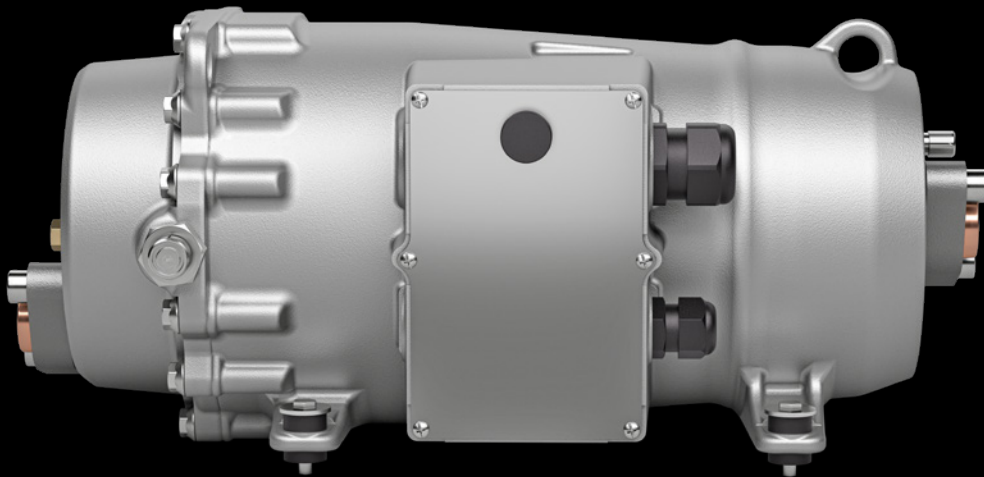




DAS HERZ DER FRISCHE

SEMI-HERMETIC SCROLL COMPRESSOR  
**SPEEDLITE ELV52**

V1-05/2023



-  AIR  
CONDITIONING
-  HEAT  
PUMPS
-  SCROLL  
COMPRESSORS

## TECHNICAL DATA

### ELV5243Y-40M

Compressor Type	Semihermetic scroll compressor
Displacement @ 7500 min-1	43 m <sup>3</sup> /h
Refrigerants	R134a, R407C (further refrigerants on request)
Oil type	BSE55
Oil charge	600 ml (additional oil charge can be required, individual system evaluation necessary)
Compressor speed	2500 – 7500 min <sup>-1</sup>
Weight	35 kg
Max pressure LP / HP	19 / 30 bar
Max operating current	32 A (with R407C)
Protection class	IP67
Max. ambient temperature	-30°C .. 70°C
Inclination Angle	+/-10° in axial and radial direction (larger inclination angle on request)
Displacement	94,8 cm <sup>3</sup> /rev
Rotation direction	right
Vibration Damper	BITZER can offer a standard damper* with a hardness of 40 Shore A
Economizer function	optional (further information on request)

\* It must be validated, by the system designer, if the standard dampers can fulfill the specific application requirements.

## SOUND PRESSURE LEVEL

### ELV5243Y-40M

Refrigerant: R407C; Inverter Operation

to [°C]	tc [°C]	Δtoh [K]	speed [rpm]	sound pressure level [dB(A)]*	sound power level [dB(A)]
5	50	10	5000	62,9	70,9
5	50	10	7500	67,3	75,3

Tolerance +/- 2 dB(A)

\*Based on freefield area with hemispherical sound emission in 1m distance

# MOTOR DATA

## ELV5243Y-40M AND ELVE5243Y-40M

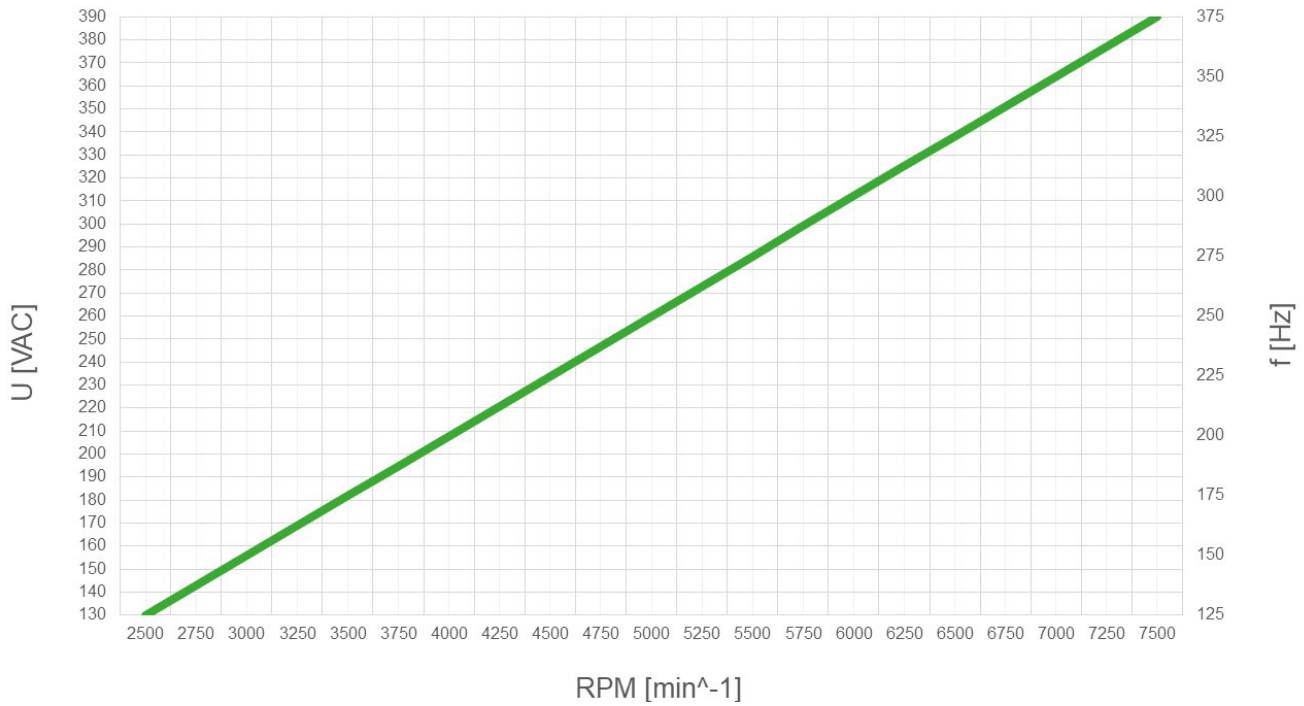
Motor type	IPM
Rated voltage	3 Phase 0 – 390 VAC
Control	sensor-less (open-loop)
Max. operating current	32 A
Max. power input	20 kW
Speed range	2500 – 7500 min <sup>-1</sup>
Motor poles	6
Phase resistance	0.142 Ω
Ld	2.66 mH (@ 30 A)
Lq	1.77 mH (@ 30 A)
Induction voltage @ 1000 min <sup>-1</sup>	43,7 V
dU/dt	max. 4.8 kV/μs
dU/dt 1500 V @ rise time	≥ 0.25 μs
Min. time between two PWM pulses	≥ 2 μs
Max ramp up time to min. speed at start-up	not limited
Max ramp up / down time during operation	1000 min <sup>-1</sup> /s
Compressor stop	freewheel (without DC braking)

## MOTOR PROTECTION DEVICE

SE-B2	SE-B2	SE-B3	SE-B2	SE-B2
230V, 50/60Hz	115V, 50/60Hz	110-240V, 50/60Hz	24V, 50/60Hz	24V DC

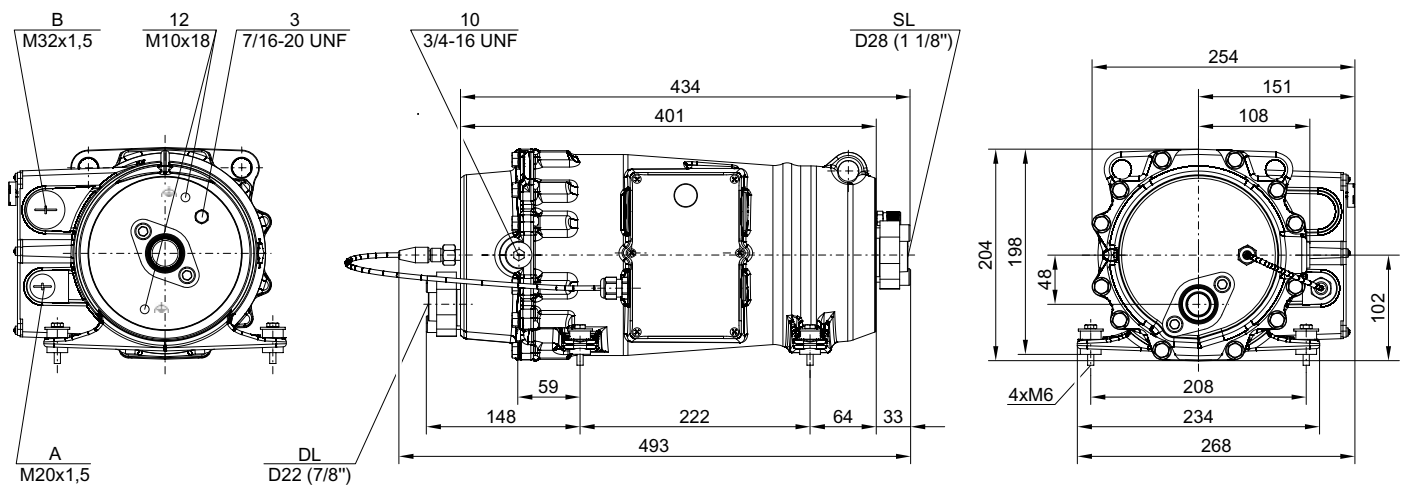
The standard configuration contains a SE-B2 with 24V DC. Supply w/o motor protection device on request.

# VOLTAGE FREQUENCY RATIO



# DIMENSIONS

ELV(E)5243Y-40M



	Suction SL	Discharge DL	Eco port 10
ELV5243Y-40M	28mm (1 1/8")	22mm (7/8")	-
ELVE5243Y-40M	28mm (1 1/8")	22mm (7/8")	Rotalock 3/4"-16UNF

Tentative data

# FUNCTIONAL EARTHING

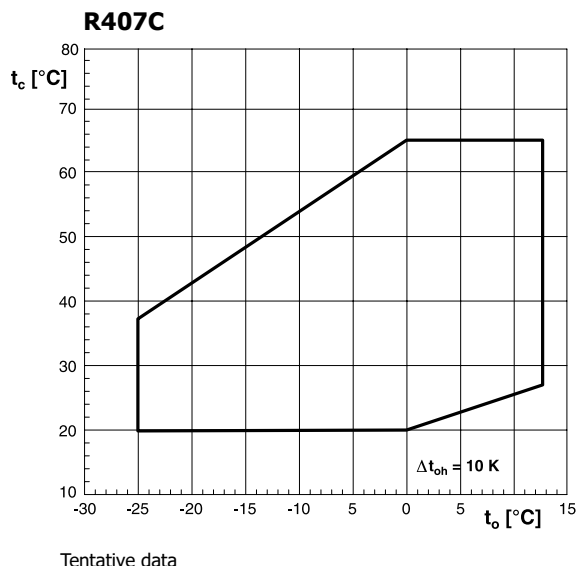
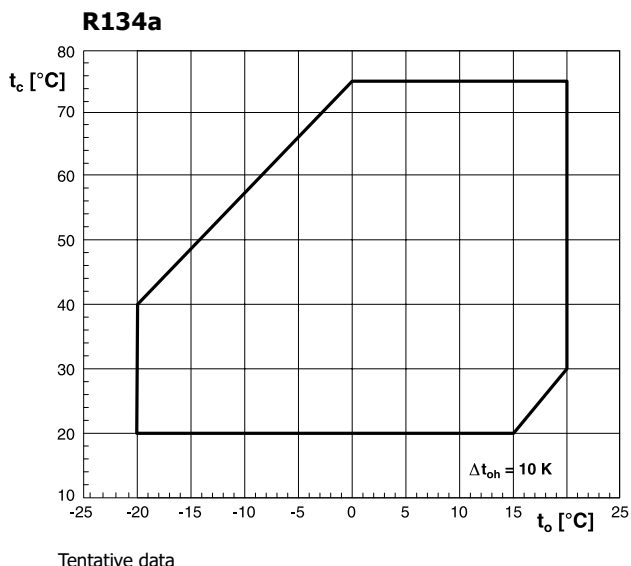
Functional earthing is an additional measure to ensure electromagnetic compatibility and to avoid bearing currents. Functional earthing is connected on the compressors suction side FE an M10 bolt and from there to the frequency inverter.

A high-frequency tinned copper flat-braid with a crosssection of min. 50 mm<sup>2</sup> and max. length of 3 m or another connection with similar high frequency impedance is required.

Additionally, the following points must be observed in order to avoid bearing currents:

- // Keep short distance between inverter and motor.
- // Use mains cable as described above.
- // Use EMC cable glands into the terminal box.
- // Property connect the shield on the compressor and on the frequency inverter.
- // Functional earthing by means of a flat-braid as described above.
- // Check each given system for harmonics and high-frequency to exclude bearing currents.

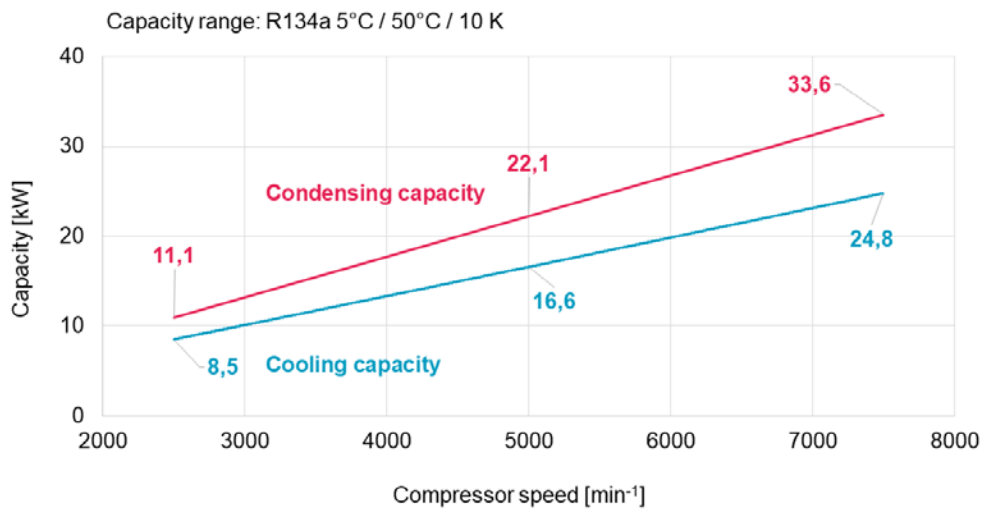
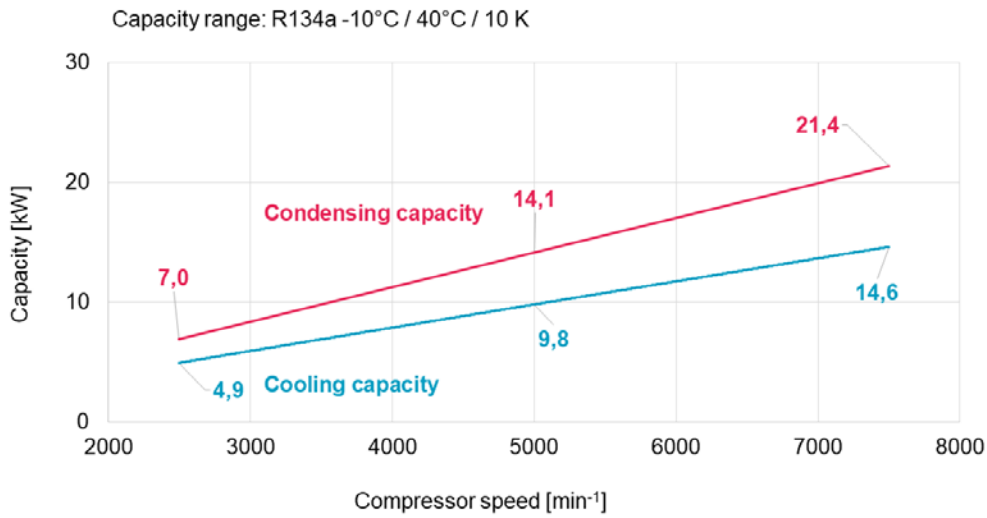
# APPLICATION LIMITS



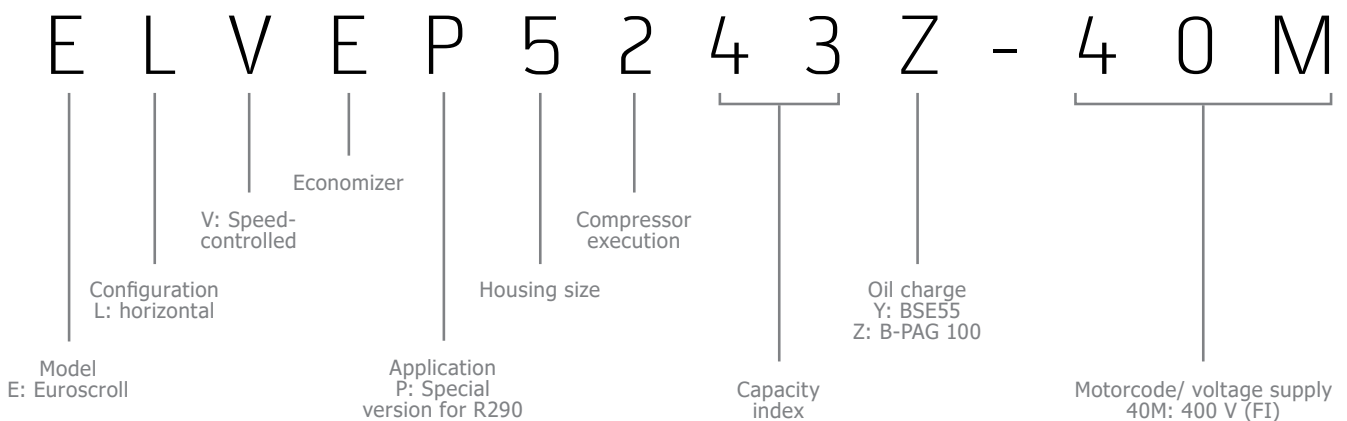
## OPERATING LIMITS

Maximum discharge gas temperature	120°C
Maximum suction gas temperature	30 .. 35°C
Switching frequency	8 times per hour, Minimum runtime 2 minutes, Switch-off time 5 minutes
Pressure limits	LP switch 1.2 bar(a) in the system is necessary. HP based on refrigerant used and corresponding application limits. Please double check the pressure switch tolerances.

# PERFORMANCE DATA



# EXPLANATION OF TYPE DESIGNATION



Tentative data