

# HGX34/210-4 ML CO2 T

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

Refrigerant: R744

Subject: Предварительный расчет

## Performance data

### Application: Refrigeration & AC

Refrigerant	R744	Compressor refrigeration capacity	57.40 kW
Reference temperature	Dew point	Evaporator refrigeration capacity	57.40 kW
Supply frequency	50 Hz	Power consumption	21.80 kW
Power supply	50 Hz, 400 V	Current draw (400 V)	36.90 A
Evaporating temperature	0.1 °C	Coefficient of performance (COP/EER)	2.63
<i>Evaporating pressure (abs.)</i>	<i>34.94 bar</i>	Gas cooler heat rejection	79.30 kW
High pressure (abs.)	90.00 bar	Mass flow	0.387 kg/s
Gas cooler outlet temperature	35.0 °C	Discharge end temperature	93.1 °C <sup>1)</sup>
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.

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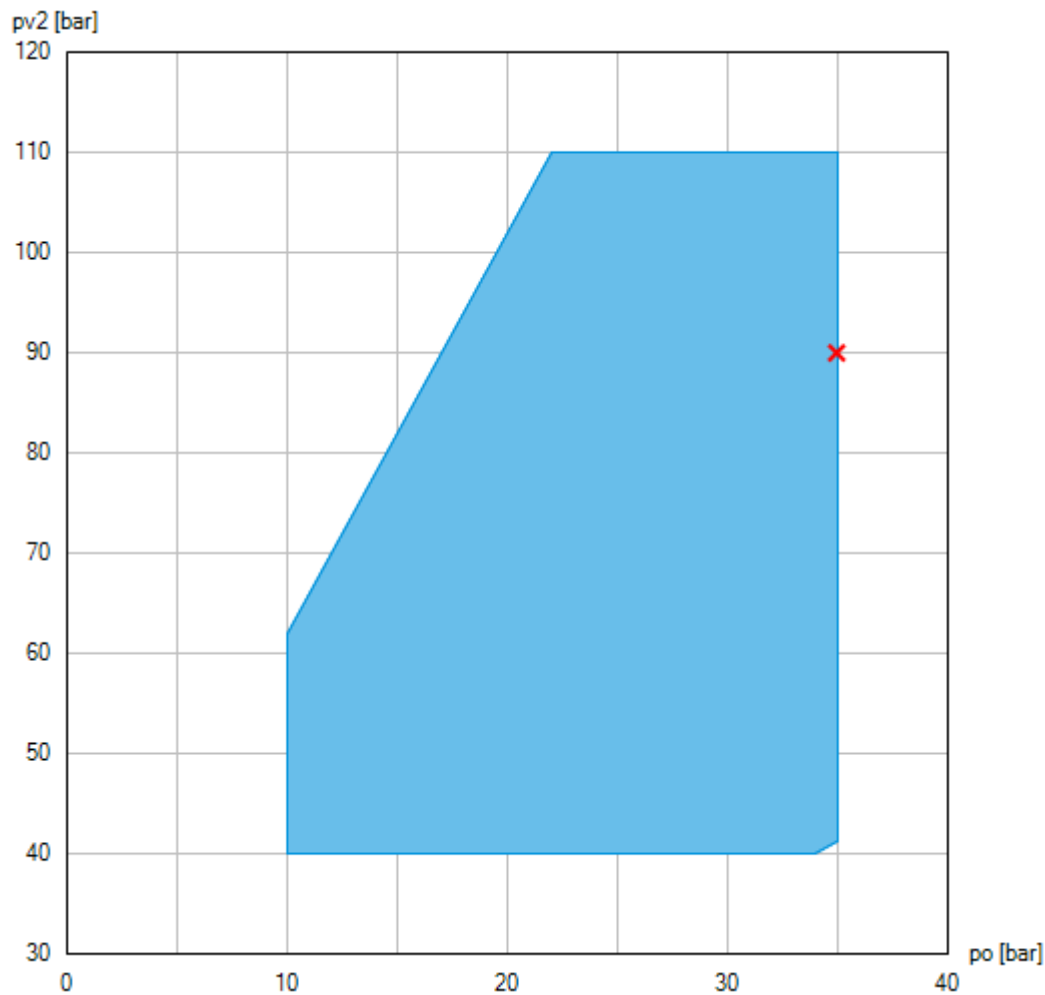
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## Operating limits



 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.

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## Technical data

Number of cylinders / Bore / Stroke	4 / 38 mm / 46 mm
Displacement 50/60 Hz (1450/1740 <sup>1</sup> /min)	18,20 / 21,80 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>	44.5 A
Max. power consumption <sup>2)</sup>	26.7 kW
Starting current (rotor blocked) <sup>2)</sup>	125.0 / 209.0 A
Motor protection	INT69 G
Protection terminal box	IP 65
Weight	206 kg
Frequency range <sup>3)</sup>	20 - 70 Hz
Max. permissible overpressure (g) (LP/HP) <sup>4)</sup>	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 <sub>WA</sub> <sup>5)</sup>	78 dB(A) @ -10 °C / 15 °C / 10 K
	77 dB(A) @ -10 °C / 90 bar / 10 K
Sound pressure level L <sub>pA</sub> <sup>5)</sup>	65 dB(A) @ -10 °C / 15 °C / 10 K
	64 dB(A) @ -10 °C / 90 bar / 10 K

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

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 motor contractors, feed lines, fuses and motor protection switches. Motor contractors: Consumption category AC3.

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

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- 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  $\mu$ Pa), 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  $d = 1$  m to the reference box.

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## 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]	95800	81400	68600	57400	47600	39100	31900	25700	20500	
	P [kW]	7.53	8.92	9.97	10.60	11.10	11.20	11.10	10.80	10.40	
	I [A]	18.40	19.80	20.90	21.70	22.20	22.40	22.30	21.90	21.40	
15.0	Q [W]	88200	74900	63000	52700	43600	35800	29100	23400	18600	
	P [kW]	9.77	10.90	11.80	12.30	12.50	12.50	12.20	11.80	11.10	
	I [A]	20.70	22.00	23.00	23.70	24.00	23.90	23.60	23.00	22.30	
20.0	Q [W]	80100	67900	57200	47700	39400	32300	26300	21100	16800	
	P [kW]	12.00	13.00	13.60	14.00	14.00	13.80	13.30	12.60	11.80	
	I [A]	23.30	24.50	25.40	25.80	25.80	25.50	24.90	24.10	23.10	
25.0	Q [W]	70900	60100	50500	42100	34800	28500	23100	18500		
	P [kW]	14.40	15.10	15.60	15.70	15.50	15.00	14.30	13.50		
	I [A]	26.30	27.30	27.80	28.00	27.70	27.10	26.30	25.10		
30.0	Q [W]	57600	48800	41000	34100	28200	23000	18600			
	P [kW]	16.80	17.30	17.50	17.30	16.90	16.20	15.30			
	I [A]	29.60	30.30	30.50	30.30	29.70	28.80	27.50			

### 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]	75	75	75	75	75	75	75			
	Q [W]	62400	52800	44300	36900	30400	24900	20100			
	P [kW]	17.70	18.10	18.20	17.90	17.40	16.60	15.60			
	I [A]	30.80	31.30	31.40	31.10	30.40	29.30	28.00			
35	pV2 [bar]	90	90	90	90	90	85				
	Q [W]	57200	48300	40500	33700	27700	21500				
	P [kW]	21.80	21.70	21.40	20.70	19.70	17.90				
	I [A]	36.90	36.80	36.20	35.10	33.70	31.10				
40	pV2 [bar]	100	105	105	105	100	85				
	Q [W]	50500	44000	36800	30500	24400	10800				
	P [kW]	24.30	25.00	24.20	23.00	21.00	17.90				
	I [A]	40.80	41.90	40.50	38.70	35.60	31.10				
45	pV2 [bar]	110	110	110	110	100					
	Q [W]	44600	37700	31500	26200	18100					
	P [kW]	26.70	26.00	25.00	23.70	21.00					
	I [A]	44.70	43.60	41.90	39.90	35.60					
50	pV2 [bar]	110	110	110	110	100					
	Q [W]	34100	28800	24200	20100	11700					
	P [kW]	26.70	26.00	25.00	23.70	21.00					
	I [A]	44.70	43.60	41.90	39.90	35.60					

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

*t<sub>o</sub>* Evaporating temperature  
*t<sub>c</sub>* Condensing temperature  
*t<sub>ga</sub>* Gas cooler outlet temperature  
*p<sub>V2</sub>* High pressure (abs.)  
*Q* Compressor refrigeration capacity  
*P* Power consumption  
*I* Current draw

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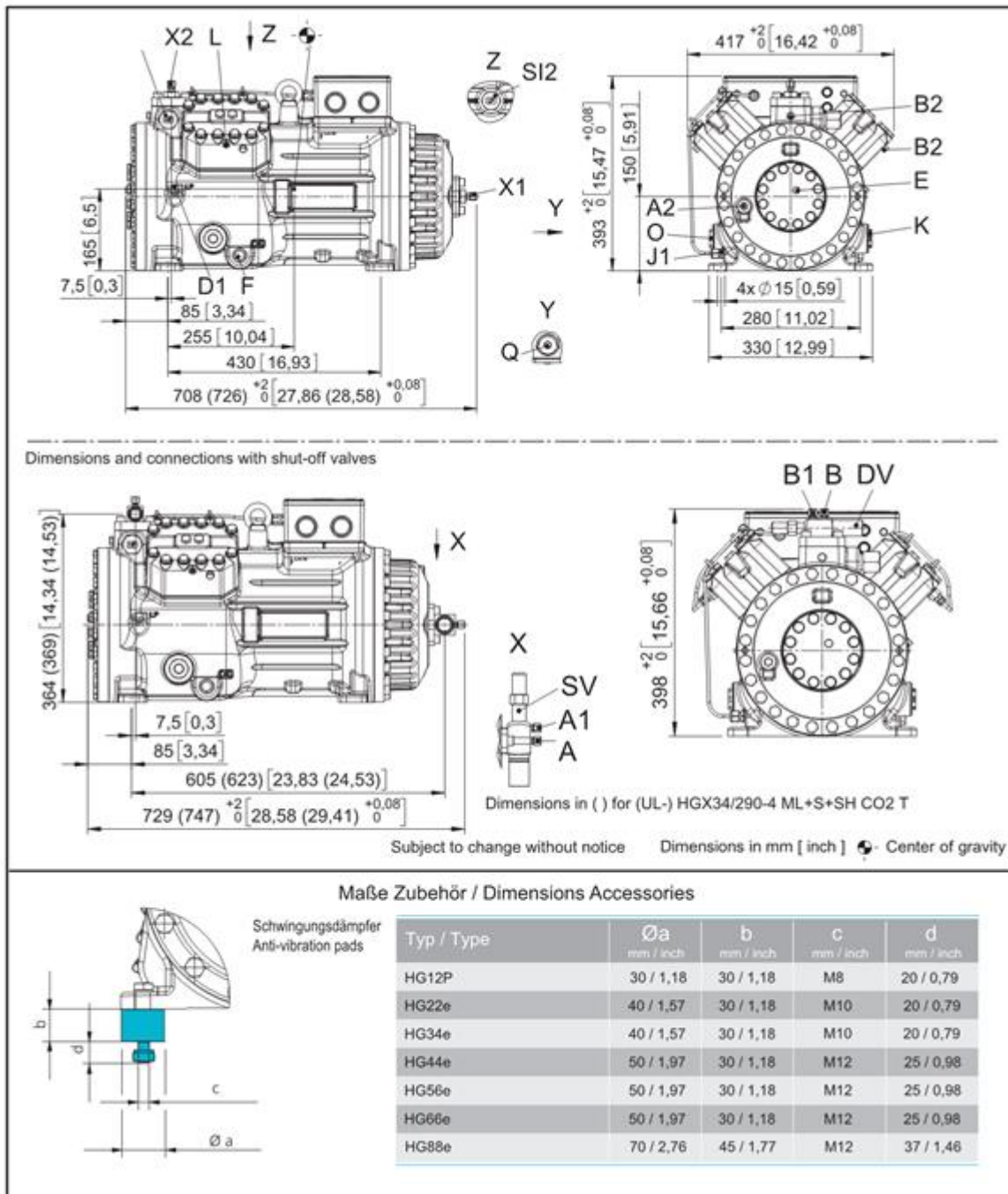
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## Dimensions and connections



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SV	Suction connection, tube $\varnothing$ <sup>1)</sup>	28 mm - 1 1/8 "
DV	Discharge connection, tube $\varnothing$ <sup>1)</sup>	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 <sup>2)</sup>	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

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### Product photo

*Picture similar and/or with accessories.*



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