

iMR-500

Traction solution: integrated drive and brake



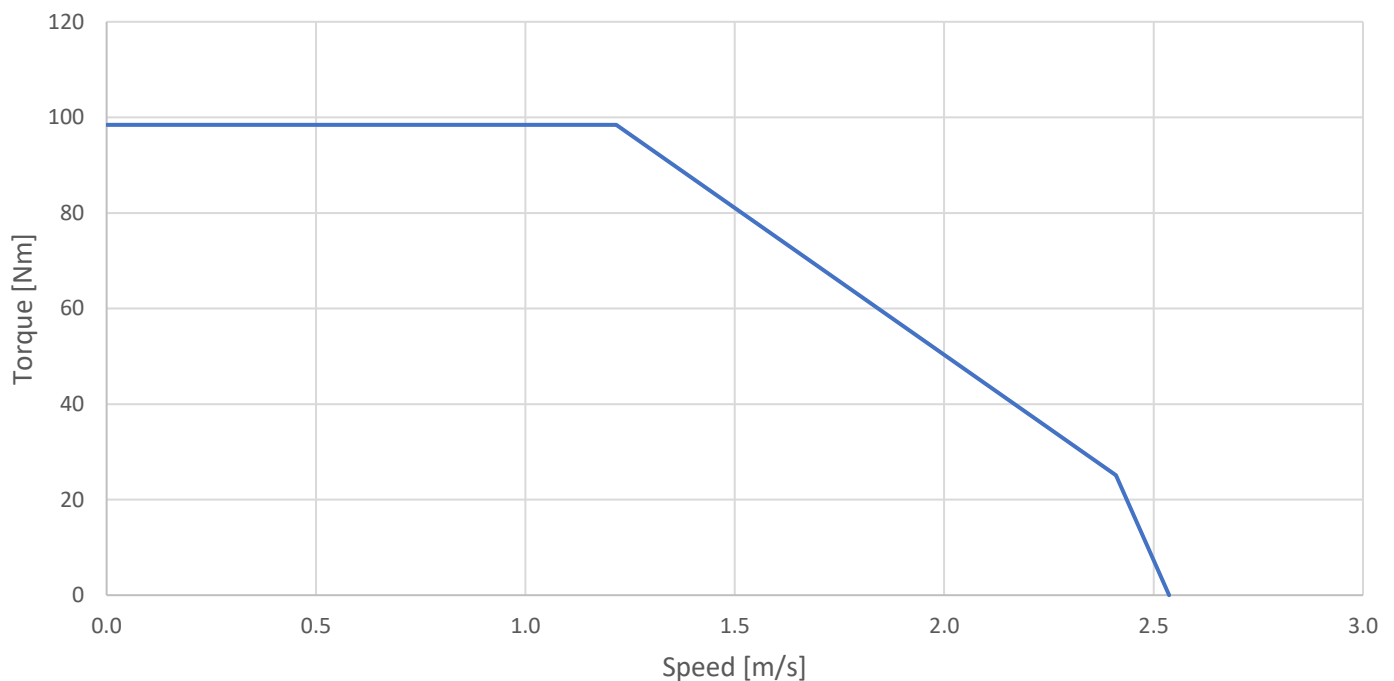
Order number:
2L085S021NXBCC-G2SY

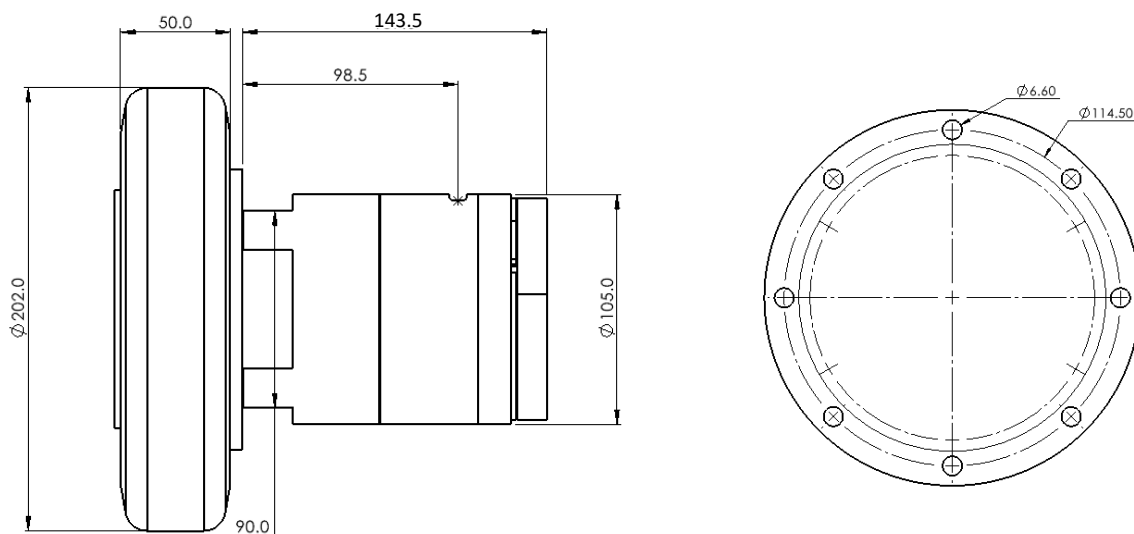
Characteristic	Unit	Value
Wheel Diameter	mm	202
Gearbox Type		Planetary Helical
Gearbox Ratio		9:1
Rated Voltage	V _{DC}	48
Max Torque	Nm	98.4
Max Speed	rpm	240
	m/s	2.54
	km/h	9.10
Peak Power	W	1,770
Max Radial Load per Wheel	N	7500
Unit Weight	kg	12

Specification	Detail
Wheel Material	PU-Rad: 78°±3° Shore A
Brake	Spring Applied 4 Nm
Feedback	20 bits
Thermal Protection	KTY-84
Comm. Interface	EtherCAT
Safety Functions	STO, SBC, SS1

Solution Peak performance diagram
Output at the wheel

Wheel Output - Speed-Torque Diagram



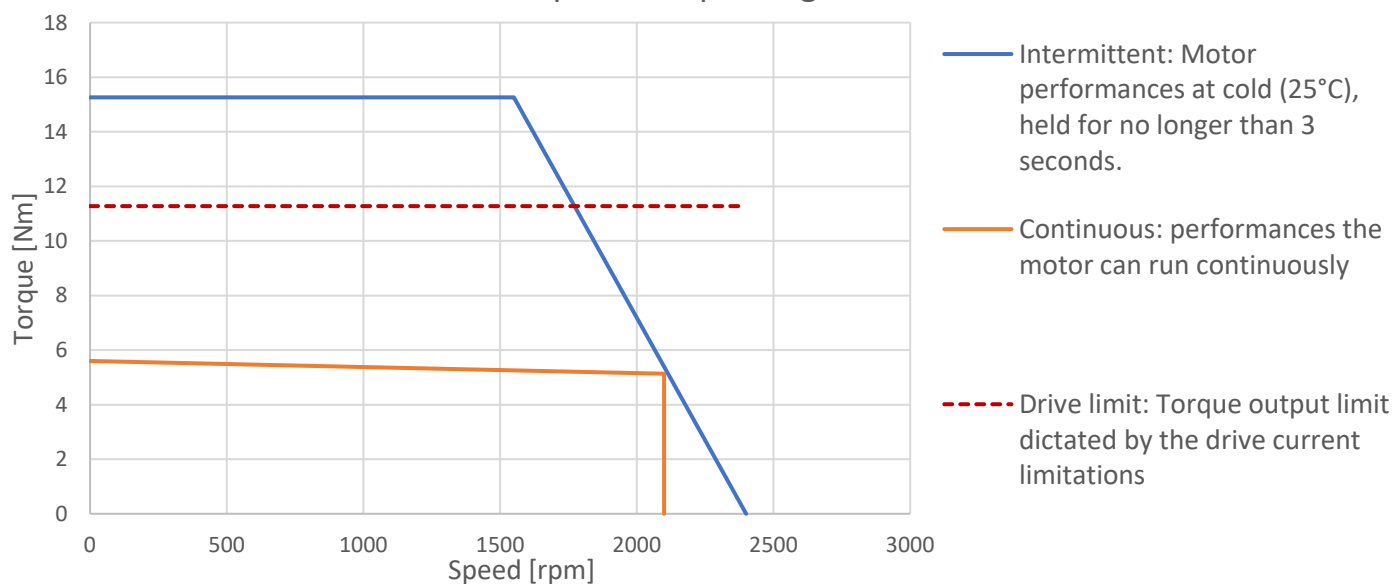


MOTOR SPECIFICATIONS

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)	$k_{t_{hot}}$	Nm/A_{rms}	0.19
Torque constant (cold)	$k_{t_{cold}}$	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	5,000
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°

INTEGRATED DRIVE

Model: Circulo 9

Drive technical specifications: https://doc.synapticon.com/circulo/technical_specs/tech_specs_circulo.html

FEEDBACK SPECIFICATIONS

	Feedback
Type	Off-Axis magnetic field scanning Absolute encoder
Resolution	20 bit
Accuracy	±0.02°
Repeatability	±0.0036°

CONNECTOR GUIDE

Power:

	Cables
Supply 24-58 VDC	Red, 10AWG, 110 cm Cut tinned end
GND	Black, 10AWG, 110 cm Cut tinned end

Communication

Motor @ Node 0

STO-Input	Cable
SBC1	Red, 180 cm
SBC2	Black, 180 cm
Safety GND	White, 180 cm

EtherCAT	Cables
EtherCAT input	Black, terminated in RJ45, 80 cm
EtherCAT Output	Grey, terminated in JST GH, 80 cm

Motor @ Node 1

EtherCAT	Cables
EtherCAT input	Grey, terminated in JST GH, 80 cm

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

info@ineticmotion.com