

# HGX7/2110-4

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

Refrigerant: R404A, R507

# BOCK

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## Subject:

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## Performance data

### Application: Refrigeration & AC

Refrigerant	R404A, R507	Compressor refrigeration capacity	113.00 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	113.00 kW
Power supply	50 Hz, 400 V	Power consumption	45.50 kW
Supply frequency	50 Hz	Current draw (400 V)	82.90 A
Evaporating temperature	-5.0 °C	Coefficient of performance (COP/EER)	2.48
<i>Evaporating pressure (abs.)</i>	<i>5.14 bar</i>	Condensing capacity	159.00 kW
Condensing temperature	40.0 °C	Mass flow	0.886 kg/s
<i>Condensing pressure (abs.)</i>	<i>18.17 bar</i>	Discharge end temperature	86.9 °C <sup>1)</sup>
Suction gas temperature	20 °C		
Subcooling (outside cond.)	0 K		
Usable superheat	100%		

## Certifications



### 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.

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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.

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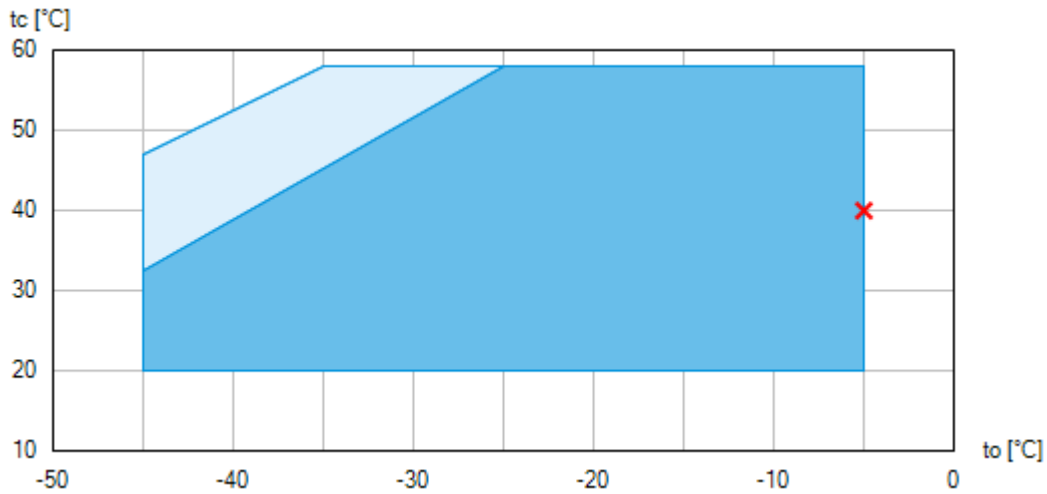
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### Operating limits



-  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. Axis values refer to dew point (saturated vapour line).

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## Technical data

Number of cylinders / Bore / Stroke	6 / 80 mm / 70 mm
Displacement 50/60 Hz (1450/1740 1/min)	183,60 / 220,40 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>	97.0 A
Max. power consumption <sup>2)</sup>	53.1 kW
Starting current (rotor blocked) <sup>2)</sup>	291.0 / 429.0 A
Motor protection	MP10
Protection terminal box	IP 65
Weight	289 kg
Max. permissible pressure (LP/HP) <sup>3)</sup>	19 / 28 bar
Connection suction line SV	64 mm - 2 5/8 "
Connection discharge line DV	42 mm - 1 5/8 "
Lubrication	Oil pump
Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A	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

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.

- Starting current (rotor blocked):

- Part winding (PW) motors: Winding 1 / Winding 1+2
- Delta/Star ( $\Delta/Y$ ) motors:  $\Delta / Y$

- Take account of the max. operating current / max. power consumption for designing fuses, supply lines and safety devices. Fuse: Consumption category AC3.

3) LP = Low pressure  
HP = High pressure

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## Subject:

### Performance data table

Application: Refrigeration & AC  
Reference temperature: Dew point  
Supply frequency: 50 Hz  
Voltage: 400 V  
Suction gas temperature: 20 °C  
Subcooling (outside cond.): 0 K

tc [°C]		to [°C]										
		0.0	-5.0	-10.0	-15.0	-20.0	-25.0	-30.0				
30.0	Q [W]		131000	109000	89100	72100	57300	44600				
	P [kW]		40.60	37.80	34.80	31.60	28.30	24.90				
	I [A]		75.10	71.00	66.90	62.90	59.10	55.50				
35.0	Q [W]		122000	102000	82800	66800	52900	41000				
	P [kW]		43.20	39.90	36.50	33.00	29.30	25.60				
	I [A]		79.00	74.10	69.30	64.60	60.20	56.10				
40.0	Q [W]		113000	93300	76300	61400	48400	37300				
	P [kW]		45.50	41.90	38.10	34.10	30.10	26.00				
	I [A]		82.90	77.10	71.50	66.10	61.10	56.60				
45.0	Q [W]		104000	85300	69500	55700	43800	33500				
	P [kW]		47.80	43.70	39.50	35.10	30.70	26.20				
	I [A]		86.60	79.90	73.50	67.40	61.80	56.80				
50.0	Q [W]		93500	77100	62600	50000	39100	29700				
	P [kW]		49.90	45.40	40.70	35.90	31.10	26.20				
	I [A]		90.30	82.60	75.30	68.50	62.30	56.80				
55.0	Q [W]		83600	68700	55600	44300	34400	26000				
	P [kW]		51.90	46.90	41.80	36.60	31.40	26.10				
	I [A]		94.00	85.20	77.00	69.40	62.70	56.70				



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

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)

Pressure relief 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)

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>

Water-cooled cylinder covers

Connection piece suction and discharge valve in welding design

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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 <sup>2)</sup>

Special voltage and/or frequency (on request)

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

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## Dimensions and connections

Maße in mm  
Dimensions in mm

Massenschwerpunkt  
Centre of gravity

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 Druckabsperventil  
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
HG56e	<sup>1)</sup>	ca. 707	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>	ca. 436	-
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. 839	ca. 760	ca. 580	520,5	95	150	ca. 505	ca. 15
HG88e	ca. 923	ca. 918	ca. 680	617	90	145	ca. 648	ca. 20

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

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SV	Suction line valve, tube $\varnothing$ <sup>1)</sup>	64 mm - 2 5/8 "
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

1) Brazing connection

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**Product photo**



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