

TRM-230 Technical Information

Motor Parameters		Symbols	Units	TML-230-030		TML-230-060		TML-230-120	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	28.9		55.8		97.2	
	Peak Torque	T_p	Nm	45.8		92.5		183.9	
	Rated Speed	N_r	rpm	95	225	60	145	35	90
	No-Load Speed	$N_{no-load}$	rpm	140	285	90	185	60	115
	Torque Constant	K_t	Nm/A	1.71		2.63		4.21	
	Voltage Constant	K_v	V/rpm	0.146		0.225		0.36	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			32		
Rated Current		I_r	A_{rms}	16.9		21.2		23.1	
Peak Current		I_p	A_{rms}	27		35.4		44	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.32 ($\pm 20\%$)		0.26 ($\pm 20\%$)		0.28 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	1.58 ($\pm 30\%$)		1.78 ($\pm 30\%$)		2.15 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	3.74		6.7		12.53	
	Rotor Weight	W_r	kg	1.89		3.81		7.65	
	Total Weight	W_{total}	kg	5.63		10.51		20.18	
	Mech. Time Constant	K_{mech}	ms	1.69		1.22		1.03	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.439		0.321		0.248	
	Inertia	J	$kg.m^2$	0.0130		0.02620		0.05260	
	Motor Constant	K_m	Nm/\sqrt{W}	2.47		4.18		6.45	
	Rotor ID		mm			148			
	Stator OD		mm			230			

Motor Parameters		Symbols	Units	TMH-230-030		TMH-230-060		TMH-230-120	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	29		55.6		95.9	
	Peak Torque	T_p	Nm	95.8		192.8		384.7	
	Rated Speed	N_r	rpm	255	490	225	435	180	345
	No-Load Speed	$N_{no-load}$	rpm	315	575	265	500	210	390
	Torque Constant	K_t	Nm/A	10		11.58		14.76	
	Voltage Constant	K_v	V/rpm	0.855		0.99		1.26	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			32		
Rated Current		I_r	A_{rms}	2.9		4.8		6.5	
Peak Current		I_p	A_{rms}	10.35		18		27.9	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	10.48 ($\pm 20\%$)		5.26 ($\pm 20\%$)		3.62 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	56.5 ($\pm 30\%$)		34.9 ($\pm 30\%$)		26.9 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	4.32		6.81		12.57	
	Rotor Weight	W_r	kg	1.89		3.81		7.65	
	Total Weight	W_{total}	kg	6.21		10.62		20.22	
	Mech. Time Constant	K_{mech}	ms	1.67		1.26		1.07	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.439		0.321		0.248	
	Inertia	J	$kg.m^2$	0.0130		0.02620		0.05260	
	Motor Constant	K_m	Nm/\sqrt{W}	2.52		4.12		6.33	
	Rotor ID		mm			148			
	Stator OD		mm			230			

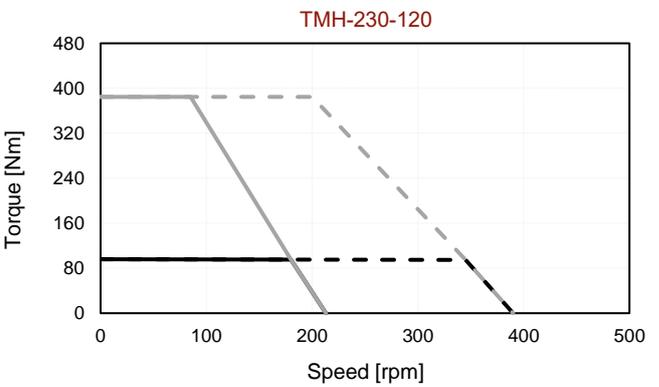
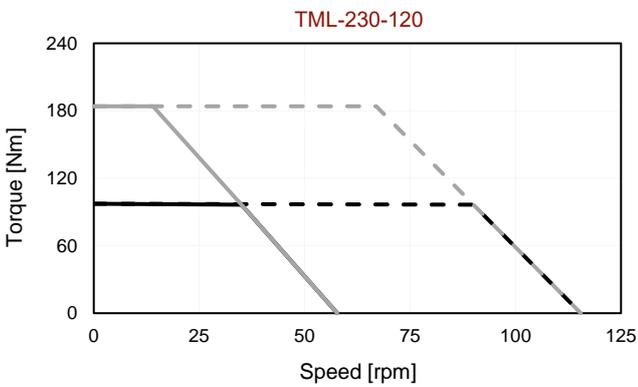
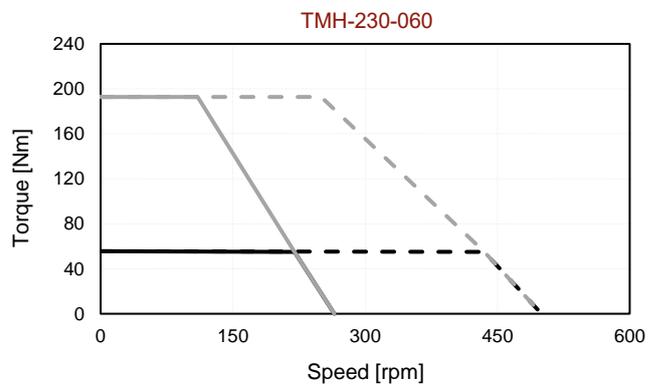
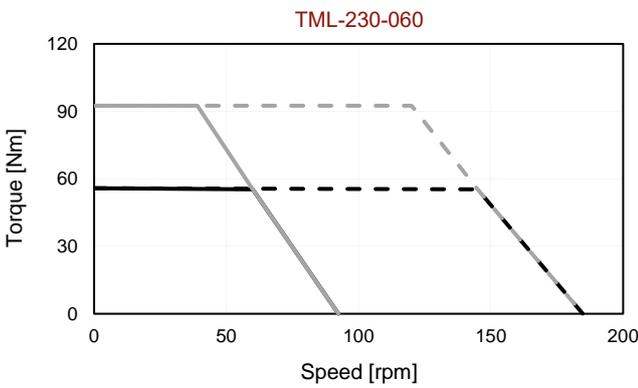
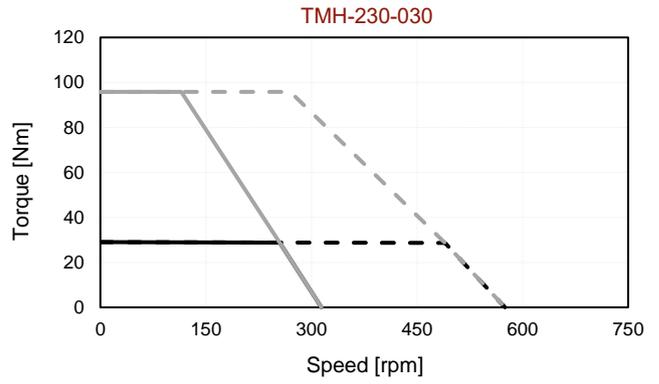
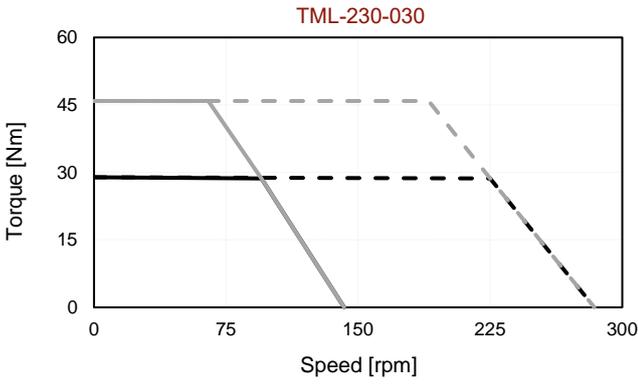
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 340 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

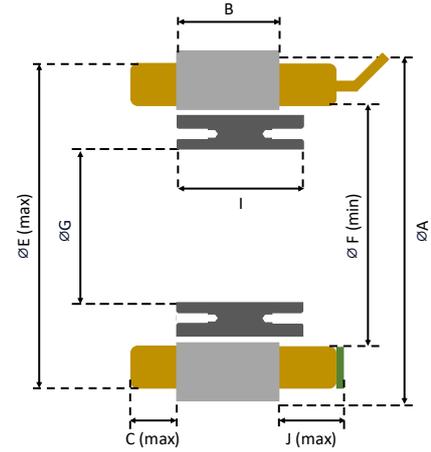
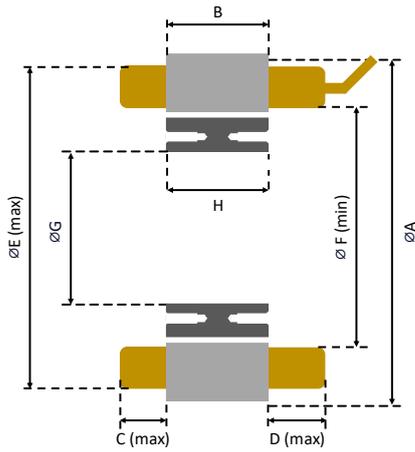
TM(L/H)-230 Torque-Speed Curves

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)-230-030	230	30	15	17	223	185	148	30.1	35.1	20
TM(L/H)-230-060	230	60	15	17	223	185	148	60.2	65.2	20
TM(L/H)-230-120	230	100	15	17	223	185	148	120.4	125.4	20

Notes:

MOTOR LEADS:

230-TML: #11 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 230-TMH: #14 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: (16X on each side) M5 Bolt Hole

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