

TRM-330 Technical Information

Motor Parameters		Symbols	Units	TML-330-035		TML-330-070		TML-330-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	78.8		144.2		250.3	
	Peak Torque	T_p	Nm	124.5		249.7		498.1	
	Rated Speed	N_r	rpm	90	200	50	120	30	75
	No-Load Speed	$N_{no-load}$	rpm	125	250	70	150	45	90
	Torque Constant	K_t	Nm/A	1.97		3.26		5.21	
	Voltage Constant	K_v	V/rpm	0.167		0.279		0.446	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			48		
Rated Current		I_r	A_{rms}	40		44.2		48	
Peak Current		I_p	A_{rms}	64		77		96	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.1 ($\pm 20\%$)		0.11 ($\pm 20\%$)		0.12 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	0.54 ($\pm 30\%$)		0.7 ($\pm 30\%$)		0.85 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	6.5		11.62		21.7	
	Rotor Weight	W_r	kg	4.12		8.28		16.61	
	Total Weight	W_{total}	kg	10.62		19.90		38.31	
	Mech. Time Constant	K_{mech}	ms	2.28		1.75		1.47	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.242		0.180		0.138	
	Inertia	J	$kg.m^2$	0.06988		0.14044		0.28155	
	Motor Constant	K_m	Nm/\sqrt{W}	5.02		8.11		12.5	
	Rotor ID		mm			240			
	Stator OD		mm			330			

Motor Parameters		Symbols	Units	TMH-330-035		TMH-330-070		TMH-330-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	78.6		143.5		250.5	
	Peak Torque	T_p	Nm	264.9		525.7		1048.9	
	Rated Speed	N_r	rpm	225	420	185	355	130	245
	No-Load Speed	$N_{no-load}$	rpm	270	485	220	395	150	270
	Torque Constant	K_t	Nm/A	11.74		14.35		20.88	
	Voltage Constant	K_v	V/rpm	1.003		1.225		1.783	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			48		
Rated Current		I_r	A_{rms}	6.7		10		12	
Peak Current		I_p	A_{rms}	24.3		39.4		54	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	3.60 ($\pm 20\%$)		2.07 ($\pm 20\%$)		1.84 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	19.1 ($\pm 30\%$)		13.42 ($\pm 30\%$)		13.8 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	6.56		11.6		21.8	
	Rotor Weight	W_r	kg	4.12		8.28		16.61	
	Total Weight	W_{total}	kg	10.68		19.88		37.41	
	Mech. Time Constant	K_{mech}	ms	2.25		1.73		1.46	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.242		0.180		0.138	
	Inertia	J	$kg.m^2$	0.06988		0.14044		0.28155	
	Motor Constant	K_m	Nm/\sqrt{W}	5.06		8.14		12.55	
	Rotor ID		mm			240			
	Stator OD		mm			330			

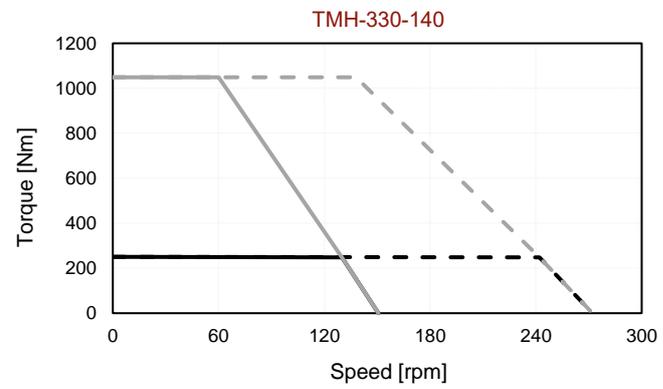
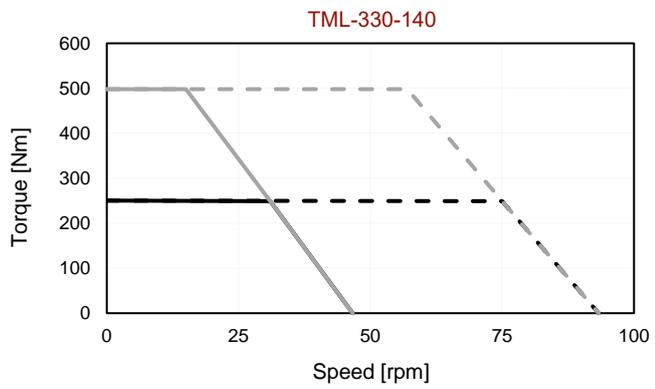
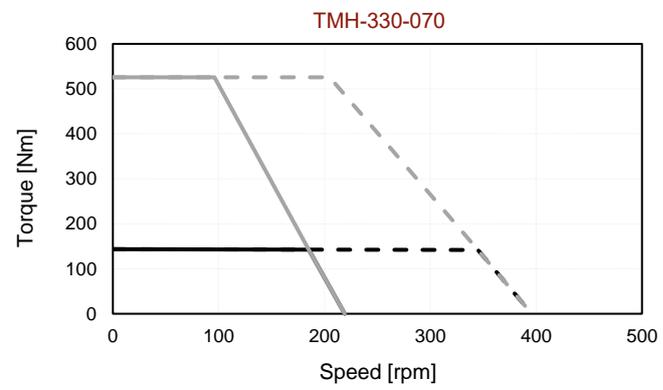
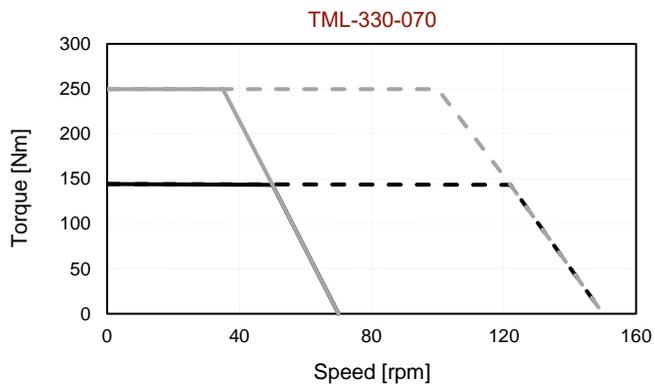
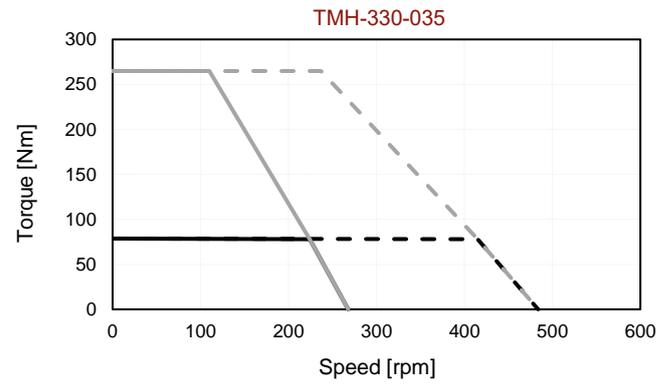
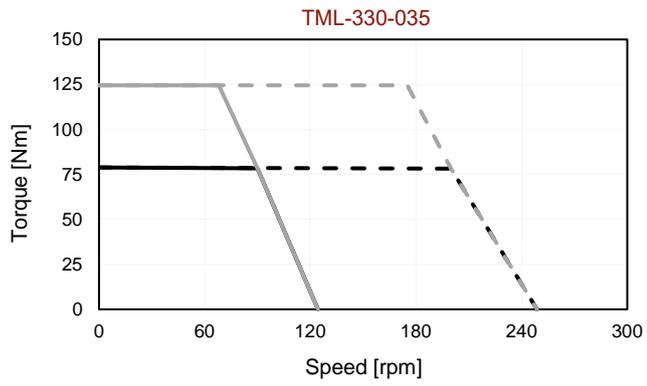
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 490 mm sq. x 20 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

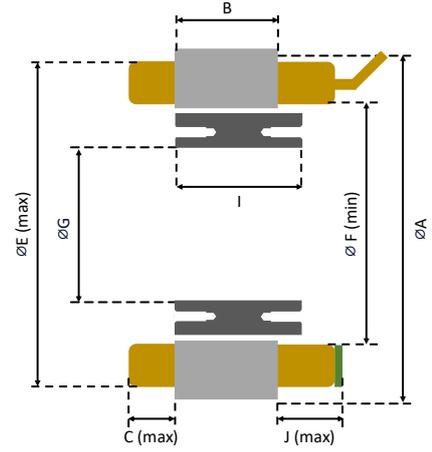
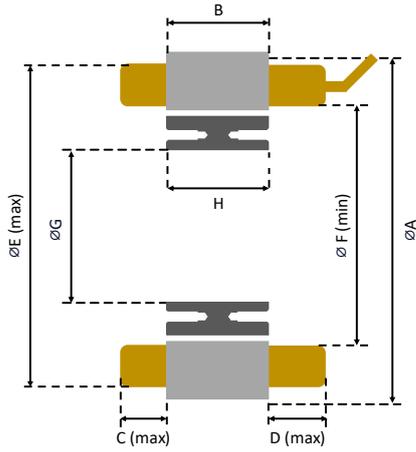
TM(L/H)-330 Torque-Speed Curves

Tr: Rated Torque
Tp: Peak Torque

— @Tr 24V - - - @Tr 48V
— @Tp 24V - - - @Tp 48V

— @Tr 310V - - - @Tr 560V
— @Tp 310V - - - @Tp 560V





Hall Effect Sensor Option

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
TM(L/H)-330-035	330	35	16	18	322	284	240	35.1	40.1	21
TM(L/H)-330-070	330	70	16	18	322	284	240	70.2	75.2	21
TM(L/H)-330-140	330	140	16	18	322	284	240	140.4	145.4	21

Notes:

MOTOR LEADS:

330-TML: #7 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 330-TMH: #11 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.

THERMISTOR LEADS:

#26 AWG Teflon® insulated, 500 mm (optional) length, 2-Brown or Blue.

SENSOR LEADS:

#23 AWG Teflon® insulated, 500 mm (optional) length, 1-Blue, 1-Green, 1-Brown, 1-White, 1-Yellow.

MOUNTING OPTION:

#Stator: 3x3 Keyway

#Rotor: (24X on each side) M5 Bolt Hole

(For detailed mounting information, including tolerances, please contact MDS Motor or refer to the MDS Motor mounting document)