
Parker SMART Electrification Industrial Motor Assistant

How-to-Use Guide



Parker SMART Electrification Assistant

Please select your application



ePump Assistant



eMotor Assistant



Industrial Motor Assistant

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About this Guide

The Industrial Motor Assistant is an intuitive, web-based selection tool accessible directly through the Parker SMART Electrification Assistant platform. Selecting servo motor products no longer requires software downloads or IT support but only an internet connection. This new tool works in harmony with Parker's Virtual Engineer Sizing and Selection Tool, our innovative platform for linear mechanics.


Virtual Engineer provides critical torque and speed parameters that can then be entered directly into the Industrial Motor Assistant by the user, ensuring accurate and efficient motor selection.

How to Find Assistant

1. Parker.com Product Pages for all Rotary Servo Motor Products

- Expand Related Documents
- Under Selector Guides
 - Example Page [MPJ Motor Product Page](#)
- Other Product Pages:
 - Brushless Servo Motors: [BE](#), [P](#), [MPP](#), [MPJ](#), and [SM](#) Series
 - Frameless Servo Motors: [K](#) Series

Electric Motors / Brushless Servo Motors / MPJ-Series High Power/Increased Inertia Brushless Servo Motors



MPJ-Series High Power/Increased Inertia Brushless Servo Motors

[Configure](#) [Where to Buy](#)

Available in 92-142mm frame sizes, MPJ motors are high inertia versions of the MPP-series and offer a perfect solution for inertia matching without the need for any additional mechanical devices. Parker can provide custom modifications to all MPJ motors.

Technical Specifications +

Full Product Description +

Related Documents -

Literature and Reference Materials

[MPP / MPJ Series Servo Motors Catalog NA](#)

Compliance, Certifications & Safety

[CE Conformity](#)

[MPP/MPJ Servo Motors - EC Declaration of Conformity](#)

Selector Guides

[Industrial Motor Assistant - Selector Guide](#)

[Servo Motor Selection Guide](#)


2. Parkermotion.com Product Page for all Rotary Servo Motor Products

- Under Software Subtitle Name **“Industrial Motor Selection Assistant”**
 - Example Page [MPP/MPJ Series Motors](#)
- Other Product Pages:
 - Brushless Servo Motors: [BE](#), [P](#), [MPP/MPJ](#), and [SM](#) Series
 - Frameless Servo Motors: [K](#) Series

3. Via Link here: [Configurator](#)


Motion Control Systems, Electromechanical Automation, North America: [Home](#) > [Products](#) > [Rotary Servo Motors](#) > [MPP/MPJ Series Motors](#)

MPP/MPJ Series Motors



- Sizes 92, 100, 115, 142, 190 and 270mm
- 12 to 1295 in-lbs continuous torque
- High torque density packaging
- Segmented Lamination Design
- Brushless Construction
- High performance Neodymium magnets
- Thermistor Protection
- 2000 line incremental, Resolver, Single/Multi-turn Absolute (EnDat and Hyperface).
- Right Angle & Rotatable connections
- 3 & 21 day delivery
- Full Customizations available
- CE / UL Compliant

MPP/MPJ motors available on any HPLA or XR actuator.



Additional products to build your total Parker solution:

Servo Drives	Servo Drives	Rotary Servo Motors	Ball Screw and Lead Screw Tables	Gearheads and Gearmotors	Gearheads and Gearmotors
Compact2 Servo Drive	High Performance Servo Drive - PSD	MPP/MPJ Series Motors	HP Series Linear Positioners	Gen II Stealth Gearhead "In-Line" PS	Gen II Stealth Gearhead "In-Line" EX

Catalog and Specifications

- [EC Declaration of Conformity](#)
- [MPP/MPJ Motor Catalog](#)

User Guides

- [Cable Selection & Drawings](#)
- [Connector Pinout - MPP / MPJ Motor](#)
- [FAQ: Absolute Encoders and Drive Compatibility](#)
- [FAQ: CML, CML Custom Servo Motors](#)
- [MPP / MPJ Product Photos](#)

Software

- [Industrial Motor Selection Assistant](#)

Download - Drawings and CAD files

- [2D CAD and Part Number Configuration - MPP/MPJ](#)
- [Hyperface DSL Drawings](#)

Publications and Advertisements

- [MPJ High Inertia Press Releases](#)
- [MPP Press Release](#)

Contact Us

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+1-707-584-7556 or (800) 358 9070

SMART Electrification Guide

1. Select the industrial motor assistant tab to gain access.



Parker SMART Electrification Assistant

Please select your application



ePump Assistant



eMotor Assistant



Industrial Motor Assistant

Step One

Subsystem Inputs A

Previous

Clear Data

Step 1: System Inputs

Units of Measure

Metric

☒ Include Inverter on Motor Selection

☐ Allow for Motor Voltage to exceed Bus Voltage

Nominal Battery Voltage

24 VDC

Cooling Method

Water Ethylene Glycol, 65°C

Maximum overall Length [mm]

0

1. Units of Measure

- If Metric is selected your units will be Torque (Nm), Power (W) for inputs

- If Imperial is selected your units will be Torque (lb-ft), Power (HP) for inputs
2. Include Inverter on Motor Selection
 - Function currently does not work
 - For Version 2 Release, we anticipate to have Servo Drives Included
 3. Allow for Motor Voltage to exceed Bus Voltage
 - Ignore Function as this does not pertain to industrial motors

System Inputs B

1. Nominal Battery Voltage
 - This would be the application Bus Voltage Available from the Servo Drive
 - Voltage Non-Parentheses is Power Supply from Line Voltage
 - Voltage in Parentheses is Bus Voltage (Line Voltage $\times \sqrt{2}$)
 - This will affect the motor selection type
 - For Example: MPP/MPJ is unselected at 24VDC, and BE Series unselects at 460VAC (650VDC)
2. Cooling Method
 - Ignore as this parameter is not used in the Industrial Selection Assistant Assumes Natural Convection and heatsink per catalog
3. Maximum Overall Length (mm)
 - Measures overall motor length; Does not account for added brake length. Please reference Catalog for added Brake Length

System Inputs C

Motor Series and Frame Selection:

- Choose All or desired Product Families
 - Motor Performance is based on 25C
 - Other Selection Criteria such as Ingress Protection, Feedback Device, Brake, etc. please reference Product Catalog
- Both Motor Family and Frame Size are dependent on catalog offering.

- Example: 190mm Frame is only available to MPP Product Family
- Example: NEMA 16 Frame is only available to BE and SM Product Family

Motor Series Selection	Motor Frame Selection	
<input checked="" type="checkbox"/> K Series	<input checked="" type="checkbox"/> NEMA 16	<input checked="" type="checkbox"/> 89 mm Frame
<input checked="" type="checkbox"/> BE Series	<input checked="" type="checkbox"/> NEMA 23	<input type="checkbox"/> 92 mm Frame
<input checked="" type="checkbox"/> P Series	<input checked="" type="checkbox"/> NEMA 34	<input type="checkbox"/> 100 mm Frame
<input type="checkbox"/> MPJ Series	<input checked="" type="checkbox"/> 32 mm Frame	<input type="checkbox"/> 115 mm Frame
<input checked="" type="checkbox"/> SM Series	<input checked="" type="checkbox"/> 40 mm Frame	<input checked="" type="checkbox"/> 127 mm Frame
<input type="checkbox"/> MPP Series	<input checked="" type="checkbox"/> 44 mm Frame	<input type="checkbox"/> 142 mm Frame
	<input checked="" type="checkbox"/> 62 mm Frame	<input checked="" type="checkbox"/> 178 mm Frame
	<input checked="" type="checkbox"/> 64 mm Frame	<input type="checkbox"/> 190 mm Frame
	<input checked="" type="checkbox"/> 80 mm Frame	

System Inputs D

Torque, Speed, and Power Inputs

- Enter Continuous and/or Peak Performance Parameters
- Only two parameters need to be inserted, the third will auto calculate.
 - Example Input 7.55 Nm and 114 RPM and auto calculates to 0.09kW of Power
- Must Select Either Continuous or Peak Performance
- Must Select Add Button to input into table

Data in the Table

- Fields can be edited when in table by double clicking into the field you want to edit
- Rows can be deleted by selecting Check Box on the left then selecting Del Button

Must Select Update Motor Results to get motor selection availability

▼ User Point Search ☒

Torque [Nm] Speed [RPM] Power [kW] Duty

0 0 0 Select Type ▼

Add Del Clear

Torque [Nm]	Speed [RPM]	Power [kW]	Cont/Peak	
7.55	114	0.09	CONT	<input type="checkbox"/>
22.6	114	0.27	PEAK	<input type="checkbox"/>

Update Motor Results

▼ User Point Search ☒

Torque [Nm] Speed [RPM] Power [kW] Duty

0 0 0 Select Type ▼

Add Del Clear

Torque [Nm]	Speed [RPM]	Power [kW]	Cont/Peak	
7.55	114	0.09	CONT	<input type="checkbox"/>
22.6	114	0.27	PEAK	<input type="checkbox"/>

Update Motor Results

Step Two

Motor Selection A

Motors Provided are in list of weighting:

1. Frame Size (mm)
 - Selects Smallest Frame Size Available
2. Stack Length/Overall Length
 - Selects Shortest Length Available
3. Current Pull (Amps rms)
 - In order of lowest current draw

Step 2: Motor Selection	
> K127200-2Y_ - 127 mm - 77 mm overall length	Select
> K127200-1Y_ - 127 mm - 77 mm overall length	Select
> K127300-1Y_ - 127 mm - 102 mm overall length	Select
> K178075-3Y_ - 178 mm - 50 mm overall length	Select
> K178075-2Y_ - 178 mm - 50 mm overall length	Select
> K178075-1Y_ - 178 mm - 50 mm overall length	Select
> K178100-3Y_ - 178 mm - 56 mm overall length	Select
> K178100-2Y_ - 178 mm - 56 mm overall length	Select
> K178100-1Y_ - 178 mm - 56 mm overall length	Select
> K178150-1Y_ - 178 mm - 69 mm overall length	Select
>	Show more Options

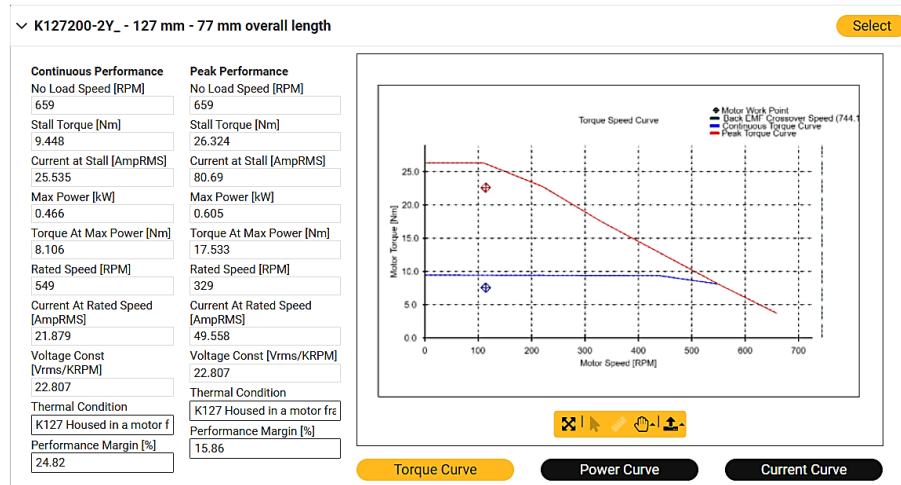
Motor Selection B

Verify:

- Frame Size
- Stack Length
- Continuous Torque Point
- Peak Torque Point
- Continuous Current Point

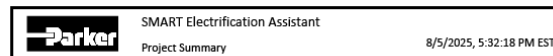
- Peak Current Point

Finally Select “Select” Button in the top right corner



Recommended eMotor Solution

View Summary Sheet prints a summary sheet of the entire application. Example is pasted below.



Contact Us

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850 Arthur Ave
Elk Grove Village, IL 60007
United States

Telephone: +1 (800) 358 9070
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Motor Disclaimer

This version of Parker's ePump and eMotor Sizing Assistant does not consider the motor's back-EMF, or account for field-weakening or potential 3PS events associated with inverter fault modes. Please consult a Parker application engineer with assistance if you need to evaluate all potential operating conditions.

eMotor Model

eMotor Part Number: K127200-3Y_

System Configuration

Nominal Voltage: 24 VDC

Current Limit:

Thermal Conditions: K127 Housed in a motor frame. Typically an aluminum cylinder with 0.250in thick walls, mounted to a 12in x 12in x 0.5in aluminum plate.

Mechanical Limits

Max Length Over All: -

Max Diameter: 178 mm



Example One

Frameless Rotary Motor; Torque and Speed Given

Givens

- 24 VDC Available
- Torque Continuous 7.5 Nm
- Torque Peak 22.6 Nm
- 114 RPM Continuous and Peak Conditions
- Frameless Motor Required
- No Diameter or Length Limitations

Frameless Rotary Motor: System Inputs Torque & Speed Givens

- 24VDC Voltage
- K Series (Frameless Motor)
- Selected All Frame Sizes of K Series
- Input both Peak and Continuous moves

Step 1: System Inputs

Units of Measure
Metric

☒ Include Inverter on Motor Selection
☐ Allow for Motor Voltage to exceed Bus Voltage

Nominal Battery Voltage
24 VDC

Cooling Method
Water Ethylene Glycol, 65°C

Maximum overall Length [mm]
0

Motor Series Selection

☒ K Series
☐ MPJ Series
☐ P Series
☐ SM Series
☐ MPP Series

Motor Frame Selection

☐ NEMA 16
☐ NEMA 23
☐ NEMA 34
☒ 32 mm Frame
☐ 40 mm Frame
☒ 44 mm Frame
☐ 62 mm Frame
☒ 64 mm Frame
☐ 80 mm Frame

☒ 89 mm Frame
☐ 92 mm Frame
☐ 100 mm Frame
☐ 115 mm Frame
☒ 127 mm Frame
☐ 142 mm Frame
☒ 178 mm Frame
☐ 190 mm Frame

User Point Search

Torque [Nm] Speed [RPM] Power [kW] Duty
0 0 0 Select Type

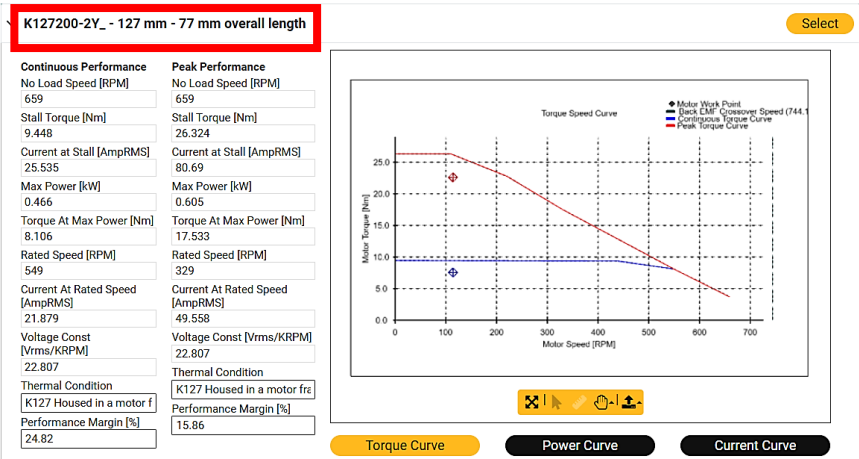
Add Del Clear

	Torque [Nm]	Speed [RPM]	Power [kW]	Cont/Peak
<input type="checkbox"/>	7.55	114	0.09	CONT
<input type="checkbox"/>	22.6	114	0.27	PEAK

Update Motor Results

Motor Selection

- Peak and Continuous Torque requirements show as red and blue stars under motor curves
- Continuous Current Pull is 17.5 Amps
- 127mm Diameter Kit Motor Frame Size
- 77mm Overall Length



Example Two

Givens from Virtual Engineer

Sizing Completed by Virtual Engineer

Application: A garage can crusher

Givens:

- Up to 20 Oz cans of 6.5" (Stroke of 200mm needed)
- Cylinder Style ETH032 with Rod Guide and 30lbs steel plate attached
- Requires 100lbs of force to crush can
- 3 Seconds Downstroke, 3 Seconds Return, and 3 second Dwell
- 120VAC Wall Plug Available

Garage Build Can Crusher

Equations

- Motor Speed
 - Motor Speed is Linear Velocity / Screw Lead
 - Linear Velocity (trap) = $1.5 * \text{Distance} / \text{Time}$
 - M05 Ball Screw = $1.5 * 0.2\text{m} / 3 \text{ sec} / .0005\text{m} = 20 \text{ rps} = 1200 \text{ rpm}$
 - M05 Ball Screw = $1.5 * 0.2\text{m} / 3 \text{ sec} / .001\text{m} = 10 \text{ rps} = 600 \text{ rpm}$
- Motor Nominal Torque
 - M05 Ball Screw RMS Torque = 71.18 oz in = 0.502 Nm
 - M10 Ball Screw RMS Torque = 73.86 oz in = 0.522 Nm
- Motor Peak Torque
 - M05 Ball Screw Peak Torque 128.95 oz in = 0.911 Nm
 - M10 Ball Screw Peak Torque = 160.19 oz in = 1.13 Nm

ETH032M05A1XXXFRN0200A

MOTOR REQUIREMENTS

Max Shaft Speed	1200 RPM
Peak Torque	128.95 oz in
RMS Torque	71.18 oz in
Inertia Reflected from System to Rotor	1.46 oz in ²

ETH032M10A1XXXFRN0200A

MOTOR REQUIREMENTS

Max Shaft Speed	600 RPM
Peak Torque	160.19 oz in
RMS Torque	73.86 oz in
Inertia Reflected from System to Rotor	3.1 oz in ²

System Inputs

- 120VAC Voltage (170VDC rectified)
- Housed Motor Lower the Current the better
- Selected All Frame Sizes of BE and P Series
- Input both Peak and Continuous moves
- Both Move profiles use about the same torque so lower speed is chosen

Step 1: System Inputs

Units of Measure
Metric

☒ Include Inverter on Motor Selection
☐ Allow for Motor Voltage to exceed Bus Voltage

Nominal Battery Voltage
120 VAC (170 VDC)

Cooling Medium
Water Ethylene Glycol, 65°C

Maximum overall Length [mm]
0

Motor Series Selection

<input type="checkbox"/> K Series	<input checked="" type="checkbox"/> BE Series	<input checked="" type="checkbox"/> P Series
<input type="checkbox"/> R Series	<input type="checkbox"/> SM Series	<input type="checkbox"/> MPP Series

Motor Frame Selection

<input checked="" type="checkbox"/> NEMA 16	<input type="checkbox"/> 89 mm Frame
<input checked="" type="checkbox"/> NEMA 23	<input type="checkbox"/> 92 mm Frame
<input checked="" type="checkbox"/> NEMA 34	<input type="checkbox"/> 100 mm Frame
<input type="checkbox"/> 32 mm Frame	<input type="checkbox"/> 115 mm Frame
<input checked="" type="checkbox"/> 40 mm Frame	<input type="checkbox"/> 127 mm Frame
<input type="checkbox"/> 44 mm Frame	<input type="checkbox"/> 142 mm Frame
<input checked="" type="checkbox"/> 62 mm Frame	<input type="checkbox"/> 178 mm Frame
<input type="checkbox"/> 64 mm Frame	<input type="checkbox"/> 190 mm Frame
<input checked="" type="checkbox"/> 80 mm Frame	

User Point Search

Torque [Nm] Speed [RPM] Power [kW] Duty

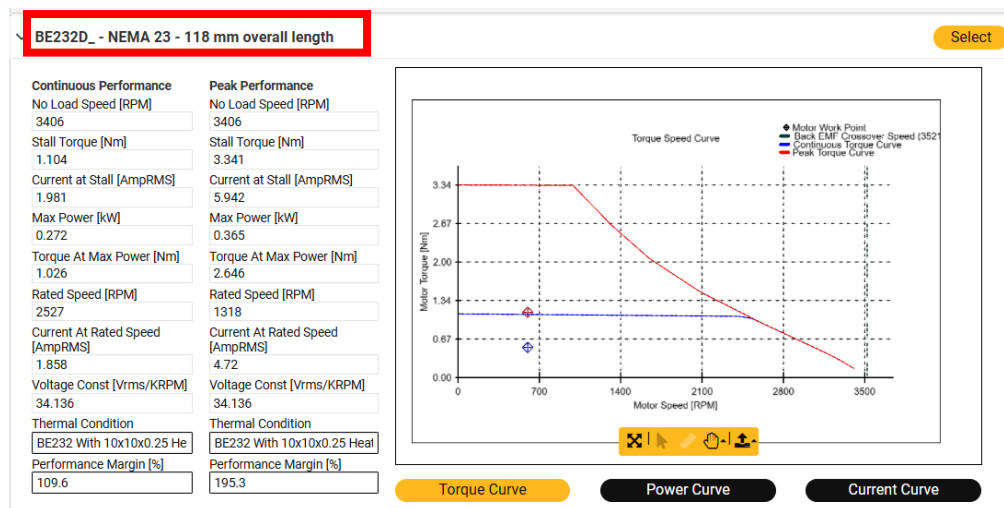
0 0 0 Select Type

Add Del Clear

Torque [Nm]	Speed [RPM]	Power [kW]	Cont/Peak
0.522	600	0.03	CONT
1.13	600	0.07	PEAK

Motor Selection

- Peak and Continuous Torque requirements show as red and blue stars under motor curves
- Continuous Current Pull is 1.9 Amps
- 60mm Motor Frame Size
- 118mm Overall Length



Motor Report

- Motor Performance Report shares critical Motor Parameters for Drive
- Inertia in BE232 Catalog is $1.50 \times 10^{-4} \text{ in-lb-sec}^2 = 0.0579 \text{ lb in}^2 = 0.926 \text{ oz in}^2$
- System Inertia is 3.1 oz in^2
- Ratio = $3.1 \text{ oz in}^2 / 0.926 \text{ oz in}^2 = 3.35:1$ System to Motor Inertia Ratio

Parker SMART Electrification Assistant
Project Summary 8/6/2025, 6:57:50 PM EST

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Electronic Motion and Control
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Telephone: +1 (800) 368 9070
Or: +1 (707) 584 7558

Motor Disclaimer
The version of motor's phony and model using Assistant does not consider the motor's back EMF or account for the motor's or
provided 30% safety margin with motor's data model. Please consult a motor application engineer with assistance for motor's
evaluate at potential operating conditions.

eMotor Model
eMotor Part Number: BE232D_

System Configuration
Nominal Voltage: 120 VAC (170 VDC)
Current Limit:
Thermal Conditions: BE232 With 10x10x0.25 HeatSink

Mechanical Limits
Max Length Over All:
Max Diameter: 80 mm



Performance Output

Motor Part Number: BE232D_

Parameter	Continuous Motor Data	Peak Motor Data
No Load Speed (RPM)	3406 RPM	3406 RPM
Stall Torque (Nm)	1.104 Nm	3.341 Nm
Current at Stall (AmpRMS)	1.981 AmpRMS	5.942 AmpRMS
Max Power (kW)	0.272 kW	0.365 kW
Torque at Max Power (Nm)	1.026 Nm	2.646 Nm
Speed at Max Power (RPM)	2527 RPM	1318 RPM
Current at Max Power (AmpRMS)	1.858 AmpRMS	4.72 AmpRMS
Voltage Const (Vrms/krpm)	34.136 Vrms/KRPM	34.136 Vrms/KRPM
Thermal Conditions	BE232 With 10x10x0.25 Heatsink	BE232 With 10x10x0.25 Heatsink
Performance Margin (%)	27.42%	79.33%

Model Size	Symbol	Units	BE232D
Stall Torque Continuous ^{1, 2, 3}	T_{CS}	Nm in-lb	1.10 9.8
Stall Current Continuous ^{1, 2, 3}	$I_{CS(rms)}$	A _{rms}	2.0
Peak Torque	T_{pk}	Nm in-lb	3.34 29.6
Peak Current	$I_{pk(rms)}$	A _{rms}	5.9
Rated Speed ^{1, 2, 3}	S_r	rpm	4965
Rated Torque ^{1, 2, 3}	T_r	Nm in-lb	0.99 8.8
Shaft Power @ Rated Speed ^{1, 2, 3}	P_{out}	kW	0.51
Current @ Rated Speed ^{1, 2, 3}	I_r	A _{rms}	1.8
Voltage Constant ^{4, 7}	K_e	V _{rms} /krpm	34.14
Torque Constant ^{4, 7}	$K_t(sine)$	Nm/A _{rms}	0.56
Resistance ^{4, 7}	R	ohm	7.72
Inductance ^{5, 7}	L	mH	35.8
Max DC bus Voltage ⁶	V_{mbus}	VDC _{max}	340
Max AC Voltage ⁶	V_s	VAC	240
Rotor Inertia ⁶	J	kg-m ² in-lb-sec ²	1.70 ⁻⁵ 1.50 ⁻⁴
Motor Weight ⁶		kg lb	1.41 3.1

Industrial Motor Assistant Overview

V1 Release

What it is

Selection Guide Tool

- 25C Natural Convection Cooling Only With Heatsink (Reference Catalogs)
- Default Common 6 Voltage Supplies
- Motor Frame Size Selection
- Motor Series Product Family Selection
- Standard Winding Selection per Catalogs
- Current Limitation Selection

What it is not

Sizing Tool

- Requires user to understand Drive Bus Voltage
- Requires user to determine Inertial mismatching
- Requires user to understand duty cycles from move profiles
- Requires user to understand response times (Accel/Decel ramps)
- No Bearing Sizing
- No custom winding options

Future State

Revision 2 will introduce the following:

- Critical Motor Parameters
 - Voltage Constant (K_e : Vrms/krpm)
 - Torque Constant ($K_t(\text{sine})$: Nm/Arms)
 - Inertia of Rotor Shaft from Motor (J: kg-m² or in-lb-sec²)
 - Resistance (R: ohm)
 - Inductance (L: mH)
- Parker Servo Drive Selection
 - P Series
 - IPA Drive
 - ACR7k Platform
 - PSD1 Series
 - Compax3
- Version 2 will have “Nominal Battery Voltage” change to “Nominal Voltage”