

XR32-11 In-Wheel Motor

Peak Torque	160 Nm
Rated Continuous Torque	60 Nm
Rated Speed	750 RPM
Speed range	0-1040 RPM

The Printed Motor Works XR32 Series is a compact and very powerful 3-phase permanent magnet brushless DC motor. The XR32 range is designed to fit inside a 15" wheel rim, but can be used in-board with half shaft connection to the wheels.

The XR32-11 uses one of the most powerful grades of NdFeB magnets and delivers unparalleled performance relative to its 360mm diameter and 112mm depth and weight of just 17kg.

The XR32-11 is available with convection air cooling and the facility to mount a brake disk to the rear face of the wrap-around housing. The XR32 range of high-end motors are designed and built to meet each customer's specification.



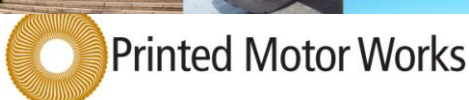
Symbol	Peak Torque Tp	Rated Torque T	Rated Speed N	Voltage Min V	Cont. Current I _{rms}	Dia. A	Depth B	Mass M
Unit	Nm	Nm	RPM	Volt	Amp	mm	mm	Kg
XR32-11	160	60	750	66	72	360	112	17

Specific benefits

- Market leading power density
- Facility to mount brake disk
- High quality bearings and seals
- Integrated encoder
- High peak torque
- Water and dust integrity protection
- High efficiency on load
- Custom windings available for special voltage/speed profiles
- Cable hub entry for easy integration



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Applications

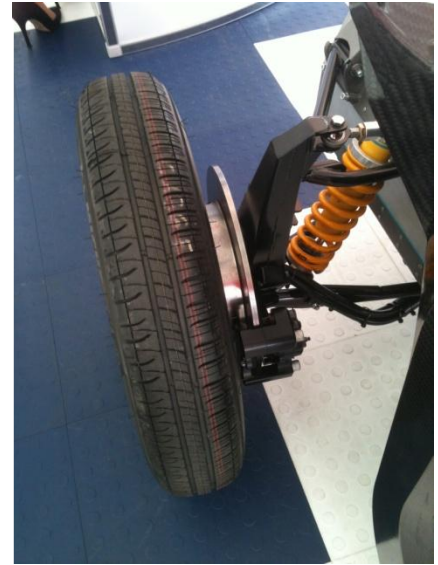
Direct drive in-wheel for both on-road and off-road applications, commercial and consumer electric vehicles, powered trailers, industrial and marine winch systems, military electric vehicles, vehicle assist systems, direct drive railway vehicles.

Markets

Commercial vehicles, consumer vehicles, industrial automation, aerospace & defence, oil & gas, railways.

Design Modifications

- Customised speed
- Customised voltage
- Customised chassis
- Customised diameters
- Customised torque
- Customised feedback
- Customised depths
- Customised wheel interface



Standard Feedback Options

Motor	Hall Sensors	Separation °elec	Type	Supply Voltage V
XR32-11	x3 Digital	60	Latch	5-24



- Advanced flux vector control
- Up to 116V DC supply voltage
- Up to 350Arms peak output current
- Autocheck system diagnostic
- Integrated logic circuit
- Hardware & software failsafe watchdog operation
- Induction motor control
- Integrated fuse holder
- IP66 protection
- 227 x 168 x 78 L x W x H, mm

Gen 4 Size 6 Controller



- As above with
- Up to 116V DC supply voltage
- Up to 550Arms peak output current
- 305 x 170 x 86 L x W x H, mm



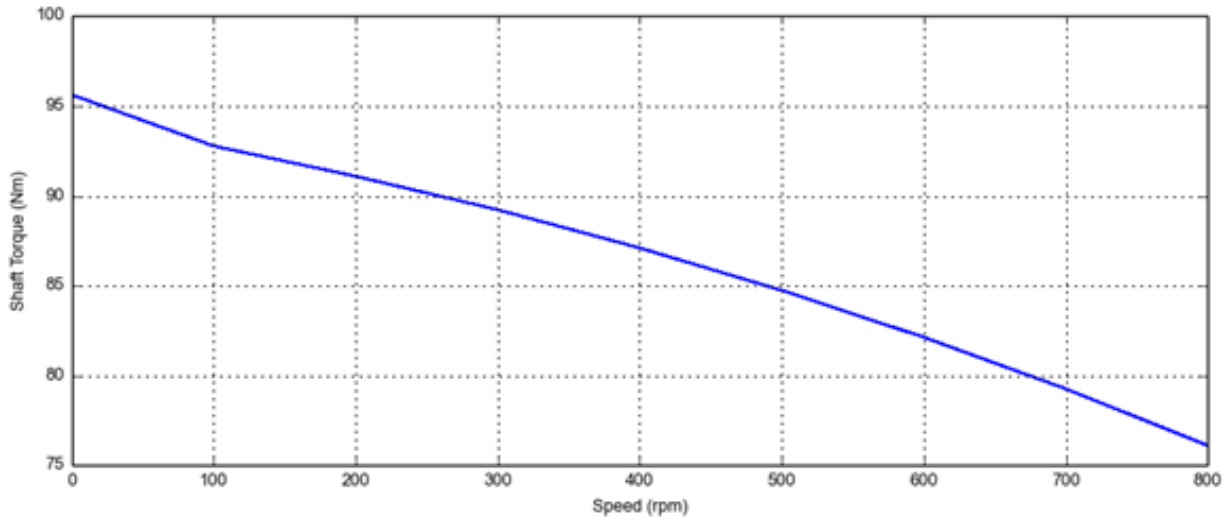
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Performance Specifications	Symbol	Units	XR32-11
Peak Torque	T_P	Nm (lb-ft)	160 (118.0)
Rated Continuous Torque @ 50°C	T_{25}	Nm (lb-ft)	60 (44.25)
Rated Speed	N	RPM	750
Rated Output Power	P	kW	4.7
Maximum Recommended Speed	N_{max}	RPM	1040
Electrical Specifications			
Rated Terminal Voltage	E	Volts	66 - 114
Rated Continuous Current	I	Amps(RMS)	72
Peak Current	I_P	Amps (RMS)	350
Motor Constants			
Line-Line Resistance	R_{L-L}	Ohms	0.0122
Back EMF Constant	K_E	V/kRPM	48.23
Torque Constant	K_T	Nm/Amp(lb-ft/Amp)	0.8 (0.59)
Armature Inductance (Line-Line)	L	mH	0.1424
Mechanical Specifications			
Weight	W	kg (lbs)	17(37.4)
Diameter	D	mm (in)	360 (14.17)
Length (mounting face to face)	LG	mm (in)	112 (4.413)
Permitted Radial Load	$\left\{ \begin{array}{l} 50\% \text{ Safety} \\ \text{Factor} \end{array} \right.$	kg (lbs)	180 (396)
Permitted Axial Load		kg (lbs)	45 (99)



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Torque versus speed for XR32-11



Torque versus speed current map for XR32-11

