WTRM-360 Technical Information

	Motor Parameters	Symbols	Units	WTRM-360-L-035		WTRM-360-L-070		WTRM-360-L-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	24	48	24	48	24	48
	Rated Torque	T_r	Nm	150.5		297.8		451.6	
	Peak Torque	T_{peak}	Nm	222.4		440.2		600.4	
	Rated Speed	N_r	rpm	55	150	30	90	20	65
	No-Load Speed	$N_{no-load}$	rpm	110	225	70	140	45	90
	Torque Constant	K_t	Nm/A	2.19		3.51		5.28	
	Voltage Constant	K_v	V/rpm	0.184		0.301		0.452	
	Max. Cogging Torque	T_{cog}	%	<1					
	Torque Ripple	T_{ripple}	%	<1					
ELECTRICAL	Number of Pole	2p	--	64					
	Rated Current	I_r	A_{rms}	68.6		84.8		85.5	
	Peak Current	I_{peak}	A_{rms}	102.9		127.2		114	
	Line Resistance	R_{LL}@25°C	Ohm	0.11 (±20%)		0.1 (±20%)		0.09 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	0.44 (±30%)		0.56 (±30%)		0.59 (±30%)	
MECHANICAL & THERMAL	Total Weight	W_{total}	kg	14.40		25.51		47.70	
	Mech. Time Constant	K_{mech}	ms	2.58		1.90		1.51	
	Thermal Resistance (2)	R_{th}	°C/W	0.051		0.028		0.015	
	Inertia	J	$kg.m^2$	0.0919		0.1845		0.3697	
	Water Inlet Temp.	T_w	°C	20					
	Water Temp. Diff. Between Inlet-Outlet	ΔT_w	°C	2.6		2.7		1.5	
	Min. Water Volumetric Flow Rate	q_w	l/min	6.9		9.7		15.2	
	Pressure Drop for qw	ΔP_w	bar	0.1535		0.1590		0.2410	
	Environment Temp.	T_{env}	°C	20					
	Rotor ID	R_{ID}	mm	270					

	Motor Parameters	Symbols	Units	WTRM-360-H-035		WTRM-360-H-070		WTRM-360-H-140	
PERFORMANCE	DC Bus Voltage	V_{DC}	V	310	560	310	560	310	560
	Rated Torque	T_r	Nm	186.4		373.2		741.4	
	Peak Torque	T_{peak}	Nm	316.6		632.8		1262.1	
	Rated Speed	N_r	rpm	155	305	125	250	90	185
	No-Load Speed	$N_{no-load}$	rpm	255	460	200	360	150	270
	Torque Constant	K_t	Nm/A	12.22		15.71		20.88	
	Voltage Constant	K_v	V/rpm	1.054		1.356		1.809	
	Max. Cogging Torque	T_{cog}	%	<1					
	Torque Ripple	T_{ripple}	%	<1					
ELECTRICAL	Number of Pole	2p	--	64					
	Rated Current	I_r	A_{rms}	15.3		23.8		35.5	
	Peak Current	I_{peak}	A_{rms}	27.5		42.8		63.9	
	Line Resistance	R_{LL}@25°C	Ohm	3.38 (±20%)		2.1 (±20%)		1.54 (±20%)	
	Line Inductance	L_{LL}@60Hz	mH	15.1 (±30%)		11.4 (±30%)		9.7 (±30%)	
MECHANICAL & THERMAL	Total Weight	W_{total}	kg	14.40		25.51		47.70	
	Mech. Time Constant	K_{mech}	ms	2.52		1.90		1.58	
	Thermal Resistance (2)	R_{th}	°C/W	0.051		0.028		0.015	
	Inertia	J	$kg.m^2$	0.0919		0.1845		0.3697	
	Water Inlet Temp.	T_w	°C	20					
	Water Temp. Diff. Between Inlet-Outlet	ΔT_w	°C	4.0		4.3		4.5	
	Min. Water Volumetric Flow Rate	q_w	l/min	6.9		9.7		15.2	
	Pressure Drop for qw	ΔP_w	bar	0.1535		0.1590		0.2410	
	Environment Temp.	T_{env}	°C	20					
	Rotor ID	R_{ID}	mm	270					

1. All performance and electrical specifications are obtained at 25°C ambient and may change ±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.

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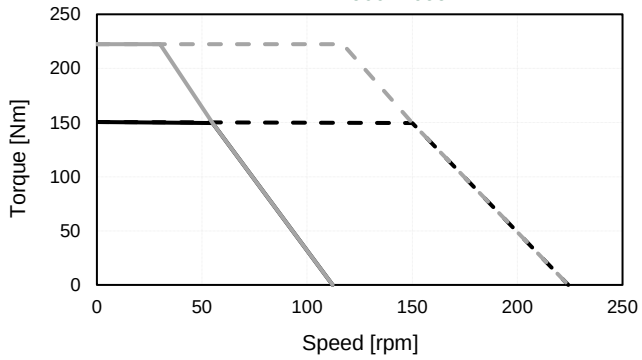
WTRM-360-(L/H)-Torque-Speed Curves

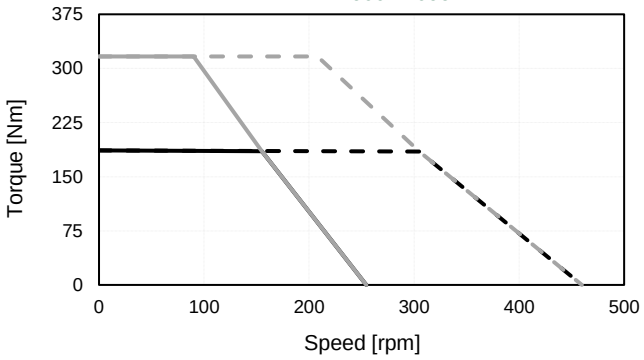
Tr: Rated Torque
Tp: Peak Torque

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

WTRM-360-L-035



WTRM-360-H-035



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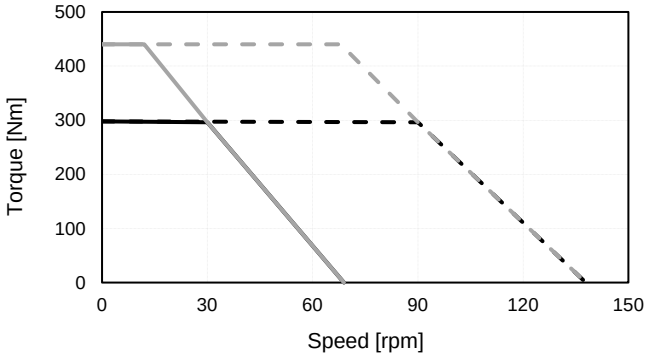

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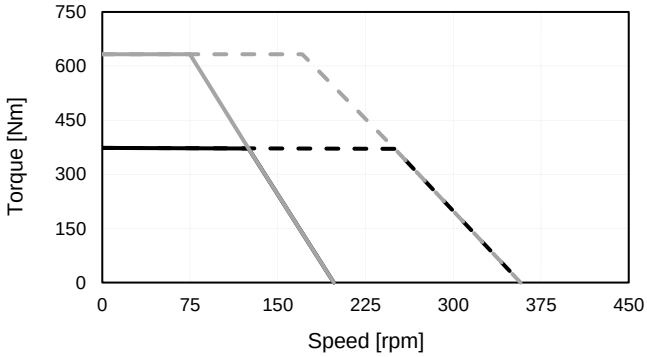

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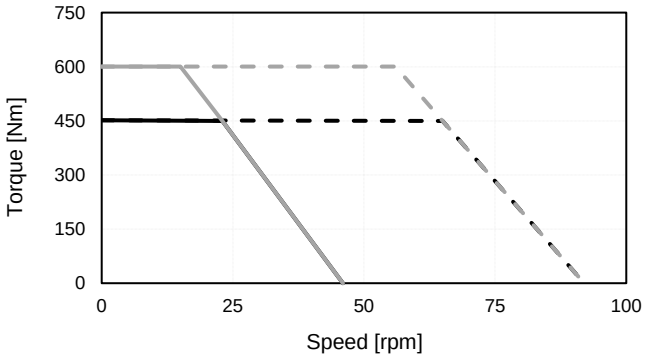
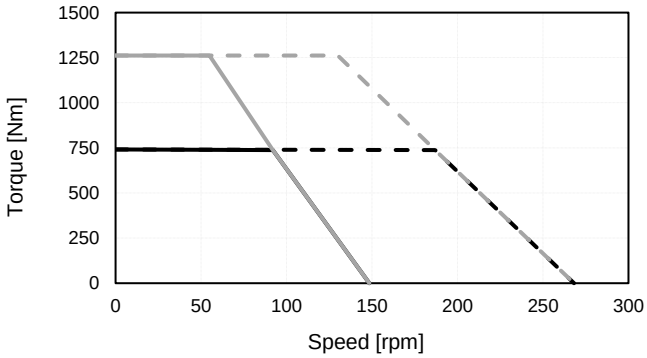


WTRM-360-H-140



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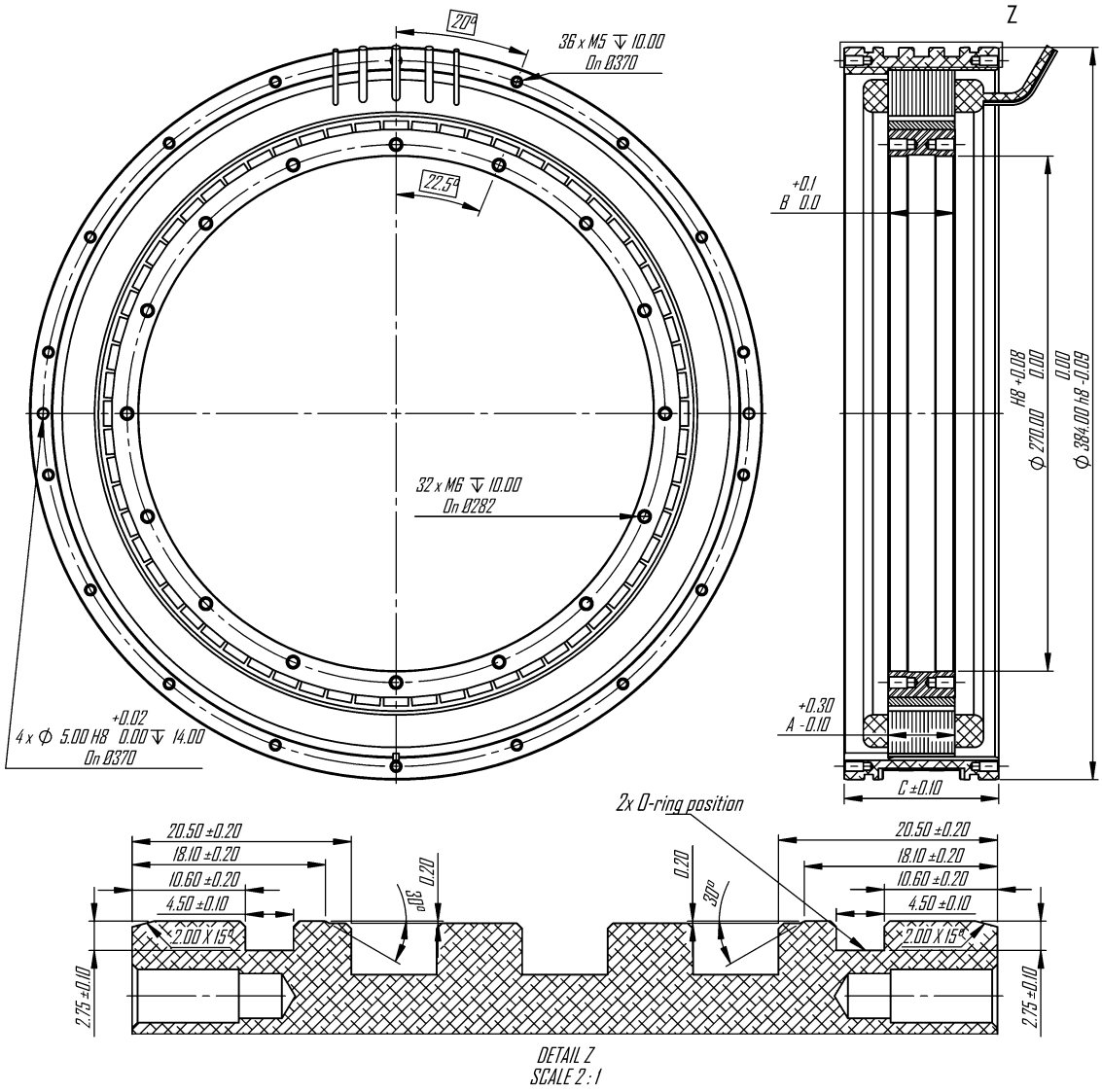
WTRM-360-(L/H) Outline Drawing



Model	A	B	C
	(mm)	(mm)	(mm)
WTRM-(L/H)-360-035	35	35.1	81
WTRM-(L/H)-360-070	70	70.2	116
WTRM-(L/H)-360-140	140	140.4	186

All dimensions in mm

Notes:

MOTOR LEADS:
WTRM-360-L: #5 AWG Teflon® insulated, 500 mm (optional) length, 1-Red, 1-White, 1-Black.
WTRM-360-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)