

ENGINEERING
TOMORROW

Danfoss

Advanced efficiency, precise cooling

Design an HVAC system like no other

2nd generation of variable-speed compressors. Stand out in the commercial HVAC and process cooling marketplaces. Boost your unit performance and development with the Danfoss prequalified and manifoldable. 13-26TR inverter package.



When scanning this QR code
you go to www.inverterscroll.danfoss.com

Over
30%

energy savings with VZH
inverter scrolls. Take the
lead in your market!

www.inverterscroll.danfoss.com

Applying inverter scroll technology keeps getting easier

Now you can build the system you want to build — the way you want to build it. That's because VZH inverter scroll compressors from Danfoss give you more efficiency, precision, capacity and simplicity.

When you want the best for air conditioning and industrial cooling, VZH inverter scrolls let you create the best system... For a wide range of applications - data centers, IT cooling, telecom buildings, offices, industrial or residential.



Advanced efficiency:

As the leader in HVAC technology responding to environmental and energy challenges, Danfoss developed the VZH inverter scroll compressor. It uses a brushless Interior Permanent Magnet (IPM) design to give you higher efficiency. And it comes in two ranges dedicated for chillers and rooftops to deliver that efficiency across a wider range of applications.

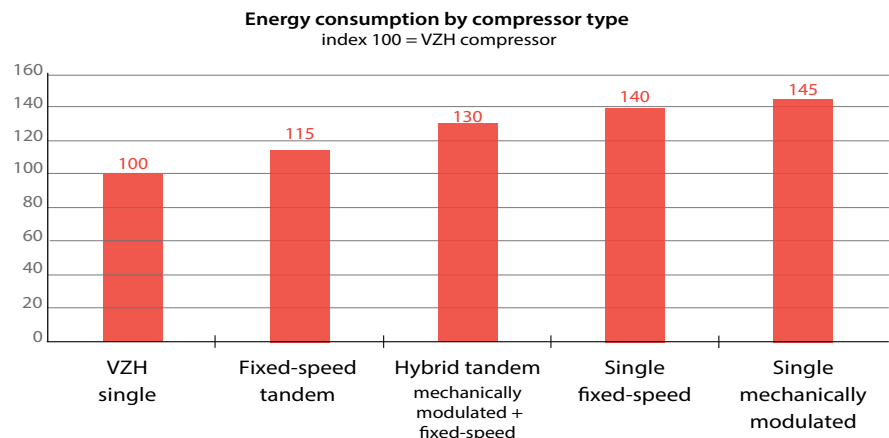
A cooling solution optimized for energy consumption and for power grid requirements.

Extended capacity with simplicity:

With cooling capacities from 13 to 26TR with a single compressor, VZH ranges offer today's biggest capacity in the market. Thanks to a 4:1 modulation ratio, the VZH inverter scroll can cycle from 25 to 100 RPS to provide greater savings.

Furthermore, pre-equipped tandem capability extends the cooling capacity to 52TR and a 12 to 100% stepless modulation.

The pre-qualified package, including compressor and drive, is fully integrated to get your product to market faster. Pick the capacity range you need for either chiller or rooftop applications.



Average consumption index based on simulations for 10-30TR compressors used in applications with low pressure ratio (rooftop) - Index 100 = VZH energy consumption. Unmatched performance really makes the difference.

Precise cooling:

Match exactly your cooling requirements to control temperature and humidity, critical for the best comfort and process, data availability as well as product quality.

Two optimised R410A ranges for

- > Low pressure ratio
- > High pressure ratio

13-52 TR* in the field with

Advanced efficiency:

More than 30% versus fixed-speed with permanent magnet motor

Precise cooling:

$\pm 0.3^{\circ}\text{C}/0.6^{\circ}\text{F}$

Faster time to market:

6 months reduction with prequalified compressor and drive

Extended modulation and capacity:

25-100 RPS

Pre-equipped for tandem configurations with a patented manifold design which optimizes performances and costs.

** (47-183 kW / 160000-624500 BTU/h)*



Two optimized ranges for high and low pressure ratio units

Models	Speed	Conditions	Cooling capacity		Efficiency High pressure ratio		Efficiency Low pressure ratio	
			TR	kW	EER	COP	EER	COP
VZH088	Part load 25 RPS	(1)	4	14.4	20.92	6.13	22.11	6.48
	Full speed 100 RPS	ARI (2)	13	46.9	10.61	3.11	10.24	3.00
		EN12900 (3)	12	41.6	10.17	2.98	9.89	2.90
VZH117	Part load 25 RPS	(1)	5	19.3	21.36	6.26	22.59	6.62
	Full speed 100 RPS	ARI (2)	18	63.0	10.85	3.18	10.47	3.07
		EN12900 (3)	16	55.8	10.41	3.05	10.10	2.96
VZH170	Part load 25 RPS	(1)	8	28.5	22.08	6.47	23.20	6.80
	Full speed 100 RPS	ARI (2)	26	93.7	11.05	3.24	10.82	3.17
		EN12900 (3)	24	82.6	10.61	3.11	10.44	3.06

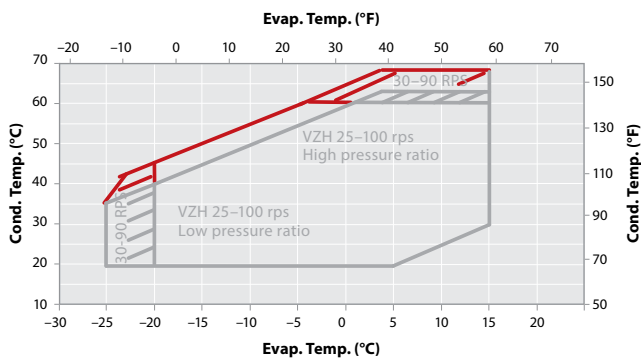
PRELIMINARY DATA - RATINGS CONDITIONS:

(1) **Part load 25 rps:** Evaporating Temp: 45°F/7.2°C; Condensing Temp 95°F/35°C; Superheat 20°F/11.1K; Subcooling 15°F/8.3K - The cooling capacity can be modulated from 100 to 25RPS depending on the part load conditions. As a result, the minimum cooling capacity at ARI conditions for example for VZH088 will be of 3TR.

(2) **ARI:** Evaporating Temp: 45°F/7.2°C; Condensing Temp 130°F/54.4°C; Superheat 20°F/11.1K; Subcooling 15°F/8.3K

(3) **EN12900:** Evaporating Temp: 5°C; Condensing Temp 50°C; Superheat 10K; Subcooling 0K

Operating envelopes

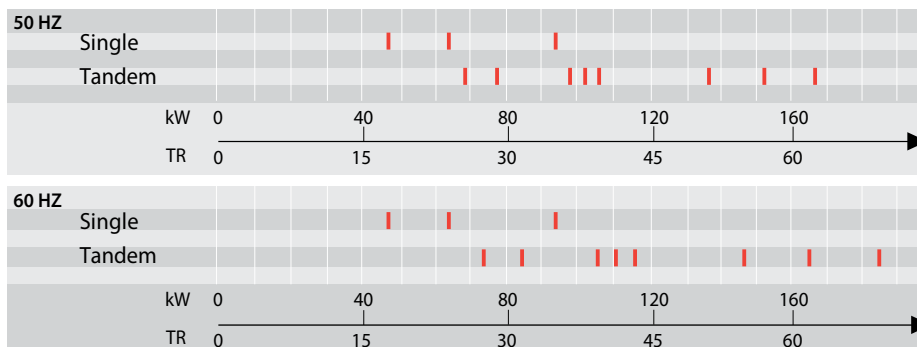


*Two pressure ratios
optimised for
enhanced efficiency of
the system.*

Plus more options

- Capacity can be controlled by an external signal using the VZH drive's user-definable closed-loop PID capacity controller.
- In tandem and trio units, a pack controller allows the staging of up to two fixed-speed compressors.
- Optional graphic display and keypad — with on-board memory — can be used to make parameter changes easy.
- Comprehensive input/output provide RS-485, analog, digital and USB interfaces to support diagnostics, load monitoring and communication.
- Embedded modbus protocol.
- Danfoss MCT10 software allows integration and programming of inverter parameters from a Windows PC.
- Inverter logic ensures a soft start that reduces inrush current.
- Designed for 50°C/122°F ambient with full current output

Product line up



Capacity - full speed @ ARI conditions

Contact your Danfoss sales office and learn why your business can gain from working with the leader in variable speed technology.

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