iMR 500

Double encoder, safety brake, integrated drive

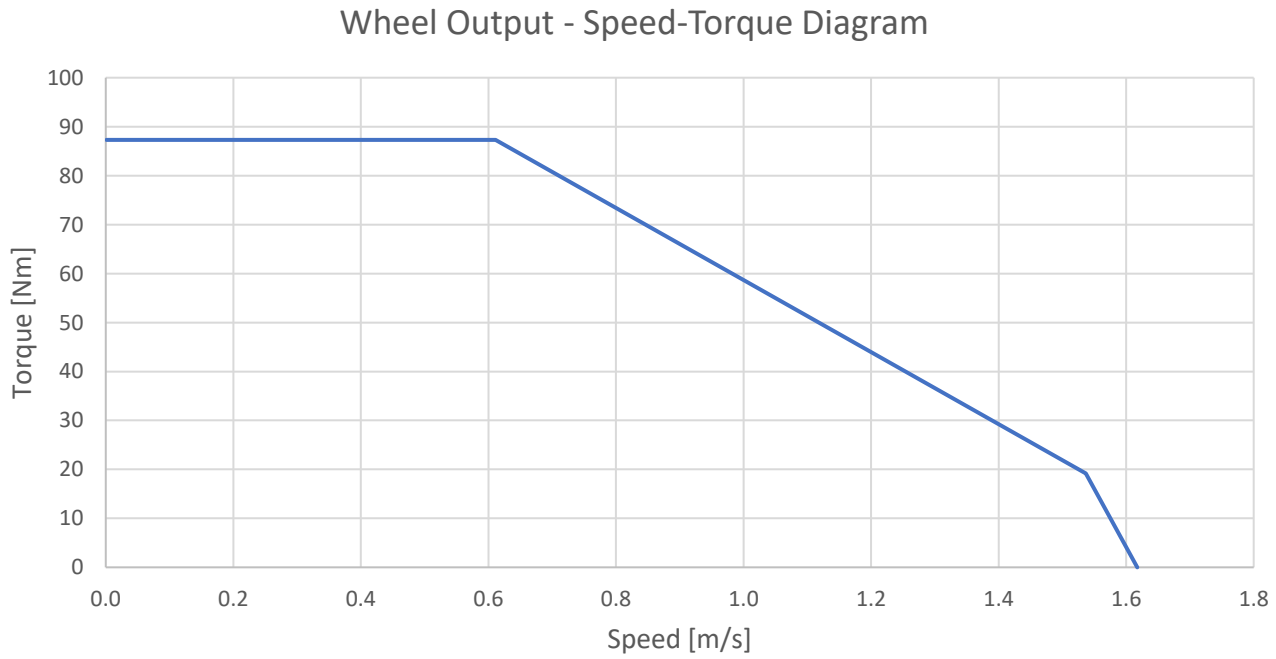
Order number:
1L085B014NXACC-GV01

Characteristic	Unit	Value
Wheel Diameter	mm	202
Gearbox Type		Planetary Helical
Gearbox Ratio		10:1
Rated Voltage	V_{DC}	48
Max Torque	Nm	87.3
Max Speed	rpm	153
	m/s	1.62
	km/h	5.8
Peak Power	W	790
Max Radial Load per Wheel	kg	5000
Unit Weight	kg	8

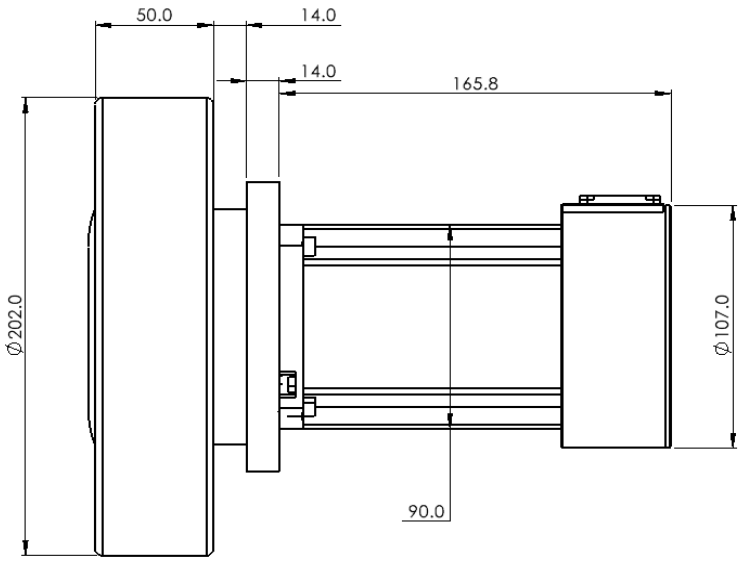
Specification	Detail
Wheel Material	PU-Rad: 90°±3° Shore A
Brake	Power Off – Brake on 100 Nm at the Wheel
Thermal Protection	KTY-84

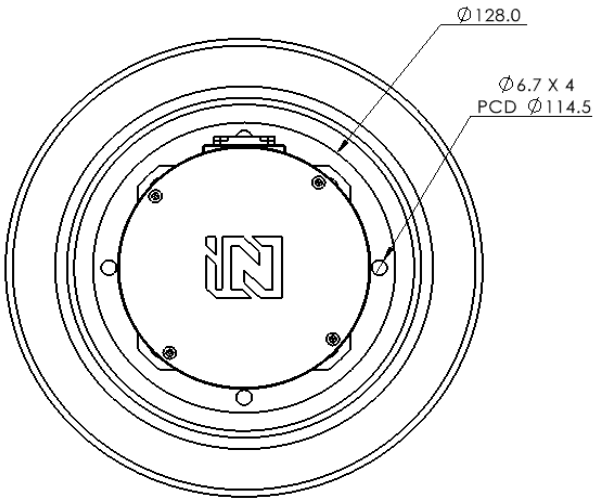
Solution Peak Performance Diagram

Output at the Wheel



Dimensions

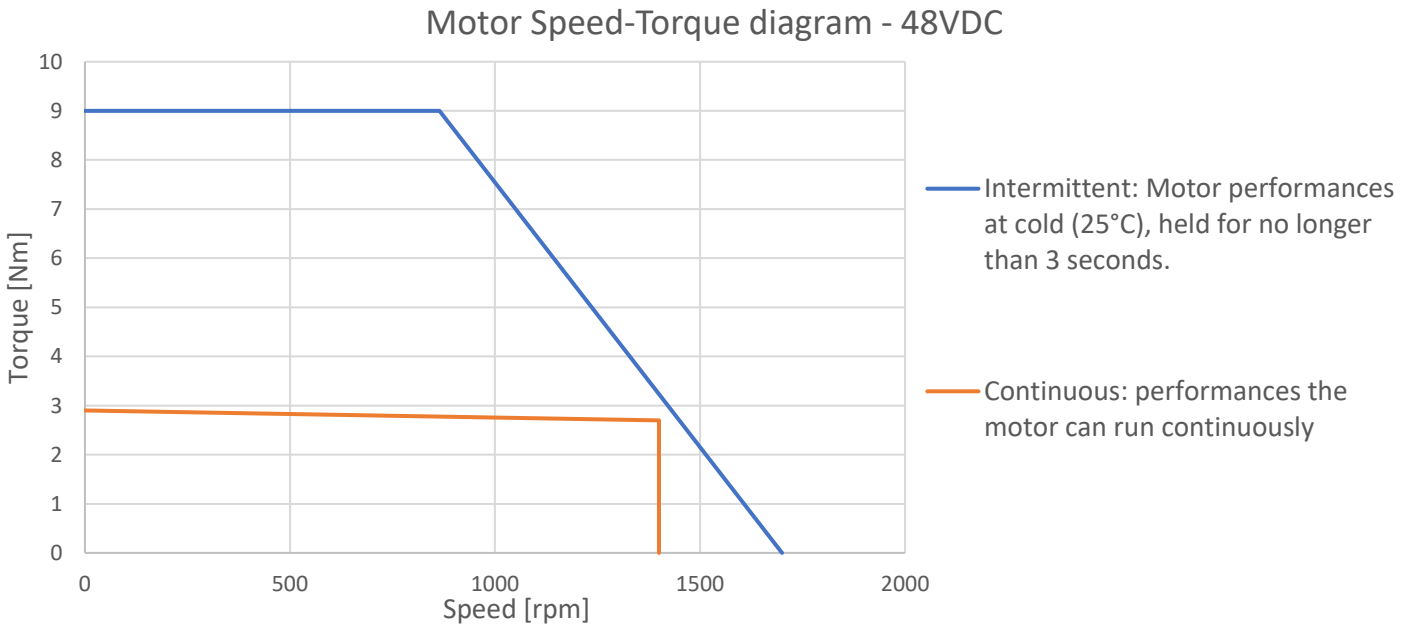




Motor specs

Characteristic	Abbr.	Unit	Value
Motor technology			SPM
No of poles			10
Rated Voltage	U_{mot}	V_{rms}	48
S1 Rated speed	n_n	rpm	1400
Maximum speed	n_{max}	rpm	1700
Rated power	P_n	W	427
Stall torque	M_0	Nm	2.9
S1 Rated torque	M_n	Nm	2.7
Peak torque	M_{max}	Nm	9.0
Stall current	I_0	A_{rms}	11.24
S1 Rated current	I_n	A_{rms}	9.94
Peak current	I_{max}	A_{rms}	35

Characteristic	Abbr.	Unit	Value
Torque constant (hot)	kt_{hot}	Nm/A_{rms}	0.272
Torque constant (cold)	kt_{cold}	Nm/A_{rms}	0.24
Voltage constant	ke	V/krpm	19.24
Winding resistance	R_{p-p}	Ω	0.39
Winding inductance	L_{p-p}	mH	1.88
Max ambient operating temperature			40°C
Insulation class			F – 155°C



Integrated drive

Model: Circulo 9
Drive technical specifications: https://doc.synapticon.com/circulo/technical_specs/tech_specs_circulo.html

Feedback specifications

	Feedback 1	Feedback 2
Type	Off-Axis magnetic field scanning 2 Arrays of Hall sensors for 2 separate magnetic tracks Absolute encoder	
Resolution	20 bit	
Accuracy	±0.02°	±0.02°
Repeatability	±0.0022°	±0.0036°

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	18
Torque	Nm	10
Response time	ms	250
Release time	ms	110
Insulation		Class F
Max backlash		3°

Connector guide

Power:

	Cables
Supply 24-58 VDC	Red, 10AWG
GND	Black, 10AWG

STO

STO-Input	Cable 3
SBC1	Red
SBC2	Black
Safety GND	White

STO-Output	Cable 4
SBC1	Red
SBC2	Black
Safety GND	White

Ether-CAT:

EtherCAT	Cables
EtherCAT input	Cable 1 – RJ45
EtherCAT output	Cable 2 – RJ45

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.