



Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	2N.2-K	Useful superheat	100%
Refrigerant	R22	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		

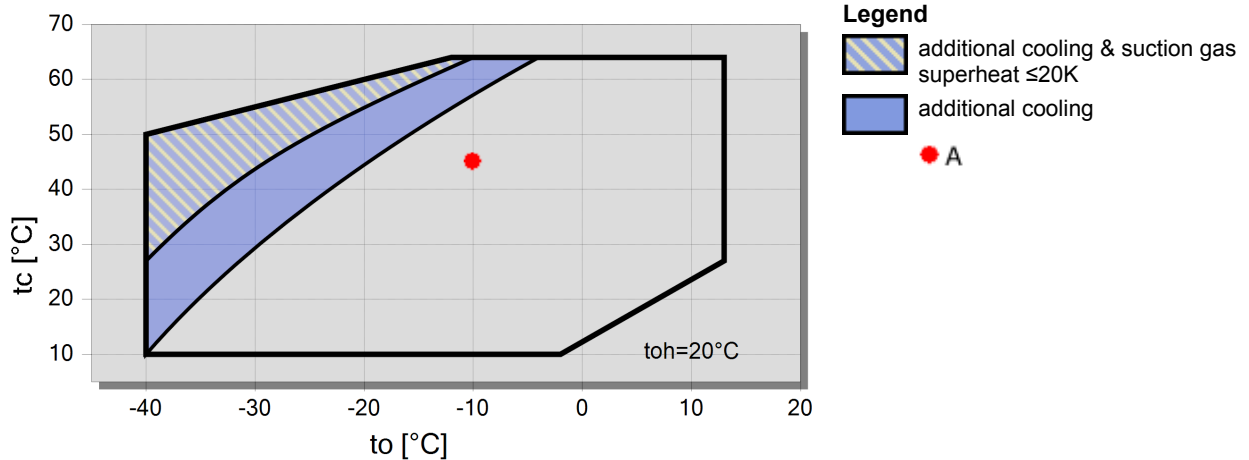
Result

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 (w. HX)	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]	34372	28913	24162	20036	16466	13389	10752	8506
	Q* [W]	34372	28913	24162	20036	16466	13389	10752	8506
	P [kW]	4,79	4,79	4,72	4,59	4,40	4,16	3,87	3,55
	Qc [W]	38918	33459	28643	24392	20643	17340	14433	11880
	COP [-]	7,18	6,04	5,12	4,37	3,74	3,22	2,78	2,40
	COP* [-]	7,18	6,04	5,12	4,37	3,74	3,22	2,78	2,40
	m [kg/h]	687	572	474	390	319	258	206	162,6
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
40°C	Q [W]	30865	25959	21680	17955	14726	11938	9543	7499
	Q* [W]	30865	25959	21680	17955	14726	11938	9543	7499
	P [kW]	5,93	5,76	5,54	5,28	4,97	4,62	4,24	3,82
	Qc [W]	36502	31434	26946	22970	19448	16329	13568	11125
	COP [-]	5,20	4,50	3,91	3,40	2,96	2,58	2,25	1,96
	COP* [-]	5,20	4,50	3,91	3,40	2,96	2,58	2,25	1,96
	m [kg/h]	665	553	458	376	307	247	196,7	154,0
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
50°C	Q [W]	27654	23250	19397	16033	13108	10575	8391	6520
	Q* [W]	27654	23250	19397	16033	13108	10575	8391	6520
	P [kW]	7,10	6,73	6,32	5,89	5,44	4,95	4,44	3,91
	Qc [W]	34401	29639	25402	21631	18272	15281	12614	10234
	COP [-]	3,89	3,46	3,07	2,72	2,41	2,13	1,89	1,67
	COP* [-]	3,89	3,46	3,07	2,72	2,41	2,13	1,89	1,67
	m [kg/h]	648	539	445	365	296	237	187,5	145,1
	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)

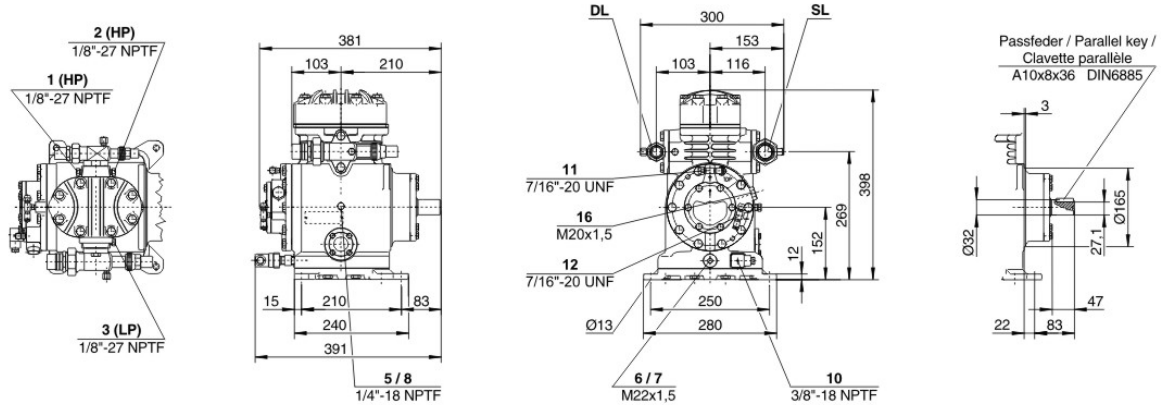
Application Limits Standard 2N.2





Technical Data: 2N.2-K

Dimensions and Connections



Technical Data

Technical Data

Displacement (1450 RPM 50Hz)	28,0 m ³ /h
Displacement (1750 RPM 60Hz)	33,84 m ³ /h
No. of cylinder x bore x stroke	2 x 60 mm x 57 mm
Allowed speed range	750 .. 1750 1/min
Weight	52 kg
Max. pressure (LP/HP)	19 / 25 bar
Connection suction line	28 mm - 1 1/8"
Connection discharge line	22 mm - 7/8"
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	1,75 dm ³
Protective charge	Standard
Suction shut-off valve	Standard
Discharge shut-off valve	Standard

Available Options

Coupling (...-K) w. A/C + medium	KK211 [<11kW] (Option)
Coupling (...-K) w. low temp.	KK215 [<7.5kW] (Option)
Coupling housing	Option
Motor pulley (...-S)	190, 210, 230, 250 mm (Option)
V-belts	2 x SPA (Option)
Discharge gas temperature sensor	Option (incl. INT69VS)
Start unloading	Option
Connection cooling water	R 1/2" (Option)
Additional fan	Option
Water-cooled cylinder heads	Option
Crankcase heater	70 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.