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	105	240	70	160	40	95
	No-Load Speed	$N_{no\text{-}load}$	rpm	145	295	95	195	55	115
	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					
ELECTRICAL	Number of Pole	2p	--	40					
	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°C	Ohm	0.15 (±20%)		0.12 (±20%)		0.14 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	0.85 (±30%)		0.88 (±30%)		1.18 (±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}	°C/W	0.304		0.217		0.164	
	Inertia	J	$kg.m^2$	0.04239		0.08519		0.17078	
	Motor Constant	K_m	Nm/√W	2.24	1.48	3.77	2.49	6.74	4.37
	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	260	495	230	430	160	305
	No-Load Speed	$N_{no\text{-}load}$	rpm	320	580	270	495	190	345
	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					
ELECTRICAL	Number of Pole	2p	--	40					
	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°C	Ohm	5.36 (±20%)		2.62 (±20%)		2.24 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	30.7 (±30%)		19.3 (±30%)		18.9 (±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}	°C/W	0.304		0.217		0.164	
	Inertia	J	$kg.m^2$	0.04239		0.08519		0.17078	
	Motor Constant	K_m	Nm/√W	1.42	1.03	2.08	1.52	3.37	2.44
	Rotor ID		mm	200					
	Stator OD		mm	290					

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

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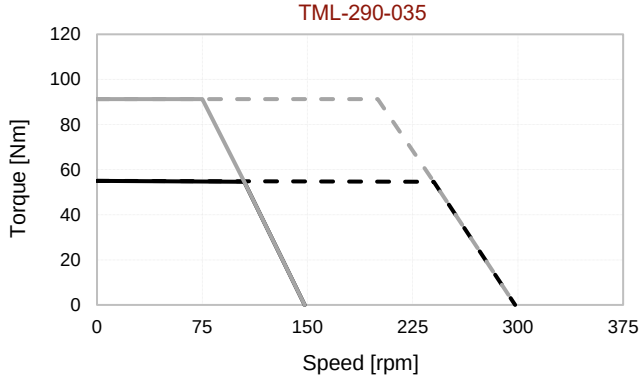
TM(L/H)-290 Torque-Speed Curves

Tr: Rated Torque
Tp: Peak Torque

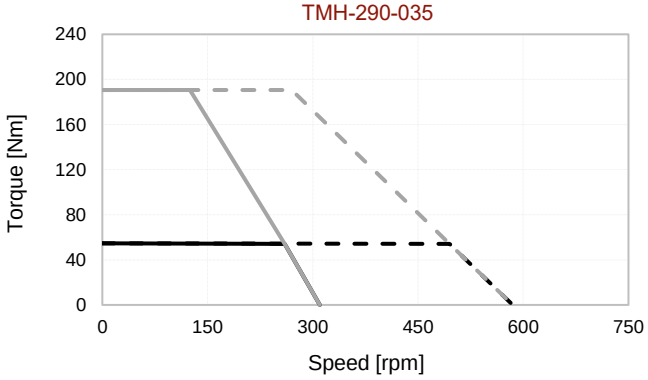
@Tr 24V @Tr 48V @Tp 24V @Tp 48V

@Tr 310V @Tr 560V @Tp 310V @Tp 560V

TML-290-035



TMH-290-035



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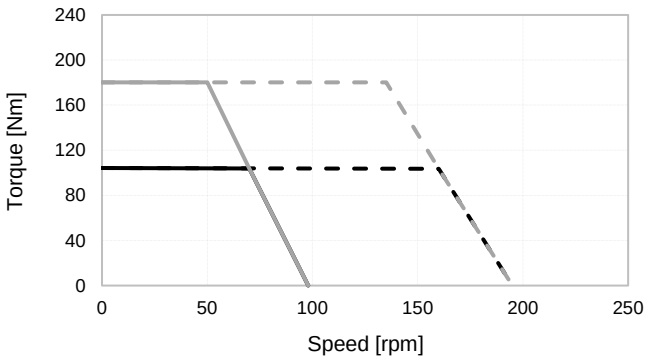

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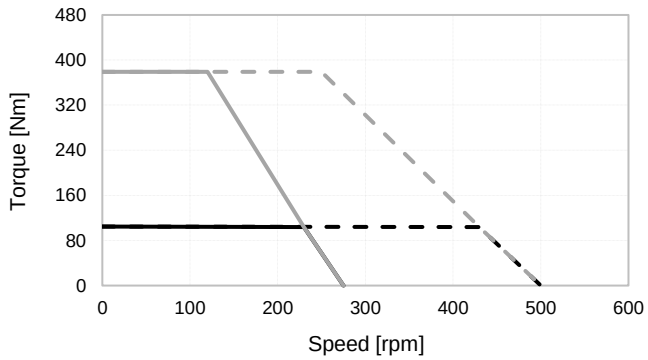

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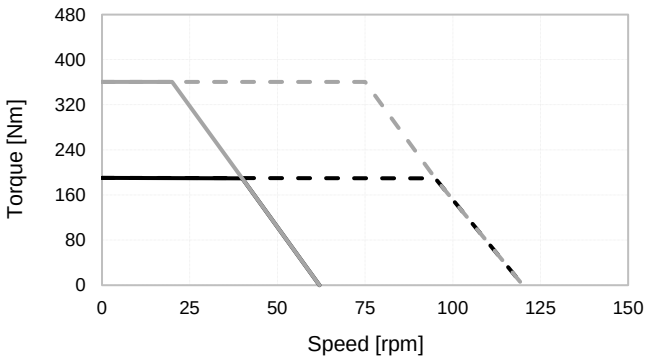

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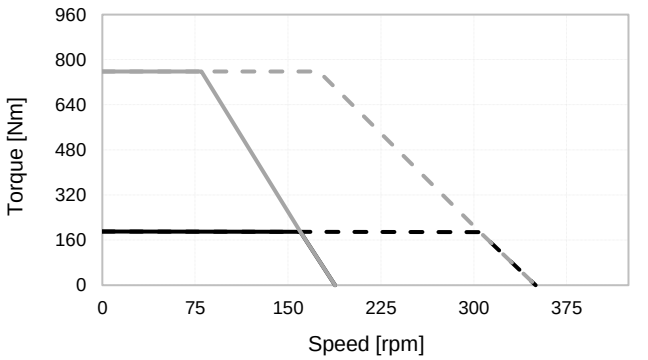

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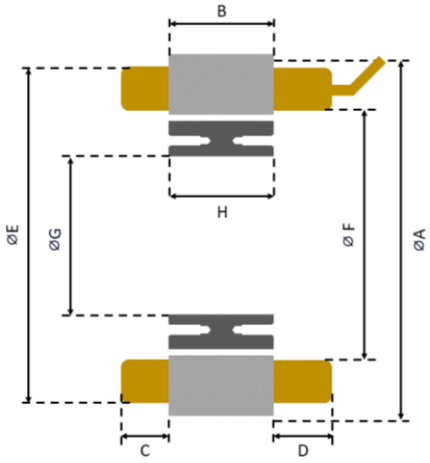
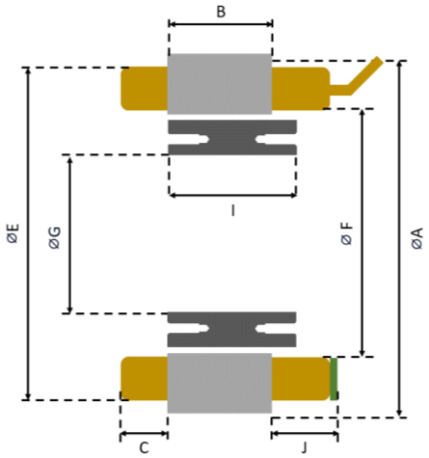
TM(L/H)-290 Outline Drawing





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)-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 details refer to MDS Motor mounting documents)

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