



Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	4G.2Y-K	Useful superheat	100%
Refrigerant	R404A	Motor speed	1450 /min
Reference temperature	Dew point temp.	Drive	Coupling (1:1)
Liq. subc. (in condenser)	0 K	Capacity control	100%
Suction gas temperature	20,00 °C		

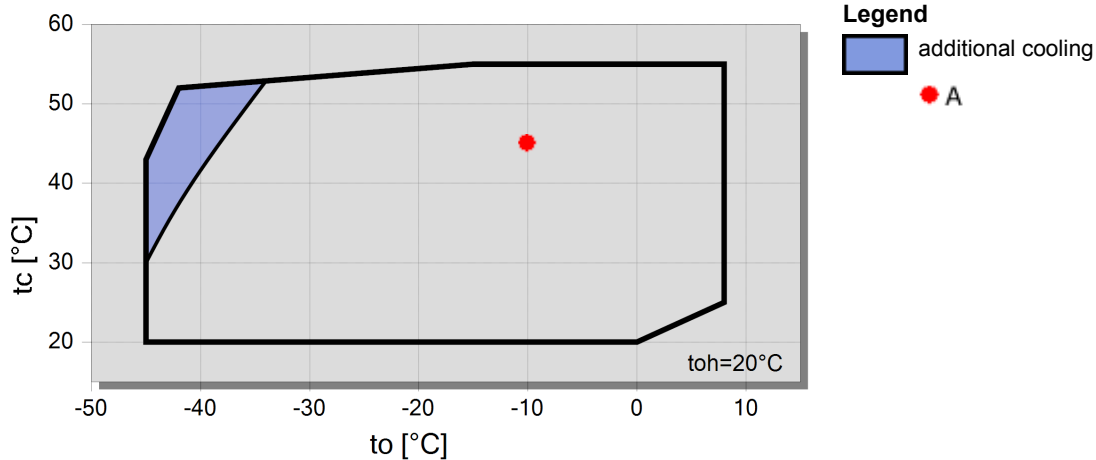
Result

Q [W]	Cooling capacity	COP [-]	COP/EER
Q* [W]	Cooling capacity *	COP* [-]	COP/EER *
P [kW]	Power input	m [kg/h]	Mass flow
Qc [W]	Condenser capacity	n [/min]	Compr. speed

tc	to	10°C	5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C
30°C	Q [W]	--	98332	82216	68260	56190	45786	36858	29240
	Q* [W]	--	98332	82216	68260	56190	45786	36858	29240
	P [kW]	--	17,86	17,54	16,92	16,04	14,95	13,69	12,31
	Qc [W]	--	116196	99760	85180	72231	60735	50549	41552
	COP [-]	--	5,50	4,69	4,03	3,50	3,06	2,69	2,37
	COP* [-]	--	5,50	4,69	4,03	3,50	3,06	2,69	2,37
	m [kg/h]	--	2535	2090	1715	1398	1129	903	712
	n [/min]	--	1450	1450	1450	1450	1450	1450	1450
	40°C	Q [W]	--	84898	70896	58725	48171	39053	31216
Q* [W]		--	84898	70896	58725	48171	39053	31216	24522
P [kW]		--	20,6	19,84	18,81	17,57	16,18	14,67	13,07
Qc [W]		--	105541	90737	77532	65745	55235	45884	37589
COP [-]		--	4,11	3,57	3,12	2,74	2,41	2,13	1,88
COP* [-]		--	4,11	3,57	3,12	2,74	2,41	2,13	1,88
m [kg/h]		--	2475	2034	1662	1349	1083	859	670
n [/min]		--	1450	1450	1450	1450	1450	1450	1450
50°C		Q [W]	--	70886	59118	48838	39890	32139	25465
	Q* [W]	--	70886	59118	48838	39890	32139	25465	19757
	P [kW]	--	23,4	22,2	20,8	19,27	17,59	15,82	13,97
	Qc [W]	--	94330	81341	69661	59160	49731	41280	33727
	COP [-]	--	3,02	2,66	2,35	2,07	1,83	1,61	1,41
	COP* [-]	--	3,02	2,66	2,35	2,07	1,83	1,61	1,41
	m [kg/h]	--	2405	1969	1602	1292	1029	808	622
	n [/min]	--	1450	1450	1450	1450	1450	1450	1450

-- No calculation possible (see message in single point selection)
 *According to EN12900 (20°C suction gas temp., 0K liquid subcooling)

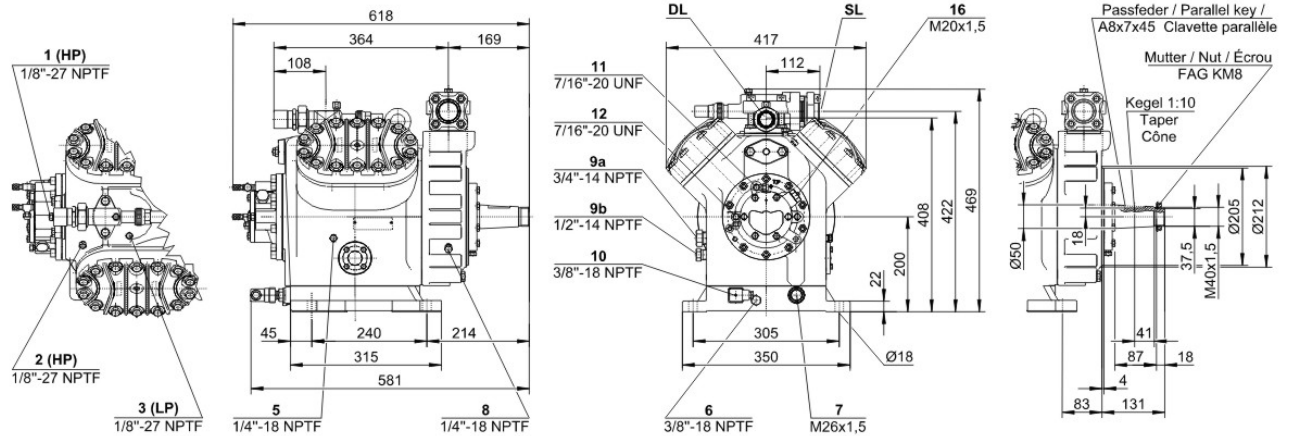
Application Limits Standard 4G.2





Technical Data: 4G.2Y-K

Dimensions and Connections



Technical Data

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Displacement (1450 RPM 50Hz)	84,5 m3/h
Displacement (1750 RPM 60Hz)	102,0 m3/h
No. of cylinder x bore x stroke	4 x 75 mm x 55 mm
Allowed speed range	750 .. 1750 1/min
Weight	129 kg
Max. pressure (LP/HP)	19 / 25 bar
Connection suction line	42 mm - 1 5/8"
Connection discharge line	28 mm - 1 1/8"
Oil type R134a/R407C/R404A/R507A/R407A/R407F	tc<55°C: BSE32 / tc>55°C: BSE55 (Option)
Oil type R22 (R12/R502)	B5.2 (Standard)

Extent of delivery (Standard)

Oil charge	4,7 dm3
Protective charge	Standard
Suction shut-off valve	Standard
Discharge shut-off valve	Standard
Pressure relief valve	Standard

Available Options

Coupling (...K) w. A/C + medium	KK620 [<22kW] / KK630 [<45kW] (Option)
Coupling (...K) w. low temp.	KK625 [<22kW] / KK630 [<45kW] (Option)
Coupling housing	Option
Motor pulley (...S)	190, 210, 230 mm (Option)
V-belts	5 x SPA (Option)
Discharge gas temperature sensor	Option (incl. INT69VS)
Start unloading	Option
Connection cooling water	R 3/4" (Option)
Capacity control	100-50% (Option)
Additional fan	Option
Water-cooled cylinder heads	Option
Oil service valve	Option
Crankcase heater	140 W (Option)
Oil pressure monitoring	MP54 (Option)
Kit for marine application	Option



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Motor Selection

The required driving motor is selected for starting conditions at direct start as well as at star-delta- or PW-start with start unloading (bypass + check valve). The starting conditions refer to the following defined operation points resp. to the maximum application limit of the compressor. Should the evaporation- or the condensing temperature of the plant be higher at the start, an individual motor selection is necessary.

Evaporation temperature for motor selection				
	HH	H	M	L
R134a	+20 °C	+12,5 °C	-5 °C	-20 °C
R404A / R507A		+7,5 °C	-5 °C	-20 °C
R407F / R407A				
R22		+12,5 °C	-5 °C	-20 °C
NH□	+15 °C	+10 °C	-5 °C	

The stated motor data refer to IEC motors at which the pull-up torque does not fall below 90 % of the max. torque. In addition the following starting torques (referring to direct starting torque) must be reached:

- * 2-cylinder compressors 220 %
- * 4-cylinder compressors 180 %
- * 6-cylinder compressors 160 %

Should the motor not fulfil these criteria, an individual selection is also necessary.

Condenser capacity

The condenser capacity can be calculated with or without heat rejection. This option can be set in the menu Program □ Options. The heat rejection is constantly 5 % of the power consumption. The condensing capacity is to be found in the line cond.cap. (with HR) resp. cond.cap.

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
 - 2 Connection for discharge gas temperature sensor (HP) (for 4VE(S)-6Y .. 4NE(S)-20(Y) connection for CIC sensor as alternative)
 - 3 Low pressure connection (LP)
 - 4 CIC system: injection nozzle (LP)
 - 4b Connection for CIC sensor
 - 4c Connection for CIC sensor (MP / operation with liquid subcooler)
 - 5 Oil fill plug
 - 6 Oil drain
 - 7 Oil filter (magnetic screw)
 - 8 Oil return (oil separator)
 - 8* Oil return with NH₃ and insoluble oil
 - 9 Connection for oil and gas equalization (parallel operation)
 - 9a Connection for gas equalization (parallel operation)
 - 9b Connection for oil equalization (parallel operation)
 - 10 Oil heater connection
 - 11 Oil pressure connection +
 - 12 Oil pressure connection -
 - 13 Cooling water connection
 - 14 Intermediate pressure connection (MP)
 - 15 Liquid injection (operation without liquid subcooler and with thermostatic expansion valve)
 - 16 Connection for oil monitoring (opto-electrical oil monitoring "OLC-K1" or differential oil pressure switch "Delta-PII")
 - 17 Refrigerant inlet at liquid subcooler
 - 18 Refrigerant outlet at liquid subcooler
 - 19 Clamp space
 - 20 Terminal plate
 - 21 Maintenance connection for oil valve
 - 22 Pressure relief valve to the atmosphere (discharge side)
 - 23 Pressure relief valve to the atmosphere (suction side)
- SL Suction gas line
DL Discharge gas line
- Dimensions can show tolerances according to EN ISO 13920-B.