



Technical Service Bulletin

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HDKAG Configuration Options for Isolated Neutral

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Warranty Statement

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

Contents

Product Affected

- HDKAG (Spec K)

Issue

Symptom:

- No AC voltage is generated at rated RPM when configured to star (wye) terminal connection using an isolated neutral configuration on an HDKAG unit

Root Cause:

- The field flash function of the generator set control does not function as intended on start-up, causing the generator set to not produce any output AC voltage at rated RPM.

Verification/Confirmation

Measure field flash voltage while terminal connections are configured to Star (Wye) as per HDKAG Service Manual (LN: 0981-0516 Issue 8):

1. In isolated neutral:
 - F1-F2 voltage: 0VDC
 - K15-87-ground voltage: ~11VDC
2. In grounded neutral:
 - F1-F2 voltage: 11VDC
 - K15-87-ground voltage: ~11VDC

Resolution

Two solutions are currently available to have an HDKAG unit operate with an isolated neutral.

1. Configure terminal connections to Series Delta and isolate neutral wire, given that the output voltage available from this configuration is acceptable.
2. If a Star (Wye) configuration is absolutely required, a work around solution has been deployed for field use. See service instructions below for further detail.

Consult with regional branch and/or regional DFSE before implementing any changes.

Customer Communication

Manuals (Service) do not indicate any intended use of star (wye) configuration with an isolated neutral on HDKAG units. Requirement and necessity to change terminal configurations should be thoroughly evaluated, if any changes are to be made.

Consult with regional branch and/or regional DFSE before implementing any changes. Policy coverage and modification approval to be reviewed by regional DFSE teams.

Service Instructions

Solution 1: Configure terminal connections to Series Delta and isolate neutral wire

- Review if output voltage from Delta connection is acceptable for customer requirement.
- Authorized Cummins service provider may reconfigure terminal connections to series delta as per HDKAG Service Manual (LN: 0981-0516, Issue 8)

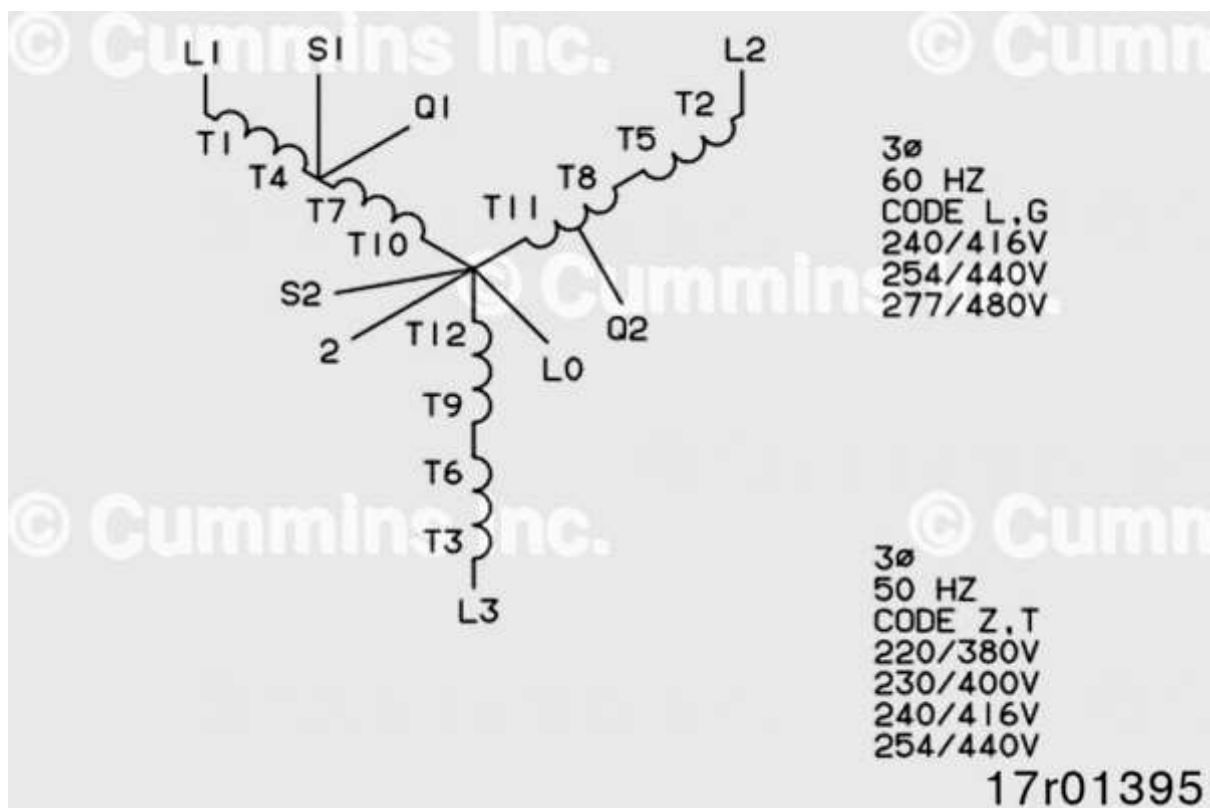


Figure 2, Star (Wye) configuration for terminal connections

- Further implementation of a relay solution, as below, will be required.

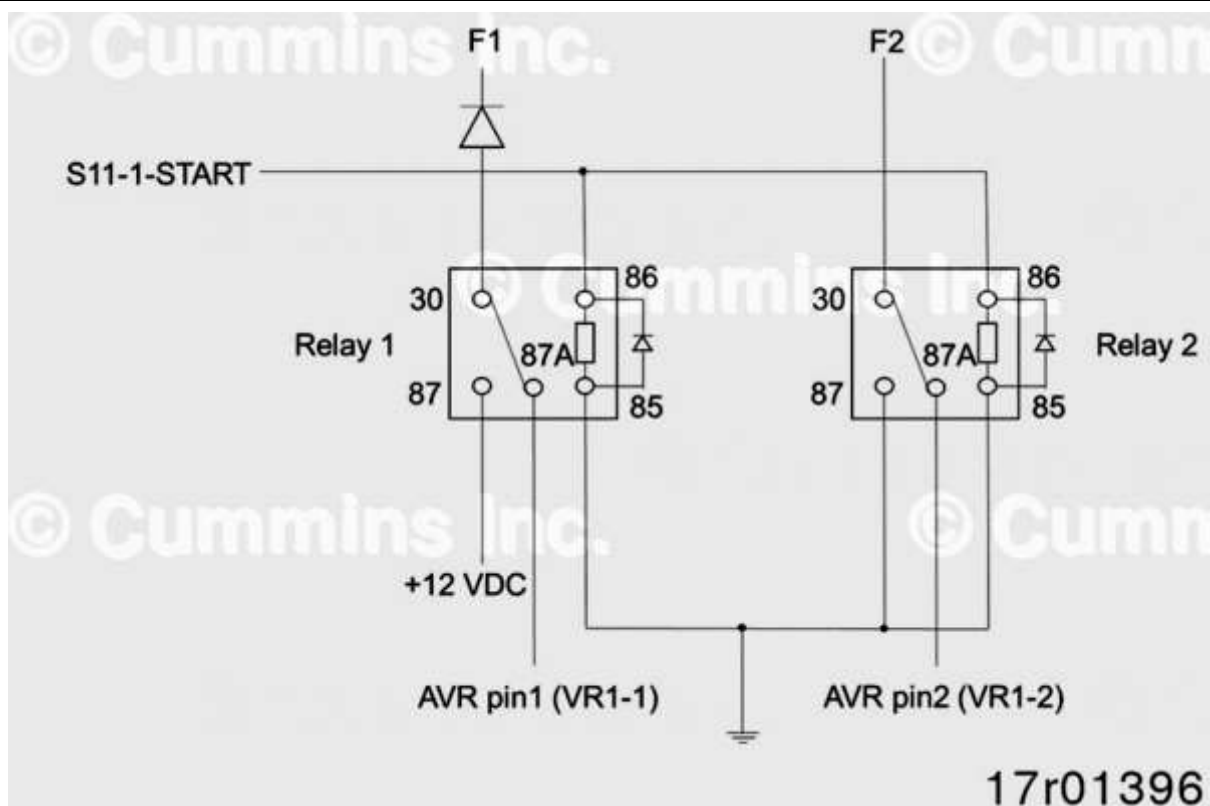


Figure 3, Relay Diagram

- Relays and wires are to be sourced locally and must meet the below operational requirements:
 - Relay Required: 5 pin 12 V 40 Amp or greater automotive relay
 - Wire Gauge: 18 Ga (1.024 mm) or greater
 - Diode Rating: 40 Amp 200 VDC or greater



Figure 4, 5 pin 12V 40A Relay

- Arrangement and mounting of components to be left to installer and customer discretion.
Policy coverage and modification approval to be reviewed by regional DFSE teams.

Document History

Date	Details
2022-2-4	Module Created
2024-1-5	Non-Product Problem Solving (PPS)

