HGX34/110-4 ML CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

BOCK colour the world of tomorrow

Performance data

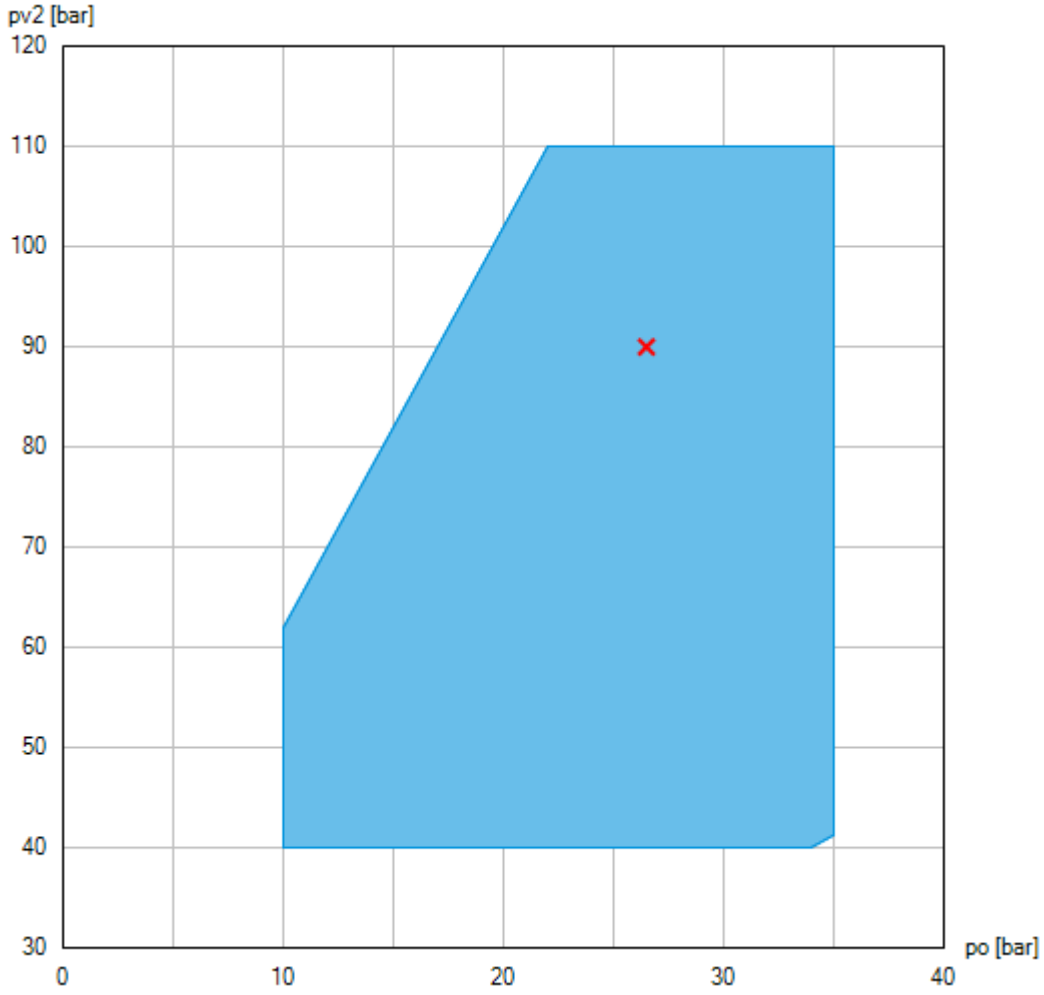
Application: Refrigeration & AC

Refrigerant	R744		Compressor refrigeration capacity	21.40 kW
Reference temperature	Dew point		Evaporator refrigeration capacity	21.40 kW
Supply frequency	50 Hz		Power consumption	11.70 kW
Power supply	50 Hz, 400 V		Current draw (400 V)	20.70 A
Evaporating temperature	-10.0 °C		Coefficient of performance (COP/EER)	1.82
Evaporating pressure (abs.)	*26.49 bar*		Gas cooler heat rejection	33.10 kW
High pressure (abs.)	90.00 bar		Mass flow	0.142 kg/s
Gas cooler outlet temperature	35.0 °C		Discharge end temperature	113.1 °C [1)]
Suction gas superheat	10 K			
Subcooling (outside cond.)	-- 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.

Subject to change without notice

Operating limits



Unlimited application range (compressor with DCR22 CO2 flexxCO2NTROL permitted - range preliminary)

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

Technical data

Number of cylinders / Bore / Stroke	4 / 28 mm / 46 mm
Displacement 50/60 Hz (1450/1740 ¹/min)	9,90 / 11,80 m³/h
Voltage [1]	380-420V Y/YY -3- 50Hz PW
	440-480V Y/YY -3- 60Hz PW
Winding divided into	50% / 50%
Max. working current [2]	24.6 A
Max. power consumption [2]	14.4 kW
Starting current (rotor blocked) [2]	87.0 / 149.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	196 kg
Frequency range [3]	20 - 70 Hz
Max. permissible overpressure (g) (LP/HP) [4]	100 / 150 bar
Connection suction line SV	28 mm - 1 1/8 "
Connection discharge line DV	22 mm - 7/8 "
Lubrication	Oil pump
Oil type R744	BOCKlub E85
Oil charge	2,3 Ltr.
Dimensions Length / Width / Height	708 / 417 / 393 mm
Sound power level L_{WA} [5]	73 dB(A) @ -10 °C / 15 °C / 10 K
	73 dB(A) @ -10 °C / 90 bar / 10 K
Sound pressure level L_{pA} [5]	60 dB(A) @ -10 °C / 15 °C / 10 K
	60 dB(A) @ -10 °C / 90 bar / 10 K

1) Tolerance (± 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

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) The maximum permissible working current of the compressor (Imax) must not be exceeded. Take account of the guidelines for use of frequency inverter (see compressor assembly instruction or selection software).

4) LP = Low pressure
HP = High pressure

5) Declared dual-number noise emission values are in accordance with ISO 4871. The corresponding uncertainty to the sound power level is K_{WA} = 2,5 dB and to the sound pressure level is K_{pA} = 2,5 dB. The values are valid for 50 Hz with the refrigerant R744 at the standard rating points according to EN 12900.
- A-weighted sound power level L_{WA} (re 1 pW), in decibel. To determine the values, measurement methods of the ISO 3740 standard with accuracy class 2 or higher were used.
- A-weighted sound pressure level L_{pA} (re 20 µPa), in decibel. The values are calculated from the sound power level in accordance with ISO 11203: $L_{pA} = L_{WA} - Q_2$ at a distance of d = 1m to the reference box.

Performance data table

Application: Refrigeration & AC
Supply frequency: 50 Hz
Voltage: 400 V
Suction gas superheat: 10 K
Subcooling (outside cond.): -- K

Subcritical

tc [°C]	to [°C]									
		0.0	**-5.0**	**-10.0**	**-15.0**	**-20.0**	**-25.0**	**-30.0**	**-35.0**	**-40.0**
10.0	Q [W] P [kW] I [A]	51600 3.93 11.70	43700 4.87 12.60	36600 5.57 13.30	30500 6.05 13.70	25100 6.33 14.00	20500 6.45 14.20	16500 6.43 14.10	13100 6.29 14.00	10200 6.06 13.80
15.0	Q [W] P [kW] I [A]	47400 5.27 13.00	40100 6.07 13.80	33600 6.63 14.40	27900 6.98 14.70	22900 7.14 14.90	18700 7.14 14.90	15000 7.00 14.80	11800 6.75 14.50	9130 6.41 14.10
20.0	Q [W] P [kW] I [A]	42900 6.61 14.30	36200 7.26 15.10	30400 7.69 15.50	25200 7.90 15.80	20700 7.93 15.80	16800 7.80 15.70	13400 7.54 15.40	10600 7.17 15.00	8120 6.72 14.40
25.0	Q [W] P [kW] I [A]	37900 7.94 15.80	32000 8.45 16.40	26800 8.72 16.80	22200 8.80 16.90	18200 8.69 16.70	14700 8.43 16.40	11800 8.04 15.90	9200 7.55 15.40	
30.0	Q [W] P [kW] I [A]	30700 9.27 17.40	25900 9.62 17.90	21700 9.74 18.00	18000 9.67 18.00	14700 9.42 17.60	11900 9.02 17.10	9430 8.50 16.50		

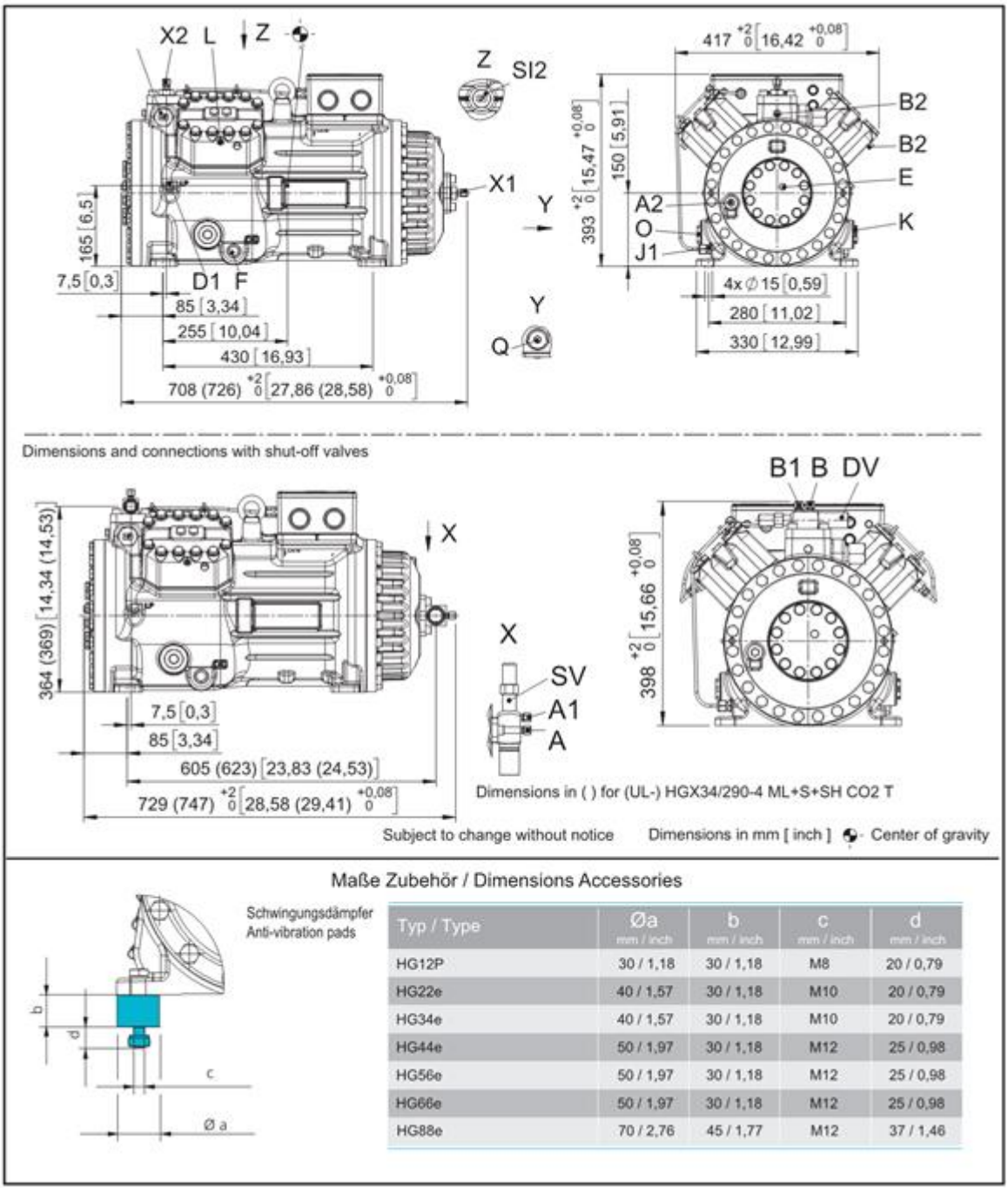
Transcritical

tga [°C]	to [°C]									
		0.0	**-5.0**	**-10.0**	**-15.0**	**-20.0**	**-25.0**	**-30.0**	**-35.0**	**-40.0**
30	pV2 [bar] Q [W] P [kW] I [A]	75 33200 9.72 18.00	75 28000 10.00 18.40	75 23400 10.00 18.50	75 19400 9.96 18.30	75 15900 9.66 17.90	75 12800 9.22 17.40	75 10200 8.65 16.70		
35	pV2 [bar] Q [W] P [kW] I [A]	90 30300 11.80 20.90	90 25600 11.90 21.00	90 21400 11.70 20.70	90 17600 11.30 20.20	90 14400 10.80 19.40	85 11000 9.84 18.20			
40	pV2 [bar] Q [W] P [kW] I [A]	100 26700 13.10 22.80	105 23100 13.50 23.40	105 19300 13.10 22.80	105 15900 12.50 21.90	100 12600 11.40 20.40	85 5520 9.84 18.20			
45	pV2 [bar] Q [W] P [kW] I [A]	110 23500 14.40 24.60	110 19800 14.10 24.20	110 16500 13.60 23.50	110 13600 12.90 22.50	100 9340 11.40 20.40				
50	pV2 [bar] Q [W] P [kW] I [A]	110 17900 14.40 24.60	110 15200 14.10 24.20	110 12700 13.60 23.50	110 10500 12.90 22.50	100 6020 11.40 20.40				

☐ Optimal high pressure is outside of the operating limits. Performance data are indicated at maximal possible high pressure.

to	Evaporating temperature
tc	Condensing temperature
tga	Gas cooler outlet temperature
pV2	High pressure (abs.)
Q	Compressor refrigeration capacity
P	Power consumption
I	Current draw

Dimensions and connections



Maße Zubehör / Dimensions Accessories

Schwingungsdämpfer
Anti-vibration pads

Typ / Type	Øa mm / inch	b mm / inch	c mm / inch	d mm / inch
HG12P	30 / 1,18	30 / 1,18	M8	20 / 0,79
HG22e	40 / 1,57	30 / 1,18	M10	20 / 0,79
HG34e	40 / 1,57	30 / 1,18	M10	20 / 0,79
HG44e	50 / 1,97	30 / 1,18	M12	25 / 0,98
HG56e	50 / 1,97	30 / 1,18	M12	25 / 0,98
HG66e	50 / 1,97	30 / 1,18	M12	25 / 0,98
HG88e	70 / 2,76	45 / 1,77	M12	37 / 1,46

SV	Suction connection, tube ø [1)]	28 mm - 1 1/8 "
DV	Discharge connection, tube ø [1)]	22 mm - 7/8 "
A	Connection suction side, not lockable	7/16" UNF
A1	Connection suction side, lockable	7/16" UNF
A2	Connection suction side, not lockable	1/8" NPTF
B	Connection discharge side, not lockable	7/16" UNF
B1	Connection discharge side, lockable	7/16" UNF
B2	Connection discharge side, not lockable	1/8" NPTF
D1	Connection oil return from oil separator	1/4" NPTF
E	Connection oil pressure gauge	1/8" NPTF
F	Oil drain	M22x1,5
J1	Oil sump heater	3/8" NPTF
K	Sight glass	1 1/8 " - 18 UNEF
L	Connection thermal protection thermostat [2)]	1/8" NPTF
O	Connection oil level regulator	1 1/8 " - 18 UNEF
Q	Connection oil temperature sensor	1/8" NPTF
SI1	Decompression valve HP	M24x1,5
SI2	Decompression valve LP	M22x1,5
X1	Connection for schrader valve, suction side	7/16" UNF
X2	Connection for schrader valve, discharge side	7/16" UNF

1) Solder/ Welding connection, cutting ring

2) No connection discharge side

Product photo

Picture similar and/or with accessories.