



# IntelliGear® Plus Motor and Gearmotor Specifications

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**F O R M**  
**9410E**  
**Revised**  
**October 2015**

### ⚠ WARNING

- Read and follow all instructions carefully.
- Disconnect and lock-out power before installation and maintenance. Working on or near energized equipment can result in severe injury or death.
- Do not operate equipment without guards in place. Exposed equipment can result in severe injury or death.

### ⚠ CAUTION

- Periodic inspections should be performed. Failure to perform proper maintenance can result in premature product failure and personal injury.



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**1.3 - Characteristics**

**1.3.1 - Electrical Data**

Single Phase Design

Power supply	115 V ± 10%, 50 - 60 Hz	230 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75 HP	0.33, 0.50, 0.75, 1.0, 1.5, 2.0 HP
Maximum numbers of power-ups per hour	10	

Three Phase Design

Power supply	230 V ± 10%, 50 - 60 Hz	460 V ± 10%, 50 - 60 Hz
Output voltage	From input voltage down to (input voltage/speed range)	
Power range	0.33, 0.50, 0.75, 1.0, 1.5, 2.0, 3, 5 HP	0.33, 0.50, 0.75, 1.0, 1.5, 2.0, 3.0, 5.0, 7.5, 10 HP
Maximum numbers of power-ups per hour	150	

**1.3.2 - Characteristics and Functions**

Characteristic	IntelliGear Plus	
Overload	150 % of full load setting for 60 seconds, 10 times per hour	
Motor Frequency Variation Ranges	Standard	60 to 10 Hz 6:1 constant torque up through 3 HP
		74 to 12 Hz 6:1 constant torque for 5 through 10 HP
	Optional	60 to 6 Hz 10:1 constant torque up through 1.5 HP
		90 to 9 Hz 10:1 constant torque for 2 through 10 HP
Special	120 to 2 Hz depending on thermal and mechanical limits	
Efficiency	97.5 % x motor efficiency x gear efficiency (if applicable)	

Drive Control	IntelliGear Plus	
Speed Reference	• Analog reference	( 0V or 4mA = minimum speed) (10V or 20mA = maximum speed)
		- 0 to 10V with integral potentiometer on enclosure ( P1,P2 and P3)
		- 0 to 10V with integral potentiometer in enclosure (P4)
		- 4 to mA with external reference
		- Digital references
		- Fieldbus using Profibus DP
Speed regulation	- Speed regulation with encoder feedback option ( only size 33)	
	- Regulation of a reference with integrated PI loop	



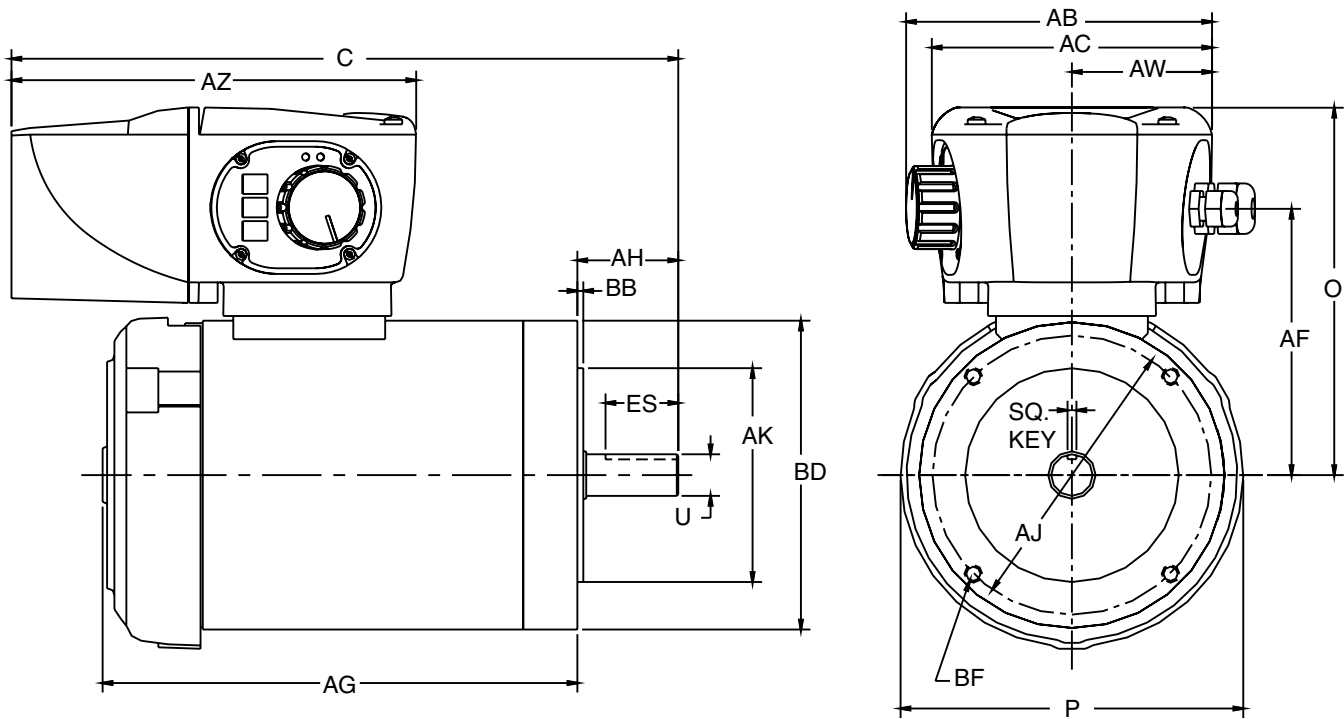
**1.3.2 - Characteristics and Functions (cont'd.)**

Drive Control	IntelliGear Plus
Run/Stop	- With power supply - With remote volt-free contact - With fieldbus - With local run/stop control
Forward/Reverse	- With internal connection on the terminal block - With remote volt-free contact - With fieldbus - With local For./Rev. controls
Stop Mode	- On ramps (using volt-free contact of integrated control) - Freewheel - With electromechanical brake
Ramps	- Ramps are adjustable from 3 to 600 seconds
Fieldbus	- PROFIBUS DP

Protection	IntelliGear Plus
Power	- Undervoltage - Overvoltage - Overloads  • thermal of motor or drive • protection from locked rotor • motor windings  - Short-circuit - Overspeed
Control	- Short circuit on 0 - 10V/24V inputs or outputs
Drive reset	- By switching off the IntelliGear Plus or by opening/closing the connection between the 24V and ENA (size 31 and 32) terminals, or SD1 and SDI 2 (size 33)

**1.4 - Environmental Characteristics**

Characteristics	Level - IntelliGear Plus
Degree of protection	TEFC   TEFC motor and NEMA 4/12 Controller
Storage temperature	-40 °C to +70 °C
Transport temperature	-40 °C to +70 °C
Ambient operating temperature	-20 °C to +40 °C (above 40 °C requires derating 1% per °C)
Altitude	Up to 3000 feet above sea level without derating
Ambient humidity	95% non-condensing
Humidity during storage	93%, 40 °C, 4 days
Vibration	- Exposed product: 0.01 g <sub>2</sub> /Hz 1 hr. in accordance with IEC 60068-2-34 - Sinusoidal vibration: 2-9 Hz 3.5 ms <sup>-2</sup> - 9-200 Hz 10 ms <sup>-2</sup> in accordance with IEC 60068-2-6
Shocks	Packaged product: 15 g, 6 ms, 500 times/direction in all 6 directions in accordance with Standard IEC 600068-2-29
Immunity	Conforming to EN61000-6-2
Radiated and conducted emissions	Conforming to EN500081-2 with internal filters
UL and cUL Standards	Conforming to UL 508 C (E211799)



Note: Illustration is with cable entry A. Cable entry will be reversed if cable entry B is specified.

Motor HP	Frame Size	Line Voltage	AB <sup>2</sup>	AC	AF	AG	AH	AK	AJ	AW	AZ	BB
1/3 or 1/2	56C	All	6.45	5.91	5.61	10	2.06	4.5	5.875	2.95	8.53	0.13
3/4	56C	115V	6.45	5.91	5.61	10	2.06	4.5	5.875	2.95	9.12	0.13
1/2 or 3/4	56C	230 or 460 V	6.45	5.91	5.61	10	2.06	4.5	5.875	2.95	8.53	0.13
1	56C	All	6.45	5.91	5.61	11	2.06	4.5	5.875	2.95	8.53	0.13
1	143TC	All	6.45	5.91	5.61	11	2.13	4.5	5.875	2.95	8.53	0.13
11/2 or 2	145TC	230 V	6.45	5.91	5.61	11	2.13	4.5	5.875	2.95	9.12	0.13
11/2 or 2	145TC	460 V	6.45	5.91	5.61	11	2.13	4.5	5.875	2.95	8.53	0.13
3 or 5	182TC, 184TC	460 V	6.45	5.91	6.58	13.5	2.53	8.5	7.25	2.95	9.12	0.25
7 1/2	213TC	460 V	8.97	8.44	7.08	16.85	3.12	8.5	7.25	4.22	13.10	0.25
10	215TC	460 V	8.97	8.44	7.08	17	3.12	8.5	7.25	4.22	13.10	0.25

Motor HP	Frame Size	Line Voltage	BD	BF	C	O	P	SQ-Key	U <sup>1</sup>	ES Min.
1/3 or 1/2	56C	All	6.5	3/8-16 NC x .75 deep	13.98	7.74	7.31	0.188	0.626	1.53
3/4	56C	115 V	6.5	3/8-16 NC x .75 deep	14.57	7.74	7.31	0.188	0.626	1.53
1/2 or 3/4	56C	230 & 460 V	6.5	3/8-16 NC x .75 deep	13.98	7.74	7.31	0.188	0.626	1.53
1	56C	All	6.5	3/8-16 NC x .75 deep	14.98	7.74	7.31	0.188	0.626	1.53
1	143TC	All	6.5	3/8-16 NC x .75 deep	15.05	7.74	7.31	0.188	0.875	1.53
1 1/2 or 2	145TC	230 V	6.5	3/8-16 NC x .75 deep	15.64	7.74	7.31	0.188	0.875	1.53
1 1/2 or 2	145TC	460 V	6.5	3/8-16 NC x .75 deep	15.05	7.74	7.31	0.188	0.875	1.53
3 or 5	182TC, 184TC	460 V	9	1/2-13 NC x .75 deep	19.62	9.71	9.5	0.25	1.125	1.78
7 1/2	213TC	460 V	9	1/2-13 NC x .75 deep	11.97	11.98	11.25	0.312	1.375	2.41
10	215TC	460 V	9	1/2-13 NC x .75 deep	12.12	11.98	11.25	0.312	1.375	2.41

<sup>1</sup> Shaft extension tolerance: +.0000"; -.0005" up to 1.5" diameter inclusive. Larger diameters: +.000"; -.001".

<sup>2</sup> Speed pot knob applies only if P1, P2, or P3 is required.

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