

TRM-240 Technical Information

Motor Parameters		Symbols	Units	TML-240-035		TML-240-070		TML-240-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	34.2		64.9		115.6	
	Peak Torque	T_p	Nm	54.3		112.1		218.6	
	Rated Speed	N_r	rpm	110	260	65	155	40	100
	No-Load Speed	$N_{no-load}$	rpm	155	320	95	195	60	125
	Torque Constant	K_t	Nm/A	1.71		2.8		4.36	
	Voltage Constant	K_v	V/rpm	0.147		0.241		0.373	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			32		
Rated Current		I_r	A_{rms}	20		23.2		26.5	
Peak Current		I_p	A_{rms}	32		40.4		50.6	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.22 ($\pm 20\%$)		0.22 ($\pm 20\%$)		0.23 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	1.31 ($\pm 30\%$)		1.63 ($\pm 30\%$)		1.91 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	4.33		7.8		14.53	
	Rotor Weight	W_r	kg	2.35		4.73		9.49	
	Total Weight	W_{total}	kg	6.68		12.53		24.02	
	Mech. Time Constant	K_{mech}	ms	1.66		1.24		1.08	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.433		0.310		0.225	
	Inertia	J	kg.m ²	0.01819		0.03647		0.07316	
	Motor Constant	K_m	Nm/ \sqrt{W}	1.72	1.12	3.09	2	5.25	3.32
	Rotor ID		mm			158			
	Stator OD		mm			240			

Motor Parameters		Symbols	Units	TMH-240-035		TMH-240-070		TMH-240-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	34.8		64.5		115.8	
	Peak Torque	T_p	Nm	115.5		233.7		463.7	
	Rated Speed	N_r	rpm	280	535	260	490	185	350
	No-Load Speed	$N_{no-load}$	rpm	345	630	310	560	215	400
	Torque Constant	K_t	Nm/A	10.26		11.53		16.09	
	Voltage Constant	K_v	V/rpm	0.88		0.987		1.387	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			32		
Rated Current		I_r	A_{rms}	3.4		5.6		7.2	
Peak Current		I_p	A_{rms}	12.15		22		31	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	7.88 ($\pm 20\%$)		3.76 ($\pm 20\%$)		3.27 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	47.2 ($\pm 30\%$)		27.7 ($\pm 30\%$)		26.3 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	4.26		7.77		14.56	
	Rotor Weight	W_r	kg	2.35		4.73		9.49	
	Total Weight	W_{total}	kg	6.61		12.50		24.05	
	Mech. Time Constant	K_{mech}	ms	1.66		1.26		1.12	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.433		0.310		0.225	
	Inertia	J	kg.m ²	0.01819		0.03647		0.07316	
	Motor Constant	K_m	Nm/ \sqrt{W}	1.09	0.79	1.54	1.12	2.45	1.78
	Rotor ID		mm			158			
	Stator OD		mm			240			

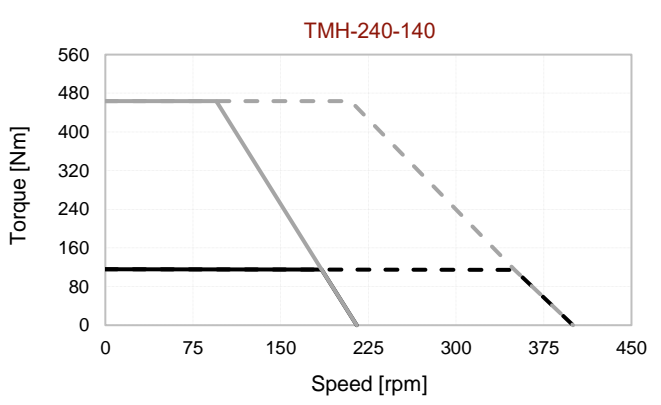
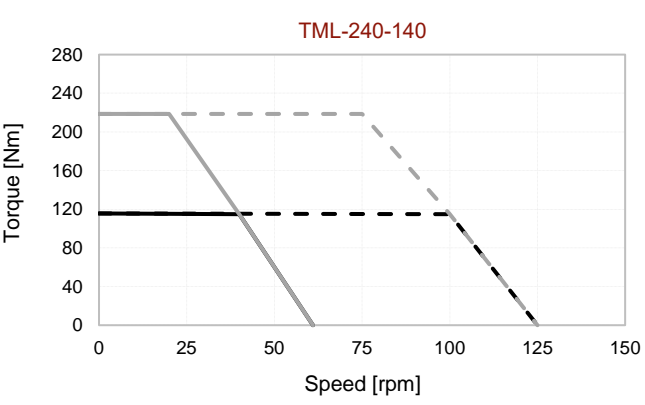
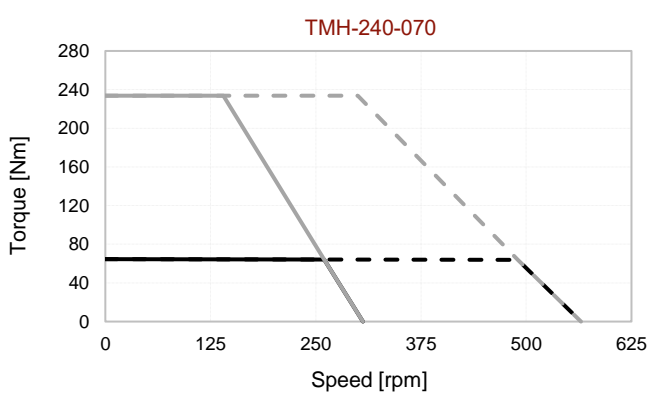
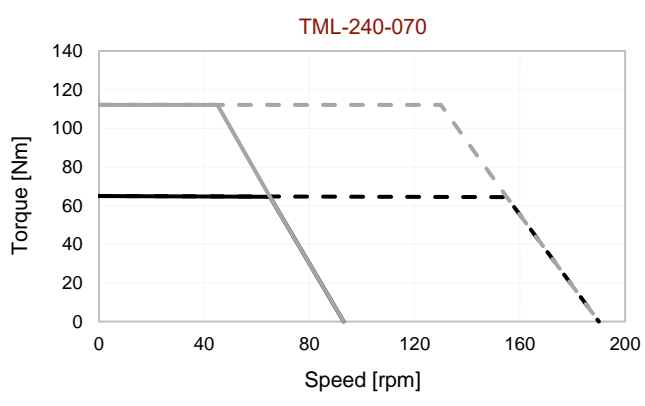
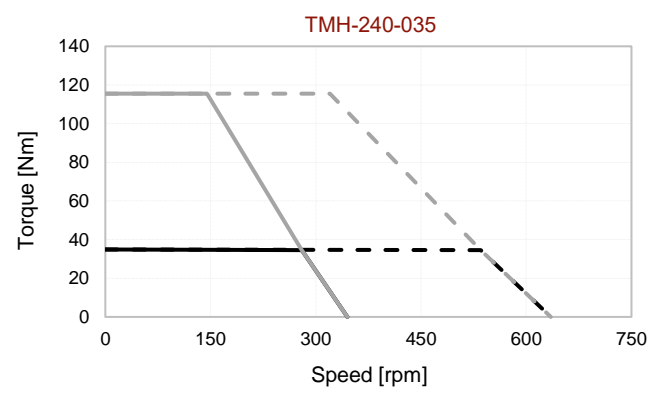
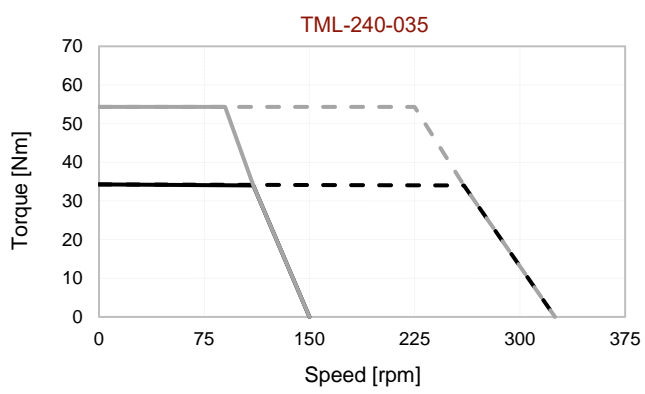
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 350 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

TM(L/H)-240 Torque-Speed Curves

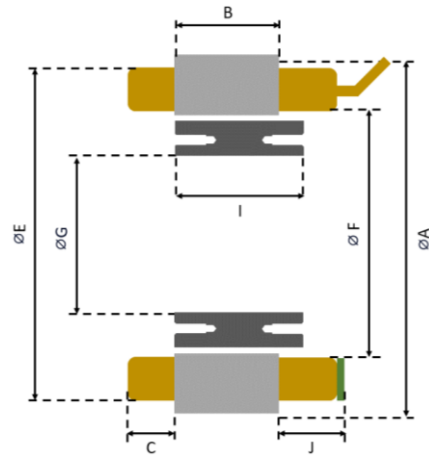
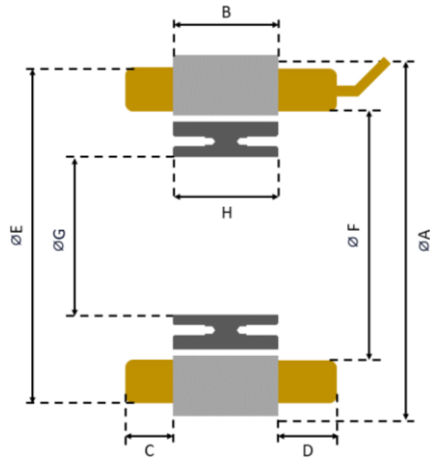
Tr: Rated Torque
Tp: Peak Torque

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

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



TM(L/H)-240 Outline Drawing



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)-240-035	240	35	16	18	232	195.2	158	35.1	40.1	21
TM(L/H)-240-070	240	70	16	18	232	195.2	158	70.2	75.2	21
TM(L/H)-240-140	240	140	16	18	232	195.2	158	140.4	145.4	21

Notes:

MOTOR LEADS:

240-TML: #10 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 240-TMH: #13 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 details refer to MDS Motor mounting documents)