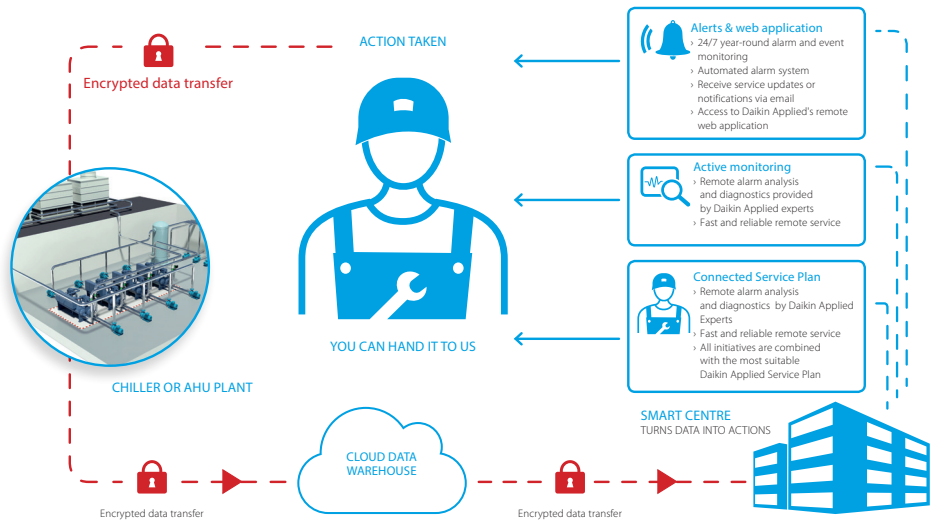
### What is Daikin on Site?

Daikin on Site (DOS) remote cloud server collects operational data from the control system of a Daikin Applied Chiller or Air Handling Unit plant.

Daikin's Smart Centre then turns this data into useful information on a web user interface.

### Main features

- › Reduce downtime
- › Optimise efficiency and reduce energy waste
- › Insight into the optimum use of equipment via trend analysis



#### Cloud technology to hand

Remote maintenance allows your system to be accessed any time, anywhere. Process data is collected constantly and automatically and is stored centrally.



#### Always up-to-date and in control

Suitable for any web-compatible devices. Operates in real time.



#### Insight into operational data for enhanced control and reliability

Enhanced control and maintenance programmes. Diagnostics, system upgrades and setting optimisations are carried out remotely where possible. If a visit is required, the service engineer will arrive already prepared, boosting your efficiency.



#### Available as part of the Daikin Applied Service Business Plus package

Adopt DoS as part of your condition based maintenance package, with a tailored monitoring program within the Business Plus package.



#### Simple, effective connection

Most Daikin Applied Chiller and AHU controllers have a built-in IP interface. This allows connection for remote monitoring either through LAN or with wireless modem communication.



#### High security

Secure in all aspects such as data privacy, data storage security and data transport.

- › All connections are encrypted (HTTPS) to prevent wiretapping and man-in-the-middle attacks
- › CSA security attestation
- › Data privacy conforming to EU data privacy Chapter 5
- › Geo-redundant data storage in Northern Europe



#### Operational data insights deliver long-term savings

The ideal tool for optimising maintenance and operating costs. Benefit from a documented view of your system's capacity requirements.

For more information email [info@daikinapplied.uk](mailto:info@daikinapplied.uk) or visit [www.daikinapplied.uk](http://www.daikinapplied.uk)

For all Daikin Applied UK,  
Daikin Applied Service &  
Spares enquiries call us on:

**0345 565 2700**



Daikin Europe N.V. participates in the Eurovent Certified Performance programme for Liquid Chilling Packages and Hydronic Heat Pumps, Fan Coil Units and Variable Refrigerant Flow systems. Check ongoing validity of certificate: [www.eurovent-certification.com](http://www.eurovent-certification.com)

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