

MAGNAMAX®

TYPICAL SUBMITTAL DATA

BASE MODEL: 744RSL4057

Winding: 740066

Date: 02/11/22

Kilowatt ratings at	1800 RPM	60 Hertz	4 Bus Bars		
kW (kVA)	3 Phase	0.8 Power Factor		Dripproof or Open Enclosure	
	CONTINUOUS ^{1, 2}			STANDBY ^{1, 2}	
Voltage*	NEMA B / 80 °C	NEMA F / 105 °C	NEMA H / 125 °C	NEMA F / 130 °C	NEMA H / 150 °C
480	1760 (2200)	2100 (2625)	2270 (2838)	2320 (2900)	2370 (2963)
440	1690 (2113)	1990 (2488)	2140 (2675)	2180 (2725)	2340 (2925)
416	1640 (2050)	1920 (2400)	2050 (2563)	2090 (2613)	2240 (2800)
400	1600 (2000)	1863 (2329)	1988 (2485)	2028 (2535)	2165 (2706)
380	1550 (1938)	1790 (2238)	1910 (2388)	1950 (2438)	2070 (2588)

① Rise by resistance method, Mil-Std-705, Method 680.1b.

② Machine rated for Max Ambient of 40 °C, Max Altitude 3300 ft

Submittal Data: 416 Volts*, 2090 kW, 2613 kVA, 0.8 P.F., 1800 RPM, 60 Hz, 3 Phase

High Wye CONNECTION

Mil-Std-705B Method	Description	Value	Units	Mil-Std-705C Method	Description	Value	Units
301.1b	Insulation Resistance	>1.5 Meg	Ohms	505.3b	Overspeed	2250	RPM
302.1a	High Potential Test			507.1c	Phase Sequence CCW-ODE	ABC	
	Main Stator	1960	Volts	508.1c	Voltage Balance, L-L or L-N	0.2%	
	Main Rotor	1500	Volts	601.4a	L-L Harmonic Max - Total (Distortion Factor)	5.0%	
	Exciter Stator	1500	Volts				
	Exciter Rotor	1500	Volts	601.4a	L-L Harmonic Max - Single	3.0%	
PMG Stator	1500	Volts	601.1c	Deviation Factor	5.0%		
401.1a	Stator Resistance, Line to Line High Wye Connection	0.00120	Ohms	---	TIF (1960 Weightings)	<50	
				---	THF (IEC, BS & NEMA Weightings)	<2%	
	Rotor Resistance	1.245	Ohms	---	Winding Pitch	2/3	
	Exciter Stator	19.44	Ohms				
	Exciter Rotor	0.071	Ohms				
	PMG Stator	2.1	Ohms				
410.1a	No Load Exciter Field Amps at 416 Volts Line to Line	0.79	A DC	Additional Prototype Mil-Std Methods are Available on Request.			
420.1a	Short Circuit Ratio	0.627					
421.1a	Xd Synchronous Reactance	2.331	PU	--	Generator Frame	744	
		0.154	Ohms	--	Type	MagnaMax	
422.1a	X2 Negative Sequence React.	0.214	PU	--	Insulation	Class H	
		0.014	Ohms	--	Coupling - Single Bearing	Flexible	
423.1a	X0 Zero Sequence Reactance	0.169	PU	--	Amortisseur Windings	Full	
		0.011	Ohms	--	Excitation	Ext. Voltage Regulated, Brushless	
425.1a	X'd Transient Reactance	0.154	PU	--	Voltage Regulator	DVR2400	
		0.010	Ohms	--	Voltage Regulation	0.25%	
426.1a	X''d Subtransient Reactance	0.132	PU				
		0.009	Ohms				
--	Xq Quadrature Synchronous Reactance	1.391	PU	--	Cooling Air Volume	3000	CFM
		0.092	Ohms	--	Heat rejection rate	4491	Btu's/min
427.1a	T'd Transient Short Circuit Time Constant	0.181	Sec	--	Full load current	3625.8	Amps
				--	Minimum Input hp required	2907.4	HP
428.1a	T''d Subtransient Short Circuit Time Constant	0.029	Sec	--	Full load torque	8480	Lb-ft
				--	Efficiency at rated load :	96.4%	
430.1a	T'do Transient Open Circuit Time Constant	3.267	Sec				
432.1a	Ta Short Circuit Time Constant of Armature Winding	0.022	Sec	--	Weight	9740	lbs

* Voltages refer to wye (star) connection, unless otherwise specified.

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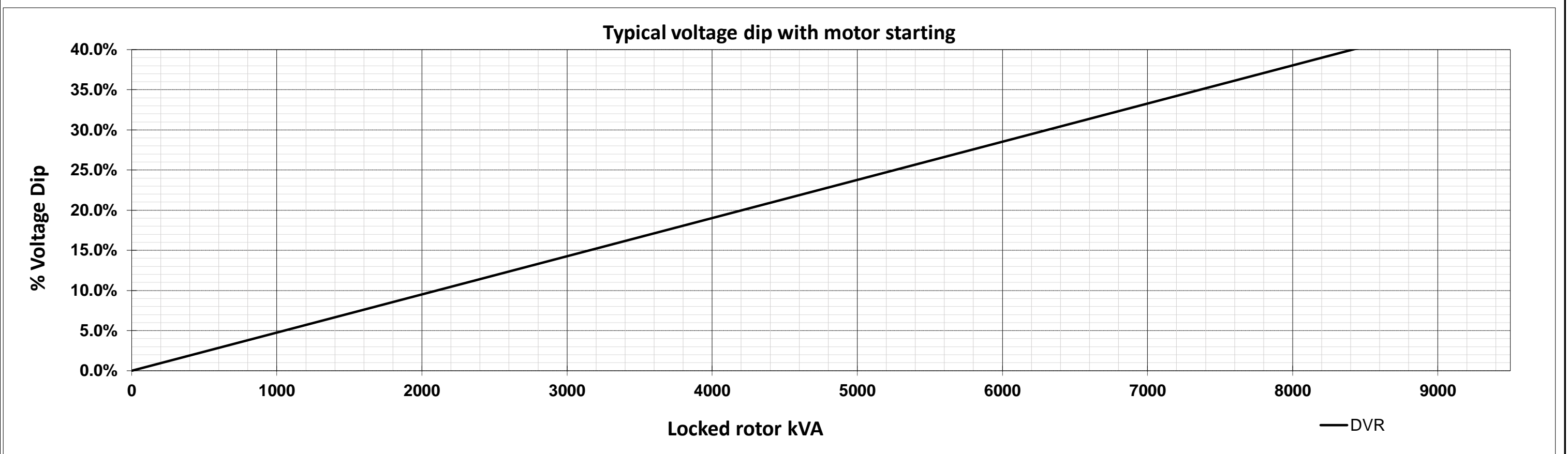
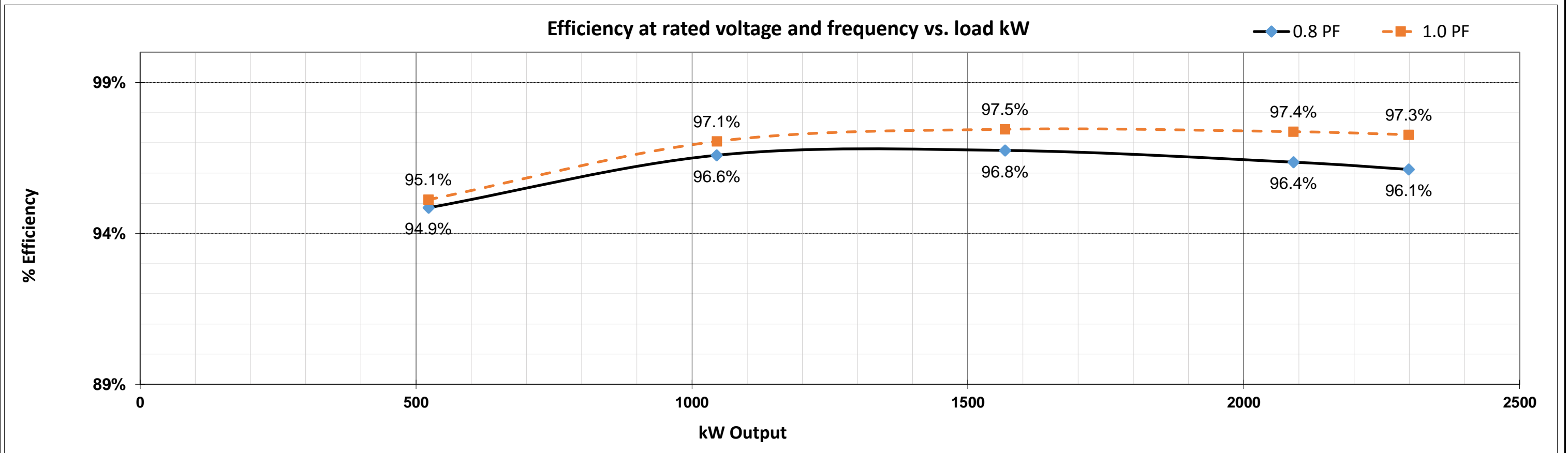
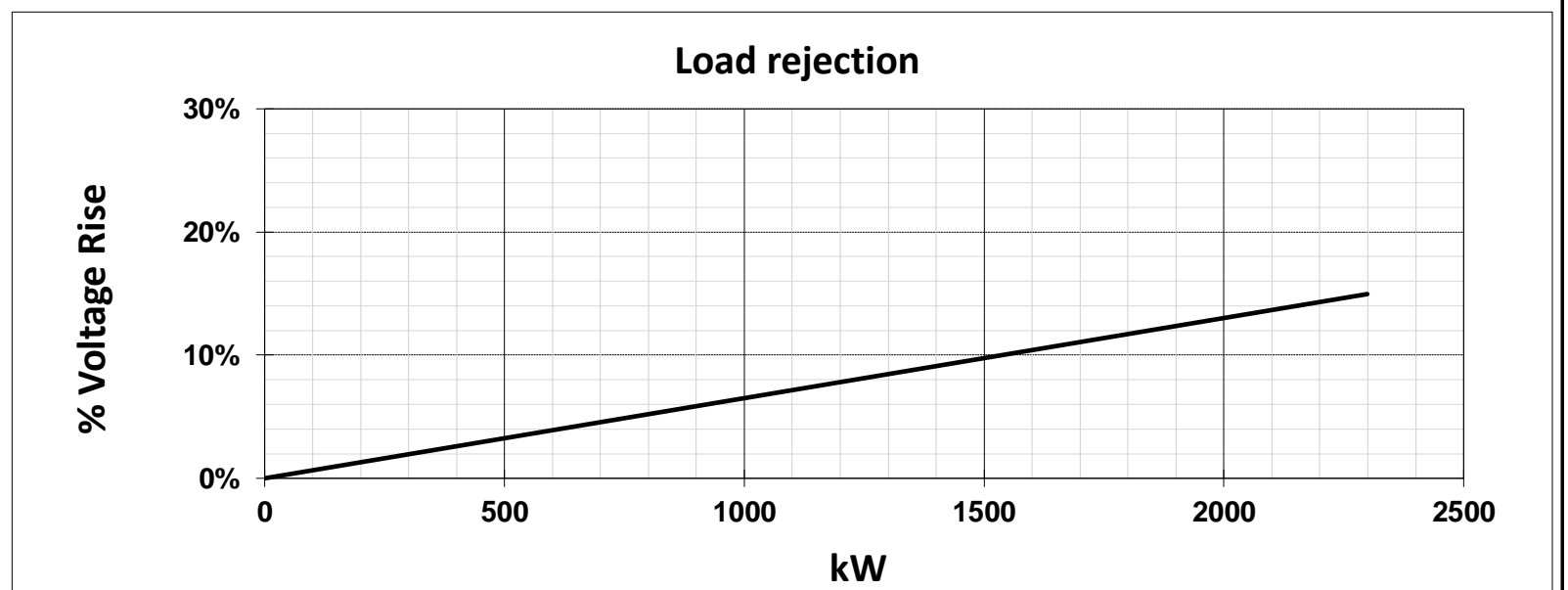
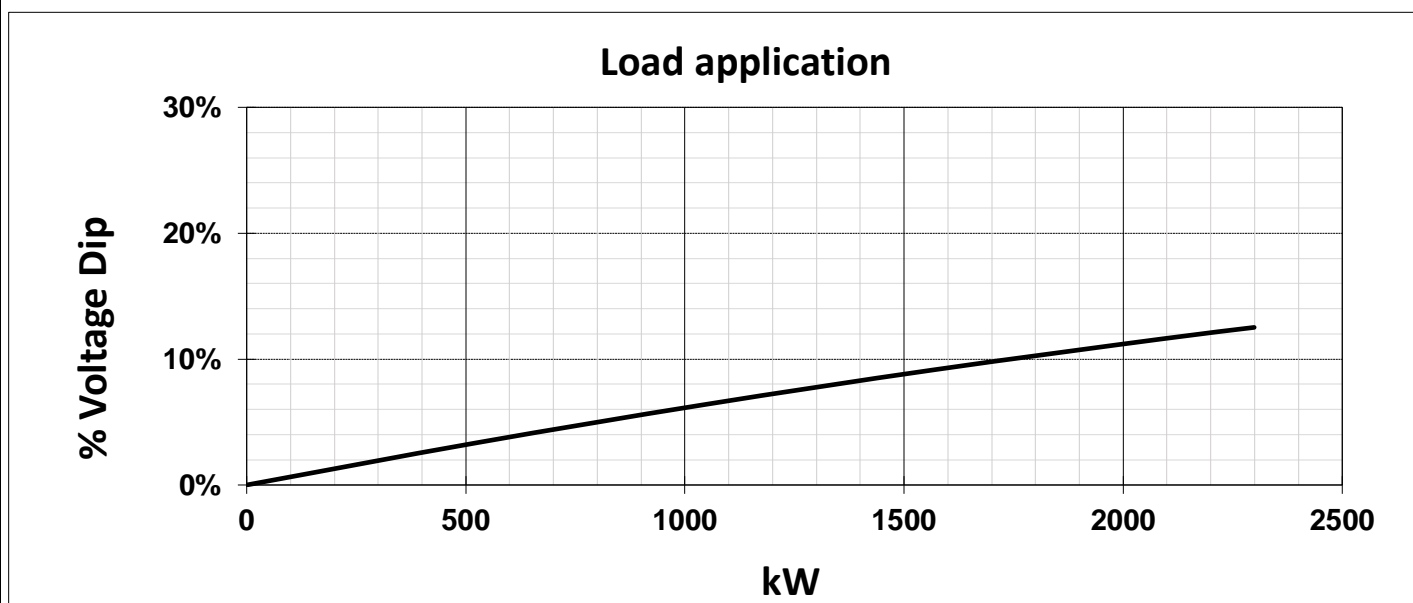
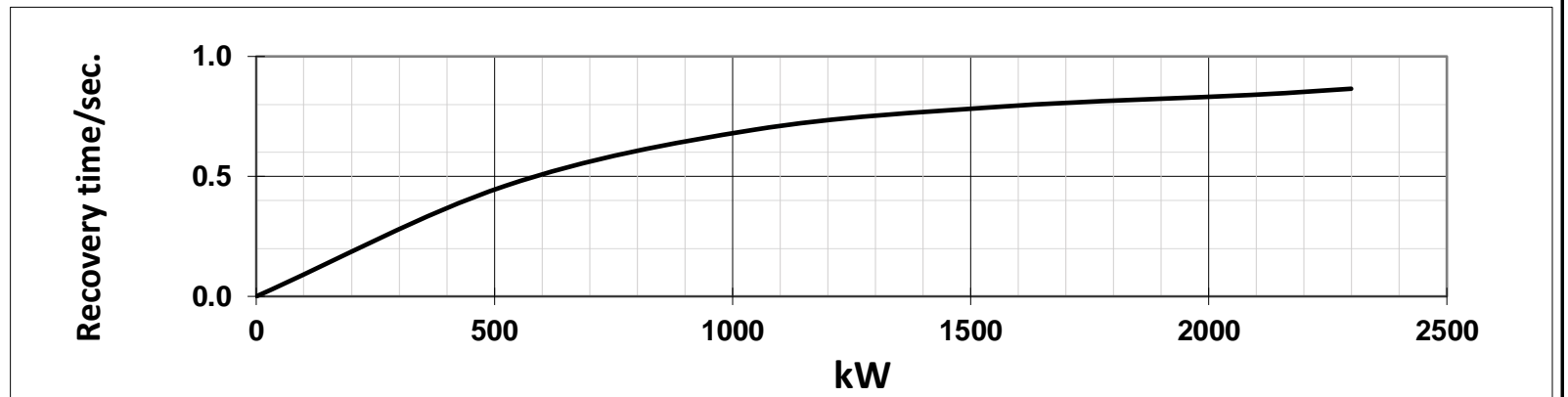
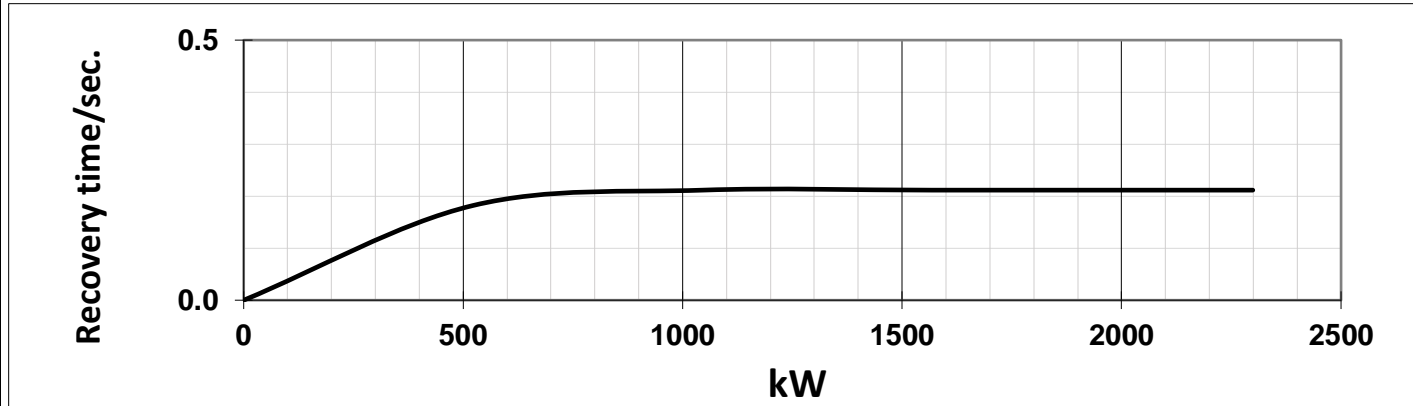
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TYPICAL DYNAMIC CHARACTERISTICS

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DECREMENT CURVE

BASE MODEL: 744RSL4057

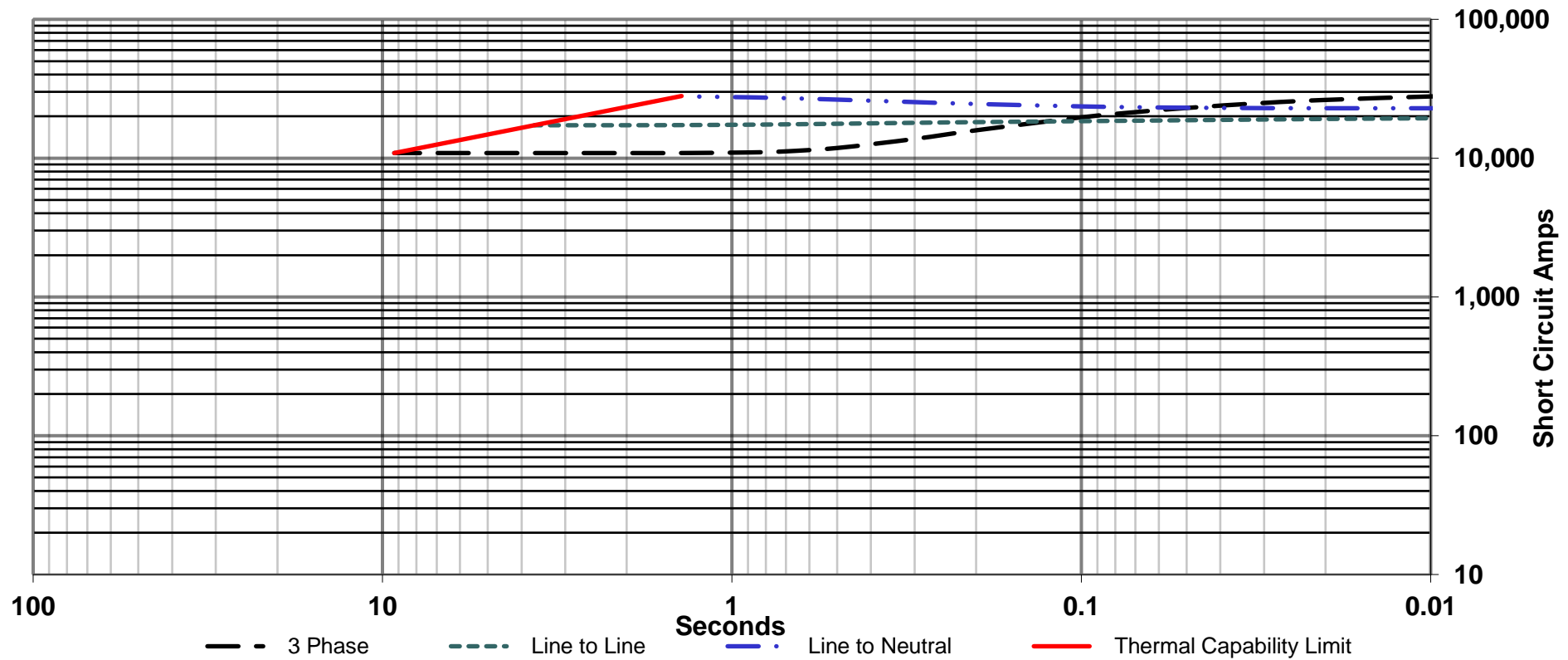
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Full Load Current : 3625.8 amps
Steady State S.C. Current : 10877.4 amps

Max. 3 ph. Symm. S.C. Current : 27426 amps
INCLUDES EXCITATION SUPPORT (PMG)

Symmetrical Component values, Maximum Asymmetrical Values Are 1.732 Times Symmetrical Values



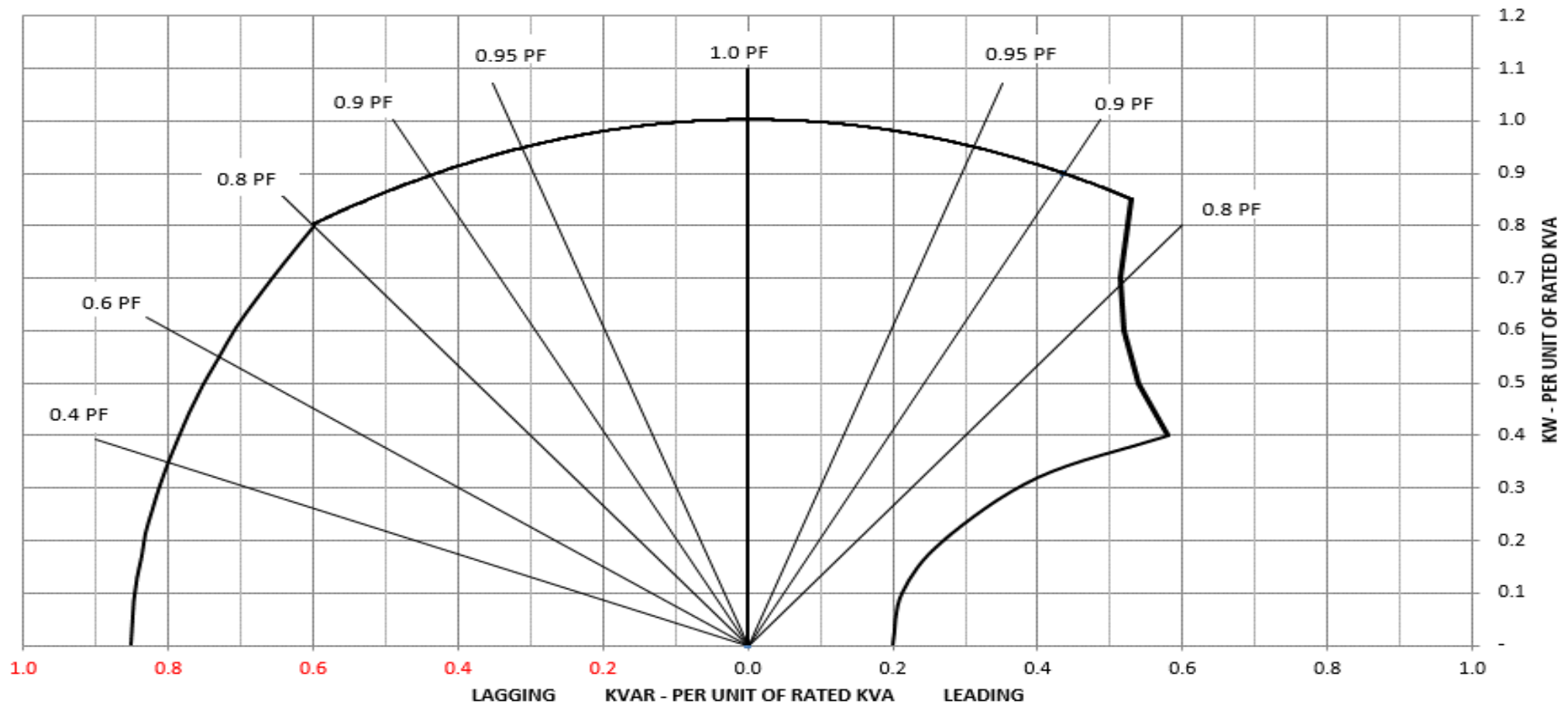
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Typical Reactive Capability Curve

Date : 02/11/22



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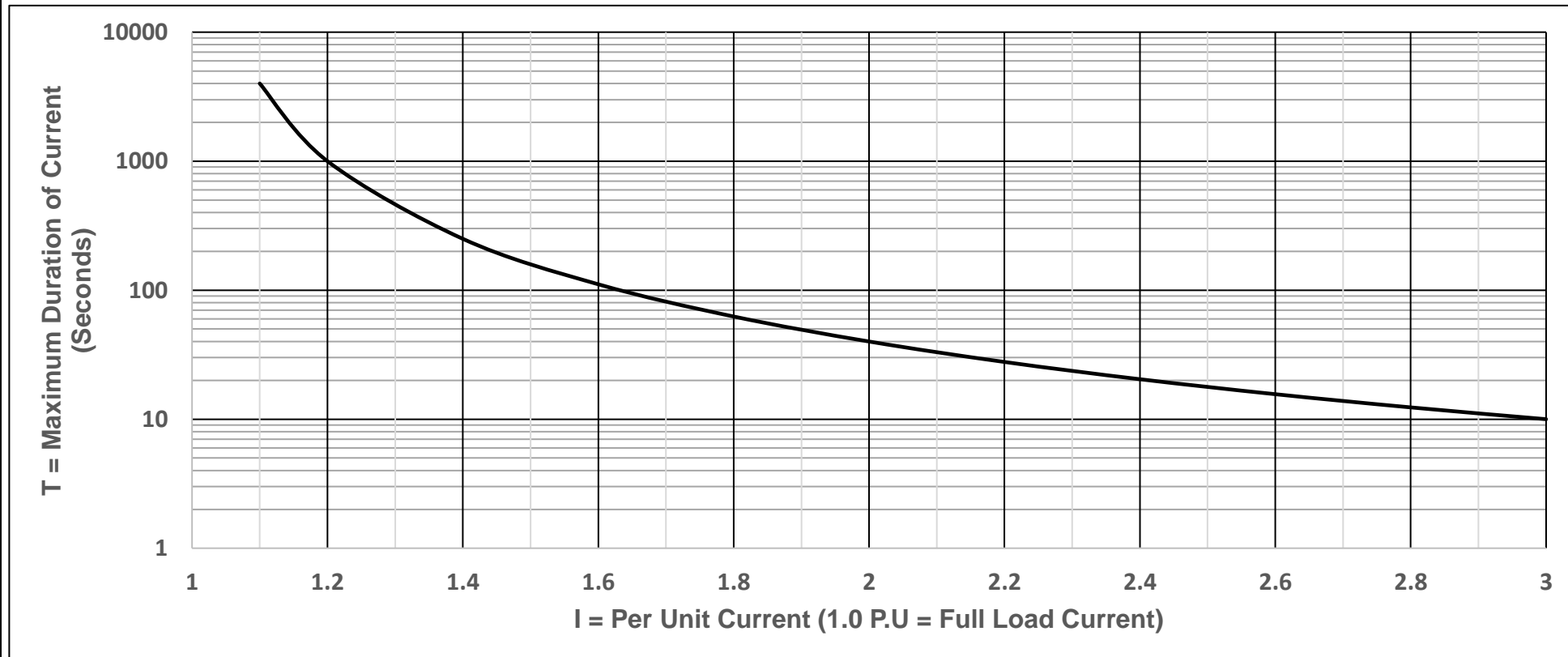
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THERMAL DAMAGE CURVE

Date : 02/11/22

Base is 3.0 P.U. current for 10 seconds from $T = 40/(I-1)^2$
Windings at operating temperature



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