

Open Motors (IP23 or IP24)



Enclosed Motors (IP54)



Specialty Products



AboveNEMA Motor Features at a Glance

Construction Features			Construction Features			Construction Features		
Standard/Enclosure	ODP/WPI (IC01)	WPII (IC01)	TEWAC (ICW81)	TEFC (IC411)	TEAAC (IC611 or IC616)	IEEE 841	API 541 5th Edition/API 547 (IC01, IC611, IC616, IC666, IC81W, IC411, IC416)	Vertical ODP/WPI, WPII, TEFC, TEAAC (IC01, IC411, IC611, IC616)
Degree of Protection	IP23	IP24	IP54/IP55 (SH630/SH710/SH800)	IP54/IP55 (SH400-SH560)	IP54/IP55 (SH630/SH710/SH800)	IP55	All	All
HP Range	200 - 9,000 HP	200 - 28,000 HP	200 - 28,000 HP	200 - 3,000 HP	200 - 19,000 HP	200 - 500 HP	250 - 28,000 HP	200 - 4,500 HP (ODP-WPII), 200 - 3,000 HP (TEFC, TEAAC)
Frame Size/Shaft Height (SH)	500, 580, 680, 800	500, 580, 680, 800, SH630, SH710, SH800	580, 680, 800, SH630, SH710, SH800	500, 580, SH400, SH450, 880	580, 680, 800, SH630, SH710, SH800	500, 580	All	500, 580, 680, 800
Voltage	380 - 13,200 V (460-690 V to 800 HP only)	380 - 13,200 V (380-690 V to 800 HP only)	380 - 13,200 V (380-690 V to 800 HP only)	380 - 11,000 V (380 - 690 V to 800 HP, to 2250 HP w/VFD)	380 - 13,200 V (380-690 V to 800 HP only)	460 - 4,000 V	2,300 - 13,200 V	2,300 - 7,200 V (500, 580 frames), 2,300 - 13,200 V (680, 800 frames)
Service Factor	1.0 (1.15 optional)	1.0 (1.15 optional)	1.0 (1.15 optional)	1.0 (1.15 optional)	1.0 (1.15 optional)	1.0	1.0 (1.15 optional)	1.0 (1.15 optional)
Warranty	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)	24 months from date of manufacture Deferred and/or Extended Warranty (optional)
Construction Materials			Construction Materials			Construction Materials		
Frame	Cast Iron	Cast Iron - 500-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron - 580-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron	Cast Iron - 580-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron	Cast Iron - 500/800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron
Bearing Housings	Cast Iron	Cast Iron - 500-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron - 580-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron - 500-880 frames Fabricated Steel - SH400 - 880	Cast Iron - 580-800 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron	Cast Iron - 500-580 frames Fabricated Steel - SH630/SH710/SH800	Cast Iron
Main Terminal Box	Cast Iron Fabricated Steel (optional)	Cast Iron - 500-800 frames Fabricated Steel (optional) Fabricated Steel - SH630/SH710/SH800	Cast Iron - 500-800 frames Fabricated Steel (optional) Fabricated Steel - SH630/SH710/SH800	Cast Iron Fabricated Steel (optional)	Cast Iron - 500-800 frames Fabricated Steel (optional) Fabricated Steel - SH630/SH710/SH800	Cast Iron (ANSI Type II with standoff Insulators and oversized to NEMA MG1 optional)	Cast Iron or Fabricated Steel	Cast Iron Fabricated Steel (optional)
Auxiliary Boxes	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)	Cast Iron - NEMA 4X Stainless Steel - NEMA 4X (optional)
Shaft	2 Pole - AISI 4140 4 Pole and Slower AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower - AISI 1045 (AISI 4140 optional)	2 Pole - AISI 4140 4 Pole and Slower - AISI 1045 (AISI 4140 optional)	500/580 - AISI 4140 Solid (2 Pole) AISI 1045 Solid, 4140 Hollow (Slower) 680/800 - AISI 1045 Solid
Rotor	Aluminum Die-cast - 500/580 frames* Induction-Brazed Copper Bar - 680/800 frames	Aluminum Die Cast - 500/580 frames* Induction-Brazed Copper Bar - 680-SH800	Aluminum Die Cast - 580 frame* Induction-Brazed Copper Bar - 680-SH800	Aluminum Die Cast - 500/580 frames* Induction-Brazed Copper Bar - SH400-880	Aluminum Die Cast - 580 frame* Induction-Brazed Copper Bar - 680-SH800	Die Cast Aluminum	API 541 5th ed: Induction-brazed Copper Bar API 547: Aluminum die cast ≤1,000 HP otherwise Induction-brazed Copper Bar (Induction-brazed Copper Bar option available for ≤1,000 HP)	Aluminum (Copper as an option) ODP-WPII 500/580 frames 4-12 poles, All TEFC Copper - All other vertical motors
Lamination Material	C5 Core Plate	C5 Core Plate	C5 Core Plate	C5 Core Plate	C5 Core Plate	C5 Core Plate	C5 Core Plate	C5 Core Plate
External Cooling Fan	N/A	N/A	N/A	Aluminum - 500/580 (other materials available) 2 Pole plastic fan with steel hub - SH400/880 4 Pole and slower plastic - SH400/SH450, Steel-880	Aluminum 580-800 Steel - SH630/SH710/ SH800 (other materials available)	Nonsparking Bronze Alloy	Aluminum if applicable (other materials optional)	Aluminum (TEFC), Steel (TEAAC)
Fan Cover	N/A	N/A	N/A	Cast Iron 500/580 frames, Steel - SH400/880	Fabricated Steel	Cast Iron	Cast Iron or Fabricated Steel	Fabricated Steel
Hood/Heat Exchanger/ Tube Material	Fabricated Steel: 500-800 frames	Fabricated Steel	Fabricated Steel; Double-tube (optional); Cu/Ni, Stainless Steel (optional)	N/A	Fabricated Steel / N/A / Aluminum, Stainless Steel (optional)	N/A	Fabricated Steel / Double-tube / Cu/Ni (TEWAC) Fabricated Steel/N/A Aluminum (TEAAC)	Fabricated Steel / Aluminum Tubes (TEAAC)
Insulation	Form-wound, Class F VPI	Form-wound, Class F VPI	Form-wound, Class FVPI	Form-wound, Class FVPI	Form-wound, Class FVPI	Form-wound, Class F-VPI	Form-wound, Class F-VPI	Form-wound, Class F-VPI
Hardware	≤M12-300 Series Stainless Steel >M12-Zinc Plated Carbon Steel (per API)	≤M12-300 Series Stainless Steel >M12-Zinc Plated Carbon Steel (per API)	≤M12 - 300 Series Stainless Steel >M12 - Zinc Plated Carbon Steel (per API)	≤M12 - 300 Series Stainless Steel >M12 - Zinc Plated Carbon Steel (per API)	≤M12 - 300 Series Stainless Steel >M12 - Zinc Plated Carbon Steel (per API)	≤M12 - 300 Series Stainless Steel >M12 - Zinc Plated Carbon Steel (per API)	≤M12 - 300 Series Stainless Steel >M12 - Zinc Plated Carbon Steel (per API)	300 Series Stainless Steel
General Information			General Information			General Information		
Noise Level	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	90 dB(A) Typical (lower on 4 pole and slower) (<85 dB(A) low noise optional on most ratings)	(≤85 dB(A) available on most ratings)	(≤85 dB(A) available on most ratings)
Vertical Mounting	All Frames	All Frames	No	500/580 only	All Frames	N/A	Available	All
Inverter Operation	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics	VFD Duty - Consult Innomotics for Specifics
Paint	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)	Two-part Epoxy (Special Paint optional)
Paint Color	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)	Innomotics Power Gray (other colors optional)
Bearing Type	Anti-friction - 500/580 frames (Sleeve bearings optional) Sleeve bearings - 680/800 frames (Anti-friction available on some ratings)	Anti-friction - 500/580 frames Sleeve bearings - 680/800 frames 2, 4 Pole Sleeve bearings - SH630/SH710/ SH800; 6 Pole and Slower Anti-friction - SH630/SH710/ SH800 Sleeve bearings (optional)	Anti-friction - 580 frame Sleeve bearings - 680/800 frames 2 & 4 Pole Sleeve bearings SH630/SH710/ SH800; 6 Pole and Slower Anti-friction - SH630/SH710/SH800 Sleeve bearings (optional)	Anti-friction - 500/580 frame Sleeve bearings (optional) 2 Pole Sleeve bearings - SH400-880 4 Pole and Slower Anti-friction - SH400- 880 Sleeve bearings (optional)	Anti-friction - 580 frame Sleeve bearings (optional); Sleeve bearings - 680/800 frames; 2 & 4 Pole Sleeve bearings SH630/ SH710/SH800; 6 Pole and Slower Anti- friction - SH630/SH710/SH800 Sleeve bearings (optional)	Anti-friction bearings	Sleeve bearings	500 2 pole - Deep groove ball 500/580 4-12 pole - Deep groove ball (Optional: Single angular contact, Tandem angular contact, or spherical roller) TEFC 500/580 2 pole - Deep groove ball (Optional: Angular contact /deep groove ball combination) 680/800 - Spherical roller (Optional: Kingsbury with oil lube upper guide)
Vibration	0.12 IPS or as defined by NEMA (Special balance if required)	0.12 IPS or as defined by NEMA (Special balance if required)	0.12 IPS or as defined by NEMA (Special balance if required)	0.12 IPS or as defined by NEMA (Special balance if required)	0.12 IPS or as defined by NEMA (Special balance if required)	0.08 IPS (except 2 pole motors = 0.10 IPS)	0.10 IPS on HSG/1.5 mils on shaft	0.12 IPS as Defined by NEMA (optional .10 IPS per API)
Hazardous Area	N/A	Class 1, Division 2 (optional)	Class 1, Division 2 (optional)	Class 1, Division 2 (optional)	Class 1, Division 2 (optional)	Class 1, Division 2 (optional)	Class 1, Division 2 (optional)	Optional: Class 1, Division 2 (WPII, TEFC, TEAAC)