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Two Generator Sets Using Cummins Plug-in Controllers (3032733) and DYNA II Digital ILS Units (DYN2 80108 Series)

Digital Isochronous Load Sharing Control

The Digital Isochronous Load Sharing Control (P/N's DYN2 80108 or DYN2 80109) can be used with the 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 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. Digital ILS
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

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.

CABLE A — DYNK 62-XX (specify length)
CABLE B — E26-22 (specify length)
CABLE C — DYNZ 70-4 (specify length)
CABLE D — DYNZ 70-5 (specify length)
CABLE E — E26-29 (specify length)

*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.

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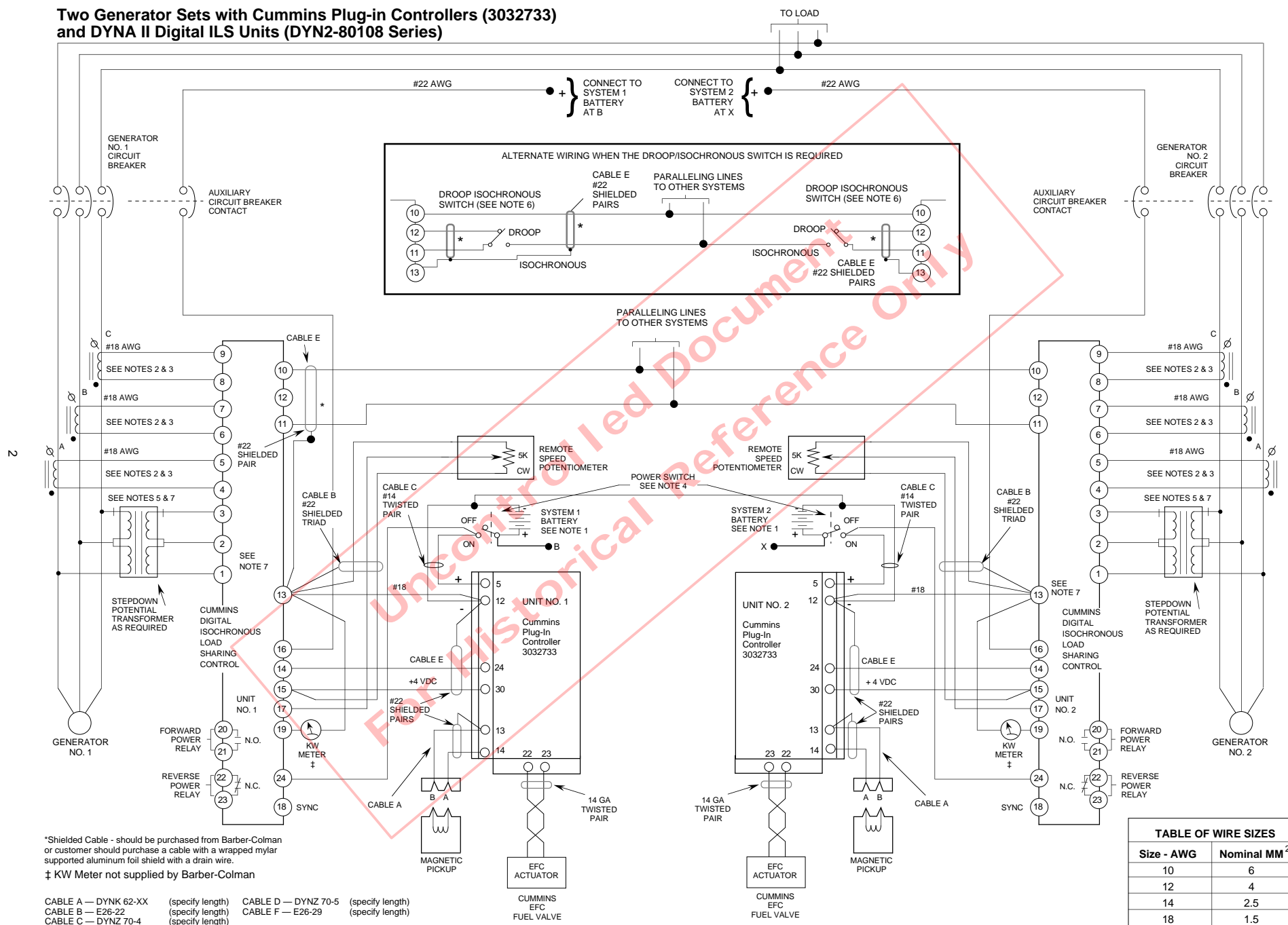


Figure 1. Typical Electrical Wiring Diagram

Two Generator Sets Using Cummins Plug-In Controllers (3032733), DYNA II Digital ILS (DYN2 80108 Series) and Digital Auto-Synchronizer (DYN2-90200)

DYNA II Auto-Synchronizer

The DYNA II Auto-Synchronizer (P/N DYN2 90200) can be used with the DYNA I governor and DYNA II 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 DYNA I governors, DYNA II 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 FOR AUTO-SYNCHRONIZER

(Also see F-23448)

1.
 - 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. Another method would be to use the "Output Hold" dip switch, SW1, on the front of the unit.
 - b. Open contacts or no jumper between 12 and 13 allows the Auto-Synchronizer to still sense any error, but it does not provide any control or contact closure.
2. 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.
3. 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.

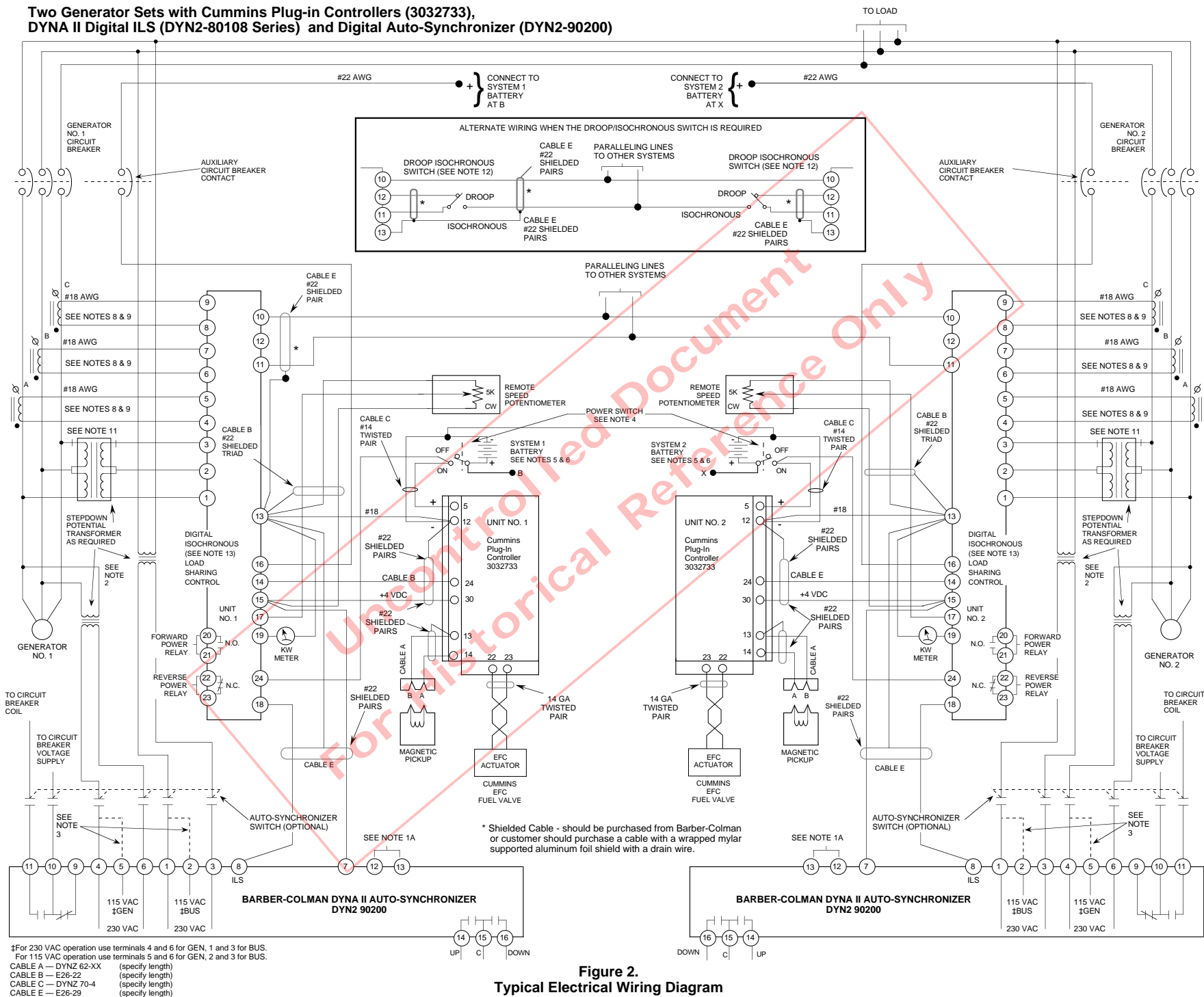
GENERAL SYSTEM NOTES

4. Power switch current rating is 10 amperes.
5. If more than one engine is started using the same battery supply, use a separate battery supply for each governor system.
6. If each generator has a separate power supply, connect the negative of all power supplies together for a common reference.
7. Use shielded and twisted leads as shown.

NOTES FOR ISOCHRONOUS LOAD SHARING MODULE

8. 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.
9. Observe current transformer polarity markings when connecting.
10. Power switch current rating: 10 amps.
11. 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.
12. Droop/isochronous switch is not required if units are always operated in the isochronous mode.
13. Digital ILS
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

**Two Generator Sets with Cummins Plug-in Controllers (3032733),
DYNA II Digital ILS (DYN2-80108 Series) and Digital Auto-Synchronizer (DYN2-90200)**



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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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