

DYNA I CONTROLLER

General

This Barber-Colman DYNA I Controller incorporates the latest technology to provide the most cost effective and versatile unit for precise control of diesel, gasoline, or natural gas engines in the marketplace.

Separate circuits measure the PROPORTIONAL (amount of off-speed), INTEGRAL (time of offspeed), and DERIVATIVE (rate of change of offspeed) values. These parameters all work together to provide a control that results in fast and stable engine response to load changes while maintaining precise speed regulation.

Speed Sensing

Typically the engine speed reference signal is obtained from a magnetic pickup mounted in the flywheel housing perpendicular to the ring gear. The number of teeth sensed per revolution is converted into an engine speed signal. Other techniques may be used to obtain speed reference.

Adjustments

- **Speed Setting:** 20 turn potentiometer
- **Gain:** Single turn potentiometer. 0 to 100%
- **Integral:** Single turn pot. 0 to 100%
- **Derivative:** Single turn pot. 0 to 100%
- **Droop:** Single turn pot. 0 to 15%
- **Fuel Selection:** Diesel, gasoline or gas
- **Actuator Selection:** DYNA 2000 & 2500
- **Remote Speed:** Use DYN S 10000 potentiometer

Features

- All electric
- All engine compatible
- Generator paralleling option
- Temperature stable
- High reliability
- Mounts in any position

Specifications

Operating Voltage: 12 or 24 volts, $\pm 20\%$

Steady State Speed Band: $\pm 0.25\%$

Ambient Operating Temperature:
 -40°F to $+180^{\circ}\text{F}$ (-40°C to $+85^{\circ}\text{C}$)



Temperature Stability: Better than $\pm 0.5\%$ over temperatures of -40°F to $+167^{\circ}\text{F}$ (-40°C to $+75^{\circ}\text{C}$)

Mechanical Vibration: Withstands the following vibration without failure or degraded performance: 0.06 inch double amplitude at 5 to 18 Hz; 1 G at 18 to 30 Hz; 0.02 inch double amplitude at 30 to 48 Hz; 2.5 G's at 48 to 70 Hz.

Output Signal: PWM current to 6 amp max.

Connections: Terminal strip

Circuit Boards: Heavy conformal coating for moisture and vibration protection

Enclosure: Die cast aluminum

Weight: 635 grams (1.4 lbs.)

Actuator Compatibility: This controller is to be used with either the DYNA 2000 or DYNA 2500 actuator.

Available Models

Part Number	Input Frequency
DYN1-10752-000-0-12/24	250 to 1200 Hz
DYN1-10753-000-0-12/24	1200 to 2500 Hz
DYN1-10754-000-0-12/24	2500 to 5000 Hz
DYN1-10756-000-0-12/24	5000 to 9500 Hz
DYN1-10752-001-0-12/24	250 to 1200 Hz
DYN1-10753-001-0-12/24	1200 to 2500 Hz
DYN1-10754-001-0-12/24	2500 to 5000 Hz
DYN1-10756-001-0-12/24	5000 to 9500 Hz

Select the controller for the correct input signal frequency range generated by the magnetic pickup at the maximum engine speed and for the required DC voltage, 12 or 24.