

DATASHEET RM 1800

The DeepDrive RM 1800 in-wheel motor propels mid-size electric vehicles.

The integrated SiC MOSFET inverter, the automotive standard wheel hub unit and the easy-to-use CAN-interface make it plug & play for most electric mobility applications.

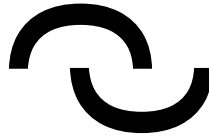
The novel motor topology delivers best-in-class efficiency, lowest weight, and inaudible noise emissions.

KEY FEATURES

- 1800 Nm peak torque
- 160 kW peak power
- up to 420 V battery supply
- 96.7 % peak efficiency
- 35 kg weight
- CAN-Interface for torque & speed control
- inaudible noise emissions
- best-in-class economics
- available with integrated drum brake
- enables concepts without mechanical rear brake

All values based on simulation and subject to change.





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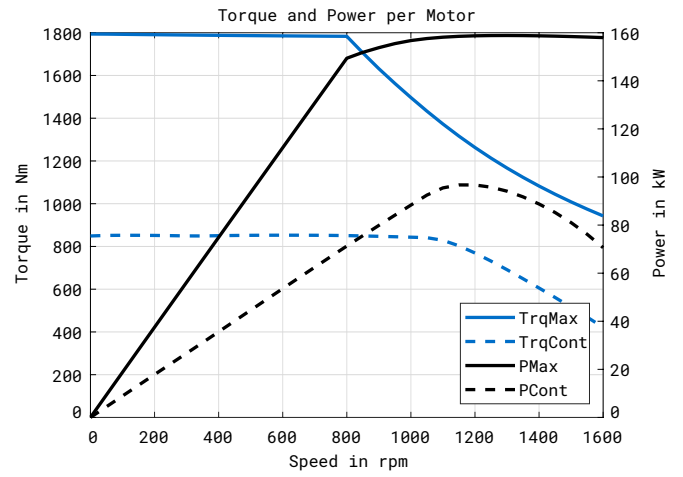
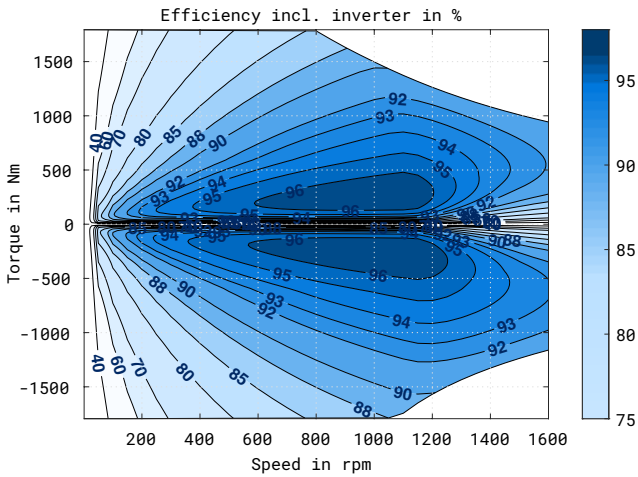
PRODUCT DATA

NAME	SYM.	MIN.	TYP	MAX.	UNIT	CONDITIONS / COMMENTS
DC-voltage	U_{dc}	200	350	420	V	
LV-Supply voltage	U_{LV}	8	12	16	V	
LV-Supply current	I_{LV}	0.5	1	1.5	A	in operation, $U_{LV}=12$ V
Peak torque (30s)	M_{30s}	–	1800	–	Nm	$T_{Mag}=40^{\circ}C$
Cont. Torque	M_{Cont}	–	850	–	Nm	$T_c=40^{\circ}C$, $Q_c=8$ l/min
Peak power (30s)	P_{30s}	–	160	–	kW	$T_{Mag}=40^{\circ}C$, $U_{dc}=350$ V
Cont. power	P_{Cont}	–	100	–	kW	$T_c=40^{\circ}C$, $Q_c=8$ l/min, $U_{dc}=350$ V
DC-current (30s)	$I_{DC,30s}$	–	500	–	A	$T_{Mag}=40^{\circ}C$, $U_{dc}=350$ V
DC-current cont.	$I_{DC,cont.}$	–	300	–	A	$T_c=40^{\circ}C$, $Q_c=8$ l/min, $U_{dc}=350$ V
Magnet temperature	T_{Mag}	-40	40	80	$^{\circ}C$	derating above $80^{\circ}C$
Copper temperature	T_{Cu}	-40	40	210	$^{\circ}C$	
Coolant temperature	T_c	-40	40	60	$^{\circ}C$	
Coolant flow rate	Q_c	2	8	12	l/min	derating may occur at <8 l/min
Coolant type	water- glycol 50/50				–	
Pressure drop	Δp	–	100	–	mBar	$Q_c=8$ l/min, $T_c=40^{\circ}C$
Speed	n_{max}	–	1,600	–	1/min	limited by U_{dc} / field weak.
Mass excl. bearing	m	–	35	–	kg	dry, no coolant
Diameter	D_{max}	–	458	–	mm	max. value, see drawing
Length	l_{max}	–	173	–	mm	incl. inverter, see drawing
Peak efficiency	η_{max}	–	96.7	–	%	$T_{Mag}=40^{\circ}C$, $T_{Cu}=40^{\circ}C$, $U_{dc}=350$ V



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EFFICIENCY MAP AND OPERATING LIMITS



DRAWING & CAD ENVELOPE-MODEL
[on request]