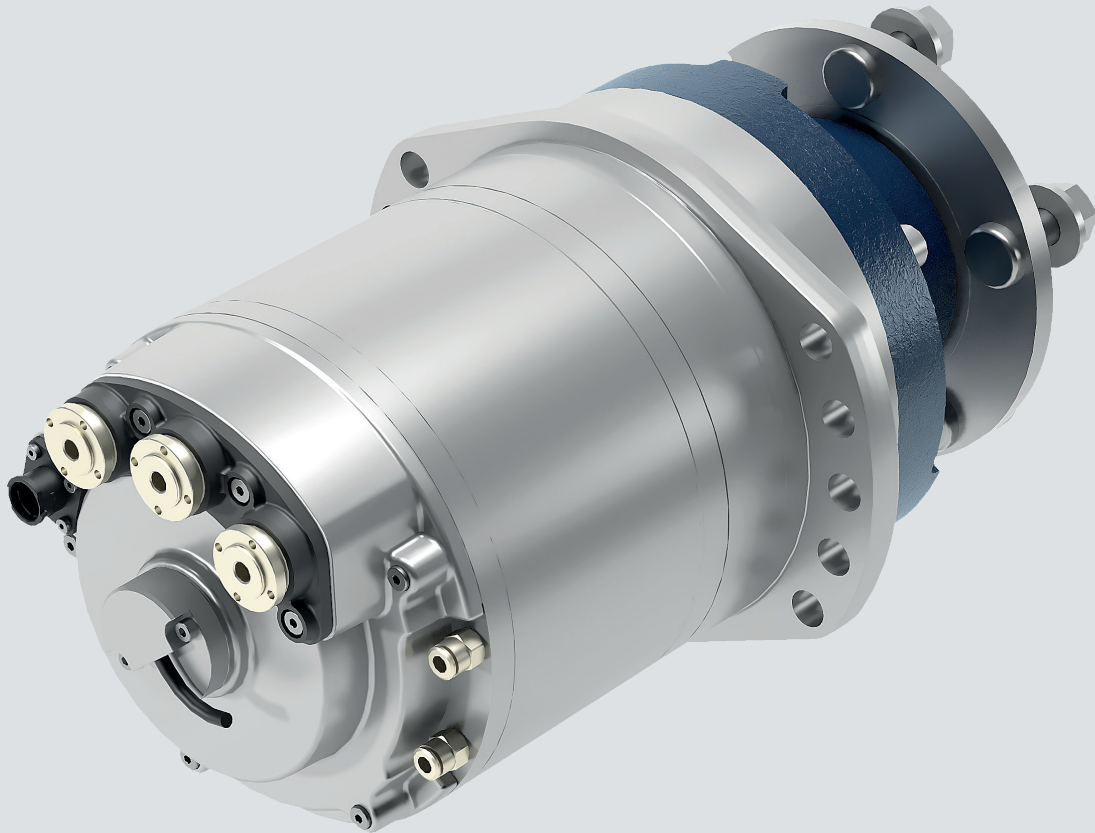


MSM Series

Electric motorwheels



SIBONI
A BONDIOLI & PAVESI COMPANY

398SEM004EN04 - 02-09-2026

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Consequently data provided in previous publications may no longer be valid. Siboni reserves the right to change specifications without prior notice or obligation.



Electric Wheel Hub Motor for Off-Highway Applications

Our **wheel hub motor** combines a high-performance brushless electric motor with an integrated gearbox, specifically designed to accelerate the electrification of the **off-highway sector**. This innovative solution addresses the growing demand for sustainable mobility across agriculture, municipal vehicles, and construction machinery.

The motor has been **engineered to fit seamlessly inside the wheel**, ensuring maximum space efficiency while delivering **optimal power density**.

Its compact architecture minimizes overall dimensions, offering manufacturers greater freedom in vehicle design without compromising on performance.

To enhance safety and reliability, the unit comes with a **built-in parking brake**, complete with a **mechanical release system** for emergency operation in the event of vehicle failure.

This feature ensures uninterrupted functionality even in the toughest working conditions.

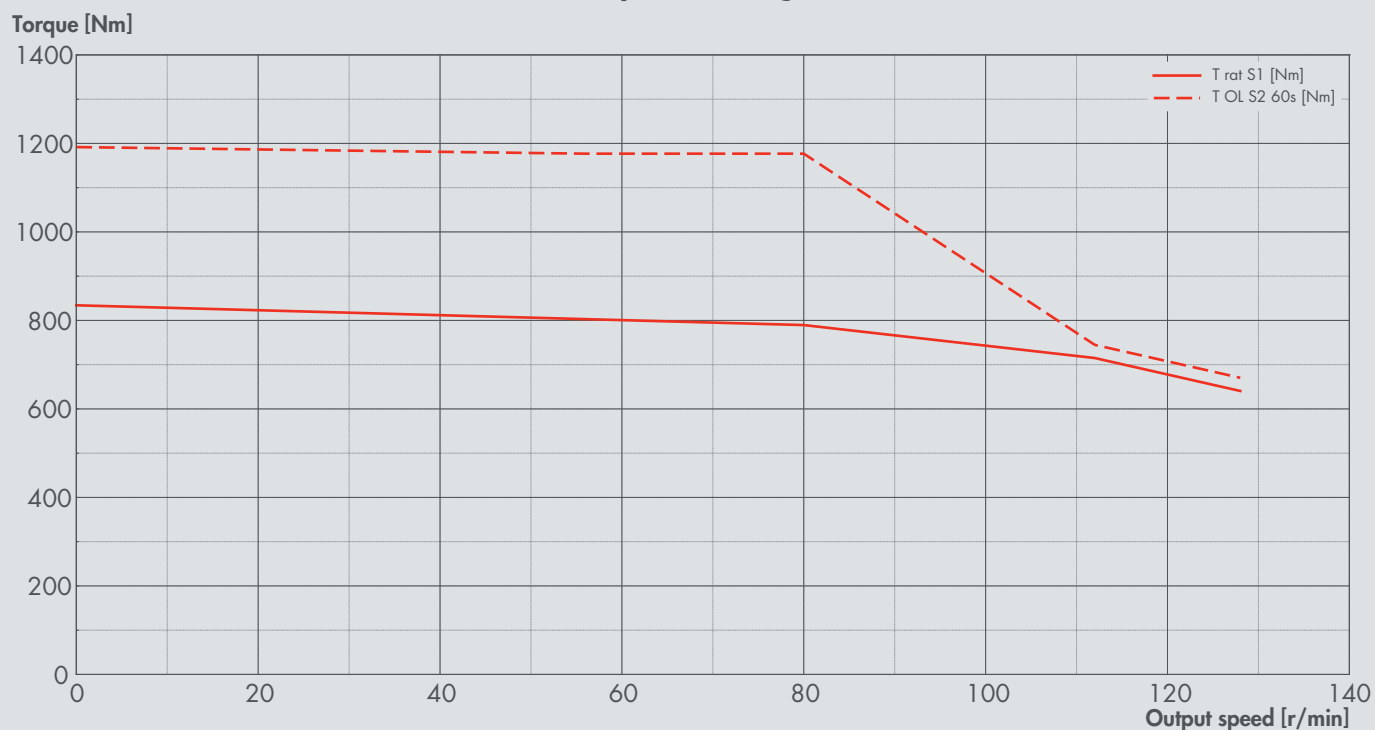
Designed for durability, the motor offers **robust construction and a high protection rating**, making it suitable for challenging environments where resistance to dust, water, and extreme conditions is essential.

Operating within a **48V power supply range**, the wheel hub motor is perfectly aligned with the needs of battery-powered equipment, combining efficiency, safety, and versatility.

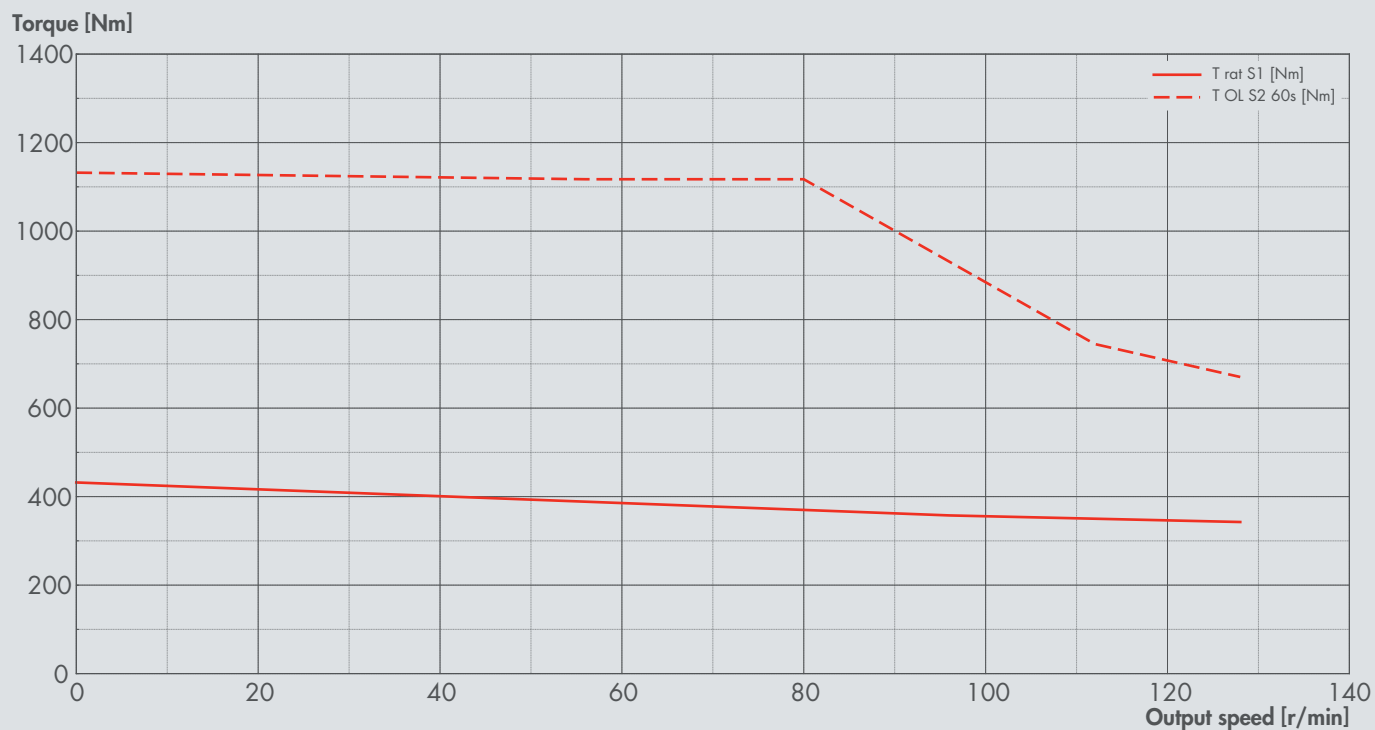
This product sets a new standard in **electric traction solutions**, helping industries move toward a cleaner, smarter, and more efficient future.

Torque/Speed Characteristics

Liquid Cooling



Air Cooling

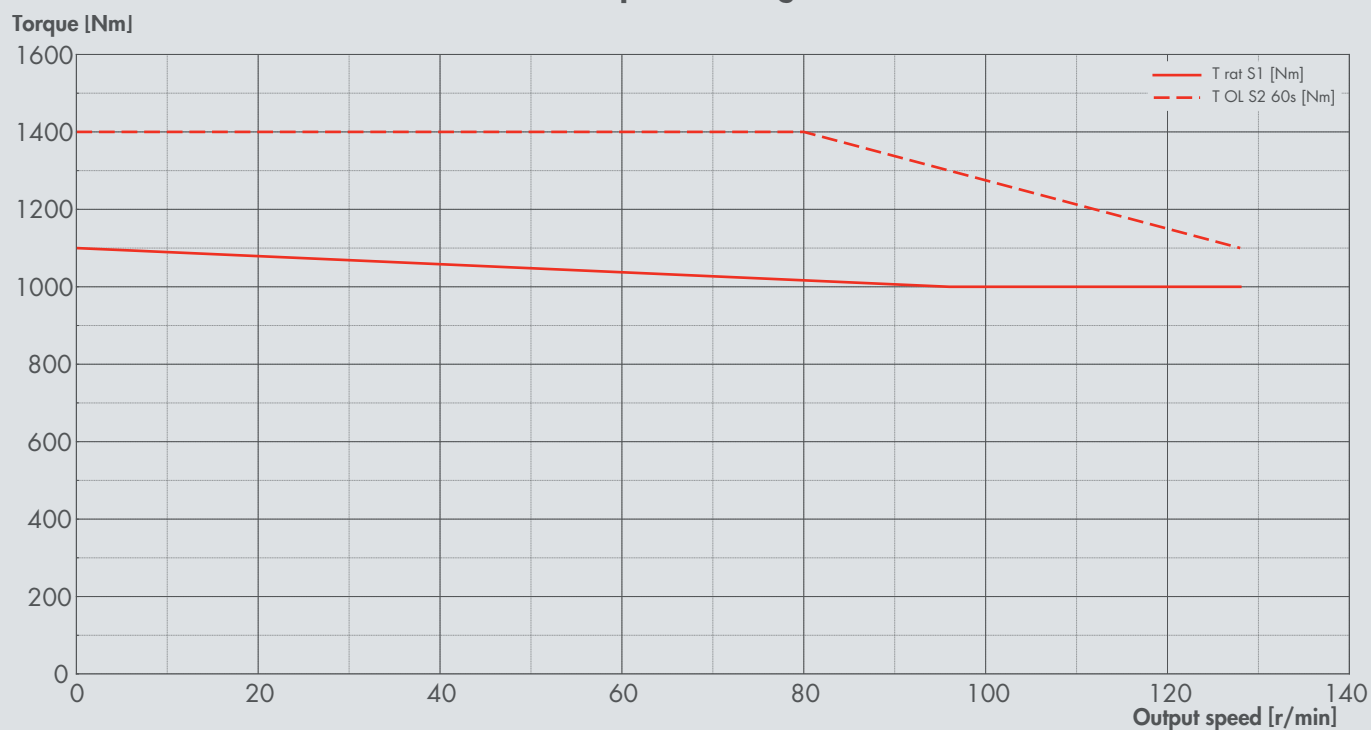


Performance and specifications

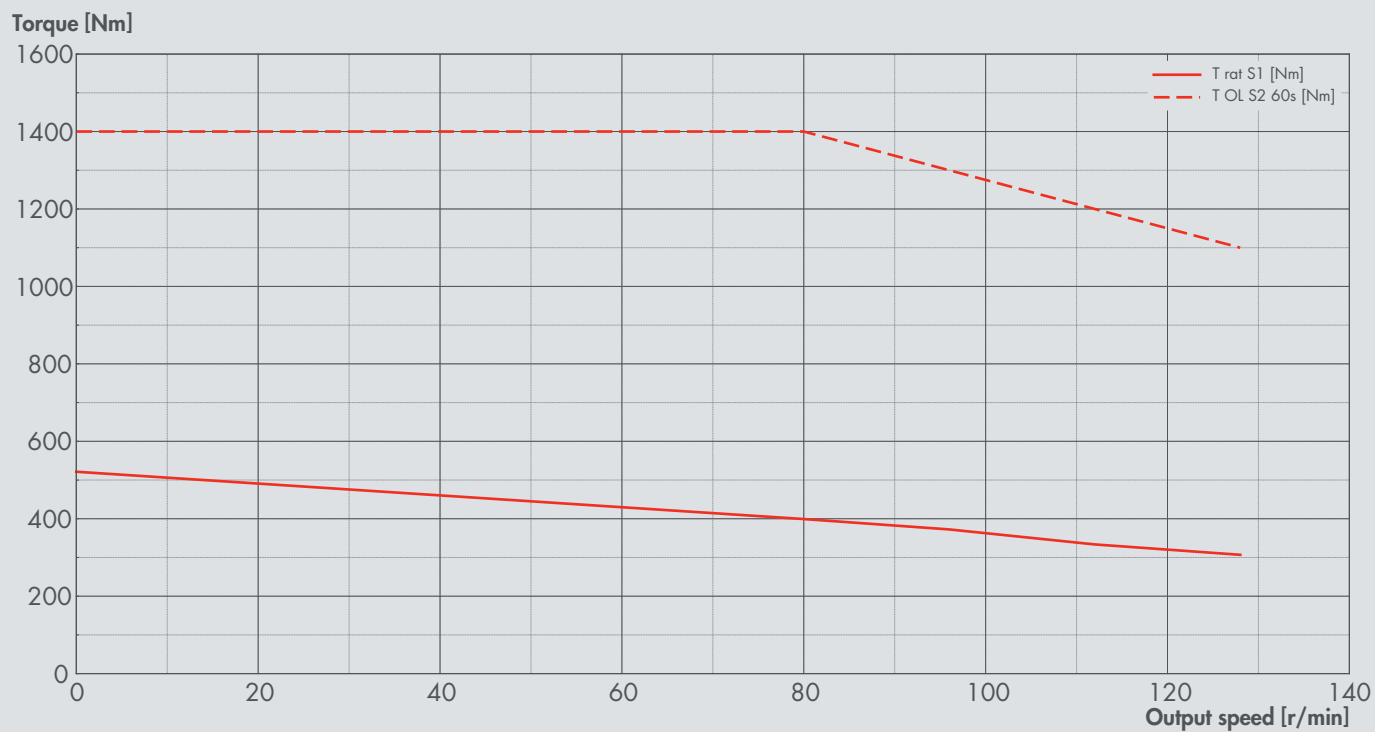
MOTOR MODEL		MSM 050	
Reduction ratio		31.36 (3 planet gear)	
Winding code		MSM187A	MSM182A
GENERAL DATA			
Cooling		Liquid	Air
Voltage Supply	V _{dc}	48	
Stall torque	Nm	835	430
Stall current	A _{rms}	209	116
Rated power	kW	8	3,5
Rated speed	r/min	95	
Rated torque	Nm	750	350
Rated current	A _{rms}	204	102
Peak torque	Nm	1170	1115
Peak current	A _{rms}	316	296
Torque costant ±5% (at 25°C)	Nm/A _{rms}	3,7	
Voltage constant ±5%	V _{rms} /[k(r/min)]	8	
Winding Resistance Phase Phase ±5% (at 25°C)	ohm	8,6	
Winding Inductance Phase Phase ±5%	mH	0,1	
Pole number		10	
ΔT _{MAX} Winding	°C	105	
MECHANICAL DATA			
Mineral gearbox oil type		ISO VG 150/220 EP	
Mineral gearbox oil quantity	ml	400	
Weight	kg	35,5	
PARKING BRAKE (option)			
Rated voltage +6 / -10%	V _{dc}	24	
Rated current at 20°C	A	1,1	
Weight	Kg	1,6	
Holding torque	Nm	1100	
ROTOR POSITION SENSOR SIN-COS (single ended)			
Supply	V	5V +/- 5%	
Max current consumption	mA	30	
Internal serial impedance	Ohm	100	
Amplitude	V	2.2 +/- 0.2 Vpp	
Signal offset	V	2.5 +/- 1%	
THERMAL SENSOR PT1000			
Type		PT1000-R8/2-2F	
Resistance at 20° / Resistance at 100°	Ohm	1078 / 1385	
Precision	°C	+/- (0.3-0.005t)	

Torque/Speed Characteristics

Liquid Cooling



Air Cooling

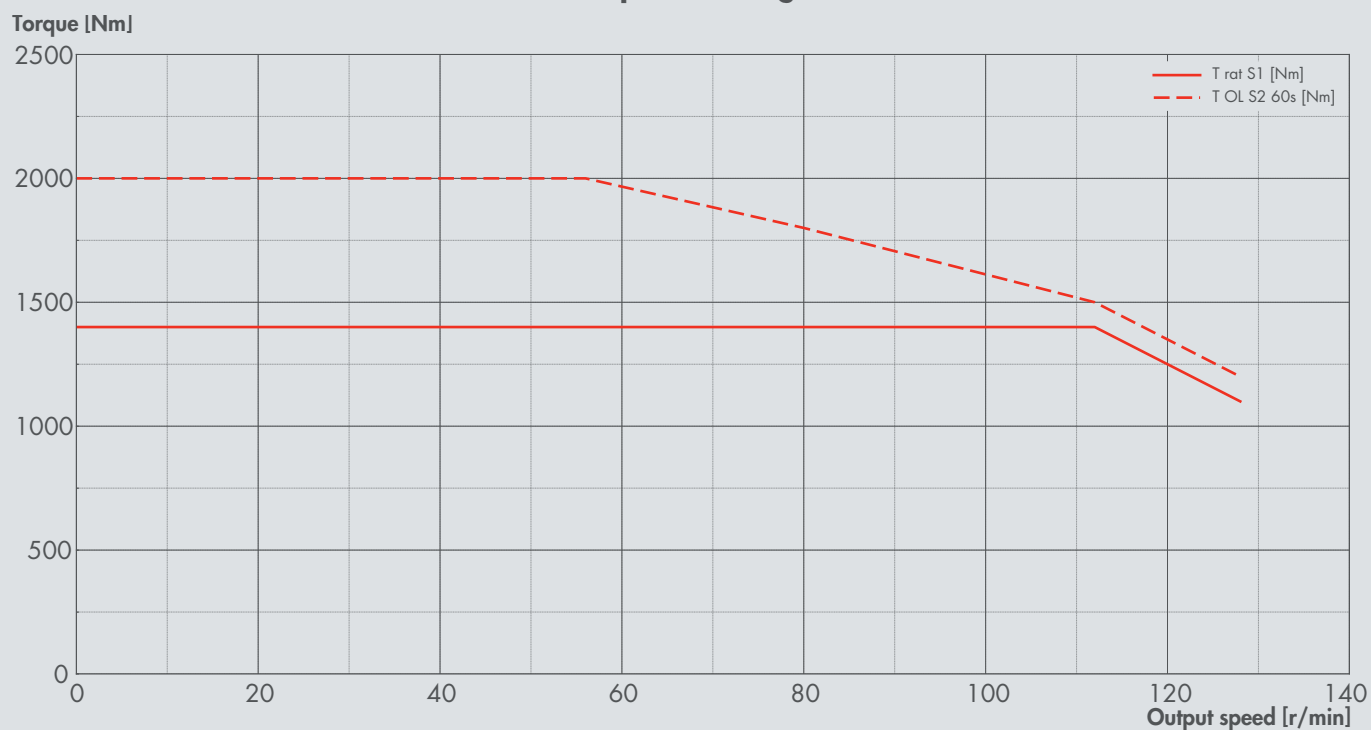


Performance and specifications

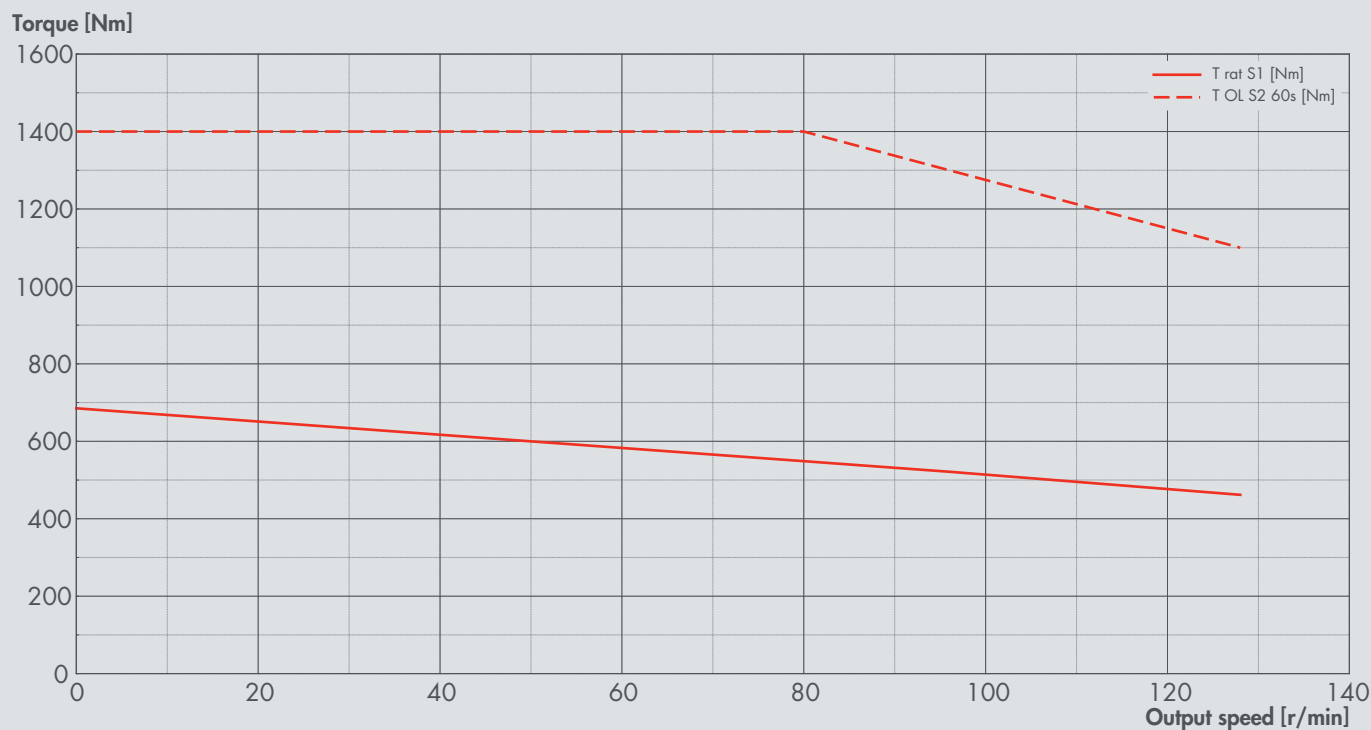
MOTOR MODEL		MSM 075	
Reduction ratio		31.36 (4 planet gear)	31.36 (3 planet gear)
Winding code		MSM188A	MSM183A
GENERAL DATA			
Cooling		Liquid	Air
Voltage Supply	V _{dc}	48	
Stall torque	Nm	1100	520
Stall current	A _{rms}	295	150
Rated power	kW	11	4
Rated speed	r/min	96	
Rated torque	Nm	1000	370
Rated current	A _{rms}	314	111
Peak torque	Nm	1400	
Peak current	A _{rms}	390	
Torque constant ±5% (at 25°C)	Nm/A _{rms}	3,7	
Voltage constant ±5%	V _{rms} /[k(r/min)]	7,75	
Winding Resistance Phase Phase ±5% (at 25°C)	ohm	4,9	
Winding Inductance Phase Phase ±5%	mH	0,06	
Pole number		10	
ΔT _{MAX} Winding	°C	105	
MECHANICAL DATA			
Mineral gearbox oil type		ISO VG 150/220 EP	
Mineral gearbox oil quantity	ml	400	
Weight	kg	41	40
PARKING BRAKE (option)			
Rated voltage +6 / -10%	V _{dc}	24	
Rated current at 20°C	A	1,1	
Weight	Kg	1,6	
Holding torque	Nm	1100	
ROTOR POSITION SENSOR SIN-COS (single ended)			
Supply	V	5V +/- 5%	
Max current consumption	mA	30	
Internal serial impedance	Ohm	100	
Amplitude	V	2.2 +/- 0.2 Vpp	
Signal offset	V	2.5 +/- 1%	
THERMAL SENSOR PT1000			
Type		PT1000-R8/2-2F	
Resistance at 20° / Resistance at 100°	Ohm	1078 / 1385	
Precision	°C	+/- (0.3-0.005t)	

Torque/Speed Characteristics

Liquid Cooling



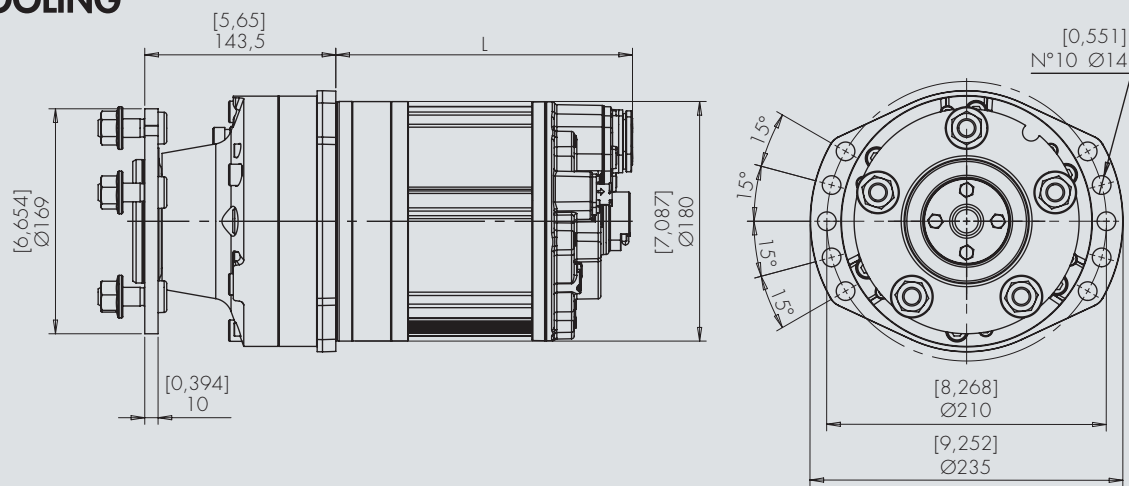
Air Cooling



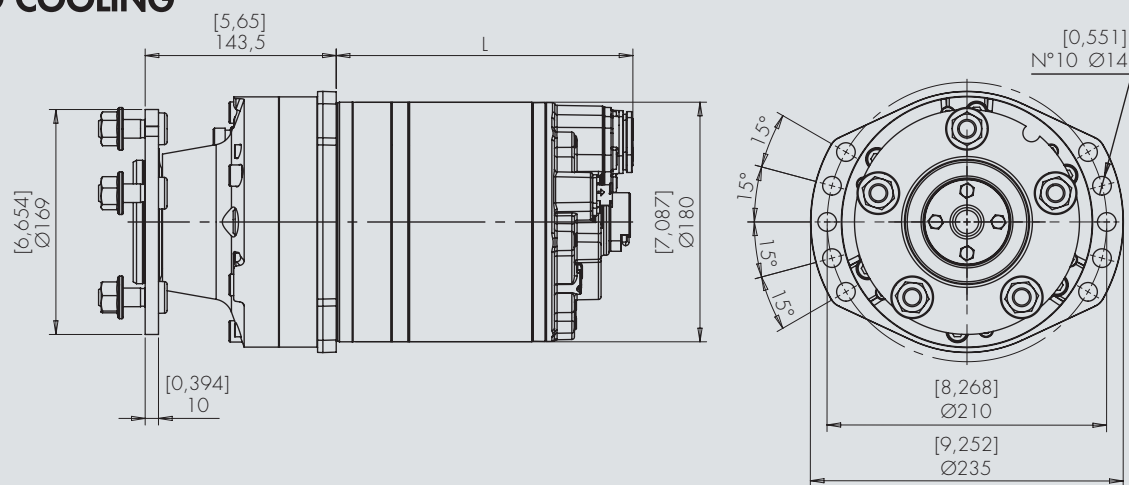
Performance and specifications

MOTOR MODEL		MSM 100	
Reduction ratio		31.36 (4 planet gear)	31.36 (3 planet gear)
Winding code		MSM189A	MSM184A
GENERAL DATA			
Cooling		Liquid	Air
Voltage Supply	V _{dc}	48	
Stall torque	Nm	1400	680
Stall current	A _{rms}	350	183
Rated power	kW	16	5,5
Rated speed	r/min	96	
Rated torque	Nm	1400	520
Rated current	A _{rms}	350	147
Peak torque	Nm	2000	1400
Peak current	A _{rms}	540	360
Torque costant ±5% (at 25°C)	Nm/A _{rms}	3,7	
Voltage constant ±5%	V _{rms} /[k(r/min)]	8,25	
Winding Resistance Phase Phase ±5% (at 25°C)	ohm	3,8	
Winding Inductance Phase Phase ±5%	mH	0,05	
Pole number		10	
ΔT _{MAX} Winding	°C	105	
MECHANICAL DATA			
Mineral gearbox oil type		ISO VG 150/220 EP	
Mineral gearbox oil quantity	ml	400	
Weight	kg	44	43
PARKING BRAKE (option)			
Rated voltage +6 / -10%	V _{dc}	24	
Rated current at 20°C	A	1,1	
Weight	Kg	1,6	
Holding torque	Nm	1100	
ROTOR POSITION SENSOR SIN-COS (single ended)			
Supply	V	5V +/- 5%	
Max current consumption	mA	30	
Internal serial impedance	Ohm	100	
Amplitude	V	2.2 +/- 0.2 Vpp	
Signal offset	V	2.5 +/- 1%	
THERMAL SENSOR PT1000			
Type		PT1000-R8/2-2F	
Resistance at 20° / Resistance at 100°	Ohm	1078 / 1385	
Precision	°C	+/- (0.3-0.005t)	

AIR COOLING

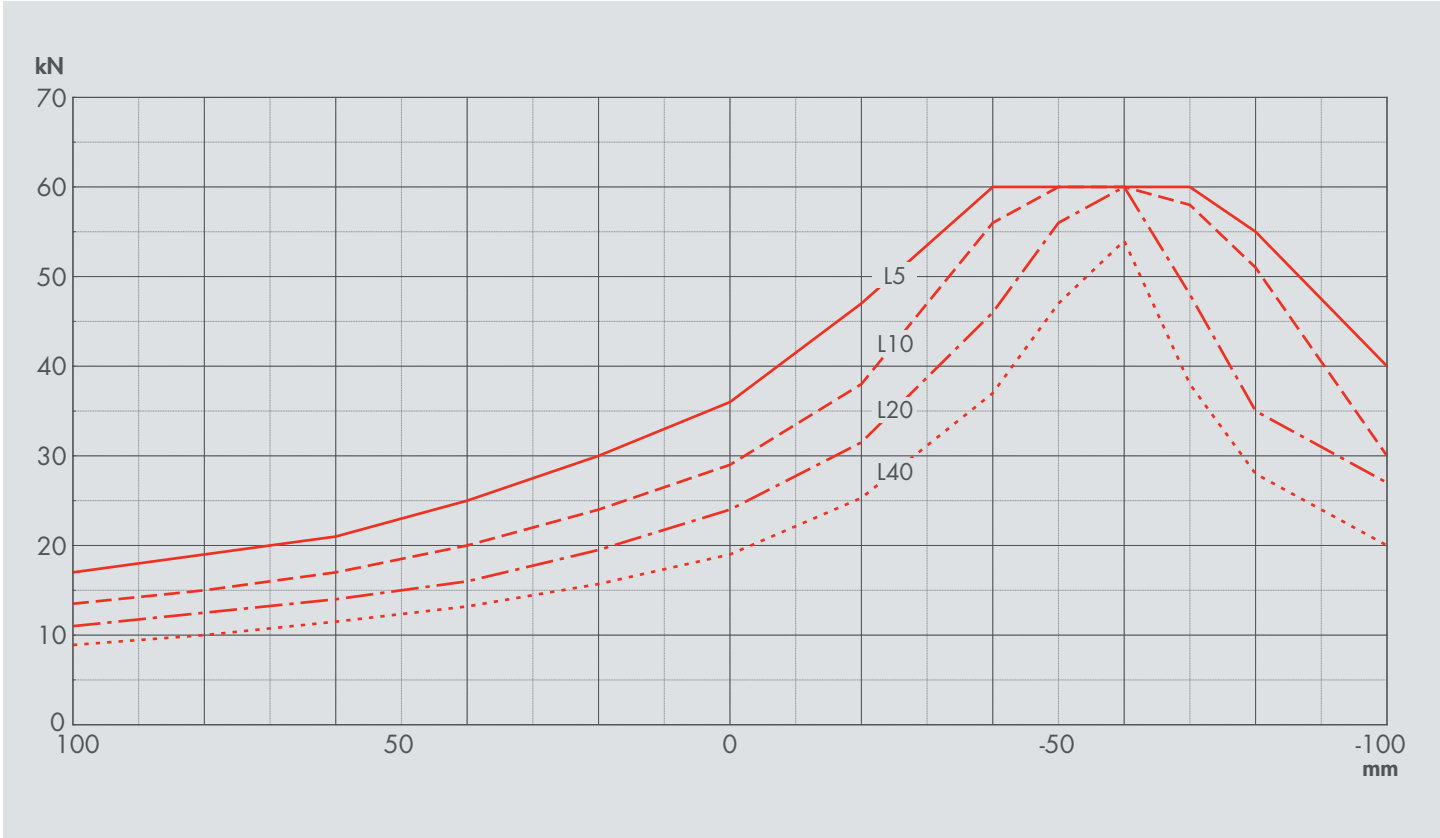


LIQUID COOLING

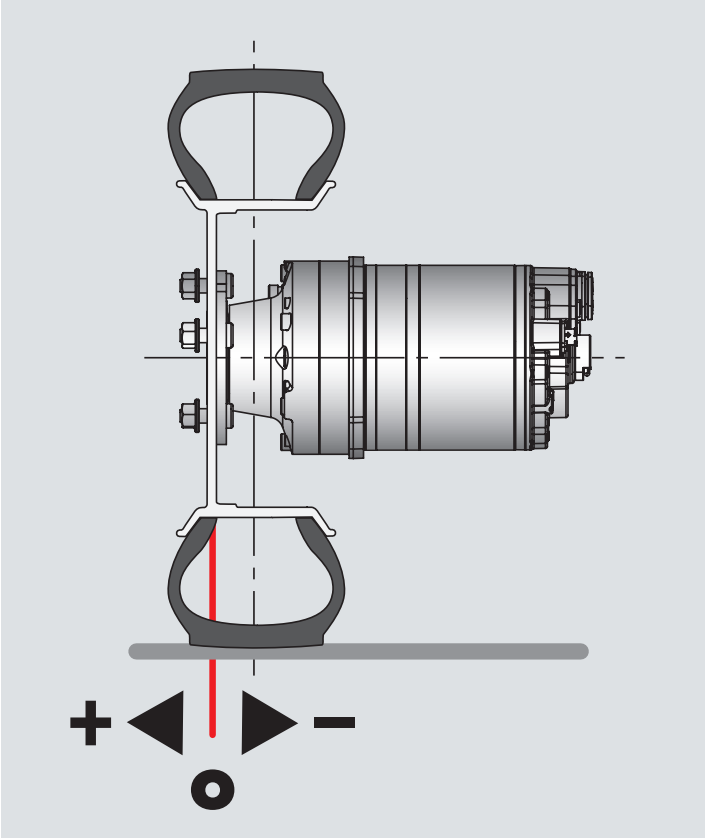


SIZE	L	
	mm	inch
MSM 050	223	8,8
MSM 075	248	9,8
MSM 100	273	10,7

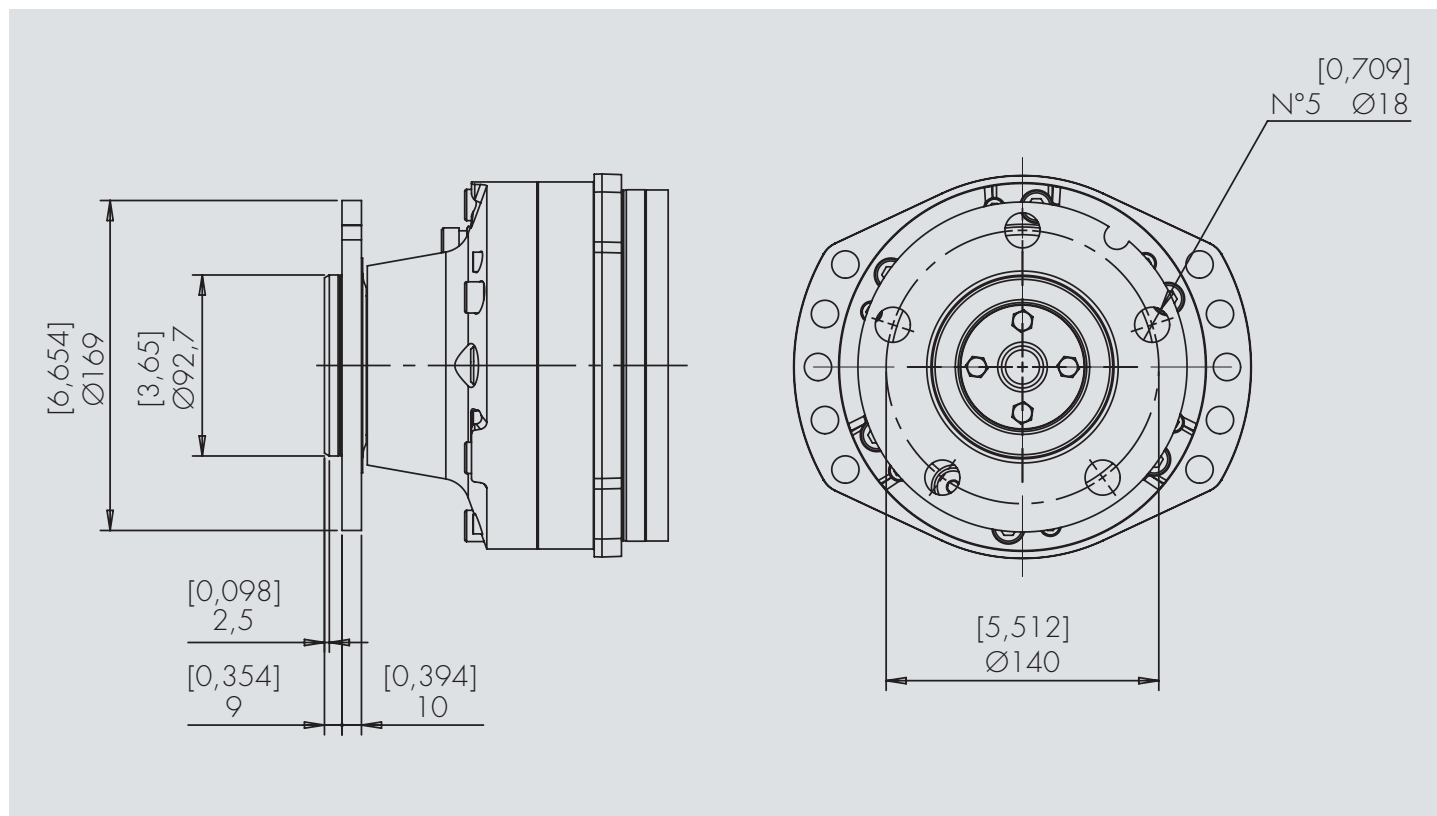
Radial load and service life of bearings



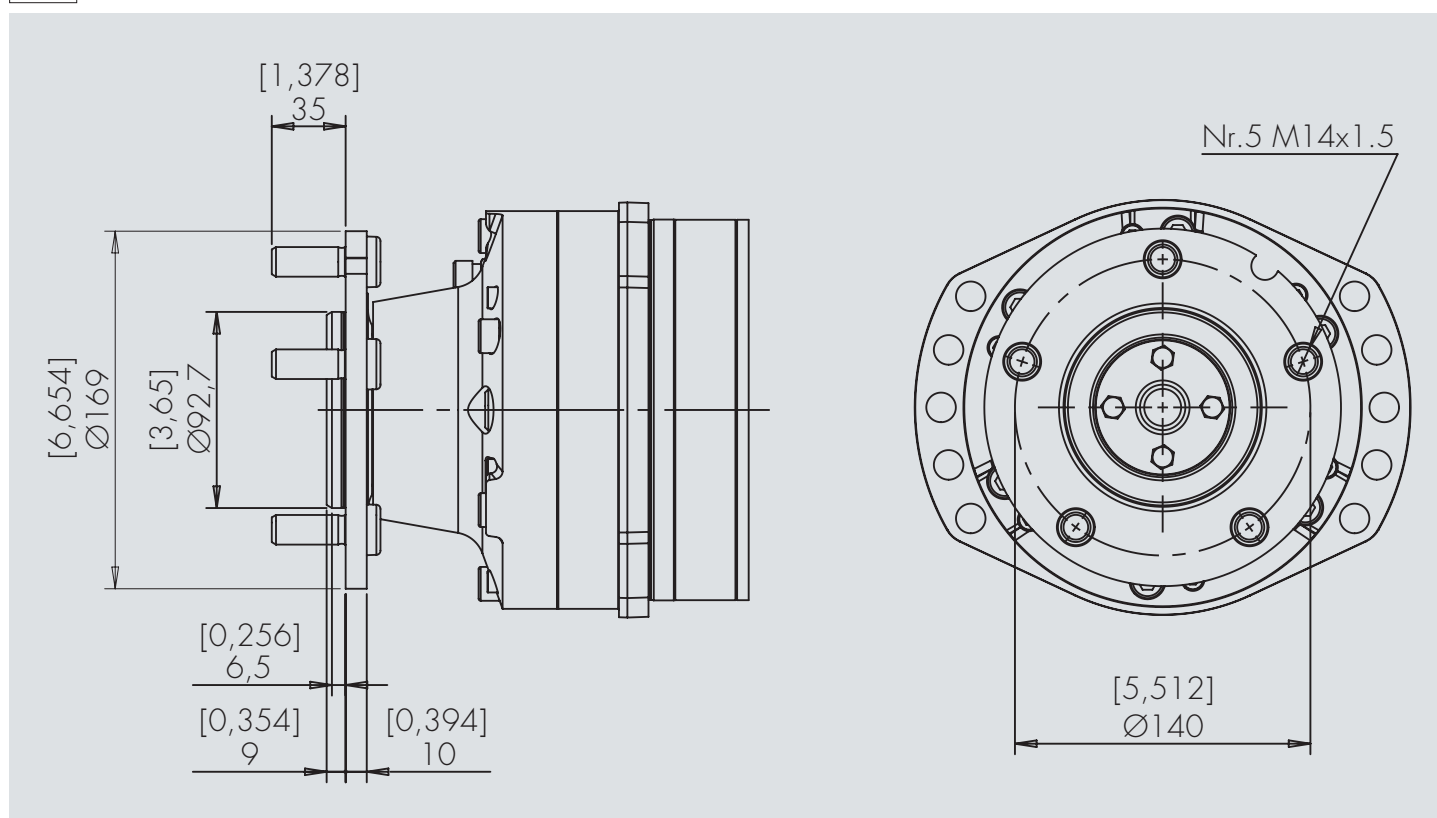
The curves of the permissible radial loads F_r , as a function of the abscissa x (distance from the wheel mounting surface), show the value corresponding to the service life L in millions of cycles of the bearings, calculated on the basis of ISO281.



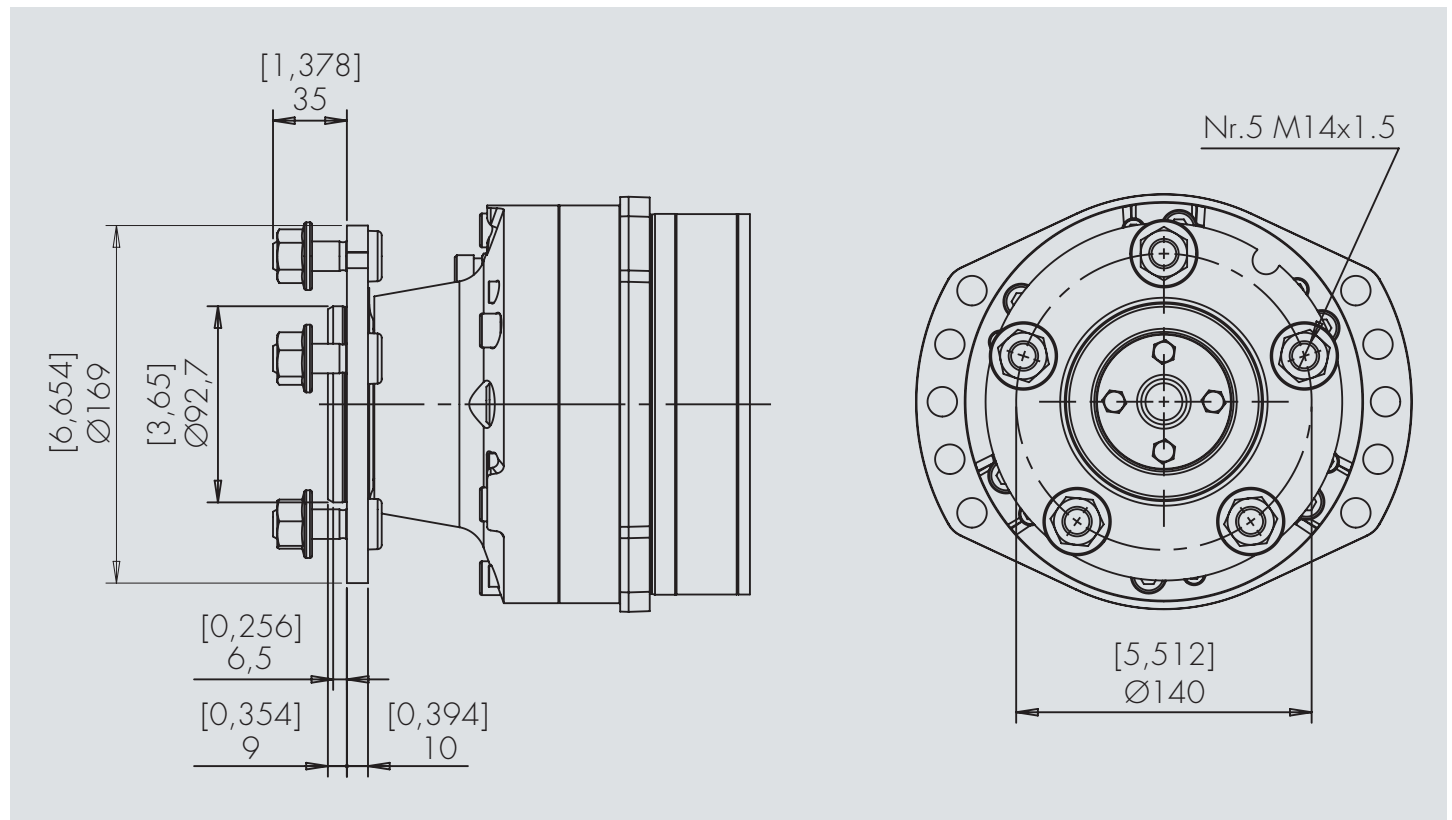
R Back (wheel)



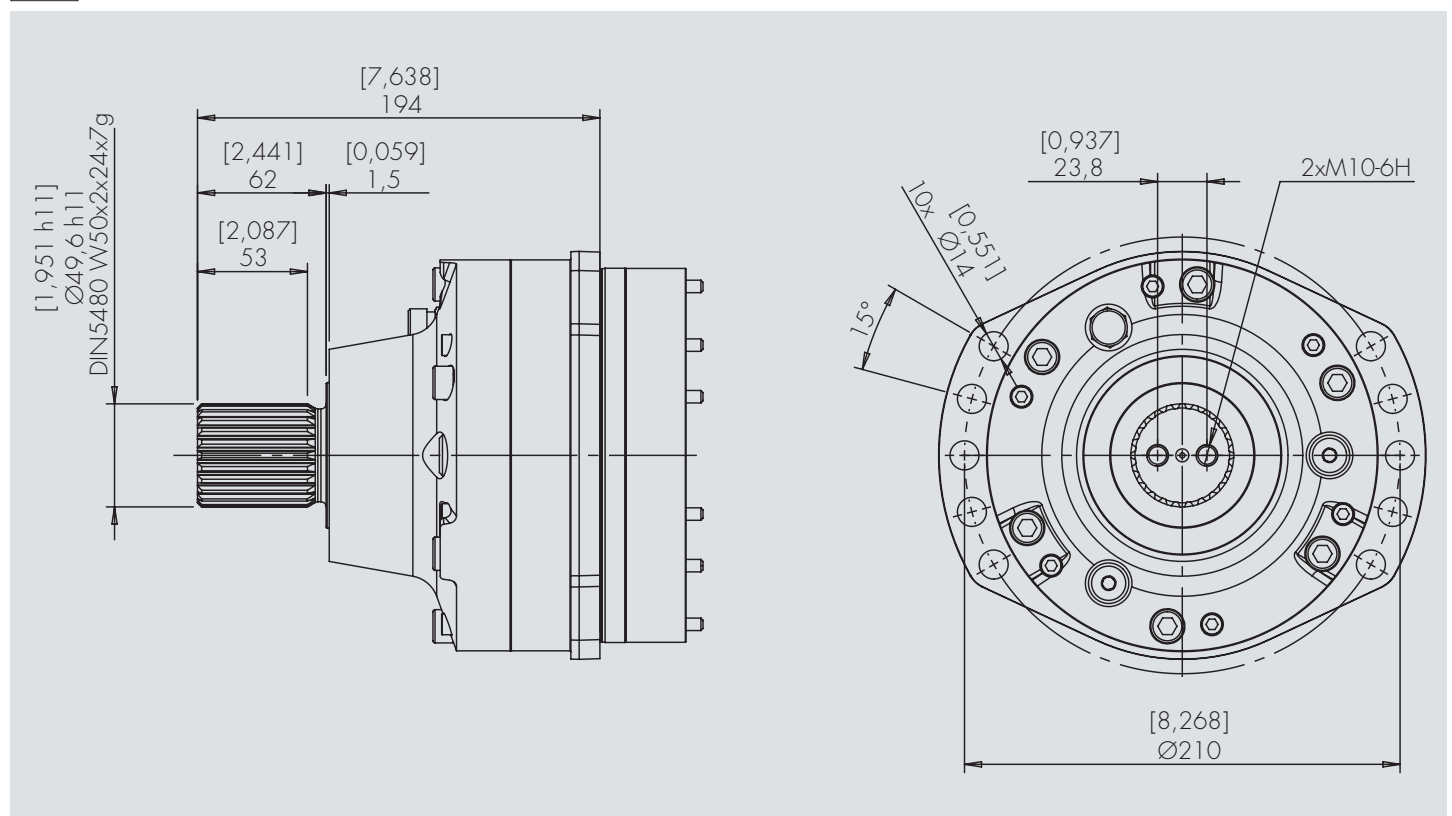
1 Back (wheel with studs)



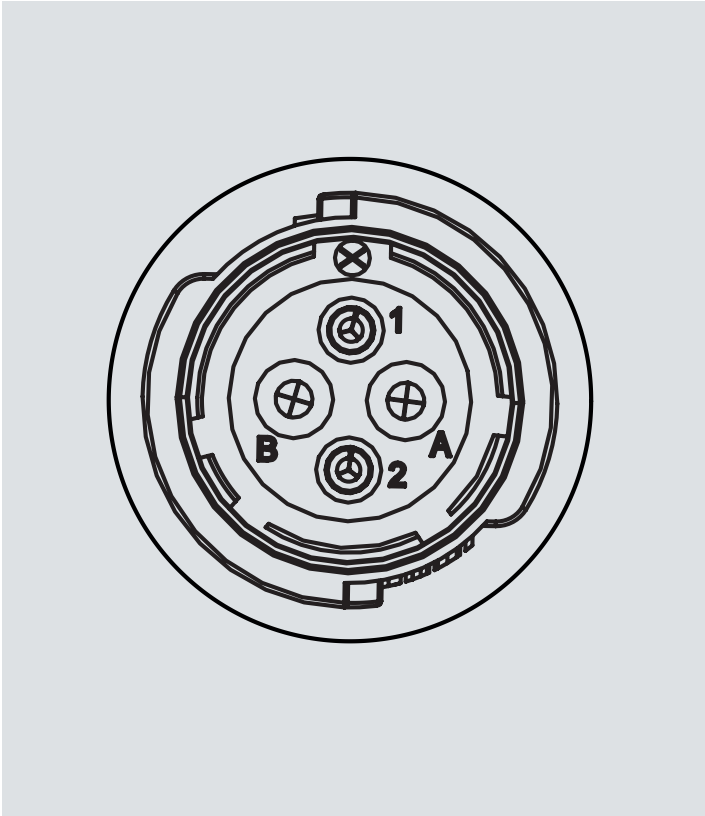
2 Back (wheel with studs+bolts)



E Shaft DIN 5480 W50x2x30x24



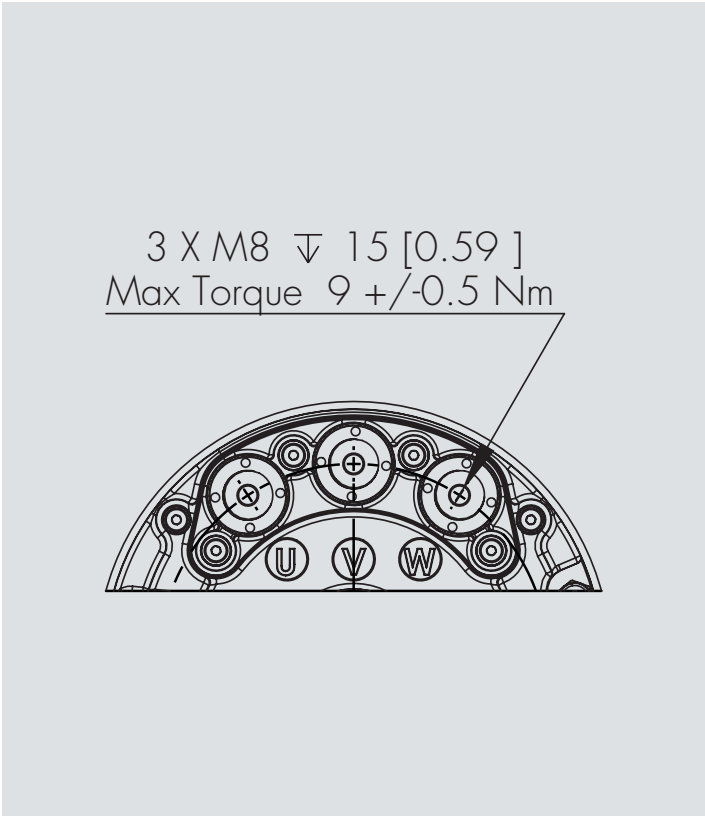
T connector



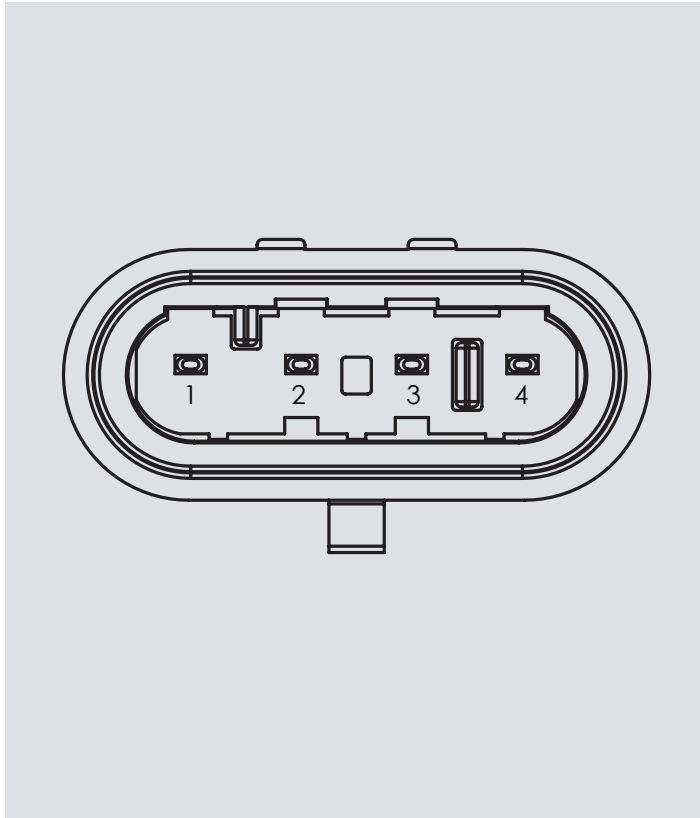
Pin	Signal
1	PT1000
3	
A	Brake V+
B	Brake V-

Mating kit for motors without brake MS5CON001R
Mating kit for motors with brake MS5CON002R

P connector



S connector

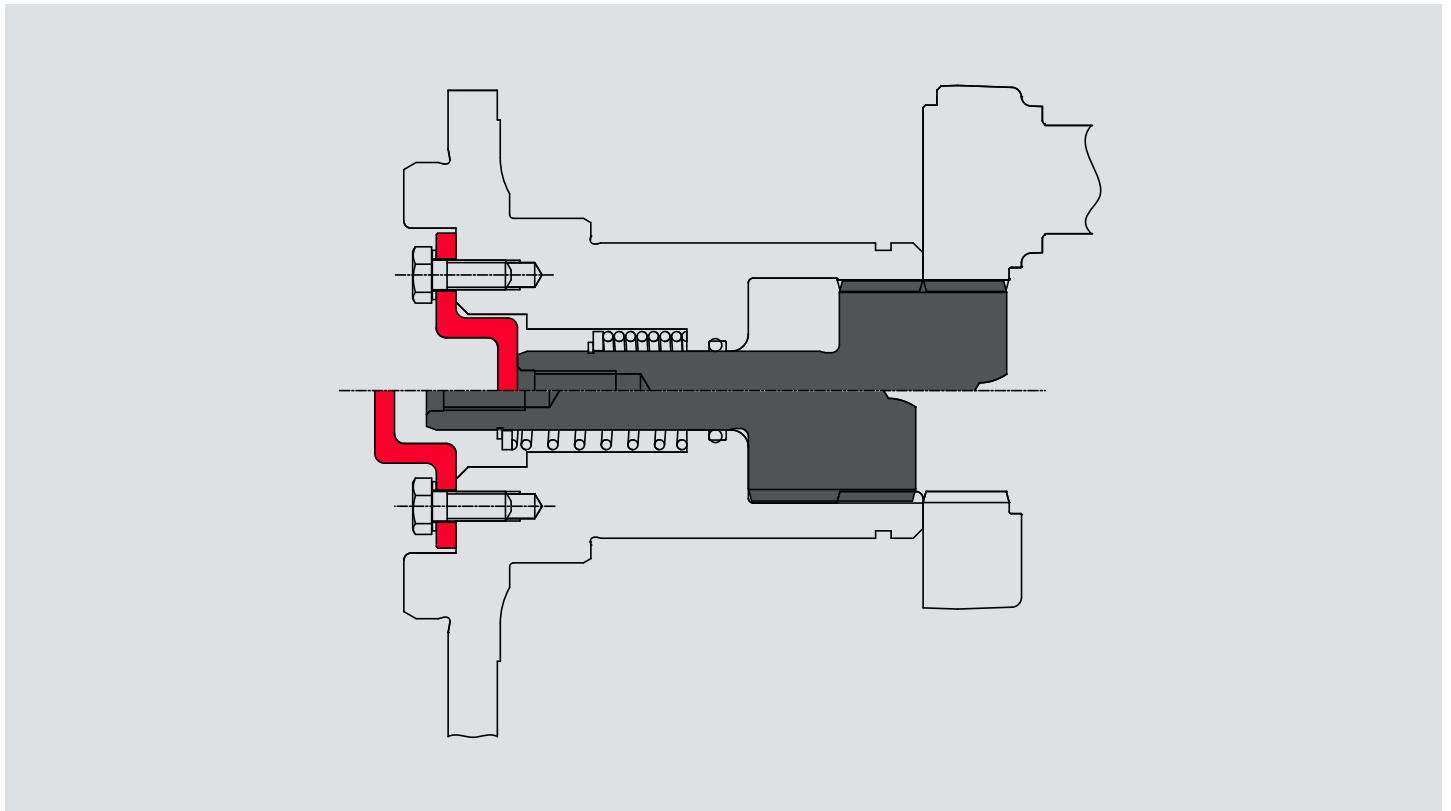


Pin	Signal
1	Vin+
2	COS out
3	SIN out
4	GND

Superseal 4 poles sin/cos encoder AMP 282106-1
Mating Female Plug Housing AMP 282088-1

Y

Towing disengagement



MSM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

1	2

Motor dimension

18

3

Motor/Cooling type

2 MSM 050 - air cooled

8 MSM 075 - liquid cooled

3 MSM 075 - air cooled

9 MSM 100 - liquid cooled

4 MSM 100 - air cooled

7 MSM 050 - liquid cooled

4

Power configuration

A 48V

5

Encoder

1 Sin/Cos

6

Cable outlet

A Rear

7

Reduction ratio

A 1:31 (3 planet gears)

B 1:31 (4 planet gears)

8

Output connection

X Rotary flange

9

Output Shaft

R Back (wheel)

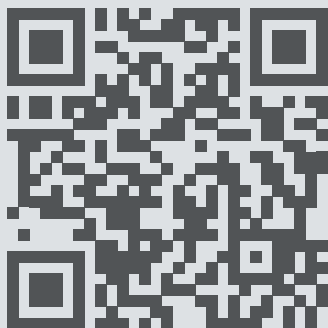
1 Back (wheel with studs)

2 Back (wheel with studs+bolts)

E Shaft DIN 5480

W50x2x30x24

10	Parking brake
☐	☒ A 36Nm EM ☐ N No brake
11	Dynamic brake
☐	☒ N No brake
12	Towing disengagement
☐	☒ Y Yes (standard for wheel output shaft) ☐ N No (standard for DIN 5480 W50x2x30x24 output shaft)
13 14 15	Customization
☐ ☐ ☐	☒ 001 No varnishing ☐ 002 Varnishing



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