

Variable Frequency Drives

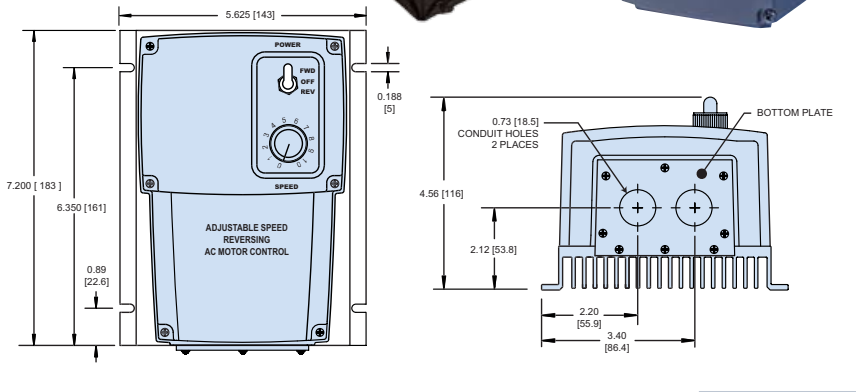
ISOLATED PWM AC NEMA 4X

Bison's Variable Frequency Drives feature a lightweight, plastic NEMA 4X enclosure, an isolated front end, minimum speed adjustment potentiometer, output voltage doubling, DC injection braking, and automatic or manual restart when power is restored.

Variable Frequency AC Drive NEMA 4X

Part Number	Input Voltage	Horsepower Rating 230V	Output Current	Output Frequency	Configuration
170-543-0004	115 or 230V Single Phase	1/6 to 1	4.0	0-120 Hz	NEMA 4X

- NEMA 4x enclosure: Compact, easy to mount, black plastic enclosure
- Isolated inputs: Accepts floating or grounded signals 0-10VDC, 0-5VDC or 4-20 mA
- User adjustable calibration pots: Minimum speed, maximum speed, current limit, acceleration, deceleration, slip compensation, boost, zero set, brake current, and brake time.
- Diagnostic LED's: Power, fault, and torque limit
- Stopping modes: DC injection braking or coast (jumper schedule)
- Adjustable 4 to 16 kHz switching frequency; Quiet motor operation or reduced electrical noise
- Quick Disconnect terminal block: Allows up to 200% torque to overcome intermittent peak loads
- Additional features: Auto or manual restart after low input voltage fault (jumper selectable), line fusing, enable and direction inputs



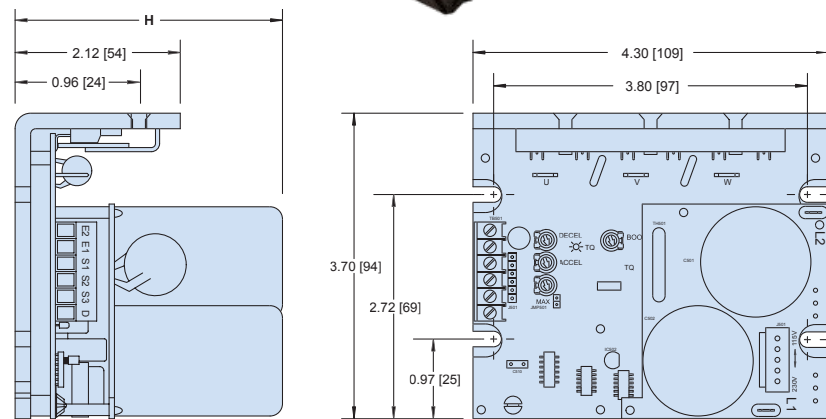
PWM AC CHASSIS

The cost-conscious and compact chassis design of Bison VFD Chassis Drives maintain the industry standard for mounting hole location and the coded LEDs make it easy to visually determine the drive status. With its compact design and application flexibility, this is an excellent choice for most AC applications.

Variable Frequency AC Chassis Drive

Part Number	Input Voltage	Horsepower Rating	Output Current	Output Frequency	Configuration
170-503-0002	115 or 230V Single Phase	1/6 to 1/2	2.4A	0-120 Hz	Chassis

- Compact size: 4.3" x 3.7" easy to-mount in small spaces with industry standard mounting hole pattern
- Easy to calibrate & set up: On-board trimmer pot adjustments for boost, maximum speed, acceleration and deceleration
- Torque "foldback" feature: Allows up to 200% torque for short periods to overcome intermittent peak loads, then reduces the torque to a preset safe level
- 16kHz switching frequency, with option to change between 4 and 16 kHz in the field: A high switching frequency results in quiet motor operation. Adjustments to a lower frequency if desired can be done in the field



107

107 Series 3-Phase Inverter Duty Gearmotors and Drives



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107 Series Gearmotor Specifications

3-Phase Inverter Duty Gearmotors & Drives

Bison's new 107 Series line of Inverter Duty Gearmotors are rated at 1/20 hp @ 230V, 60Hz, 3 phase. The product line was designed for applications requiring variable speed and no maintenance. Coupled with Bison's Variable Frequency Drives, the gearmotors are rated from 6 Hz to 90Hz with a broad line of gear ratios. Input power is either 115V or 230V, 60/50 Hz for maximum flexibility.

Shielded ball bearings | (permanently lubricated, electric motor grade) on motor maximize overhung load capability. Preload spring minimizes end play, reducing vibration and noise.

Class F UL recognized insulation system | designed to meet NEMA MG 1 Section 31 offer superior protection against voltage spikes induced by variable frequency drives, enhancing system life.

Large junction box | has multiple knockouts, providing wiring flexibility.

Thermostat leads | (signal type, normally closed) provide overload protection when coupled with the proper inverter control.

Baked on epoxy powder coat paint finish | high gloss black, for durability and maximum heat transfer.



Agency Coverage

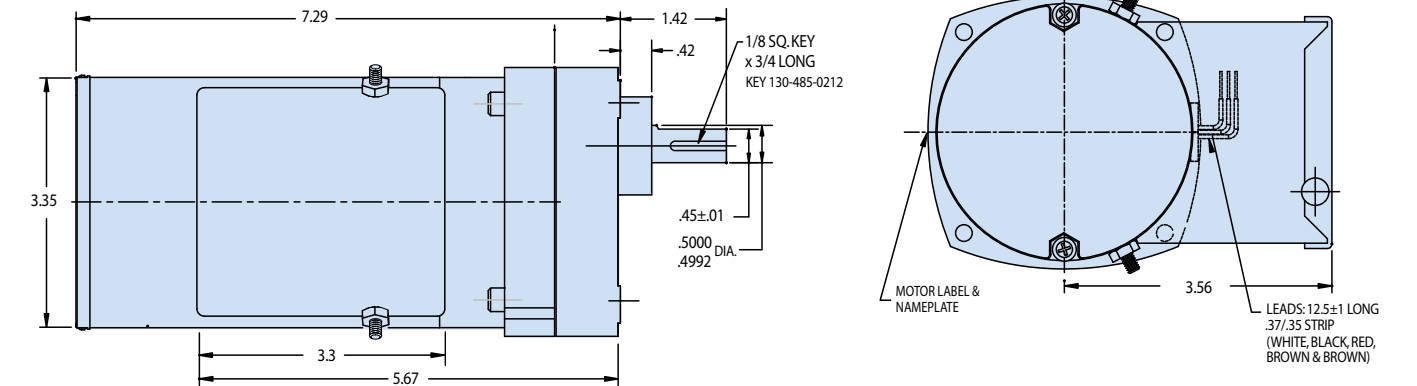
Class F insulation system evaluated to UL 1449 described in E199928
Construction features meet UL 1004 and C22.2 #100 described in E89715
CE marked to indicate compliance with IEC 34-1
Class B temperature rise at 40°C rated ambient temperature allows for use in elevated ambient conditions



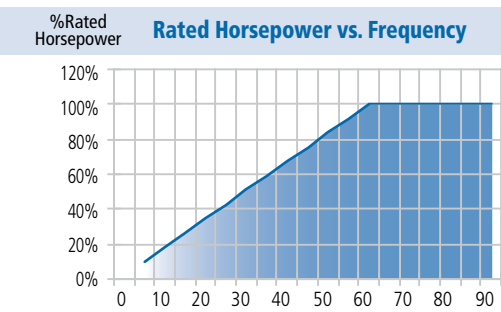
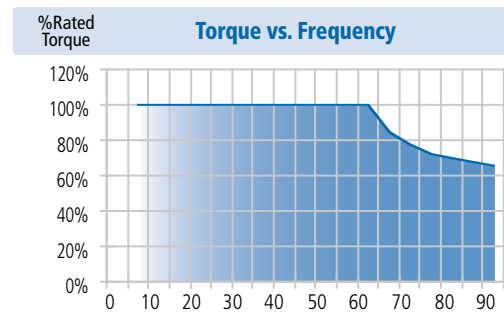
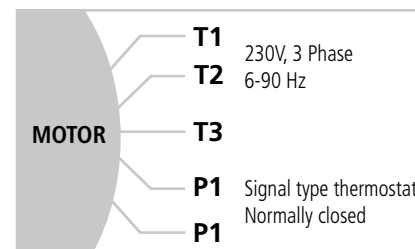
Specifications

Gearhead		Motor	
Gearing:	First stage helical steel, balance powdered metal or steel	Motor Type:	230V, 3 phase, 6-90 Hz
Geartrain:	Engineered to handle up to 200% shockloading	Rotation:	Reversible
Housing:	Precision machined die cast aluminum	Bearings:	Shielded ball bearing
Lubrication:	Lifetime oil bath	Insulation:	Class F (155°C)
Bearings:	Needle	Enclosure:	TENV
Shafts:	Precision ground shaft seal diameters	Thermostat:	Signal type, normally closed
Mounting:	All position	Windings:	Inverter duty 200°C rated magnet wire for maximum protection
		Pinion:	Precision helical involute pinion teeth hobbled directly on motor shaft. Pinion gear teeth induction heat treated to maximize operating life
		Shaft:	Input seal area centerless ground to optimize seal life

Schematics



Wiring Diagram



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100 Series 3-Phase Inverter Duty 230V

Bison Part No.	Ratio	Amps	HP	Rated RPM@6Hz	Rated RPM@60Hz	Rated RPM@90Hz	Rated in-lbs@6Hz	Rated in-lbs@60Hz	Rated in-lbs@90Hz
017-107-0007	6.7	0.24	1/20	24	245	368	12	12	7
017-107-0013	12.9	0.24	1/20	12	127	191	23	23	14
017-107-0025	25.2	0.24	1/20	6.3	65	98	45	45	27
017-107-0049	49.0	0.24	1/20	3.3	33	50	84	84	53
017-107-0096	95.5	0.24	1/20	1.7	17	26	100**	100**	100**

**Gear Limited Visit www.bisongear.com for more details.

Additional Inverter Duty gearmotors are available at www.bisongear.com under *Inverter Duty Products for the 247, 485 and 650.*

Need to know more?

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