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Typical Wiring Diagram When Using a Digital ILS Unit and a DYN1 10004 Series Controller

DYNA II Isochronous Load Sharing Control

The Digital Isochronous Load Sharing Control, DYN2 80108 or DYN2 80109 can be used with the DYNA 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 DYNA 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 overspeed device be incorporated in every engine control system.

Notes

1. System battery supply — If more than one engine is started using the same battery supply, use a separate battery supply for each system. Twist power leads as shown. 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 — See F-22396 Technical Manual
 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. DYNA Controllers: DYN1 10002, DYN1 10003, DYN1 10004 or DYN1 10006.

9. DYNA Actuators: Plus 1 or Plus 4

Plus 1 Units — DYNC 11000, DYNC 11001, DYNC 11002, DYNC 11004, DYNC 11005 or DYNC 11006

Plus 4 Units — DYNC 14000

* 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.

CABLE B — E26-22 (Specify Length)
 CABLE E — E26-29 (Specify Length)

TABLE OF WIRE SIZES	
Size — AWG	Nominal MM ²
10	6
12	4
14	2.5
18	1.5
22	1.0

Typical Wiring Diagram When Using a Digital ILS Unit and a DYN1 10004 Series Controller

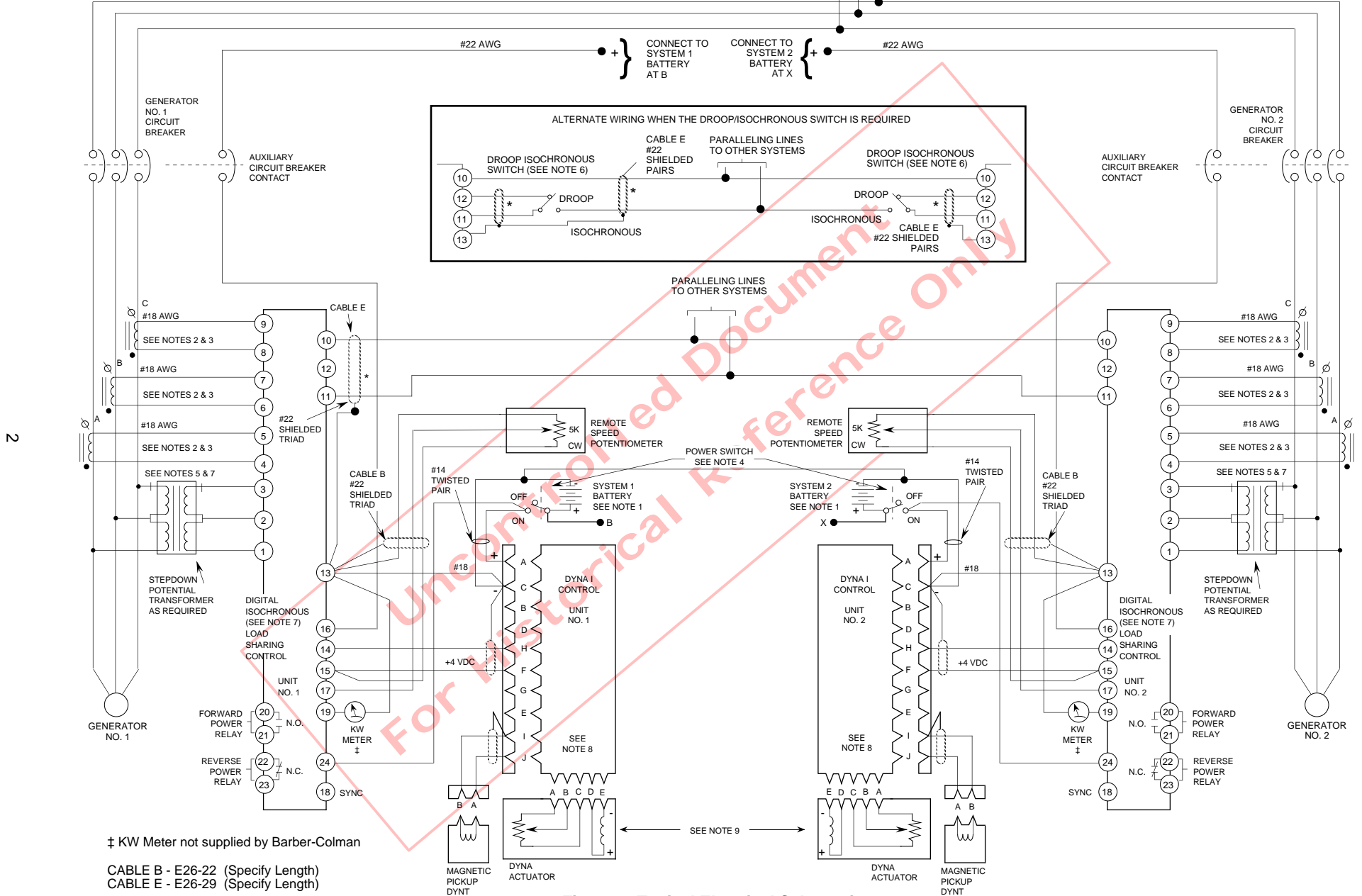


Figure 1. Typical Electrical Schematic

Typical Wiring Diagram When Using a DYN1-10004 Series Controller, a DYN2 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 DYNA 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 DYNA 8000 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 overspeed device be incorporated in every engine control system.

Notes

1. Systems battery supply — If more than one engine is started using the same battery supply, use separate battery supply for each System. Twist power leads as shown. 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
8. DYNA Controllers: DYN1 10002, DYN1 10003, DYN1 10004 or DYN1 10006.
9. DYNA Actuators: Plus 1 or Plus 4
Plus 1 Units — DYNC 11000, DYNC 11001, DYNC 11002, DYNC 11004, DYNC 11005 or DYNC 11006

Plus 4 Units — DYNC 14000
10. If "Load Pulse" functions is not being used, the "Load Pulse" Potentiometer must be set fully counterclockwise

Notes For Auto-Synchronizer (Also see F-23448)

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. Another method would be to use the "Output Hold" dip switch, SW1, on the front of the unit.

b) Open contacts or no jumper from 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.

For 230 VAC operation use terminals 4 & 6 for GEN, 1 & 3 for BUS.

For 115 VAC operation use terminals 5 & 6 for GEN, 2 & 3 for BUS.

CABLE B — E26-22 (specify length)

CABLE E — E26-29 (specify length)

Remote Speed Potentiometer — DYNS 10000

* 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.

Figure 2. Typical Wiring Diagram When Using a DYN1 10004 Series Controller, a DYN2 Digital ILS Control and a DYN2 90200 Auto-Synchronizer

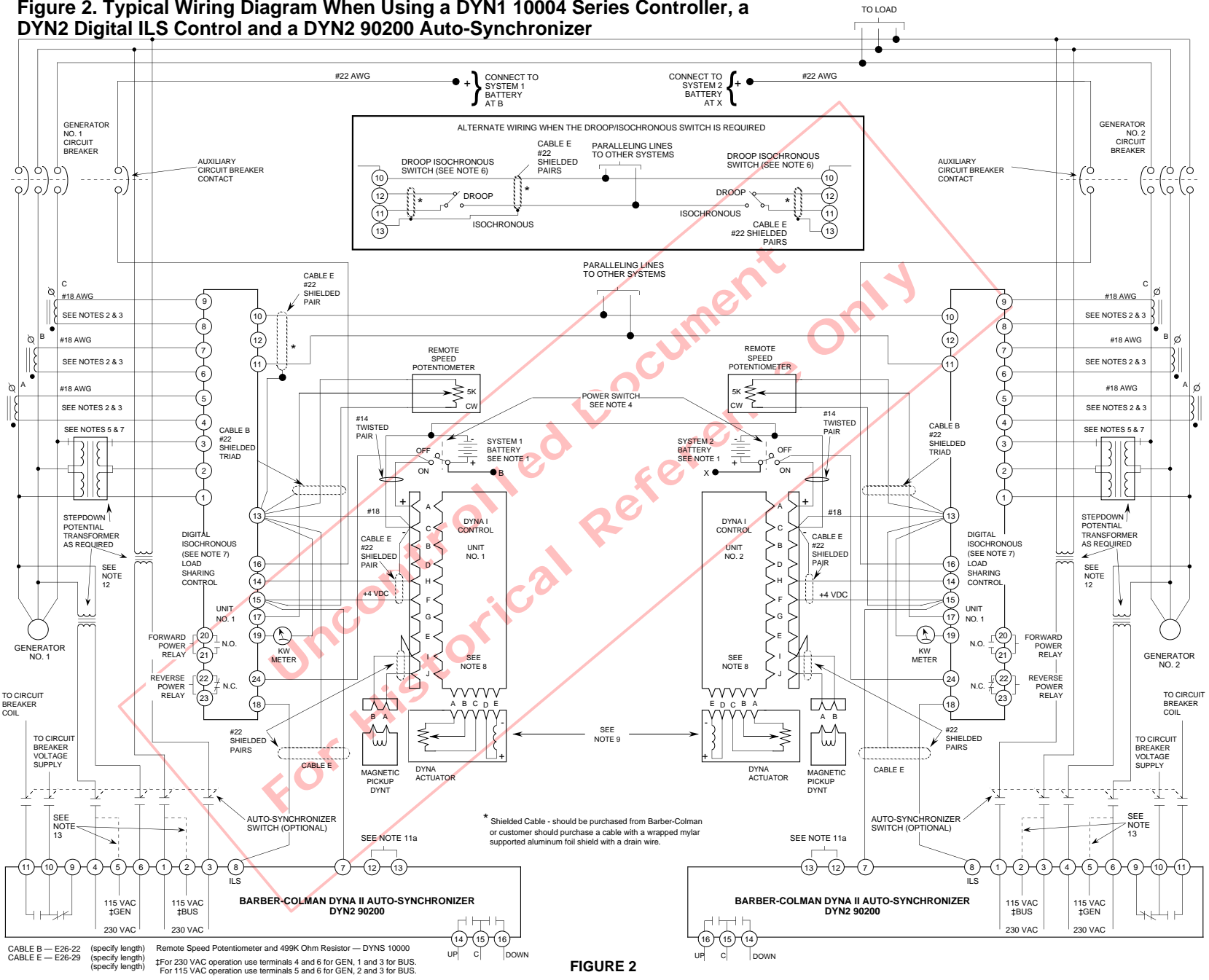


FIGURE 2

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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