



Selection: Semi-hermetic Screw Compressors HS

Input Values

Compressor model	HSN6461-50	Operating mode	Standard
Refrigerant	R507A	Power supply	400V-3-50Hz
Reference temperature	Dew point temp.	Useful superheat	100%
Liq. subc. (in condenser)	0 K	Additional cooling	Automatic
Suct. gas superheat	10/00 K	Max. discharge gas temp.	80/0 °C

Result

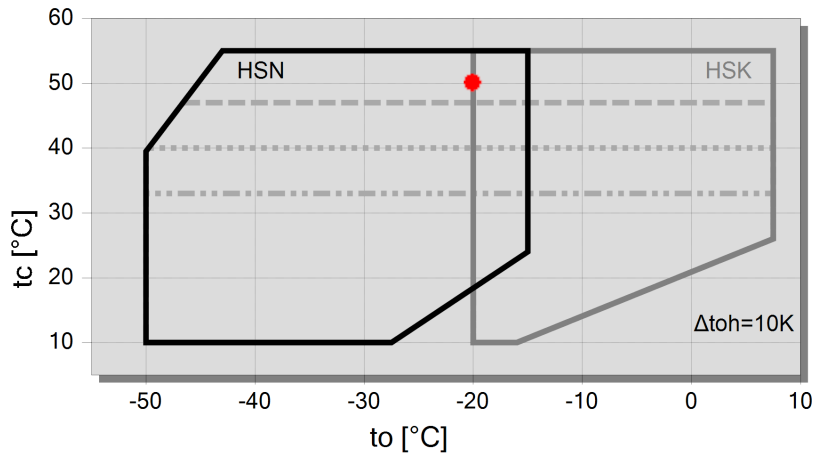
Q [W]	Cooling capacity	mHP [kg/h]	Mass flow HP
P [kW]	Power input	Qac [kW]	Additional cooling
I [A]	Current	tcu [°C]	Liquid temp.
COP [-]	COP/EER	pm [bar(a)]	ECO pressure
mLP [kg/h]	Mass flow LP	Qsc [kW]	sub cooler capacity (ECO)

tc	to	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C	-40°C	-45°C
30°C	Q [W]	--	91198	73861	59194	46872	36598	28105	21150
	P [kW]	--	36/2	34/0	31/9	29/9	28/1	26/4	24/8
	I [A]	--	58/5	55/2	52/2	49/4	46/7	44/3	42/1
	COP [-]	--	2/52	2/17	1/86	1/57	1/30	1/07	0/85
	mLP [kg/h]	--	2762	2294	1888	1537	1235	977	758
	mHP [kg/h]	--	2762	2294	1888	1537	1235	977	758
	Qac [kW]	--	--	--	--	--	0/53	3/72	6/56
	tcu [°C]	--	30/0	30/0	30/0	30/0	30/0	30/0	30/0
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
40°C	Q [W]	--	77163	62136	49480	38900	30129	22925	17069
	P [kW]	--	41/9	39/4	37/0	34/7	32/7	31/0	29/5
	I [A]	--	66/9	63/1	59/6	56/3	53/4	50/9	48/8
	COP [-]	--	1/84	1/58	1/34	1/12	0/92	0/74	0/58
	mLP [kg/h]	--	2701	2240	1839	1493	1196	943	728
	mHP [kg/h]	--	2701	2240	1839	1493	1196	943	728
	Qac [kW]	--	--	--	1/56	4/73	7/66	10/41	13/01
	tcu [°C]	--	40/0	40/0	40/0	40/0	40/0	40/0	40/0
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--
50°C	Q [W]	--	61492	49011	38556	29870	22718	16889	12193
	P [kW]	--	48/7	46/0	43/4	41/1	39/0	37/5	36/5
	I [A]	--	77/5	73/2	69/2	65/6	62/6	60/3	58/9
	COP [-]	--	1/26	1/06	0/89	0/73	0/58	0/45	0/33
	mLP [kg/h]	--	2590	2139	1747	1407	1116	866	655
	mHP [kg/h]	--	2590	2139	1747	1407	1116	866	655
	Qac [kW]	--	7/87	10/52	12/97	15/33	17/68	20/1	22/8
	tcu [°C]	--	50/0	50/0	50/0	50/0	50/0	50/0	50/0
	pm [bar(a)]	--	--	--	--	--	--	--	--
	Qsc [kW]	--	--	--	--	--	--	--	--

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

*According to EN12900 (10K suction gas superheat, 0K liquid subcooling)

Application Limits Standard HSN6461-50



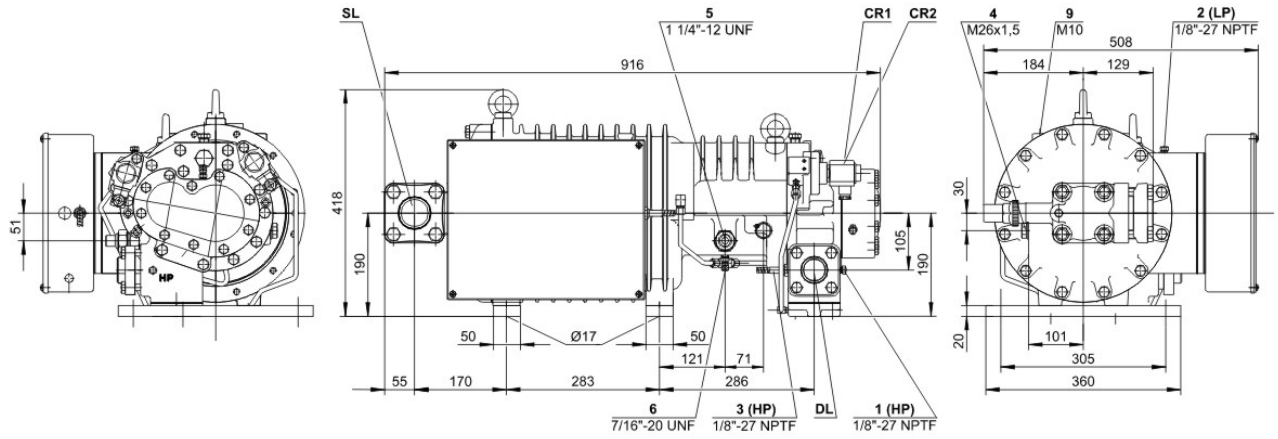
Legend

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



Technical Data: HSN6461-50

Dimensions and Connections





Technical Data

Technical Data

Displacement (2900 RPM 50 Hz)	165 m ³ /h
Displacement (3500 RPM 60 Hz)	198 m ³ /h
Weight	238 kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	54 mm - 2 1/8"
Connection discharge line	42 mm - 1 5/8"
Adapter/shut-off valve for ECO	22 mm - 7/8" (Option)
Oil type R22	B150SH, B100 (Option)
Oil type R134a/R404A/R507A/R407A/R407F	BSE170
Oil type R448A/R449A/R454C	BSE170

Motor data

Motor version	1
Motor voltage (more on request)	380-415V PW-3-50Hz
Max operating current	79.0 A
Starting current (Rotor locked)	206.0 A D / 355.0 A DD
Max. Power input	52/1 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 (-35°C / 40°C)	87,5 dB(A)
Sound pressure level @ 1m (-35°C / 40°C)	79,5 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.

HS 64/74

- * 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)
Connection for high pressure switch (HP)
- 1a Additional high pressure connection (HP)
Not suitable for pressure switch or pressure transmitter!
- 1b Connection for high pressure transmitter (HP)
- 2 Low pressure connection (LP)
Connection for low pressure switch
- 2a Additional low pressure connection (LP)
- 2b Connection for low pressure transmitter (LP)
- 2c Low pressure connection for the minimum pressure differential control valve
- 3 Connection for discharge gas temperature sensor (HP)
- 4 Connection for economiser (ECO)
HS.85: ECO valve with connection line (option)
OS.85, OS.95, OS.105, HS.95: ECO valve (option)
- 5 Connection/valve for oil injection
- 6 Oil pressure connection
- 7 Oil drain (compressor or motor housing)
- 7a Oil drain (suction gas filter)
- 7b Oil drain from shaft seal (maintenance connection)
- 7c Oil drain hose (shaft seal)
- 8 Threaded bore for foot fastening
- 9 Threaded bore for pipe fixture (ECO and LI lines)
- 10 Maintenance connection for oil filter
- 11 Oil drain (oil filter)
- 13 Oil filter monitoring
- 14 Oil flow switch
- 15 Earth screw for housing
- 16 Pressure blow-off (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 Oil pressure transmitter



- 23 Connection for oil and gas return (for systems with flooded evaporator adaptor optional)
- 24 Access to oil circulation restrictor
- 25 Oil inlet for shaft seal cooling
- 26 Oil outlet for shaft seal cooling
- 27 Temperature sensor in the shaft seal
- 28 Vibration sensor connection
- SL Suction gas line
- DL Discharge gas line

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