

TRM-175 Technical Information

Motor Parameters		Symbols	Units	TML-175-030		TML-175-060		TML-175-120	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	15.1		29.5		55.2	
	Peak Torque	T_p	Nm	24.9		50.6		99.3	
	Rated Speed	N_r	rpm	115	290	70	180	40	115
	No-Load Speed	$N_{no-load}$	rpm	185	380	120	240	75	150
	Torque Constant	K_t	Nm/A	1.27		2.03		3.04	
	Voltage Constant	K_v	V/rpm	0.109		0.174		0.261	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			24		
Rated Current		I_r	A_{rms}	12		14.6		18.2	
Peak Current		I_p	A_{rms}	20		25.4		33.2	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.52 ($\pm 20\%$)		0.47 ($\pm 20\%$)		0.42 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	2.75 ($\pm 30\%$)		3.44 ($\pm 30\%$)		3.69 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	3.66		6.39		11.77	
	Rotor Weight	W_r	kg	1.04		2.10		4.19	
	Total Weight	W_{total}	kg	4.70		8.49		15.96	
	Mech. Time Constant	K_{mech}	ms	1.10		0.78		0.63	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.558		0.416		0.290	
	Inertia	J	$kg.m^2$	0.00279		0.00562		0.01128	
	Motor Constant	K_m	Nm/\sqrt{W}	1.43		2.42		3.81	
	Rotor ID		mm			88			
	Stator OD		mm			175			

Motor Parameters		Symbols	Units	TMH-175-030		TMH-175-060		TMH-175-120	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	15		29		55.9	
	Peak Torque	T_p	Nm	44.4		88.7		181.2	
	Rated Speed	N_r	rpm	280	550	230	450	205	395
	No-Load Speed	$N_{no-load}$	rpm	375	675	305	545	265	475
	Torque Constant	K_t	Nm/A	8.36		10.56		12.16	
	Voltage Constant	K_v	V/rpm	0.717		0.902		1.043	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			24		
Rated Current		I_r	A_{rms}	1.8		2.75		4.6	
Peak Current		I_p	A_{rms}	6		9.6		16.8	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	22.7 ($\pm 20\%$)		13.14 ($\pm 20\%$)		6.74 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	127.9 ($\pm 30\%$)		92.7 ($\pm 30\%$)		59.2 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	3.62		6.38		11.87	
	Rotor Weight	W_r	kg	1.04		2.10		4.19	
	Total Weight	W_{total}	kg	4.66		8.48		16.06	
	Mech. Time Constant	K_{mech}	ms	1.10		0.81		0.62	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.558		0.416		0.290	
	Inertia	J	$kg.m^2$	0.00279		0.00562		0.01128	
	Motor Constant	K_m	Nm/\sqrt{W}	1.43		2.38		3.82	
	Rotor ID		mm			88			
	Stator OD		mm			175			

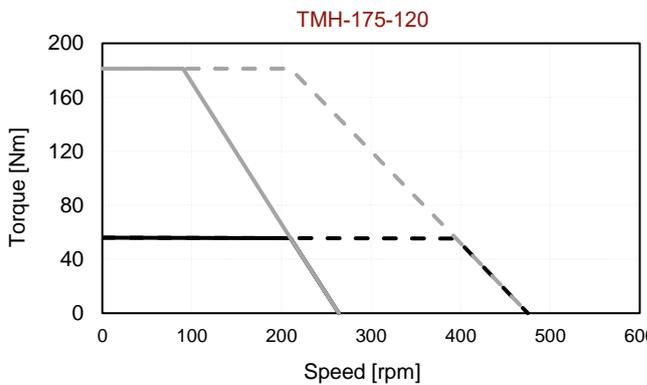
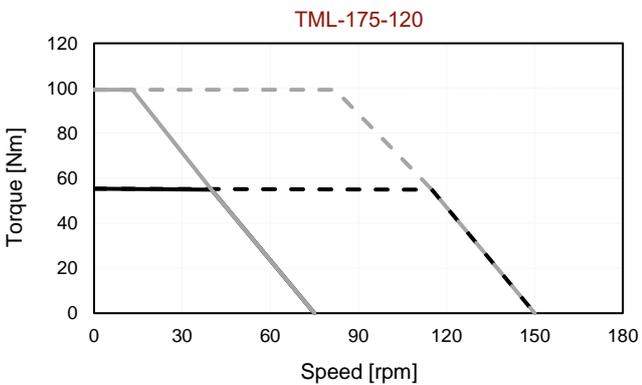
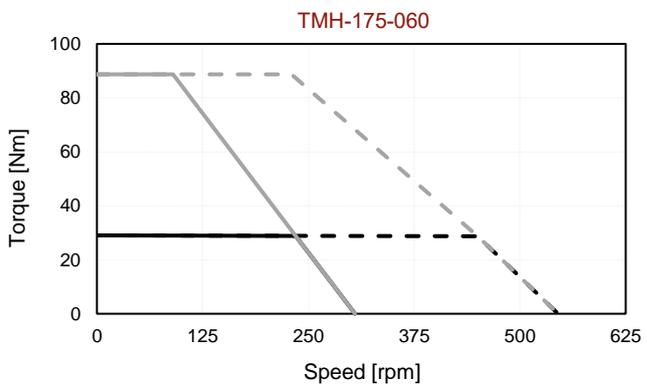
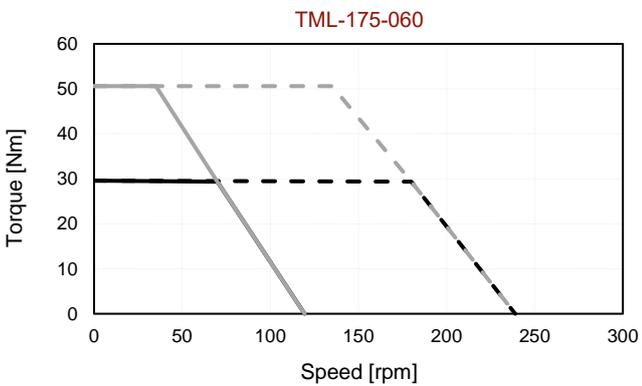
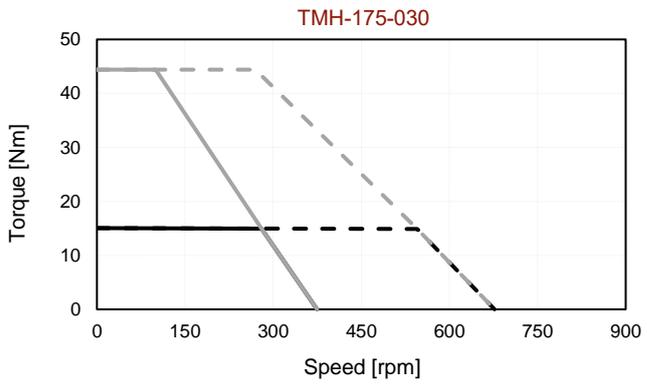
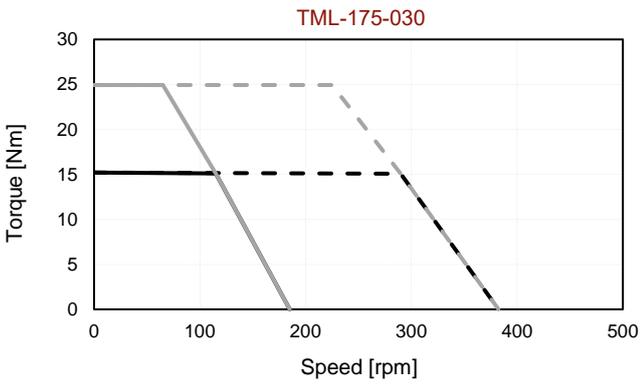
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 300 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

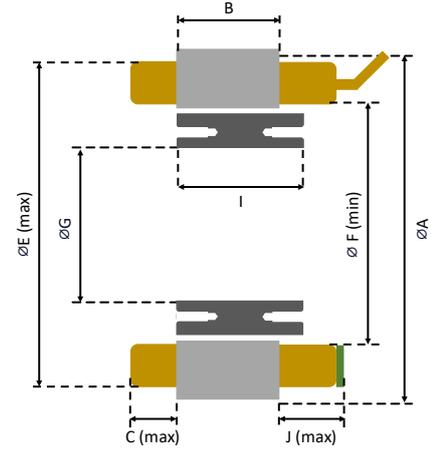
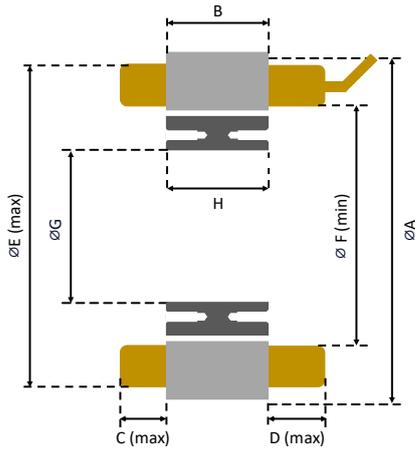
TM(L/H)-175 Torque-Speed Curves

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)-175-030	175	30	15	17	166	120.5	88	30.1	35.1	20
TM(L/H)-175-060	175	60	15	17	166	120.5	88	60.2	65.2	20
TM(L/H)-175-120	175	120	15	17	166	120.5	88	120.4	125.4	20

Notes:

MOTOR LEADS:

175-TML: #12 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 175-TMH: #15 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: (8X on each side) M5 Bolt Hole

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