

EWAD TZ-C

Inverter Screw Chiller

Top 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

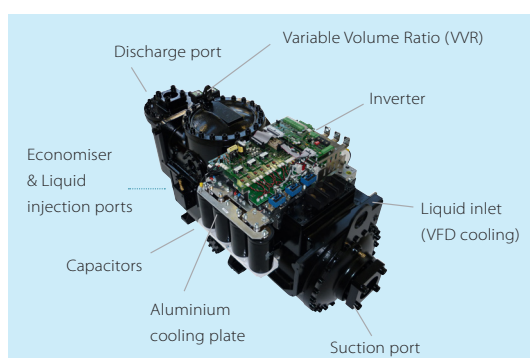
Why choose EWAD TZ-C chiller series

1 Top class efficiency:

EER up to 3.6
ESEER up to 5.5

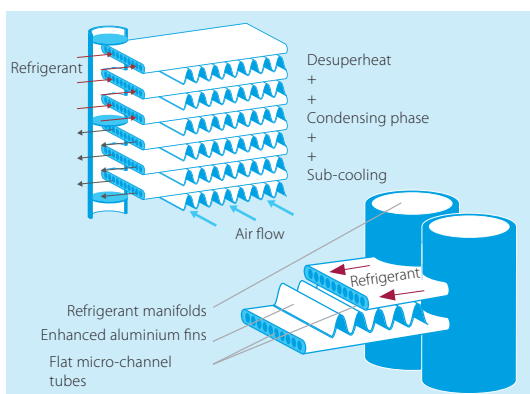
Best choice for every application

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



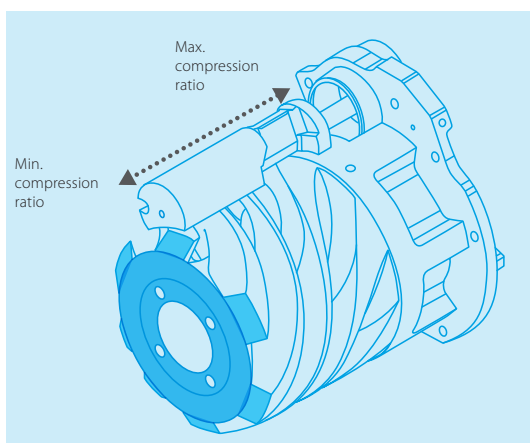
✓ New generation of Daikin Applied inverter screw compressors

- › 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.

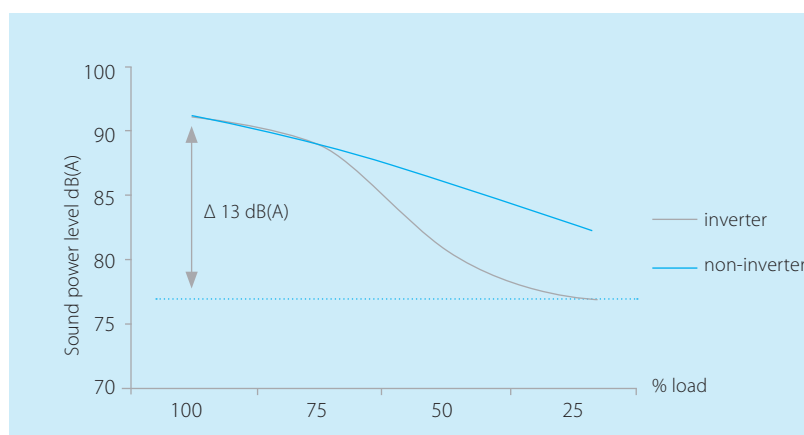
Daikin Applied compressors can modify their own geometry thanks to variable volume ratio (VVR). The volume ratio will change by moving the sliding valves. VVR changes the point at which the gas leaves the compressor, and therefore changes the pressures at discharge which will be optimised for any condition.



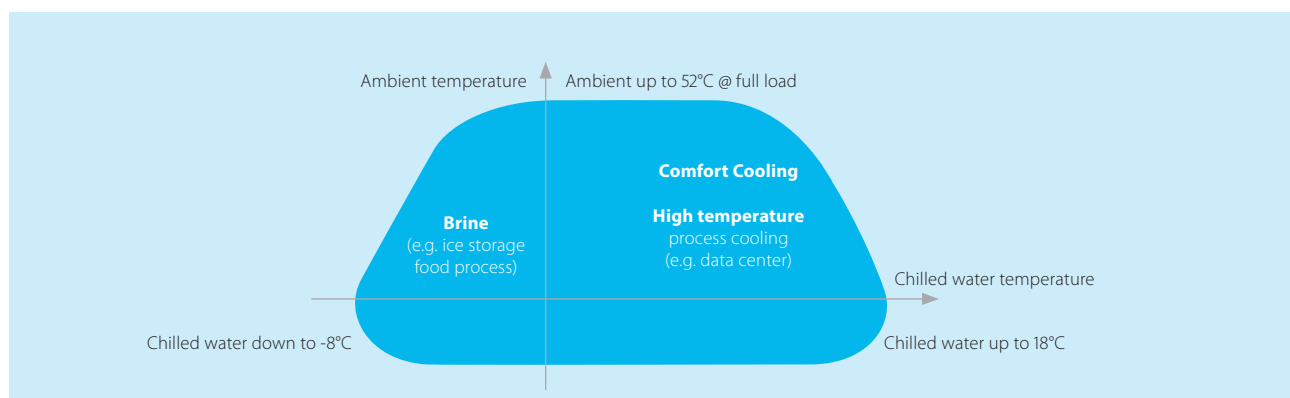
2 Silent operation – for distraction-free work

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





Providing a lifetime of comfort in the most flexible way

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																															
Fan	Quantity				1						2																									
	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			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 ₂ eq	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																											
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Fan	Quantity				1						2																					
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	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
Sound power level	Speed				700																											
	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																											
Refrigerant charge	Circuits	Quantity			1						2																					
	Per circuit				kg	36	39	40	51	32		37	40.0		44.5	48	52.00		58.5	65	71.5											
					TCO _{eq}	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																							

Why choose 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, VRV 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**

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.



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.



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.



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

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



0345 565 2700



www.daikinapplied.uk



www.daikinrentalsolutions.uk



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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

