



Air Conditioning

Danfoss compressors

For comfort and precise cooling

With scroll and reciprocating technologies

Over 30%

energy savings

with Danfoss inverter scrolls accelerate ROI

2-40 TR

with one supplier

simplifies development and reduces costs

Driving true customer satisfaction and providing solutions within climate and energy

Danfoss Commercial Compressors operates globally as a leading technology provider of compressors and automated solutions to the refrigeration and air conditioning industry. Our products include fixed and inverter compressors with scroll and reciprocating technologies as well as condensing units, all engineered using the most innovative technologies available on the global market.

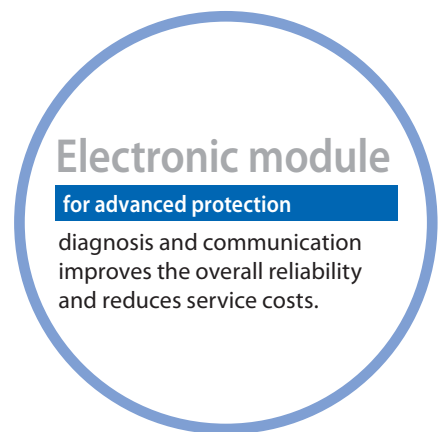
We are committed to providing service and support worldwide through a collaborative approach that enables stronger partnerships and fast, effective responses. Our teams have the comprehensive knowledge of markets and applications that enables us to engineer the right solutions and to back up those solutions with superior support. Through proven and reliable energy-efficient products and effective processes, we help our customers reduce total value chain costs. All compressors engineered by us are dedicated to specific applications and designed to increase efficiency, improve margins and drive differentiation in the market.

Danfoss focuses on enhancing comfort, efficiency, and sustainability for residential, light commercial, commercial and industrial applications with:

- The widest product range in inverter technology: from 2.5 to 26TR, there is always a Danfoss prequalified compressor and drive available to provide stunning efficiency
- Excellent *energy efficiency* across the complete scroll range, offering performance that ranks among the best in the market
- *Low ODP* refrigerants with a complete compressor range using R410A
- Compact solutions for *smaller footprints*
- Reduced *sound levels*, for greater comfort in residential, commercial areas.

In addition, our clients can benefit from a large number of innovations and patents including:

- A new 40-ton compressor with integrated electronics and remote control and diagnostics, for improved motor protection
- Reduced installation costs with fast connections thanks to pre-equipped compressors for different manifold configurations.



About 1500 employees on the 5 continents contribute to compressor design and manufacturing with Danfoss plants located close to customers in the USA, France and China.

Compressor solutions for air conditioning

	R410A	R134a	R407C	R22	Technology
Light commercial A/C Residential A/C	HRH HLH HLJ VRJ*		HRP HLP	HRM HLM	Scroll
		MTZ VTZ*		MT	Reciprocating
Light commercial A/C Commercial A/C	HLH HLJ HCJ SH VSH* VZH*		HLP HCP	HLM HCM	Scroll
		SZ		SM SY	

* inverter technology

2-26 TR

Danfoss inverter scrolls

help drive
differentiation in the
market



Danfoss scroll compressors

Green, efficient and reliable

The continuous compression inherent in scroll technology makes it the most widely used compression technology in air conditioning and heat pump applications by providing naturally *high efficiency and limiting vibration*

and noise levels. For several decades, Danfoss scrolls have offered all the benefits of scroll technology making Danfoss a leading partner for its customers.

The *smart design* provides *reliable, compact* solutions with low sound

levels. The ranges are designed to operate with the greenest refrigerants. Quick electrical connector plugs and equipment simplify the *mounting and servicing.*

Take advantage of everything Danfoss offers you to drive differentiation!



Scrolls for light commercial and commercial applications

By combining an in-depth understanding of customer needs with continuous investment in product technology Danfoss is able to offer you the H and S series, which comprise a *7.5-40TR* industry-leading range of high efficiency scroll compressors optimized for large rooftop and chiller applications.

Flexible and efficient

The performance of air conditioning units depends on their ability to adapt to variations in the climate over the year and to temperature differences during the day.

Consequently the higher efficiency of Danfoss scroll compressors can make a vital difference.

The adaptability of the S-Series also makes it easier for you to reduce the number of items held in stock.

Environmental compliance

Danfoss leads the industry and sets standards by going beyond current legal regulations and removing environmentally harmful substances from its products. Danfoss is striving to be 100% RoHS compliant and offers acoustic performance that is among the best in the market to respect the environment in residential areas.

Danfoss helps you provide your customers with sustainable solutions without compromising on reliability, endurance and performance.

WSH

Optimized for high efficiency A/C systems (low condensing temperatures)

- From 7.5 to 15 TR
- Increase COP by up to 5%
- Quick electrical connector plug avoids miswiring connections



New 2012

SH-25TR compresses your carbon footprint

Unique benefits of the SH295

- Industry's smallest foot print in its size
- 25% lighter compared to a standard 25HP compressor
- Improved energy efficiency: new model achieves 3.25W/W Coefficient of Performance



New 2012

Innovative 40-ton compressor with new electronic module

Unique benefits of the SH485

- New electronic module enhances system reliability and simplifies servicing
- Unique Intermediate Discharge Valve (IDV) design boosts part load efficiency by up to 26%
- Innovative patented gas flow path helps maintain uniform motor winding temperature, thus enhancing overall reliability



New 2012



5%

higher COP

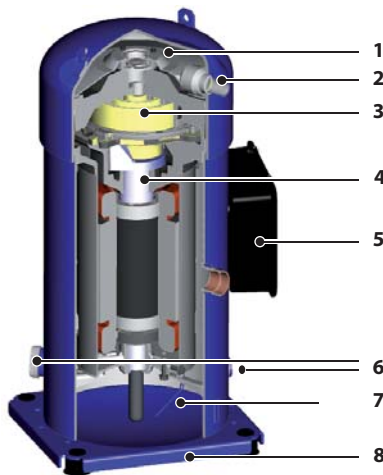
meets the most demanding energy standards and provides great savings on running costs

over 15%

savings

on installation costs with fewer circuits, reduced piping and space usage in your system thanks to the new 40TR compressor

Featured for immediate benefits



S-Series compressor design

1. Improved energy efficiency and reduced sound levels with the intermediate cap design feature.
2. Greater reliability with the internal non-return valve, which avoids refrigerant migration from the high pressure side.
3. Quieter and more efficient operation with “no contact – no wear” scroll design for reduced friction.
4. Environmentally-friendly lead-free bearings.
5. Highly efficient and reliable protection against overheating, overloading, phase loss and phase order with specific electronic module protection.
6. Prepared for manifolding with oil sight glass and oil equalizer.
7. Easy maintenance with oil drain tube.
8. The Surface Sump Heater provides thermal and acoustic insulation, thus higher efficiency and greater noise reduction from 2 to 4 dB(A).

Danfoss Surface Sump Heater

A patented heater designed to:

- Reduce sensitivity to ambient air temperature and wind speed surrounding the compressor
- Enhance heat transfer with larger heater surface area and area of contact with the compressor
- Improve system efficiency through uniform heating and lower power consumption
- Attenuate the sound level by 2 to 4 dB(A) depending on the size
- Reduce power input per heater by 25% to 38% compared to a standard belt type heater

S-series: large operating envelope makes the compressor suitable for more applications and provides greater efficiency



Leading the way in variable speed solutions with Danfoss inverter scroll technology

85% of traditional commercial air conditioning installations are oversized as they have to be designed to handle peak load conditions. Danfoss offers commercial air conditioning manufacturers the means to meet

today's demands for increased energy efficiency. With lower noise, increased system reliability, and improved comfort. **Boost your packaged air conditioning, chiller, rooftop, VRF, split system or ducted system** with Danfoss inverter

compressors ranging from **3 to 26 TR with a single compressor**. Danfoss variable speed solutions are the first high-capacity R-410A inverter scroll compressors for air conditioning, process cooling and heat pumps.

More efficiency, more capacity, more simplicity with Danfoss inverter scrolls:



Advanced efficiency

Danfoss inverter scrolls deliver a solution that improves energy savings by more than 30% compared with a conventional system using a fixed-speed compressor.



Simplicity for faster time to market

The pre-qualified package, including the compressor and the drive, is fully integrated to get your product to market faster. In addition, servicing and maintenance are much easier and more cost effective.



Precise cooling and humidity control

Whether in process cooling or in commercial and residential areas, tight temperature control means greater comfort and safer processes. It's both easy and cost efficient thanks to stepless modulation. This also results in the right evaporating temperature to better control your humidity rate.



Quieter environment

A system using variable-speed components will have a much better sound performance throughout the year. Because the fan, the compressor, the blower as well as the pump speeds will be lower most of the time. During the night, when loads are typically lowest, a Danfoss variable speed compressor runs at its quietest speed.



Improved reliability through drive protection

A balanced, continuous compressor operation means less cycling and system stress. This leads to higher reliability and a longer lifetime.



True benefits for the different stakeholders:

For OEMs:

- The pre-qualified package and Danfoss technical support reduce the time needed to design and qualify your system.
- Greater differentiation in the range and energy savings open up more business opportunities.
- Elimination of components in the unit where the Danfoss inverter substitutes for traditional components (crankcase heater, contactor, controller simplification) reduces installation costs.
- Reliability enhancement reduces warranty costs.

For design consultants:

- Ability to select and promote energy saving solutions to the end-user leads to enhanced project success.
- Energy savings help in meeting ever more demanding project specifications.
- Innovative technology helps to build a good reputation in the market.
- Reduced down time and improved reliability are key benefits in specifying systems according to end-user requirements.

For end-users:

- Advanced efficiency and energy savings reduce the electricity bills.
- Precise and smooth temperature control increases comfort.
- More reliable process control in precision cooling or agriculture due to tight temperature control reduces losses of goods.
- Reliability improves peace of mind and lowers down time.
- Attenuated sound level during part load conditions, often at night.

VZH: 2nd generation of variable-speed compressors



Advanced efficiency, precise cooling Design an HVAC system like no other

Unique features:

- Largest cooling capacity for a hermetic inverter compressor
- Up to 52 tons in tandem configuration
- Two optimized ranges for low and high pressure ratios
- Permanent magnet motors for even more efficiency
- 4:1 turndown ratio

over 30%

energy savings

with Danfoss inverter scrolls accelerates ROI

www.inverterscroll.danfoss.com

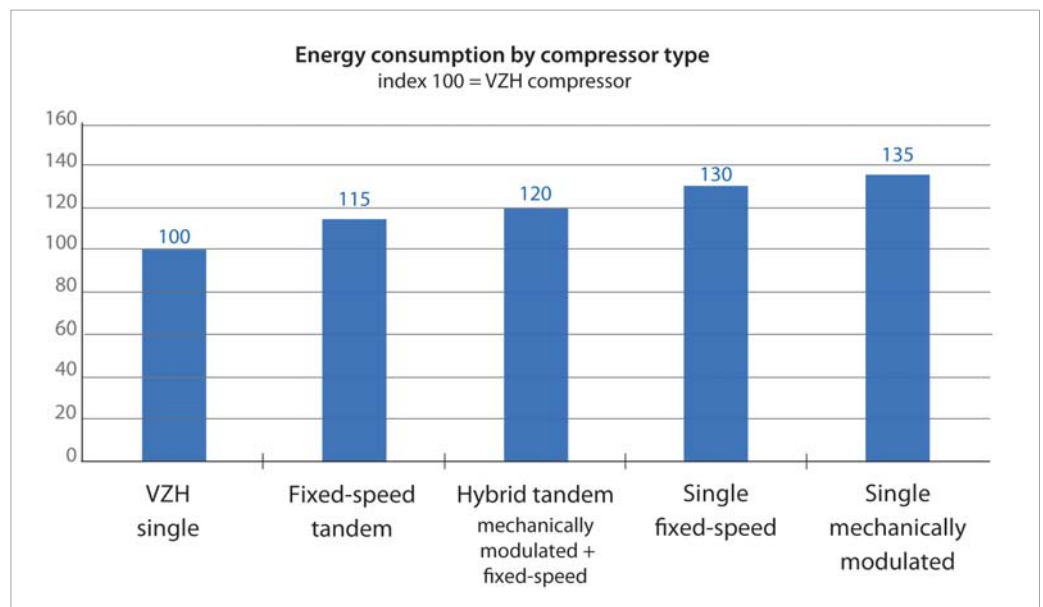
Energy consumption by compressor type

Average consumption index based on simulations for 10-30TR compressors used in applications with low pressure ratio (rooftop) -Source Danfoss HVAC tool.

Index 100 = VZH energy consumption.

Example: energy consumption of a fixed speed tandem will be 15% higher than the one of a VZH compressor providing the same cooling capacity.

Unmatched performance really makes the difference.



Scrolls for light commercial and residential applications

Danfoss scrolls are designed for excellence in performance, silence and endurance. They feature compressors that are among the quietest, most

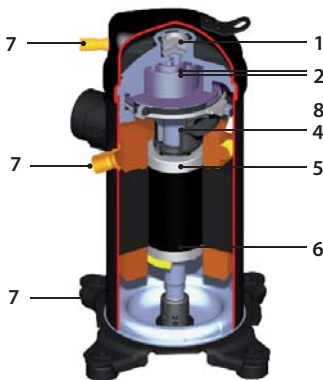
efficient, reliable and available on the market.

Ranging from 2.5 to 7TR, the universal dimension, footprint and connections of

the H series make it the natural choice for greater comfort in existing or new residences.



Featured for immediate benefits



H-Series compressor design

- 1) *Discharge check valve*: no reverse rotation hence no shutdown noise
- 2) *Radial scroll compliance*: good resistance to liquid flood back
- 3) *Axial scroll compliance*: low starting current
- 4) *Oil injection*: good lubrication at fierce conditions
- 5) *Lead-free bearings*: high reliability even with low lubrication
- 6) *Patented internal protection combined with HOOP* thermal valve*: excellent reliability

3dB(A)

lower sound level

with no start and shutdown noise. The best solution for residential applications!

- 7) *Standard dimensions and tubing*: ideal for both new installations and replacement markets

*HOOP: Hot Oil Over Protector

VRJ inverter scrolls

Designed for residential ducted systems: a fully integrated compressor, variable speed frequency drive, electronic expansion valve and controller provide exceptional comfort with the best energy efficiency and least environmental impact possible today. From 2 to 16kW (ARI240 AC).

+25% SEER

raising the bar

for a new level of efficiency

↑
Comfort zone

Variable speed ahead

Maneurop® reciprocating compressors: the complementary range

Maneurop® reciprocating from Danfoss Commercial Compressors are specially designed for **2.5-13TR** applications with a wide range of operating conditions. All components are of high quality and precision in order to ensure a long product life. Maneurop® MT and MTZ series compressors are of the hermetic reciprocating type and are designed for medium and high evaporating temperature applications. They operate with **multiple refrigerants to save on inventory**. The standard footprint of the range as well as compact design make these compressors ideal in **the replacement market for split and packaged air-conditioners**.

Highly efficient motor in all 2-cylinder models

From April 2012, the standard 2-cylinder-range has been upgraded to the level of the “high efficiency” range.

The impact on applications and for customers is excellent with:

- an average compressor efficiency increase by 10% compared to the former generation
- no system or application test required
- unchanged code numbers for ordering

6-10%

increased COP

in 2-cylinder upgraded models provides great energy savings (depending on the model and conditions)

Featured for immediate benefits

New
2012

The compressor design allows for the motor to be 100% suction-gas cooled. This means that no additional compressor

cooling is required and allows the compressors to be insulated with acoustic jackets to obtain lower sound levels, without any risk of overheating.

The positive benefits of internal motor protection, high efficiency circular valve design and high torque motors make this an exceptionally long-lasting compressor.

The MTZ series is specifically designed for use with the HFC refrigerants R407C, R134a, R404A and R507A, using 160PZ

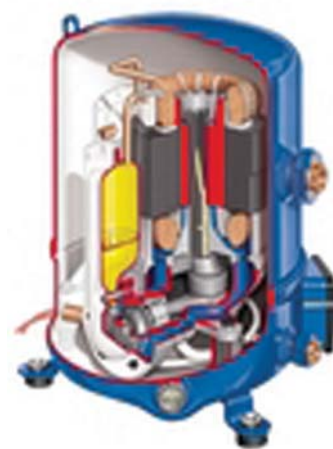
polyester oil as lubricant.

MT and MTZ compressors have a large internal free volume that protects against the risk of liquid hammering when liquid refrigerant enters the compressor.

MT and MTZ compressors are available in 22 different models with displacements ranging from 30 to 271cm³/rev. Seven different motor voltage ranges are available for single and three phase power supplies at 50 and 60 Hz.

Most of the compressors exist in two versions:

- standard version
- VE version with oil equalization and oil sight glass.



Maneurop® VTZ

Intelligent compressor package that utilizes variable speed technology to ensure superior efficiency across the entire operating range.

- Designed for variable speed, modulating from 90 to 30 rps
- Reciprocating solution 3–54 kW (ARI240 AC)
- Multirefrigerant: R404A, R407C and R134a

±0.3°C

precise and stable

temperature control improves process and equipment reliability



17-100%

capacity modulation

with up to six compressors in the system

Manifold configurations

Extend capacity and performance while reducing noise and installation costs

Today, almost 90% of all commercial air conditioning systems use manifold compressors. Several combinations are possible in single, tandem and trio formats. The compressors are already equipped with oil equalizers and oil sight glasses. The Performer S-series has been specifically designed for manifolding. As a result, higher efficiency, flexibility and lower installation costs are achieved.

Mechanically, the sound level is significantly lower than in units using alternative technologies in larger capacities.

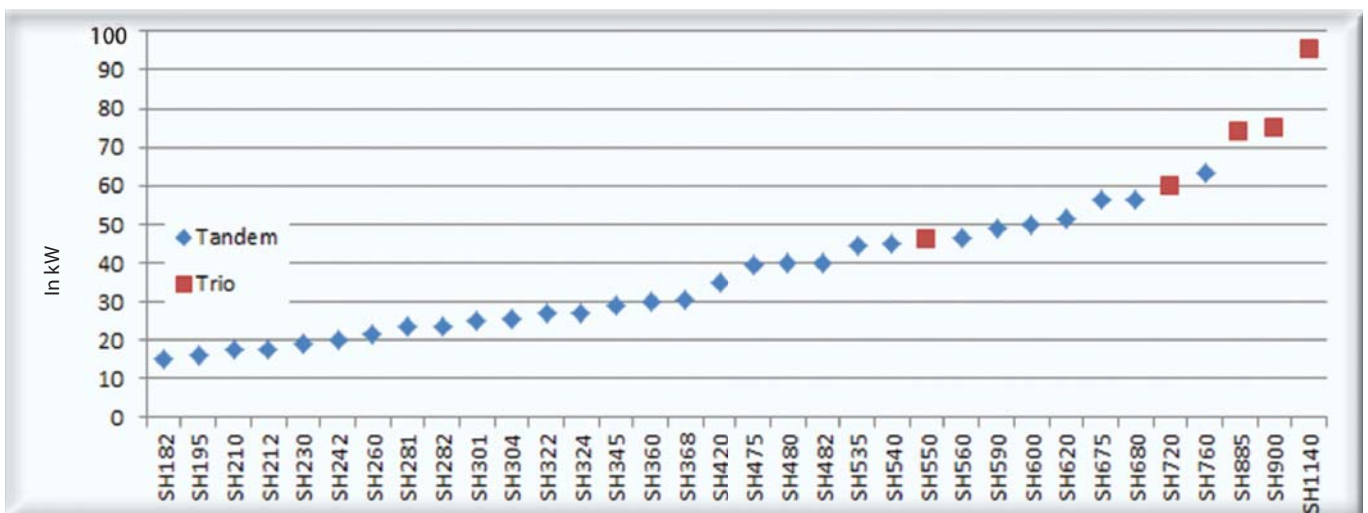
Two identical compressors have a global sound level close to 1 compressor + 3 dB(A) of tandem configuration. The sound level increases by only 3 dB(A), which is significantly lower than an equivalent compressor of twice the cooling capacity!

2 to 6

manifold designs

Combine up to 6 compressors for exceptional seasonal efficiency (IEER) in cooling.

Manifold configurations of Danfoss commercial scrolls - R410A



Scrolls for light commercial, commercial A/C applications and precision cooling

R410A - 400V / 3 ~ / 50Hz

Model	Nominal cooling capacity	50 Hz, EN12900 ratings				50 Hz, ARI ratings			
		Cooling capacity		Efficiency		Cooling Capacity		Efficiency	
		TR - 60Hz	W	Btu/h	COP in W/W	EER in Btu.h/W	W	Btu/h	COP in W/W
HLH061	5.1	13 166	44 896	3.01	10.26	15 210	51 880	3.11	10.61
HLH068	5.7	14 966	51 034	3.11	10.61	16 880	57 610	3.21	10.96
HLJ072	6.0	15 811	53 916	3.11	10.61	17 840	60 900	3.21	11.0
HLJ075	6.3	16 548	56 429	3.12	10.64	18 600	63 490	3.22	11.0
HLJ083	6.9	18 150	61 892	3.13	10.67	20 420	69 690	3.25	11.1
HJC090	7.5	19 814	67 605	3.03	10.34	22 320	76 190	3.11	10.6
HJC105	8.8	23 088	78 776	3.08	10.51	26 100	89 090	3.16	10.8
HJC120	10.0	26 307	89 759	3.06	10.44	29 610	101 080	3.11	10.6
SH090	7.5	19 833	67 670	3.03	10.34	22 300	76 100	3.10	10.59
SH105	9	23 832	81 315	3.08	10.51	26 850	91 600	3.17	10.80
SH120	10	26 649	90 926	3.09	10.54	30 000	102 200	3.17	10.80
SH140	12	30 843	105 236	3.12	10.65	34 700	118 400	3.19	10.90
SH161	13	34 611	118 093	3.14	10.71	38 800	132 400	3.19	10.90
SH184	15	39 764	135 675	3.17	10.82	44 650	152 500	3.25	11.10
SH180	15	39 556	134 965	3.14	10.71	44 500	151 800	3.21	10.95
SH240	20	53 200	181 400	3.16	10.78	60 400	206 300	3.22	11.00
SH295	25	65 100	222 200	3.17	10.82	73 200	249 800	3.25	11.10
SH300	25	69 000	235 300	3.15	10.75	75 200	256 400	3.22	11.00
SH380	30	80 400	274 300	3.13	10.68	90 400	308 700	3.21	10.95
SH485*	40	103 391	352 800	3.17	10.8	116 316	396 882	3.25	11.10

R410A - 460V / 3~ / 60Hz

Model	Nominal cooling capacity	60 Hz, ARI ratings				Net weight
		Cooling Capacity		Efficiency		
		TR - 60Hz	W	Btu/h	COP in W/W	EER in Btu.h/W
HLH061	5.1	18 050	61 580	3.17	10.8	37
HLH068	5.7	20 130	68 670	3.20	10.9	37
HLJ072	6.0	21 240	72 500	3.19	10.9	37
HLJ075	6.3	22 320	76 190	3.25	11.1	37
HLJ083	6.9	24 340	83 090	3.22	11.0	37
HJC090	7.5	26 810	91 500	3.16	10.8	44
HJC105	8.8	31 170	106 390	3.20	10.9	44
HJC120	10.0	35 620	121 600	3.20	10.9	44
SH090	7.5	27 100	92 500	3.16	10.79	58.0
SH105	9	32 100	109 500	3.22	11.00	64.0
SH120	10	36 800	125 400	3.27	11.15	64.0
SH140	12	42 300	144 300	3.27	11.15	67.0
SH161	13	47 200	160 900	3.27	11.15	69.0
SH184	15	54 000	184 400	3.28	11.20	71.5
SH180	15	54 300	185 300	3.27	11.15	108.0
SH240	20	73 500	251 000	3.27	11.15	108.0
SH295	25	88 500	302 000	3.25	11.10	111.0
SH300	25	91 300	311 500	3.24	11.05	153.0
SH380	30	109 600	374 300	3.22	11.00	159.0
SH485*	40	140 501	479 403	3.25	11.10	183.0

* Preliminary data

Data given for Code 4: 400V - 50 Hz
460V - 60 Hz : 3 phases.

Net weight with oil charge

TR= Ton of Refrigeration

COP= Coefficient Of Performance, 400V / 3ph / 50Hz

EER= Energy Efficiency Ratio, 460V / 3ph / 60Hz

ARI: evap. temp. 7.2 °C/45°F; cond. temp. 54.4 °C/130°F; superheat 11.1 K/20°F; subcooling 8.3 K/15°F

EN12900: evap. temp. 5 °C/41°F; cond. temp. 50 °C/122°F; superheat: 10 K/18°F; subcooling: 0 K

Discover the compressor performance when using R134a, R22 or R407C refrigerants with Danfoss Coolselector or with the Online Datasheet Generator: www.danfoss.com/odsg

Scrolls for light commercial, commercial A/C applications and precision cooling

R410A - Variable speed - Inverter scroll compressors

	Performances		Cooling capacity		Efficiency	
			TR	W	EER (Btu/W)	COP (W/W)
VSH088	Part load	30 rps	3.55	12 477	21.91	6.42
		60 rps	9	31 649	14.6	4.28
	Full speed 90rps	ARI	11.73	41 237	9,9	2.90
		EN12900	10.4	36 619	9.59	2.81
VSH117	Part load	30 rps	6,5	22 826	21.09	6.18
		60 rps	11.97	42 098	14.4	4.22
	Full speed 90rps	ARI	15.63	54 968	10.10	2.96
		EN12900	13.86	48 745	9.69	2.84
VSH170	Part load	30 rps	9.7	34 115	22.25	6.52
		60 rps	17.3	60 846	14.43	4.23
	Full speed 90rps	ARI	22.8	80 172	10.1	2.96
		EN12900	20.21	71 094	9.72	2.85

Speed is controlled by the frequency drive from 30 to 90 rps. Data given for Code G 380-480V. Subject to modification without prior notification.

Part load conditions:

30 rps: Evaporating temp: 7.2°C / 45°F; Condensing temp 30°C / 86°F; Superheat 6K / 11°F; Subcooling 8.3K / 15°F

60 rps: Evaporating temp: 7.2°C / 45°F; Condensing temp 43°C / 109°F; Superheat 7K / 11°F; Subcooling 8.3K / 15°F

Models	Conditions	Cooling capacity		Efficiency High Pressure Ratio		Efficiency Low Pressure Ratio		
		TR	kW	EER	COP	EER	COP	
VZH088	Part load 25 rps	4.1	14.4	20.92	6.13	22.11	6.48	
	Full speed 100 rps	ARI	13.3	46.9	10.61	3.11	10.24	3
		EN12900	11.8	41.6	10.17	2.98	9.89	2.9
VZH117	Part load 25 rps	5.5	19.3	21.36	6.26	22.59	6.62	
	Full speed 100 rps	ARI	17.9	63	10.85	3.18	10.47	3.07
		EN12900	15.9	55.8	10.41	3.05	10.10	2.96
VZH170	Part load 25 rps	8.1	28.5	22.08	6.47	23.20	6.8	
	Full speed 100 rps	ARI	26.6	93.7	11.05	3.24	10.82	3.17
		EN12900	23.5	82.6	10.61	3.11	10.44	3.06

Speed is controlled by the frequency drive from 25 to 100 rps. Data given for Code G 380-480V. Preliminary data

Part load 25rps: Evaporating temp 7.2°C / 45°F; Condensing temp 35°C / 65°F; Superheat 11.1K / 20°F; Subcooling 8.3K / 15°F

ARI: Evaporating temp 7.2°C / 45°F; Condensing temp 54.4°C / 130°F; Superheat 11.1K / 20°F; Subcooling 8.3K / 15°F

EN12900: Evaporating temp 5°C; Condensing temp 50°C; Superheat 10K; Subcooling 0K

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Scrolls for light commercial and residential A/C applications

R410A - 400V / 3 ~ / 50Hz

Model	Nominal cooling capacity TR - 60Hz	EN12900 ratings				ARI ratings			
		Cooling capacity		Efficiency		Cooling Capacity		Efficiency	
		W	Btu/h	COP in W/W	EER in Btu.h/W	W	Btu/h	COP in W/W	EER in Btu.h/W
HRH029	2.4	6272	21 388	2.86	9.75	7 120	24 310	2.93	10.0
HRH031	2.6	6 654	22 690	2.77	9.45	7 530	25 710	2.82	9.62
HRH032	2.7	6 776	23 106	2.77	9.45	7 670	26 170	2.79	9.51
HRH034	2.8	7 501	25 578	2.88	9.82	8 500	29 000	2.93	10.0
HRH036	3.0	7 788	26 557	2.79	9.51	8 820	30 110	2.82	9.62
HRH038	3.2	8 194	27 942	2.72	9.28	9 250	31 560	2.76	9.41
HRH040	3.3	8 995	30 673	2.79	9.51	10 200	34 810	2.85	9.72
HRH041	3.3	8 908	30 376	2.88	9.82	10 050	34 300	2.93	10.00
HRH044	3.7	9 612	32 777	2.77	9.45	10 830	36 940	2.76	9.41
HRH049	4.1	10 730	36 589	2.96	10.09	12 110	41 320	2.99	10.22
HRH051	4.3	11 411	38 912	3.01	10.26	12 860	43 890	3.05	10.42
HRH054	4.5	11 851	40 412	2.96	10.09	13 340	45 510	3.02	10.32
HRH056	4.7	12 287	41 899	2.98	10.16	13 830	47 200	3.02	10.31

R410A - 460V / 3~ / 60Hz

R410A Model	Nominal Cooling Capacity TR - 60Hz	ARI ratings				Net weight kg
		Cooling Capacity		Efficiency		
		W	Btu/h	COP in W/W	EER in Btu.h/W	
HRH029	2.4	8 500	29 000	2.99	10.2	31
HRH031	2.6	9 080	30 990	2.99	10.2	31
HRH032	2.7	9 380	31 990	3.02	10.3	31
HRH034	2.8	10 110	34 510	2.99	10.2	31
HRH036	3.0	10 370	35 390	2.99	10.2	31
HRH038	3.2	11 100	37 890	2.93	10.0	32
HRH040	3.3	12 160	41 490	3.02	10.3	32
HRH041	3.3	12 100	41 300	2.99	10.2	37
HRH044	3.7	13 010	44 390	3.02	10.3	37
HRH049	4.1	14 360	48 990	3.08	10.5	37
HRH051	4.3	15 180	51 780	3.14	10.7	37
HRH054	4.5	15 970	54 480	3.11	10.6	37
HRH056	4.7	16 670	56 880	3.11	10.6	37

R410A - Variable speed - Inverter scroll compressors

	Conditions		Cooling capacity		Efficiency	
			TR	W	EER (Btu/W)	COP (W/W)
	VRJ028	Part load	15 rps	0.8	2.740	23.62
45 rps			2.1	7.430	14.52	4.25
Full speed		ARI	2.9	10.125	9.22	2.7
VRJ035	Part load	15 rps	1.0	3.473	23.81	6.98
		45 rps	2.7	9.429	14.81	4.34
	Full speed	ARI	3.6	12.676	9.25	2.71
VRJ044	Part load	15 rps	1.3	4.513	25.14	7.37
		45 rps	3.4	11.956	15.01	4.4
	Full speed	ARI	4.6	16.231	9.39	2.75

ARI: evap. temp. 7.2 °C/45°F; cond. temp. 54.4 °C/130°F; superheat 11.1 K/20°F; subcooling 8.3 K/15°F

EN12900: evap. temp. 5 °C/41°F; cond. temp. 50 °C/122°F; superheat: 10 K / 18°C; subcooling: 0 K

Part load conditions:

15 rps:

Evap temp: 7.2°C / 45°F; Cond temp 30°C / 86°F; Superheat 6K / 11°F; Subcooling 8.3K / 15°F

45 rps:

Evap temp: 7.2°C / 45°F; cond temp 43°C / 109°F; Superheat 7K / 13°F; Subcooling 8.3K / 15°F

Speed is controlled by the frequency drive from 15 to 70 rps. VRJ data given for single phase 208-230V 50/60 Hz.

Net weight with oil charge

Subject to modification without prior notification.

For full data details, capacity tables or use with other refrigerants please refer to the Online Datasheet Generator: www.danfoss.com/odsg

Reciprocating compressors for light commercial, commercial A/C applications and precision cooling

R407C - 400V / 3~ / 50Hz

Model	EN12900 ratings				ARI ratings			
	Cooling capacity		Efficiency		Cooling Capacity		Efficiency	
	W	Btu/h	COP in W/W	EER in Btu.h/W	W	Btu/h	COP in W/W	EER in Btu.h/W
MTZ018	3 470	11 843	2.73	9.32	3 850	13 140	2.79	9.53
MTZ022	4 550	15 529	2.67	9.11	5 020	17 133	2.70	9.23
MTZ028	5 880	20 068	2.72	9.28	6 540	22 321	2.77	9.45
MTZ032	6 650	22 696	2.74	9.35	7 330	25 017	2.76	9.43
MTZ036	7 510	25 631	2.56	8.74	8 280	28 259	2.58	8.82
MTZ040	8 660	29 556	2.55	8.70	9 580	32 696	2.58	8.81
MTZ044	8 940	30 512	2.67	9.11	9 870	33 686	2.72	9.27
MTZ050	10 190	34 778	2.69	9.18	11 270	38 464	2.74	9.34
MTZ056	11 700	39 932	2.71	9.25	12 940	44 164	2.76	9.42
MTZ064	13 180	44 983	2.72	9.28	14 590	49 795	2.77	9.47
MTZ072	14 800	50 512	2.69	9.18	16 380	55 904	2.74	9.36
MTZ080	16 750	57 167	2.66	9.08	18 530	63 242	2.71	9.25
MTZ100	20 480	69 898	2.78	9.49	22 700	77 474	2.84	9.69
MTZ125	26 880	91 741	2.84	9.69	29 790	101 672	2.89	9.85
MTZ144	29 770	101 604	2.79	9.52	33 070	112 867	2.85	9.74
MTZ160	34 090	116 348	2.75	9.39	37 820	129 078	2.81	9.59

R07C - 460V / 3~ / 60Hz

Model	ARI ratings				Net weight
	Cooling Capacity		Efficiency		
	W	Btu/h	COP in W/W	EER in Btu.h/W	kg
MTZ018	5 050	17 235	2.92	9.98	21
MTZ022	6 280	21 433	2.78	9.48	21
MTZ028	8 220	28 055	2.91	9.93	23
MTZ032	8 990	30 683	2.82	9.61	24
MTZ036	9 990	34 096	2.56	8.74	25
MTZ040	11 720	40 000	2.63	8.98	26
MTZ044	12 600	43 003	2.89	9.85	35
MTZ050	14 100	48 123	2.85	9.72	35
MTZ056	15 920	54 334	2.81	9.6	37
MTZ064	17 700	60 410	2.78	9.5	37
MTZ072	19 890	67 884	2.76	9.41	40
MTZ080	22 520	76 860	2.73	9.33	40
MTZ100	28 220	96 314	2.86	9.77	60
MTZ125	35 620	121 570	2.77	9.47	64
MTZ144	40 900	139 590	2.84	9.68	67
MTZ160	45 220	154 334	2.72	9.27	69

ARI

Evaporating temperature: 7.2 °C/45°F
 Condensing temperature: 54.4 °C/130°F
 Superheat: 11.1 K/20°F
 Subcooling: 8.3 K/15°F

EN12900

Evaporating temperature: 5 °C/41°F
 Condensing temperature: 50 °C/122°F
 Superheat: 10 K/18°F

Subcooling: 0 K/0°F
 Data given for Code 4: 400V - 50 Hz
 460V - 60 Hz : 3 phases
 Net weight with oil charge

For smaller capacities, please refer to Secop compressor offer ranging from 0.2 to 2HP. The compressors are available exclusively through Danfoss sales network. Visit <http://cc.danfoss.com> for more information.

Discover the compressor performance when using R134a, R22 or R407C refrigerants with Danfoss Coolselector or with the Online Datasheet Generator: www.danfoss.com/odsg

Reciprocating compressors for light commercial, commercial A/C applications and precision cooling

Variable speed - Inverter reciprocating compressors

Model	Cooling capacity	R404A	R407C	R134a	Efficiency R404A	
		Evap. -10°C Cond. 45°C	Evap. +5°C Cond. 50°C	Evap. +5°C Cond. 50°C	EER	COP
VTZ 038-G & Compressor Drive 4.0 kW	35 rps	1 685	3 052	1 926	5.32	1.56
	60 rps	3 198	5 370	3 565	5.80	1.7
	90 rps	4 404	7 809	5 402	4.74	1.39
VTZ 054-G & Compressor Drive 5.5 kW	35 rps	2 559	4 214	2 892	5.56	1.63
	60 rps	4 612	7 843	5 349	5.63	1.65
	90 rps	6 324	11 288	8 112	5.09	1.49
VTZ 086-G & Compressor Drive 7.5 kW	30 rps	3 232	5 453	3 935	5.22	1.53
	60 rps	7 445	11 901	8 499	5.87	1.72
	90 rps	11 429	17 299	12 910	5.77	1.69
VTZ 121-G & Compressor Drive 11.0 kW	30 rps	5 100	8 606	5 434	5.43	1.59
	60 rps	10 530	18 167	11 413	5.63	1.65
	85 rps	14 395	25 269	16 273	5.22	1.53
VTZ 171-G & Compressor Drive 15.0 kW	30 rps	6 737	11 968	7 718	5.77	1.69
	60 rps	14 660	25 287	16 931	5.94	1.74
	90 rps	22 301	38 079	25 636	5.46	1.6
VTZ 215-G & Compressor Drive 18.5 kW	30 rps	9 099	15 590	10 342	5.73	1.68
	60 rps	18 670	33 061	22 365	5.80	1.7
	90 rps	29 012	48 566	33 914	5.46	1.6
VTZ 242-G & Compressor Drive 22.0 kW	30 rps	9 793	17 442	11 457	5.80	1.7
	60 rps	21 174	36 092	23 967	5.84	1.71
	85 rps	28 187	50 664	34 317	5.26	1.54

Voltage code:

G (380-480V / three-phase motor)

For other voltage codes available, please refer to the VTZ guidelines.

Rating conditions:

Superheat: 10K - Subcooling: 0K - Dew point value for R407C.

More information about Danfoss Commercial Compressors?

<http://cc.danfoss.com>

Product benefits and line up

- Product brochure



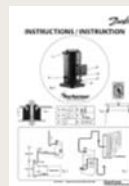
Product selection and technical data

- Quick references
- Catalogues
- Guidelines
- Datasheets



Installation and commissioning

- Manuals
- instructions



Education and training

- Whitepapers and posters
 - Danfoss learning platform
- <http://learning.danfoss.com>



Dynamic selection tools:

- Coolselector programme can be downloaded from www.danfoss.com
- Online Data Sheet Generator is available on www.danfoss.com/odsg





Danfoss Commercial Compressors is a worldwide manufacturer of compressors and condensing units for refrigeration and HVAC applications. With a wide range of high quality and innovative products we help your company to find the best possible energy-efficient solutions that respect the environment and reduce total life cycle costs.

We have 40 years of experience in the development of hermetic compressors which has placed us amongst the global leaders in our business, and positioned us as distinct variable speed technology specialists. Today we operate from engineering and manufacturing facilities spread across three continents.



Performer Variable Speed scroll compressors



Performer Air Conditioning scroll compressors



Performer Heat Pump scroll compressors



Maneurop Variable Speed reciprocating compressors



Performer Refrigeration scroll compressors



Maneurop Reciprocating Compressors



Optyma & Optyma Plus Condensing Units



Refrigeration compressors (manufactured by Secop)

Our products can be found in a variety of applications such as rooftops, chillers, residential air conditioners, heatpumps, coldrooms, supermarkets, milk tank cooling and industrial cooling processes.

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