



Selection: Semi-hermetic Screw Compressors HS

Input Values

Compressor model	HSK7461-80	Operating mode	Economizer
Refrigerant	R404A	Power supply	400V-3-50Hz
Reference temperature	Dew point temp.	Useful superheat	100%
Liq. subc. (in condenser)	0 K	Additional cooling	Automatic
Auto. subcooling	Auto	Max. discharge gas temp.	80,0 °C
Suct. gas superheat	10,00 K		

Result

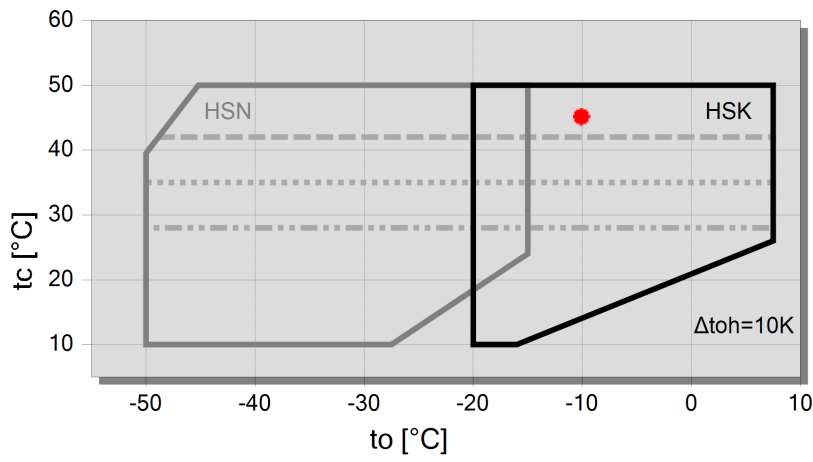
Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	10°C	5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C
30°C	Q [W]	--	278653	239811	205061	174159	146791	122638	--
	P [kW]		47,5	47,1	46,9	46,9	46,8	46,6	
	I [A]		76,9	76,3	76,0	76,0	75,9	75,6	
	COP [-]		5,86	5,10	4,37	3,72	3,14	2,63	
	mLP [kg/h]		7392	6291	5320	4468	3720	3068	
	mHP [kg/h]		7448	6531	5692	4928	4236	3610	
	Qac [kW]		--	--	--	--	--	--	
	tcu [°C]		28,9	26,1	23,3	20,3	17,15	13,82	
	pm [bar(a)]		10,56	9,78	9,02	8,27	7,54	6,81	
	Qsc [kW]		2,23	9,37	14,33	17,59	19,46	20,2	
40°C	Q [W]	--	254725	219090	187404	159317	134477	112556	--
	P [kW]		59,5	59,5	59,5	59,4	59,3	59,0	
	I [A]		94,9	94,8	94,8	94,8	94,6	94,2	
	COP [-]		4,28	3,69	3,15	2,68	2,27	1,91	
	mLP [kg/h]		7192	6115	5166	4333	3603	2967	
	mHP [kg/h]		7698	6753	5893	5113	4406	3767	
	Qac [kW]		--	--	--	--	--	--	
	tcu [°C]		34,1	31,4	28,6	25,6	22,3	18,84	
	pm [bar(a)]		12,16	11,32	10,48	9,63	8,77	7,92	
	Qsc [kW]		17,99	22,5	25,4	26,9	27,3	26,8	
50°C	Q [W]	--	225582	193966	165902	141013	118945	99386	--
	P [kW]		74,8	75,1	75,2	75,1	74,9	74,7	
	I [A]		117,8	118,2	118,3	118,3	118,0	117,6	
	COP [-]		3,01	2,58	2,21	1,88	1,59	1,33	
	mLP [kg/h]		6926	5873	4946	4131	3417	2794	
	mHP [kg/h]		7912	6947	6070	5272	4545	3884	
	Qac [kW]		--	--	--	1,54	9,08	16,40	
	tcu [°C]		40,4	37,7	34,8	31,7	28,3	24,5	
	pm [bar(a)]		14,32	13,37	12,40	11,40	10,38	9,34	
	Qsc [kW]		31,1	33,5	34,7	34,7	33,8	32,1	

-- No calculation possible (see message in single point selection)

*According to EN12900 (10K suction gas superheat, liquid subcooling in Economiser with 5K temperature difference)

Application Limits ECO HSK7461-80



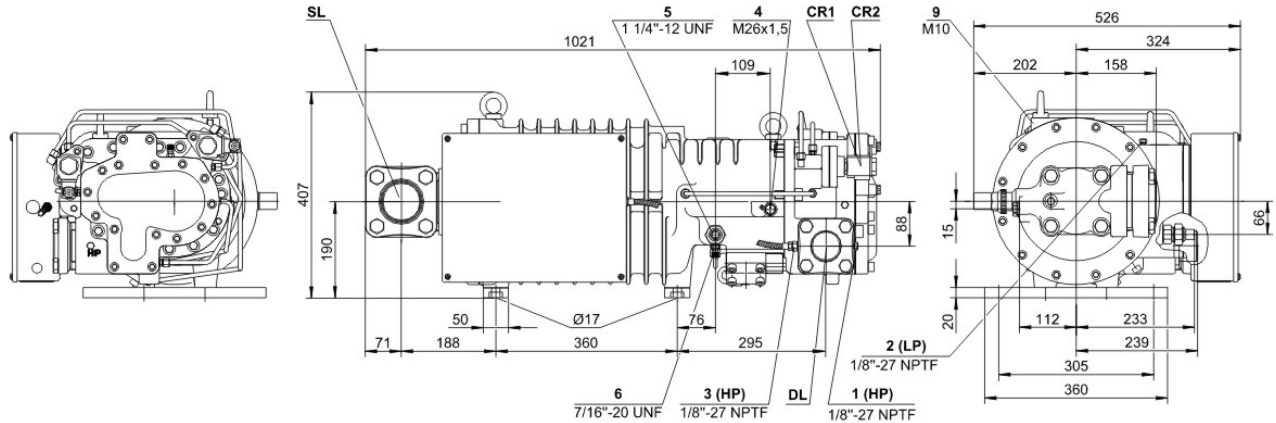
Legend

- max. tc for frequencies = 20Hz
- max. tc for frequencies = 25Hz
- max. tc for frequencies = 35Hz
- A



Technical Data: HSK7461-80

Dimensions and Connections



Technical Data

Technical Data

Displacement (2900 RPM 50 Hz)	220 m ³ /h
Displacement (3500 RPM 60 Hz)	266 m ³ /h
Weight	314 kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	76 mm - 3 1/8"
Connection discharge line	54 mm - 2 1/8"
Adapter/shut-off valve for ECO	22 mm - 7/8" (Option)
Adapter for liquid injection	16 mm - 5/8" (Option)
Oil type R22	B150SH, B100 (Option)
Oil type R134a/R404A/R507A/R407A/R407F	BSE170
Oil type R448A/R449A/R454C	BSE170

Motor data

Motor voltage (more on request)	380-415V PW-3-50Hz
Max operating current	144.0 A
Starting current (Rotor locked)	350.0 A D / 585.0 A DD
Max. Power input	85,0 kW

Extent of delivery (Standard)

Discharge gas temperature sensor	Standard
Start unloading	Standard
Oil flow control	SE-B3 (Standard)
Motor protection	SE-E1 (Standard), SE-E3 (Standard for 660-690V)
Suction shut-off valve	Standard
Capacity control	100-75-50% (Standard)
Enclosure class	IP54

Available Options

Discharge shut-off valve	Option
ECO connection with shut-off valve	Option
Motor protection	SE-i1 (200-690V)

Sound measurement

Sound power level (-10°C / 45°C)	86,5 dB(A)
Sound pressure level @ 1m (-10°C / 45°C)	78,5 dB(A)



Semi-hermetic Screw Compressors HS

HSK = Application for air-conditioning and medium temperature cooling.

HSN = Application for low temperature cooling.

Notes regarding application limits (see "Limits")

- * Ranges are valid for standard operation and at full-load conditions.
- * With high pressure conditions, part-load operation is partly limited (see application limits in applications manual SH-100).
- * With Economizer operation the maximum admissible evaporation temperature is shifted by 10K downward (otherwise there is a danger of excessive compression and overload of the motor because of a higher mass flow). At pull-down conditions from higher evaporation temperatures, the ECO injection must remain closed until the evaporation temperature is below the maximum admissible value and a stable operation is achieved (e.g. control of the ECO solenoid valve by means of a low pressure cut-out). The use of the ECO-system with higher evaporation temperatures requires individual consultation with Bitzer.

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- * Capacity control with ECO operation at the same time is limited to one single regulating step (CR 75%). At CR 50% the ECO injection should be closed.

Data for sound emission

Data are based on 50Hz application (IP-units 60Hz) and R404A.

Sound pressure level: values are based on open air test sites with semi-spherical sound emissions at 1 meter distance. For further information see Technical Information "Sound Data".

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
- 1a Additional high pressure connection
- 1b Connection for high pressure transmitter (HP)
- 2 Low pressure connection (LP)
- 2a Additional low pressure transmitter (LP)
- 2b Connection for low pressure transmitter (LP)
- 3 Discharge gas temperature sensor connection (HP)
- 4 Connection for economizer (ECO)
- HS.85: ECO valve with connection pipe (option)
- HS.95, OS.85, OS.95: ECO valve (option)
- 5 Oil injection connection
- 6 Oil pressure connection for HS.85 and OS.85:
 - Oil drain (compressor housing)
 - 7 Oil drain (motor housing)
 - 7a Oil drain (suction gas filter)
 - 7b Oil drain out of shaft seal (maintenance connection)
 - 7c Oil drain tube (shaft seal)
- 8 Threaded bore for foot fastening
- 9 Threaded bore for pipe support (ECO and LI line)
- 10 Maintenance connection (oil filter)
- 11 Oil drain (oil filter)
- 12 Monitoring of oil stop valve
- 13 Oil filter monitoring
- 14 Oil flow switch
- 15 Earth screw for housing
- 16 Pressure relief (oil filter chamber)
- 17 Maintenance connection for shaft seal
- 18 Liquid injection (LI)
- 19 Compressor module
- 20 Slider position indicator
- 21 Oil level switch
- 22 Connection for oil pressure transmitter
- 23 Connection for oil and gas return (for systems with flooded evaporator adapter optional)
- 24 Access to oil circulation restrictor
- SL Suction gas line



DL Discharge gas line

Dimensions can show tolerances according to EN ISO 13920-B.