DAIKIN

EWAD-TZ

Air cooled chiller with R-134a inverter driven screw compressor

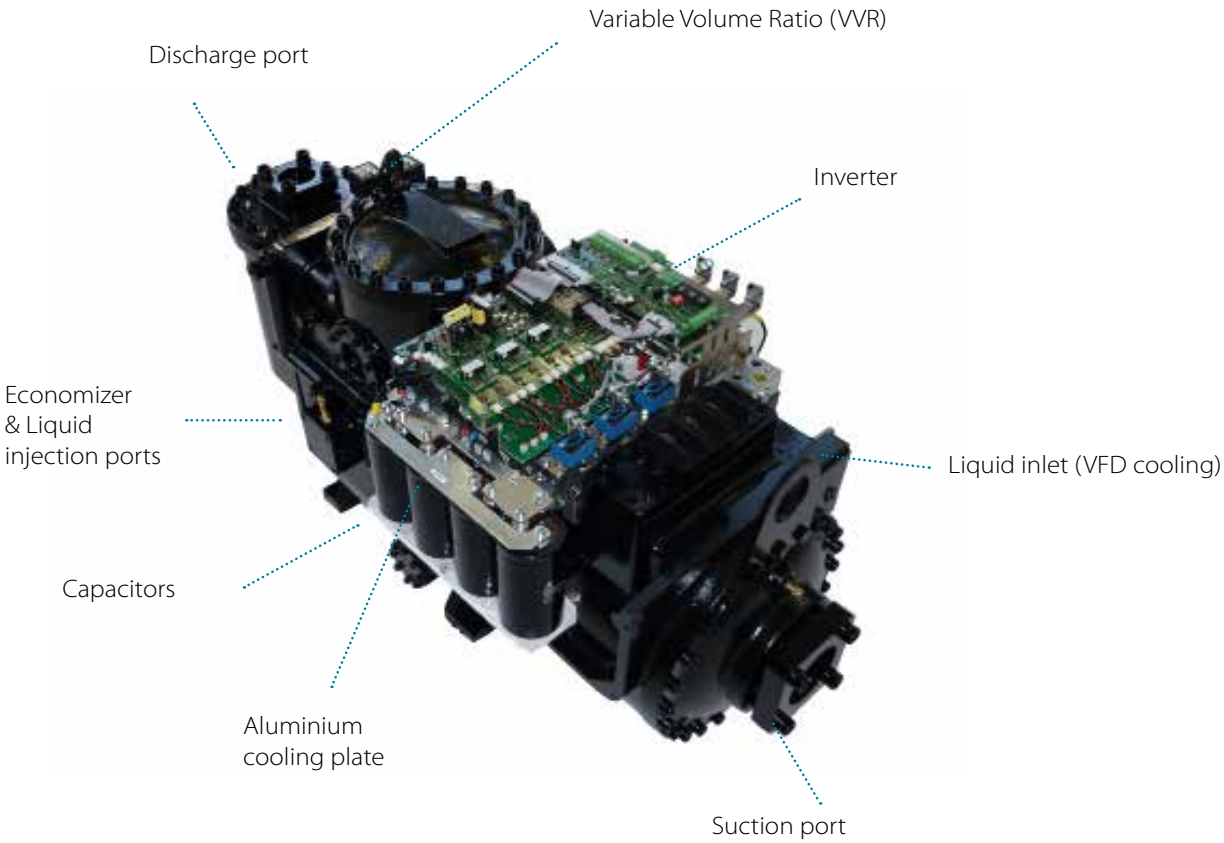
New inverter compressor technology

- ✓ Compressor and inverter both designed by Daikin
- ✓ Inverter integral to the compressor body
- ✓ Inverter refrigerant cooled
- ✓ VVR = Variable Volume Ratio for optimized efficiency
- ✓ Enlarged discharge port and suction side for reduced refrigerant pressure drop
- ✓ New optimized compressor motors

Today, Daikin is leading the way towards more efficient and cost-effective comfort solutions. All Daikin products - residential and commercial as well as industrial - are seasonal efficient, they all reduce energy and costs in a smart way.

Daikin chillers

The Daikin Group has a long worldwide experience in the design and manufacturing of screw chillers, enhancing the inverter technology for all those applications that require remarkable load variations during the year. Daikin chillers are assembled and factory tested before shipment, controls are pre-wired, adjusted and tested to offer almost a plug&play unit even for high cooling capacities. A special attention is also dedicated to provide the maximum serviceability so to ease the maintenance operations on site.



Leading-edge chiller solutions

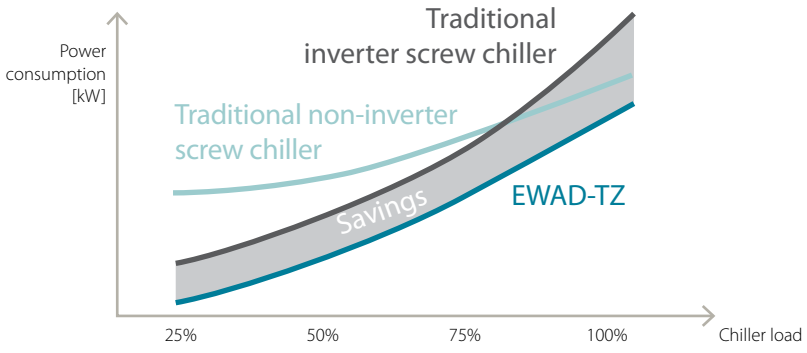
The new Daikin inverter screw compressor at the heart of the EWAD-TZ chiller range (170 to 710 kW) reflects Daikin's commitment to developing highly efficient systems without compromising on reliability and performance. By installing these advanced chillers, business owners can benefit from significant carbon savings and reduce the impact of rising energy prices.

→ Best full load and part load efficiencies

Daikin inverter screw chillers can deliver precise control of comfort and process cooling, particularly where there are high variations in load, so excellent part load efficiency is vital. EWAD-TZ is the first inverter driven unit to provide **top performances under all working conditions**: **incomparable efficiency at part load with ESEER up to 5.73* and top efficiency values at full load with EER up to 3.57*.**

These performances are achieved by:

- New **inverter compressor technology** optimized in every single aspect
  Inverter screw compressors run most efficiently at partial loads, using only the power necessary to match the load required. Traditional inverter driven units deliver high part load efficiencies but can suffer when running at full load. The new Daikin compressor eliminates this negative effect by employing variable volume ratio (VVR) technology combined with an inverter.
- New **control software with Dynamic Condensing Pressure Management and Innovative Economizers Control logic**. Thanks to this, the chiller controller adjusts the condensing pressure setpoint to minimize the overall chiller power input. This results in an efficiency optimization from using the most efficient working point (or set point) for the unit at any ambient temperature.



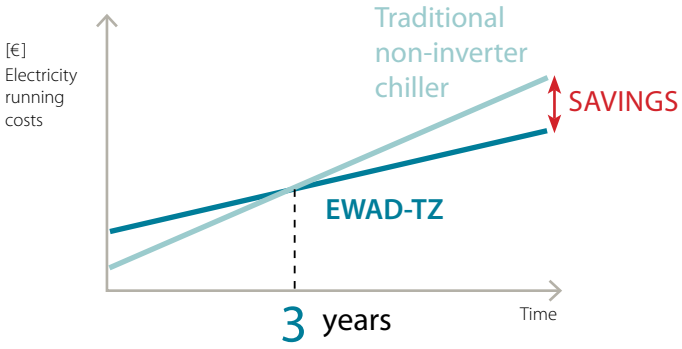
- **High efficiency components** as Daikin designed condenser coils, the latest technologies for shell & tube and plate to plate evaporators and in-house designed optimized fans technology.

* Values in compliance with Eurovent EN14511-3:2011, gross values ESEER up to 6.00 and EER up to 3.6 calculated at nominal conditions (water temperatures 12/7°C and condenser inlet air temperature 35°C)

→ Rapid payback relative to traditional non-inverter chiller

Comfort cooling application:

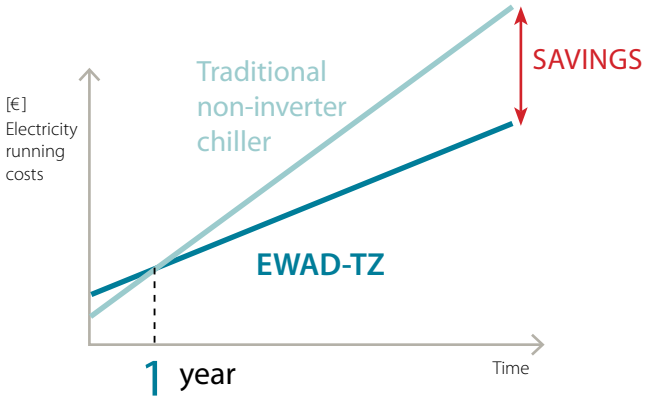
Return on investment within 3 years



Based on:
1,500 working hours/year
industrial electricity price = 0.17€/kWh
design conditions 12/7°C evaporator and 35°C ambient

Process cooling application:

Return on investment within 1 year



Based on:
5,000 working hours/year
industrial electricity price = 0.17€/kWh
design conditions 12/7°C evaporator and 35°C ambient

→ High performance combined with unrivaled reliability

Chillers and compressors have been subject to intensive testing in Daikin factories and in selected job-sites even at extreme working conditions. Performances, acoustic, endurance and vibration tests ensuring the best technical solution and the most enjoyable chiller experience.

→ Compact design

The compact design of EWAD-TZ means you get the equivalent cooling capacity of a non-inverter unit but with better efficiency and the same physical footprint

The new series has been designed to need the minimum installation space. In particular, the highly efficient compressor with its integral inverter allows us to mount more compact heat exchangers in the frame and, combined with the use of a compact control panel, more power is delivered from a reduced footprint.

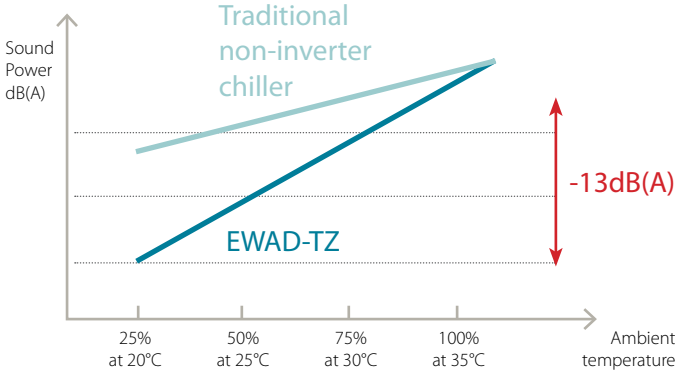
→ Extensive option list

Including:

- **Rapid restart**, this is ideal for those applications in which a loss of cooling would be critical to catastrophic, for example data centres, health care facilities, and process cooling applications. In these cases, should a power failure occur the chiller equipment must be restored as fast as possible to restore the cooling supply. The Daikin rapid restart option enables the chiller to restart within 30 seconds of the power being restored and reach full-load cooling capacity in less than 6 minutes.
- **Smart energy meter** this option, combined with the Modbus RS485 communication module, enables you to remotely monitor the energy usage in real time and adjust it accordingly
- **VFD pumps** - variable frequency pumps can be used to optimise the working efficiency of the chiller and thus maximise the energy savings.
- **Refrigerant leak detection** - a leak in the refrigerant system not only reduces the efficiency of the chiller but is environmentally harmful and potentially costly. Our refrigerant leak detector option will provide rapid advanced warning of trouble so that it it can be fixed before it causes loss.

→ Silent operation for sound sensitive projects

As nothing is more disturbing to our comfort than the sound of machinery, our new series has been specially engineered with sound sensitive environments in mind. Sound power levels at full load operating conditions are down to **86 dB(A)** and even lower at part load conditions by the use of a unique fan design incorporating variable fan velocity and additional vibration damping combined with a new inverter driven compressor with a variable frequency. All this results in the lowest possible sound levels, which makes this unit ideal for noise sensitive installations.



Cooling only << Platinum >> Premium efficiency*

EWAD-TZPS/PR					190	225	250	270	295	320	345	380	415	460	505	560	600	645
Cooling capacity	Nom.			kW	185	221	247	271	294	316	339	369	418	452	495	554	598	639
Power input	Cooling	Nom.		kW	52.7	64.9	69.2	77.4	85.1	94.4	102	110	123	134	146	168	183	200
Capacity control	Method				Stepless													
	Minimum capacity			%	33.3	28.6	33.3	30.8	28.6	26.7	18.2	16.7	15.4	14.3	16.7	15.4	14.3	13.3
EER					3.52	3.41	3.57	3.50	3.45	3.35	3.34	3.36	3.38	3.39	3.38	3.30	3.28	3.20
ESEER					5.50	5.45	5.73	5.66	5.65	5.62	5.46	5.47	5.59	5.61	5.67		5.62	5.53
Dimensions	Unit	HeightxWidthxDepth		mm	2,222x2,258x3,218	2,222x2,258x4,117						2,222x2,258x5,015		2,222x2,258x5,917			2,222x2,258x6,817	
Weight (PS)	Unit			kg	2,436	2,565	2,810	2,815	3,026	3,031	4,290	4,517	4,764	5,007	5,241	5,269	5,489	5,591
	Operation weight			kg	2,536	2,591	2,962	2,967	3,076	3,080	4,460	4,687	5,034	5,277	5,511	5,524	5,744	5,838
Weight (PR)	Unit			kg	2,533	2,662	2,908	2,913	3,124	3,128	4,485	4,712	4,960	5,203	5,436	5,465	5,685	5,786
	Operation weight			kg	2,633	2,688	3,060	3,065	3,173	3,178	4,655	4,882	5,230	5,473	5,706	5,720	5,940	6,033
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube							
	Water volume			l	24	26	39		50		170			270			255	
	Nominal water flow	Cooling		l/s	8.9	10.6	11.8	13.0	14.0	15.1	16.2	17.7	20.0	21.6	23.7	26.5	28.7	30.6
	Nominal water pressure drop	Cooling	Total	kPa	20	23	18	20	18	21	34	41	30	35	26	39	44	50
Compressor	Type				Inverter driven single screw compressor													
	Quantity				1						2							
Fan	Type				Direct propeller													
	Quantity				6		8				10			12			14	
Sound power level (PS)	Cooling	Nom.		dBA	96			97			99						100	
Sound power level (PR)	Cooling	Nom.		dBA	87				88		89		90					
Refrigerant	Type				R-134a													
	Circuits	Quantity			1						2							

Cooling only << Gold >> High efficiency*

EWAD-TZXS/XR					180	220	265	290	330	360	380	410	440	490	540	580	630	690
Cooling capacity	Nom.			kW	180	216	265	288	332	360	366	407	441	490	536	577	629	682
Power input	Cooling	Nom.		kW	56.1	68.4	84.6	89.8	106	113	116	128	139	156	169	185	201	216
Capacity control	Method				Stepless													
	Minimum capacity			%	33.3	28.6	30.8	28.6	25.0	23.5	16.7	15.4	14.3	16.7	15.4	14.3	13.3	12.5
EER					3.20	3.16	3.14	3.21	3.14	3.18	3.16	3.17		3.15	3.17	3.12		3.16
ESEER					5.02	5.09	5.10	5.16	5.23		5.02	5.10	5.05	5.02	5.18	5.15	5.12	
Dimensions	Unit	HeightxWidthxDepth		mm	2,270x1,224x3,361	2,270x1,224x5,261		2,222x2,258x3,218	2,222x2,258x4,117				2,222x2,258x5,015			2,222x2,258x5,917		2,222x2,258x6,817
Weight (XS)	Unit			kg	2,060	2,304	2,434	2,582	2,986	3,039	4,247	4,321		4,706	4,882	5,185	5,275	5,588
	Operation weight			kg	2,081	2,404	2,586	2,734	3,035	3,088	4,417	4,479		4,864	5,152	5,455	5,537	5,843
Weight (XR)	Unit			kg	2,158	2,402	2,532	2,679	3,084	3,136	4,442	4,516		4,901	5,077	5,381	5,471	5,783
	Operation weight			kg	2,178	2,502	2,684	2,831	3,133	3,186	4,612	4,674		5,059	5,347	5,651	5,733	6,038
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube							
	Water volume			l	20	24	39		50		170	158		270			262	255
	Nominal water flow	Cooling		l/s	8.6	10.4	12.7	13.8	15.9	17.2	17.5	19.5	21.1	23.5	25.7	27.6	30.1	32.7
	Nominal water pressure drop	Cooling	Total	kPa	24	25	19	22	23	26	40	41	48	56	30	34	44	57
Compressor	Type				Inverter driven single screw compressor													
	Quantity				1						2							
Fan	Type				Direct propeller													
	Quantity				4	5		6	8			10			12		14	
Sound power level (XS)	Cooling	Nom.		dBA	96	97	96	97	98		99		100	99		100		101
Sound power level (XR)	Cooling	Nom.		dBA	89				91		92			93	94	100		101
Refrigerant	Type				R-134a													
	Circuits	Quantity			1						2							

Cooling only << Silver >> Standard efficiency*

EWAD-TZSS/SR					170	205	235	270	320	365	370	415	465	500	540	590	640	710
Cooling capacity	Nom.			kW	170	205	229	268	317	365	366	412	463	499	536	589	640	710
Power input	Cooling	Nom.		kW	62.2	72.5	79.1	96.0	116	133	134	145	164	178	190	217	235	267
Capacity control	Method				Stepless													
	Minimum capacity			%	33.3	28.6	33.3	28.6	25.0	22.2	15.4	14.3	16.7	15.4	14.3	13.3	12.5	11.1
EER					2.73	2.83	2.90	2.79		2.74		2.85	2.83	2.80	2.82	2.72	2.73	2.66
ESEER					4.48	4.61	4.67	4.64	4.67	4.65	4.61	4.73	4.81	4.82	4.75	4.79	4.75	4.71
Dimensions	Unit	HeightxWidthxDepth		mm	2,270x1,224x3,361	2,270x1,224x4,361		2,270x1,224x5,261		2,270x2,258x3,218	2,222x2,258x3,218	2,222x2,258x4,117			2,222x2,258x5,015			2,222x2,258x5,917
Weight (SS)	Unit			kg	1,898	1,977	2,083	2,478	2,444	2,756	3,906	4,256	4,426	4,481	4,709	4,892	4,969	5,291
	Operation weight			kg	1,915	2,077	2,183	2,504	2,596	2,806	3,995	4,426	4,590	4,645	4,873	5,162	5,231	5,553
Weight (SR)	Unit			kg	1,996	2,075	2,181	2,576	2,541	2,854	4,101	4,452	4,621	4,676	4,904	5,087	5,164	5,486
	Operation weight			kg	2,013	2,174	2,280	2,602	2,693	2,903	4,190	4,622	4,785	4,840	5,068	5,357	5,426	5,748
Water heat exchanger	Type				Plate heat exchanger						Single pass shell & tube							
	Water volume			l	17	24		26	39	50	89	170		164		270	262	
	Nominal water flow	Cooling		l/s	8.1	9.8	11.0	12.8	15.1	17.4	17.5	19.7	22.1	23.9	25.6	28.2	30.6	34.0
	Nominal water pressure drop	Cooling	Total	kPa	25	24	29	33	26	27	36	50	33	37	43	36	47	57
Compressor	Type				Inverter driven single screw compressor													
	Quantity				1						2							
Fan	Type				Direct propeller													
	Quantity				3	4		5		6		8			10			12
Sound power level (SS)	Cooling	Nom.		dBA	96	97	96	97	98	101	99	100	99		100		101	104
Sound power level (SR)	Cooling	Nom.		dBA	89				90		92					93		95
Refrigerant	Type				R-134a													
	Circuits	Quantity			1						2							

*PR, XR & SR: reduced sound version; PS, XS & SS: standard sound version Values in compliance with EN14511-3:2011

Daikin Europe N.V. participates in the Eurovent Certification programme for Liquid Chilling Packages (LCP), Air handling units (AHU) and Fan coil units (FCU), Check ongoing validity of certificate online: www.eurovent-certification.com or using: www.certiflash.com

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