

# 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	100	235	60	140	35	90
	No-Load Speed	$N_{no-load}$	rpm	140	280	85	170	55	110
	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			
	Number of Pole	$2p$	--			32			
ELECTRICAL	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 <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.433		0.310		0.225	
	Inertia	$J$	$kg.m^2$	0.01819		0.03647		0.07316	
	Motor Constant	$K_m$	$Nm/\sqrt{W}$	2.98		4.87		7.43	
	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	250	480	230	440	165	315
	No-Load Speed	$N_{no-load}$	rpm	305	550	275	495	195	355
	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			
	Number of Pole	$2p$	--			32			
ELECTRICAL	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 <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.433		0.310		0.225	
	Inertia	$J$	$kg.m^2$	0.01819		0.03647		0.07316	
	Motor Constant	$K_m$	$Nm/\sqrt{W}$	2.98		4.86		7.26	
	Rotor ID		mm			158			
Stator OD		mm			240				

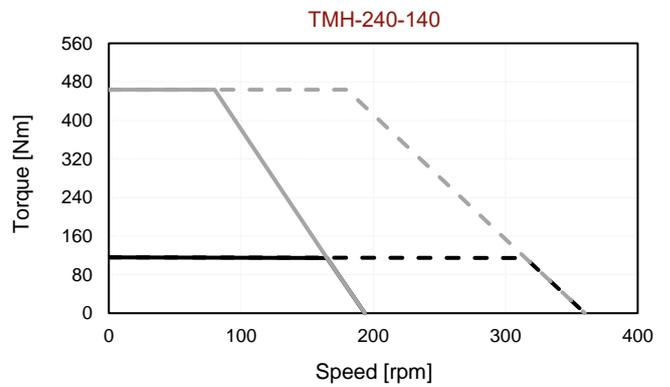
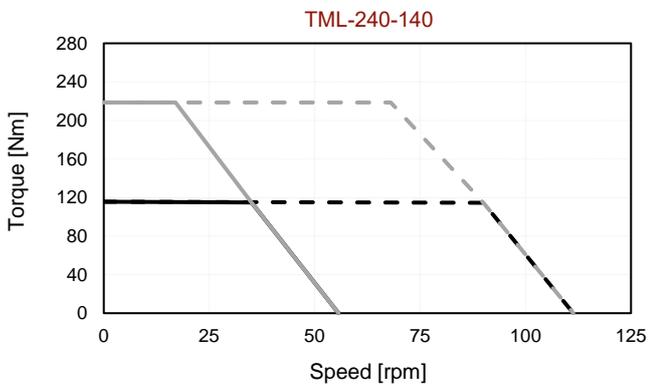
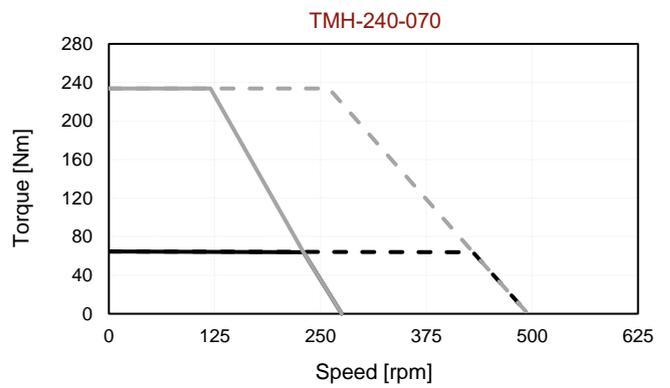
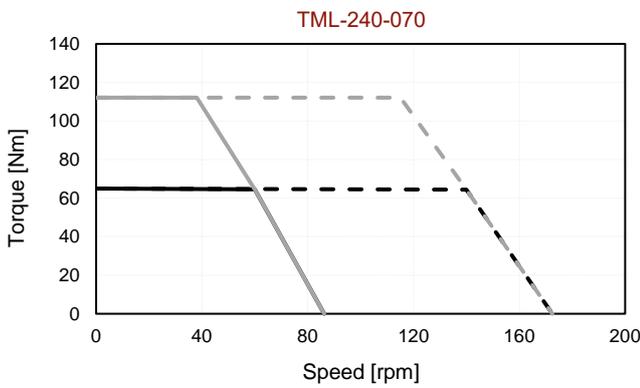
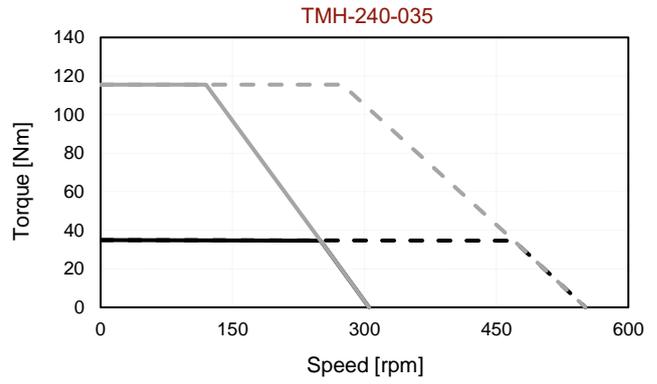
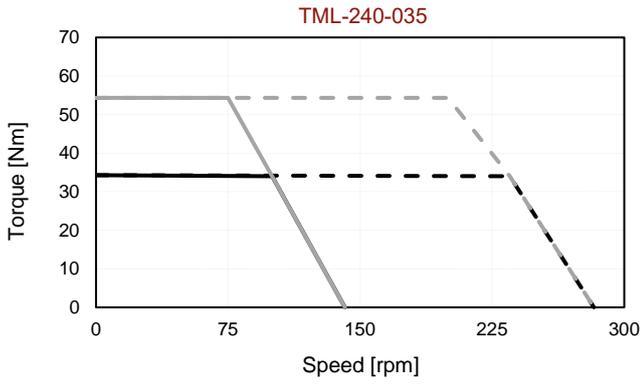
1. All performance and electrical specifications are obtained at 25°C ambient and may change  $\pm 10\%$ . 2. Housed version of motor mounted to 350 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

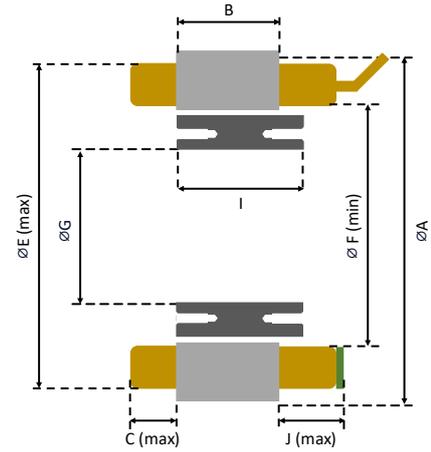
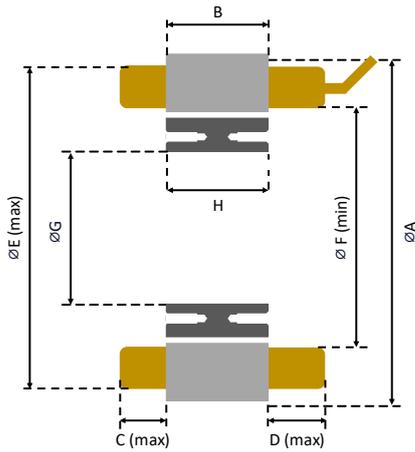
# TM(L/H)-240 Torque-Speed Curves

Tr: Rated Torque  
Tp: Peak Torque

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

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





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