



### OFF-HIGHWAY CONTROLLER

PART NUMBER: DYN1-10749

#### GENERAL

This controller is specifically designed to cover a wide range of control requirements for industrial and off-highway engines. It has three selectable speeds (LOW, MID and HIGH) plus a unique gain change feature that automatically increases the gain for optimum response when MID and HIGH speeds are selected. In addition, the controller has a built in limit to prevent overshooting of the engine speed after extreme loading. This limit automatically resets the controller's integrator circuit upon sensing a quick increase in engine speed - i.e. during an engine load shed. This feature provides protection against excessive engine speed overshoots.

Unlike a throttle control, the DYN1-10749 is an isochronous governor. For any given speed set input, the controller sends a corrective output signal to the actuator to maintain the speed selected. Unlike a throttle positioner, this control uses a PID function to provide a quick and stable engine response to load changes holding engine RPM constant.

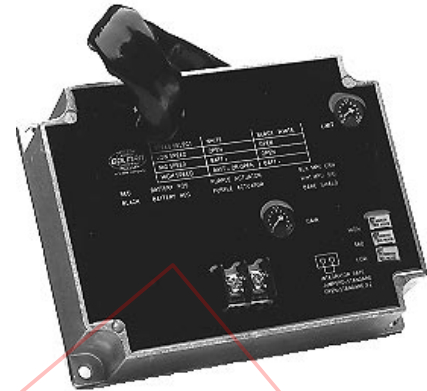
The DYN1-10749 controller can be used in either diesel or spark-ignited engine applications.

#### FEATURES

- CE Rated
- All Electric
- All Engine Compatible - Gas and Diesel
- Three Governed Adjustable Set Speeds
- Automatic Gain Change
- Gas or Diesel Selection Switch
- Remote Speed Selection
- High Reliability
- Weathertight Enclosure
- Temperature Stable
- Flying Leads

#### ACTUATOR COMPATABILITY

- DYNA 2000
- DYNA 2500



#### TYPICAL APPLICATIONS

- Manlifts
- Cranes
- Sweepers
- Chippers
- Welders
- Trenchers
- Compressors
- Irrigation Engines
- Pumps
- Crop Spraying
- Compactors
- Graders
- PTOs
- Gensets

#### SPEED SENSING

A magnetic pickup, typically mounted in the flywheel housing perpendicular to the flywheel, supplies a speed reference signal to the controller. The number of teeth sensed per revolution is converted to a frequency the controller reads to maintain set speed.

$$\text{Input Signal Frequency in Hertz} = \frac{\text{Engine RPM} \times \text{Number of Gear Teeth on Flywheel}}{60}$$

#### FAILSAFE

The actuator is spring loaded and will return to the minimum fuel position if the speed reference signal is lost or if the DC power is interrupted.

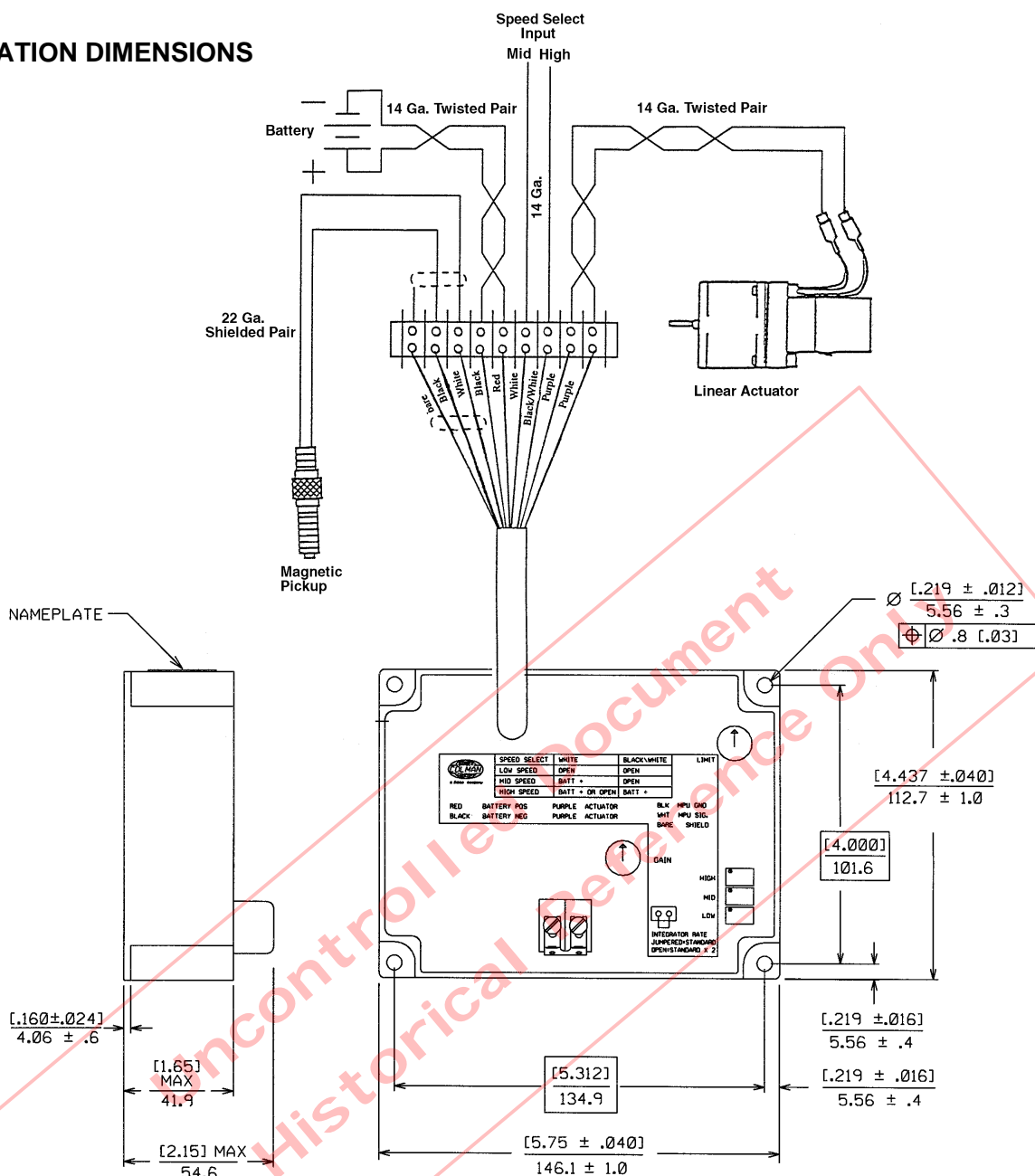
#### SPECIFICATIONS

- **Operating Voltage:** 12 or 24 volts,  $\pm 20\%$
- **Ambient Operating Temperature:**  $-40^{\circ}\text{F}$  to  $+180^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ )
- **Mechanical Vibration:** 5-500 Hz, curve L, per MIL-STD-810C
- **Weight:** 826 grams (1.82 pounds)
- **Sealing:** Oil, Water and Dust Tight
- **Connections:** #18 gauge leads with minimum length of 10 inches (25.4 cm)
- **Input Signal Voltage From Magnetic Pickup:** 2.5 VAC RMS minimum during cranking.
- **Steady State Speed Band:**  $\pm 0.25\%$
- **Output Signal:** PWM Current to 6 Amps Maximum
- **Magnetic Pickup Frequency Range:** 2500 - 5000 Hz

DYNA 230



## INSTALLATION DIMENSIONS



## SELECTABLE SPEED SETTINGS

SPEED SET	WHITE	BLACK/WHITE
LOW	OPEN	OPEN
MID	BATTERY +	OPEN
HIGH	BATTERY + OR OPEN	BATTERY+

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### — NOTE —

Barber-Colman believes that all information provided herein is correct and reliable and reserves the right to update at any time. Barber-Colman does not assume any responsibility for its use unless otherwise expressly undertaken.

### — CAUTION —

As a safety measure, the engine should be equipped with an independent overspeed shutdown device in the event of failure which may render the governor inoperative.