DAIKIN

DAIKIN APPLIED (UK) LTD

Technically better...

EWAD TZ-B

Inverter Screw Chiller

High efficiency chiller for comfort and process cooling

AHUs

CHILLERS

PROJECTS

SERVICE

Why choose

Daikin Applied

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

- Optimum efficiency (at both partial and full loads).
- Lower noise level (down to just 90 dB(A)).
- Higher energy efficiency than ever before.
- Reduced running costs without compromising on climate comfort or performance.
- Integrated inverter featuring Variable Volume Ratio (VVR) technology and Direct Current (DC) motors.
- Premium features such as Micro-Channel condenser coils and precision electronic expansion valves.

EWAD TZ-B

High performance energy efficient comfort cooling

Why choose

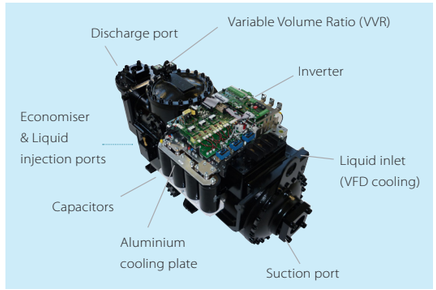
EWAD TZ-B chiller series

1 Top class efficiency:

EER up to 3.6
ESEER up to 5.5

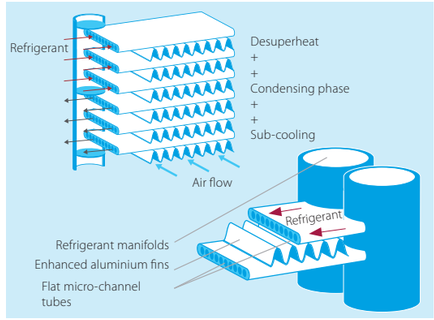
Best choice for every application

Rapid payback: 1 year for process cooling and 3 years for comfort cooling applications.



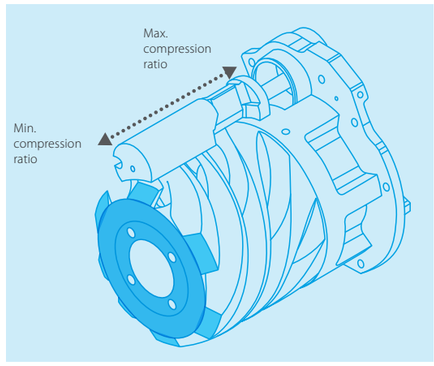
☑ New generation of Daikin Applied inverter screw compressors

› Integrated inverter, refrigerant cooled
› Variable volume ratio technology



☑ Micro-channel condenser coils

› High thermal efficiency
› Small volume, resulting in a small refrigerant charge
› Light & durable design
› Easy to clean



☑ 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.

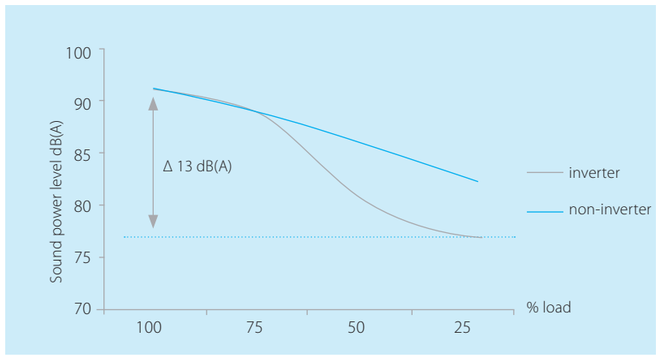
Providing a lifetime of comfort in

the most flexible way

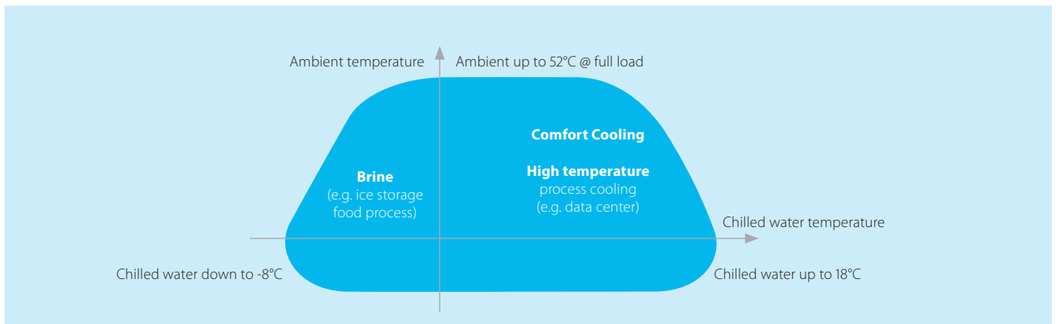
2 Silent operation – for distraction-free work

Nothing disrupts the workplace more than the sound of machinery. So our engineers have brought the sound power levels right down to just 90 dB(A)* at full load operating conditions - and even lower at part load conditions. Thanks to the special acoustic solutions on the compressor and a custom Daikin fan design with reduced noise impact and vibration, the EWAD TZ-B is ideal for even the most sound-sensitive environments.

*400 kW size



3 Application flexibility



4 Compact design

The EWAD TZ-B keeps installation space at a minimum, so it's ideal for both new and retrofit projects. In particular, the highly efficient compressor with its integrated inverter allows us to mount more compact heat exchangers in the frame and, combined with the integrated compact control panel, deliver more power from a reduced footprint.

5 Simple to install. Even simpler to maintain

Our chillers are wired at the factory and are also pre-commissioned, with the unit's software tuned and set points already established. They also integrate easily with existing building management systems. So, on site, all that is required is to plug the unit into the power supply, connect any pipes and wires, and switch the unit on.

6 Proven reliability

All our chillers and compressors are subjected to intensive performance, acoustic, endurance and vibration tests in our Daikin Applied factories and at selected job-sites, even at extreme working conditions. To ensure maximum reliability in every component – and the right, lifelong technical solution for your application.

7 Extensive options list

- **Rapid restart** - loss of cooling can be catastrophic, the chiller can restart within 30 seconds of the power being restored and reach full-load cooling capacity in less than 6 minutes
- **VFD pumps** - variable frequency pumps can be used to optimise the working efficiency of the chiller and thus maximise energy savings, also in primary only variable flow systems
- **Refrigerant leak detection** - rapid advanced warning of trouble, so you can avoid any environmentally harmful and potentially costly leaks in the refrigerant system. **BREEAM Compliant**
- **Heat recovery** - a plate to plate heat exchanger for each refrigerant circuit is installed in series to the condenser coil. 15 to 85 % of the total heat rejection of the chiller can be recovered
- **Partial heat recovery** - a plate to plate heat exchanger for each refrigerant circuit is installed in series to the air condenser coil. The plant manager controls the operation of the pump on the recovery circuit. 15 to 20 % of the total heat rejection of the chiller can be recovered
- **Smart sequencing capability** - master/slave sequencing function up to 4 units connected together for system optimisation and without the need of external control systems

Technical Specifications

Cooling only				EWAD-TZSRB	160	190	240	270	300	360	380	450	495	570	610	660	700	820	900	990	C10	C11
Cooling capacity	Nom.			kW	169	201	235	269	306	351	394	455	499	569	610	659	700	800	895	956	1,013	1,067
Power input	Cooling	Nom.		kW	56.5	69.9	83	89.9	108	119	140	164	175	199	218	240	250	247.8	294.1	316	335.6	358.9
EER					2.99	2.87	2.83	2.99	2.82	2.95	2.81	2.76	2.85	2.86	2.80	2.74	2.80	3.229	3.043	3.016	3.018	2.973
ESEER					4.37	4.46	4.30	4.40	4.42	4.50	4.44	4.43	4.47	4.53	4.61	4.60	4.68	4.8		4.85	4.83	4.98
Dimensions	Unit	Height		mm	2,483															2,482		
		Width		mm	2,258																	
		Depth		mm	2,283			3,183			4,083		4,983		5,883		6,783	7,783		8,820	9,591	10,461
Weight	Unit			kg	2,166	2,191	2,249	2,475	2,522	2,871	4,244	4,260	4,517	4,803	4,980	5,004	5,274	6,964	6,862	7,217	7,495	7,820
	Operation weight			kg	2,186	2,217	2,287	2,501	2,560	2,921	4,402	4,424	4,675	4,961	5,250	5,259	5,529	7,247	7,347	7,702	7,980	8,273
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube											
	Water flow rate	Cooling	Nom.	l/s	8.1	9.6	11.2	12.9	14.6	16.8	18.8	21.7	23.9	27.2	29.2	31.5	33.5	38.3	42.8	45.7	48.5	51
	Water pressure drop	Cooling	Nom.	kPa	25.0	19.3	15.4	32.6	25.2	25.9	25.8	32.2	43.9	55.5	38.6	32.2	35.9	52.1	36.3	41	45.6	36.3
	Water volume			l	20	26	37	26	37	50	158	164	158		270	255		283		485		453
Air heat exchanger	Type				Microchannel																	
Compressor	Type				Inverter driven single screw compressor																	
	Quantity				1						2											
Fan	Type				Direct propeller																	
	Quantity				4			6			8		10		12		14	16		18	20	22
	Air flow rate	Cooling	Nom.	l/s	15,109			22,664		30,219	29,650		36,920		44,475		51,745	59,299		66,570	74,124	81,394
	Speed			rpm	700																	
Sound power level	Cooling	Nom.		dBA	86	87		88			90				91		92	94		95		
Sound pressure level	Cooling	Nom.		dBA	67	68			69	70	70			70			71	73				
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~47													-18~45				
	Water side	Cooling	Min.~Max.	°CDB	-8~18													-15~20				
Refrigerant	Type/GWP				R-134a/1,430																	
	Circuits	Quantity			1						2											
Refrigerant charge	Per circuit			kg	27	29	33	38	41	52	29	29.5	34	37.5	38.5	41.5	45	52		58.5	65	71.5
				TCO_2eq	39	41	47	54	59	74	41	42	49	54	55	59	64	74.36		83.655	92.95	102.245
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400																	

Cooling only				EWAD-TZXRB	190	220	240	290	320	360	420	450	540	570	610	660	680	770	850	910	C10	C11
Cooling capacity	Nom.			kW	180	211	240	277	313	360	417	472	528	562	599	639	677	764	850	912	1,001	1,045
Power input	Cooling	Nom.		kW	52.1	63.2	72.5	83.9	100	109	132	145	164	181	192	203	220	226.5	266.8	275.4	303.1	320.6
EER					3.46	3.34	3.30		3.13	3.29	3.16	3.24	3.22	3.09	3.11	3.15	3.07	3.373	3.186	3.311	3.302	3.26
ESEER					5.11	5.06	4.99	5.09	5.13	5.12	5.09	4.99	5.04	5.05	5.13		5.07	5.09		5.13	5.15	5.22
Dimensions	Unit	Height		mm	2,483													2,482				
		Width		mm	2,258																	
		Depth		mm	3,183			4,083			4,983			5,883		6,783	7,683	7,783		8,820	9,591	10,461
Weight	Unit			kg	2,462	2,509	2,521	2,870			4,492	4,802	5,000	5,272	5,625			6,946	6,862	7,217	7,495	7,820
	Operation weight			kg	2,488	2,547	2,559	2,920			4,650	4,960	5,255	5,527	5,880			7,247	7,347	7,702	7,980	8,273
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube							Shell and tube				
	Water flow rate	Cooling	Nom.	l/s	8.6	10.1	11.5	13.2	15.0	17.2	20.0	22.6	25.3	26.9	28.6	30.5	32.4	36.6	40.7	43.6	47.9	50.0
	Water pressure drop	Cooling	Nom.	kPa	16.4	13.2	16.2	17.1	21.0	34.2	31.2	39.7	36.6	41.0	27.1	30.4	33.2	40.3	33.3	37.3	42.3	34.2
	Water volume			l	26	37		50			158			255				301		485		453
Air heat exchanger	Type				Microchannel																	
Compressor	Type				Inverter driven single screw compressor																	
	Quantity				1					2												
Fan	Type				Direct propeller																	
	Quantity				6			8		10	12			14	16			18	20	22		
	Air flow rate	Nom.		l/s	22,664			30,219		36,920	37,774	44,475		51,745	59,299			66,570	74,124	81,394		
	Speed			rpm	700																	
Sound power level	Cooling	Nom.		dBA	88			89		90		91				92	94	94	95			
Sound pressure level	Cooling	Nom.		dBA	68			69		70						71	73					
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~50																	
	Water side	Cooling	Min.~Max.	°CDB	-8~18													-15~20				
Refrigerant	Type / GWP				R-134a/1,430																	
	Circuits	Quantity			1					2												
Refrigerant charge	Per circuit			kg	36	39	40	51		32	37	40.0	44.5	48	52.00			58.5	65	71.5		
				TCO_2eq	51	56	57	73		46	53	57	64	69	74.36			83.65	92.95	102.245		
Piping connections	Evaporator water inlet/outlet (OD)				88.9mm		114.3mm			139.7mm		168.3mm			6inch"	8mm"						
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400																	

Cooling only				EWAD-TZPRB	190	220	240	290	300	350	420	495	550	620	720	820	950
Cooling capacity	Nom.			kW	187	218	247	279	317	382	437	505	543	620	717	833	950
Power input	Cooling	Nom.		kW	50.5	60.7	68.7	83.4	95.9	105	125	139	151.3	178.5	182.2	220.2	252.4
EER					3.71	3.59		3.35	3.31	3.64	3.49	3.62	3.59	3.473	3.935	3.783	3.764
ESEER					5.55	5.52	5.27	5.16	5.20	5.32	5.21	5.38	5.5	5.42	5.59	5.54	5.55
Dimensions	Unit	Height		mm	2,483								2,482				
		Width		mm	2,258												
		Depth		mm	4,083				4,983	5,883	6,783		8,820	9,591		10,461	11,233
Weight	Unit			kg	2,858		2,869	2,870	3,120	4,935	5,269	5,277	6,620	6,648	7,735	8,028	8,357
	Operation weight			kg	2,908		2,919	2,920	3,170	5,190	5,524	5,532	6,927	6,955	8,220	8,513	8,810
Water heat exchanger	Type				Plate heat exchanger					Single pass shell & tube							
	Water flow rate	Cooling	Nom.	l/s	9.0	10.4	11.8	13.3	15.2	18.3	20.9	24.2	26	29.6	34.3	39.8	45.4
	Water pressure drop	Cooling	Nom.	kPa	10.6	11.0	13.4	17.1	21.5	20.4	26.4	33.2	19.8	24.9	24.2	31.7	28.9
	Water volume			l	50					255			307		485		453
Air heat exchanger	Type				Microchannel												
Compressor	Type				Inverter driven single screw compressor												
	Quantity				1					2							
Fan	Type				Direct propeller												
	Quantity				8				10	12	14	16	18	20		22	24
	Air flow rate	Cooling	Nom.	l/s	29,610				37,013	43,369	50,423	57,826	64,879	72,282		79,336	86,738
	Speed			rpm	700												
Sound power level	Cooling	Nom.		dBA	87	88	87	88		89	90		94	95			
Sound pressure level	Cooling	Nom.		dBA	67	68	67	68			69		73				
Operation range	Air side	Cooling	Min.~Max.	°CDB	-18~52										-18~55		
	Water side	Cooling	Min.~Max.	°CDB	-8~18										-15~20		
Refrigerant	Type				R-134a												
	Circuits	Quantity			1					2							
Refrigerant charge	Per circuit			kg	49		50	51	58	38.5	43	47	52.5	57	65	71.5	78
				TCO_2eq	70		72	73	83	55	61	67	75.075	81.51	92.95	102.245	111.54
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/400												

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, VRV 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
- Retrofiting & 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

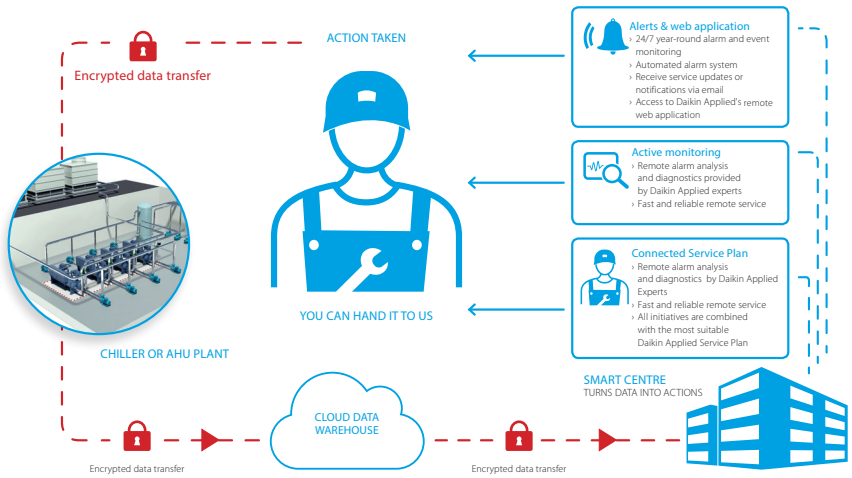
What is Daikin on Site?

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

0345 565 2700

www.daikinapplied.uk

www.daikinrentalsolutions.uk

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