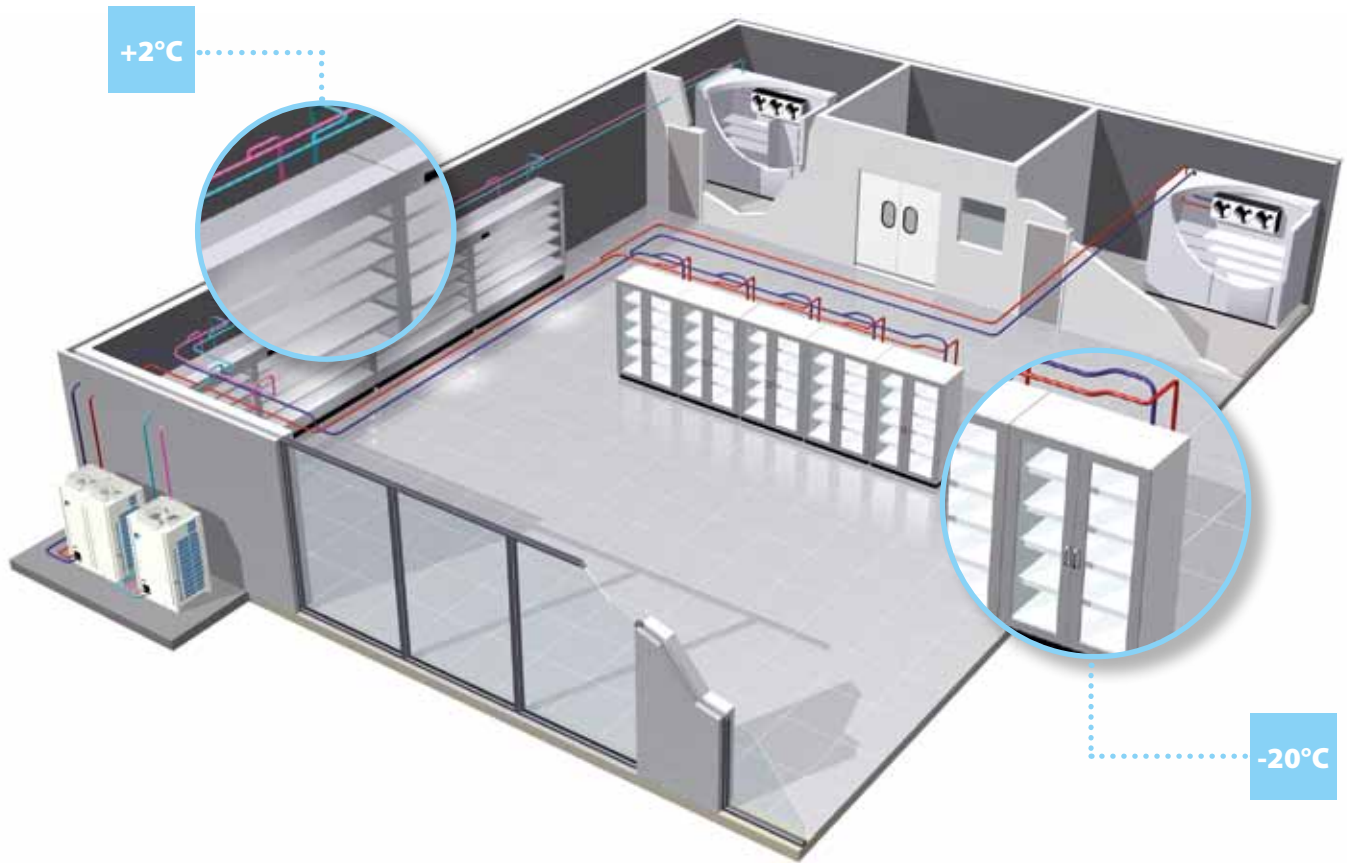


ZEAS Condensing Units

Refrigeration Condensing units

- » Unified model for low and medium temperature refrigeration
- » Multi connection possibility
- » High energy efficiency
- » Low sound level
- » VRV technology for refrigeration





With this new range of inverter controlled condensing units Daikin expands its range of specified solutions with unified models for medium and low temperature refrigeration applications.

The ZEAS condensing units are the perfect solution for applications with fluctuating loads and high energy efficiency requirements such as supermarkets, blast coolers and freezers, cold storage, restaurants, petrol station shops, etc.

On top of that their reduced footprint and low sound emissions allow installation in virtually any available place.

Main benefits

- › Small footprint
- › Fully equipped, easy to install solution
- › Low operating sound level
- › DC inverter scroll compressor with economiser function for high energy efficiency and reliable performance
- › VRV (Variable Refrigerant Volume) technology for flexible application range

Installer benefits

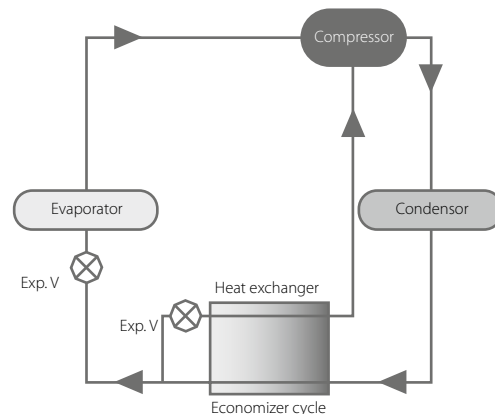
- › Applicable for applications with variable load conditions
- › Factory tested and pre-programmed for quick and easy installation and commissioning
- › Increased installation flexibility thanks to limited dimensions
- › Parts and support available throughout the Daikin network

End-user benefits

- › Reduced CO₂ emissions thanks to the use of R-410A as a refrigerant and low energy consumption
- › Low sound level including 'night mode' operation
- › Strong anti-corrosion housing for long life, even in harsh environmental conditions
- › Fully packaged unit at a very competitive price

Scroll compressor with DC inverter technology and economizer function

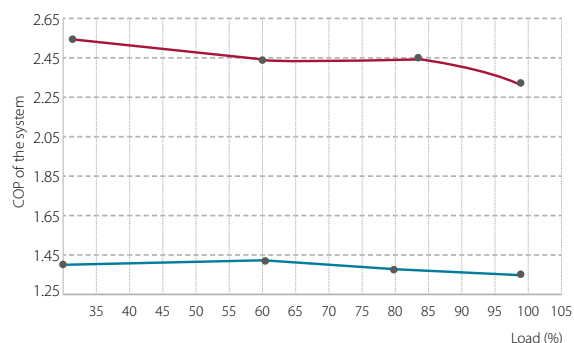
- > The reluctance brushless DC motor provides significant increases in efficiency compared to conventional AC inverter motors, simultaneously using 2 different forms of torque (normal and reluctance torque) to produce extra power from small electric currents.
- > The motor comprises powerful neodymium magnets, that efficiently generate high torque. These magnets make a major contribution to the energy saving characteristics of the motor.
- > The unit is equipped with an economizer function. The refrigeration capacity to power consumption ratio improves significantly versus standard systems.



Good part load performance

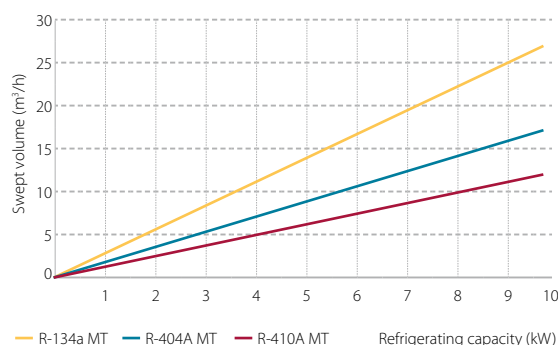
Thanks to the characteristics of the DC inverter scroll compressor the performance and efficiency of the unit remains very high even in part load operation.

Low temperature applications:	—	Medium temperature application:	—
Evaporation	= -30°C	Evaporation	= -10°C
Ambient temperature	= 32°C	Ambient temperature	= 32°C
Superheat	= 10K	Superheat	= 10K



R-410A refrigerant

The ZEAS condensing units use R-410A as a refrigerant. R-410A has a lower global warming potential than R-404A and zero ozone depletion potential. R-410A refrigerant also has a larger heat transportation capacity than R-404A and R-134a. This leads to more compact components and reduced piping sizes for an identical capacity and less influence of long piping lengths.



Refrigeration control systems

Monitoring system

Modbus 2lines RS-485

Communication box

Powerful interface providing 2 way communication possibility with third party BMS / Monitoring systems, via MOD - BUS. Allows remote access to all operating parameters, while in the same time provides the possibility to control the refrigeration units from a distance. Setting of target evaporating temperature, Error code reset, On and off units and Low Noise operation setting can be executed remotely.

Diagnostic tool

Handy tool providing easy access to main operating data, error codes, error history and main PCB settings.

Service checker Type III

Powerful service tool allowing monitoring and logging of all operating parameters providing all necessary information for efficient and effective troubleshooting.

Specifications

INDOOR UNIT				LREQ5BY1	LREQ6BY1	LREQ8BY1	LREQ10BY1	LREQ12BY1	LREQ15BY1	LREQ20BY1	
Cooling capacity*	Nom.		kW	12.5	15.2	19.8	23.8	26.5	33.9	37.9	
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x635x765			1,680x930x765		1,680x1,240x765		
Weight	Unit		kg	166			242		331	337	
Heat exchanger	Type			Cross fin coil							
Fan	Type			Propeller fan							
	Quantity			1					2		
	Air flow rate	Cooling	Nom.	m ³ /min	95	102	171	179	191	230	240
Fan motor	Output			kW	0.35			0.75		0.35 + 0.35	0.75+0.75
	Drive				Direct drive						
Compressor	Type				Hermetically sealed scroll compressor						
	Piston displacement			m ³ /h	11.18	13.85	19.68	23.36	25.27	32.24	35.8
	Speed			rpm	5,280	6,540	4,320+2,900	6,060+2,900	6,960+2,900	5,280+2,900+2,900	6,960+2,900+2,900
	Output			kW	2.6	3.2	2.1 + 3.6	3.0 + 3.6	3.4 + 3.6	2.6 + 3.6 + 3.6	3.4 + 3.6 + 3.6
	Starting method				Direct on line (inverter driven)						
Operation range	Evaporator	Min.~Max.		°CDB	-45~10						
	Ambient temperature			°C	-20~43						
Refrigerant	Type				R-410A						
	Charge			kg	5.2			7.9		11.5	
	Control				Electronic expansion valve						
Refrigerant oil	Type				Daphne FVC68D						
	Charged volume			l	1.7 / 2.5	1.7 / 2.5	1.7 / 2.1 / 3.0	1.7 / 2.1 / 3.0	1.7 / 2.1 / 4.0	1.7 / 2.1 / 4.0	
Piping connections	Liquid	50m or less			ø 9.5 C1220T (Braze connection)				ø 12.7 C1220T (Braze connection)		
		50~130m			ø 9.5 C1220T (Braze connection)			ø 12.7 C1220T (Braze connection)			
	Gas				ø 22.2 C1220T (Braze connection)				ø 28.6 C1220T (Braze connection)		
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/380-415						
Voltage range	Min.			%	-10						
	Max.			%	10						
Current	Nominal running current (RLA) - 50Hz	Compressor	Cooling	A	7.1	9.2	5.3 + 7.5	7.4 + 7.9	9.8 + 8.3	7.0 + 8.2 + 8.2	9.5 + 8.4 + 8.4
Current - 50Hz	Starting current (MSC)			A	-			74		75	
	Minimum Ssc value			kVa	-			655		899	
	Minimum circuit amps (MCA)			A	12.8	13.7	19.3	22.0	24.0	31.4	35.0
	Maximum fuse amps (MFA)			A	15			25		40	
	Total overcurrent amps (TOCA)			A	15.6			31.5		48.3	
	Full load amps (FLA) Fan motor			A	0.4			0.9		0.4 + 0.4	0.7 + 0.7

*Operation conditions of outdoor unit: Te = -10°C, outdoor temperature +32°C, suction SH10°C

INDOOR UNIT				*LREQ30BY1	*LREQ40BY1
Cooling capacity ¹	Nom.		kW	64	73.5
Cooling capacity ²	Nom.		kW	26	28.5
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x2,680x765	
Weight	Unit		kg	333 x 2	
Operation range	Evaporator	Min.~Max.	°CDB	-45~10	
	Ambient temperature		°C	-20~43	
Compressor number				2 inv + 4 non-inv	
Fan motor	Output		kW	(0.35x2)x2	
Maximum piping length			m	Te = -45°C~-20°C: 100m Te = -20°C~+10°C: 130m	
Piping connections	Liquid			ø 19,05	
	Gas			ø 41,28	
Power supply				380~415V, 3phase, 50Hz	
Voltage range (Min~Max)			%	-10~10	
Operation sound ³			dB	65	66
Refrigerant	Charge		kg	23	
Receiver volume			l	27	

(1) Te -10°C / Tamb +32°C, (2) Te -35°C / Tamb +32°C, (3) Sound pressure data: outdoor temperature 32°C, at 1m in front of unit, at 1,5m height

*Note: grey cells contain preliminary data



Daikin's unique position as a manufacturer of air conditioning equipment, compressors and refrigerants has led to its close involvement in environmental issues. For several years Daikin has had the intention to become a leader in the provision of products that have limited impact on the environment. This challenge demands the eco design and development of a wide range of products and an energy management system, resulting in energy conservation and a reduction of waste.



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