

Technical Data

4.15 MSK071E Technical Data

Description	Symbol	Unit	MSK071E-0200-NN	MSK071E-0300-NN	MSK071E-0450-NN
Continuous torque at standstill, 60K	M_{0_60}	Nm	23,0		
Continuous current at standstill, 60K	$I_{0_60(\text{eff})}$	A	10,1	12,5	20,0
Continuous torque at standstill, 100K	M_{0_100}	Nm	28,0		
Continuous current at standstill, 100K	$I_{0_100(\text{eff})}$	A	12,6	15,2	24,4
Continuous torque at standstill, surface	M_{0_S}	Nm	34,5		
Continuous current at standstill, surface	$I_{0_S(\text{eff})}$	A	15,2	18,8	30,0
Maximum torque	M_{max}	Nm	84,0		
Maximum current	$I_{\text{max}(\text{eff})}$	A	45,5	56,3	90,1
Torque constant at 20°C	K_{M_N}	Nm/A	2,51	2,05	1,29
Constant voltage at 20°C	$K_{EMK_0}^{EMK_100}$	V/min ⁻¹	154,6	126,4	82,7
Winding resistance at 20°C	R_{12}	Ohm	1,16	0,79	0,32
Winding inductivity	L_{12}	mH	9,150	6,200	2,600
Leakage capacitance of the component	C_{ab}	nF	8,9	9,3	9,5
Number of pole pairs	p	-	4		
Moment of inertia of rotor without brake ¹⁾	J_{rot}	kg*m ²	0,00290		
Thermal time constant	T_{th}	min	75,0	19,8	
Maximum speed	n_{max}	min ⁻¹	3400	4200	6000
Sound pressure level	L_p	dB[A]	<75		
Ambient temperature during operation	T_{um}	°C	0 ... 40		
Degree of protection		-	IP65		
Insulation class EN 60034-1		-	F		

1) Specified without brake. If necessary, add the moment of inertia brake.
Fig.4-70: MSK - Technical Data (natural and surface cooling)

Description	Symbol	Unit	MSK071E-0450-FN	
Continuous torque at standstill, 60K	M_{0_60}	Nm	23,0	
Continuous current at standstill, 60K	$I_{0_60(\text{eff})}$	A	20,0	
Continuous torque at standstill, 100K	M_{0_100}	Nm	28,0	
Continuous current at standstill, 100K	$I_{0_100(\text{eff})}$	A	24,4	
Continuous torque at standstill, liquid	M_{0_L}	Nm	43,7	
Continuous current at standstill, liquid	$I_{0_L(\text{eff})}$	A	38,0	
Maximum torque	M_{max}	Nm	84,0	
Maximum current	$I_{\text{max}(\text{eff})}$	A	90,1	
Torque constant at 20°C	K_{M_N}	Nm/A	1,29	
Constant voltage at 20°C	K_{EMK_1000}	V/min ⁻¹	82,7	
Winding resistance at 20°C	R_{12}	Ohm	0,32	
Winding inductivity	L_{12}	mH	2,600	
Leakage capacitance of the component	C_{ab}	nF	9,5	
Number of pole pairs	p	-	4	
Moment of inertia of rotor without brake ¹⁾	J_{rot}	kg*m ²	0,00290	
Thermal time constant	T_{th}	min	19,8	
Maximum speed	n_{max}	min ⁻¹	6000	
Sound pressure level	L_P	dB[A]	<75	
Ambient temperature during operation	T_{um}	°C	0 ... 40	
Degree of protection		-	IP65	
Insulation class EN 60034-1		-	F	

1) Specified without brake. If necessary, add the moment of inertia brake.
Fig.4-71: MSK - Technical Data (natural and liquid cooling)

Description	Symbol	Unit	BREMSE-298397	BREMSE-308413
Holding torque	M_4	Nm	23,0	30,0
Rated voltage ±10%	U_N	V	24	
Rated current	I_N	A	0,79	0,94
Connection time	t_1	ms	130	35
Disconnection time	t_2	ms	180	125

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Description	Symbol	Unit	BREMSE-298397	BREMSE-308413
Moment of inertia brake	J_{rot}	kg*m ²	0,000300	
Mass brake	M_{Br}	kg	1,6	

Fig.4-72: MSK071: Holding brake - Technical data (optional)

Description	Symbol	Unit	MSK071E
Nominal power loss	P_{vN}	W	1000
Coolant inlet temperature ¹⁾	ϑ_{ein}	°C	10 ... 40
Coolant temperature raise with P_{vN}	$\Delta\vartheta_N$	°C	10
Minimum necessary required coolant flow for $\Delta\vartheta_N$ ²⁾	Q_N	l/min	1,4
Pressure decrease at Q_N ^{2) 3)}	Δp_N	bar	0,7
Maximum system pressure	P_{max}	bar	3,0
Volume liquid cooling duct	V	l	0,06
pH-Value coolant			6 ... 8
Materials with coolant contact			
Flange, end shield			Al Mg 5 F32
Motor housing			Al Mg Si 0,5 F22
O-ring			Viton

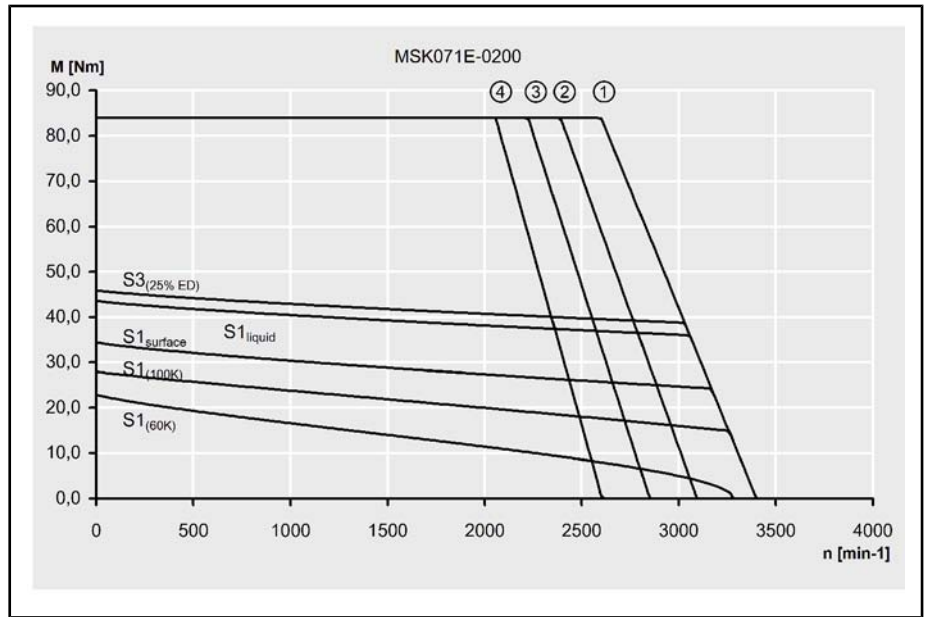
1) Danger of condensation! The coolant inlet temperature should be max. 5° C under the real environmental temperature.

2) At coolant water.

3) For deviating discharge values notice the discharge diagram.

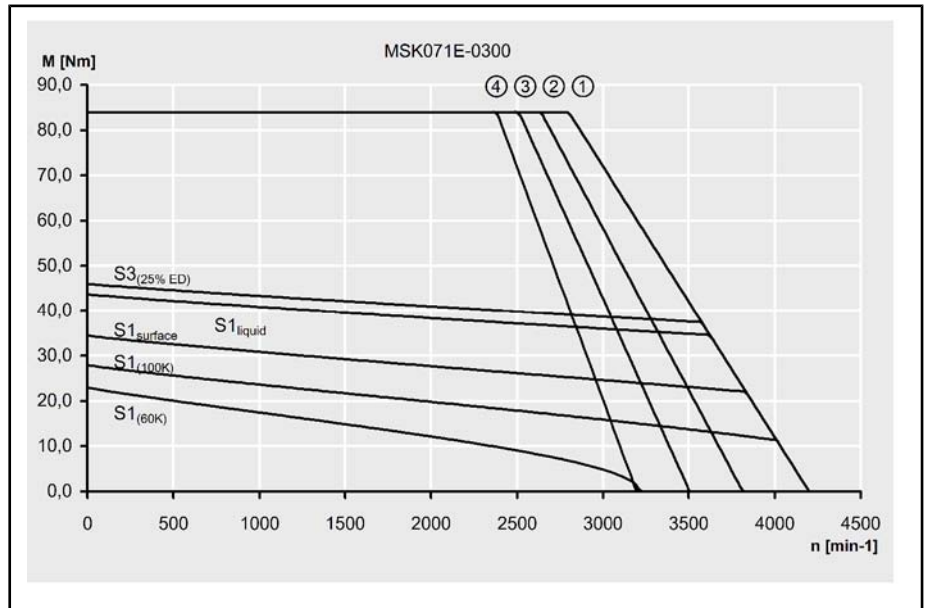
Fig.4-73: Technical data liquid coolant for MSK071E

Speed-torque characteristics



- ① Mmax for IndraDrive, controlled feed, 3x AC 400V
- ② Mmax for IndraDrive, uncontrolled feed, 3x AC 480V
- ③ Mmax for IndraDrive, uncontrolled feed, 3x AC 440V
- ④ Mmax for IndraDrive, uncontrolled feed, 3x AC 400V

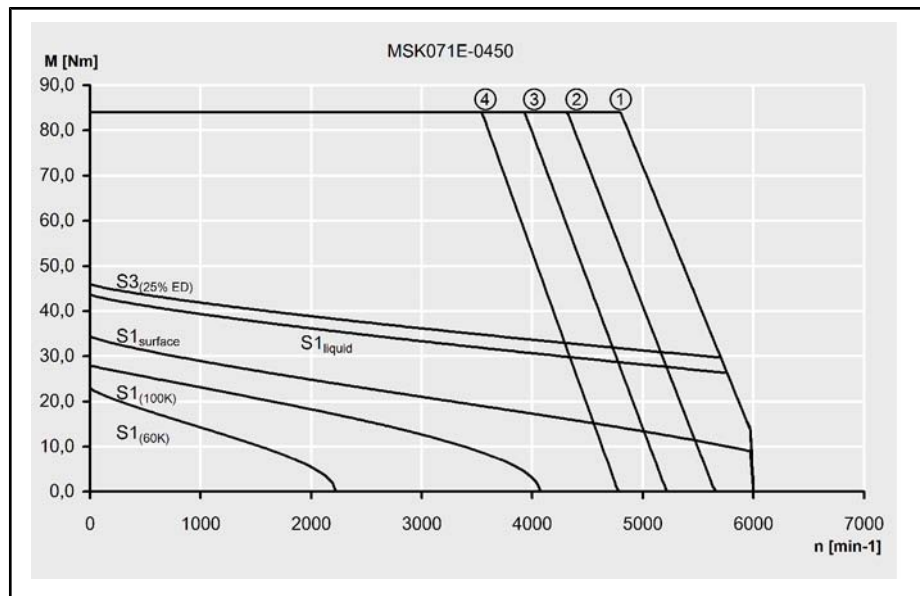
Fig.4-74: Speed-torque characteristic of MSK071E-0200



- ① Mmax for IndraDrive, controlled feed, 3x AC 400V
- ② Mmax for IndraDrive, uncontrolled feed, 3x AC 480V
- ③ Mmax for IndraDrive, uncontrolled feed, 3x AC 440V
- ④ Mmax for IndraDrive, uncontrolled feed, 3x AC 400V

Fig.4-75: Speed-torque characteristic of MSK071E-0300

Technical Data



- ① Mmax for IndraDrive, controlled feed, 3x AC 400V
- ② Mmax for IndraDrive, uncontrolled feed, 3x AC 480V
- ③ Mmax for IndraDrive, uncontrolled feed, 3x AC 440V
- ④ Mmax for IndraDrive, uncontrolled feed, 3x AC 400V

Fig.4-76: Speed-torque characteristic of MSK071E-0450

Shaft load Diagram for determining the maximum permissible radial force F_{radial} .

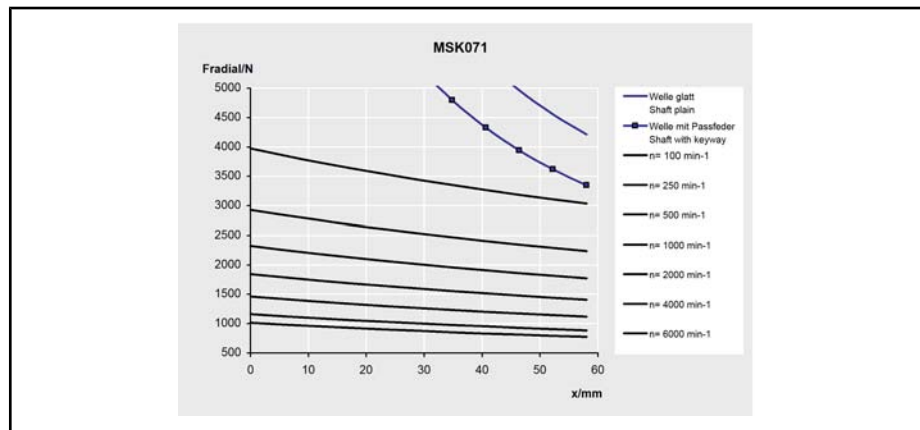


Fig.4-77: permissible radial force of MSK071 - Motors (shaft and bearing load)

The maximum permissible axial force F_{axial} is 500 N .

For additional information about permissible radial and axial forces, see [chapter 9.7 "Bearing and Shaft Load "](#) on page 164.

Specifications

5.8 Size MSK071

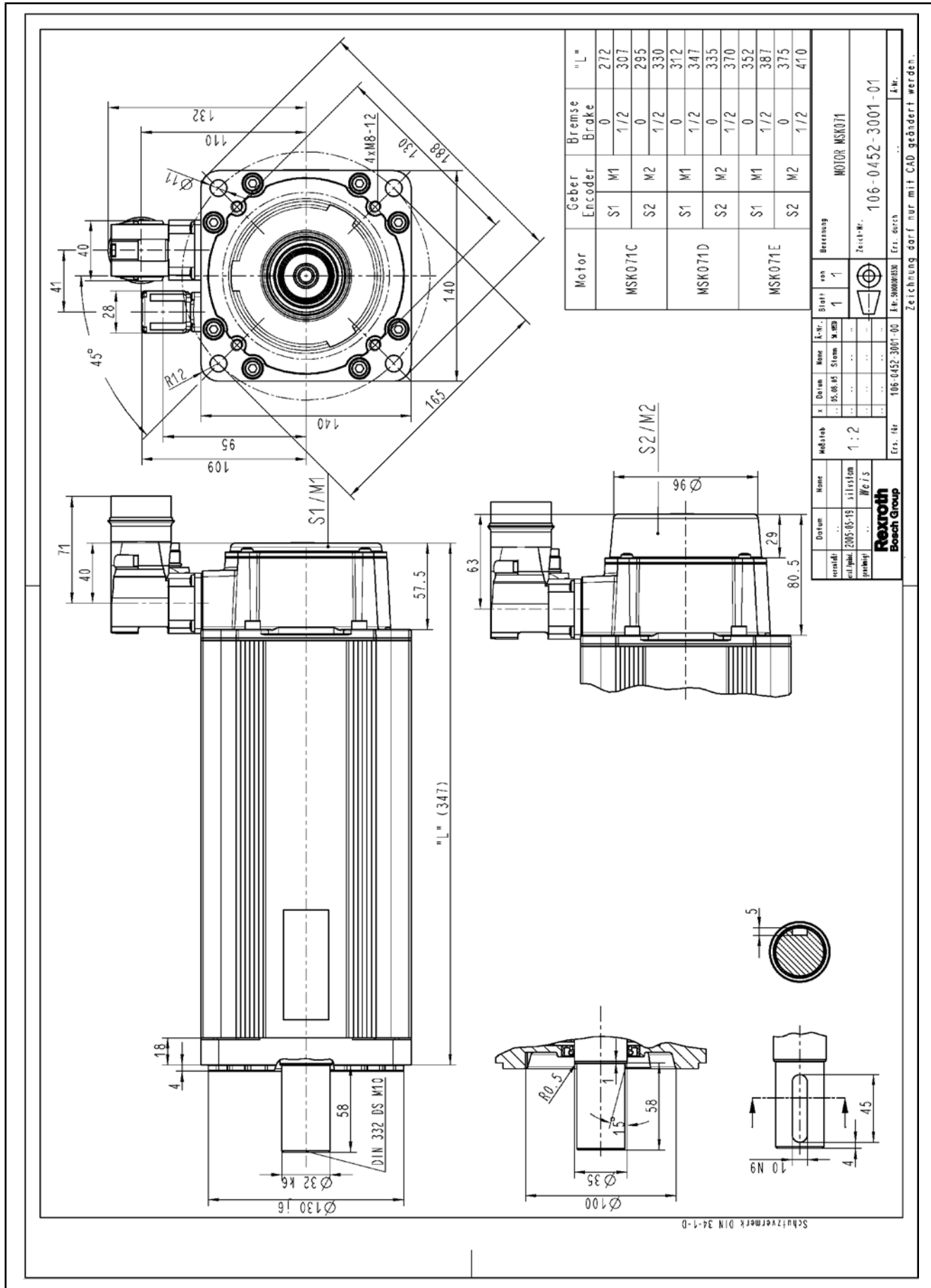


Fig.5-9: MSK071...NN specification

Type Codes

Abbrev.																																								
Column	→																																							
	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
Example:	M	S	K	0	7	1	D	-	0	3	0	0	-	N	N	-	S	1	-	U	G	0	-	N	N	N	N													

10. Other design ^②

10.1 none. = NNNN

10.2 reduced shaft run-out, axial run-out according to DIN 42955 . . . = RNNN

11. Standard reference

<u>Standard</u>	<u>Title</u>	<u>Edition</u>
DIN 6885-1	Drive Type Fastenings without Taper Action; Parallel Keys, Keyways, Deep Patter	1968-08
DIN 42955	Tolerances of shaft extension run-out of mounting flanges for rotating electrical machinery, test	1981-12

Note:

① Cooling mode "FN" is only available with holding brake "0" and "2" and length "D" and "E"

② Other design "NNNN" is only available with encoder "S1" and "M1"
 Other design "RNNN" is only available with encoder "S2" and "M2"

Fig.6-30: Type Codes MSK071 (page 2)