



Typical Wiring Interface When Using a Woodward 2301A Governor/Load Sharing Control paralleled with a Pow-R-Con™.

DYNA II Pow-R-Con

The DYNA II Pow-R-Con can be used with the Woodward 2301A Governor/Load Sharing Control in parallel gen-set application. The Pow-R-Con and applicable governor will provide automatic synchronizing, load sharing, soft loading/unloading, and load management for generator set systems. The Pow-R-Con eliminates the risk of operator error inherent with manual paralleling systems.

Figure 1 illustrates the wiring of one gen-set using a Pow-R-Con with a DYNA 1 governor control and a Woodward 2301A Governor/Load Sharing Control. Additional engine generator sets can be paralleled by wiring them at the points designated, PARALLELING LINES TO OTHER SYSTEMS.

CAUTION

It is recommended that an independent overspeed 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 the governor system. Twist power leads and use shield cables as shown.
2. Using Pow-R-Con select current transformers to provide 5.0 amps at full rated load. Current transformers require 1.25 VA/PHASE at 5.0 amps.
3. Observe current transformer polarity markings when connecting.
4. Power switch current rating: 15 amps.
5. Phasing of voltage potential to Terminals 1, 2 and 3 is necessary to keep each signal in its correct phase relationship. The Pow-R-Con can be calibrated to accept 120 to 480Vac. If step-down transformers are used, the Pow-R-Con will require 1 Va/phase (nominal).
6. Droop/Isochronous switch is not required if units are always operated in the isochronous mode.
7. Pow-R-Con™ models (also see DYNA 259 or DYNA 265)
DYN2-94025 (module with display and programming panel)
DYN2-94026 (module without display and programming panel)
DYNK-55100 (display and programming panel)
DYNA-29900 (includes both DYN2-94026 and DYNK-55100)
8. Closing terminal 38 (synch enable) to terminal 39 (common) activates the Pow-R-Con's synchronizer. The phase and frequency 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 38 and 39 should be opened.
9. Phasing of voltage potential to the terminals 8 and 9 is necessary to keep each signal in its correct phase relationship. The Pow-R-Con can be calibrated to accept 120 to 480 Vac. If step-down transformers are used, the Pow-R-Con will require 1 Va/phase (nominal).
10. Connections to Pow-R-Con terminals 1, 2, and 3 must be the same voltage potential that is applied to terminals 8 and 9. 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.

The following should be completed to allow for paralleling the Pow-R-Con to the Woodward 2301A.

1. Wire per standard Pow-R-Con installation procedure with exception of adding the circuit as shown in figure 1. Consult Woodward 2301A manuals/wiring diagrams for details on installation.
2. The gain (parallel line voltage) of the Pow-R-Con will need to match to that of the 2301A. For example, typically Barber-Colman systems would see 3 volts on the parallel lines at full load.
3. Verify the voltage on the 2301A and confirm that it is 12.9 VDC to Common. The closer the zener diode matches the 2301A voltage the less frequency offset when paralleled.

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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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