4.20 MSK101D Technical Data

Description	Symbol	Unit	MSK101D-0200-NN	MSK101D-0300-NN	MSK101D-0450-NN
Continuous torque at standstill, 60K	M_{0_60}	Nm	50,0		
Continuous current at standstill, 60K	$I_{0\_60(eff)}$	A	22,2	30,6	41,7
Continuous torque at standstill, 100K	M_{0_100}	Nm	57,0		
Continuous current at standstill, 100K	$I_{0\_100(eff)}$	A	25,3	34,9	50,6
Continuous torque at standstill, surface	M_{0_S}	Nm	75,0		
Continuous current at standstill, surface	$I_{0\_S(eff)}$	A	33,3	45,9	66,0
Maximum torque	M_{max}	Nm	160,0		
Maximum current	$I_{max(eff)}$	A	99,9	137,7	187,7
Torque constant at 20°C	K_{M_N}	Nm/A	2,48	1,80	1,32
Constant voltage at 20°C	K_{EMK_1000}	V/min^{-1}	152,0	113,0	81,0
Winding resistance at 20°C	R_{12}	Ohm	0,35	0,19	0,10
Winding inductivity	L_{12}	mH	6,000	3,200	1,700
Leakage capacitance of the component	C_{ab}	nF	13,2	9,1	13,2
Number of pole pairs	p	-	4		
Moment of inertia of rotor without brake[1)]	J_{rot}	$kg*m^2$	0,00932		
Thermal time constant	T_{th}	min	100,0		
Maximum speed	n_{max}	min^{-1}	3400	4600	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.4-101: MSK - Technical Data (natural and surface cooling)

Technical Data

Description	Symbol	Unit	MSK101D-0200-FN	MSK101D-0300-FN	MSK101D-0450-FN
Continuous torque at standstill, 60K	M_{0_60}	Nm	50,0		
Continuous current at standstill, 60K	$I_{0\_60(eff)}$	A	22,2	30,6	41,7
Continuous torque at standstill, 100K	M_{0_100}	Nm	57,0		
Continuous current at standstill, 100K	$I_{0\_100(eff)}$	A	26,8	34,9	50,6
Continuous torque at standstill, liquid	M_{0_L}	Nm	95,0		
Continuous current at standstill, liquid	$I_{0\_L(eff)}$	A	43,3	58,1	83,6
Maximum torque	M_{max}	Nm	160,0		
Maximum current	$I_{max(eff)}$	A	99,9	137,7	187,7
Torque constant at 20°C	K_{M_N}	Nm/A	2,48	1,80	1,32
Constant voltage at 20°C	K_{EMK_1000}	V/min^{-1}	152,0	113,0	81,0
Winding resistance at 20°C	R_{12}	Ohm	0,35	0,19	0,10
Winding inductivity	L_{12}	mH	6,000	3,200	1,700
Leakage capacitance of the component	C_{ab}	nF	13,2	9,1	13,2
Number of pole pairs	p	-	4		
Moment of inertia of rotor without brake[1)]	J_{rot}	$kg*m^2$	0,00932		
Thermal time constant	T_{th}			100,0	
Maximum speed	n_{max}	min^{-1}	3400	4600	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.4-102: MSK - Technical Data (natural and liquid cooling)

Description	Symbol	Unit	BREMSE-276088	BREMSE-296482
Holding torque	M_4	Nm	70,0	32,0
Rated voltage ±10%	U_N	V	24	
Rated currend	I_N	A	1,29	0,93
Connection time	t_1	ms	53	15
Disconnection time	t_2	ms	97	115

Description	Symbol	Unit	BREMSE-276088	BREMSE-296482
Moment of inertia brake	J_{rot}	kg*m2	0,003000	0,001242
Mass brake	M_{Br}	kg	3,8	2,4

Fig.4-103: MSK101: Holding brake - Technical data (optional)

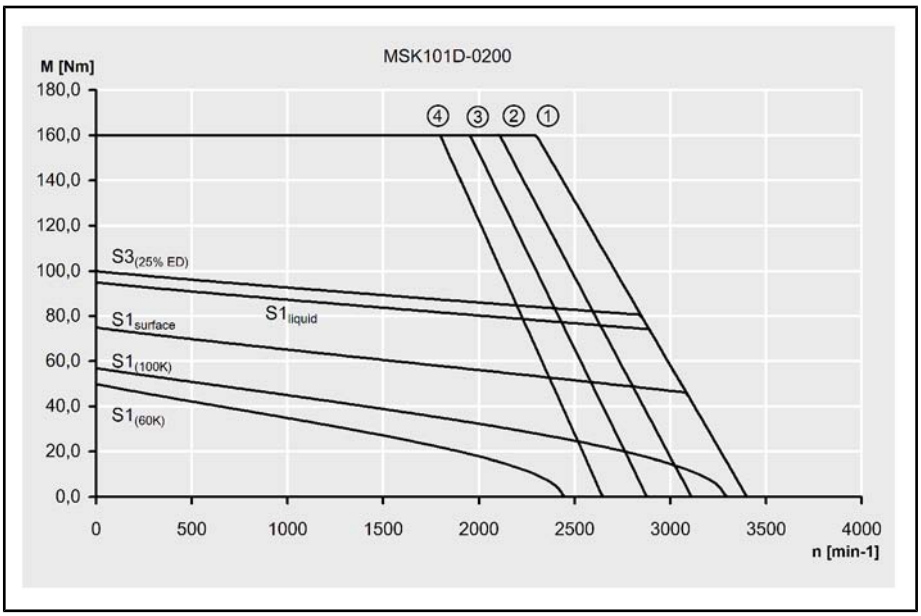
Description	Symbol	Unit	MSK101D
Nominal power loss	P_{vN}	W	1200
Coolant inlet temperature 1)	ϑ_{ein}	°C	10 ... 40
Coolant temperature raise with P_{vN}	$\Delta\vartheta_N$	°C	10
Minimum necessary required coolant flow for $\Delta\vartheta_N$ 2)	Q_N	l/min	1,7
Pressure decrease at Q_N 2) 3)	Δp_N	bar	0,9
Maximum system pressure	P_{max}	bar	3,0
Volume liquid cooling duct	V	l	0,11
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 devating discharge values notice the discharge diagram.

Fig.4-104: Technical data liquid coolant for MSK101D

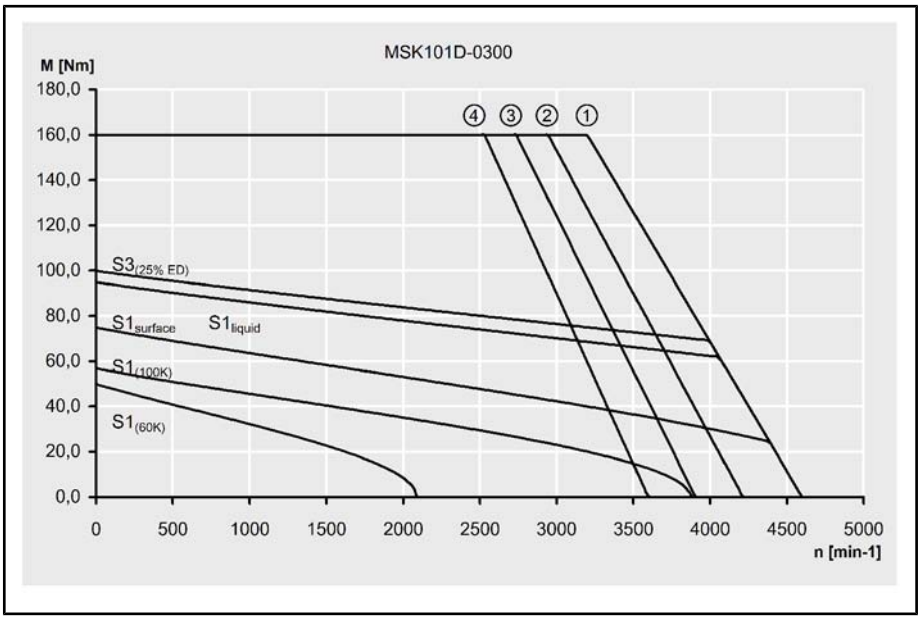
Technical Data

Speed-torque characteristics



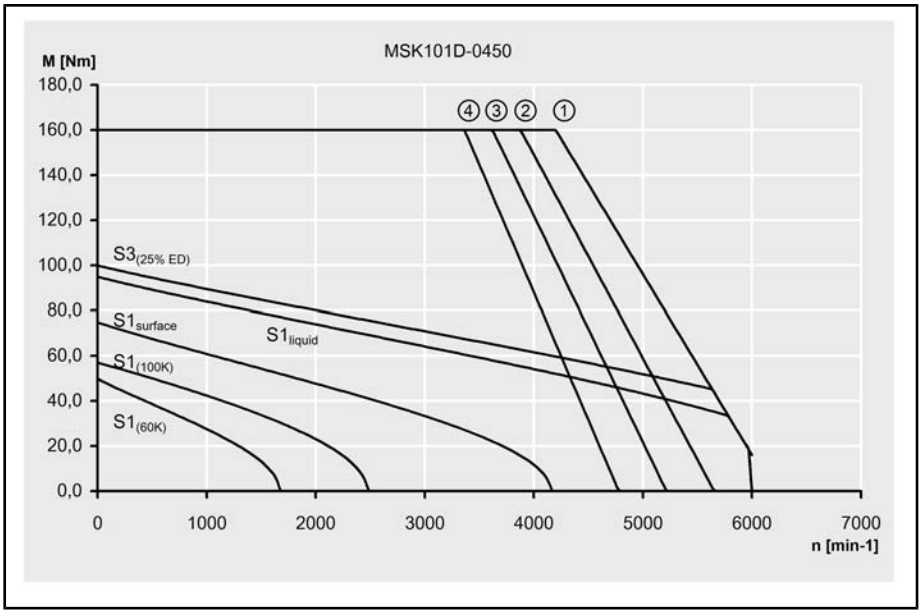
① Mmax for IndraDrive, controlled feed, 3x AC 400V
② Mmax for IndraDrive, uncontrolled feed, 3x AC 480V
③ Mmax for IndraDrive, uncontrolled feed, 3x AC 440V
④ Mmax for IndraDrive, uncontrolled feed, 3x AC 400V

Fig.4-105: Speed-torque characteristic of MSK101D-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.4-106: Speed-torque characteristic of MSK101D-0300



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.4-107: Speed-torque characteristic of MSK101D-0450

Shaft load

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

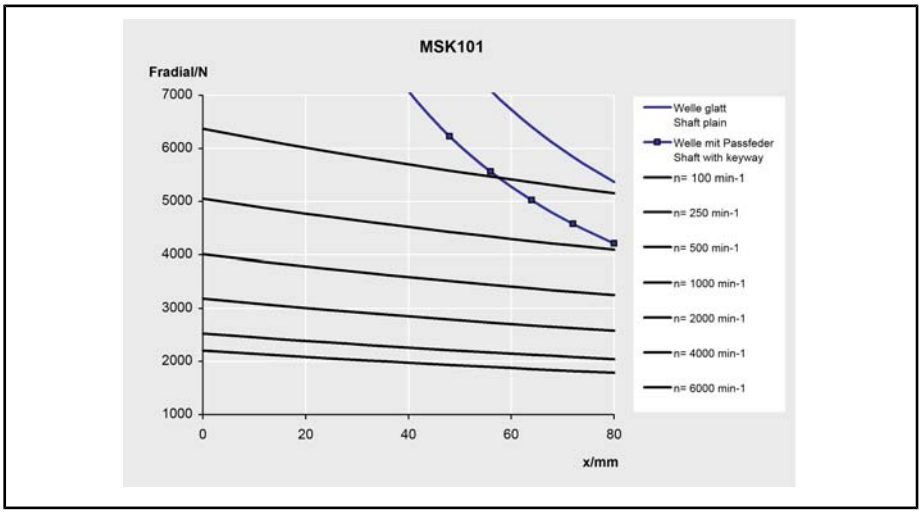


Fig.4-108: permissible radial force of MSK101 - Motors (shaft and bearing load)

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

5.12 Size MSK101

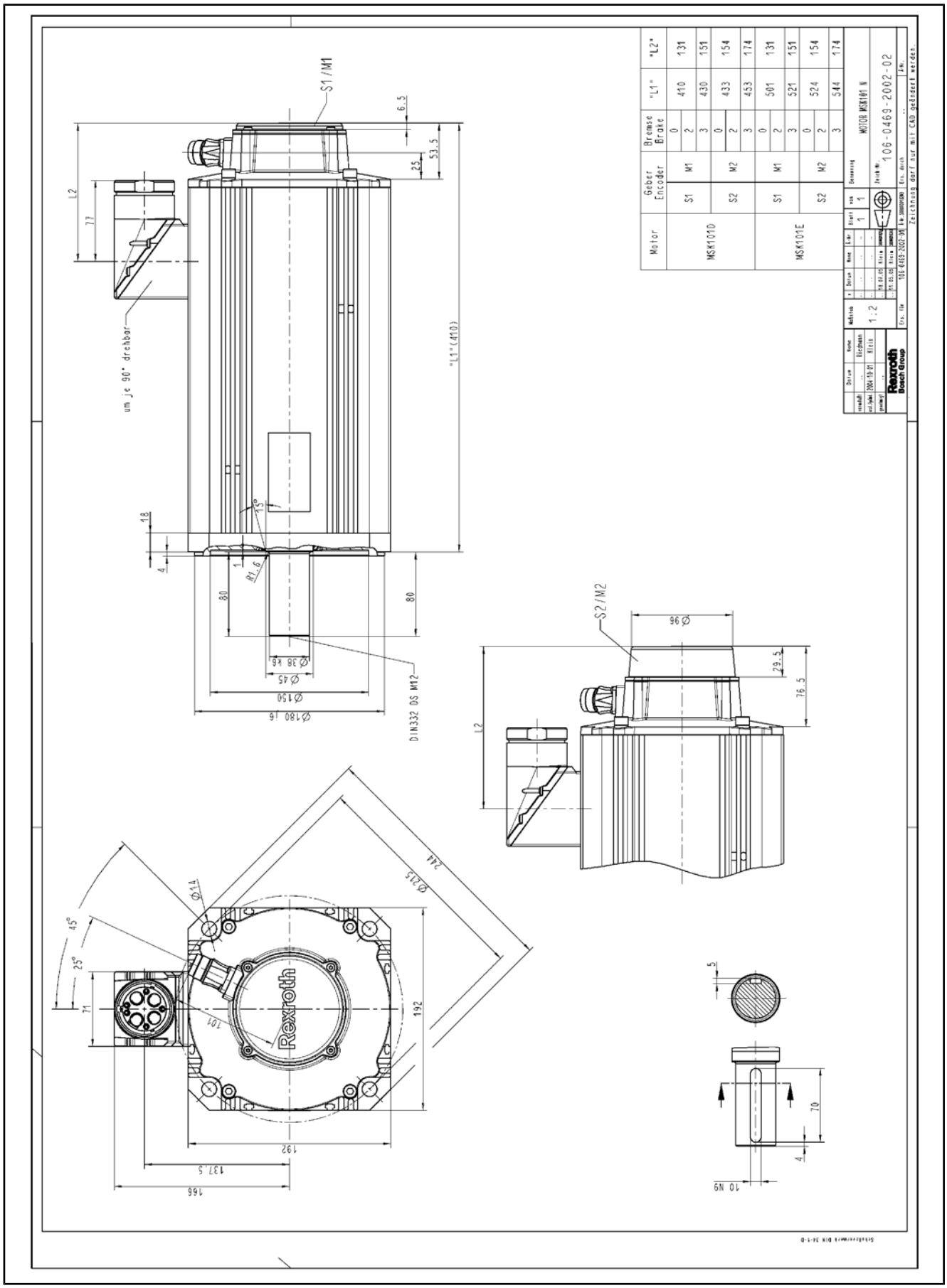


Fig.5-13: MSK101 specification

6.11 Size MSK101

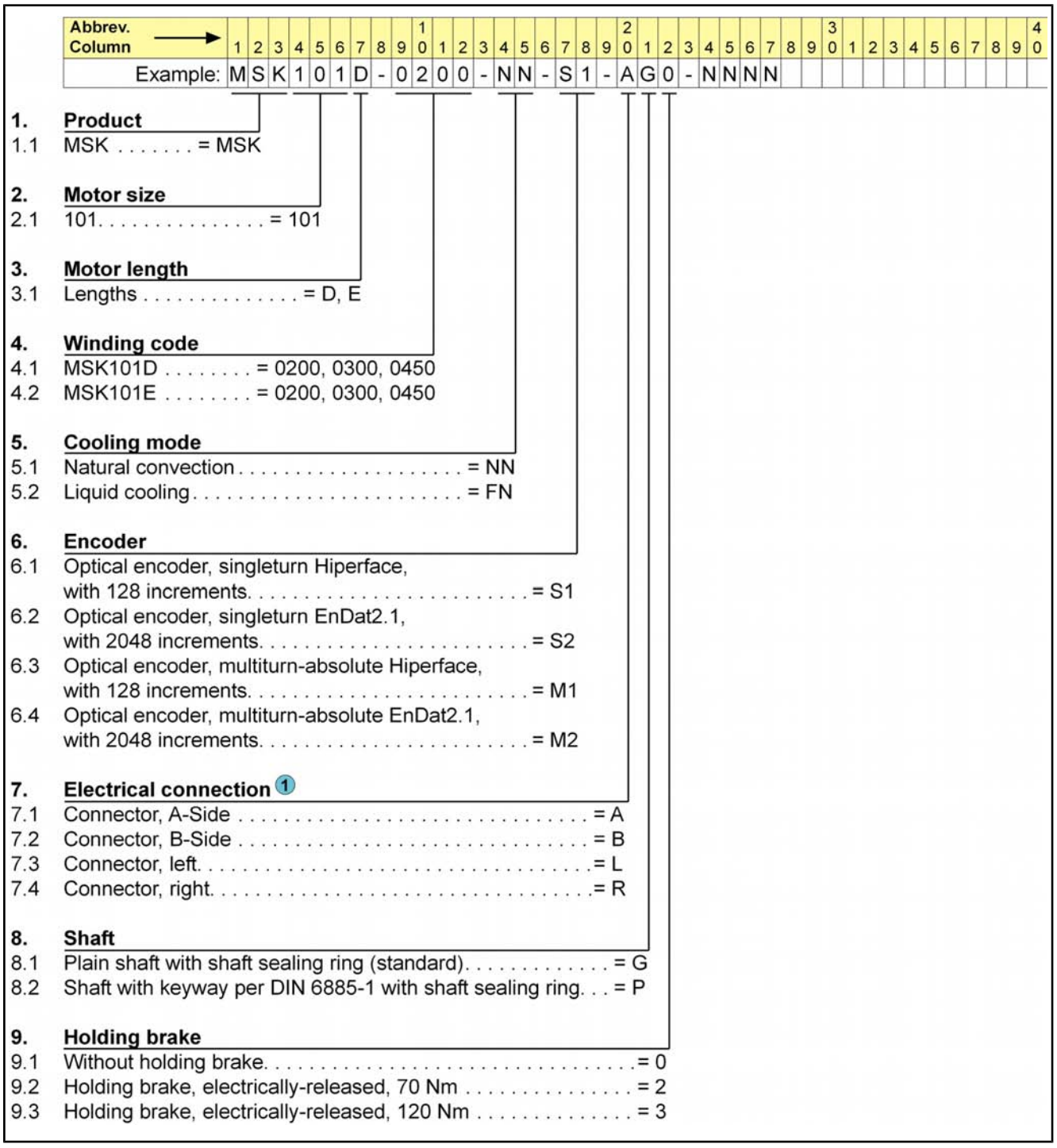


Fig.6-35: Type Codes MSK101 (page 1)

Type Codes

Abbrev. Column →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Example:	M	S	K	1	0	1	D	-	0	2	0	0	-	N	N	-	S	1	-	A	G	0	-	N	N	N	N														

10. Other design ②

10.1 None. . . . . = NNNN

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

11. Standard reference

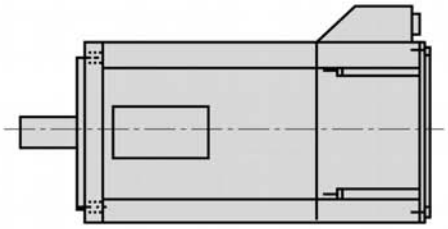
Standard	Title	Edition
DIN 6885-1	Drive Type Fastenings without Taper Action; Parallel Keys, Keyways, Deep Patter	1968-08
DIN 42955	Tolerances of shaft extension run-out of mounting flanges for rotating electrical machinery, test	1981-12

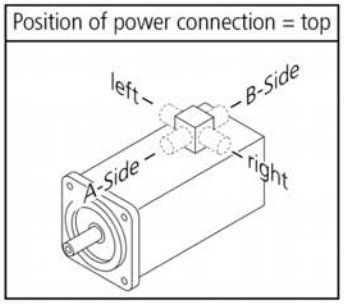
Note:

① Looking from front onto driven shaft (see picture 1)

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

Illustration example: MSK101





Picture 1

Fig.6-36: Type Codes MSK101 (page 2)