SyMAX™ IHP
VS.
A TYPICAL INDUCTION MOTOR

FUNCTION	INDUCTION MOTOR	SyMAX™ IHP	BENEFITS
Energy Efficiency	Average	**Ultra-Efficient™**	SyMAX™ IHP offers increased efficiency with greater payback, meets IE4 levels and has 15% fewer losses than NEMA Premium
System Efficiency	Low	**High**	SyMAX™ IHP may eliminate transmission devices such as sheaves and belts, chains, gearboxes and coupling accessories in certain applications resulting in better machine efficiency
Performance Matched™	No	**Yes**	SyMAX™ IHP is Performance Matched™ to today's state-of-the-art PWM permanent magnet drives
Insulation System	Class F (Class B rise)	**Class H MAX GUARD®** (Class B rise)	The patented MAX GUARD® insulation system protects the motor from the destructive forces associated with the high switching frequencies of PWM drives
Torque-to-Inertia Ratio	Low	**High**	SyMAX™ IHP offers a higher dynamic response. This dynamic response results in consistent and repeatable machine performance creating less product variation and resulting in a higher quality product and higher production rates
Torque	Variable and Limited Constant	**Variable and Constant**	SyMAX™ IHP delivers variable or constant torque from zero to rated speed
Speed Range	4:1	**1000:1**	Greater speed range allows for greater application capability
Cogging at Low Speed	Low	**Low**	With SyMAX™ IHP there is no cogging at any speed
Sound	Low	**Low**	SyMAX™ IHP meets NEMA MG1 9.17 Table 43, IEEE841, Chrysler, GM 7E-TA and Ford EM1
Power Factor	Low	**High**	The SyMAX™ IHP design has a higher power factor, thus reducing energy bills due to cable and transformer losses and the voltage drops associated with induction motors
Vibration	Average	**Low**	SyMAX™ IHP is precision balanced resulting in a lower vibration profile than the equivalent induction motor
Operating Temperature	High	**Low**	SyMAX™ IHP runs cooler than a standard induction motor increasing the life of the motor
Enclosure	IP43	**IP55**	SyMAX™ IHP is a mission critical motor designed for the harshest environments
Weight	Heavy	**Light**	SyMAX™ IHP is lighter than an equivalent induction motor, reducing shipping cost and making it easier to handle
Maintenance	Low	**Lower**	SyMAX™ IHP has low losses in the rotor, decreased operating temperature of the bearings and lengthened lubrication intervals resulting in longer motor life
Warranty	12-24 months	**3 years**	SyMAX™ IHP has one of the longest warranties in the industry

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SyMAX™ IHP vs. BLUE CHIP XRI®

SPECIFICATIONS	FEATURES	BLUE CHIP XRI®	SYMAX™ IHP
Voltage	230/460V through 100 HP, 460V 125 HP and larger, 575V available	●	
	230, 460, 575V, custom voltages available		●
Efficiency	NEMA Premium (IE3)	●	
	Ultra-Efficient™ (IE4)		●
Speed Range	100:1 Variable torque	●	●
	20:1 Constant torque (1-40hp)	●	
	2:1 Constant torque (50hp & larger)	●	
	20:1 Constant torque (all ratings) – open loop		●
	2000:1 Constant torque (all ratings) – closed loop		●
Service Factor	1.0 service factor on VFD power	●	●
IP Protection	IP43	●	
	IP55		●
Enclosures	Totally Enclosed Non Ventilated		●
	Totally Enclosed Fan Cooled	●	●
	Open Drip Proof	●	
Construction	Cast iron	●	●
	Rolled steel frame (56-210)	●	
Epoxy Coatings	Internal and external corrosion resistant epoxy		●
Hardware	Corrosion resistant zinc dichromate plated hex head hardware	●	●
	Lifting provisions, 182 and larger	●	●
Fan Guard	Polypropylene	●	
	Cast iron		●
Fan (External)	Non-sparking polypropylene (TEFC)	●	●
Drains	Drilled and tapped hole	●	
	Corrosion resistant brass drain and breather		●
Seals	Molded neoprene slinger on shaft end	●	●
	V-Ring Forsheda® Seal		●
Conduit Box	Steel (56-326T), cast iron (364T and larger), no gaskets	●	
	Cast iron with gaskets		●
Ground	Ground lug in conduit box	●	●
	Ground lug provision on motor frame/foot		●
Termination System	Flying leads (lead lugs 364 and larger)	●	
	Finger safe terminal blocks (180-210), stud type (250 and larger)		●
Lubrication	Zerk fittings		●
	Extended grease tubes		●
Bearings	Shielded ball bearings	●	●
	EXXON Polyrex EM grease	●	●
Bearing Caps	Cast iron (440 and larger)	●	
	Cast iron (all frames)		●
Insulation Process	Dip & Bake varnish	●	
	Roll-Dip Resin system		●
Insulation System	Non-hygroscopic Class F system 143-445, Class H 447/9	●	
	MAX GUARD® / Class H system with Class B rise		●
Balance & Vibration	Standard (per NEMA)	●	
	Precision Balance, .08 inches per second		●
Motor Testing	Actual short commercial test data supplied with each motor	●	
	No load test plus “birth report”		●
Agency Listings	UL Recognized, CSA Certified, CE Mark	●	●
Warranty	36 months from date of first use, 42 months from date of manufacture	●	●

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