Instruction Manual

Installation
Operation
Maintenance

Line Drop Compensator
514-01905-04
514-01906-04
514-01907-04

Publication
351-07002-00 (06-21-2005)
Connections
See Figure 1.

Mounting
This unit can be mounted in any position. See Figure 2 for an outline drawing.

Operation
The line drop compensator provides constant voltage at the load for applications with line loss of up to approximately 8%, depending upon the type of voltage regulator. It does this by measuring the load at the generator and sending a signal to the voltage regulator to increase the voltage output when voltage is lost in the line between the generator and the load.

The current transformer supplies a signal that is proportional to the line current. The rectifier bridge converts this ac signal to dc, and it is added to the sensing circuit of the voltage regulator. The setting of the variable resistors will determine the amount of line drop compensation which is delivered to the voltage regulator.

Adjustment
1. Turn line drop compensation control on the front of unit fully counterclockwise. This control may be located external to the line drop compensator.

2. Set no-load voltage at the generator to the desired voltage by use of the voltage adjust rheostat.

3. Apply load; monitor the voltage at the load.

4. Turn the drop compensation control clockwise until voltage is the same as that in step 2.

If proper adjustment cannot be obtained, check connections. Be sure + and - connections are not reversed.

If connections are correct and the unit still cannot reach proper adjustments, the problem is in the line drop compensator or the current transformer supplying the line drop compensator.

Note: Because of rapid changes in designs and processes and the variability of Kato Engineering’s products, information in this manual must not be regarded as binding and is subject to change without notice.

Note: Line drop compensator will not compensate for more than approximately 8% of line loss.
**Maintenance**

If parts, repair, or replacement are required, contact the Service Department at Kato Engineering. Be sure to specify part number and serial number. Table 1 and Table is a list of replacement parts.

<table>
<thead>
<tr>
<th>Key Number</th>
<th>Description</th>
<th>Part Number</th>
<th>Quantity Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1, T2, T3</td>
<td>Transformer, 5 A to 0.5 A</td>
<td>858-25027-01</td>
<td>1 each</td>
</tr>
<tr>
<td>TB1</td>
<td>Terminal strip</td>
<td>531-14100-12</td>
<td>1</td>
</tr>
<tr>
<td>R1</td>
<td>External rheostat, 3 Ω, 25 W</td>
<td>867-21075-23</td>
<td>1</td>
</tr>
<tr>
<td>None</td>
<td>Circuit board assembly</td>
<td>509-00080-01</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1: Replacement parts for assembly 514-01905-04 (older model three-phase)

<table>
<thead>
<tr>
<th>Key Number</th>
<th>Description</th>
<th>Part Number</th>
<th>Quantity Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1, T2, T3</td>
<td>Transformer, 5 A to 0.5 A</td>
<td>858-25027-03</td>
<td>1 each for 514-01907-04 T1 only for 514-01906-04</td>
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<tr>
<td>TB1</td>
<td>Terminal strip</td>
<td>531-30309-10</td>
<td>1</td>
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<tr>
<td>R1</td>
<td>External rheostat, 3 Ω, 25 W</td>
<td>867-13075-23</td>
<td>1</td>
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<tr>
<td>None</td>
<td>Circuit board assembly</td>
<td>509-00080-02</td>
<td>1</td>
</tr>
<tr>
<td>L1</td>
<td>Filter choke</td>
<td>859-48010-00</td>
<td>1</td>
</tr>
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Table 2: Replacement parts for assembly 514-01906-04 and 514-01907-04
To use the internal droop adjust, connect a jumper between terminals 7 and 8 as shown in this drawing. To use remote adjust, connect a 3 Ω, 25 W rheostat between terminals 7 and - (minus) as shown by the dotted connection. Remove the jumper between 7 and 8. The single-phase unit uses terminals CT1A and CT1B.

Figure 1: Typical line connection (three phase)
Figure 2: Outline drawing
Figure 3: Single-phase electrical schematic (514-01906-04)
Figure 4: Three-phase electrical schematic (514-01907-04)
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