

DYNA II Isochronous Load Sharing Control

General

The Barber-Colman DYNA II Isochronous Load Sharing Control operates with any of the DYNA all-electric precision governors. This combination permits proportional division of a common load between multiple engine-generator sets while maintaining a fixed frequency on an isolated bus.

Multi Gen Set Capability

The ILS Control will enable a common load to be proportionately shared among any number of engine generators in a system. The generators need not have the same kilowatt ratings. All generators in the system will assume equal percentages of their full load capacity.

Operation

The ILS Control compares the load on its generator to that on other generators in the same system and signals the governor to increase or decrease engine fuel to maintain its proportional share of the total system load. Current input signals from each of the three generator phases are summed to determine the actual kilowatt load for each generator. Each generator set's load is compared to all other loads and any difference from desired load sharing commands the DYNA governor to change fuel so that load is proportionately shared.

Typical Applications

- Isochronous load sharing between two or more generator sets.
- Droop load sharing when paralleling with an infinite bus.

Available Isochronous Load Sharing Models

- **Models with 115/230 VAC Input**
Basic ILS Module — Part Number DYN2 80100
ILS Module with load pulse and ramp options — Part Number DYN2 80101
- **Models with 230/370-480 VAC Input**
Basic ILS Module — Part Number DYN2 80104
ILS Module with load pulse and ramp options — Part Number DYN2 80105

Load Pulse/Ramp Options

The load pulse feature senses generator load changes and signals the governor to increase or decrease engine fuel before there is an actual change in engine speed. Depending upon the engine being controlled, offspeed transient performance may be improved by up to 25-30 percent. The amount of load pulse is adjustable.

The ramp generator is an engine control feature that permits engine warm-up before running the engine at operational speed. Operating from an oil pressure monitor switch or a water temperature switch, the ramp first controls the engine at an

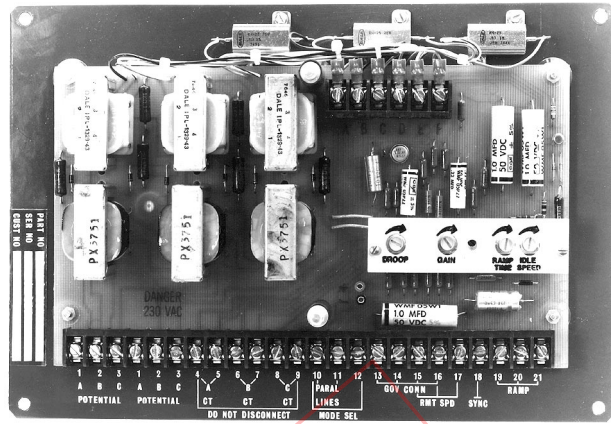


adjustable idle speed and then gradually increases to operational speed over a time range adjustable to 10 or 20 seconds.

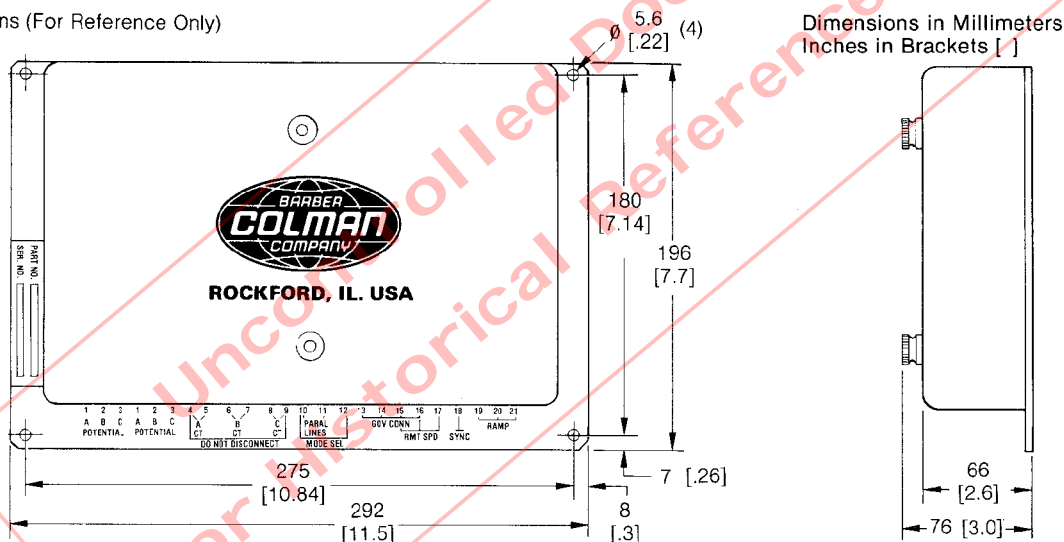
Specifications

- **Voltage Input** 3-phase, 50/60 Hz.
Models with line to line voltage of 115/230 $\pm 15\%$ Vac input.
Models with line to line voltage of 230/370-480 $\pm 15\%$ Vac input.
- **Current Input** All models — 3-phase*
2.5 to 5 amps per phase at maximum generator load.
3.2 VA burden per phase on each current transformer at 2.5 amps.
12.5 VA burden per phase on each current transformer at 5.0 amps.
*See Application Bulletin No. 30 for application of current and potential transformers.
- **Load Sharing Accuracy** Adjustable to $\pm 0.5\%$ between sets at full load.
- **Output** (Dependent on load gain adjustment)
Test Jacks: 6V typical at full load.
Paralleling Lines: 3.0V typical at full load.
- **Adjustments** All models
Droop: 0-10 percent, CW to increase.
Gain: CW to increase.
- **Adjustments** Models with options
Ramp Time: 0-10 or 20 seconds, CW to increase.
Idle Speed: CW to increase.
Load Pulse: 0-100 percent CW to increase.
- **Ambient Operating Temperature** - 55°C to 82°C (-65°F to 180°F).

- **Enclosure** The ILS Module is one compact assembly. The module cover is a sturdy non-conductive plastic that is secured to the module by two knurled nuts. The module is designed for behind-the-panel mounting.
- **Mounting Attitude:** Any position.
- **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.
- **Shock** Withstands 15 G's in each of three mutually perpendicular axes.
- **Manual for ILS** See instruction manual F-16892.
- **Typical Wiring Diagram** See application bulletin No.16, F16197.
- **Weight** 1.5 Kg (3.25 lbs.).



Dimensions (For Reference Only)



— 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.

Barber-Colman Company

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