

HGX4/465-4

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

Refrigerant: R134a

Subject:

Performance data

Application: Refrigeration & AC

| | | | |
|------------------------------------|-----------------|--------------------------------------|-----------------------|
| Refrigerant | R134a | Compressor refrigeration capacity | 18.10 kW |
| Reference temperature | Dew point | Evaporator refrigeration capacity | 18.10 kW |
| Power supply | 50 Hz, 400 V | Power consumption | 5.08 kW |
| Supply frequency | 50 Hz | Current draw (400 V) | 9.31 A |
| Evaporating temperature | -5.0 °C | Coefficient of performance (COP/EER) | 3.55 |
| <i>Evaporating pressure (abs.)</i> | <i>2.43 bar</i> | Condensing capacity | 23.20 kW |
| Condensing temperature | 32.0 °C | Mass flow | 0.105 kg/s |
| <i>Condensing pressure (abs.)</i> | <i>8.15 bar</i> | Discharge end temperature | 79.8 °C ¹⁾ |
| Suction gas temperature | 20 °C | | |
| Subcooling (outside cond.) | 0 K | | |
| Usable superheat | 100% | | |

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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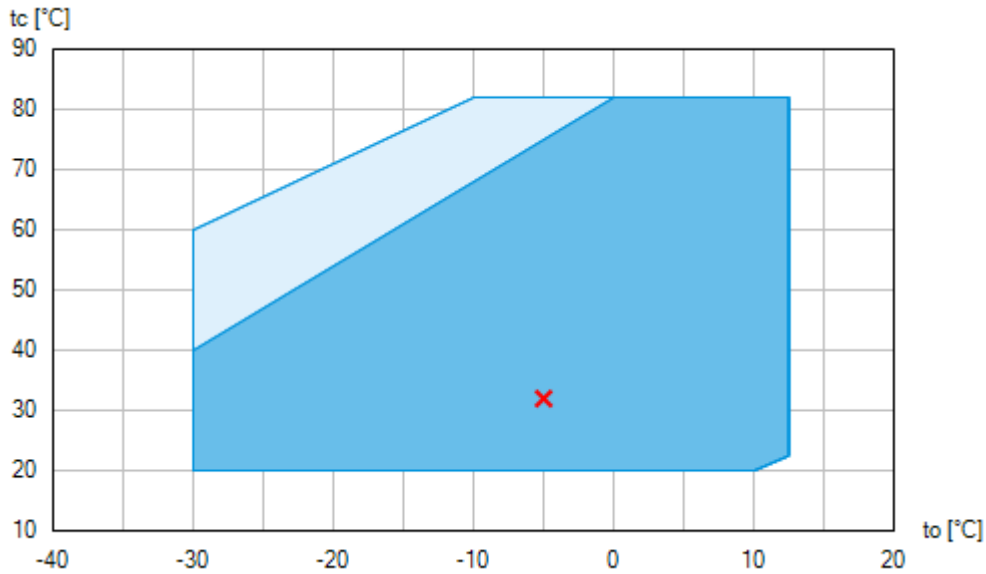
HGX4/465-4



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

Refrigerant: R134a

Subject:

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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HGX4/465-4

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

Refrigerant: R134a

Subject:

Technical data

| | |
|--|---------------------------------|
| Number of cylinders / Bore / Stroke | 4 / 55 mm / 49 mm |
| Displacement 50/60 Hz (1450/1740 1/min) | 40,50 / 48,60 m ³ /h |
| Voltage ¹⁾ | 380-420V Y/YY -3- 50Hz PW |
| | 440-480V Y/YY -3- 60Hz PW |
| Winding divided into | 66% / 33% |
| Max. working current ²⁾ | 20.0 A |
| Max. power consumption ²⁾ | 11.8 kW |
| Starting current (rotor blocked) ²⁾ | 57.0 / 75.0 A |
| Motor protection | MP10 |
| Protection terminal box | IP 65 |
| Weight | 148 kg |
| Max. permissible overpressure (g) (LP/HP) ³⁾ | 19 / 28 bar |
| Connection suction line SV | 35 mm - 1 3/8 " |
| Connection discharge line DV | 28 mm - 1 1/8 " |
| Lubrication | Oil pump |
| Oil type R134a, R404A, R407A/C/F, R448A, R449A, R450A, R513A | BOCKlub E55 |
| Oil type R22 | BOCKlub A46 |
| Oil charge | 2,7 Ltr. |
| Oil sump heater | 230 V - 1 - 50/60 Hz, 80 W |
| Dimensions Length / Width / Height | 690 / 370 / 405 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 (Δ/Y) motors: Δ / Y

- Take account of the max. operating current / max. power consumption for designing motor contractors, feed lines, fuses and motor protection switches. Motor contractors: Consumption category AC3.

3) LP = Low pressure
HP = High pressure

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HGX4/465-4

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

Refrigerant: R134a

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] | | | | | | | | | |
|---------|--------|---------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | | 10.0 | 5.0 | 0.0 | -5.0 | -10.0 | -15.0 | -20.0 | -25.0 | -30.0 | |
| 30.0 | Q [W] | 33600 | 27900 | 22800 | 18400 | 14700 | 11500 | 8680 | 6380 | 4440 | |
| | P [kW] | 6.20 | 5.76 | 5.36 | 4.98 | 4.61 | 4.25 | 3.88 | 3.50 | 3.09 | |
| | I [A] | 10.90 | 10.30 | 9.68 | 9.18 | 8.71 | 8.26 | 7.81 | 7.37 | 6.92 | |
| 35.0 | Q [W] | 32000 | 26500 | 21700 | 17500 | 13900 | 10900 | 8210 | 6010 | 4160 | |
| | P [kW] | 6.58 | 6.10 | 5.65 | 5.22 | 4.81 | 4.39 | 3.97 | 3.54 | 3.07 | |
| | I [A] | 11.40 | 10.80 | 10.10 | 9.50 | 8.95 | 8.43 | 7.92 | 7.41 | 6.90 | |
| 40.0 | Q [W] | 30200 | 24900 | 20400 | 16500 | 13100 | 10200 | 7710 | 5640 | 3890 | |
| | P [kW] | 6.97 | 6.43 | 5.93 | 5.45 | 4.98 | 4.51 | 4.03 | 3.54 | 3.01 | |
| | I [A] | 12.00 | 11.20 | 10.50 | 9.81 | 9.18 | 8.58 | 7.99 | 7.41 | 6.83 | |
| 45.0 | Q [W] | 28200 | 23300 | 19000 | 15300 | 12200 | 9450 | 7170 | 5250 | 3630 | |
| | P [kW] | 7.35 | 6.77 | 6.21 | 5.67 | 5.13 | 4.60 | 4.06 | 3.50 | 2.91 | |
| | I [A] | 12.60 | 11.70 | 10.90 | 10.10 | 9.38 | 8.69 | 8.03 | 7.37 | 6.73 | |
| 50.0 | Q [W] | 26100 | 21500 | 17500 | 14100 | 11200 | 8670 | 6590 | 4840 | 3350 | |
| | P [kW] | 7.75 | 7.10 | 6.47 | 5.87 | 5.27 | 4.67 | 4.06 | 3.43 | 2.77 | |
| | I [A] | 13.20 | 12.20 | 11.30 | 10.40 | 9.56 | 8.78 | 8.03 | 7.29 | 6.58 | |
| 55.0 | Q [W] | 23800 | 19500 | 15900 | 12700 | 10100 | 7820 | 5950 | 4380 | 3060 | |
| | P [kW] | 8.14 | 7.43 | 6.73 | 6.06 | 5.39 | 4.72 | 4.03 | 3.33 | 2.59 | |
| | I [A] | 13.80 | 12.70 | 11.70 | 10.70 | 9.72 | 8.84 | 7.99 | 7.18 | 6.39 | |
| 60.0 | Q [W] | 21300 | 17400 | 14100 | 11300 | 8860 | 6890 | 5250 | 3880 | 2740 | |
| | P [kW] | 8.54 | 7.75 | 6.99 | 6.24 | 5.49 | 4.74 | 3.98 | 3.19 | 2.37 | |
| | I [A] | 14.50 | 13.20 | 12.10 | 10.90 | 9.86 | 8.87 | 7.93 | 7.03 | 6.17 | |
| 65.0 | Q [W] | 18700 | 15200 | 12200 | 9640 | 7570 | 5870 | 4470 | 3330 | | |
| | P [kW] | 8.95 | 8.08 | 7.24 | 6.41 | 5.58 | 4.74 | 3.89 | 3.02 | | |
| | I [A] | 15.10 | 13.70 | 12.40 | 11.20 | 9.98 | 8.87 | 7.83 | 6.84 | | |
| 70.0 | Q [W] | 15900 | 12700 | 10100 | 7910 | 6160 | 4750 | 3620 | | | |
| | P [kW] | 9.36 | 8.41 | 7.48 | 6.56 | 5.65 | 4.72 | 3.78 | | | |
| | I [A] | 15.80 | 14.30 | 12.80 | 11.40 | 10.10 | 8.84 | 7.69 | | | |

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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HGX4/465-4

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

Refrigerant: R134a

Subject:

Scope of supply

Semi-hermetic four-cylinder reciprocating compressor with drive motor
Motor unit flanged onto the compressor housing

Oil pump

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

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 Traxoil ¹⁾

Oil charge:

HG: **BOCK**lub A46

HGX: **BOCK**lub E55

Sight glass

Prepared for capacity regulator (1 cylinder cover)

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)

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 ²⁾

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

Oil sump heater 230 V - 1 - 50/60 Hz, 80 W

Oil service valve

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

Water-cooled cylinder covers

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

Connection piece suction and discharge valve in welding design

Thermal protection thermostat per cylinder cover ³⁾

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HGX4/465-4

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

Refrigerant: R134a

Subject:

Bock Compressor Management BCM2000 including oil pressure control,
oil temperature control (NTC), thermal protection thermostat per cylinder covers

Additional fan

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

230 V AC - 1 - 60 Hz, 128 W ²⁾

Intermediate adapter for discharge line valve

Special voltage and/or frequency (on request)

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

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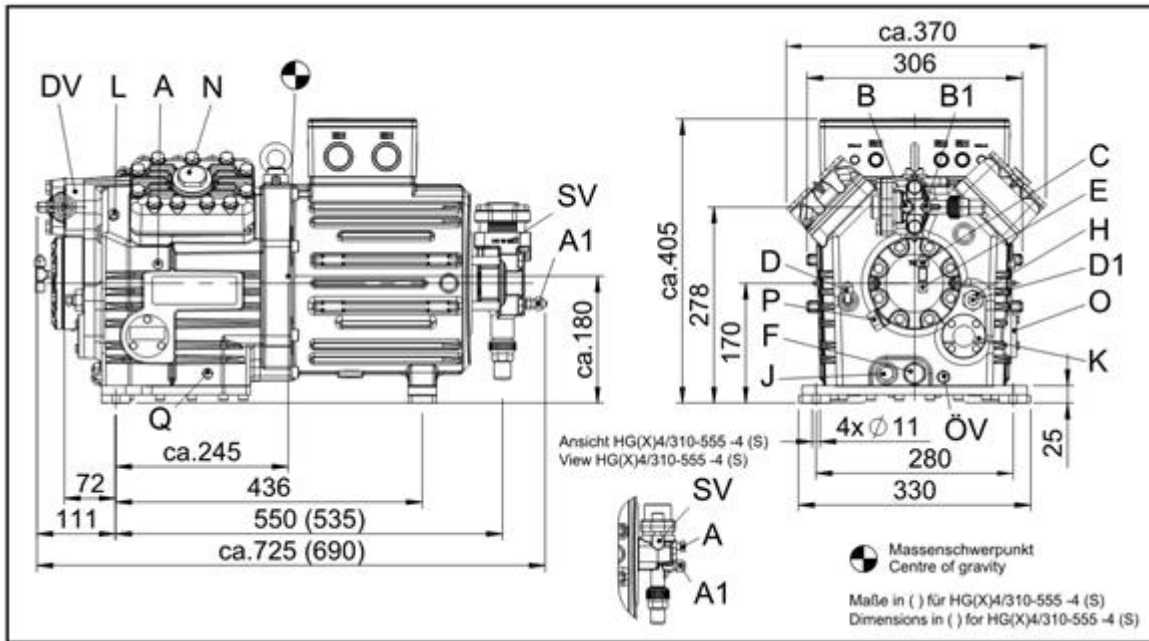
HGX4/465-4

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

Refrigerant: R134a

Subject:

Dimensions and connections



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HGX4/465-4

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

Refrigerant: R134a

Subject:

| | | |
|----|---|-----------------|
| SV | Suction line valve, tube ø ¹⁾ | 35 mm - 1 3/8 " |
| DV | Discharge line valve, tube ø ¹⁾ | 28 mm - 1 1/8 " |
| A | Connection suction side, not lockable | 1/8 " NPTF |
| A1 | Connection suction side, lockable | 7/16 " UNF |
| 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 48 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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Engine: 380-420V Y/YY -3- 50Hz PW

Refrigerant: R134a

Subject:

BOCK colour the world
of tomorrow

Product photo



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