Instruction Manual

Installation
Operation
Maintenance

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

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Nidec
KATO ENGINEERING™

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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.*

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.

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

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.

Maintenance

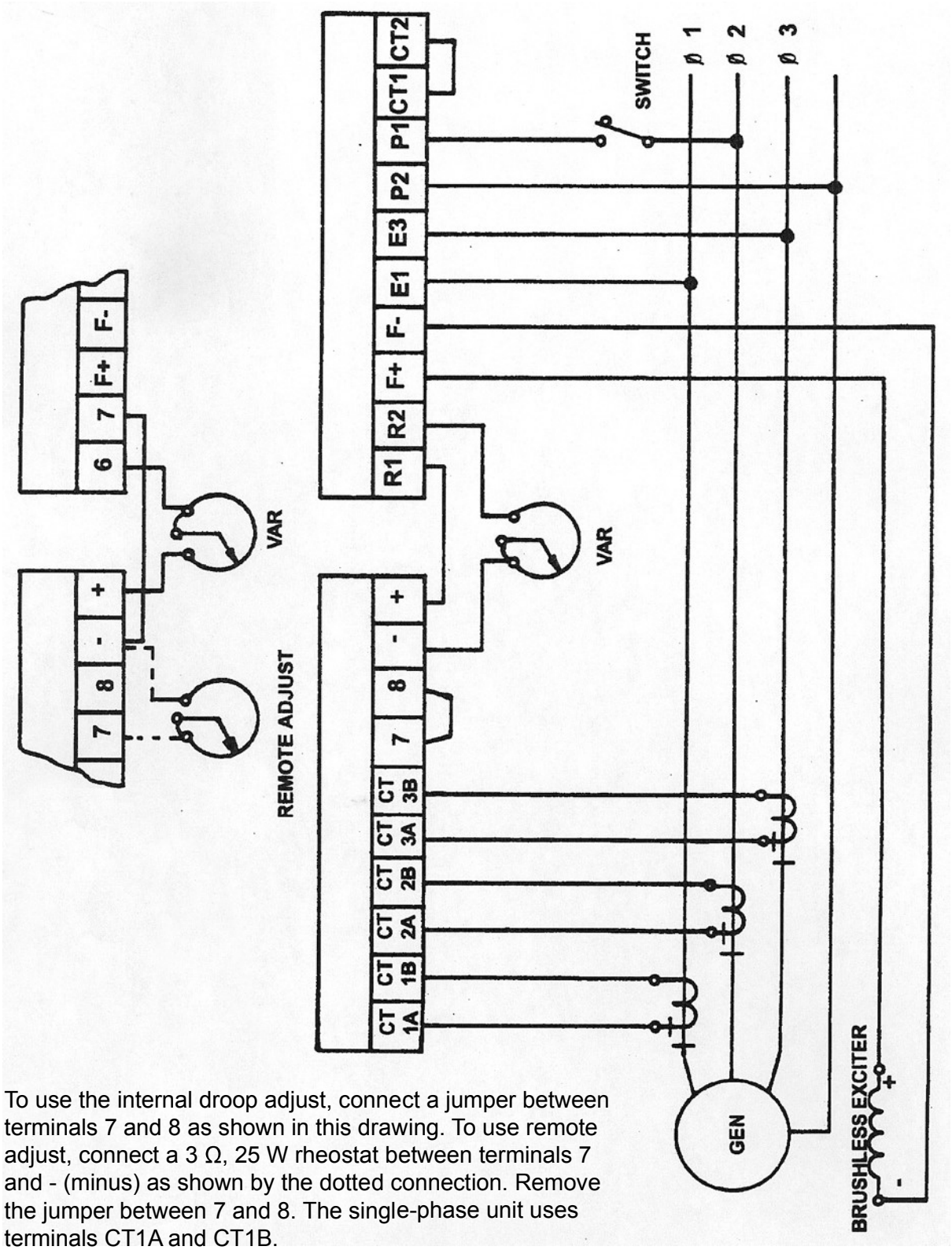
If parts, repair, or replacement are required, contact the Service Department at Kato Engineering. Be sure to specify part number and serial number. Table 1 and Table is a list of replacement parts.

Key Number	Description	Part Number	Quantity Required
T1, T2, T3	Transformer, 5 A to 0.5 A	858-25027-01	1 each
TB1	Terminal strip	531-14100-12	1
R1	External rheostat, 10 Ω, 25 W	867-21075-23	1
None	Circuit board assembly	509-00080-01	1

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

Key Number	Description	Part Number	Quantity Required
T1, T2, T3	Transformer, 5 A to 0.5 A	858-25027-03	1 each for 514-01907-04 T1 only for 514-01906-04
TB1	Terminal strip	531-30309-10	1
R1	External rheostat, 3 Ω, 25 W	867-13075-23	1
None	Circuit board assembly	509-00080-02	1
L1	Filter choke	859-48010-00	1

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)

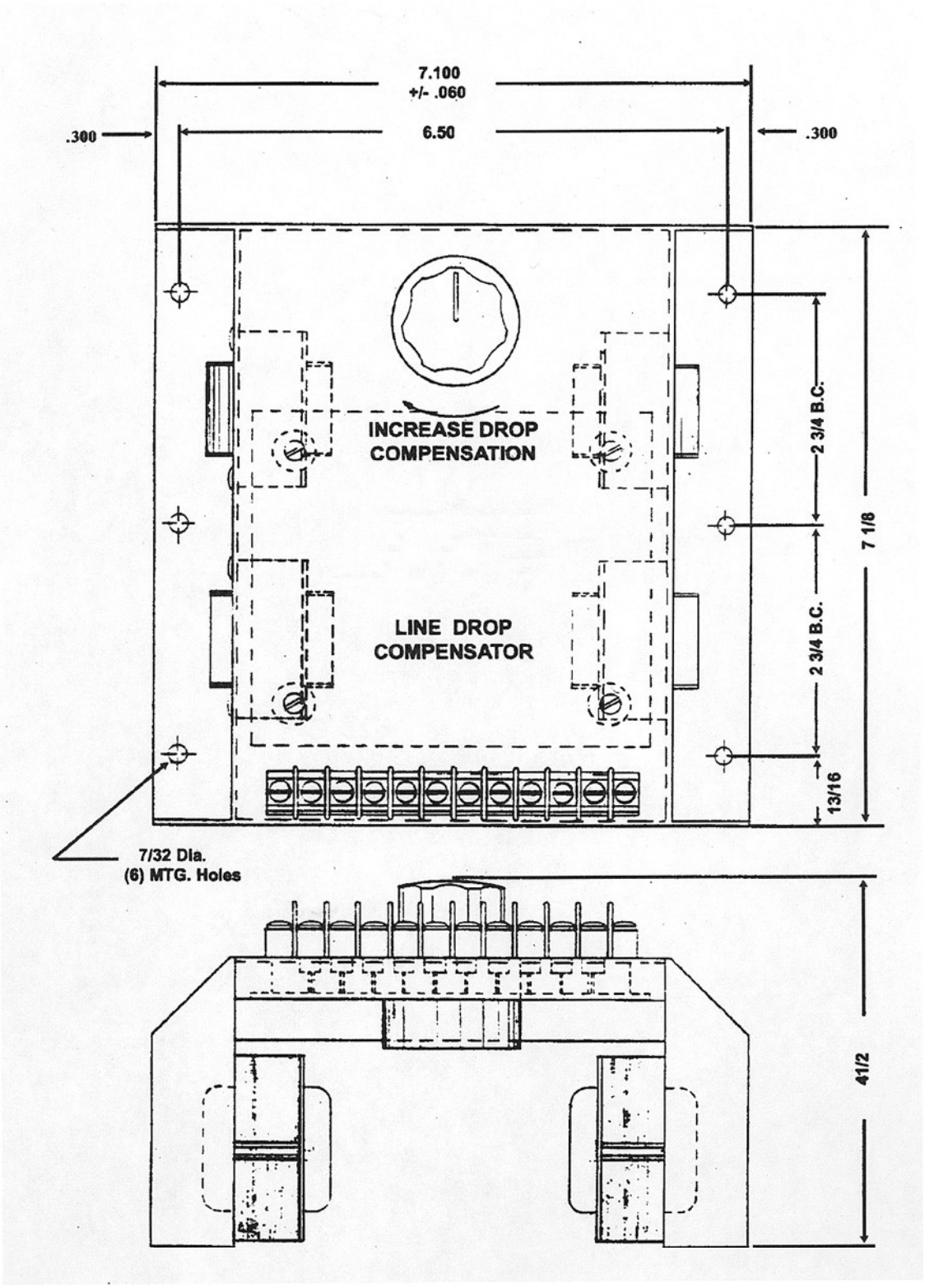


Figure 2: Outline drawing

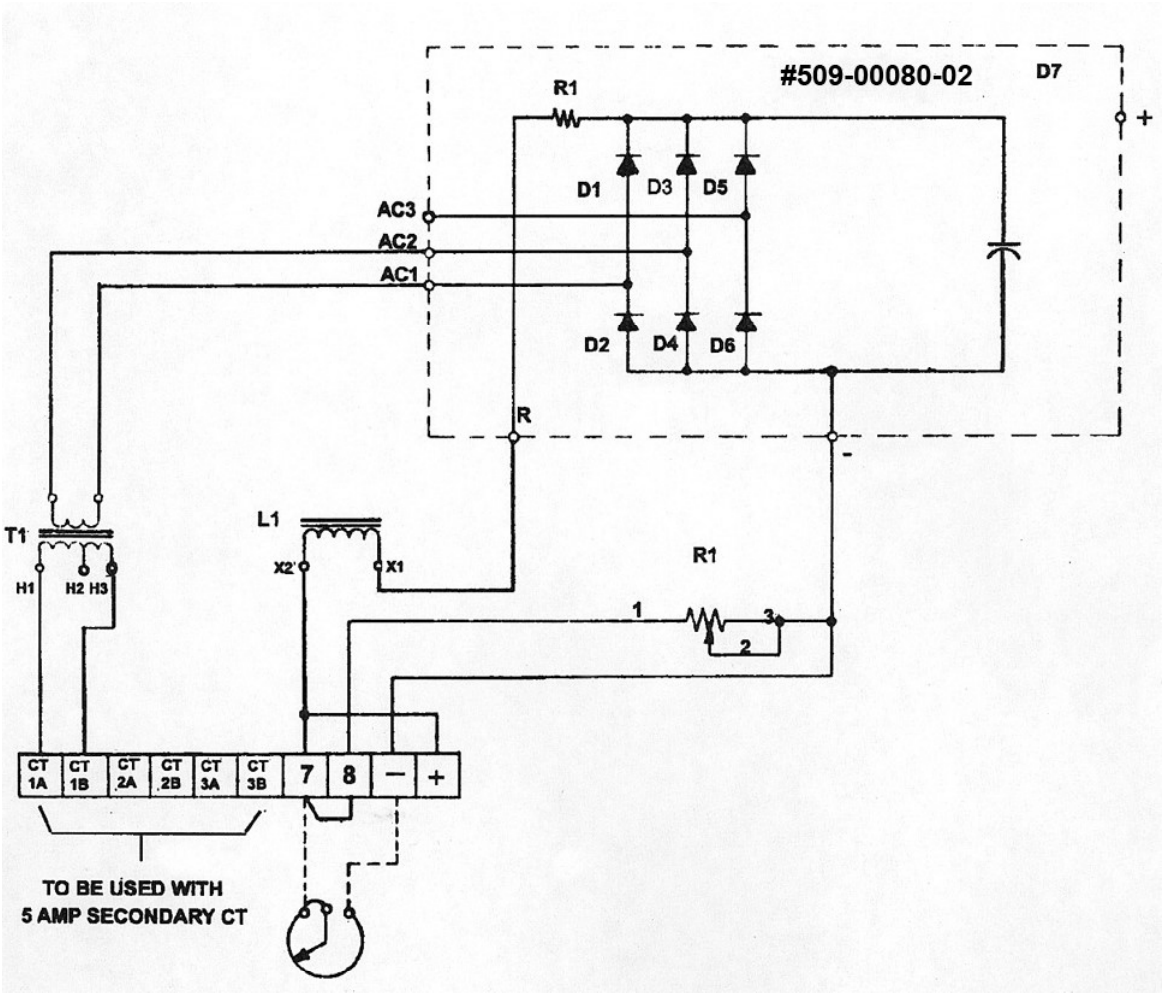


Figure 3: Single-phase electrical schematic (514-01906-04)

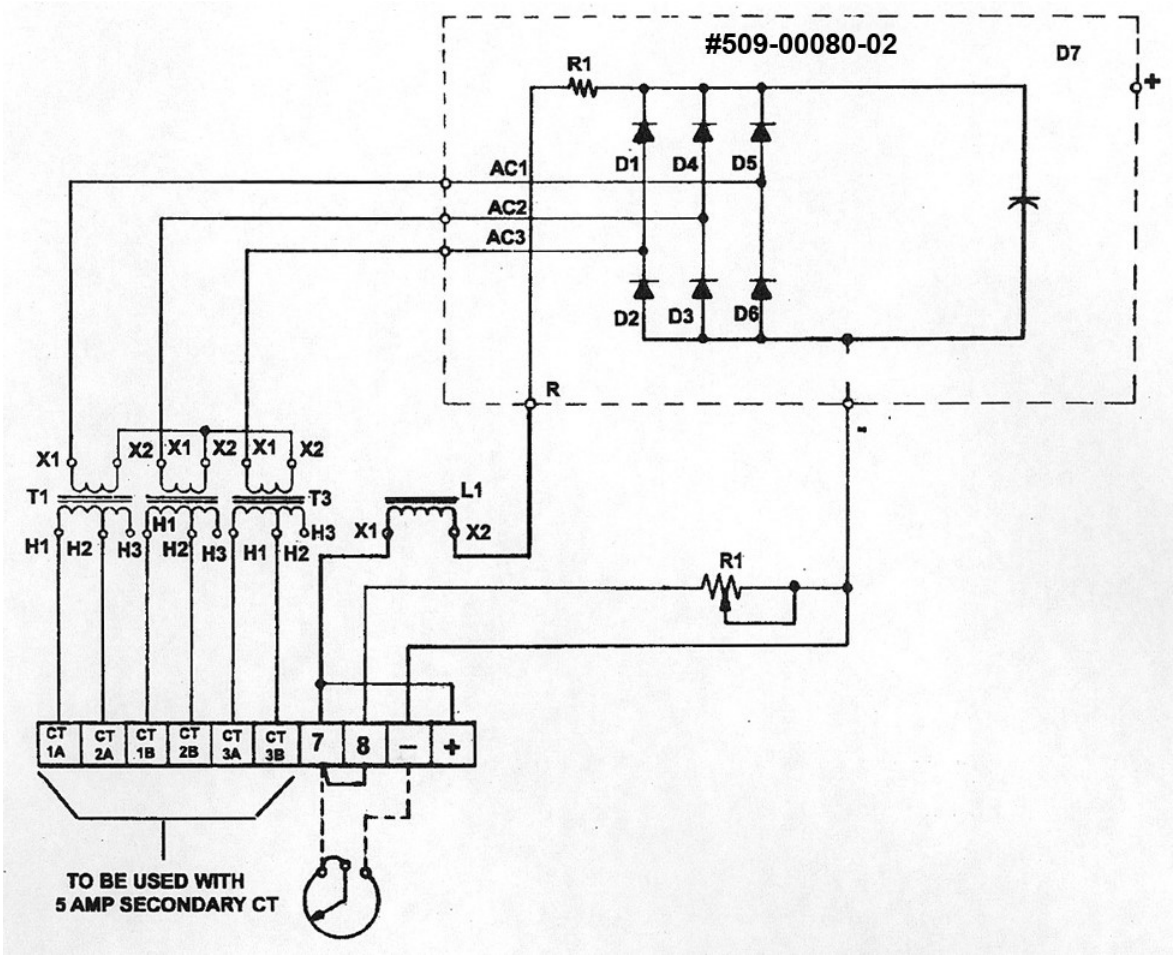


Figure 4: Three-phase electrical schematic (514-01907-04)

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