

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

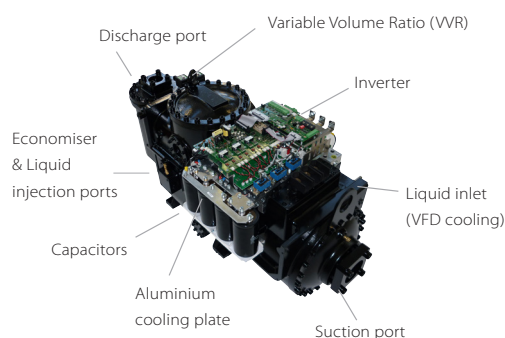
Why choose EWYD 4Z-B chiller series

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

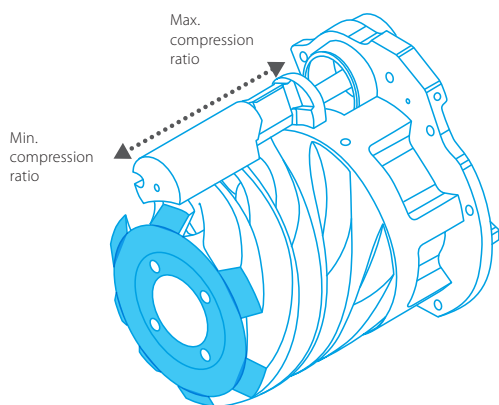
✓ VVR (Variable Volume Ratio)

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.

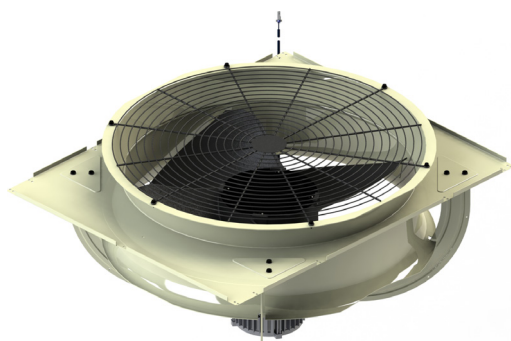
Once the geometry of the compressor is defined the volume ratio is also defined.

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

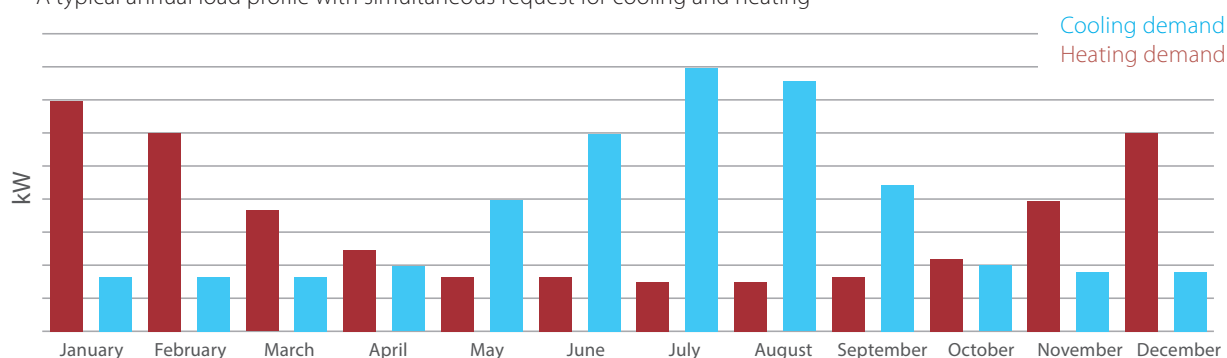
The new high efficiency fan developed by Daikin Applied with optimised geometry ensures the best ratio between airflow and power input. The inverter control ensures the optimum airflow in every condition.



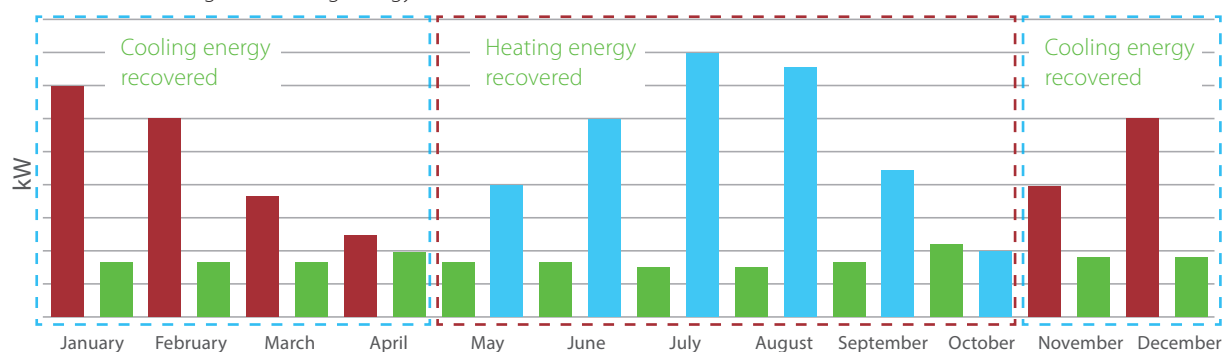
2 Best solution for simultaneous cooling and heating

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

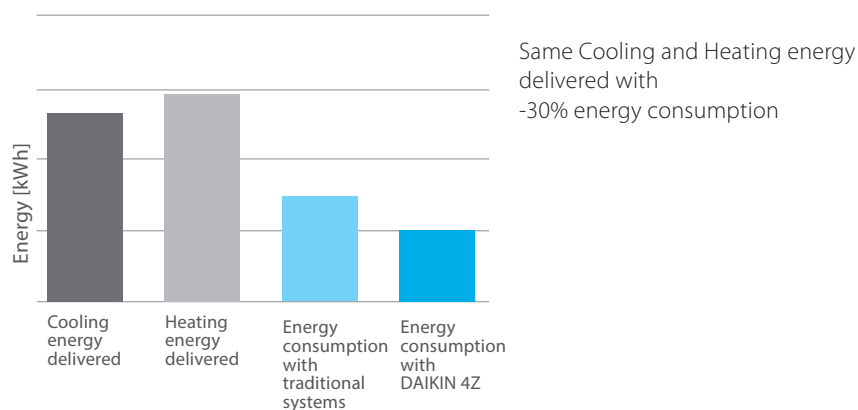
A typical annual load profile with simultaneous request for cooling and heating



Recovered cooling and heating energy



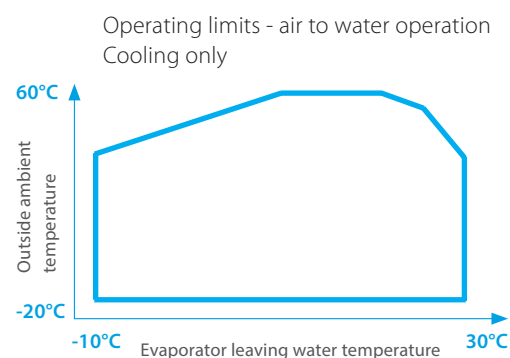
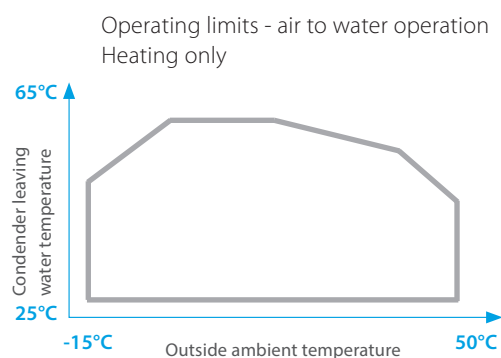
- ✓ Lower energy consumption compared to traditional systems





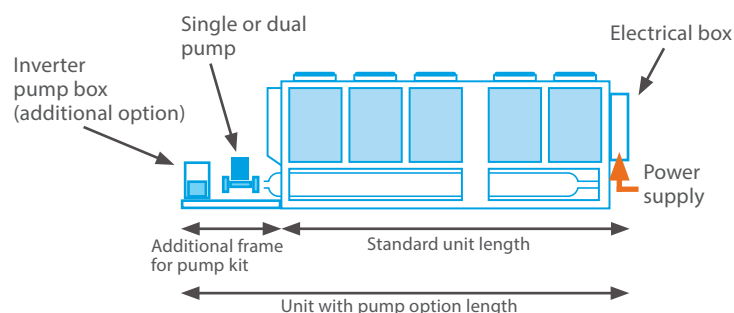
3 Application flexibility

✓ 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

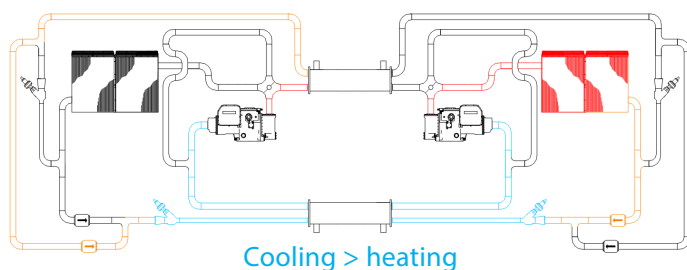
In case of power failure the Daikin Applied 4Z is able to restart in less than 30 seconds. The UPS installed in electrical box keeps the unit controller always powered. It is also possible to give (if needed) priority to restore the cooling or the heating load.





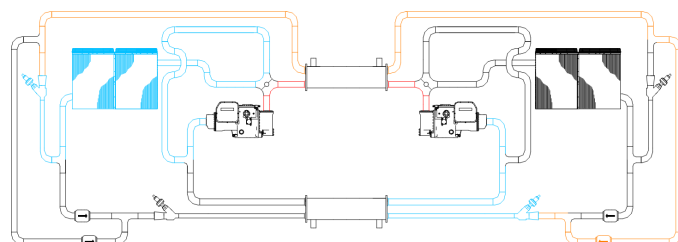
EWYD-4Z: How does it work

DAIKIN 4Z is provided with two Shell & Tube heat exchangers on water side: one operating always as an 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.



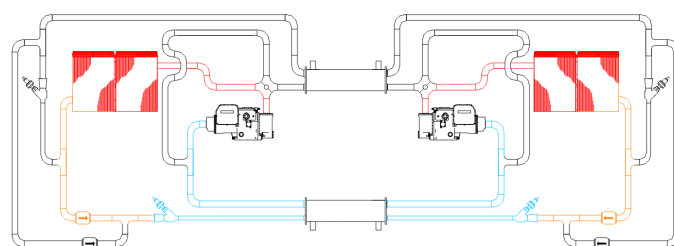
Cooling > heating

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.



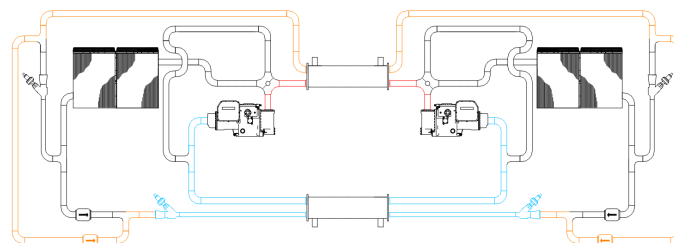
Cooling < heating

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.



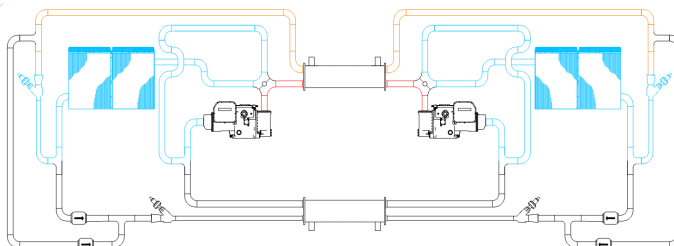
Cooling only

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

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



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.

Technical Specifications

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

Daikin on Site

Standard on all new installations

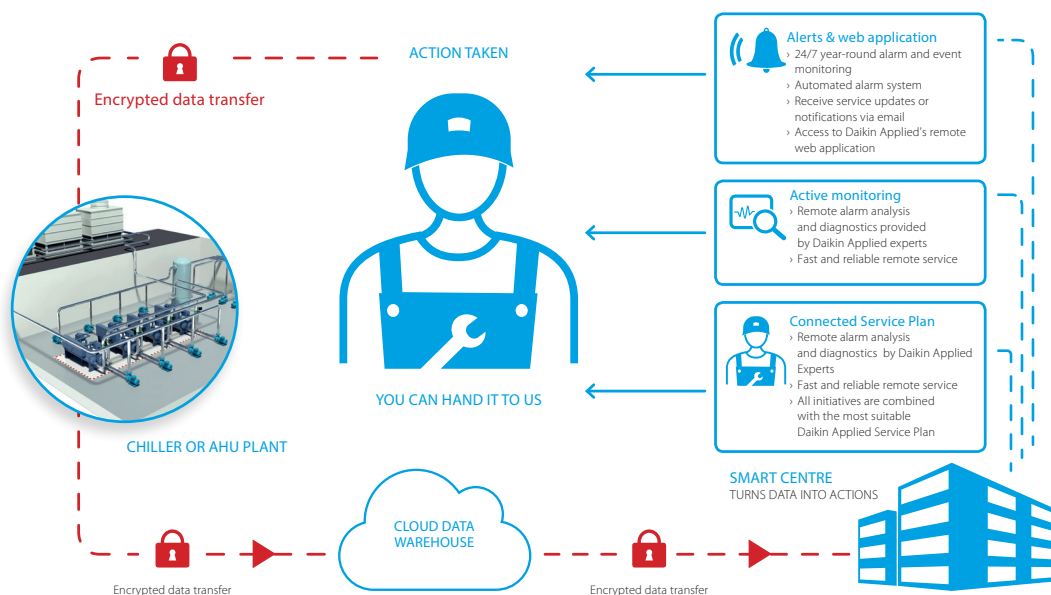
What is Daikin on Site?

Daikin on Site (DOS) is a web-based 24/7 remote monitoring system that collects complex operational data from the AHU or chiller control system.

Daikin's Smart Centre turns the operational data into useful information that allows the user to remotely monitor performance. It also allows Daikin professionals to remotely optimise and maintain the equipment.

Main benefits to DOS

- › Remote diagnostic support from Daikin experts
- › Enhanced reliability and reduced system downtime
- › Optimised energy efficiency and reduced operational costs over the systems lifetime
- › Insight into operational data to optimise the use of equipment via Trend Analysis



Cloud technology to hand

Remote maintenance allows your system to be accessed using any web-compatible devices any time and anywhere using cloud technology. Process data is collected automatically in real time and stored centrally.



Insight into operational data for enhanced control and reliability

Through enhanced operational data, Daikin engineers are able to remotely monitor system performance, run diagnostics and software upgrades. If an on-site visit is required, the service engineer will arrive already informed of the issue, reducing system downtime.



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 (MITM) attacks
- › CSA security attestation
- › Data privacy conforming to EU data privacy regulations
- › Geo-redundant data storage in Northern Europe

Service & Maintenance

Daikin Applied Service offers maintenance, repairs and support on ALL brands of HVAC systems and applied system solutions; covering air handling units, chillers, split air conditioning, VRF and heat pumps.

Service capabilities

- › Flexible maintenance contracts tailored to your business needs
- › Maintenance of ALL brands of HVAC equipment
- › 24/7 emergency call out service
- › Up to four hour response time
- › Qualified site service engineers (F-Gas Registered)
- › Remote monitoring with Daikin On Site (DOS)
- › On site training for front-line personnel
- › Tailored Service Level Agreement (SLA)
- › Full chiller running logs taken on every service visit
- › Comprehensive spare parts availability & support on all brands
- › Retrofitting & refurbishment

Benefits of a maintained system

- › Lower operation costs and energy usage
- › Extended life-cycle of assets
- › Fast and reliable remote diagnostics with Daikin On Site
- › Reduced equipment downtime and costly repairs
- › Improved indoor air quality



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.

For Product, Service & Maintenance,
Rental and Spares enquiries:



0345 565 2700



www.daikinapplied.uk



www.daikinrentalsolutions.uk



Follow us:
www.linkedin.com/company/daikin-applied-uk-ltd/



The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Applied (UK). Daikin Applied (UK) Ltd has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Applied (UK) Ltd explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication.



Daikin Applied (UK) Ltd is certified to ISO 9001 Quality Management System (QMS), ISO 14001 Environmental Management System (EMS), and ISO 45001 Occupational Health and Safety (OH&S) management systems. For the latest certificates, visit: www.daikinapplied.uk/documents-download

