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	130	320	80	200	50	130
	No-Load Speed	$N_{no\text{-}load}$	rpm	215	435	130	270	85	175
	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°C	Ohm	0.52 (±20%)		0.47 (±20%)		0.42 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	2.93 (±30%)		3.44 (±30%)		3.69 (±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}	°C/W	0.558		0.416		0.290	
	Inertia	J	$kg.m^2$	0.00279		0.00562		0.01128	
	Motor Constant	K_m	Nm/√W	1.06	0.67	1.88	1.06	0.67	1.88
	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	315	615	260	505	230	445
	No-Load Speed	$N_{no\text{-}load}$	rpm	425	775	335	615	290	530
	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°C	Ohm	22.7 (±20%)		13.14 (±20%)		6.74 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	127.9 (±30%)		92.7 (±30%)		59.2 (±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}	°C/W	0.558		0.416		0.290	
	Inertia	J	$kg.m^2$	0.00279		0.00562		0.01128	
	Motor Constant	K_m	Nm/√W	0.68	0.48	1.03	0.68	0.48	1.03
	Rotor ID		mm	88					
	Stator OD		mm	175					

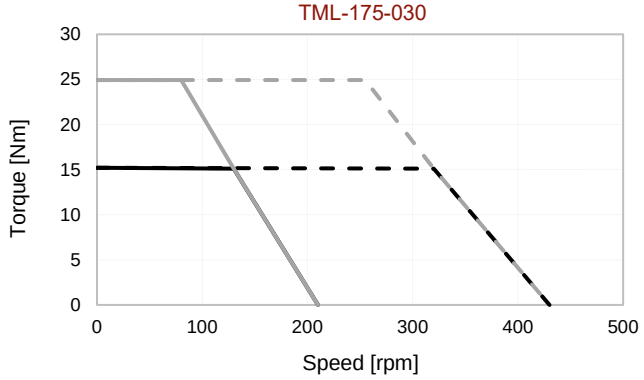
1. All performance and electrical specifications are obtained at 25°C ambient and may change ±10%. 2. Housed version of motor mounted to 300 mm sq. x 15 mm aluminum heat sink (maximum winding temperature is 120°C). 3. Higher torque and speed values as well as dimensions on request.

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

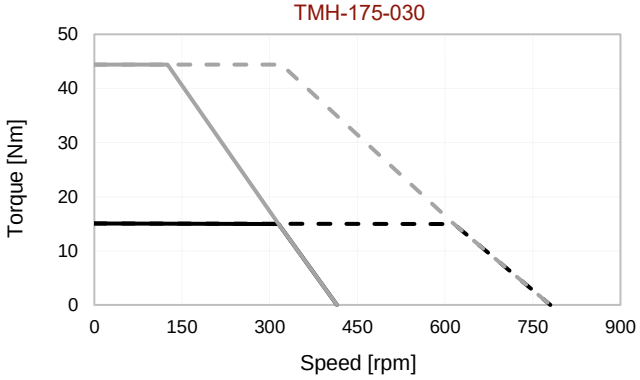
Tr: Rated Torque
Tp: Peak Torque

@Tr 24V @Tr 48V @Tr 310V @Tr 560V
@Tp 24V @Tp 48V @Tp 310V @Tp 560V

TML-175-030



TMH-175-030



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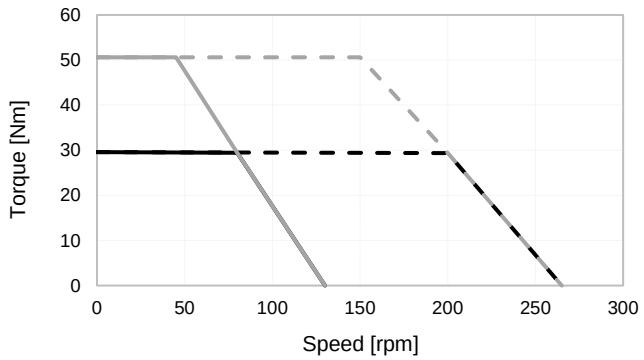

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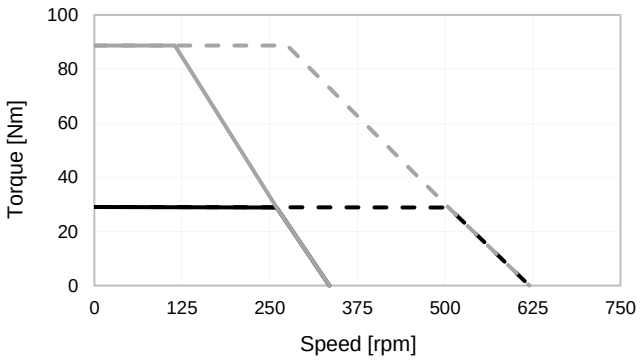

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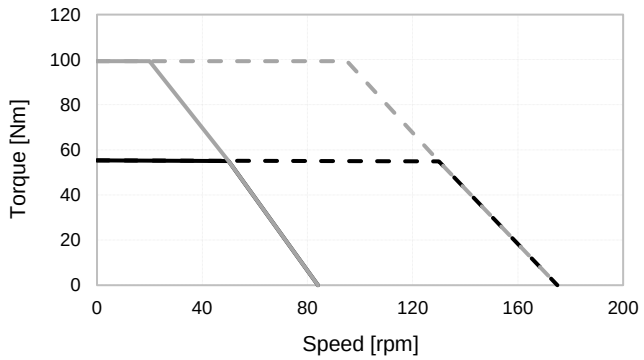

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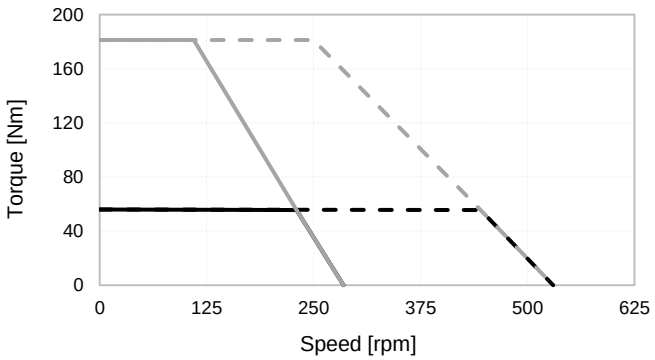
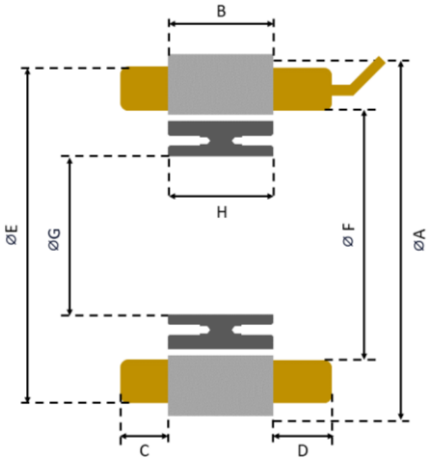
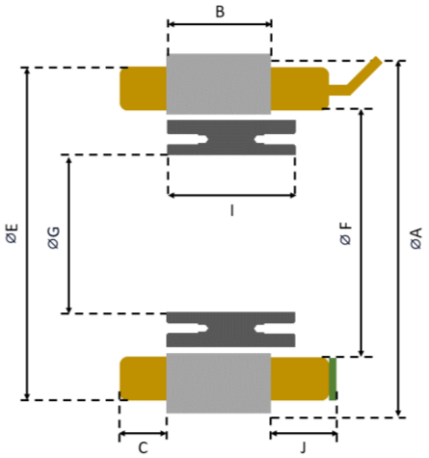


TM(L/H)-175 Outline Drawing





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)-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 details refer to MDS Motor mounting documents)