



Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	4T.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		

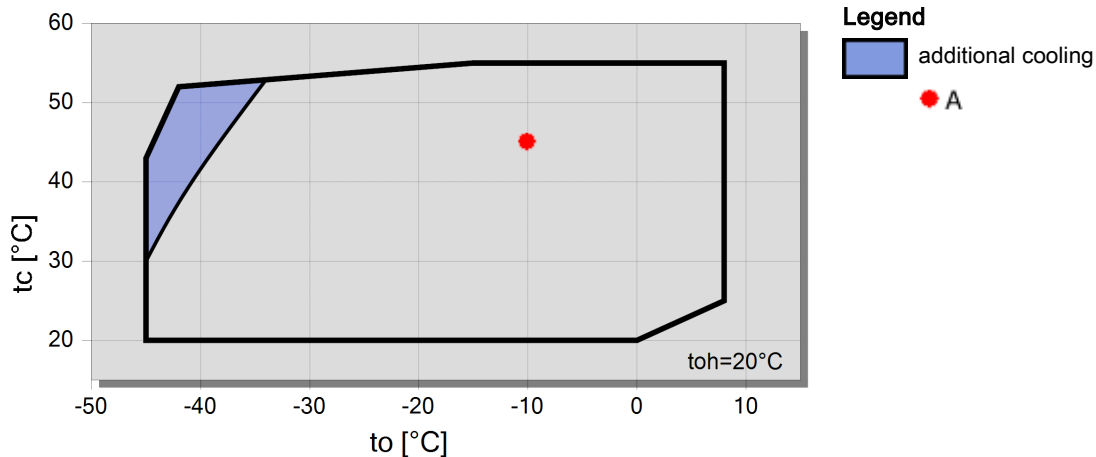
Result

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	0°C	-5°C	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C
30°C	Q [W]	38121	31817	26355	21634	17572	14094	11134	8633
	Q* [W]	38121	31817	26355	21634	17572	14094	11134	8633
	P [kW]	8,23	7,99	7,61	7,11	6,55	5,95	5,35	4,78
	Qc [W]	46355	39808	33961	28749	24123	20044	16483	13417
	COP [-]	4,63	3,98	3,46	3,04	2,68	2,37	2,08	1,80
	COP* [-]	4,63	3,98	3,46	3,04	2,68	2,37	2,08	1,80
	m [kg/h]	969	799	656	534	430	343	270	208
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
40°C	Q [W]	33057	27567	22790	18645	15064	11985	9353	7118
	Q* [W]	33057	27567	22790	18645	15064	11985	9353	7118
	P [kW]	9,33	8,85	8,26	7,62	6,94	6,28	5,66	5,11
	Qc [W]	42387	36413	31053	26262	22008	18263	15009	12232
	COP [-]	3,54	3,12	2,76	2,45	2,17	1,91	1,65	1,39
	COP* [-]	3,54	3,12	2,76	2,45	2,17	1,91	1,65	1,39
	m [kg/h]	948	780	638	517	414	328	254	192,6
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
50°C	Q [W]	27768	23136	19081	15544	12471	9814	7530	5577
	Q* [W]	27768	23136	19081	15544	12471	9814	7530	5577
	P [kW]	10,40	9,73	9,00	8,26	7,53	6,86	6,27	5,80
	Qc [W]	38165	32863	28084	23804	20004	16673	13799	11378
	COP [-]	2,67	2,38	2,12	1,88	1,66	1,43	1,20	0,96
	COP* [-]	2,67	2,38	2,12	1,88	1,66	1,43	1,20	0,96
	m [kg/h]	925	759	618	498	396	309	236	173,6
	n [/min]	1450	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)

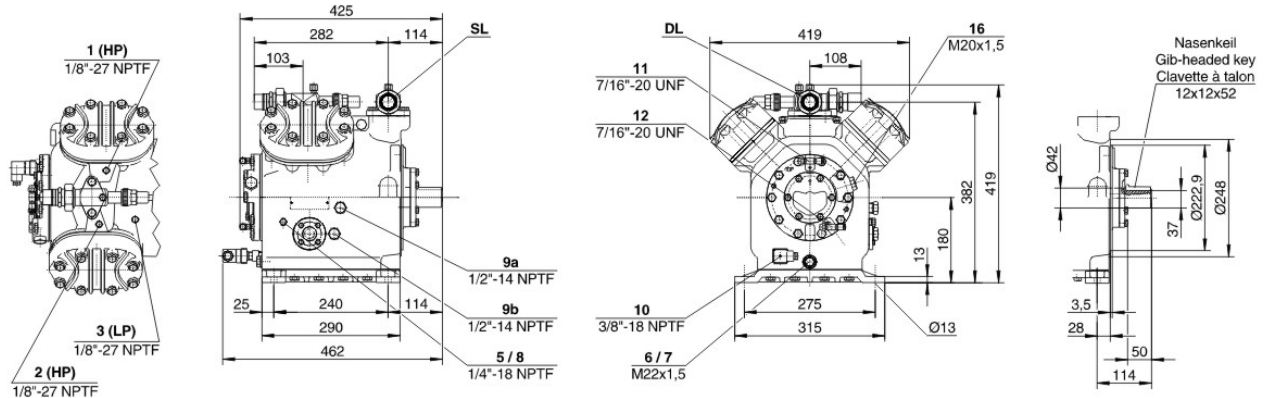
Application Limits Standard 4T.2





Technical Data: 4T.2Y-K

Dimensions and Connections



Technical Data

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Displacement (1450 RPM 50Hz)	39,36 m3/h
Displacement (1750 RPM 60Hz)	47,5 m3/h
No. of cylinder x bore x stroke	4 x 60 mm x 40 mm
Allowed speed range	750 .. 1750 1/min
Weight	77 kg
Max. pressure (LP/HP)	19 / 25 bar
Connection suction line	35 mm - 1 3/8"
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	4,0 dm3
Protective charge	Standard
Suction shut-off valve	Standard
Discharge shut-off valve	Standard

Available Options

Coupling (...-K) w. A/C + medium	KK411 [<11kW] / KK420 [<22kW] (Option)
Coupling (...-K) w. low temp.	KK415 [<7.5kW] / KK425 [<22kW] (Option)
Coupling housing	Option
Motor pulley (...-S)	190, 210, 230 mm (Option)
V-belts	3 x SPA (Option)
Discharge gas temperature sensor	Option (incl. INT69VS)
Start unloading	Option
Connection cooling water	R 1/2" (Option)
Capacity control	100-50% (Option)
Additional fan	Option
Water-cooled cylinder heads	Option
Oil service valve	Option
Crankcase heater	100 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 ₃	+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.