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Typical Wiring Diagram When Using A Cummins Digital ILS Unit and a Cummins Panel Mounted Controller and EFC Fuel Valve

Cummins Digital Isochronous Load Sharing Control

The Cummins Digital Isochronous Load Sharing Control can be used with the Cummins governor to provide control of an engine generator set by maintaining preset engine speed or proportional sharing of load between similar or dissimilar generators. Both droop and isochronous modes can be selected.

Figure 1 illustrates the wiring of two engine generator sets having Cummins governors and Digital Isochronous Load Sharing Controls. Additional engine generator sets can be paralleled by wiring them at the point designated, PARALLELING LINES TO OTHER SYSTEMS.

CAUTION

It is recommended that an independent over-speed shutdown device be incorporated in every engine control system.

Notes

1. If more than one engine is started using the same battery supply, use separate battery supply for each governor system. Twist power leads and use shielded leads as shown.
2. Select current transformers to provide 2.5 to 5.0 amps at full rated load. Current transformers require nominal 0.32 VA/ PHASE at 2.5 amps 1.25 VA/ PHASE at 5.0 amps.
3. Observe current transformer polarity markings when connecting.
4. Power switch current rating: 10 amps.
5. Phasing of potential to Terminals 1, 2 and 3 is necessary to keep each signal in its correct phase relationship. If the generator voltage is not the same as the voltage range on Terminals 1, 2 and 3 of the Isochronous Load Sharing Control, a step-down transformer is required. Correct phasing of the transformer leads is necessary. Step-down transformers require nominal 1 VA/PHASE.
6. Droop/Isochronous switch is not required if units are always operated in the Isochronous mode.
7. Shielded wires are to be terminated only on one end, as shown in the diagram, Figure 1.

Typical Wiring Diagram When Using a Cummins Digital ILS Unit and a Cummins Panel Mounted Controller and EFC Fuel Valve

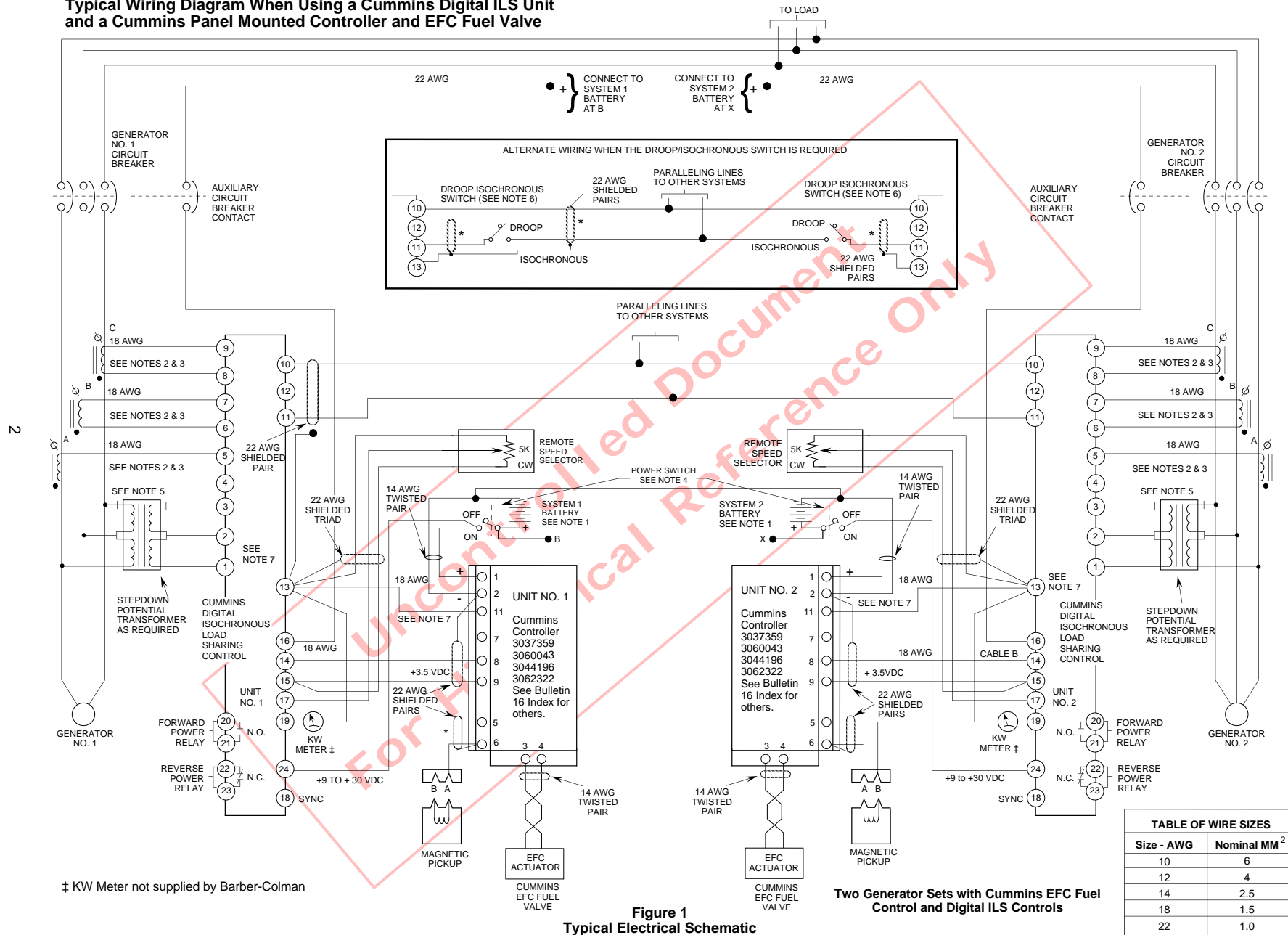


Figure 1
Typical Electrical Schematic

Two Generator Sets with Cummins EFC Fuel Control and Digital ILS Controls

Typical Wiring Diagram When Using a Cummins Panel-Mounted Controller and EFC Valve is Connected to a DYN2 80108 Series Digital ILS Control and a DYN2 90200 Auto-Synchronizer

DYNA II Auto-Synchronizer

The DYNA II Auto-Synchronizer (P/N DYN2 90200) can be used with the Cummins Governor and DYNA II Digital Isochronous Load Sharing Control to automatically synchronize one generator with another or with a bus. The Auto-Synchronizer eliminates the risk of operator error inherent with manual synchronizing.

Figure 2 illustrates the wiring of two engine generator sets having Cummins governors, DYNA II Digital Isochronous Load Sharing Controls and DYNA II Auto-Synchronizers. Additional engine generator sets can be paralleled by wiring them at the point designated, PARALLELING LINES TO OTHER SYSTEMS.

CAUTION

It is recommended that an independent over-speed device be incorporated in every engine control system.

NOTES

1. If more than one engine is started using the same battery supply, use separate battery supply for each governor system. Twist power leads and use shielded leads as shown.
2. Select current transformers to provide 2.5 to 5.0 amps at full rated load. Current transformers require nominal 0.32 VA/ PHASE at 2.5 amps; 1.25 VA/PHASE at 5.0 amps.
3. Observe current transformer polarity markings when connecting.
4. Power switch current rating: 10 amps.
5. Phasing of potential to Terminals 1, 2 and 3 is necessary to keep each signal in its correct phase relationship. If the generator voltage is not the same as the voltage rating on Terminals 1, 2 and 3 of the Isochronous Load Sharing Control, a step-down transformer is required. Correct phasing of the transformer leads is necessary. Step-down transformers require nominal 1 VA/PHASE.
6. Droop/Isochronous switch is not required if units are always operated in the Isochronous mode.
7. Digital ILS (Also see F-22396A)
DYN2 80108 — 115/230 VAC input, 50/60 Hz
DYN2 80109 — 230/480 VAC input, 50/60 Hz
DYN2 80110 — 230/480 VAC input, 400 Hz
8. Controller: Cummins Panel Mount.
9. Actuator: Cummins EFC Valve.
10. If "Load Pulse" function is not being used the "Load Pulse" Potentiometer must be set fully counterclockwise.
11. a. Closing a contact between 12 to 13 allows the Auto-Synchronizer to perform as a speed matching unit. The speed and phase of the incoming generator are controlled and a contact is closed to drive a circuit breaker. Once the circuit breaker is closed the contact between 12 and 13 should be opened .
b. Open contacts or no jumper 12 to 13 allows the Auto-Synchronizer to still sense any error, but it does not provide any control or contact closure.
12. Phasing of voltage potential to the Auto-Synchronizer is necessary to keep each signal in its correct phase relationship. If the generator voltage is not the same as the voltage rating of the Auto-Synchronizer, step-down transformers are required. The step-down transformers require a nominal 7 VA/PHASE for the generator input and 2 VA/PHASE for the Bus input.
13. Connections to terminals 1-3 or 2-3 and 4-6 or 5-6 of the Auto-Synchronizer must be the same voltage potential. Applying generator voltage without applying bus voltage may cause the engine to run faster or slower than the desired speed. However, when bus voltage is applied, the Auto-Synchronizer will change engine speed to quickly match the generator to the bus frequency.
14. Shielded wires are to be terminated on one end, as shown in the diagram, Figure 2.

*Shielded cable should be purchased from Barber-Colman or customer should purchase a cable with a wrapped mylar supported aluminum foil shield with a drain wire.

**Two Generator Sets with Cummins Panel Mounted Controllers,
DYNA II ILS, DYN2-80108 Series and DYNA II DYN2 90200 Auto-Synchronizer**

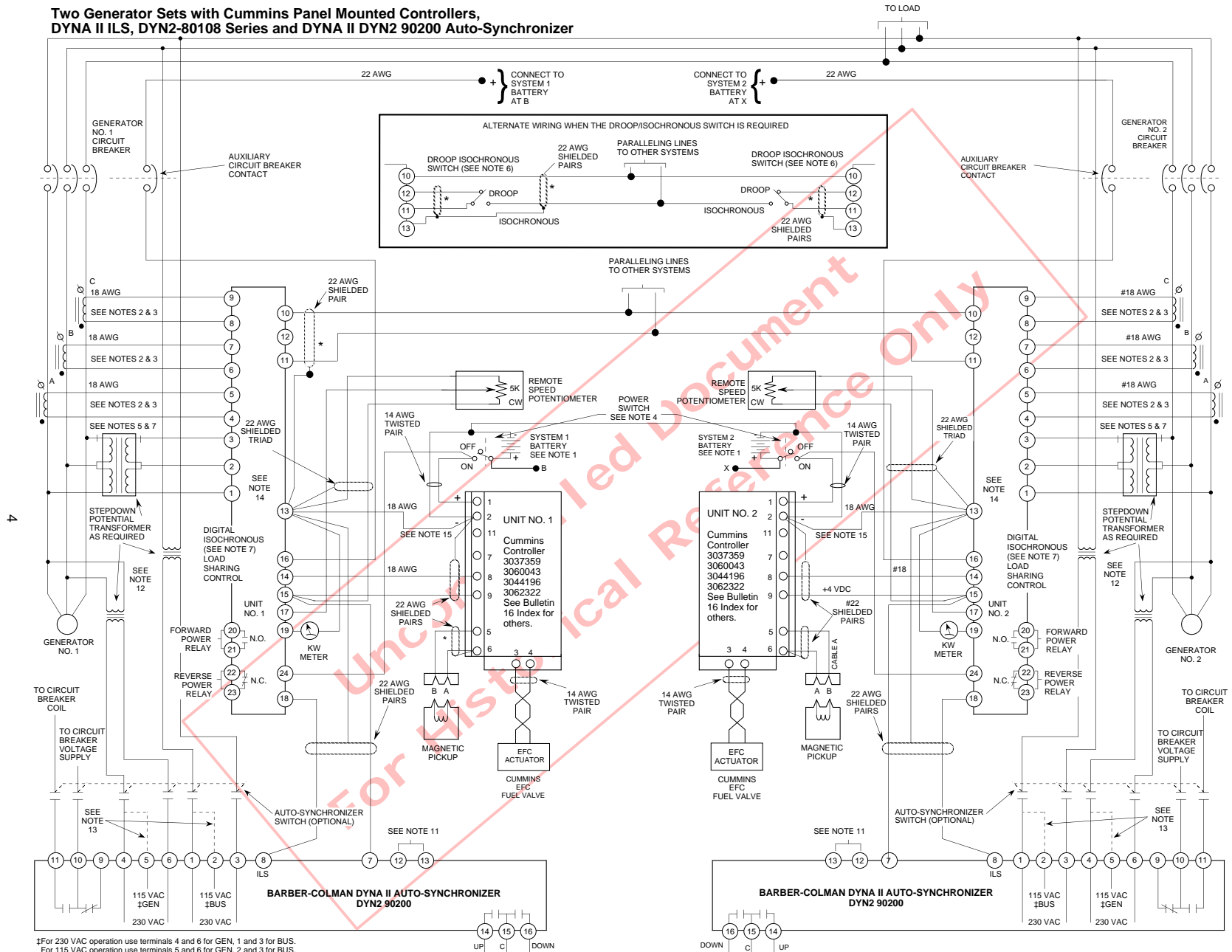


Figure 2.
Typical Electrical Wiring Diagram

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.

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Barber-Colman Company

AEROSPACE & POWER CONTROLS DIVISION

DYNA Product Group

1354 Clifford Avenue
P.O. Box 2940
Loves Park, IL U.S.A. 61132-2940

Phone: (815) 637-3000
Fax: (815) 877-0150

In Europe contact: Barber-Colman GmbH
Am neuen Rheinhafen 4, D-6720 Speyer, West Germany
Tel: 06232-1203, Fax: 06232-12155, Telex: 467 627

In Japan contact: Ranco Japan Ltd.
Shiozaki Bldg. 7-1, 2-chome, Hirakawa-Cho, Chiyoda-Ku
Tokyo 102, Japan
Tel: 3261-4293, Fax: 3264-4691, Telex: 0232-2087