WOODWARD

Application Note 51049
(Revision A, 12/2000)

Original Instructions

Load Sensor Wiring

- Accurate load sharing on single-phase generators
- Adds isochronous load sharing capability to some Woodward control systems for paralleling generators
- Provides up to 85% of load gain voltage available on three-phase systems

for Single Phase Generators

Load Sensor Wiring for Single Phase Generators

Applications

Woodward's three-phase load sensors (including the Load Sensors and 2301A Load Sharing and Speed Control) may be used on single-phase generators. This sheet describes a method of wiring a single-phase input to a three-phase load sensor that can provide load-sharing accuracy comparable to a conventional three-phase input.

Load sensors can be used to accomplish isochronous load-sharing in multi-engine generator systems, or for operation with Woodward auxiliaries.

Methods of Operation

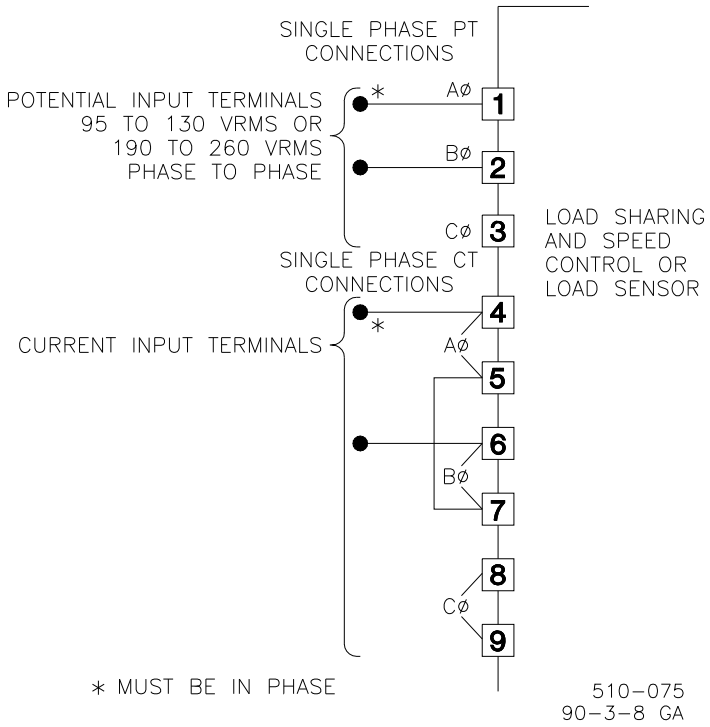
By measuring kilowatt load, the load sensor develops a load signal proportional to load. This voltage is shared with all other units in the power system in order to precisely maintain the loading of each generator.

The load sensor measures true generated current through connections to potential and current transformers. These connections normally are made to a three-phase generator with three current transformers. However, the alternate method shown uses only one current transformer to connect one phase in place of all three. This permits a single-phase system to provide an acceptable load gain voltage necessary for accurate load sharing—up to approximately 85 percent of the voltage available with the standard three-phase power input.

A single-phase generator could be connected to any one of the three-phase inputs, but would yield only 33 percent of the three-phase load-gain voltage.

Read the appropriate control or load sensor manual before installing, operating, or servicing. All procedures and precautions described in the manuals must be followed.

Load Sensor Wiring Diagram for Single Phase



WARNING

Do not use this method to sense only one phase of a three-phase system.

IMPORTANT

Read the appropriate control or load sensor manual before installing, operating, or servicing. All procedures and precautions described in the manuals must be followed.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 51049A.

WOODWARD

PO Box 1519, Fort Collins CO 80522-1519, USA
1000 East Drake Road, Fort Collins CO 80525, USA
Phone +1 (970) 482-5811 • Fax +1 (970) 498-3058

Email and Website—www.woodward.com

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