

# HGX7/1860-4 S

Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R404A, R507

**Subject:**

GEA Commercial Compressors



## Performance data

### Application: Refrigeration & AC

Refrigerant	R404A, R507	Compressor refrigeration capacity	123.00 kW
Power supply	50 Hz, 400 V	Evaporator refrigeration capacity	123.00 kW
Supply frequency	50 Hz	Power consumption	50.30 kW
Evaporating temperature	5.0 °C	Current draw (400 V)	91.20 A
<i>Evaporating pressure (abs.)</i>	<i>7.06 bar</i>	Coefficient of performance (COP/EER)	2.44
Condensing temperature	50.0 °C	Condensing capacity	173.00 kW
<i>Condensing pressure (abs.)</i>	<i>22.98 bar</i>	Mass flow	1.103 kg/s
Suction gas temperature	25 °C	Discharge end temperature	88.1 °C <sup>1)</sup>
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

*Evaporation and condensing temperatures are based on the dew point values (saturated vapour conditions).*

Certifications <sup>2)</sup>



### ASERCOM certified performance data

The performance data of compressors bearing this label has been certified to the strict requirements of ASERCOM.

ASERCOM is the Association of European Refrigeration Compressors and Controls Manufacturers. Information about the Association and the constantly updated overview of certified GEA compressors can be found at [www.asercom.org](http://www.asercom.org).

This certification is based on EN 12900. This signifies: 20 °C suction gas temperature without liquid subcooling at 50 Hz power supply frequency.

## Notes

- 1) The stated value of the discharge end temperature is a mere calculated value. Additional cooling and heat dissipation are not considered. Deviations (particularly in deep freezing applications) from the real measured discharge temperature during operation are possible.
- 2) valid for 400V, 50Hz & application Refrigeration & AC

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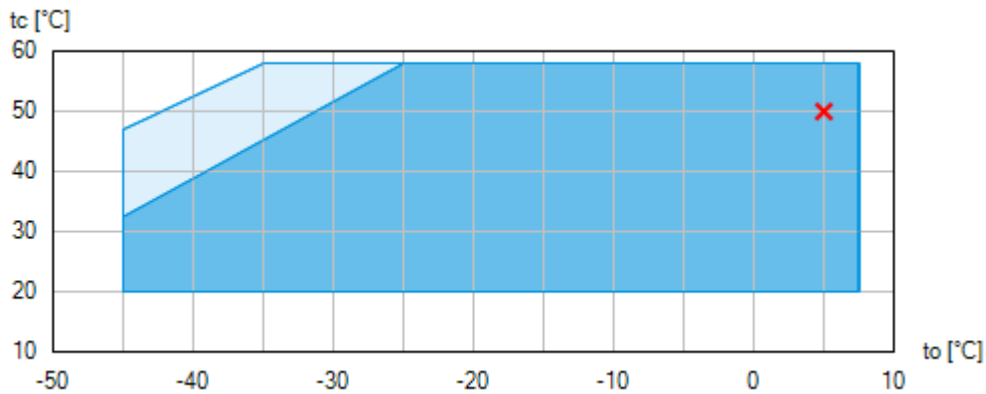
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## Operating limits



-  Unlimited application range
-  Supplementary cooling or reduced suction gas temperature ( $\Delta t_{oh} < 20K$ )

Compressor operation is possible within the limits shown on the diagrams of application. Please note the coloured areas. Compressor application limits should not be chosen for design purposes or continuous operation.

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## Technical data

Number of cylinders / Bore / Stroke	6 / 75 mm / 70 mm
Displacement 50/60 Hz (1450/1740 <sup>1</sup> /min)	161,40 / 193,70 m <sup>3</sup> /h
Voltage <sup>1)</sup>	380-420V Y/YY -3- 50Hz PW
	440-480V Y/YY -3- 60Hz PW
Winding divided into	50% / 50%
Max. working current <sup>2)</sup>	104.0 A
Max. power consumption <sup>2)</sup>	56.7 kW
Starting current (rotor blocked) <sup>2)</sup>	291.0 / 429.0 A
Motor protection	MP10
Protection terminal box	IP 65
Weight	292 kg
Max. permissible pressure (LP/HP) <sup>3)</sup>	19 / 28 bar
Connection suction line SV	54 mm - 2 1/8 "
Connection discharge line DV	42 mm - 1 5/8 "
Lubrication	Oil pump
Oil type R134a, R404A, R407C/F, R507	FUCHS Reniso Triton SE 55
Oil type R22	FUCHS Reniso SP 46
Oil charge	4,5 Ltr.
Oil sump heater	230 V - 1 - 50/60 Hz, 140 W
Dimensions Length / Width / Height	830 / 510 / 500 mm

## Notes

- 1) Tolerance ( $\pm 10\%$ ) relates to the mean value of the voltage range. Other voltages and current types on request

All data are based on voltage rms values

PW = part winding, motors for part winding starting  
(no start unloaders required)  
Designs for Y/D on request

- 2) - The stated value for the max. power consumption is valid for the adjusted power supply.  
- Take account of the max. operating current / max. power consumption for designing fuses, supply lines and safety devices. Fuse: Consumption category AC3.  
- Operation with EFC (available only for certain compressor types) may result into higher max. operating current / max. power consumption values.
- 3) LP = Low pressure  
HP = High pressure

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## Performance data table

Application: Refrigeration & AC

Supply frequency: 50 Hz

Voltage: 400 V

Suction gas temperature: 25 °C

Subcooling (outside cond.): 0 K

tc [°C]		to [°C]									
		0	-5	-10	-15	-20	-25	-30	-35	-40	-45
30	Q [W]	145000	121000	100000	81500	65400	51400	39500	29300	20900	13900
	P [kW]	36.10	34.60	32.60	30.30	27.60	24.70	21.70	18.50	15.40	12.30
	I [A]	68.70	66.70	64.20	61.30	58.30	55.30	52.30	49.50	47.00	44.80
35	Q [W]	135000	112000	92300	75100	60000	47000	35900	26500	18600	12000
	P [kW]	39.30	37.10	34.60	31.70	28.60	25.40	22.00	18.60	15.20	12.00
	I [A]	73.10	70.10	66.70	63.10	59.50	55.90	52.60	49.60	46.90	44.60
40	Q [W]	124000	103000	84700	68700	54800	42800	32500	23800	16400	10200
	P [kW]	42.10	39.30	36.30	33.00	29.50	25.90	22.20	18.60	15.00	11.70
	I [A]	77.30	73.30	69.00	64.70	60.40	56.50	52.80	49.60	46.80	44.50
45	Q [W]	114000	94100	77200	62500	49700	38700	29200	21200	14300	8500
	P [kW]	44.60	41.30	37.80	34.10	30.20	26.30	22.40	18.60	14.90	11.50
	I [A]	81.30	76.20	71.10	66.00	61.30	56.90	53.00	49.60	46.70	44.30
50	Q [W]	103000	85200	69800	56400	44700	34700	26000	18700	12400	
	P [kW]	46.90	43.10	39.20	35.10	30.90	26.70	22.60	18.60	14.90	
	I [A]	85.10	79.00	73.00	67.30	62.10	57.30	53.20	49.60	46.70	

to Evaporating temperature

tc Condensing temperature

Q Compressor refrigeration capacity

P Power consumption

I Current draw

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### Scope of supply

Semi-hermetic six-cylinder reciprocating compressor with drive motor  
Single-section compressor housing with hermetically integrated electric motor

Oil pump

Winding protection with PTC resistor sensors and electronic trigger unit MP 10

Oil pump cover with screw-in option for oil differential pressure sensor DELTA-P II

Possibility of connection of oil level controllers ESK, AC+R or CARLY

Possibility of connection of oil level controllers Traxoil <sup>1)</sup>

Possibility for connection of oil pressure safety switch MP54

Oil charge:

HG: FUCHS Reniso SP 46

HGX: FUCHS Reniso Triton SE 55

Two sight glasses

Prepared for capacity regulator (2 cylinder covers)

Decompression valve

Suction and discharge line valve

Inert gas charge

4 anti-vibration pads enclosed

### Accessories

Start unloader 230 V - 1 - 50/60 Hz, IP65, less check valve,  
including thermal protection thermostat (posistor tracer)

Start unloader by means of a ESS (Electronic Soft Start), 400 V - 3 - 50/60 Hz, IP20 (Connection clamps IP00) for  
installation in switch cabinet <sup>2)</sup>

Capacity regulator 230 V - 1 - 50/60 Hz, IP65  
1-2 capacity regulator = 66/33% residual capacity

Oil sump heater 230 V - 1 - 50/60 Hz, 140 W

Oil pressure safety switch MP54 230 V - 1 - 50/60 Hz, IP20 <sup>2)</sup>

Oil differential pressure sensor DELTA-P II 220-240 V - 1 - 50/60 Hz <sup>2)</sup>

Oil service valve

Thermal protection thermostat per cylinder cover <sup>3)</sup>

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Water-cooled cylinder covers

Sea water resistant water-cooled cylinder covers

Connection piece suction and discharge valve in welding design (on request)

Additional fan

230 V AC - 1 - 50 Hz, 97 W, IP44

230 V AC - 1 - 60 Hz, 128 W <sup>2)</sup>

Intermediate adapter for discharge line valve

Special voltage and/or frequency (on request)

### Notes

- 1) Only with additional adapter possible
- 2) Enclosure
- 3) Mounted

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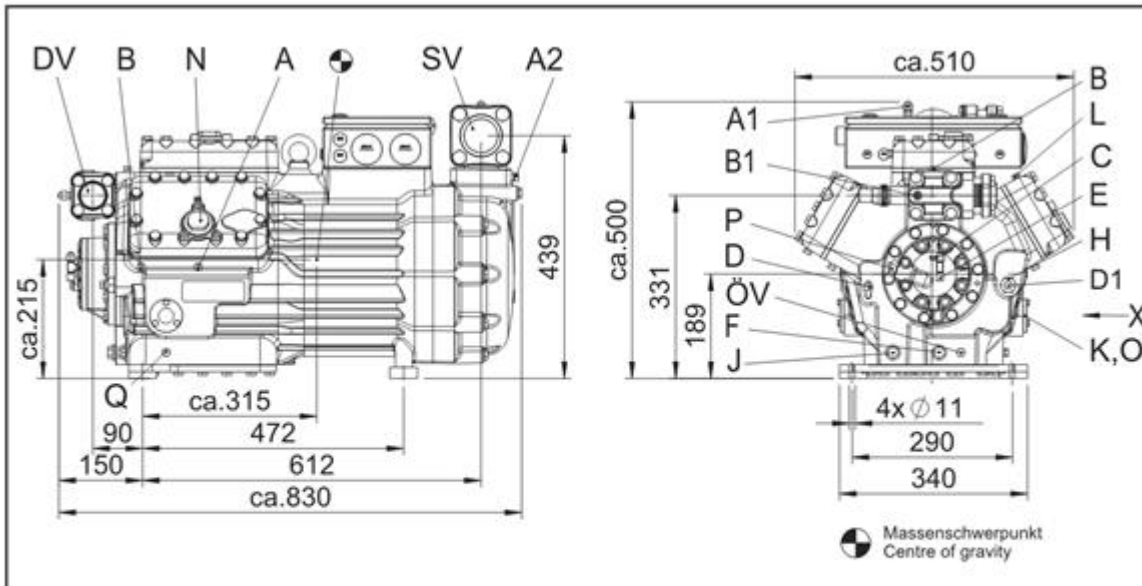
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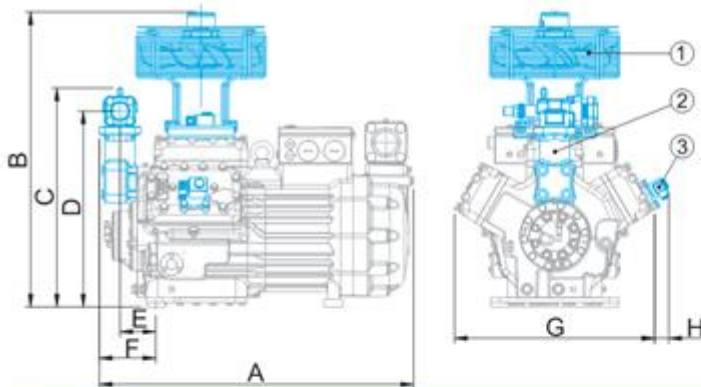


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## Dimensions and connections



### Maße Zubehör / Dimensions Accessories



Ansicht X: Anschlussmöglichkeit für Ölspiegelregulator  
View X: Possibility of connection of oil level regulator



- Dreilochanschluss für TRAXOIL (3xM6x10)  
Three-hole connection for TRAXOIL (3xM6x10)
- Dreilochanschluss für ESK, AC+R, CARLY (3xM6x10)  
Three-hole connection for ESK, AC+R, CARLY (3xM6x10)

- ① Zusatzlüfter  
Additional fan
- ② Zwischenadapter für Druckabsperrventil  
Intermediate adapter for discharge line valve
- ③ Leistungsregler  
Capacity regulator

	A	B	C	D	E	F	G	H
	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch	mm / inch
HG44e	- <sup>1)</sup>	ca. 675	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	ca. 360	-
HA4	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	ca. 400	ca. 5
HG5/725, HG5/830	ca. 835	ca. 730	ca. 465	422	101	141	ca. 440	-
HG5/945	ca. 850	ca. 730	ca. 465	422	101	141	ca. 440	-
HA5	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	ca. 435	-
HG6	ca. 870	ca. 740	ca. 460	421	101	141	ca. 460	-
HA6	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	- <sup>1)</sup>	ca. 455	-
HG7	ca. 830	ca. 760	ca. 580	520,5	95	150	ca. 510	ca. 15
HG88e	ca. 920	ca. 880	ca. 680	617	90	145	ca. 610	ca. 20

<sup>1)</sup>Nicht verfügbar / Not available

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SV	Suction line valve, tube $\varnothing$ <sup>1)</sup>	54 mm - 2 1/8 "
DV	Discharge line valve, tube $\varnothing$ <sup>1)</sup>	42 mm - 1 5/8 "
A	Connection suction side, not lockable	1/8 " NPTF
A1	Connection suction side, lockable	7/16 " UNF
A2	Connection suction side, not lockable	1/4 " NPTF
B	Connection discharge side, not lockable	1/8 " NPTF
B1	Connection discharge side, lockable	7/16 " UNF
C	Connection oil pressure safety switch OIL	7/16 " UNF
D	Connection oil pressure safety switch LP	7/16 " UNF
D1	Connection oil return from oil separator	1/4 " NPTF
E	Connection oil pressure gauge	7/16 " UNF
F	Oil drain	M 22 x 1.5
H	Oil charge plug	M 22 x 1.5
J	Connection oil sump heater	M 22 x 1.5
K	Sight glass	-
L	Connection thermal protection thermostat	1/8 " NPTF
N	Connection capacity regulator	M 45 x 1.5
O	Connection oil level regulator	3 x M 6
ÖV	Connection oil service valve	1/4 " NPTF
P	Connection oil differential pressure sensor	M 20 x 1.5
Q	Connection oil temperature sensor	1/8 " NPTF

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1) Brazing connection

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### Product photo



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