Chapter 1.
General Information

Introduction

The Woodward Load Sharing Module is made for use with engines equipped with speed controls that accept a 0–5 Vdc speed setting. The Load Sharing Module allows use of Woodward power generation accessories and allows load sharing between engines equipped with speed controls that are not manufactured by Woodward and engines controlled with Woodward electronic controls, or controls using other Woodward load sharing modules.

Description

The Load Sharing Module provides isochronous and droop load-sharing capability for engines in generator set applications. Additional equipment in the control system can include the Woodward SPM-A Synchronizer, Import/Export Control, Automatic Generator Loading Control, and Automatic Power Transfer and Loading Control.

Figure 1-1 shows a typical system using a Load Sharing Module.

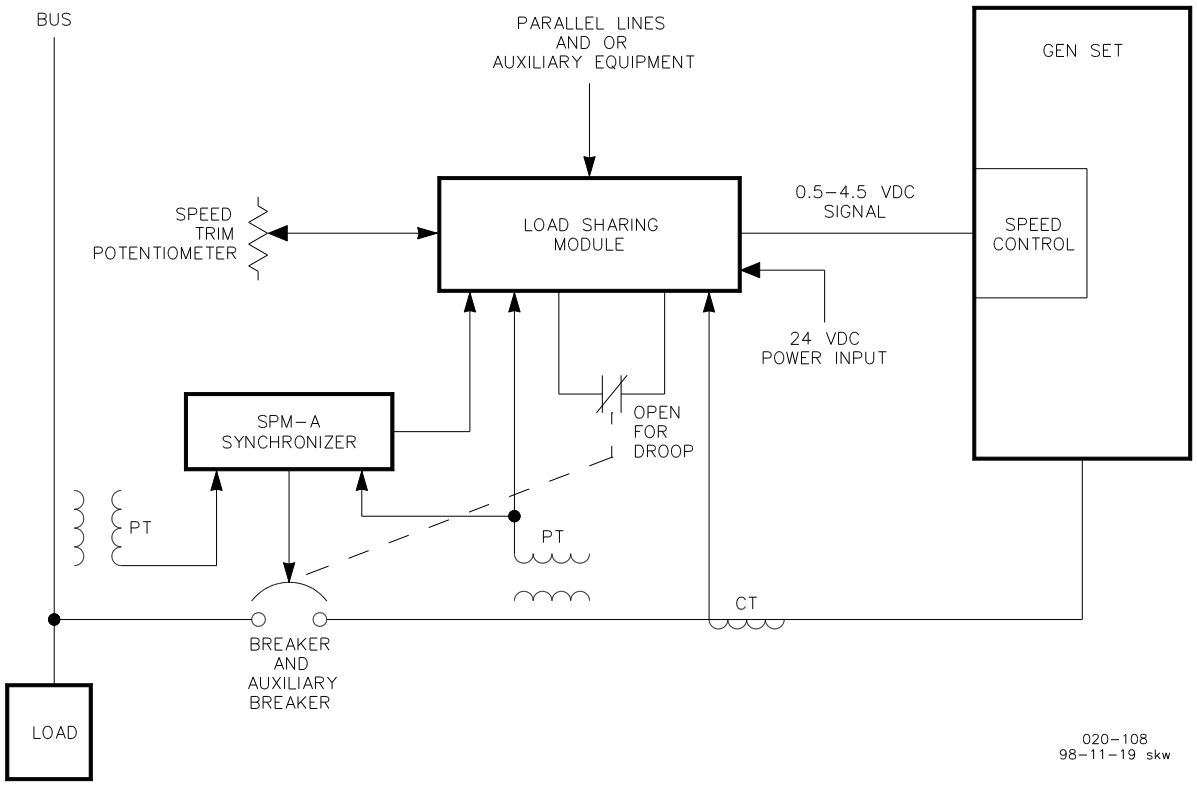

Figure 1-1. Typical System Using a Load Sharing Module

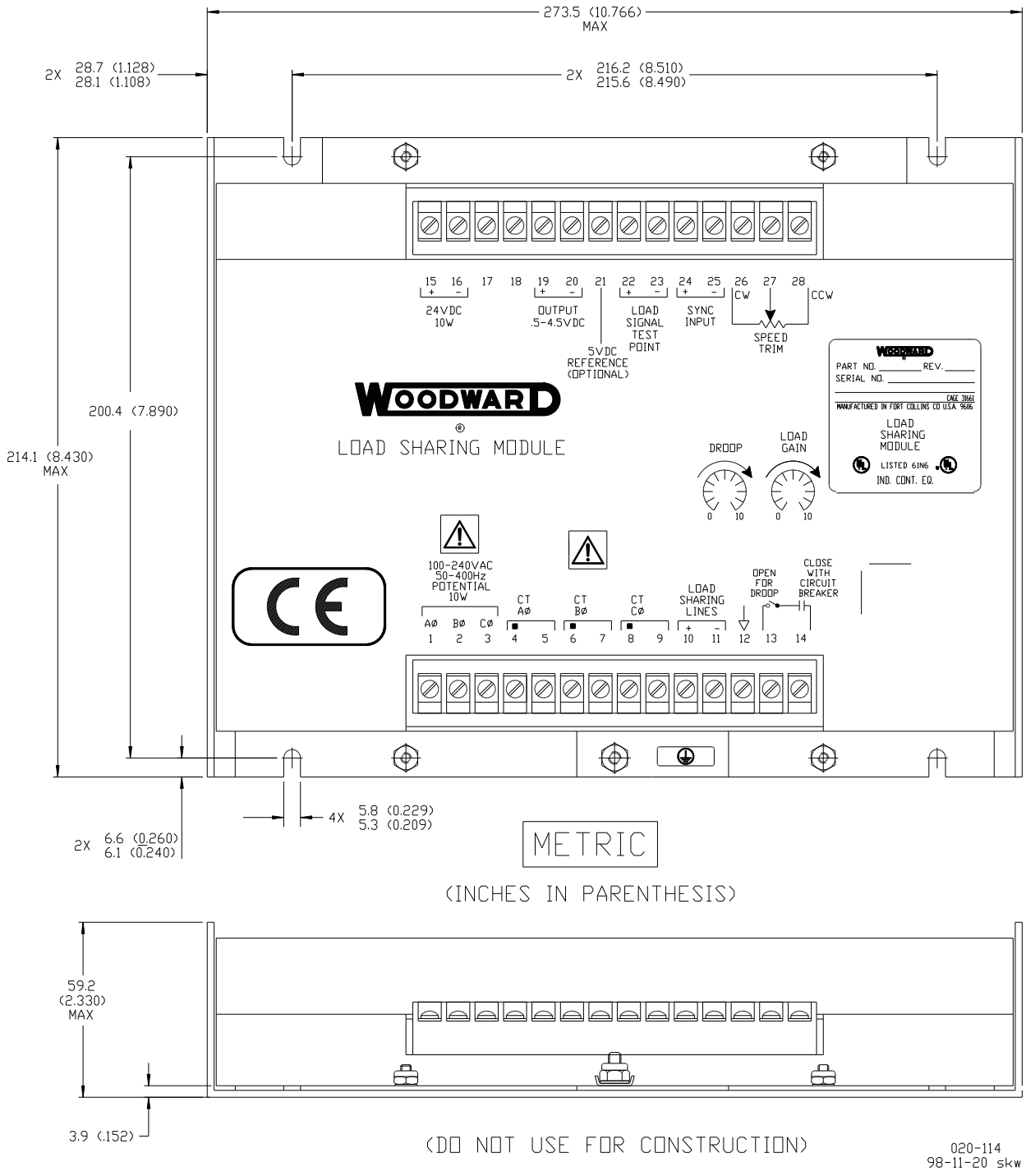

Figure 1-2. Outline Drawing of Load Sharing Module

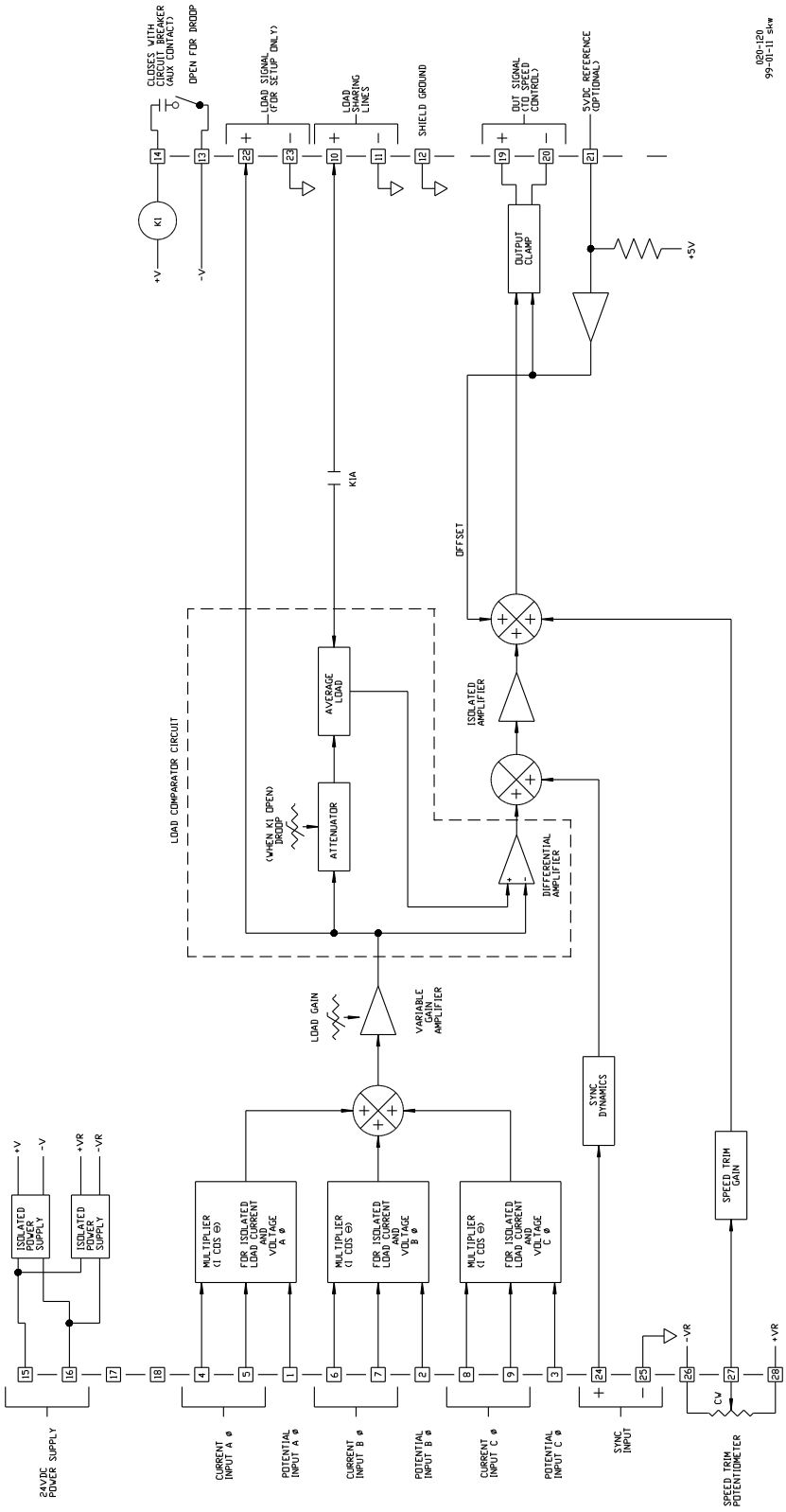

Figure 1-3a. Block Diagram of Load Sharing Module

NOTES:

1. WITH A BALANCED THREE PHASE LOAD AND UNITY POWER FACTOR, THE CURRENT TRANSFORMERS SHOULD BE WIRED IN THE CORRECT POTENTIAL LEG AND MUST BE PHASED AT THE CONTROL AS FOLLOWS:

   PHASE A: POTENTIAL TERMINAL 1, WITH RESPECT TO NEUTRAL, IN PHASE WITH CT TERMINALS 4 (■) TO 5.
   PHASE B: POTENTIAL TERMINAL 2, WITH RESPECT TO NEUTRAL, IN PHASE WITH CT TERMINALS 6 (■) TO 7.
   PHASE C: POTENTIAL TERMINAL 3, WITH RESPECT TO NEUTRAL, IN PHASE WITH CT TERMINALS 8 (■) TO 9.

2. POWER SOURCE CURRENT TRANSFORMERS SHOULD BE SIZED TO PRODUCE 5A SECONDARY CURRENT WITH MAXIMUM GENERATOR CURRENT. CT BURDEN IS 0.1 VA.
3. CONTACTS TO CLOSE WHEN BREAKER CLOSES.
4. THE GENERATOR CURRENT TRANSFORMERS MUST BE CONNECTED TO THE APPROPRIATE TERMINALS OF THE LOAD SHARING MODULE WHENEVER UNIT IS RUNNING TO PREVENT LETHAL HIGH VOLTAGE FROM DEVELOPING ON LEADS TO THESE TERMINALS.
5. POTENTIAL TRANSFORMER BURDEN IS 5VA PER PHASE WITH 230VAC INPUT AND 2.5VA PER PHASE WITH 115VAC INPUT.
6. SIGNAL LINES SHOULD BE TWISTED SHIELDED WIRES.
7. PROTECTIVE EARTH GROUND. USE AS REQUIRED BY REGULATIONS. GROUND WIRE MUST BE AT LEAST AS LARGE AS THE WIRES ON TERMINALS 1 THROUGH 9.
8. CONNECT SHIELDS TO THE NEAREST CHASSIS SCREW AS INDICATED.
9. THE WIRE LUGS ON TERMINALS 3 AND 4 MUST HAVE INSULATED SLEEVES AND MUST HAVE A CREEPAGE DISTANCE OF 6.5 MM (.256") OR GREATER TO COMPLY WITH THE EUROPEAN UNION'S LOW VOLTAGE DIRECTIVE.
10. REPLACE AMMETERS WITH JUMPERS IF AMMETERS ARE NOT USED.

⚠ THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATIONS AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE PRODUCT.

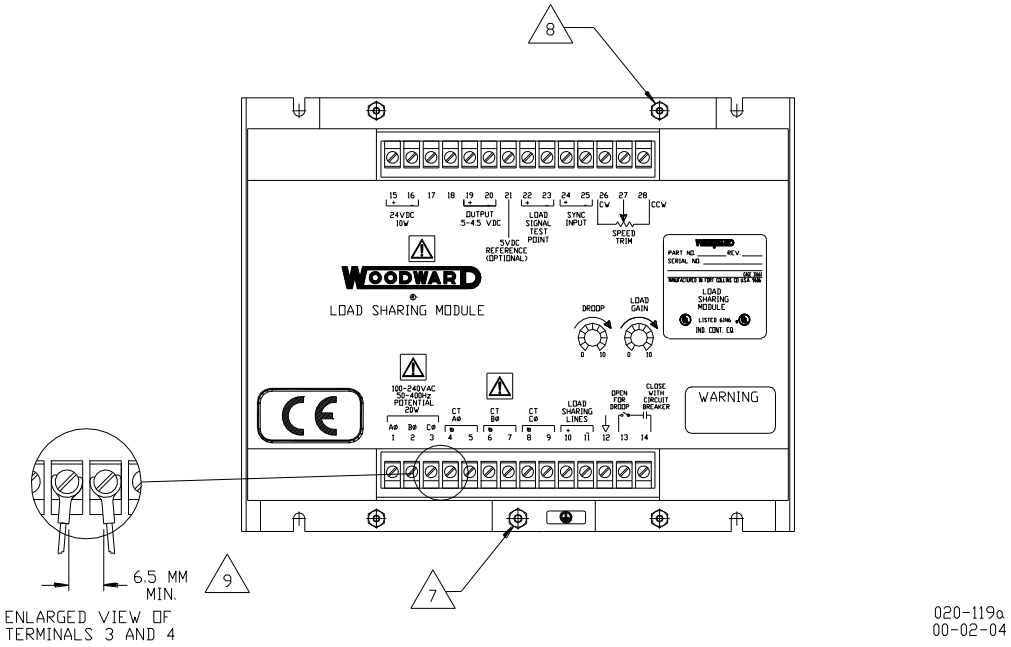

Figure 1-3b. Drawing Notes and Enlarged View of Terminals 3 and 4