

Motor Parameters		Symbols	Units	WTRM-390-L-035		WTRM-390-L-070		WTRM-390-L-140	
PERFORMANCE	DC Bus Voltage	$V_{DC}$	V	24	48	24	48	24	48
	Rated Torque	$T_r$	Nm	179.3		359.6		541.1	
	Peak Torque	$T_{peak}$	Nm	262.4		527.1		717.4	
	Rated Speed	$N_r$	rpm	50	135	25	80	20	60
	No-Load Speed	$N_{no-load}$	rpm	100	200	60	125	40	85
	Torque Constant	$K_t$	Nm/A	2.39		3.83		5.77	
	Voltage Constant	$K_v$	V/rpm	0.207		0.331		0.496	
	Max. Cogging Torque	$T_{cog}$	%			<1			
	Torque Ripple	$T_{ripple}$	%			<1			
	Number of Pole	$2p$	--			64			
ELECTRICAL	Rated Current	$I_r$	$A_{rms}$	75		94		93.8	
	Peak Current	$I_{peak}$	$A_{rms}$	112.5		141		125	
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	0.1 ( $\pm 20\%$ )		0.11 ( $\pm 20\%$ )		0.08 ( $\pm 20\%$ )	
	Line Inductance	$L_{LL}@60Hz$	mH	0.48 ( $\pm 30\%$ )		0.55 ( $\pm 30\%$ )		0.59 ( $\pm 30\%$ )	
MECHANICAL & THERMAL	Total Weight	$W_{total}$	kg	16.93		30.25		57.17	
	Mech. Time Constant	$K_{mech}$	ms	2.49		2.11		1.48	
	Thermal Resistance <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.051		0.027		0.015	
	Inertia	$J$	$kg.m^2$	0.12		0.2406		0.4818	
	Water Inlet Temp.	$T_w$	$^{\circ}C$			20			
	Water Temp. Diff. Between Inlet-Outlet	$\Delta T_w$	$^{\circ}C$	2.4		3.1		1.6	
	Min. Water Volumetric Flow Rate	$q_w$	l/min	7.8		10.4		16.2	
	Pressure Drop for $q_w$	$\Delta P_w$	bar	0.1984		0.1873		0.2790	
	Environment Temp.	$T_{env}$	$^{\circ}C$			20			
	Rotor ID	$R_{ID}$	mm			290			

Motor Parameters		Symbols	Units	WTRM-390-H-035		WTRM-390-H-070		WTRM-390-H-140	
PERFORMANCE	DC Bus Voltage	$V_{DC}$	V	310	560	310	560	310	560
	Rated Torque	$T_r$	Nm	226.7		447.4		886.9	
	Peak Torque	$T_{peak}$	Nm	378.3		747.5		1483	
	Rated Speed	$N_r$	rpm	145	290	115	225	85	175
	No-Load Speed	$N_{no-load}$	rpm	240	435	180	325	135	245
	Torque Constant	$K_t$	Nm/A	12.77		17.04		22.74	
	Voltage Constant	$K_v$	V/rpm	1.116		1.488		1.985	
	Max. Cogging Torque	$T_{cog}$	%			<1			
	Torque Ripple	$T_{ripple}$	%			<1			
	Number of Pole	$2p$	--			64			
ELECTRICAL	Rated Current	$I_r$	$A_{rms}$	17.8		26.3		39	
	Peak Current	$I_{peak}$	$A_{rms}$	32		47.3		70.2	
	Line Resistance	$R_{LL}@25^{\circ}C$	Ohm	2.8 ( $\pm 20\%$ )		1.82 ( $\pm 20\%$ )		1.35 ( $\pm 20\%$ )	
	Line Inductance	$L_{LL}@60Hz$	mH	13.7 ( $\pm 30\%$ )		11.2 ( $\pm 30\%$ )		9.4 ( $\pm 30\%$ )	
MECHANICAL & THERMAL	Total Weight	$W_{total}$	kg	16.93		30.25		57.17	
	Mech. Time Constant	$K_{mech}$	ms	2.47		1.81		1.50	
	Thermal Resistance <sup>(2)</sup>	$R_{th}$	$^{\circ}C/W$	0.051		0.027		0.015	
	Inertia	$J$	$kg.m^2$	0.12		0.2406		0.4818	
	Water Inlet Temp.	$T_w$	$^{\circ}C$			20			
	Water Temp. Diff. Between Inlet-Outlet	$\Delta T_w$	$^{\circ}C$	4.0		4.2		4.4	
	Min. Water Volumetric Flow Rate	$q_w$	l/min	7.8		10.4		16.2	
	Pressure Drop for $q_w$	$\Delta P_w$	bar	0.1984		0.1873		0.2790	
	Environment Temp.	$T_{env}$	$^{\circ}C$			20			
	Rotor ID	$R_{ID}$	mm			290			

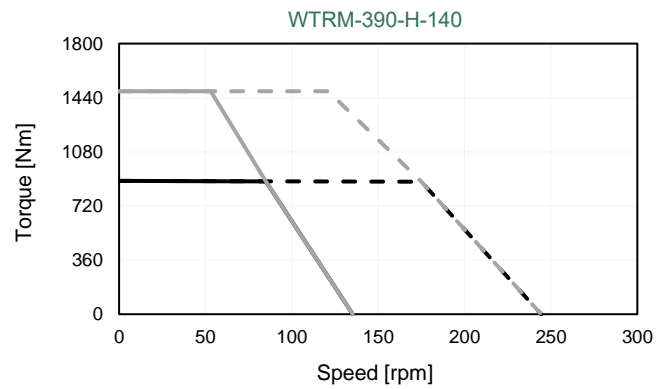
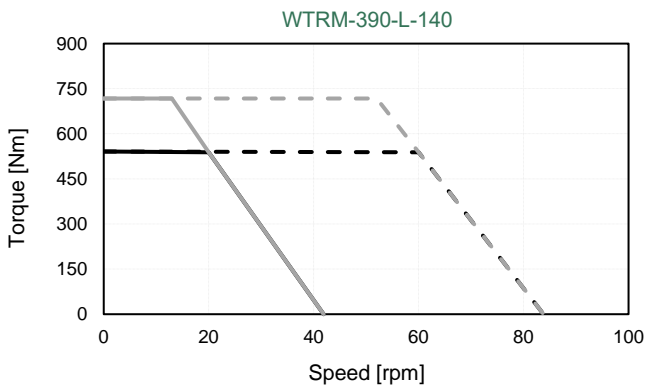
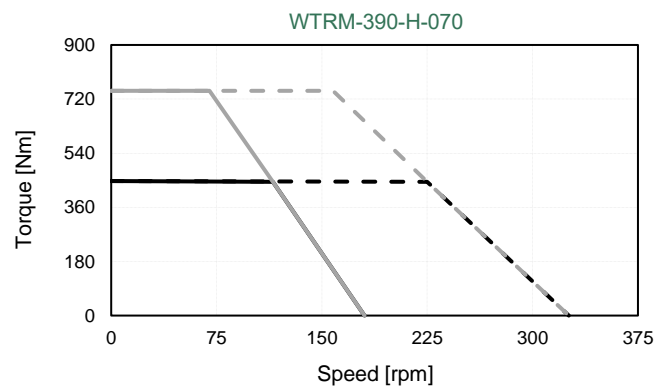
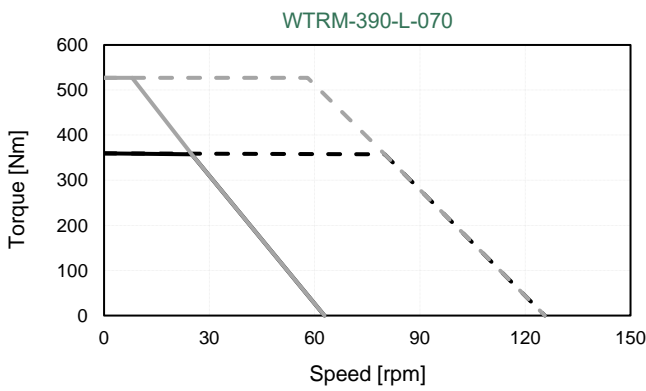
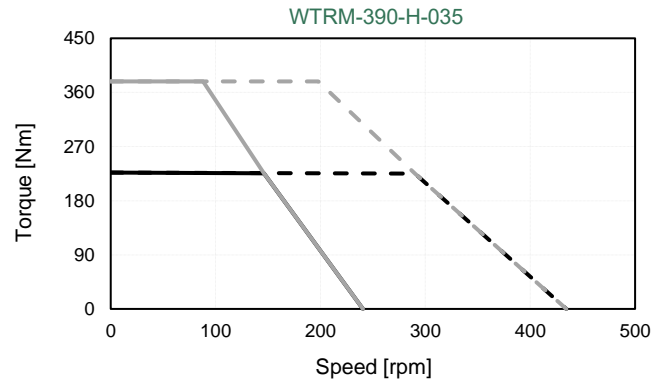
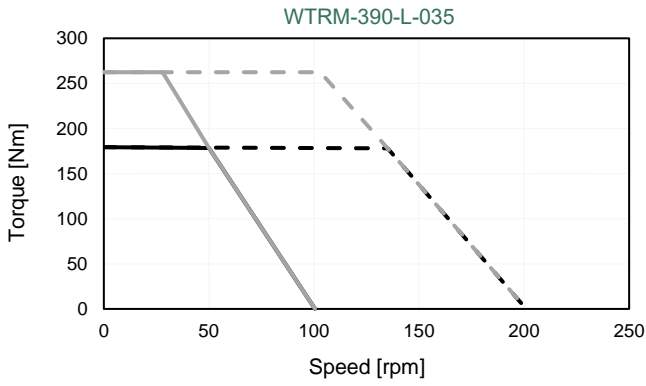
1. All performance and electrical specifications are obtained at 25°C ambient and may change  $\pm 10\%$ . 2. Maximum coil temperature is 130°C. 3. All data referenced to sinusoidal commutation. 4. Higher torque and speed values as well as dimensions on request.

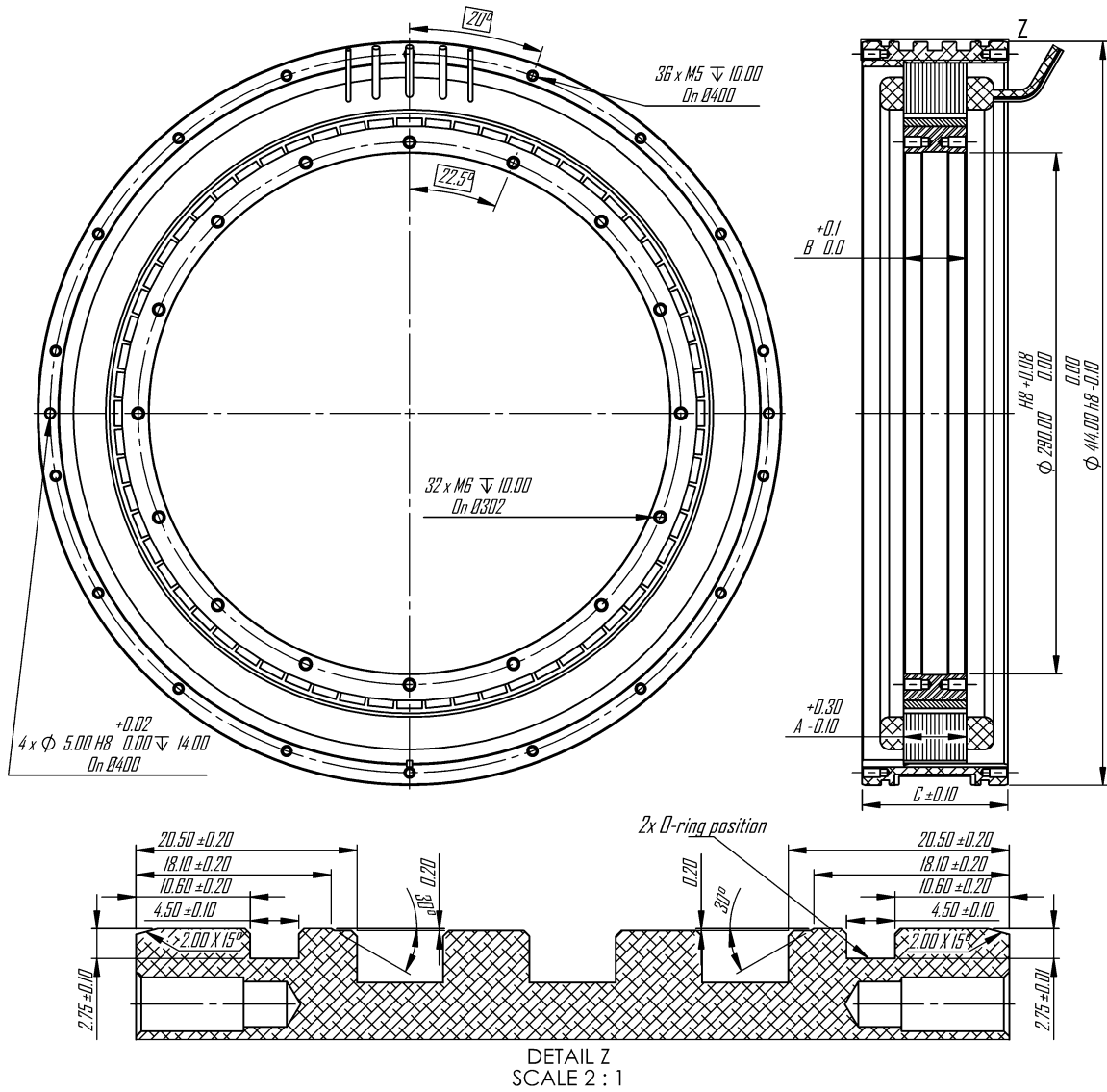
# WTRM-390-(L/H)-Torque-Speed Curves

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)
WTRM-(L/H)-390-035	35	35.1	81
WTRM-(L/H)-390-070	70	70.2	116
WTRM-(L/H)-390-140	140	140.4	186

All dimensions in mm

**Notes:**

**MOTOR LEADS:**

WTRM-390-L: #5 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.  
 WTRM-390-H: #9 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.

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