

iMR-500

Traction solution with brake and double encoder



Order number:

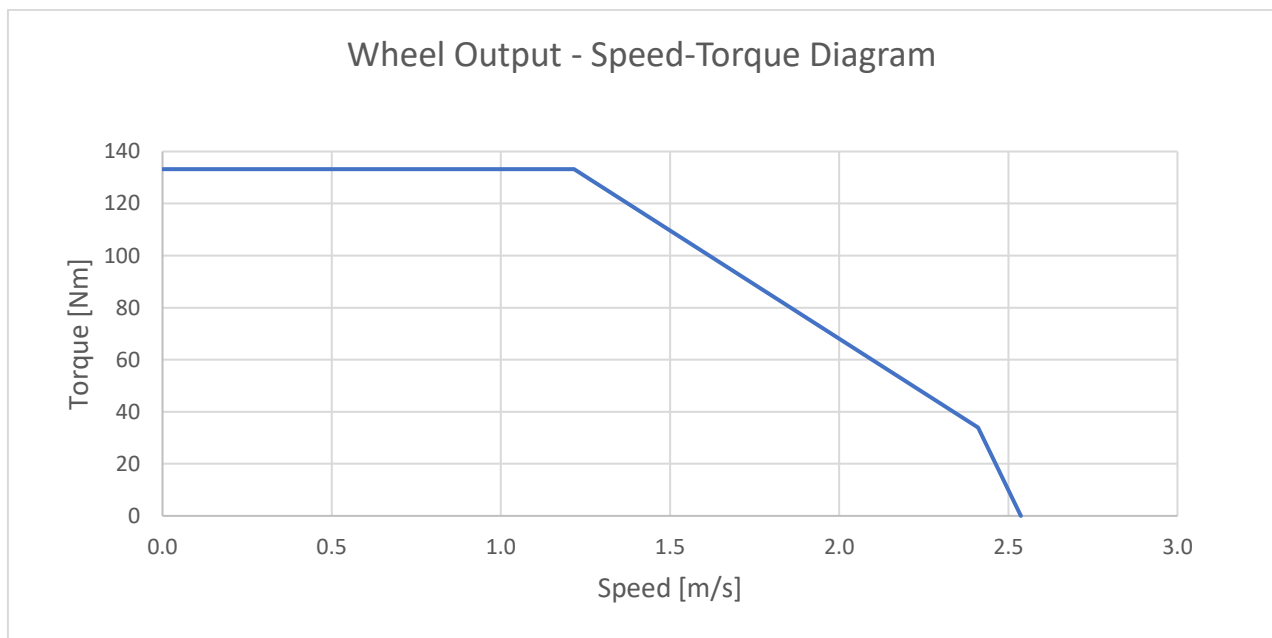
2L085S021NXXXD-EE20

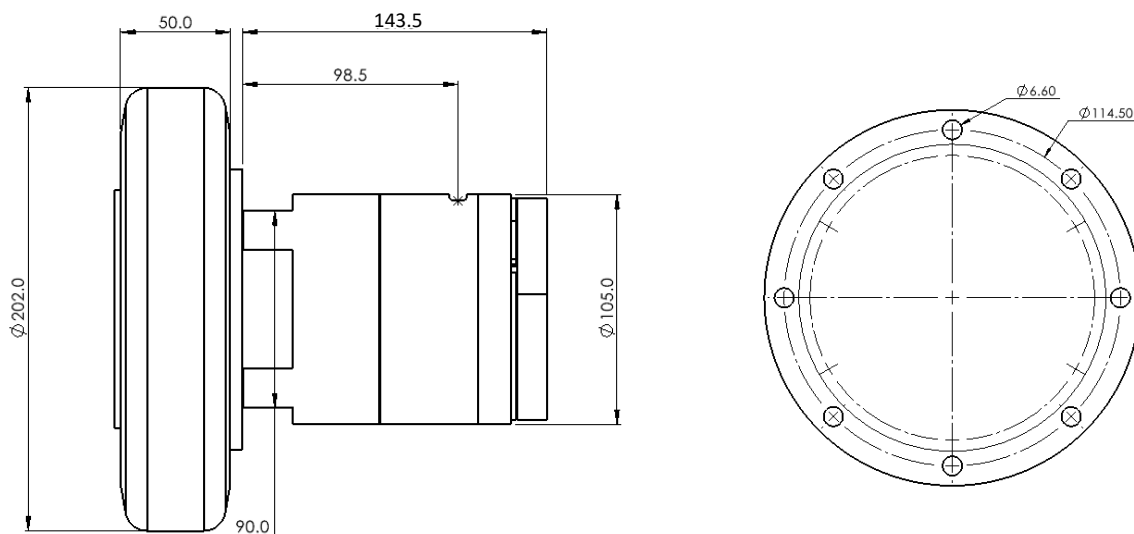
Characteristic	Unit	Value
Wheel Diameter	mm	202
Gearbox Type		Planetary Helical
Gearbox Ratio		9:1
Rated Voltage	V _{DC}	48
Max Torque	Nm	133
Max Speed	rpm	240
	m/s	2.54
	km/h	9.10
Peak Power	W	2,400
Max Radial Load per Wheel	N	7500
Unit Weight	kg	12

Specification	Detail
Wheel Material	PU-Rad: 78°±3° Shore A
Brake	Spring Applied 4 Nm
Feedback	Double incremental encoder
Thermal Protection	KTY-84

Solution Peak performance diagram

Output at the wheel



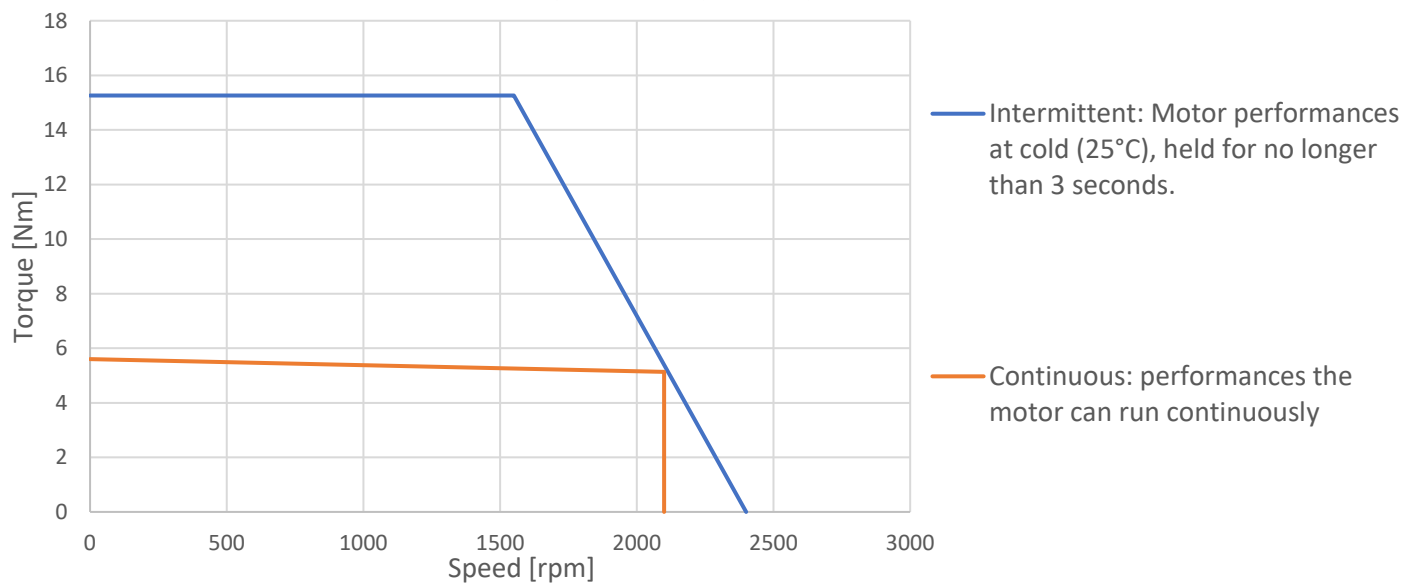


MOTOR SPECIFICATIONS

Characteristic	Abbr.	Unit	Value
Motor technology			SPM
No of poles			10
Rated Voltage	U_{mot}	V_{rms}	48
S1 Rated speed	n_n	rpm	2100
Maximum speed	n_{max}	rpm	2400
Rated power	P_n	W	1130
Stall torque	M_0	Nm	5.6
S1 Rated torque	M_n	Nm	5.2
Peak torque	M_{max}	Nm	15.26
Stall current	I_0	A_{rms}	31.9
S1 Rated current	I_n	A_{rms}	27.3
Peak current	I_{max}	A_{rms}	87

Characteristic	Abbr.	Unit	Value
Torque constant (hot)	kt_{hot}	Nm/A_{rms}	0.19
Torque constant (cold)	kt_{cold}	Nm/A_{rms}	0.21
Voltage constant	k_e	$V/krpm$	13.6
Winding resistance	R_{p-p}	Ω	0.07
Winding inductance	L_{p-p}	mH	0.22
Max ambient operating temperature			40°C
Insulation class			F – 155°C

Motor Speed-Torque diagram - 48VDC





GEARBOX SPECIFICATIONS

Characteristic	Unit	Value
Gear box ratio		9 : 1
Radial load	N	7,500
Axial Load	N	2,000
Nominal output torque	Nm	50
Nominal output speed	rpm	350
Maximum output torque	Nm	150
Backlash		0.3°
Efficiency		95%

BRAKE SPECIFICATIONS

Characteristic	Unit	Value
Operational voltage	V _{DC}	24
Max release voltage	V _{DC}	16
Max re-engage voltage	V _{DC}	8
Power	W	15
Torque	Nm	4
Response time	ms	250
Release time	ms	110
Insulation		Class F
Max backlash		3°

FEEDBACK SPECIFICATIONS

Characteristic	Value
Manufacturer	Renishaw RLS
Type	Double incremental encoder with Commutation signals
Resolution	1024 ppr
Hysteresis	0.18°
Accuracy	±0.5°
Supply voltage	5 V _{DC}
Current Consumption	13 mA to 50 mA

CONNECTOR GUIDE

Power:

Phase	Cable
U	Black, AWG14, x2
V	Blue, AWG14, x2
W	White, AWG14, x2

Cable length: 1.5 m

Thermistor:

Black - AWG26 cables

Brake:

White – AWG26 cables

Signal - Feedback 1

Signal	Colour
U	Black
V	Violet
W	Grey/Pink
A+	Pink
A-	Grey
B+	Green
B-	Yellow
Z+	White
Z-	Brown
Vdd (+5 V)	Red
GND	Blue

Signal - Feedback 2

Signal	Colour
A+	Pink
A-	Grey
B+	Green
B-	Yellow
Z+	White
Z-	Brown
Vdd (+5 V)	Red
GND	Blue

Cable length: 1.5m

NOTE: 1) The data provided in this datasheet is for guidance only and does not form part of any contract. 2) Motor, drive, gearbox and brake should undergo application testing to validate performance.

iNMotion is part of iNetic www.inetic.com

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