

TRM-372 Technical Information

Motor Parameters		Symbols	Units	TML-372-035		TML-372-070		TML-372-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	105.8		194.5		336.5	
	Peak Torque	T_p	Nm	168.8		337		669.6	
	Rated Speed	N_r	rpm	70	165	40	100	25	65
	No-Load Speed	$N_{no-load}$	rpm	100	200	55	120	40	80
	Torque Constant	K_t	Nm/A	2.42		3.87		5.8	
	Voltage Constant	K_v	V/rpm	0.208		0.333		0.498	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			64		
Rated Current		I_r	A_{rms}	43.8		50.3		58	
Peak Current		I_p	A_{rms}	70.2		87.6		116	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	0.1 ($\pm 20\%$)		0.1 ($\pm 20\%$)		0.095 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	0.45 ($\pm 30\%$)		0.54 ($\pm 30\%$)		0.58 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	6.23		11.28		21.42	
	Rotor Weight	W_r	kg	4.75		9.52		19.07	
	Total Weight	W_{total}	kg	10.98		20.8		40.49	
	Mech. Time Constant	K_{mech}	ms	2.39		1.82		1.53	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.190		0.149		0.115	
	Inertia	J	$kg.m^2$	0.11166		0.22396		0.44857	
	Motor Constant	K_m	Nm/\sqrt{W}	6.16		10.0		15.42	
	Rotor ID		mm			287			
	Stator OD		mm			372			

Motor Parameters		Symbols	Units	TMH-372-035		TMH-372-070		TMH-372-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	105.5		194.9		341	
	Peak Torque	T_p	Nm	358.9		717.9		1435.7	
	Rated Speed	N_r	rpm	190	365	150	290	115	220
	No-Load Speed	$N_{no-load}$	rpm	230	415	180	320	135	240
	Torque Constant	K_t	Nm/A	13.52		17.4		23.2	
	Voltage Constant	K_v	V/rpm	1.163		1.495		1.994	
	Max. Cogging Torque	T_{cog}	%			<1			
	Torque Ripple	T_{ripple}	%			<1			
	ELECTRICAL	Number of Pole	$2p$	--			64		
Rated Current		I_r	A_{rms}	7.8		11.2		14.7	
Peak Current		I_p	A_{rms}	28.3		44.1		66.1	
Line Resistance		$R_{LL}@25^{\circ}C$	Ohm	3.18 ($\pm 20\%$)		1.99 ($\pm 20\%$)		1.49 ($\pm 20\%$)	
Line Inductance		$L_{LL}@60Hz$	mH	14.28 ($\pm 30\%$)		10.86 ($\pm 30\%$)		9.24 ($\pm 30\%$)	
MECHANICAL & THERMAL	Stator Weight	W_s	kg	6.23		11.34		21.52	
	Rotor Weight	W_r	kg	4.75		9.52		19.07	
	Total Weight	W_{total}	kg	10.98		20.86		40.59	
	Mech. Time Constant	K_{mech}	ms	2.36		1.79		1.51	
	Thermal Resistance ⁽²⁾	R_{th}	$^{\circ}C/W$	0.190		0.149		0.115	
	Inertia	J	$kg.m^2$	0.11166		0.22396		0.44857	
	Motor Constant	K_m	Nm/\sqrt{W}	6.19		10.07		15.54	
	Rotor ID		mm			287			
	Stator OD		mm			372			

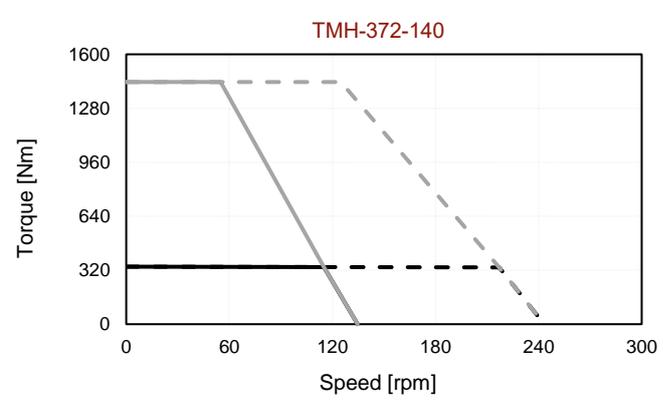
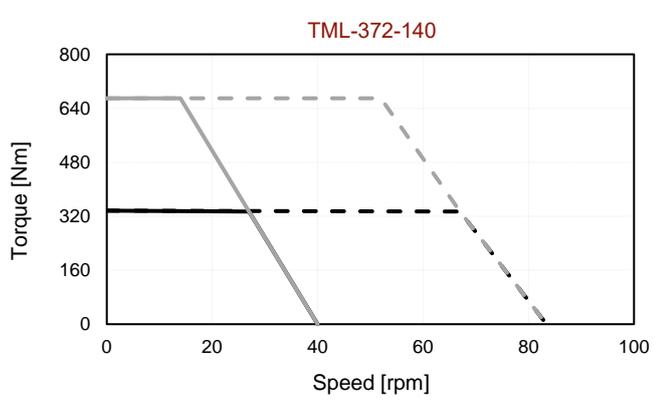
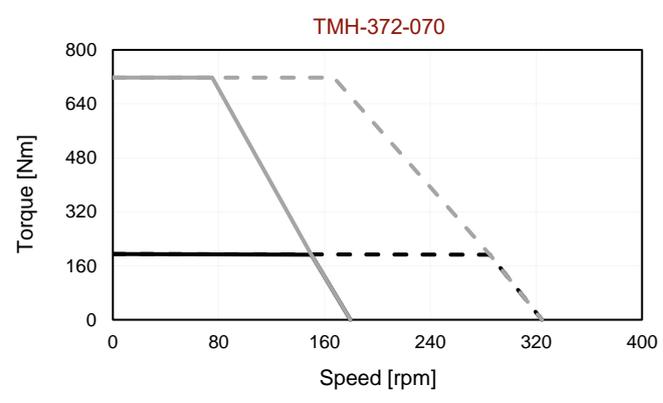
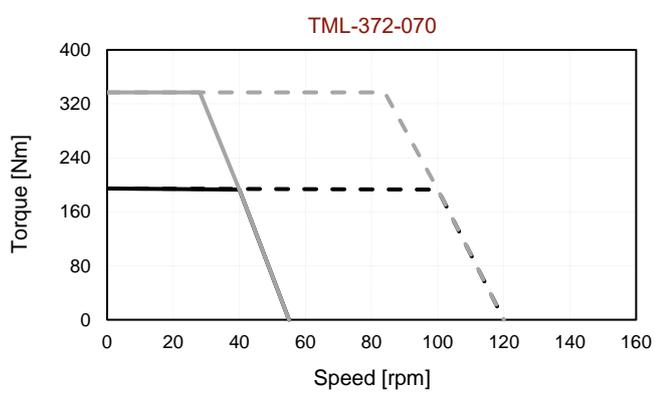
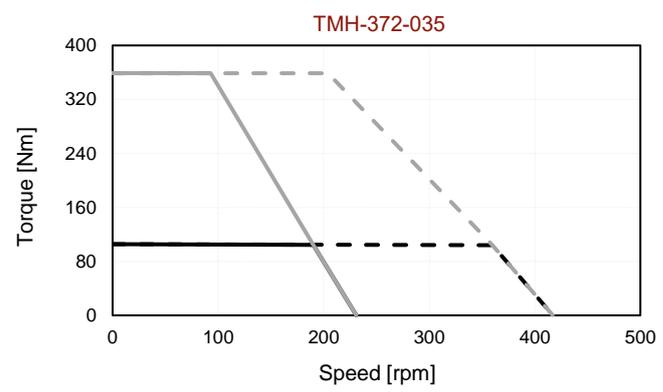
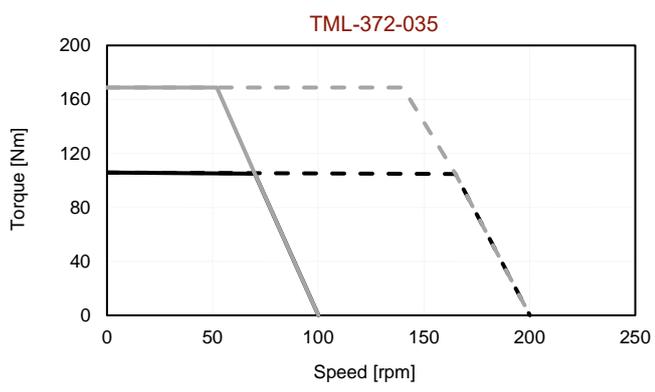
1. All performance and electrical specifications are obtained at 25°C ambient and may change $\pm 10\%$. 2. Housed version of motor mounted to 550 mm sq. x 20 mm aluminum heat sink (maximum winding temperature is 120°C). 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

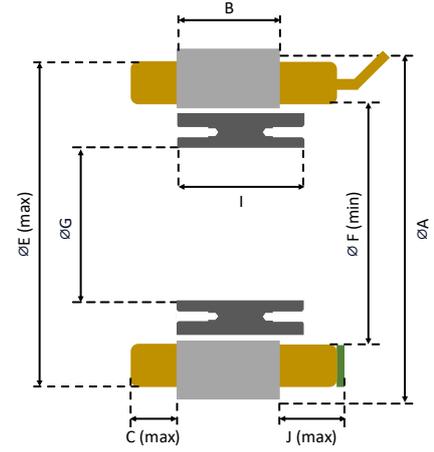
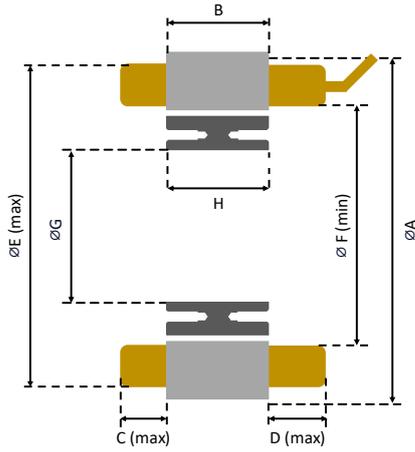
TM(L/H)-372 Torque-Speed Curves

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)-372-035	372	35	16	18	365	330.4	287	35.1	40.1	21
TM(L/H)-372-070	372	70	16	18	365	330.4	287	70.2	75.2	21
TM(L/H)-372-140	372	140	16	18	365	330.4	287	140.4	145.4	21

Notes:

MOTOR LEADS:

372-TML: #6 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
 372-TMH: #10 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) M6 Bolt Hole

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