

This robust line of gearmotors was designed and engineered for low audible noise and extended life. The GF series is versatile and offers a wide choice of gear reductions and materials for demanding applications. The 5700B brushless motor offers extended life, high efficiency, and controllability for demanding applications.

## GEAR REDUCER FEATURES

**Housing Material:** Zinc die cast

**Gears:** Sintered Powder Metal

**Bearings:** Sintered or Needle

**Lubrication:** Synthetic Grease

**Output speeds:** 1 to 100 RPM

## MOTOR FEATURES

**Type:** Electronically Commutated

**Voltage:** 12Vdc to 32Vdc

**Output Power:** 45 to 140 Watts with External Drive

**Phase Connection:** 3 Phase Wye

**Slot / Poles:** 12 / 8

**Rotor Magnets:** High Energy skewed to reduce cogging

**Insulation Class:** F

**Rotation:** Reversible

**Rotor Positioning:** Three Hall Effect Sensors

**Bearings:** Ball

## INTEGRAL CONTROL FEATURES

**Type:** Two quadrant trapezoidal programmable

**Speed Control:** 0 to 5Vdc or 0 to 10Vdc

**Protection:** Over current and over temperature

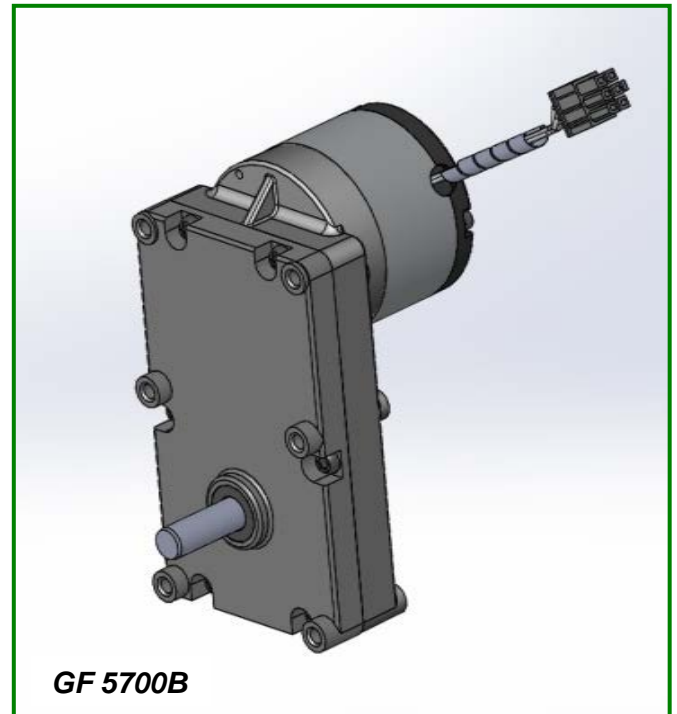
**Braking:** Dynamic

**Programming Options:** Acceleration, velocity, current limit

**Tachometer Output:** 2 Channels – 6 PPR

## OPTIONAL FEATURES

- Customized output shafts including dual output
- Helical first stage gear for low audible noise
- Various lead lengths, terminals and connectors
- Output Needle bearings for high radial loads
- Integral motor control
- Brakes: Electromagnetic
- Encoders: Incremental Optical or Capacitive



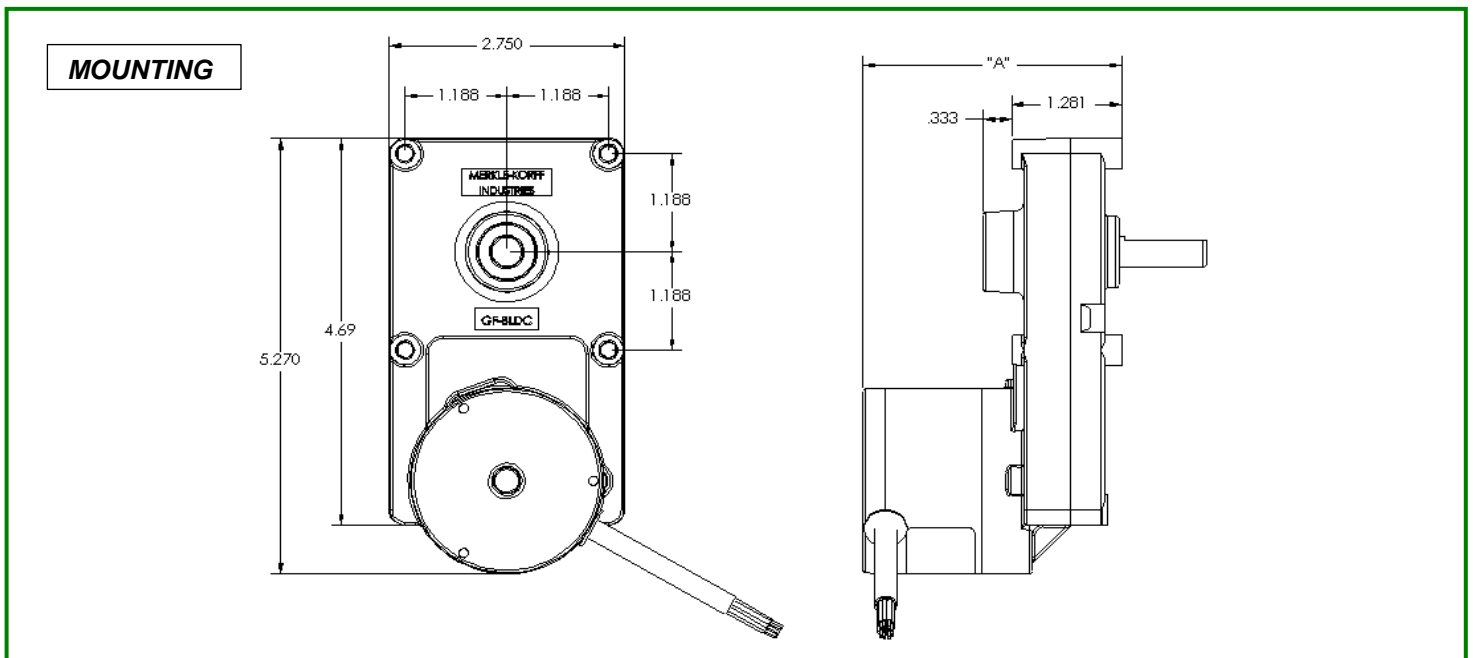
GF 5700B

**Maximum Permissible Torque: 200 In.Lb (22.5 Nm)**  
**Speed: Up to 100 RPM**

*Note: Speed and torque combinations will vary depending on the motor/gearbox combination.*

## TYPICAL APPLICATIONS

- Food Service Equipment
- Satellite positioning systems
- Pellet Stoves
- Agricultural Equipment
- Valve Actuators
- Medical / Laboratory Equipment
- Robotics
- Material Handling



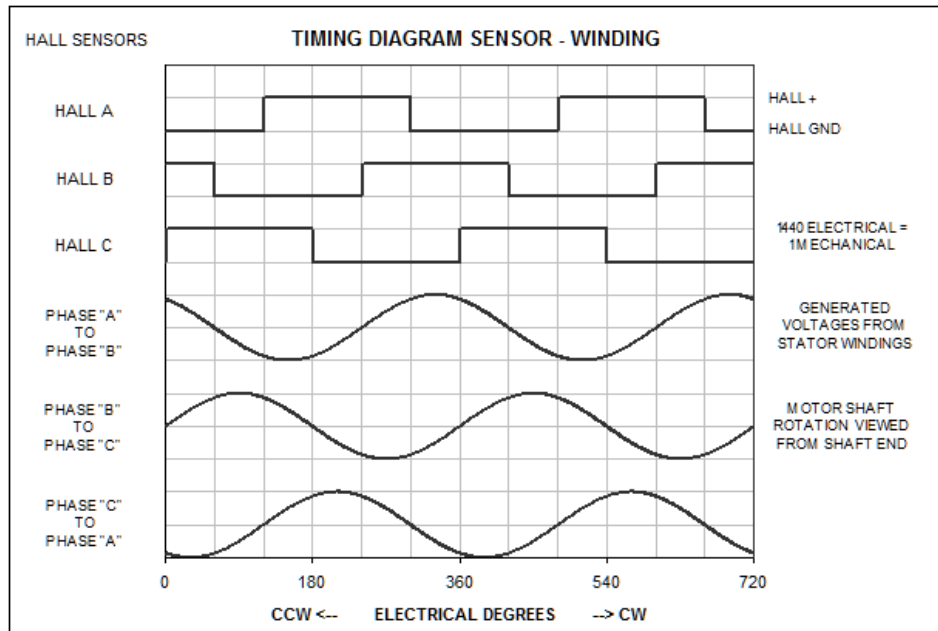
Model	Output Power (Watts) with Integral Control	Output Power (Watts) without Integral Control	Peak Torque (Lb.In)	Dimension "A"
GF-5706B	12	45	200	3.020"
GF-5719B	25	100	200	3.520"
GF-5738B	45	140	200	4.270"

### Integral Controller: Lead Wire Color Code

Board Position	Designation	Lead Color
1	Digital I/O "A"	Gray
2	Digital I/O "B"	White/Red
3	Direction	White/Black
4	Signal Ground	Green
5	Enable Input	Orange
6	5 Vdc (output)	Yellow
7	Input Power (12-32Vdc)	Red
8	Power Ground	Black
9	Analog Input 2	Violet
10	Analog Input 1 (speed)	Blue
11	Tachometer Output "B"	Brown
12	Tachometer Output "A"	White

### External Controller (Hall Only): Lead Wire

Board Position	Designation	Lead Color
1	Motor Phase A	Blue
2	Motor Phase B	White
3	Motor Phase C	Brown
4	Hall A	Green
5	Hall B	Orange
6	Hall C	Yellow
7	5 Vdc (Vcc)	Red
8	Ground	Black



In order to properly commutate the Merkle-Korff 2.25" BLDC motor, the following table is provided to indicate the required motor phase state for a given hall-effect state.

Direction	120° Hall Spacing			Motor Phases		
	HA	HB	HC	MA	MB	MC
(NOTE 1) CW	1	0	0	DC+	OFF	DC-
	1	1	0	OFF	DC+	DC-
	0	1	0	DC-	DC+	OFF
	0	1	1	DC-	OFF	DC+
	0	0	1	OFF	DC-	DC+
	1	1	1	DC+	DC-	OFF
CW	1	0	0	DC-	OFF	DC+
	1	0	1	DC-	DC+	OFF
	0	0	1	OFF	DC+	DC-
	0	1	1	DC+	OFF	DC-
	0	1	0	DC+	DC-	OFF
	1	1	0	OFF	DC-	DC+

NOTE 1: Direction viewed from motor shaft (gearbox output shaft rotation may not be the same)