

TRM-290 Technical Information

Motor Parameters		Symbols	Units	TML-290-035		TML-290-070		TML-290-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	55		104.2		190.3	
	Peak Torque	T_p	Nm	91.2		180.2		360.6	
	Rated Speed	N_r	rpm	90	215	60	145	35	85
	No-Load Speed	$N_{no-load}$	rpm	125	255	80	175	50	105
	Torque Constant	K_t	Nm/A	1.86		2.79		4.65	
	Voltage Constant	K_v	V/rpm	0.16		0.239		0.399	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	Number of Pole	$2p$	--			40			
ELECTRICAL	Rated Current	I_r	A_{rms}	29.6		37.4		40.9	
	Peak Current	I_p	A_{rms}	49.4		65		78	
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.15 ($\pm 20\%$)		0.12 ($\pm 20\%$)		0.14 ($\pm 20\%$)	
	Line Inductance	$L_{LL}@60Hz$	mH	0.85 ($\pm 30\%$)		0.88 ($\pm 30\%$)		1.18 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	5.7		10.1		18.9	
	Rotor Weight	W_r	kg	3.48		7.01		14.05	
	Total Weight	W_{total}	kg	9.18		17.02		32.95	
	Mech. Time Constant	K_{mech}	ms	2.25		1.62		1.35	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.304		0.217		0.164	
	Inertia	J	$kg.m^2$	0.04239		0.08519		0.17078	
	Motor Constant	K_m	Nm/\sqrt{W}	3.91		6.54		10.13	
	Rotor ID		mm			200			
Stator OD		mm			290				

Motor Parameters		Symbols	Units	TMH-290-035		TMH-290-070		TMH-290-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	54.6		104.6		190.4	
	Peak Torque	T_p	Nm	190.6		379.1		758.1	
	Rated Speed	N_r	rpm	230	440	200	385	145	270
	No-Load Speed	$N_{no-load}$	rpm	280	505	240	435	165	305
	Torque Constant	K_t	Nm/A	11.15		13		18.49	
	Voltage Constant	K_v	V/rpm	0.956		1.116		1.594	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	Number of Pole	$2p$	--			40			
ELECTRICAL	Rated Current	I_r	A_{rms}	4.9		8.05		10.3	
	Peak Current	I_p	A_{rms}	18.5		31.5		44.1	
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	5.64 ($\pm 20\%$)		2.62 ($\pm 20\%$)		2.24 ($\pm 20\%$)	
	Line Inductance	$L_{LL}@60Hz$	mH	30.7 ($\pm 30\%$)		19.3 ($\pm 30\%$)		18.9 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	5.67		10		18.9	
	Rotor Weight	W_r	kg	3.48		7.01		14.05	
	Total Weight	W_{total}	kg	9.15		17.01		32.95	
	Mech. Time Constant	K_{mech}	ms	2.23		1.61		1.36	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.304		0.217		0.164	
	Inertia	J	$kg.m^2$	0.04239		0.08519		0.17078	
	Motor Constant	K_m	Nm/\sqrt{W}	3.83		6.56		10.09	
	Rotor ID		mm			200			
Stator OD		mm			290				

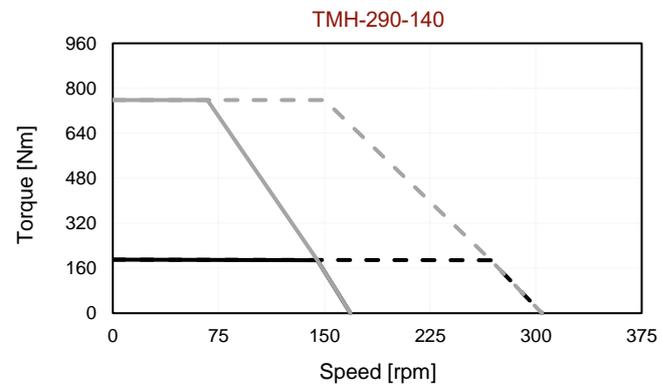
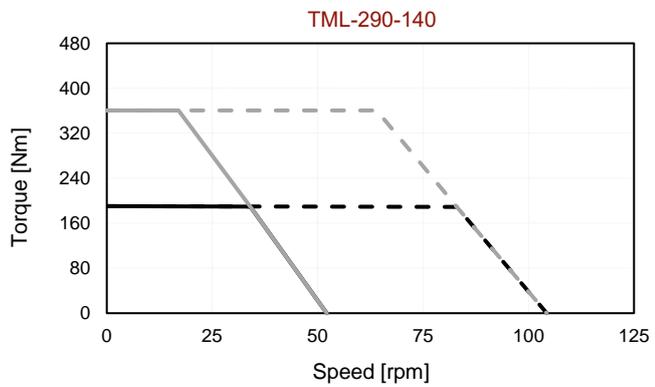
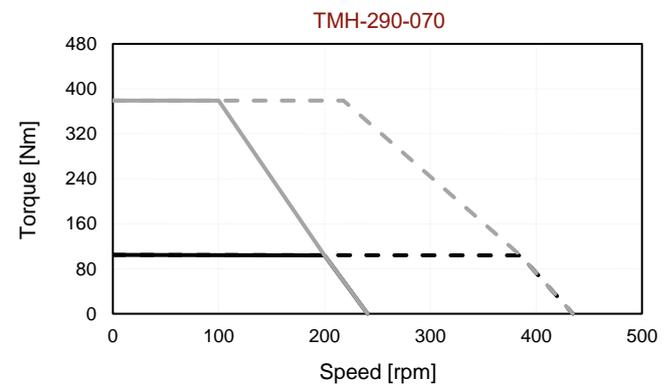
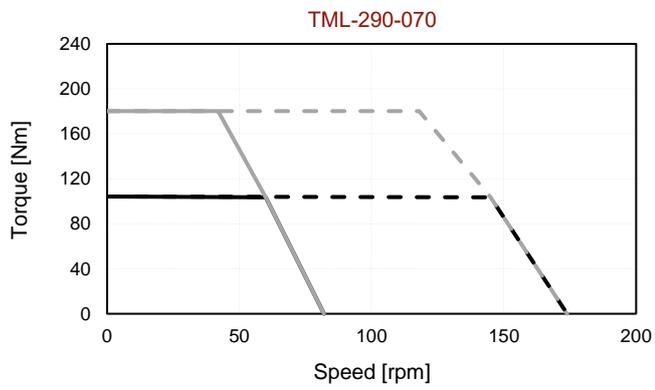
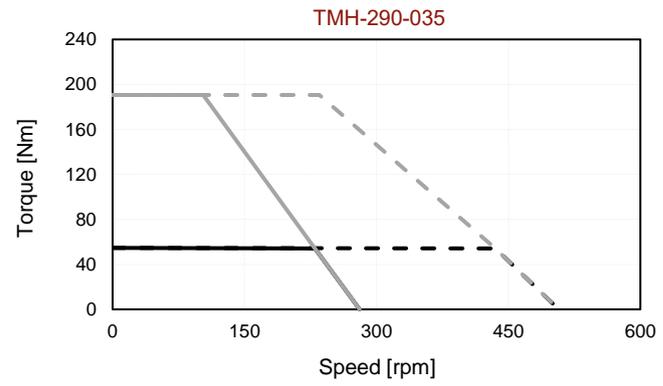
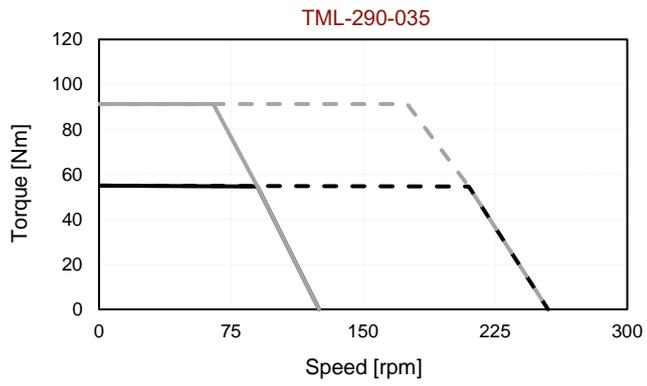
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 430 mm sq. x 20 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

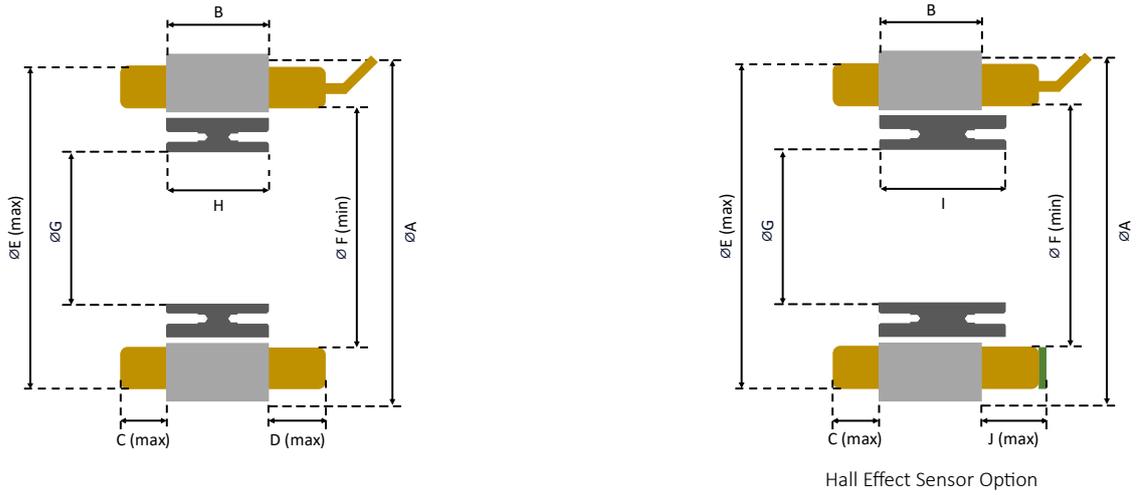
TM(L/H)-290 Torque-Speed Curves

Tr: Rated Torque
Tp: Peak Torque

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

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





Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)
TM(L/H)-290-035	290	35	16	18	282	244.8	200	35.1	40.1	21
TM(L/H)-290-070	290	70	16	18	282	244.8	200	70.2	75.2	21
TM(L/H)-290-140	290	140	16	18	282	244.8	200	140.4	145.4	21

Notes:

MOTOR LEADS:

290-TML: #8 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 290-TMH: #12 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: (20X on each side) M5 Bolt Hole
 (For detailed mounting information, including tolerances, please contact MDS Motor or refer to the MDS Motor mounting document)