



WITTENSTEIN

Powerful

Modular

Reliable

High Performance Servo Motors

Compact and Efficient Motors





High performing modular motor technology has arrived

WITTENSTEIN has gained a global reputation for supplying superior motion – from revolutionary linear mechatronics to one of the world's smallest AC servo motors.

Now your processes can excel with the latest range of motors from WITTENSTEIN's cyber motor technology unit. The new High Performance Servo Motors possess the characteristics to optimize productivity and efficiency for your processes.

- Compact design
- Reduced inertia for the highest in dynamic performance
- Highest power / smallest package
- Unexcelled efficiency
- High continuous power
- High reliability
- Maintenance free
- Long life ($L_{h10} > 20,000$)
- Modular construction (brake, feedback, sensors, etc.)
- Design conformance to IEC 34 / UL 1004-1
- Custom designs available

Servo Motor MRSH049A-...C

M R S H 0 4 9 A - . . . C - 3 D 9 D E - . . . G S C - N N N

Stack Length

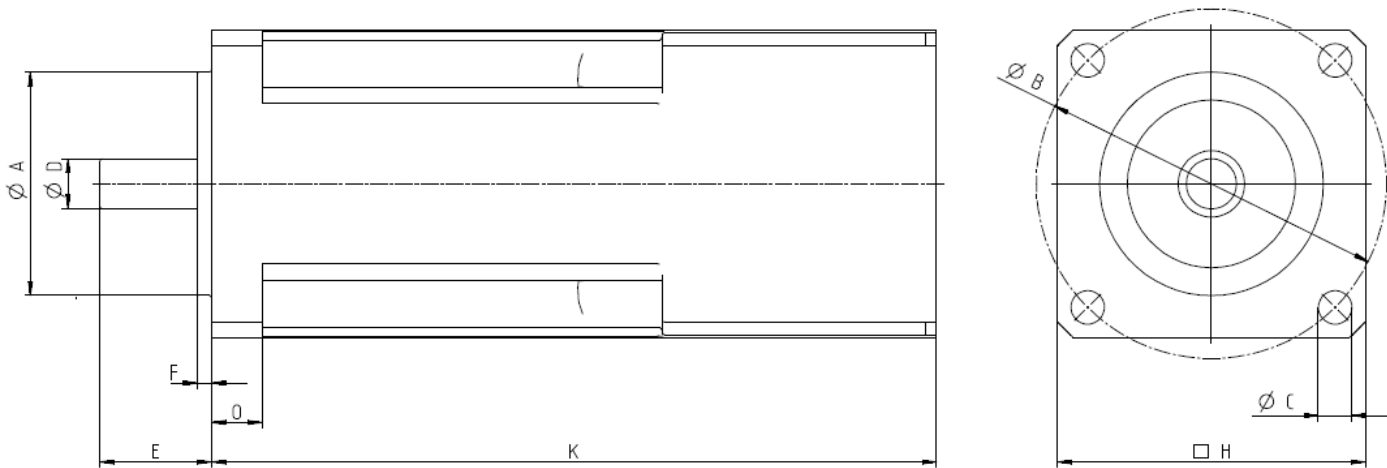
- 015 = 15 mm
- 030 = 30 mm
- 045 = 45 mm
- 060 = 60 mm

Feedback

- EJ = Optical Encoder, Absolute, Multiturn, EnDat 2.2, EN ISO 13849
- RA = Resolver, Pole pair count 1

Brake

- 0 = none
- 1 = Electrically released brake, $M_4 = 1 \text{ Nm}$



Motor type	Brake	K
MRSH049A-015C-3D9D	0	102
	1	136
MRSH049A-030C-3D9D	0	117
	1	151
MRSH049A-045C-3D9D	0	132
	1	166
MRSH049A-060C-3D9D	0	147
	1	181

Dimensions	
A _{i6}	40
B	63
C	5.5
D _{k6}	9
E	20
F	2.5
H	55
O	9

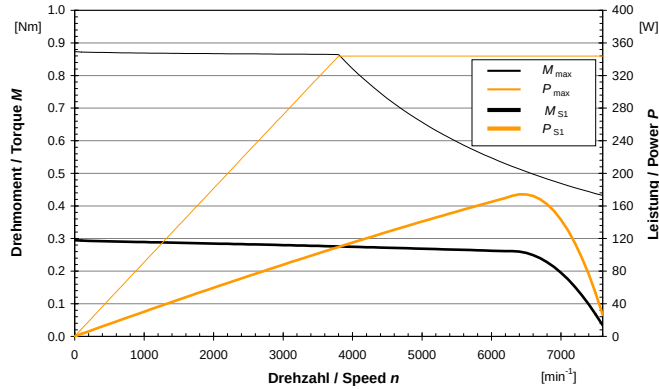
Technical Data

Motor type	M_0 [Nm]	I_0 [A]	$M_{\max}$ [Nm]	$I_{\max}$ [A]	n_N [min ⁻¹]	M_N [Nm]	m [kg]	J [kgm ²]	k_m [Nm/A]	α [rad/s ²]
MRSH049A-015C-3D9D	0.30	0.6	0.87	2.0	6200	0.26	1.00	$10 \cdot 10^{-6}$	0.47	$9 \cdot 10^4$
MRSH049A-030C-3D9D	0.60	1.3	1.78	4.1	6500	0.50	1.22	$16 \cdot 10^{-6}$	0.47	$11 \cdot 10^4$
MRSH049A-045C-3D9D	0.93	1.9	2.60	6.0	6500	0.73	1.44	$22 \cdot 10^{-6}$	0.48	$12 \cdot 10^4$
MRSH049A-060C-3D9D	1.15	2.4	3.50	8.6	6200	0.90	1.66	$28 \cdot 10^{-6}$	0.48	$13 \cdot 10^4$

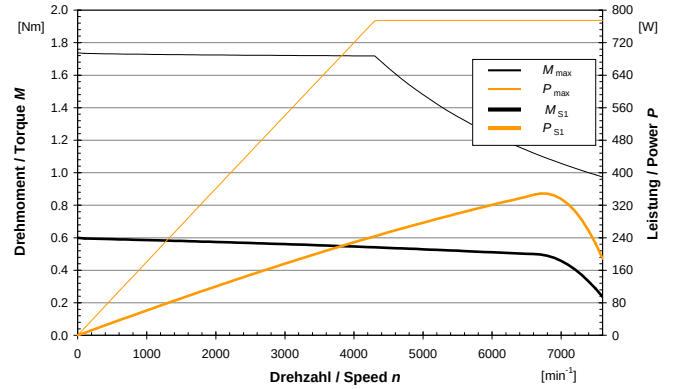
Performance data at $U_{DC} = 320$ V

Motor Characteristics

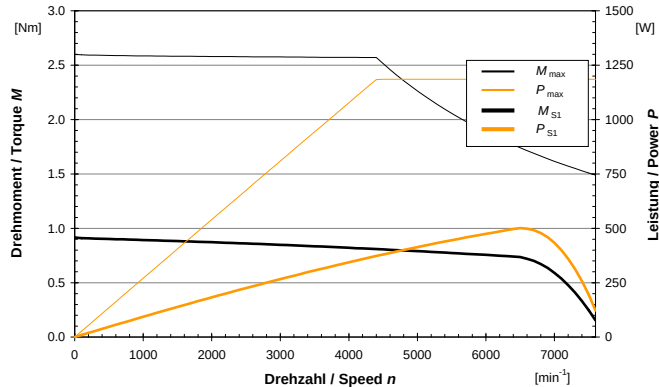
MRSH049A-015C-3D9D



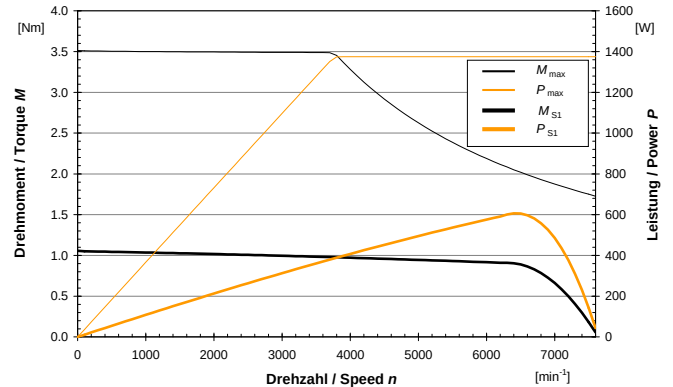
MRSH049A-030C-3D9D



MRSH049A-045C-3D9D

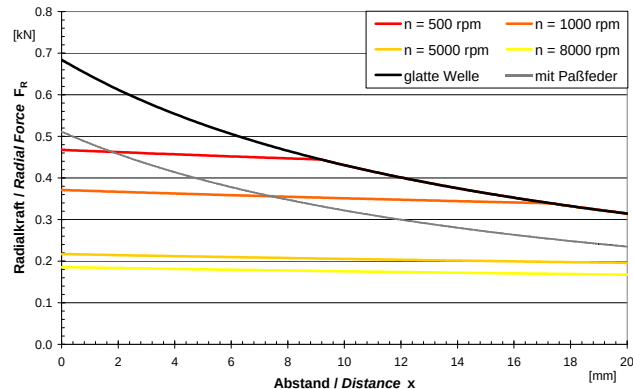


MRSH049A-060C-3D9D

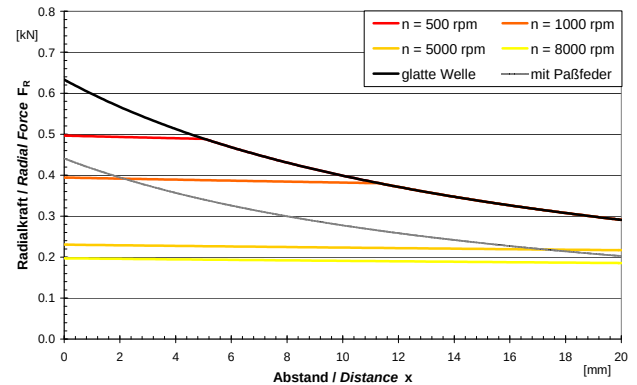


Shaft Loading

MRSH049A-015



MRSH049A-060



Fatigue strength safety factor – $S = 1.5$

Servo Motor MRSH064A-...C

M R S H 0 6 4 A - . . . C - 4 D 5 S E - . . . G S C - N N N

Stack Length

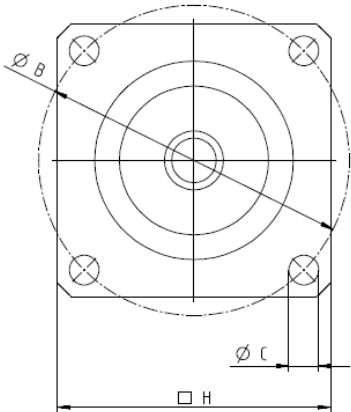
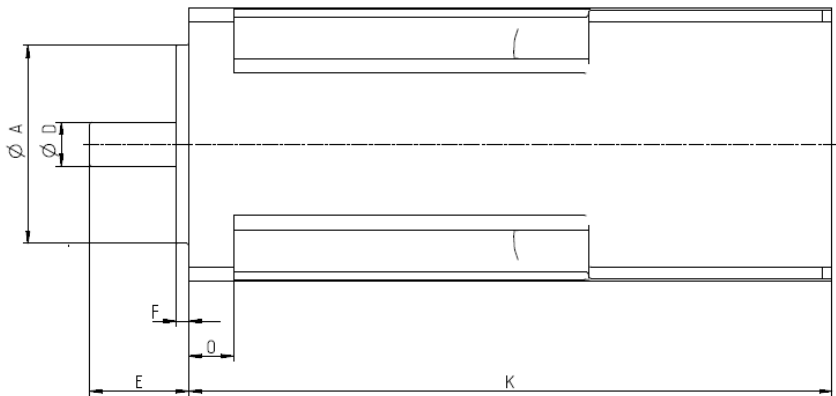
- 015 = 15 mm
- 030 = 30 mm
- 045 = 45 mm
- 060 = 60 mm

Feedback

- EJ = Optical Encoder, Absolute, Multiturn, EnDat 2.2, EN ISO 13849
- RA = Resolver, Pole pair count 1

Brake

- 0 = none
- 1 = Electrically released brake, $M_4 = 4.5 \text{ Nm}$



Motor type	Brake	K
MRSH064A-015C-4D5S	0	150.5
	1	155.5
MRSH064A-030C-4D5S	0	165.5
	1	170.5
MRSH064A-045C-4D5S	0	180.5
	1	185.5
MRSH064A-060C-4D5S	0	195.5
	1	200.5

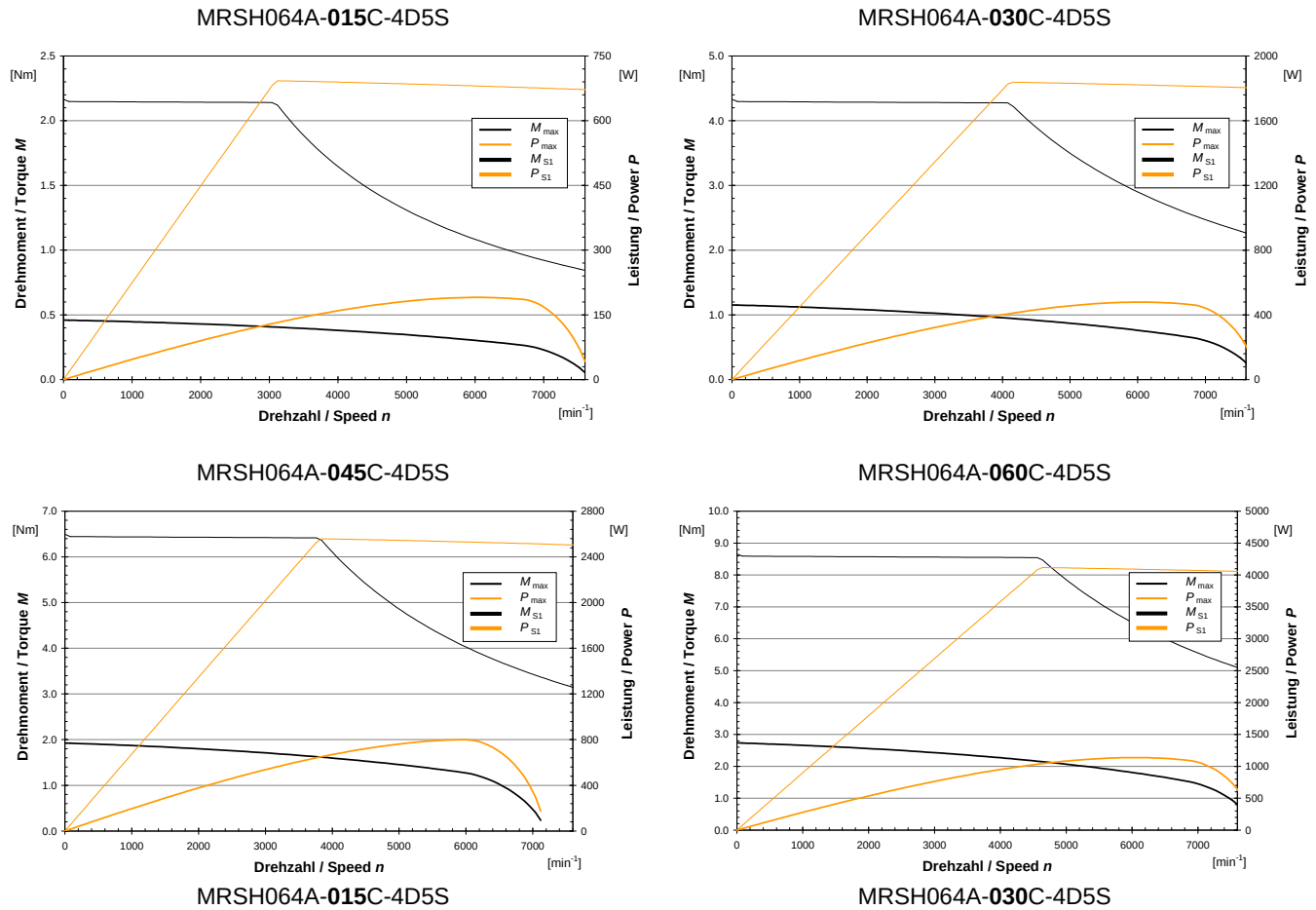
Dimensions	
A _{i6}	60
B	75
C	5.5
D _{k6}	11
E	23
F	2.5
H	70
O	11.5

Technical Data

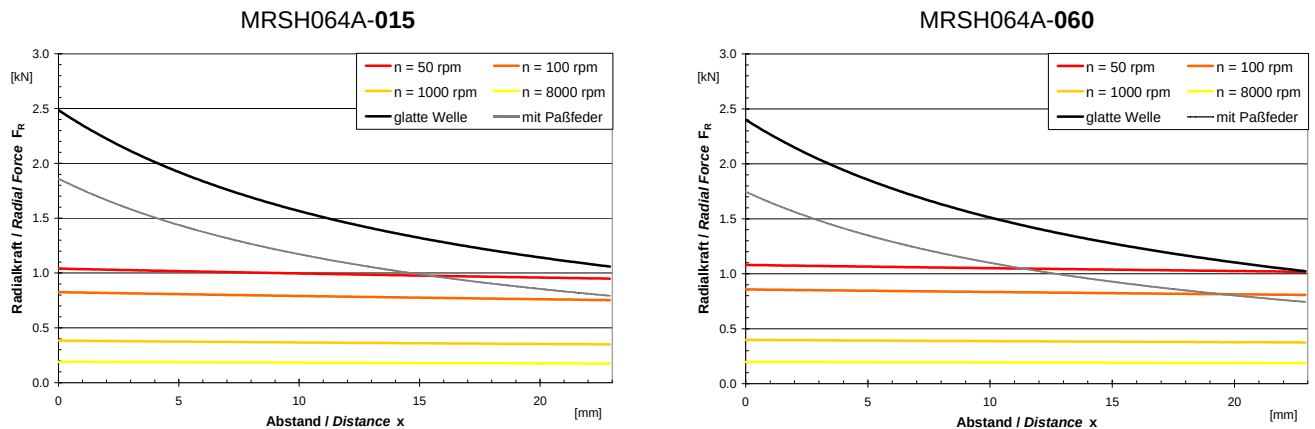
Motor type	M_0 [Nm]	I_0 [A]	M_{max} [Nm]	I_{max} [A]	n_N [min ⁻¹]	M_N [Nm]	m [kg]	J [kgm ²]	k_m [Nm/A]	α [rad/s ²]
MRSH064A-015C-4D5S	0.46	0.9	2.2	4.5	6000	0.30	1.28	$18 \cdot 10^{-6}$	0.55	$12 \cdot 10^4$
MRSH064A-030C-4D5S	1.15	2.2	4.3	9.0	6100	0.75	1.61	$33 \cdot 10^{-6}$	0.55	$13 \cdot 10^4$
MRSH064A-045C-4D5S	1.93	3.3	6.5	12.0	6000	1.27	1.94	$47 \cdot 10^{-6}$	0.62	$14 \cdot 10^4$
MRSH064A-060C-4D5S	2.73	5.3	8.7	18.0	6000	1.79	2.27	$61 \cdot 10^{-6}$	0.55	$14 \cdot 10^4$

Performance data at $U_{DC} = 560$ V

Motor Characteristics



Shaft Loading



Fatigue strength safety factor – $S = 1$.

Servo Motor MRSH130A-...L

M R S H 1 3 0 A - . . . L - 7 D 3 S E - . . . G S C - N N N

Stack Length

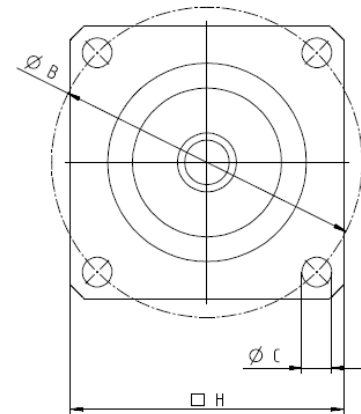
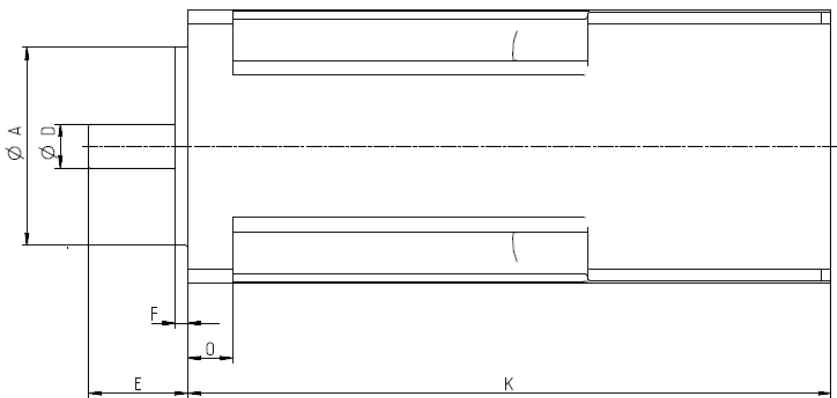
030 = 30 mm
060 = 60 mm
120 = 120 mm
230 = 230 mm

Feedback

EL = Optical Encoder, Absolute, Multiturn, EnDat 2.2, EN ISO 13849
RA = Resolver, Pole pair count 1

Brake

0 = none
1 = Electrically released brake, $M_4 = 18\text{ Nm}$



Motor type	Brake	K
MRSH130A-030L-7D3S	0	191
	1	247
MRSH130A-060L-7D3S	0	221
	1	277
MRSH130A-120L-7D3S	0	281
	1	337
MRSH130A-230L-7D3S	0	391
	1	447

Dimensions	
A ₁₆	130
B	182
C	11
D _{k6}	24
E	60
F	5
H	150
O	22

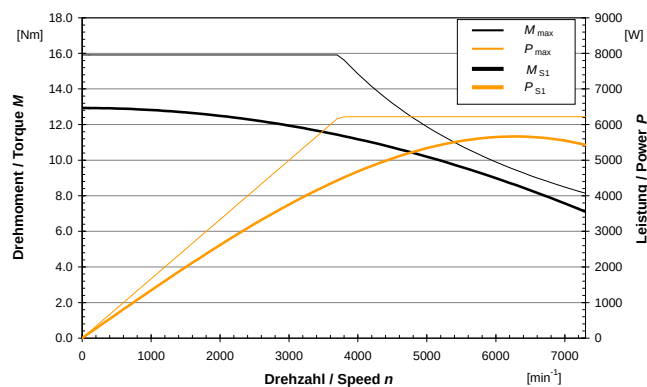
Technical Data

Motor type	M_0 [Nm]	I_0 [A]	$M_{\max}$ [Nm]	$I_{\max}$ [A]	n_N [min ⁻¹]	M_N [Nm]	m [kg]	J [kgm ²]	k_m [Nm/A]	α [rad/s ²]
MRSH130A-030L-7D3S	13	15	16	25	6600	8	7.2	$5 \cdot 10^{-4}$	0.72	$30 \cdot 10^3$
MRSH130A-060L-7D3S	27	24	32	56	6400	15	10	$9 \cdot 10^{-4}$	0.72	$30 \cdot 10^3$
MRSH130A-120L-7D3S	47	52	63	100	6300	47	16	$19 \cdot 10^{-4}$	0.72	$33 \cdot 10^3$
MRSH130A-230L-7D3S	76	89	120	200	6000	74	25	$33 \cdot 10^{-4}$	0.72	$36 \cdot 10^3$

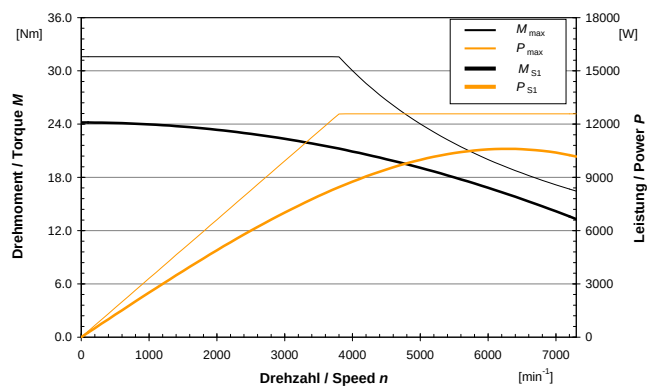
Performance data at $U_{DC} = 560$ V

Motor Characteristics

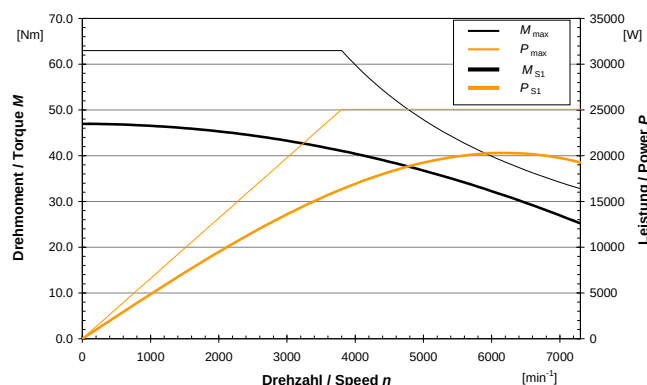
MRSH130A-030L-7D3S



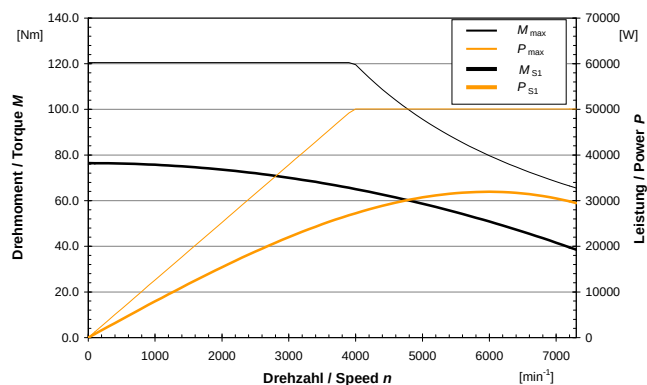
MRSH130A-060L-7D3S



MRSH130A-120L-7D3S

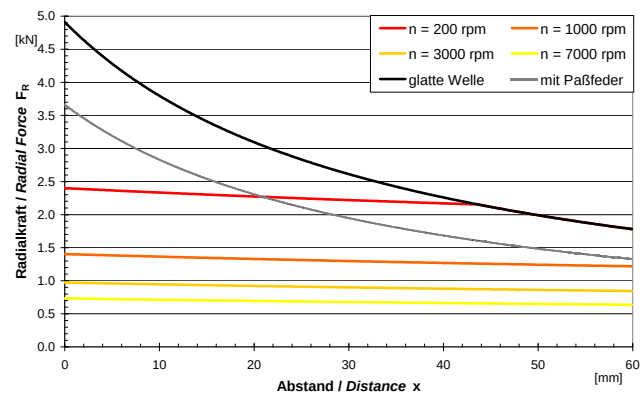


MRSH130A-230L-7D3S

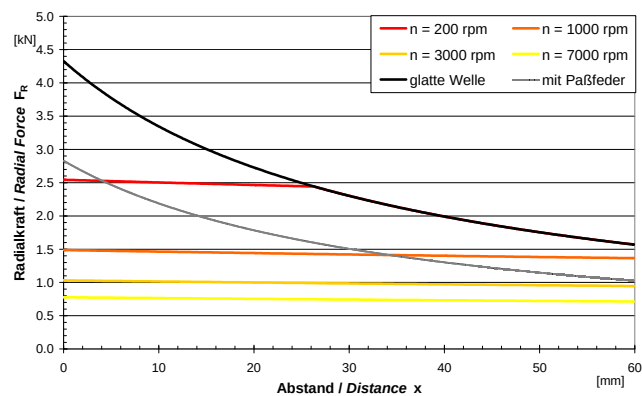


Shaft Loading

MRSH130A-030



MRSH130A-120



Fatigue strength safety factor – $S = 1.5$

Servo Motor MRSH178A-...L

M R S H 1 7 8 A - . . . L - . . . S K - . . . G S C - N N N

Stack Length

135 = 135 mm
195 = 195 mm

Voltage

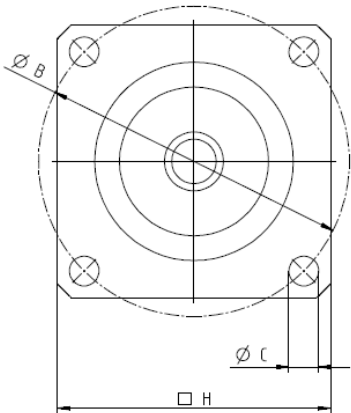
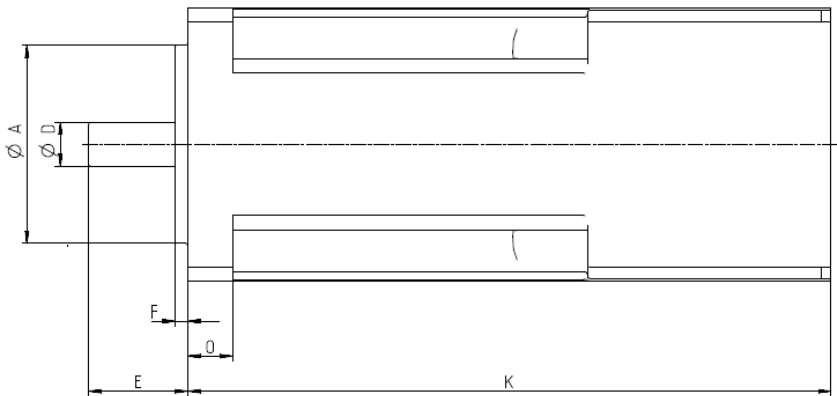
5D3 = 0.53 Vs Voltage 5D3 only with length 135
5D8 = 0.58 Vs Voltage 5D8 only with length 195
9D3 = 0.93 Vs Voltage 9D3 only with length 135
9D6 = 0.96 Vs Voltage 9D6 only with length 195

Feedback

EL = Optical Encoder, Absolute, Multiturn, EnDat 2.2
RA = Resolver, Pole pair count 1

Brake

0 = none
1 = Electrically released brake, M₄ = 22 Nm



Motor type	Brake	K
MRSH178A-135L	0	279.5
	1	308.0
MRSH178A-195L	0	339.5
	1	368.0

Dimensions	
A _{j6}	180
B	236
C	11
D _{k6}	40
E	77
F	7
H	190
O	30

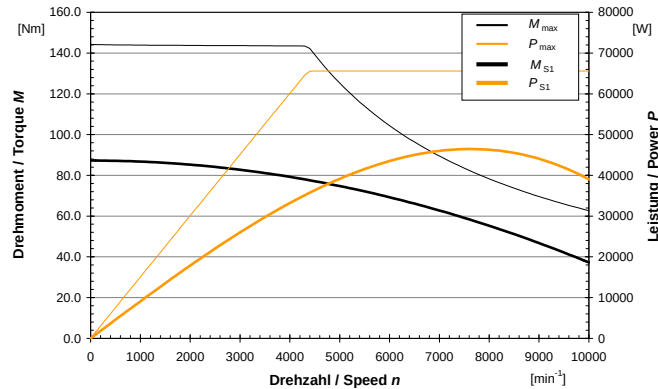
Technical Data

Motor type	M_0 [Nm]	I_0 [A]	M_{max} [Nm]	I_{max} [A]	n_N [min ⁻¹]	M_N [Nm]	m [kg]	J [kgm ²]	k_m [Nm/A]	α [rad/s ²]
MRSH178A-135L-5D3S	87	140	142	240	7700	57	35	$9 \cdot 10^{-3}$	1.13	$16 \cdot 10^3$
MRSH178A-135L-9D3S	87	79	142	140	4500	56	35	$9 \cdot 10^{-3}$	1.13	$16 \cdot 10^3$
MRSH178A-195L-5D8S	117	170	178	290	8200	78	47	$13 \cdot 10^{-3}$	1.18	$14 \cdot 10^3$
MRSH178A-195L-9D6S	117	102	178	170	4000	79	47	$13 \cdot 10^{-3}$	1.18	$14 \cdot 10^3$

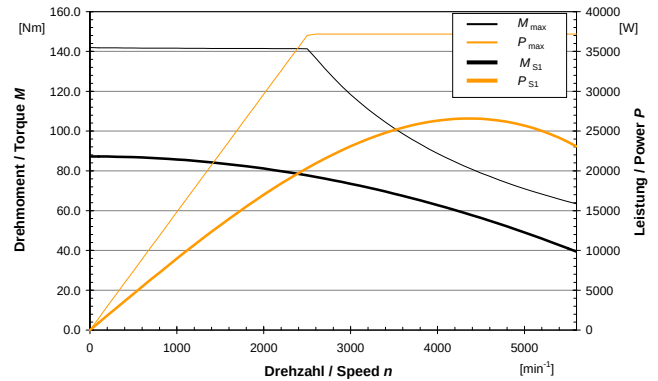
Performance data at $U_{DC} = 560$ V

Motor Characteristics

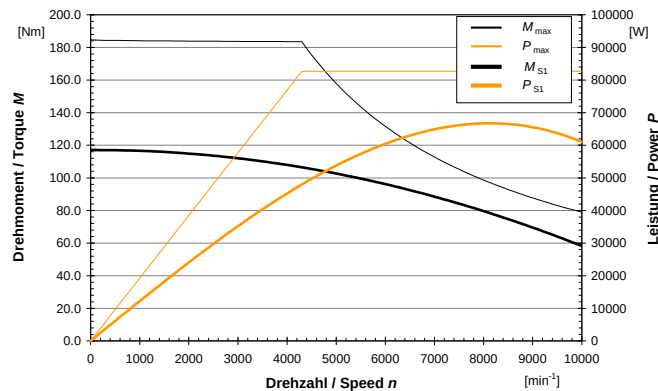
MRSH178A-135L-5D3S



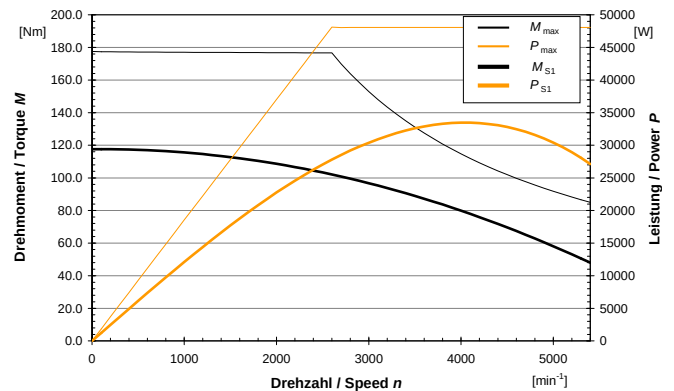
MRSH178A-135L-9D3S



MRSH178A-195L-5D8S

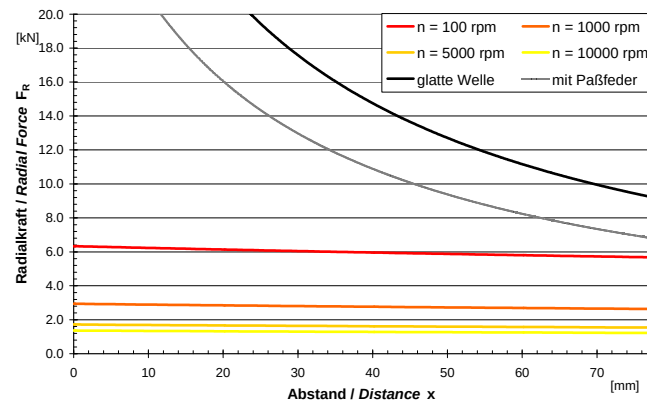


MRSH178A-195L-9D6S

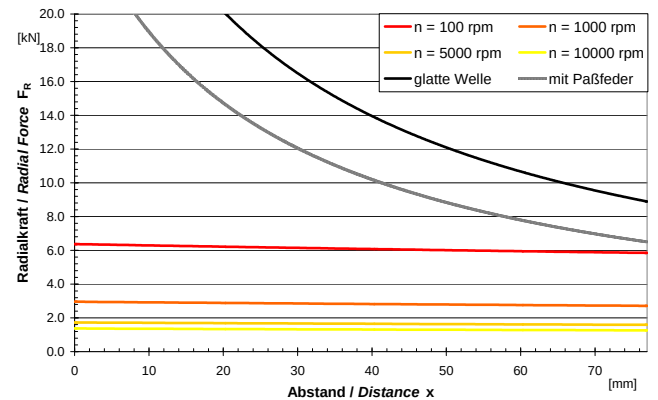


Shaft Loading

MRSH178A-135L



MRSH178A-195L



Fatigue strength safety factor – $S = 1.5$

Servo Motor MRSH178C-...L

M R S H 1 7 8 C - . . . L - . . . S K - . . . G S C - N N N

Stack Length

135 = 135 mm
195 = 195 mm

Voltage

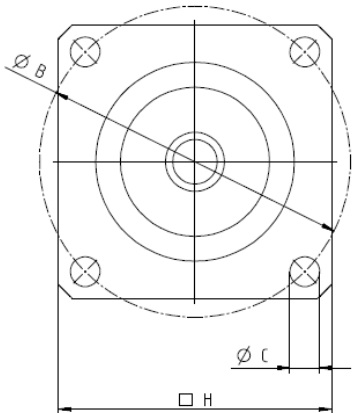
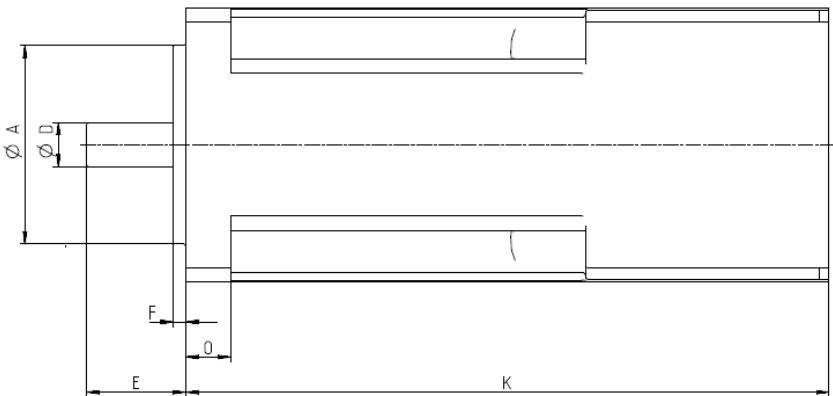
5D9 = 0.59 Vs Voltage 5D9 only with length 195
7D1 = 0.71 Vs Voltage 7D1 only with length 135
1V2

Feedback

EL = Optical Encoder, Absolute, Multiturn, EnDat 2.2
RA = Resolver, Pole pair count 1

Brake

0 = none
1 = Electrically released brake, $M_4 = 22 \text{ Nm}$



Motor type	Brake	K
MRSH178C-135L	0	279.5
	1	308.0
MRSH178C-195L	0	339.5
	1	368.0

Dimensions	
A ₁₆	180
B	236
C	11
D _{k6}	40
E	77
F	7
H	190
O	30

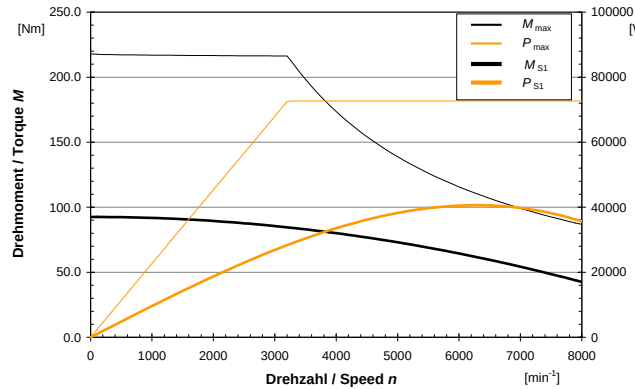
Technical Data

Motor type	M_0 [Nm]	I_0 [A]	M_{max} [Nm]	I_{max} [A]	n_N [min ⁻¹]	M_N [Nm]	m [kg]	J [kgm ²]	k_m [Nm/A]	α [rad/s ²]
MRSH178C-135L-7D1S	92	110	211	330	6300	61	35	$16 \cdot 10^{-3}$	0.71	$13 \cdot 10^3$
MRSH178C-135L-1V2S	92	63	211	190	3300	61	35	$16 \cdot 10^{-3}$	1.50	$13 \cdot 10^3$
MRSH178C-195L-5D9S	144	204	305	560	6400	93	47	$23 \cdot 10^{-3}$	0.72	$13 \cdot 10^3$
MRSH178C-195L-1V2S	144	102	305	280	3400	100	47	$23 \cdot 10^{-3}$	1.45	$13 \cdot 10^3$

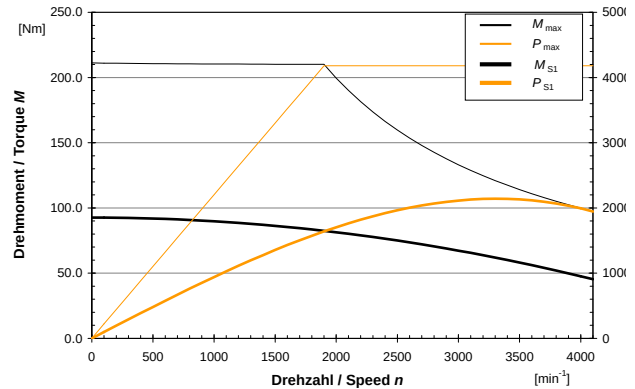
Performance data at $U_{DC} = 560$ V

Motor Characteristics

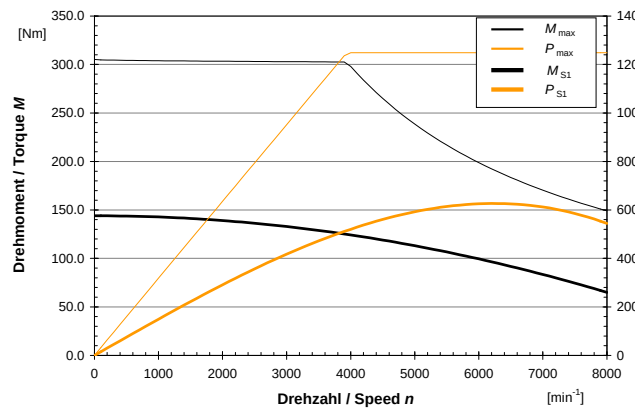
MRSH178C-135L-7D1S



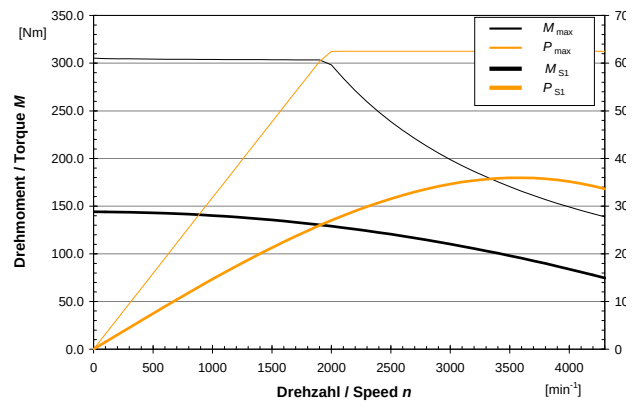
MRSH178C-135L-1V2S



MRSH178C-195L-5D9S

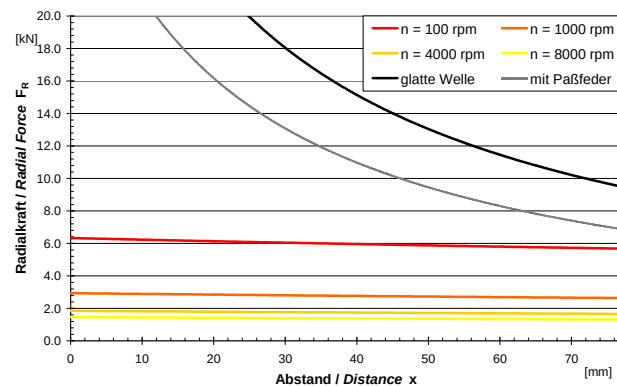


MRSH178C-195L-1V2S

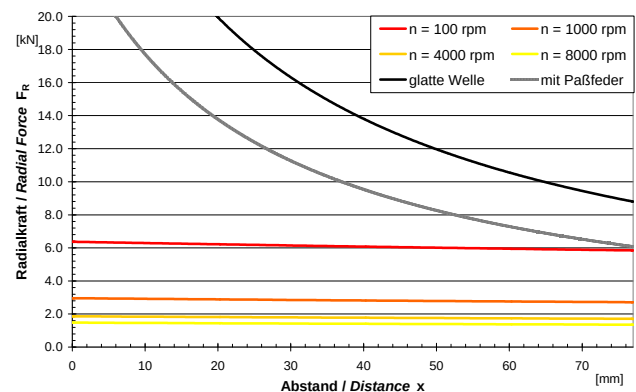


Shaft Loading

MRSH178C-135L



MRSH178C-195L



Fatigue strength safety factor – $S = 1.5$

Options for Your Motion Requirements



High Performance Motors



Miniature Motors



Radiation Hardened Motors



Vacuum Motors



Direct Drive Motors



Clean Room Motors



Linear Direct Drive Motors



Linear High Force Actuators



Servo Controller



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WITTENSTEIN – being **one** with the future

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