

Figure 1. Winterization Thermostat, Resistors, and Diode.

NOTE

Replace heat shrink sleeving when soldering wiring on resistor leads.

2. To install resistor HTR1 (Figure 1, Item 4) or HTR2 (Figure 1, Item 5), position resistor and secure with two screws (Figure 1, Item 6) and nuts (Figure 1, Item 7).

3. Connect spade terminals as follows:
 - HTR-1 lead 1 to TB4-10B
 - HTR-2 lead 1 to TB3-10B
 - HTR-1 lead 2 to HTR-2 lead 2
4. To install thermostat (Figure 1, Item 1), position thermostat and secure with two screws (Figure 1, Item 3) and nuts (Figure 1, Item 2).
5. Connect spade terminals to TB 4 as follows:
 - Lead from TS-1 to TB 4-17
 - Lead from TS-2 to TB 4-12
6. Close control box panel and control box door.

END OF TASK

END OF WORK PACKAGE

SUSTAINMENT MAINTENANCE**TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A**
WINTERIZATION WIRING HARNESSES: REMOVAL, INSTALLATION

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (GMTK) (WP 0122, Table 2, Item 2)
Tool Set, Standard Automotive (SATS) Base (WP 0122, Table 2, Item 3)

Materials/Parts

Marker tags (WP 0123, Table 1, Item 54)
Tiedown strap (WP 0123, Table 1, Item 51)

Personnel Required

One

References

TM 9-6115-729-24P

Equipment Condition

Generator Set fully stopped
Engine Control Switch in OFF/RESET Position
Battery Disconnect Switch set in OFF Position
Dead Crank Switch set in OFF Position

WARNING

Metal jewelry will conduct electricity. All jewelry can become entangled in generator set components. Remove all jewelry when working on generator set. Failure to comply can cause injury or death to personnel by electrocution.

WARNING

DO NOT wear loose clothing when performing checks, services and maintenance. Failure to comply can cause injury or death to personnel.

WARNING

High voltage is produced when this generator set is in operation. Make sure unit is completely shut down and free of any power source before attempting any repair or maintenance on the unit. Failure to comply can cause injury or death to personnel.

WARNING

High voltage is produced when the generator set is in operation. Never attempt to start or maintain the generator set unless it is properly grounded. Failure to comply can cause injury or death to personnel.

WARNING

DC voltages are present at generator set electrical components even with generator set shut down. Avoid shorting any positive with ground/negative. Failure to comply can cause injury to personnel and damage to equipment.

WARNING

When running, winterization heater has hot metal surfaces that will burn flesh on contact. Shut down generator set and allow heater to cool before performing maintenance. Wear gloves and additional protective clothing as required. Failure to comply can cause injury or death to personnel.

REMOVAL

1. Ensure generator set is fully stopped, ENGINE CONTROL switch is OFF/RESET, Battery Disconnect Switch is OFF, and DEAD CRANK SWITCH is OFF before proceeding.

NOTE

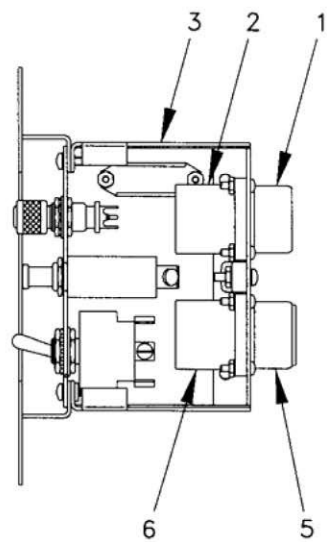
Cut tiedown straps as required.

2. Open left rear doors and battery access doors.
3. To remove winterization power input wiring harness, disconnect connector P26 (Figure 1, Item 1) from connector J26 (Figure 1, Item 2) on rear of winterization heater control box (Figure 1, Item 3).
4. On terminal board TB5 (Figure 1, Item 4), tag and disconnect three spade terminals from TB5-15A, TB5-16A, and TB5-17A.
5. Remove winterization power wiring harness.
6. To remove heater to heater control box wiring harness, disconnect connector P27 (Figure 1, Item 5) from connector J27 (Figure 1, Item 6) on rear of winterization heater control box (Figure 1, Item 3).
7. On terminal board TB5 (Figure 1, Item 4), tag and disconnect spade terminal from TB5-17B.
8. On winterization heater (Figure 1, Item 7), disconnect connector P28 (Figure 1, Item 8) (FO-1, Sheet 6) from top of heater and connector P29 (Figure 1, Item 9) (FO-1, Sheet 6) from end of heater.
9. Remove winterization heater to heater control box wiring harness.

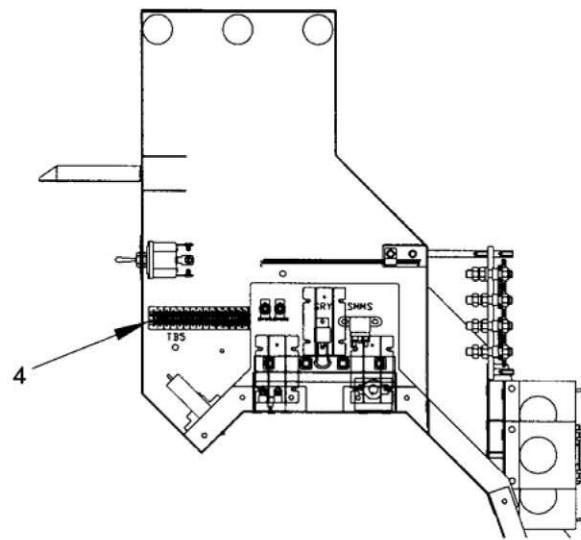
END OF TASK**INSTALLATION****NOTE**

Install tiedown straps as required.

1. To install winterization heater to heater control box wiring harness, connect connector P29 (Figure 1, Item 9) (FO-1, Sheet 6) to end of heater (Figure 1, Item 7) and connector P28 (Figure 1, Item 8) (FO-1, Sheet 6) to top of heater.
2. On terminal board TB 5 (Figure 1, Item 4), connect spade terminal to TB5-17B.
3. Connect connector P27 (Figure 1, Item 5) to connector J27 (Figure 1, Item 6) on rear of winterization heater control box (Figure 1, Item 3).
4. To install winterization power wiring harness, connect three spade terminals to TB5-17A, TB5-16A, and TB5-15A on terminal board TB5 (Figure 1, Item 4).
5. Connect connector J26 (Figure 1, Item 2) to connector P26 (Figure 1, Item 1) on rear of winterization heater control box (Figure 1, Item 3).
6. Close left rear doors and battery access doors.



VIEW FROM BEHIND
HEATER CONTROL BOX



REAR VIEW

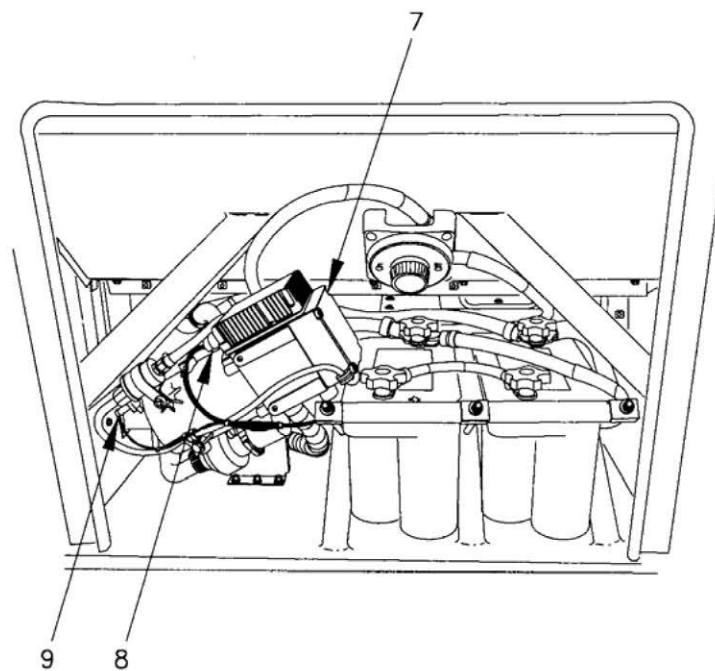


Figure 1. Winterization Wiring Harnesses.

END OF TASK

END OF WORK PACKAGE

CHAPTER 6

FIELD AND SUSTAINMENT SUPPORTING INFORMATION

FOR

TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz
MEP-807A/PU-807A

CHAPTER 6
SUPPORTING INFORMATION

WORK PACKAGE INDEX

<u>Title</u>	<u>WP Sequence No.</u>
References	0120
Introduction for Standard Two-Level MAC	0121
Maintenance Allocation Chart (MAC)	0122
Expendable and Durable Items List.....	0123
Laminates	0124

FIELD MAINTENANCE**TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A****REFERENCES**

SCOPE

This work package lists all field manuals, forms, technical manuals, and miscellaneous publications referenced in this manual.

FIELD MANUALS

FM 3-3	Chemical and Biological Contamination Avoidance
FM 3-3-1	Nuclear Contamination Avoidance
FM 3-11.4	NBC Protection
FM 3-11.5	NBC Decontamination
FM 3.97.6	Mountain Operations
FM 4-25.11	First Aid
FM 5-20	Camouflage
FM 9-207	Operation and Maintenance of Ordnance Materiel in Cold Weather (0° to -65°)
FM 10-67-1	Concepts and Equipment of Petroleum Operations
FM 10-564	Air Drop of Supplies and Equipment
FM 21-6	Techniques of Military Instruction
FM 21-30	Military Symbols
FM 21-40	Chemical, Biological, Radiological, and Nuclear Defense
FM 21-305	Manual for Wheeled Vehicle Driver
FM 31-70	Basic Cold Weather Manual
FM 31-71	Northern Operations

FORMS

AFR 66-1	Maintenance Reporting
AFTO Form 22	Technical Order Publication Improvement Report
DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
DA Form 2062	Hand Receipt
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2407	Maintenance Request
DA Form 2408	Equipment Log Assembly (Records)
DA Form 2408-9	Equipment Control Record
DA Form 2408-20	Oil Analysis Log
DA Form 5988-E	Equipment Inspection and Maintenance Worksheet
DD Form 314	Preventive Maintenance Schedule and Record
DD Form 518	Accident Identification Card
DD Form 1397	Processing and Deprocessing Record for Shipment, Storage, and Issue of Vehicles and

DD Form 2326	Preservation and Packing Data
NAVMC10524	Consolidated Engineer Equipment Operations Log and Service Record
NAVMC10560	Worksheet for Quarterly Preventive Maintenance and Technical Inspection for Engineer
NAVMC 10772	Recommended Changes to Publications and Blank Forms
SF Form 91	Motor Vehicle Accident Report
SF Form 361	Transportation Discrepancy Report
SF Form 364	Report of Discrepancy (ROD)
SF Form 368	Product Quality Deficiency Report

MISCELLANEOUS PUBLICATIONS

AR 190-13	Army Physical Security Program
AR 190-16	Physical Security
AR 385-11	Safety Ionizing Protection
AR 700-138	Army Logistics Readiness and Sustainability
AR 735-11-2	Reporting of Supply Discrepancies
AR 750-1	Army Materiel Maintenance Policy and Retail Maintenance Operations
AR 750-244-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use
CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-970	Expendable Items (Except Medical Class V, Repair Parts, and Heraldic Items)
TC 9-237	Operator's Circular, Welding Theory and Application
TC 38-3	Guide for Basic Military Preservation and Packing

PAMPHLETS

DA PAM 25-30	Consolidated Index of Publications and Blank Forms
DA PAM 750-8	Functional Users Manual for the Army Maintenance Management System (TAMMS)

TECHNICAL BULLETINS

TB 43-0209	Color, Marking, and Camouflage Painting of Military Vehicles, Construction Equipment, and Materials Handling Equipment
TB 43-0213	Corrosion Prevention and Control
TB 750-651	Use Of Antifreeze Multi-engine Type Cleaning Compounds And Test Kit In Engine Cooling Systems (This Item Is Included On EM 0178)
TB ORD 1032	Description, Use, Bonding Techniques, and Properties of Adhesives

MILITARY STANDARDS AND SPECIFICATIONS

A-A-52557	Fuel Oil, Diesel
MIL-DTL-53072C	Chemical Agent Resistant Coating (CARC) System Application Procedures and Quality
MIL-L-21260	Lubricating Oil, Internal Combustion Engine, Preservative and Break-In
MIL-L-46167	Lubricating Oil, Internal Combustion Engine, Arctic
MIL-PRF-2104	Lubricating Oil, Internal Combustion Engine, Combat/Tactical Service
MIL-PRF-5624	Turbine Fuels, Aviation, Grades JP-4, JP-5, and JP-5/JP-8 ST

MIL-STD-913 Requirements for the Certification of Sling Loaded Military Equipment for External

DEPARTMENT OF DEFENSE (DOD) STANDARDS

DOD 4100-1-R Department of Defense Materiel Management Regulations
DOD 4100-39-M FLIS Program Manual

DETAIL SPECIFICATION

MIL-DTL 83133E Turbine Fuels, Aviation, Kerosene Types NATO F-34 (JP-8), NATO F-35, and JP8+10

TECHNICAL MANUALS

TM 3-220 Chemical, Biological, and Radiological (CBR) Decontamination
TM 9-214 Inspection, Care, and Maintenance of Antifriction Bearings
TM 9-238 Deepwater Fording of Ordnance Material
TM 9-247 Materials Used for Cleaning, Preserving, Abrading, and Cementing Ordnance Material
TM 9-6115-729-10 Operator Manual Tactical Quiet Generator Set, Skid Mounted, 100 kW, 50/60 Hz MEP-807A and Tactical Quiet Generator Set, Trailer Mounted, 100 kW, 50/60 Hz, PU-807A
TM 9-6115-729-24P Repair Parts and Special Tools Lists for Tactical Quiet Generator Set, Skid Mounted, 100 kW, 50/60 Hz MEP-807A and Tactical Quiet Generator Set, Trailer Mounted, 100 kW, 50/60 Hz, PU-807A
TM 9-2330-376-14&P Operator's, Organizational, DS, and GS Maintenance Manual Including Repair Parts and Special Tools Lists for Trailer, 5-Ton, 4-Wheel, GEMSS, XM979; Trailer, Flatbed: 5-Ton, 4-Wheel, XM1061/M1061A1; and Trailer, General Purpose, Flatbed: 7-1/2-Ton, XM1073
TM 43-0139 Painting Instructions for Army Materiel
TM 55-1500-323-24 Installation Practices for Aircraft Electrical and Electronic Wiring
TM 740-90-1/TO 35-1-4 Administrative Storage of Equipment
TM 750-244-2 Procedures for Destruction of Electronics Materiel to Prevent Enemy Use
TM 750-254 Cooling Systems: (Tactical Vehicles)
TM 4700-15 Operation and Maintenance of Ground Equipment
TO 00-350-54 Unsatisfactory Equipment Reporting

END OF WORK PACKAGE

FIELD AND SUSTAINMENT MAINTENANCE
TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A
MAINTENANCE ALLOCATION CHART (MAC)

INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions.

The MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance tasks on the identified end item or component. The application of the maintenance tasks to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels/classes, which are shown on the MAC in column (4). Column (4) is divided into two secondary columns. These columns indicate the maintenance levels/classes of 'Field' and 'Sustainment.' Each maintenance level column is further divided into two sub-columns. These subcolumns identify the maintenance classes and are as follows:

1. Field level maintenance classes:
 - a. Crew (operator) maintenance. This is the responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. Items with a "C" ("O" for joint service reporting) in the third position of the Source, Maintenance, and Recoverability (SMR) code may be replaced at the crew (operator) class. A code of "C" ("O" for joint service) in the fourth position of the SMR code indicates complete repair is authorized at the crew (operator) class.
 - b. Maintainer maintenance. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion by field level units. This maintenance is performed either on the system or after it is removed. An "F" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this level. An "F" in the fourth position of the SMR code indicates complete repair of the identified item is allowed at the Maintainer class. Items repaired at this level are normally returned to the user after maintenance is performed.
2. Sustainment level maintenance classes:
 - a. Below depot sustainment. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The item subject to maintenance has normally been forwarded to a maintenance facility away from the field level supporting units. An "H" in the third position of the SMR code indicates replacement of assemblies, subassemblies, or other components is authorized at this class. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at this class. Items are normally returned to the supply system after maintenance is performed at this class.
 - b. Depot. This is maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. Assets to be repaired at this class are normally returned to an Army Depot or authorized contractor facility. The replace function for this class of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this class.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance task as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance task.

Maintenance Tasks

Maintenance tasks are limited to and defined as follows:

1. Inspect. A function to determine the serviceability of an item by comparing its physical, mechanical, and/or

electrical characteristics with established standards through examination (e.g., by sight, sound, or feel).

2. **Test.** To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. **Service.** Operations required periodically to keep an item in proper operating condition such as replenishing fuel, lubricants, chemical fluids, or gases.
4. **Adjust.** To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. **Align.** To adjust specified variable elements of an item to bring about optimum or desired performance.
6. **Calibrate.** To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. It consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. **Remove.** The act of taking a sub-component off an asset to allow repair or replacement of that sub component, or to facilitate other maintenance.
8. **Install.** The act of placing, positioning, or otherwise locating a component or sub-component to make it part of a higher level end item. Install can be to install a new asset for the first time or reinstall an asset previously removed. The maintenance class allowed to perform an installation is determined by the third position in the SMR code.
9. **Replace.** To install a serviceable component in place of one that is unserviceable or a required time change asset. "Replace" is authorized by the MAC and assigned maintenance class is shown as the third position code of the SMR code.
10. **Repair.** The application of maintenance actions, including fault location/troubleshooting, removal, installation, disassembly, assembly or other maintenance actions to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in the item.
11. **Paint.** This is a function to prepare and apply coats of paint. When used with munitions, the paint is applied to the ammunition can be identified and protected.

NOTE

The following definitions are applicable to the "repair" maintenance task:

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

12. **Overhaul.** This is the maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operation condition as required by maintenance standards in the appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to a like new condition.
13. **Rebuild.** This consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.
14. **Lubricate.** The act of applying a material (e.g., oil or grease) to reduce friction and allow a component to operate in a more efficient manner.
15. **Mark.** The process of restoring obliterated identification on an asset.
16. **Pack.** To place an item into a container for either storage or shipment after service and other maintenance operations have been completed.
17. **Unpack.** The act of removing an asset from a storage or shipping container in preparation to perform further maintenance (e.g., repair or install).
18. **Preserve.** The action required to treat systems and equipment whether installed or stored, to ensure a serviceable condition.
19. **Prepare for Use.** Those steps required to make an asset ready for other maintenance (e.g., remove preservatives, lubricate, etc).
20. **Assemble.** The step-by-step instructions to join the component pieces of an asset together to make a complete serviceable asset.

21. Disassemble. The step-by-step breakdown (taking apart) of a spare/functional group coded item to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).
22. Clean. Step-by-step instructions on how to remove dirt, corrosion or other contaminants from equipment.
23. Non-destructive inspection. Step-by-step instructions on preparation and accomplishment of inspections which do not destroy or damage the equipment.
24. Radio interference suppression. Step-by-step instructions to ensure installed equipment, either communication or other electronics, does not interfere with installed communication equipment.
25. Place in service. Step-by-step instructions required to place an item into service that are not covered in the service upon receipt work package.
26. Towing. The step-by-step instructions to connect one vehicle to another for the purpose of having one vehicle moved through the motive power of the other vehicle.
27. Jacking. The step-by-step instructions to mechanically raise or lift a vehicle to facilitate maintenance on the vehicle.
28. Parking. Step-by-step instructions to safely place a vehicle in a lot, ramp area or other designated location.
29. Mooring. Step-by-step instructions to secure a vehicle by chains, ropes or other means to protect the vehicle from environmental conditions or secure for transportation.
30. Covering. Step-by-step instructions to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (e.g., camouflage) it.
31. Hoisting. Step-by-step instructions to allow a vehicle to be raised by cables or ropes through attaching points.
32. Sling loading. Step-by-step instructions to place a sling around a vehicle to allow it to be raised.
33. External power. Step-by-step instructions on how to apply electrical power from any authorized power source (e.g., external generator or facility power).
34. Preparation for storage or shipment. Those procedures necessary to prepare an item to be stored for an extended period or shipped.
35. Arm. Detailed instructions on activating munitions prior to use.
36. Load. This may be one of two tasks:
 - a. For transportation, the act of placing assets onto a transportation medium (e.g., pallet, truck, container).
 - b. For weapons/weapon systems, the act of placing munitions into the weapon/weapon system.
37. Unload. This may be one of two tasks:
 - a. For transportation, the act of removing assets from a transportation medium (e.g., pallet, truck, container).
 - b. For weapons/weapon systems, the act of removing munitions from the weapon/weapon system.
38. Software maintenance. Step-by-step instructions for software maintenance (e.g., installing, un-installing, etc.).

Explanation of Columns in the MAC

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which a maintenance function is authorized.

Column (3) Maintenance Task. Column (3) lists the functions to be performed on the item listed in column (2). (For detailed explanation of these functions, refer to "Maintenance Functions" outlined above).

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate sub-column. This work-time figure represents the active time required to perform that maintenance task at the indicated level/class of maintenance. If the number or complexity of tasks within the listed maintenance task varies at different maintenance classes, appropriate work-time figures are shown for each class. The work-time figure represents the average time required to perform the prescribed task (assembly, subassembly, component, module, end item, or system) on the item under typical field operating conditions for

that maintenance level/class. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels under the Two-Level Maintenance concept are as follows:

Field:

- C Crew maintenance
- F Maintainer maintenance

Sustainment:

- L Specialized Repair Activity (SRA)
- H Below depot maintenance
- D Depot maintenance

NOTE

The "L" maintenance class is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement and Diagnostic Equipment (TMDE), and special tools, special TMDE and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) Maintenance Level. The lowest class of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer's part number.

Explanation of Columns in the Remarks

Column (1) Remarks Code. The code recorded in column (6) of the MAC.

Column (2) Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

FIELD AND SUSTAINMENT MAINTENANCE

TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A

MAINTENANCE ALLOCATION CHART (MAC)

Table 1. MAC for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A.

(1) GROUP NUMBER	(2) COMPONENT / ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARK CODES
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
00	100 kW Generator Set	None None	N/A	N/A				
	Set Assembly	Test		1.0			3	
	Quarterly	Service		8.0			2, 3	
	Semi-Annual	Service		10.0				
	Annual	Service		16.0				
		Repair		2.0			3	
		Repair			8.0		3	
		Adjust		1.0				
0101	Housing Installation	Inspect	0.1					
		Inspect		0.4				
	Door Assemblies	Repair		1.0				
	Ceiling Assemblies	Repair		3.0				
	Access Covers	Repair		1.0				
	Housing Assemblies	Repair		1.0				
	Panel Assemblies	Repair		1.0				
	Complete Assembly	Repair		7.0			2, 3	A
0102	Control Box Assembly	Inspect	0.1					B
	Diode	Inspect		0.2				B
		Test		0.2				
		Replace		0.5				
	Load Sharing Module A4	Repair		1.0				R
	Digital Voltage Regulator A3	Repair		1.0				R
	Bus Transformer Box A6	Test		0.2				
		Replace		0.8				R
	AC Transformer Box A5	Test		0.2				
		Replace		0.8				
	Resistor Assembly A7	Repair		1.0				
	Switches	Test		0.2				
		Replace		0.3				
	Relay	Repair		0.5				
	Harness Assembly	Repair		5.0				
	Complete Assembly	Repair		11.2			2, 3	B
010201	Control Box Door	Replace		3.0			2, 3	H
	Panel Assembly							
	Generator Set Control A1	Repair		1.0			2, 3	
	Alarm Module A2	Repair		1.0				R
	Switches/Gauges	Test		0.2				
		Replace		0.2				

Table 1. MAC for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A. - Continued

(1) GROUP NUMBER	(2) COMPONENT / ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARK CODES
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
0103	Electrical Components Installation Battery Disconnect Switch Batteries Dead Crank Switch NATO Slave Recept- acle Main Load Contactor K1 Engine to EMCP Har- ness Assembly Engine Harness Assembly	Inspect Repair Repair Repair Repair Repair Repair Repair Repair	 					

Table 1. MAC for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A. - Continued

(1) GROUP NUMBER	(2) COMPONENT / ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARK CODES	
			FIELD		SUSTAINMENT				
			CREW	MAINTAINER	BELOW DEPOT	DEPOT			
			C	F	H	D			
0106	Surge Tank	Repair	0.1	0.5	2.0		2, 3		
	Coolant Recovery Tank	Repair		0.5					
	Radiator	Repair		8.0					
	Engine Fan	Repair		2.0					
	Radiator Shrouds	Repair		2.0					
	Coolant Hoses	Repair		1.5					
	Exhaust System	Inspect							
0107		Inspect	0.1	0.5					
	Muffler Inlet Tubes	Replace		0.5					
	Exhaust Muffler	Replace		1.0					
	Muffler Outlet Tubes	Replace		0.5					
	Complete Assembly	Replace		2.0					
	Air Cleaner Installation	Inspect							
		Inspect		0.1					
0108		Service	0.1	0.3					
		Repair		0.5					
	Complete Assembly	Replace		1.5					
	Crankcase Ventilation Assembly	Replace		0.5					
	Engine/Generator Base Assembly	Inspect							
		Inspect		0.1					
		Repair		1.0					
010801		Repair	0.1		2.0		3 3		
	Generator	Inspect							
		Inspect		0.5					
	Main Stator	Repair		22.0					
		Test		1.0					
	Exciter Stator	Repair		23.0					
		Test		0.5					
010802	Main Rotor	Repair	0.2	23.0			1, 3	R	
		Test		1.0					
	Complete Assembly	Repair		23.0					
	Engine	Inspect							
		Inspect		0.5					
	Engine	Replace		24.0					
	Engine Tensioner	Replace		1.0					
01080201	Engine Pulley	Replace	0.2	6.0				R R R R R R R	
	Water Pump	Replace		2.0					
	Water Line	Repair		1.5					
	Thermostat	Replace		1.5					
	Starter Motor	Repair		3.5					
	Alternator	Repair		1.5					
	Engine Electrical Sys-tem	Inspect		0.2					
	Sensor and Wiring Group	Repair		3.0					
	Engine Control Module	Repair		3.0					
	Sensor	Replace		1.5					

Table 1. MAC for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A. - Continued

(1) GROUP NUMBER	(2) COMPONENT / ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARK CODES
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
01080202	Engine Intake and Exhaust System	Inspect		1				
	Turbocharger	Replace		2.5				R
	Exhaust Manifold	Repair		3.0				R
	Heater and Air Inlet	Repair		3.0				R
01080203	Engine Oil System	Inspect		0.3				
	Oil Pan	Replace		25.0				
	Oil Pump	Replace		25.0				
	Oil Filter-Cooler	Replace		1.5				
	Oil Filler	Replace		0.5				
	Oil Line	Replace		0.5				
01080204	Engine Fuel System	Inspect		0.2				
	Injectors	Replace		3.0				
	Priming Fuel Pump	Repair		0.5				
	Fuel Filter and Line	Replace		1.5				
01080205	Engine Cylinder Head Assembly	Inspect		0.5				
	Valve cover	Replace		2.5				
	Cylinder Head	Replace		10.5				
	Camshaft Group	Repair			6.5			
01080206	Engine Flywheel and Housing Assembly	Inspect		0.2				
	Flywheel	Replace		25.0				R
	Flywheel Housing Group	Repair		25.0				R
01080207	Engine Crankshaft Pulley	Inspect		0.2				
		Repair		1.0			3	N
	Crankshaft-Damper	Repair						
	Crankshaft	Repair						
01080208	Engine Timing Gear Cover	Inspect		0.2				
		Repair		1.0			3	O
	Front Cover	Repair						
	Front Housing	Repair						
	Front Gear	Repair						
01080209	Engine Block Assembly	Inspect		0.2				
		Repair		1.0			2	P
	Engine Support	Repair						
	Carrier Seal Group	Repair						
	Cylinder Block Group	Repair						
	Piston and Rod Group	Repair						
03	Winterization Kit	Inspect	0.2					Q
	Installation	Inspect		0.2				Q
		Replace		0.5			2, 3	R
		Repair		4.1			2, 3	Q
04	Trailer Installation	Repair		1.0			2, 3	

Table 2. Tools and Test Equipment Requirements for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A.

TOOLS OR TEST EQUIPMENT	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	Lifting Strap, 2,000 lb. capacity	5120-00-388-9344	EE2801, P/N 60803
2	F	Tool Kit, General Mechanic's (GMTK)	5180-01-548-7634	P/N: 5180-95-B48
3	F	Tool Set, Standard Automotive (SATS)Base	4910-01-490-6453	SC 4910-95-A81

Table 3. Remarks for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A.

REMARK CODES	REMARKS
A	Housing Installation repair function includes replacement of Right Battery Access Door Assembly, Left Battery Door Assembly, Control Box Door Assembly, Left Front Door Assembly (Latch), Left Rear Door Assembly, Left Rear Door Assembly (Latch), Load Board Door Assembly, Right Front Door Assembly (Latch), Right Rear Door Assembly, Right Rear Door Assembly (Latch), Engine Generator Compartment Ceiling Assembly, Access Cover Assembly, Generator Access Cover Assembly, Front Section Housing Assembly, Rear Section Housing Assembly, Front Roof Section Housing Assembly, Rear Roof Section Housing Assembly, Left Center Panel Assembly, Right Center Panel Assembly, Right Rear Panel Assembly, and Left Rear Panel Assembly.
B	Control Box Assembly repair function includes replacement of Load Sharing Module A4, Digital Voltage Regulator A3, Alarm Module A2, Generator Set Control A1, and all other components.
C	Reconnection Terminal Board Assembly repair function includes replacement of Reconnection Terminal Board.
D	Load Terminal Board Assembly repair function includes replacement of EMI Filter Assembly L1, L2, and L3, EMI Filter Assembly N to Ground, Varistor Wire L1, Varistor Wire L2, Varistor Wire L3, and Varistor Wire N.
E	Cables Assemblies inspect, service, and repair functions include inspection, servicing, and replacement of Battery Cable Assembly 12A, Battery Cable Assembly 24D, Battery Cable Assembly 1C, Battery Cable Assembly 2A, Battery Cable Assembly 1A, Battery Cable Assembly 24A, Battery Cable Assembly 2C, Power Cable Assembly 110K, Power Cable Assembly 121A, Power Cable Assembly 122A, Power Cable Assembly 123A, Power Cable Assembly 103A, Power Cable Assembly 102A, and Power Cable Assembly 101A.
F	Fuel System Installation inspection and repair functions include inspection and replacement of Fuel Level Switch Assembly, Fuel Hose Assemblies, and Fuel Pickup Tube Assembly.
G	Engine repair functions include repair, replacement and adjustment of Engine Tensioner Group, Engine Pulley Group, Water Pump Group, Water Line Group, Lifting Group, and Starter Motor Group
H	Engine Electrical System repair functions include inspection, repair, and replacement of Sensor and Wiring Group and Controller Group.
I	Engine Intake and Exhaust System repair functions include inspection, replacement and repair of Turbocharger Group, Exhaust Manifold Group, and Heater and Air Inlet Group
J	Engine Oil System repair functions include inspection and repair of Oil Pan Group, Oil Pump Lines Group, Oil Filter-Cooler Group, Oil Filler Group, Oil Line Group, and Oil Level Gage Group
K	Engine Fuel System repair functions include inspection and repair of Injector Pump Group,

Table 3. Remarks for Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A.

REMARK CODES	REMARKS
	Priming Fuel Pump Group, and Fuel Filter and Line Group
L	Engine Cylinder Head Assembly repair functions include inspection and repair of Cylinder Head Group, Fuel Injectors Group, Cylinder Head Cover Group, and Camshaft Group
M	Engine Flywheel and Housing Assembly repair functions include inspection and repair of Flywheel Group and Flywheel Housing Group
N	Engine Crankshaft Pulley repair functions include inspection and repair of Crankshaft-Damper Group and Crankshaft Group
O	Engine Timing Gear Cover repair functions include inspection and repair of Front Cover Group, Front Housing Group, and Front Gear Group
P	Engine Block Assembly repair functions include inspection and repair of Engine Support Group, Carrier Seal Group, Cylinder Block Group, and Piston and Rod Group
Q	Winterization Kit Installation repair function includes replacement of Winterization Heater Control Box Assembly, Winterization Heater Assembly, Winterization Heater Hoses, Winterization Thermostat, Resistors, and Diode, and Winterization Wiring Harness.
R	Refer to Removal and Installation procedures for Replacement functions.

END OF WORK PACKAGE

FIELD AND SUSTAINMENT MAINTENANCE
TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A
EXPENDABLE AND DURABLE ITEMS LIST

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Tactical Quiet Generator 100 kW, 50/60 Hz MEP-807A/PU-807A. This list is for information only and is not authority to requisition the listed items. These items are authorized to you by Common Table of Allowances (CTA) 50-790, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., "Use brake fluid, (WP 0085, item 5)").

Column (2) Level. This column provides the lowest level of maintenance that requires the listed item (includes as applicable: C = Operator/Crew, O = AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot).

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, gross, etc.

Table 1. Expendable and Durable Items List.

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number / (CAGEC)	(5) U/I
1	F	6850-01-506-1744	Acid CC-2638 (4H242)	GL
2	F	6850-01-506-1738	Alkaline CC-2610 (4H242)	GL
3	F	8030-00-597-5367	Anti-seize Compound 2-1/2 lb can MIL-A-907 (81349)	CN
4	F	8030-01-451-1403	Anti-seize Compound 5P3931 (11083)	TU
5	F	8040-00-117-8510	Adhesive 3 Ounce 3145RTV Clear (71984)	TU
6	F	6810-00-286-5435	Alcohol, Technical 1 gallon can TT-I-735 (81348)	CN

Table 1. Expendable and Durable Items List. - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number / (CAGEC)	(5) U/I
7	C	6850-00-664-1403	Antifreeze, Ethylene Glycol 1 gallon A-A-52624 (58536)	GL
8	F	5340-00-450-5718	Cap and Plug Set Protective 10935405 (19207)	KT
9	H	6850-00-543-7801	Carbon Removing Compound, Type II 5 gallon can MIL-C-19853 (81349)	CN
10	F	6850-00-281-1985	Cleaning Solvent 1 gallon can PS-661 (02978)	CN
11	F	5350-00-221-0872	Cloth, Abrasive Crocus A-A-1206 (58536)	PG
12	F	9330-01-531-5160	Damping Sheet Adhesive Back 0116-1957-01 (93742)	SH
13	F	9330-01-532-6890	Damping Sheet Adhesive Back 0116-1957-02 (93742)	SH
14	F	9330-01-531-6338	Damping Sheet Adhesive Back 0116-1957-03 (93742)	SH
15	F	9330-01-532-5183	Damping Sheet Adhesive Back U-127U-PSA (69202)	SH
16	F	9330-01-531-5163	Damping Sheet Adhesive Back U-381U-PSA (69202)	SH
17	F	9330-01-532-4787	Damping Sheet Adhesive Back V-05 (69202)	SH
18	C	9140-00-286-5286	Fuel, Diesel, DF-1 bulk A-A-52557-1 (58536)	GL
19	C	9140-00-286-5294	Fuel, Diesel, DF-2 bulk A-A-52557-2 (58536)	GL
20	H	5210-00-640-6176	Gage, Bearing Clearance box of 12 PLASTIGAGE PB-1 (77220)	EA
21	F	8040-01-038-5043	Gasket Cement 8 oz can 5H2471 (11083)	CN
22	F	8040-01-038-5043	Gasket Cement 8 oz can 5H2471 (11083)	CN
23	F	5330-01-438-1861	Gasket Forming Compound 8C8422 (11083)	CN
24	H	9150-01-035-5391	Gear Lubricating Oil 5 gallon can MIL-PRF-2105 (81349)	CN

Table 1. Expendable and Durable Items List. - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number / (CAGEC)	(5) U/I
25	F	9150-01-197-7689	Grease, Automotive and Artillery 6.5 lb can MIL-PRF-10924 (81349)	CN
26	H	9150-00-223-4004	Grease, Molybdenum Disulfide 6-1/2 lb can MIL-G-21164 (81349)	CN
27	C	6850-01-287-8067	Inhibitor, Corrosion, Liquid Cooling System 1 gallon MIL-A-53009 (81349)	GL
28	F	5970-00-815-1300	Insulation Sleeving Electrical MIL-I-23053/5 (81349)	FT
29	C	9150-01-402-2372	Lubricating Oil, Engine, Arctic, OEA 5 gallon can MIL-PRF-46167 (81349)	CN
30	C	9150-01-189-6727	Lubricating Oil, Engine, OE/HDO-10 1 quart MIL-PRF-2104 (81349)	QT
31	C	9150-01-186-6668	Lubricating Oil, Engine, OE/HDO-10 5 gallon MIL-PRF-2104 (81349)	CN
32	C	9150-00-186-6681	Lubricating Oil, Engine, OE/HDO-30 1 quart MIL-PRF-2104 (81349)	QT
33	C	9150-00-188-9858	Lubricating Oil, Engine, OE/HDO-30 5 gallon MIL-PRF-2104 (81349)	CN
34	C	9150-01-518-9477	Lubricating Oil, Engine, OE/HDO-15/40 1 quart MIL-PRF-2104 (81349)	QT
35	C	9150-01-421-1432	Lubricating Oil, Engine, OE/HDO-15/40 5 gallon MIL-PRF-2104 (81349)	CN
36	F	9150-00-111-0209	Lubricating Oil, Engine, Preservation, Grade 30W 5 gallon MIL-PRF-21260 (81349)	CN
36A	F	9150-00-111-3199	Lubricating Oil, Engine, Preservation, Grade 10W 5 gallon MIL-PRF-21260 (81349)	CN
36B	F	9150-00-231-6689	Lubricating Oil, General Purpose 1 quart can MIL-PRF-32033 (81349)	CN

Table 1. Expendable and Durable Items List. - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number / (CAGEC)	(5) U/I
36C	F	9150-00-250-0926	Petroleum Jelly 1 lb can VV-P-236 (81348)	CN
37	F	8030-00-935-5816	Primer, Sealing Compound 1 gallon can LOCQUIC PRIMER N (05972)	CN
38	F	7920-00-205-3571	Rag, Wiping, Cotton and Cotton Synthetic Grade B DDD-R-0030 (81348)	BX
39	F	8040-01-108-6660	Repair Kit Adhesive 900M-195 (73168)	KT
40	F	8030-00-981-7005	Sealant Locktite AA15-1 (05972)	CN
41	F	8030-00-656-1426	Sealant, Silicone 1 pint can MIL-S-45180 (81349)	
42	F	5330-01-485-8999	Sealer High Temperature 2P-2333 (11083)	
43	F	8040-01-173-9815	Sealing Compound 12 oz. tube RTV-108 (01139)	TU
44	F	8030-01-155-3238	Sealing Compound 50 ml tube 6V6640 (11083)	TU
45	H	8030-01-025-1692	Sealing Compound 250 cc bottle Locktite 24241 (05972)	BT
46	F	8030-00-148-9833	Sealing Compound, Thread Locking, Type II, Grade N 10 cc bottle MIL-S-46163 (81349)	BT
47	F	8030-01-063-7510	Sealing Compound, Thread Locking, Type I Grade L 50 cc bottle MIL-S-46163 TY1GRL (80244)	BT
48	F	3439-00-974-1873	Solder, Tin Alloy, SN60WRMAP2 1 lb spool QQS-571 E (81348)	LB
49	F	6850-01-474-2317	Solvent, Cleaning Compound 5 gallon can BREAKTHROUGH BT05 (OK209)	CN
50	F	5975-00-074-2072	Strap, Tiedown Electrical PLT2SC (06383)	HD
51	F	5975-01-364-7334	Strap, Tiedown Electrical PLT.7M-C (06383)	HD

Table 1. Expendable and Durable Items List. - Continued

(1) Item No.	(2) Level	(3) National Stock Number (NSN)	(4) Item Name, Description, Part Number / (CAGEC)	(5) U/I
52	F	5975-01-376-6480	Strap, Tiedown Electrical PLT1.51 (06383)	HD
53	F	5975-01-273-8134	Strap, Tiedown Electrical PLM2S-D (06383)	EA
54	F	9905-00-537-8954	Tag, Marker 50 each bundle MIL-T-12755 (81349)	BD
54A	F	7510-00-073-1337	Tape, Pressure Sensitive Adhesive, 3/4 in. W 60 yd Roll PPP-T-60 (81348)	RL
55	C	9130-00-273-2379	Turbine Fuel, Aviation bulk, JP5 MILT5624 (81349)	GL
56	C	9130-01-031-5816	Turbine Fuel, Aviation bulk, JP8 MIL-T-83133 GR (81349)	GL
57	F	9505-00-684-4841	Wire, nonelectrical, 0.031 in. dia 1 lb roll ASTM A641 (81346)	RL

END OF WORK PACKAGE

SUSTAINMENT MAINTENANCE
TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A
LAMINATES

INTRODUCTION

Laminates are fielded with each 100 kW Generator Set. These laminates are often lost or damaged and the user must try to locate a replacement. This work package lists all of the laminates used on the 100 kW Tactical Quiet Generator. It is designed so that lost or damaged laminates may be pulled from the Technical Manual, reproduced and then laminated for use. The needed page is then placed back into the manual for future use.

100KW LAMINATE TABLE OF CONTENTS

SHT NUMBER(S)	DASH NUMBER(S)	TITLE	REFERENCE DWG NO.
1	-01	100KW LAMINATE TABLE OF CONTENTS	N/A
2	-01	BLANK	N/A
3-6	-02,-03	100KW GEN SET CONTROL (GSC) FAULT CODES	N/A
7	-04	SCHEMATIC AND WIRING DIAGRAM LEGEND	0116-1273
8,9	-04,-05	AC SCHEMATIC	0116-1277
10,11	-05,-06	100KW DC SCHEMATIC	0116-1276
12-16	-06,-07,-08	CONTROL BOX WIRING DIAGRAM	0116-1274
17,18	-09	100KW ENGINE WIRING DIAGRAM	0116-1275
19-22	-10,-11	TQG 100KW 50/60HZ MEP-807A/PU807A REPROGRAMMING INSTRUCTIONS	N/A
23,24	-12	100/200 KW ENGINE HARNESS SCHEMATIC LEGEND	N/A
25,26	-13	100KW ENGINE HARNESS SCHEMATIC DIAGRAM	N/A
27,28	-14	100KW ENGINE SENSOR LOCATIONS	N/A

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100kW Generator Set Control (GSC) Alarm Fault Codes

AL1 – High Water Temperature	AL10 – Generator Under Frequency
AL2 – Low Water Temperature	AL11 – Generator Reverse Power
AL3 – Low Engine Oil Pressure	AL12 – Phase Over Current
AL4 – Fault Detected by Engine ECM	AL13 – Generator Total Over Current
AL5 – Low Engine Coolant Level	AL14 – Phase A No Voltage Input
AL6 – High Engine Oil Temperature	AL15 – GSC Configuration Error
AL7 – Generator Over Voltage	AL16 – Incorrect Phase Sequence
AL8 – Generator Under Voltage	AL17 – Improper Generator or Bus Voltage
AL9 – Generator Over Frequency	AL18 – Synchronizer Time-out

100kW Generator Set Control (GSC) SP Fault Codes

SP1 – Low Fuel Level	SP3 – When relay K1 is energized and one or both of the following is true for more than 2 seconds an SP3 fault is announced. The difference in frequency between the generator and the bus is greater than 0.2 Hz. The difference in phase between the generator and the bus is greater than 10 degrees. The GSC will then stop the synchronization process until the fault is cleared and corrected.
SP2 – DVR FAULT	SP4 – Input is active when 208 or 416 VAC is detected on the load bus by relay DBLO or DBHI. This input is compared to the reading of the bus voltage (P7-17 and P7-18). If the voltage of phase A is less than 20% of the rated voltage, it is considered to be "dead". If the condition of these measurements is different with regards to presence or absence of bus voltage, a fault is announced.

100kW Digital Voltage Regulator (DVR) Alarm Fault Codes

601 – Internal Memory Failure Alarm	704 – Reverse VAR Shutdown
602 – Internal Watchdog Failure Alarm	705 – Reverse Power Shutdown
603 – Rotating Diode Failure Alarm	801 – Instantaneous Trip Shutdown
604 – Reverse VAR Alarm	802 – Loss of Sensing Shutdown
701 – Undervoltage Shutdown	803 – Loss of Frequency Shutdown
702 – Overvoltage Shutdown	9xx – Severe Fault. There are several possible failures in the 900's. All require replacement of the DVR.
703 – Overexcitation Shutdown	

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100kW Generator Set Control (GSC) Fault Codes, including Engine Control Module (ECM) Codes And Event Codes Codes Sorted in CID Number Sequence			
CID 1 E FMI 11 Cylinder 1 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 100 E FMI 02 Engine Oil Pressure Sensor Erratic, intermittent, or incorrect signal (Logged)		
CID 2 E FMI 11 Cylinder 2 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 100 E FMI 03 Engine Oil Pressure Sensor Voltage above normal (Logged)		
CID 3 E FMI 11 Cylinder 3 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 100 E FMI 04 Engine Oil Pressure Sensor Voltage below normal (Logged)		
CID 4 E FMI 11 Cylinder 4 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 110 FMI 02 Engine Coolant Temperature Sensor Erratic, intermittent, or incorrect signal (Logged)		
CID 5 E FMI 11 Cylinder 5 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 110 FMI 03 Engine Coolant Temperature Sensor Voltage above normal (Logged)		
CID 6 E FMI 11 Cylinder 6 Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 110 FMI 04 Engine Coolant Temperature Sensor Voltage below normal (Logged)		
CID 9 E FMI 02 High Altitude Derate (Active Only)	CID 111 FMI 03 Engine Low Coolant Sensor Voltage above normal		
CID 41 E FMI 03 Above normal 8 Volt Power Supply Failure mode is not identifiable (Mechanical Failure) (Logged) (8 volt supply not used)	CID 164 E FMI 00 Injection Actuation Pressure System Data is Valid but Above Normal Operating Range (Logged)		
CID 41 E FMI 04 Below normal 8 Volt Power Supply Failure mode is not identifiable (Mechanical Failure) (Logged) (8 volt supply not used)	CID 164 E FMI 11 Injection Actuation Pressure System Failure Mode is Not Identifiable (Logged)		
CID 42 E FMI 11 Injection Actuator Pressure Valve Failure mode is not identifiable (Mechanical Failure) (Logged)	CID 164 E FMI 02 Injection Actuation Pressure System Erratic, Intermittent, or Incorrect Signal (Logged)		
CID 85 E FMI 01 Shutdown Overridden (Logged Only)	CID 164 E FMI 03 Injection Actuation Pressure System Voltage Above Normal (Logged)		
CID 91 E FMI 08 PWM Throttle Position Sensor Abnormal frequency, pulse width, or period (Not Logged)	CID 164 E FMI 04 Injection Actuation Pressure System Voltage Below Normal (Logged)		
CID 94 E FMI 03 Fuel Pressure Sensor Voltage above normal (Logged)	CID 168 E FMI 02 Electrical System Voltage Erratic, intermittent		
CID 94 E FMI 04 Fuel Pressure Sensor Voltage data is valid but below normal operating mode (Logged)	CID 168 E FMI 03 Electrical System Voltage Above Normal		
CID 96 E FMI 01 High Fuel Pressure Warning (Active and Logged)	CID 168 E FMI 04 Electrical System Voltage Below Normal		
CID 97 E FMI 01 Derate Overridden (Logged Only)	CID 169 E FMI 01 Engine Oil Maintenance Required		

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100kW Generator Set Control (GSC) Fault Codes, including Engine Control Module (ECM) Codes And Event Codes
Codes Sorted in CID Number Sequence

CID 170 E FMI 01 Fuel Filter Change Required	CID 268 FMI 02 GSC Electronic Control Erratic, Intermittent, or Incorrect Signal
CID 172 E FMI 03 Inlet Air Temperature Sensor Data is Valid but Above Normal Operating Range (Logged)	CID 269 FMI 03 GSC 8V Sensor Power Supply Voltage Above Normal
CID 172 E FMI 04 Inlet Air Temperature Sensor Failure Data is Valid but Below Normal Operating Range (Logged)	CID 269 FMI 04 GSC 8V Sensor Power Supply Voltage Below Normal
CID 175 E FMI 02 Engine Oil Temperature Sensor Erratic, Intermittent, or Incorrect Signal (Logged)	CID 273 FMI 03 Turbo Outlet Pressure Sensor Voltage Above Normal
CID 175 E FMI 03 Engine Oil Temperature Sensor Data is Valid but Above Normal Operating Range (Logged)	CID 273 FMI 04 Turbo Outlet Pressure Sensor Voltage Below Normal
CID 175 E FMI 04 Engine Oil Temperature Sensor Data is Valid but Below Normal Operating Range (Logged)	CID 274 FMI 03 Atmospheric Pressure Sensor Voltage Above Normal
CID 190 FMI 02 Magnetic Pickup Unit Erratic, Intermittent, or Incorrect Signal (Logged)	CID 274 FMI 04 Atmospheric Pressure Sensor Voltage Below Normal
CID 190 FMI 03 Magnetic Pickup Unit Voltage Above Normal (Logged)	CID 334 FMI 03 Spare Output (P7-36) Voltage Above Normal
CID 190 E FMI 02 Primary Engine Speed/Timing Sensor Erratic, Intermittent, or Incorrect Signal (Logged)	CID 334 FMI 04 Spare Output (P7-36) Voltage Below Normal
CID 190 E FMI 11 Primary Engine Speed/Timing Sensor Failure mode not identifiable (Mechanical Failure) (Logged)	CID 336 E FMI 02 Engine Control Switch Erratic, Intermittent, or Incorrect Signal
CID 248 FMI 09 CAT Data Link Abnormal Update	CID 342 E FMI 02 Secondary Engine Speed/Timing Sensor Erratic, Intermittent, or Incorrect Signal (Logged)
CID 253 E FMI 02 Personality Module Erratic, Intermittent, or Incorrect Signal	CID 342 E FMI 11 Secondary Engine Speed/Timing Sensor Failure mode is not identifiable (Mechanical Failure) (Logged)
CID 254 E FMI 12 Engine Control Module Self Test Failed Component	CID 360 E FMI 01 Low Engine Oil Pressure Warning (Active and Logged)
CID 261 E FMI 13 Engine Timing (cal) Device is not calibrated	CID 360 E FMI 02 Low Engine Oil Pressure Derate (Active and Logged)
CID 262 E FMI 03 5 Volt Sensor Power Supply Voltage Above Normal	CID 360 E FMI 03 Low Engine Oil Pressure Shutdown (Active and Logged)
CID 262 E FMI 04 5 Volt Sensor Power Supply Voltage Below Normal	CID 361 E FMI 01 High Engine Coolant Temperature (Active and Logged)
CID 264 E FMI 03 E-Stop Shutdown (Active Only)	CID 361 E FMI 02 High Engine Coolant Derate (Active and Logged)

PN: 0116-1912-03 REV G

100kW Generator Set Control (GSC) Fault Codes, including Engine Control Module (ECM) Codes And Event Codes
Codes Sorted in CID Number Sequence

CID 361 E FMI 03 High Engine Coolant Shutdown (Active and Logged)	CID 617 E FMI 05 Intake Air Heater Current is below normal or circuit is open
CID 362 E FMI 01 Overspeed Warning (Active and Logged)	CID 617 E FMI 06 Intake Air Heater Current is above normal or circuit is open
CID 362 E FMI 03 Overspeed Shutdown (Active and Logged)	CID 770 FMI 09 Customer Communication Module (Not used) Abnormal Update
CID 368 E FMI 01 High Inlet Air Temperature Warning (Active and Logged)	CID 858 FMI 03 Close Breaker Output Voltage Above Normal
CID 390 E FMI 01 Fuel Filter Restriction Warning (Active and Logged)	CID 858 FMI 04 Close Breaker Output Voltage Below Normal
CID 391 E FMI 01 Inlet Air Restriction Warning (Active and Logged)	CID 1038 FMI 03 Speed Adjust 1 Output Voltage Above Normal
CID 441 FMI 12 GSC Electronic Governor Relay (A1K1) Failed Component	CID 1038 FMI 04 Speed Adjust 1 Output Voltage Below Normal
CID 442 FMI 12 GSC Generator Fault Relay (A1K2) Failed Component	CID 1167 FMI 04 K1 Sense Input (P7–25) Voltage Below Normal
CID 443 FMI 12 GSC Crank Termination Relay (A1K3) Output (External contacts not used) Failed Component	CID 1168 FMI 03 Dead Bus Sensor Voltage Above Normal
CID 444 FMI 12 GSC Starting Motor Relay (A1K4) Failed Component	CID 1168 FMI 04 Dead Bus Sensor Voltage Below Normal
CID 445 FMI 12 GSC Run Relay (A1K5) Failed Component	CID 1169 FMI 02 AC Transformer Box (ATB) Sensor Erratic, Intermittent, or Incorrect Signal
CID 447 FMI 12 GSC Fuel Control Relay (A1K7) Output (External contacts not used) Failed Component	CID 1170 FMI 02 Bus Transformer Box (BTB) Sensor Erratic, Intermittent, or Incorrect Signal
CID 448 FMI 12 GSC Programmable Spare Relay (A1K8) Failed Component	CID 1170 FMI 04 Bus Transformer Box (BTB) Sensor Voltage Below Normal
CID 500 FMI 12 GSC Failed Component	CID 1170 FMI 08 Bus Transformer Box (BTB) Sensor Abnormal frequency, pulse width, or period
CID 566 FMI 07 Unexpected Shutdown Improper Mechanical Response	CID 1589 E FMI 03 Turbocharger Air Inlet Pressure Sensor Voltage Above Normal
CID 590 FMI 09 Engine Electronic Control Abnormal Update	CID 1589 E FMI 04 Turbocharger Air Inlet Pressure Sensor Voltage Below Normal

PN: 0116–1912–03 REV G

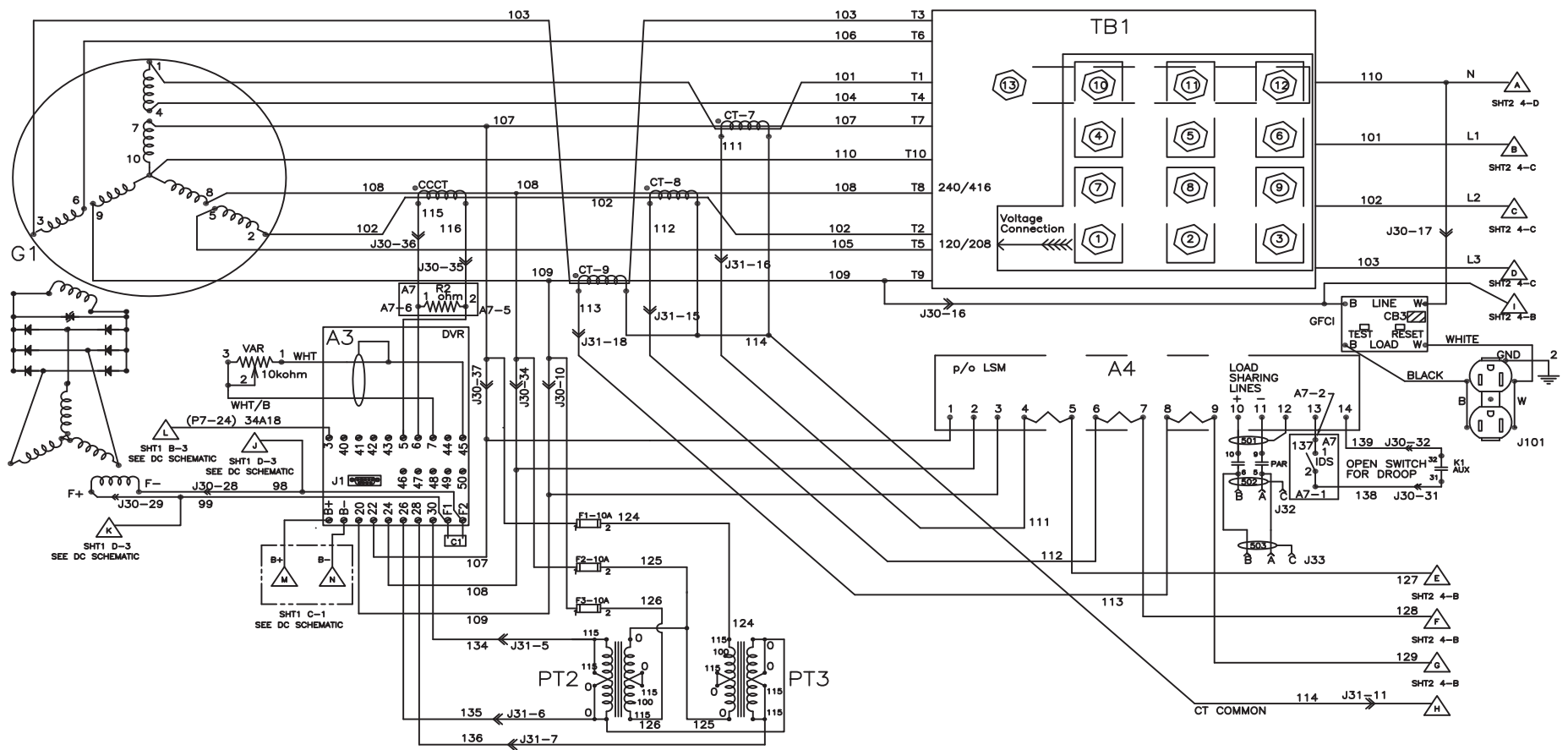
SCHEMATIC AND WIRING DIAGRAM LEGEND

REFERENCE DESIGNATION	ITEM DESCRIPTION
A1	GENERATOR SET CONTROLLER PLUS PARALLEL OPTION (GSC & P)
A2	CUSTOM ALARM MODULE (CAM)
A3	DIGITAL VOLTAGE REGULATOR (DVR)
A4	LOAD SHARING MODULE (LSM)
A5	"A" TRANSFORMER BOX SIGNAL CONDITIONER FOR GSC+P (ATB)
A6	"B" TRANSFORMER BOX SIGNAL CONDITIONER FOR GSC+P (BTB)
A7	AUXILIARY PANEL RESISTOR ASSY
A8	ENGINE CONTROL MODULE (ECM)
ALM	ALARM
AR	ALARM RESET
ALT	ALTERNATOR
AS	ALARM SILENCE SWITCH
AFP	AUXILIARY FUEL PUMP
AFPS	AUXILIARY FUEL PUMP SWITCH
AFPR	AUXILIARY FUEL PUMP RELAY
AFPV	AUXILIARY FUEL PUMP SOLENOID VALVE
BDS	BATTERY DISCONNECT SWITCH
BSS	BATTLE SHORT SWITCH
CATSW1	FUEL FILTER CHANGED
CATSW2	OIL FILTER CHANGED
CB1	DC POWER CIRCUIT BREAKER
CB2	PINION SOLENOID CIRCUIT BREAKER
CB3	CIRCUIT BREAKER AND GFCI PROTECTION FOR CONVENIENCE RECEPTACLE
CB4	ECM POWER CIRCUIT BREAKER
CB5	ALTERNATOR CIRCUIT BREAKER
CCCT	CROSS CURRENT COMPENSATION (OR DROOP) TRANSFORMER
CCL	CONTACTOR CLOSED LIGHT
CCS	CONTACTOR CONTROL SWITCH
CDR	COOL DOWN RELAY
CT1, CT2, CT3	CURRENT TRANSFORMERS, LOAD OUTPUT
CT7, CT8, CT9	CURRENT TRANSFORMER, LOAD SHARING
CTR	CRANK TERMINATION RELAY
D1	DIODE MAIN POWER 1N1186 OR EQUIVALENT
D2	DIODE DEAD CRANK BLOCKING 3 AMP 1N5404
D3	DIODE FIELD FLASH BLOCKING 3 AMP 1N5404
D4	DIODE BLOCKING BREAKER CLOSURE 3 AMP 1N5404
DBHI	DEAD BUS RELAY HIGH VOLTAGE SENSING
DBLO	DEAD BUS RELAY LOW VOLTAGE SENSING
DCA	DC AMMETER
DCS	DEAD CRANK SWITCH
ECS	ENGINE CONTROL SWITCH (MASTER)
ENG HTR	ENGINE HEATER (AIR INLET HEATER)
ESPB	EMERGENCY STOP PUSH BUTTON
F1, F2, F3	FUSE, POTENTIAL TRANSFORMERS
FCR	FUEL CONTROL RELAY
FL1	LOW LEVEL FUEL ALARM SWITCH
FL2A	AUX FUEL PUMP "OFF" SWITCH
FL2B	AUX FUEL PUMP "ON" SWITCH
FLG	FUEL LEVEL GAUGE
FLSU	FUEL LEVEL SENDING UNIT
FLT1, FLT2, FLT3, FLT4	FILTER, E.M.I.
G1	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER, CONVENIENCE RECEPTACLE
GFR	GENERATOR FAULT RELAY
GND	GROUND
HTR1, HTR2	HEATER RESISTOR WINTERIZATION
IDS	ISOCHRONOUS DROOP SW

REFERENCE DESIGNATION	ITEM DESCRIPTION
J7	A1 CONNECTOR
J8	FUEL SWITCH PUMP CONTROL
J11	FUEL SWITCH LOW LEVEL SHUTDOWN
J30	CONNECTOR, CONTROL BOX 37 PIN
J31	CONNECTOR, CONTROL BOX 19 PIN
J32, J33	CONNECTOR, PARALLELING
J37	CONNECTOR, CONTROL BOX
J101	CONVENIENCE RECEPTACLE
K1	MAIN LOAD CONTACTOR
KFF	RELAY FIELD FLASH
KAFFP	RELAY AUXILIARY FUEL PUMP
KR	MAIN CONTACTOR RELAY
L1, L2, L3	LOAD LEADS
LCL	LOW COOLANT LEVEL SENSOR
LFL	LOW FUEL LEVEL
LT	LAMP TEST SWITCH
MAN	MANUAL
MPU	MAGNETIC SPEED PICKUP
N	NEUTRAL
NEU	NEUTRAL
OL/SC	OVERLOAD / SHORT CIRCUIT MODULE
P8	FUEL SWITCH PUMP CONTROL
P11	FUEL SWITCH LOW LEVEL SHUTDOWN
P7	A1 CONNECTOR
P30	CONTROL BOX 37 PIN
P31	CONTROL BOX 19 PIN
P32	PARALLEL CABLE PLUGS
P37	CONTROL BOX /A1 CONNECTOR
PS	PINION SOLENOID (STARTER SOLENOID)
PSR	PROGRAMMABLE SPARE RELAY
PT2, PT3	POTENTIAL TRANSFORMERS FOR POWER INPUT TO A3 (DVR)
PL1, PL2, PL3	PANEL ILLUMINATION LIGHT
PLS	PANEL LIGHT SWITCH
PSU	PARALLEL / SINGLE UNIT SWITCH
R1	RESISTOR FIELD FLASH 15 OHM DIGIKEY (TMC-25-15-ND)
R2	RESISTOR VOLTAGE DROOP 1 OHM DIGIKEY (TMC-50-1.0-ND)
R3	RESISTOR DEAD BUS 15K OHM (OHMITE 825F15K)
R4	DC AMMETER SHUNT
RM	RELAY MODULE
RR	RUN RELAY
SM	STARTER MOTOR
SMMS	STARTER MOTOR MAGNETIC SWITCH
SMR	STARTER MOTOR RELAY
SMS	SYNCHRONIZING MODE SELECTOR SWITCH
SRY	SLAVE RELAY
SR	SLAVE RECEPTACLE
SSP	SPEED SETTING POTENTIOMETER
T1-T10	GENERATOR LINE LEADS
TB1	GENERATOR RECONNECTION BOARD
TB2	LOAD CONNECTION BOARD
TB5	TERMINAL STRIP (ENGINE GENERATOR)
V1, V2, V3, V4	VARISTOR
VAR	VOLTAGE ADJUST RHEOSTAT

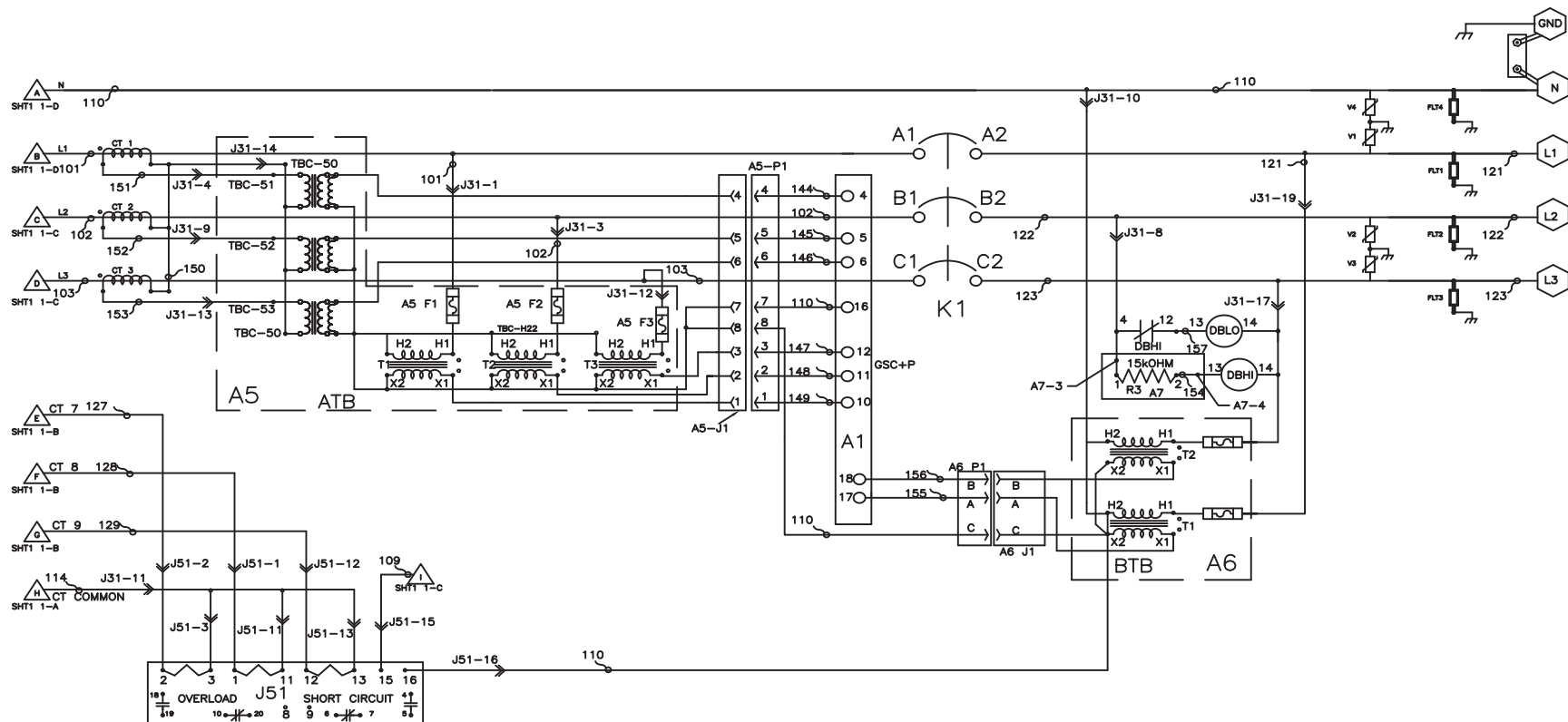
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AC SCHEMATIC



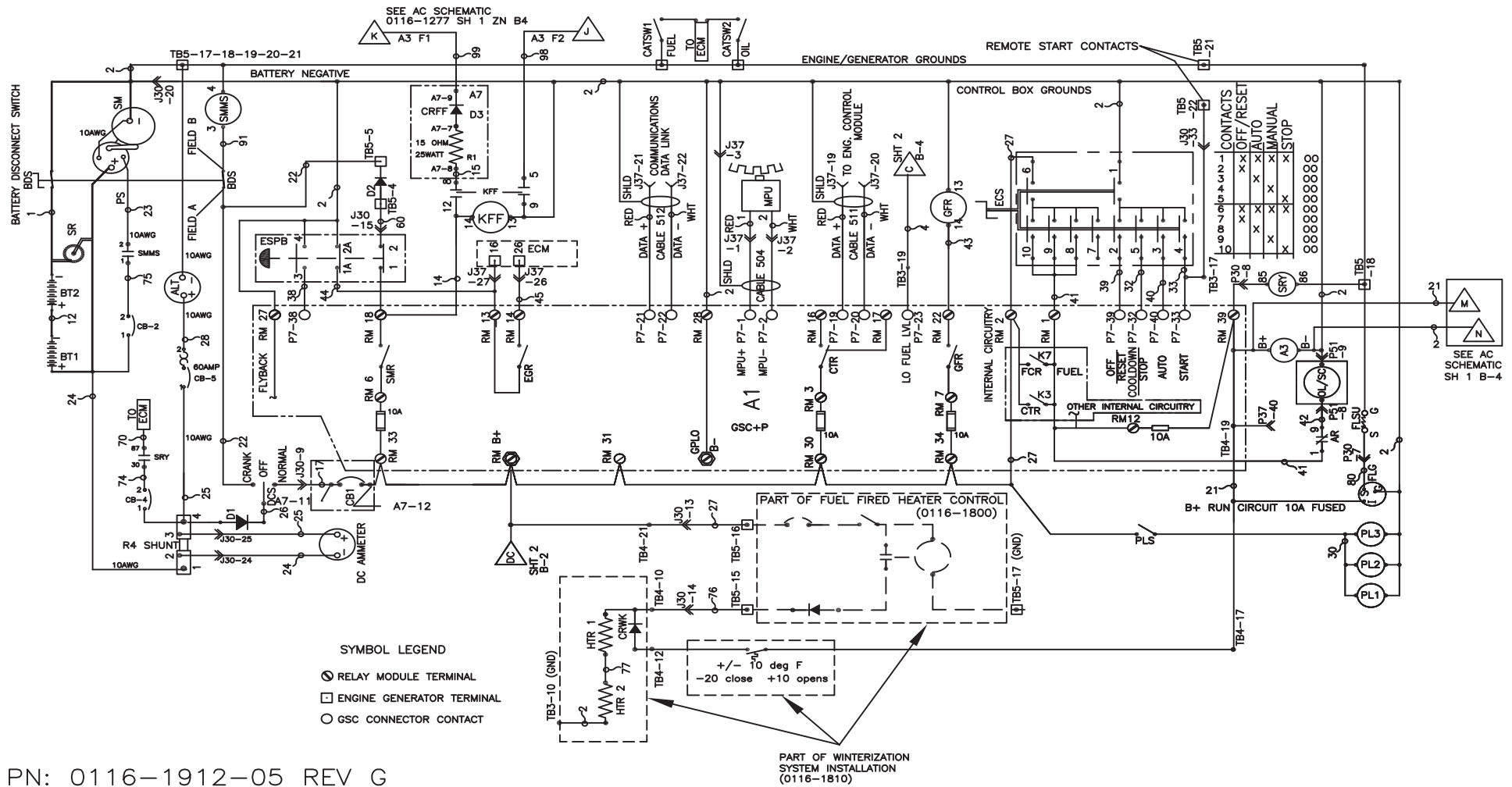
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AC SCHEMATIC



PN: 0116-1912-05 REV G

100 KW DC SCHEMATIC






PN: 0116-1912-05 REV G

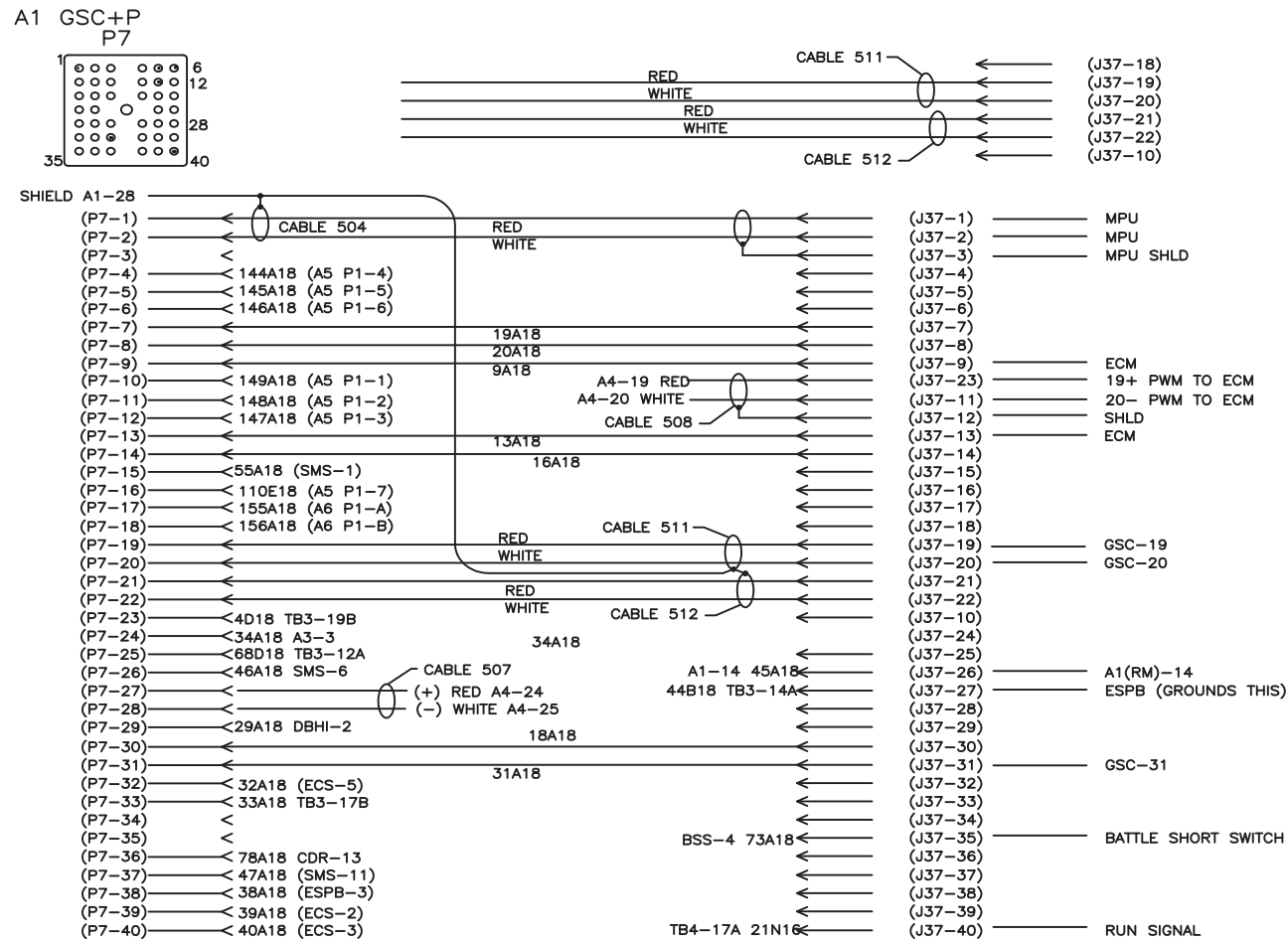
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SYMBOL LEGEND

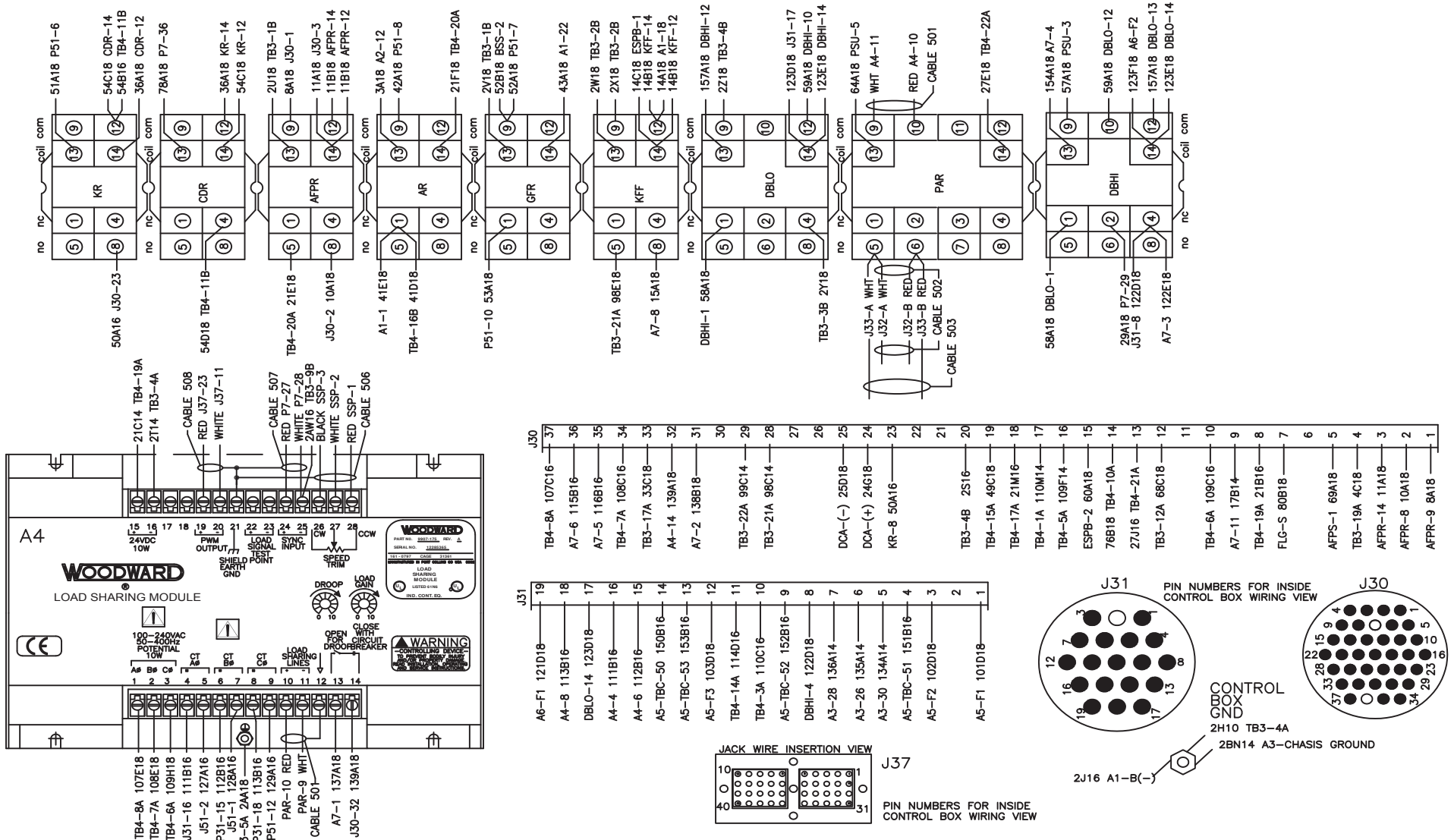
	RELAY MODULE TERMINAL
	ENGINE GENERATOR TERMINAL
	GSC CONNECTOR CONTACT

CONTROL BOX WIRING DIAGRAM



PN: 0116-1912-06 REV G

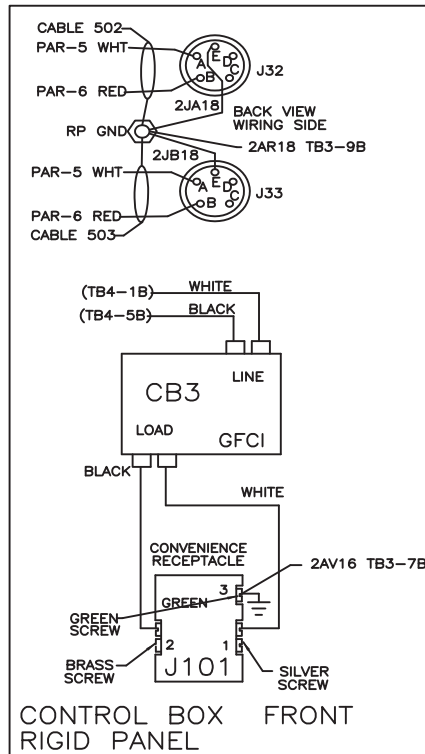
CONTROL BOX WIRING DIAGRAM



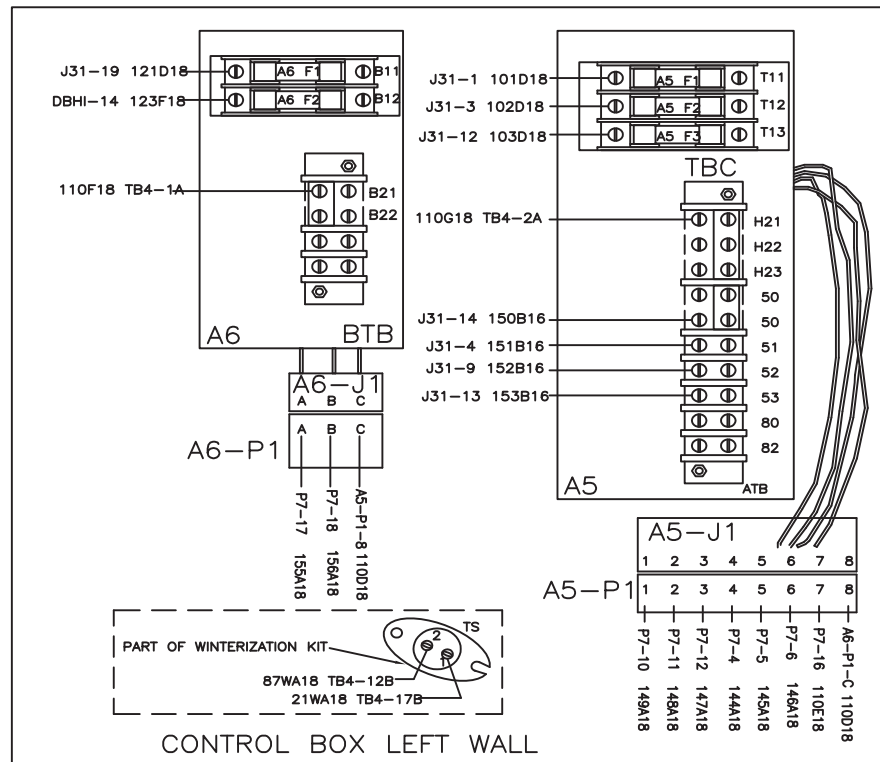
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CONTROL BOX REAR WALL

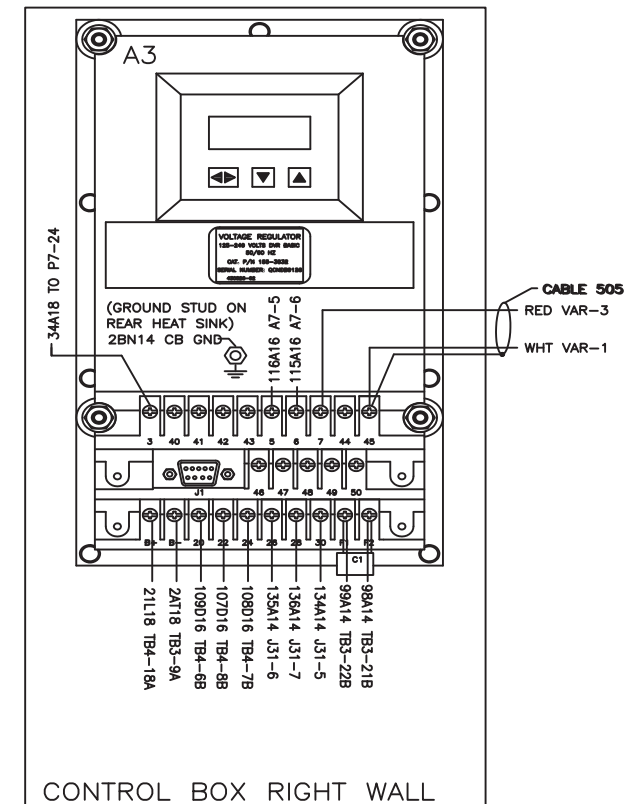
CONTROL BOX WIRING DIAGRAM



PN: 0116-1912-07 REV G

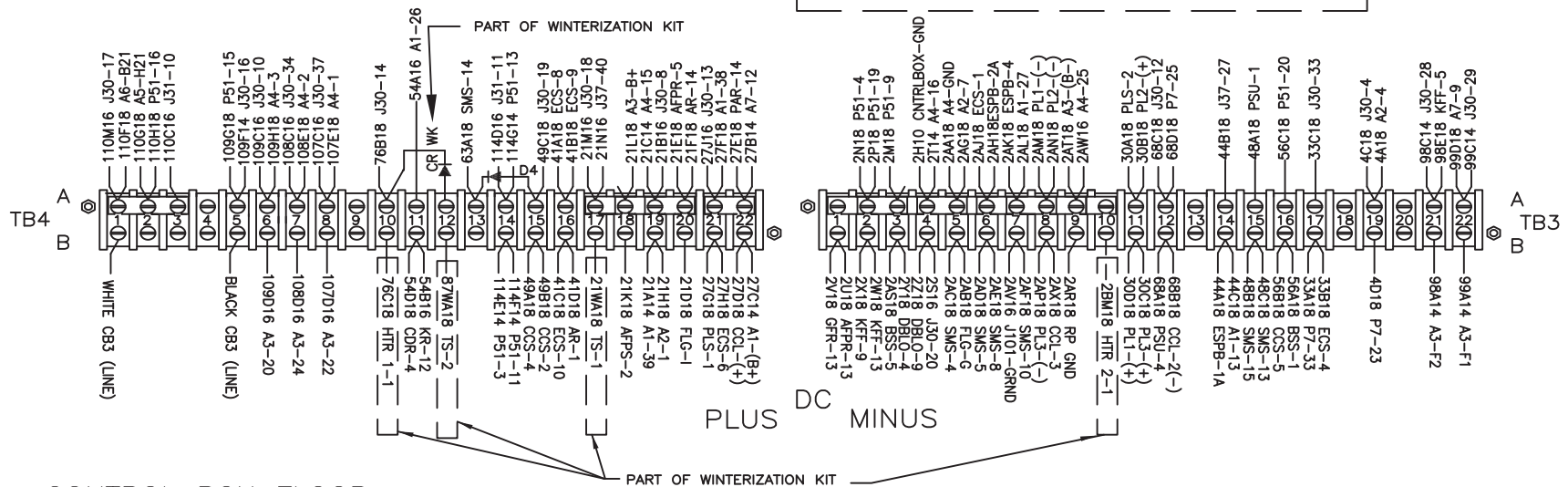
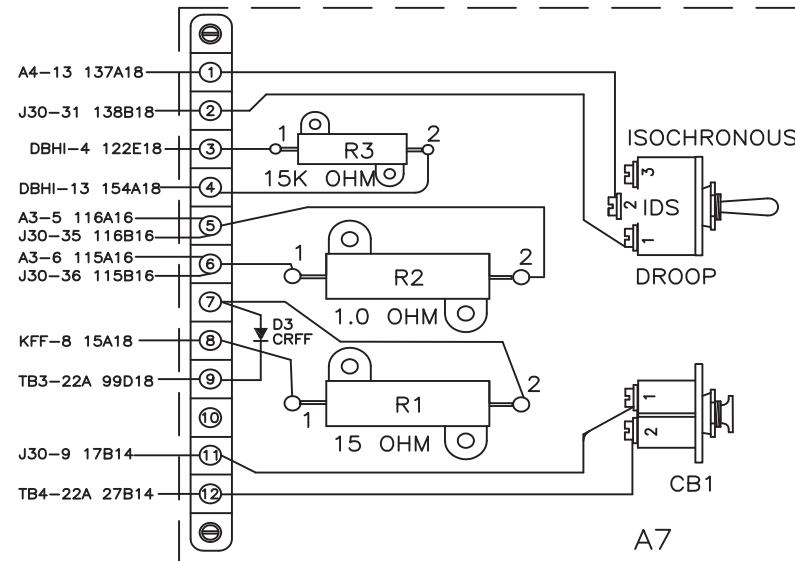
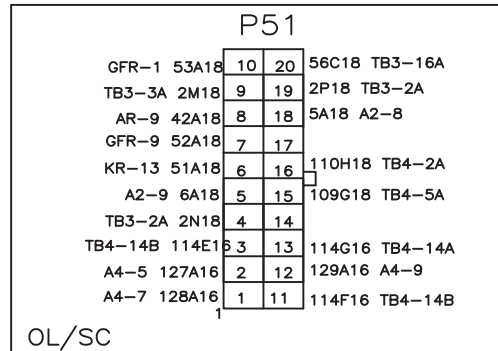


CONTROL BOX FRONT
LEFT AND RIGHT WALLS

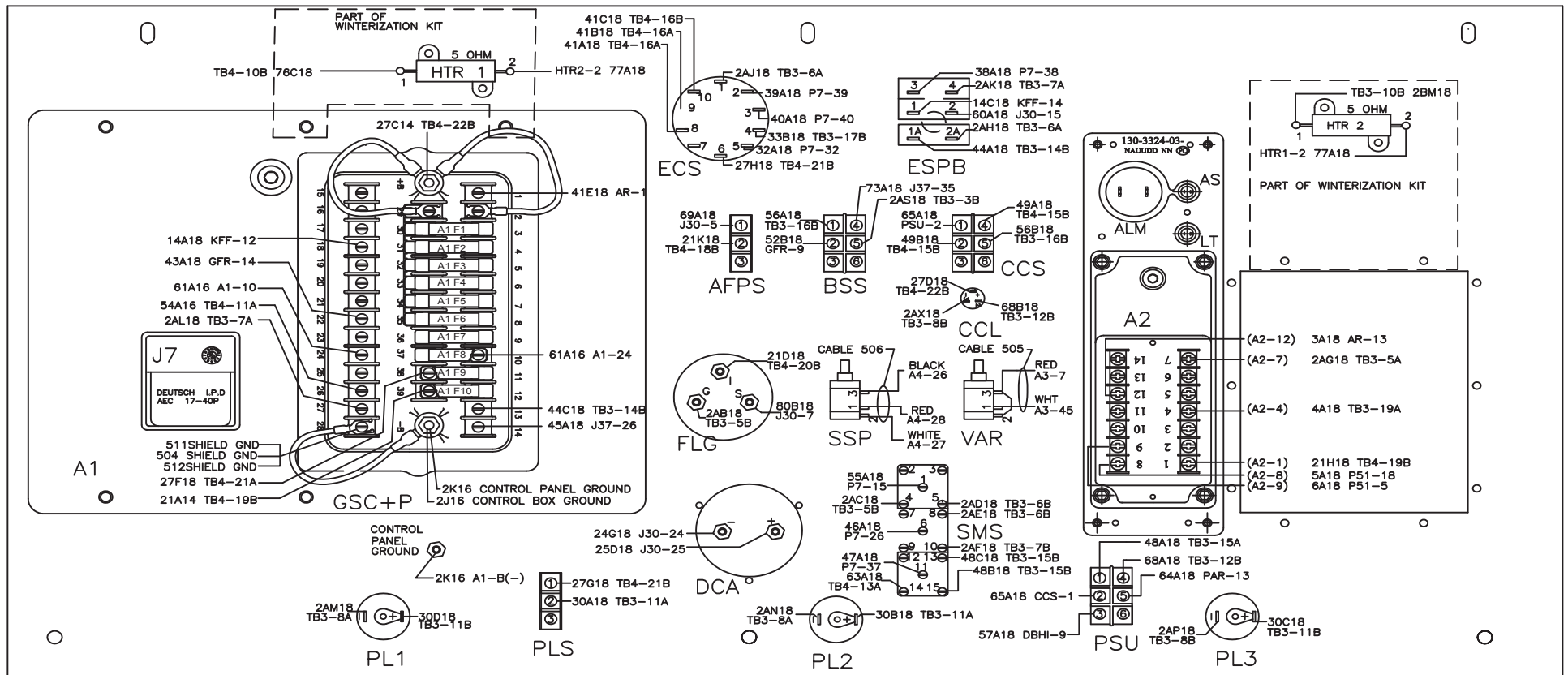


CONTROL BOX RIGHT WALL

CONTROL BOX WIRING DIAGRAM



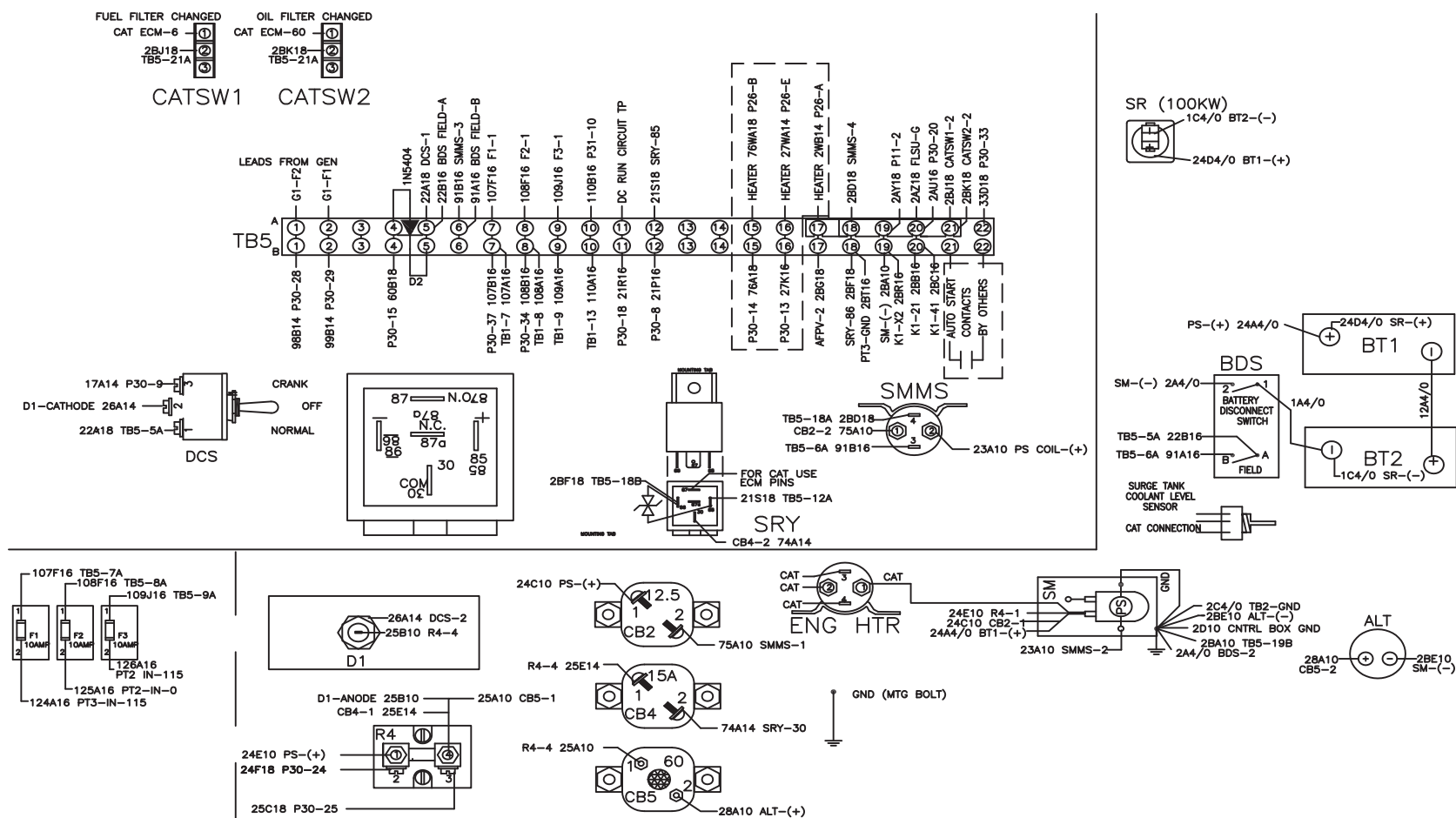
CONTROL BOX WIRING DIAGRAM



CONTROL BOX HINGED CONTROL PANEL

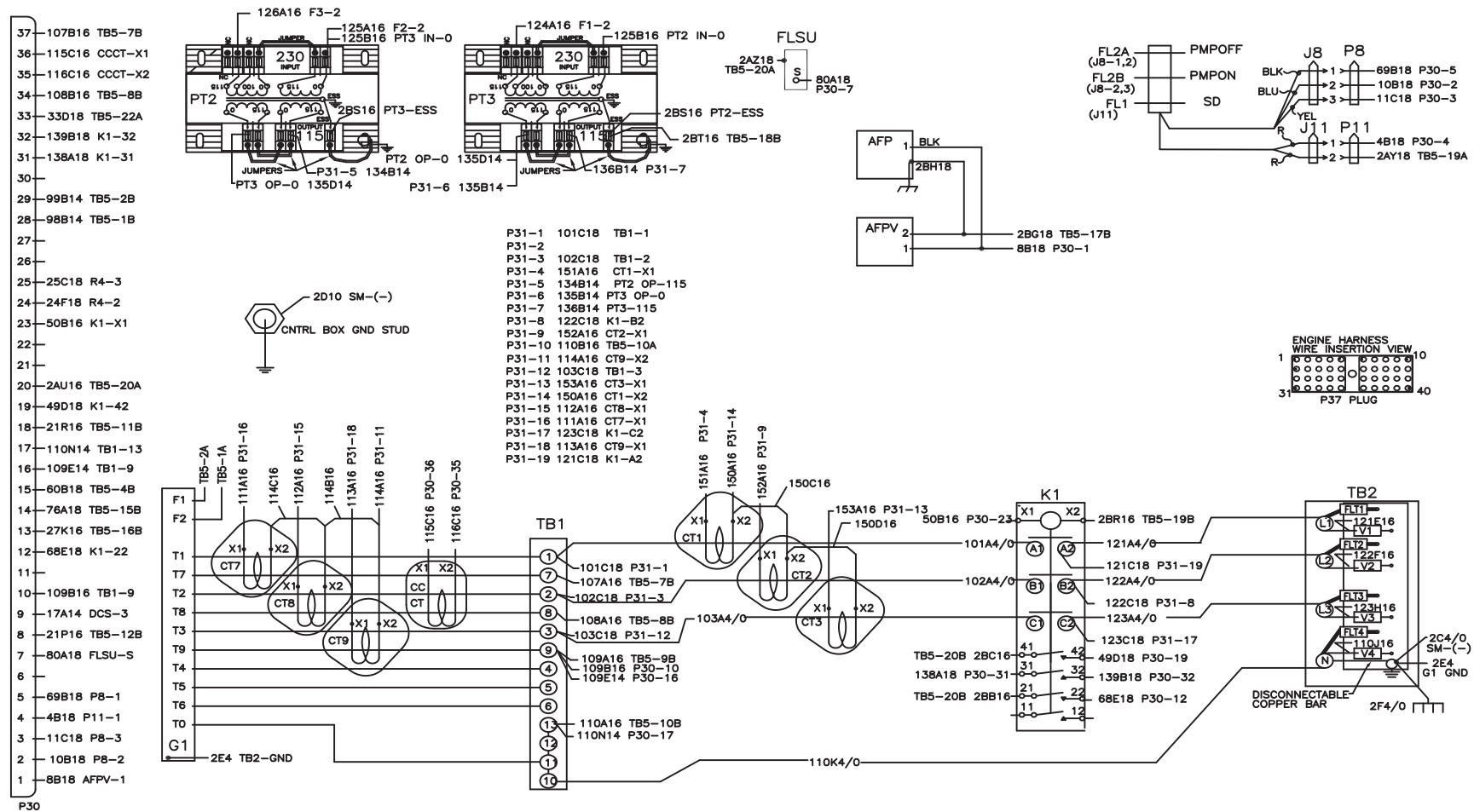
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100 KW ENGINE WIRING DIAGRAM



PN: 0116-1912-09 REV G

100 KW ENGINE WIRING DIAGRAM



PN: 0116-1912-09 REV G

UNIT (FIELD) LEVEL MAINTENANCE
TACTICAL QUIET GENERATOR 100 kW, 50/60 Hz MEP-807A/PU-807A
REPROGRAMMING

INITIAL SETUP:

Tools and Special Tools

None

References

WP 0003

Materials/Parts

None

Equipment Condition

TQG is not operating and powered down

Personnel Required

One

REPROGRAMMING DVR PARAMETERS FOR VOLTAGE AND FREQUENCY CHANGE




















The following procedure is used if the voltage and frequency settings for the generator set must be changed because of mission requirements. When that occurs, the reconnection board must be repositioned and the DVR must be reprogrammed for specified frequency and voltage. Note that the GSC OP-5 parameters must be reprogrammed, also.

1. Set Battery Disconnect Switch to ON.
2. Set DEAD CRANK SWITCH to NORMAL.
3. On EMCP, set ENGINE CONTROL Switch (ECS) to COOL DOWN/STOP.
4. Select reprogramming data from Table 1 below according to the desired output voltage and desired frequency. Mission requirements will define requirements. Note: All 6 of the DVR PARAMETERS must be changed or verified.

Table 1. 100 kW TQG DVR Voltage and Frequency Programming Parameters and Setpoints.

DESIRED OUTPUT		DVR PARAMETER NUMBER					
VOLTS	HERTZ	:01	:02	:03	:04	:05	:06
120/208	60	217	1.0	0	347	4.34	58.8
120/208	50	205	1.0	0	289	3.61	49.8
240/416	60	434	2.0	0	174	4.34	58.8
240/416	50	410	2.0	0	145	3.61	49.8

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5. Press the up arrow key  . DVR display should read :01 (the colon with the number indicates that the number is a parameter number).
6. Press and hold up arrow key  until display shows parameter number :90. Parameter number :90 is a password that can be used to protect the settings.
7. Press Function  key on DVR once to display data for parameter :90.
8. Press and hold up arrow key  or down arrow key  to set the data for parameter number :90 to 0200.
9. Press Function  key on DVR once to display parameter :90.
10. Press and hold up arrow key  or down arrow key  to change to parameter number :01
11. Press Function  key on DVR once to display data for parameter .
12. Press and hold up arrow key  or down arrow key  to set the data for parameter per Table 1.
13. Press Function  key on DVR once to switch back to the parameter number.
14. Press up arrow key  once to change to next parameter number per Table 1.
15. Keep repeating from step 9, entering parameter data from Table 1, until all 6 parameter data is entered or verified to be correct.
16. Press Function  key on DVR once to display data for parameter :90.
17. Press and hold up arrow key  or down arrow key  to set the data for parameter number :90 to any number but **0009 to lock the DVR. DVR will not stay locked when Engine Control switch is switched from either COOL DOWN/STOP to OFF/RESET and back to COOL DOWN/STOP or from COOL DOWN/STOP to MANUAL START.**
18. Press Function  key on DVR once to switch back to parameter number. Press and hold up arrow key  or down arrow key  to set the parameter number back to 01.
19. Proceed to REPROGRAMMING GSC SETPOINTS FOR VOLTAGE AND FREQUENCY CHANGE and reprogram the OP5 parameters for P028 thru P031 (steps 1 thru 25).
20. If the generator set is not to be used, set ENGINE CONTROL Switch (ECS) to OFF/RESET, set DEAD CRANK SWITCH to OFF, and set Battery Disconnect Switch to OFF.

END OF TASK

PN: 0116–1912–10 REV K

REPROGRAMMING GSC PARAMETERS FOR VOLTAGE AND FREQUENCY CHANGE

1. Set Battery Disconnect Switch to ON.
2. Set DEAD CRANK SWITCH to NORMAL.
3. On EMCP, set ENGINE CONTROL Switch (ECS) to COOL DOWN/STOP.
4. Select programming data from GSC from Table 3 for desired output voltage and desired frequency.

Table 3. 100 kW TQG GSC Programming Setpoints.

DESIRED OUTPUT		OP5-0				OP5-1			
VOLTS	HERTZ	P028	P029	P030	P031	P114	P117	P120	P123
120/208	60	208	347	100	60	63	66	57	54
120/208	50	208	289	83	50	53	55	48	45
240/416	60	416	173	100	60	63	66	57	54
240/416	50	416	144	83	50	53	55	48	45

NOTE

In SERVICE MODE, the buttons on the GSC keypad perform new functions as follows:

POWER METER is Scroll Right
 AC METER is Scroll Up
 ENGINE METER is Scroll Down
 LAMP TEST is Select
 ALARM CODES is Enter

5. Press SERVICE MODE key on GSC. SERV will be displayed on upper display. OP1 will be displayed on lower display.
6. Press AC METER key five times. OP3 will be displayed.
7. Press the LAMP TEST key. P E ---- will be displayed. The left-most underline will be flashing. If an error is made any time during the password entry, P E FAIL will be displayed. Password entry can be restarted by pressing LAMP TEST key.
8. Press POWER METER key. P E 1---- will be displayed. The left-most underline will be flashing.
9. Press ENGINE METER key. P E 1 3--- will be displayed. The left-most underline will be flashing.
10. Press AC METER key. P E 1 3 2-- will be displayed. The left-most underline will be flashing.
11. Press ENGINE key. P E 1 3 2 3- will be displayed. The underline will be flashing.
12. Press POWER METER key. P E 1 3 2 3 1 will be displayed.
13. Press ALARM CODES key. P E PASS will be displayed.
14. Press EXIT key. OP4 will be displayed.
15. Press AC METER key. OP5 will be displayed.

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NOTE

For input values the OP set and parameter values will toggle between the upper and lower displays as each OP set is entered.

16. Press AC METER key or ENGINE METER key until OP5-0 is displayed.
17. Press LAMP TEST key. P001 will be displayed followed by the value of the set point.
18. Press ENGINE METER key until P028 is displayed (P028 is first setpoint in table).
19. Press LAMP TEST key. The value of the setpoint will begin to flash.
20. Press AC METER key or ENGINE METER key to change the value, as required, to what is shown in Table 3 corresponding to the desired voltage and frequency.
21. Press ALARM CODES key. The value of the setpoint will stop flashing.
22. Repeat steps 18 through 21 until all setpoint values are checked or changed for OP5-0.
23. Press the EXIT key. OP5-0 will be displayed. Press the AC METER key. OP5-1 will be displayed.
24. Repeat steps 16 through 22 for OP5-1. The first set point displayed will be P101. The first setpoint to be changed/verified is P114, per Table 3.
25. At the completion of the programming, press EXIT key until SERV is no longer displayed on upper display.
26. If the generator set is not to be used, set ENGINE CONTROL Switch (ECS) to OFF/RESET, set DEAD CRANK SWITCH to OFF, and set Battery Disconnect Switch to OFF.

END OF TASK

PN: 0116-1912-11 REV G

100/200 KW ENGINE HARNESS SCHEMATIC LEGEND

REFERENCE DESIGNATION	DESCRIPTION
ENG-P101	PLUG, AIR INLET HEATER RELAY CONNECTOR, ENGINE HARNESS ENGINE HARNESS, 100 KW
ENG-P11	PLUG, ATMOSPHERIC PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P12	PLUG, TURBO OUTLET PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P13	PLUG, INJECTOR ACTUATOR PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P17	PLUG, FUEL PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P15	PLUG, OIL PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P10	PLUG, CONNECTOR FOR TDC PROBE, TIMING CALIBRATION, ENGINE HARNESS, 100 KW
ENG-P6	PLUG, COOLANT TEMP SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P7	PLUG, INTAKE MANIFOLD AIR TEMP SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P18	PLUG, OIL TEMP SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P4	PLUG, TOP CRANKSHAFT TIMING SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P5	PLUG, BOTTOM CRANKSHAFT TIMING SENSOR CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P3	PLUG, IAP CONTROL VALVE CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P300	PLUG, FUEL INJECTION HARNESS CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P2	PLUG, ECM CONNECTOR, ENGINE HARNESS 100/200 KW
ENG-P1	PLUG, EMCP HARNESS CONNECTOR, ENGINE HARNESS 100/200 KW
CDC-P7	PLUG, CAT DIAGNOSTIC COMPUTER CONNECTOR, CONNECTOR, ENGINE HARNESS 100/200 KW
ENG-P16	PLUG, LOW COOLANT SENSOR CONNECTOR, ENGINE HARNESS 100/200 KW
ENG-P14	PLUG, MAGNETIC SPEED PICKUP (MPU) CONNECTOR, ENGINE HARNESS 100/200 KW
ENG-P8	PLUG, TURBO INLET PRESSURE SENSOR CONNECTOR, ENGINE HARNESS 100/200 KW

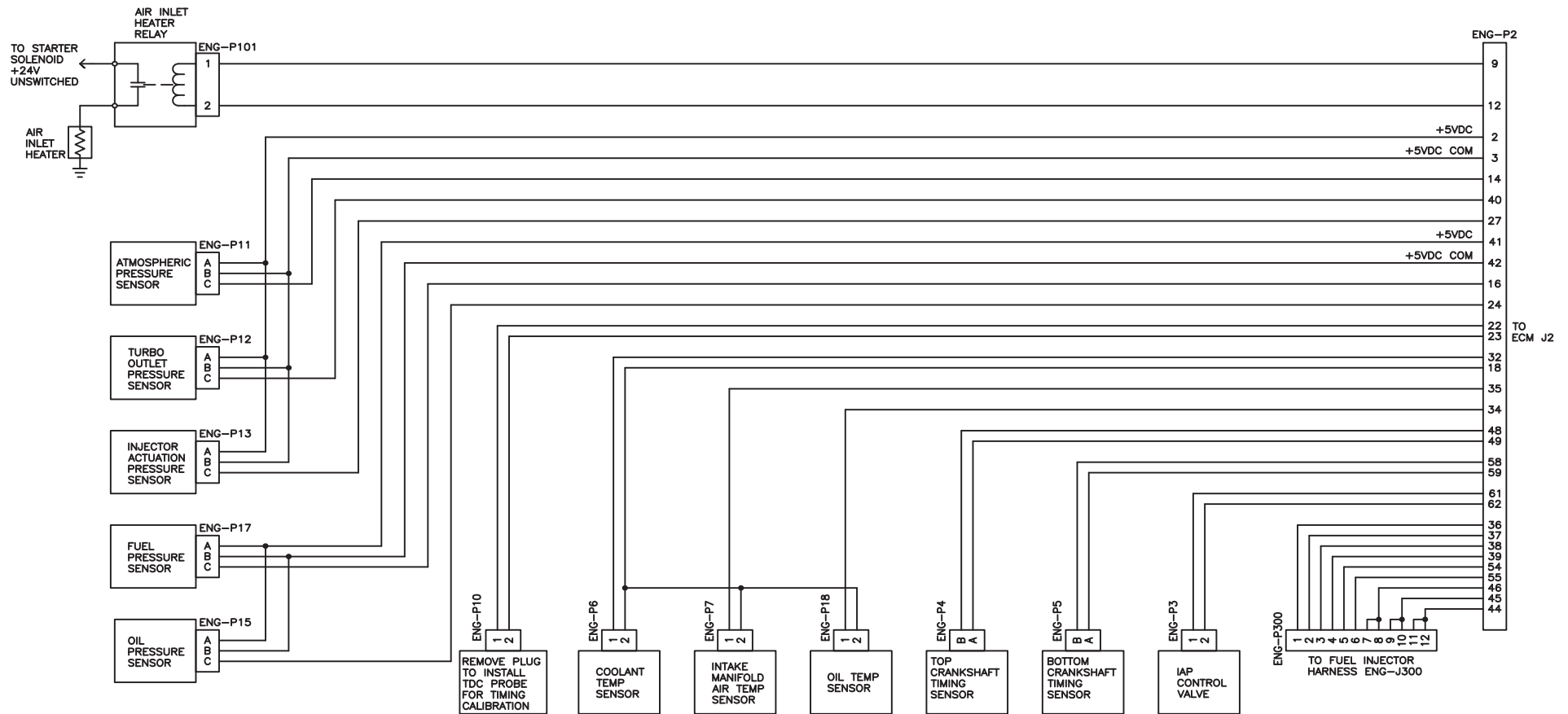
PN: 0116-1912-12 REV G

100/200 KW ENGINE HARNESS SCHEMATIC LEGEND

REFERENCE DESIGNATION	DESCRIPTION
ENG-P301	PLUG, UNIT INJECTOR NO. 1 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P302	PLUG, UNIT INJECTOR NO. 2 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P303	PLUG, UNIT INJECTOR NO. 3 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P304	PLUG, UNIT INJECTOR NO. 4 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P305	PLUG, UNIT INJECTOR NO. 5 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P306	PLUG, UNIT INJECTOR NO. 6 CONNECTOR, ENGINE HARNESS, 100 KW
ENG-P20	PLUG, FILTERED FUEL PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-0213	PLUG, ETHER INJECTION RELAY CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P203	PLUG, ATMOSPHERIC PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P200	PLUG, TURBO OUTLET PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P202	PLUG, FUEL PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P201	PLUG, OIL PRESSURE SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P400	PLUG, TDC PROBE CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P105	PLUG, FUEL TEMP SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P100	PLUG, COOLANT TEMP SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P103	PLUG, INTAKE MANIFOLD AIR TEMP SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P401	PLUG, CRANK SHAFT SPEED/TIMING SENSOR CONNECTOR, ENGINE HARNESS, 200 KW
ENG-P402	PLUG, CAM SHAFT SPEED/TIMING SENSOR CONNECTOR, ENGINE HARNESS, 200 KW

PN: 0116-1912-12 REV G

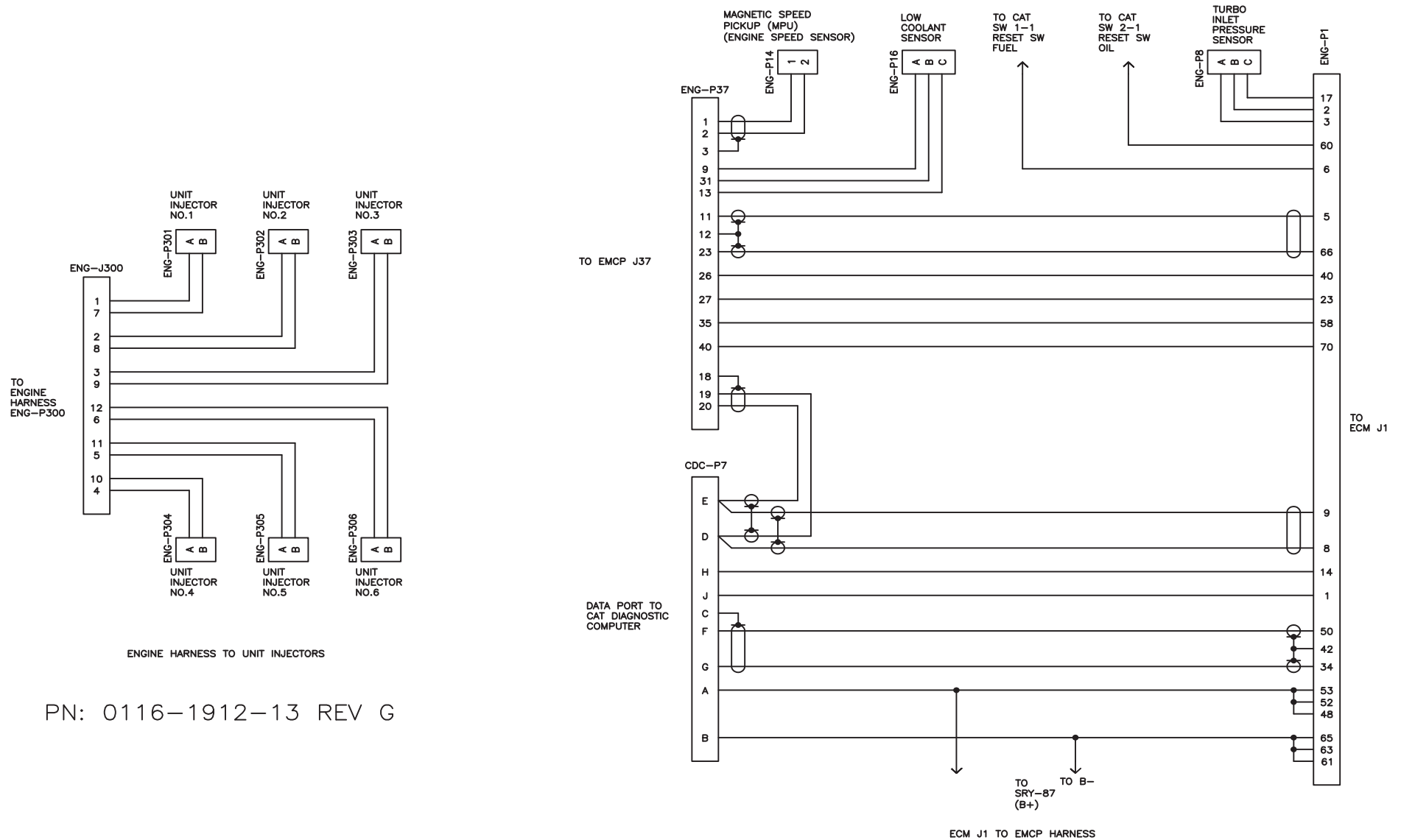
100kW ENGINE HARNESSSES- SCHEMATIC DIAGRAM



PN: 0116-1912-13 REV G

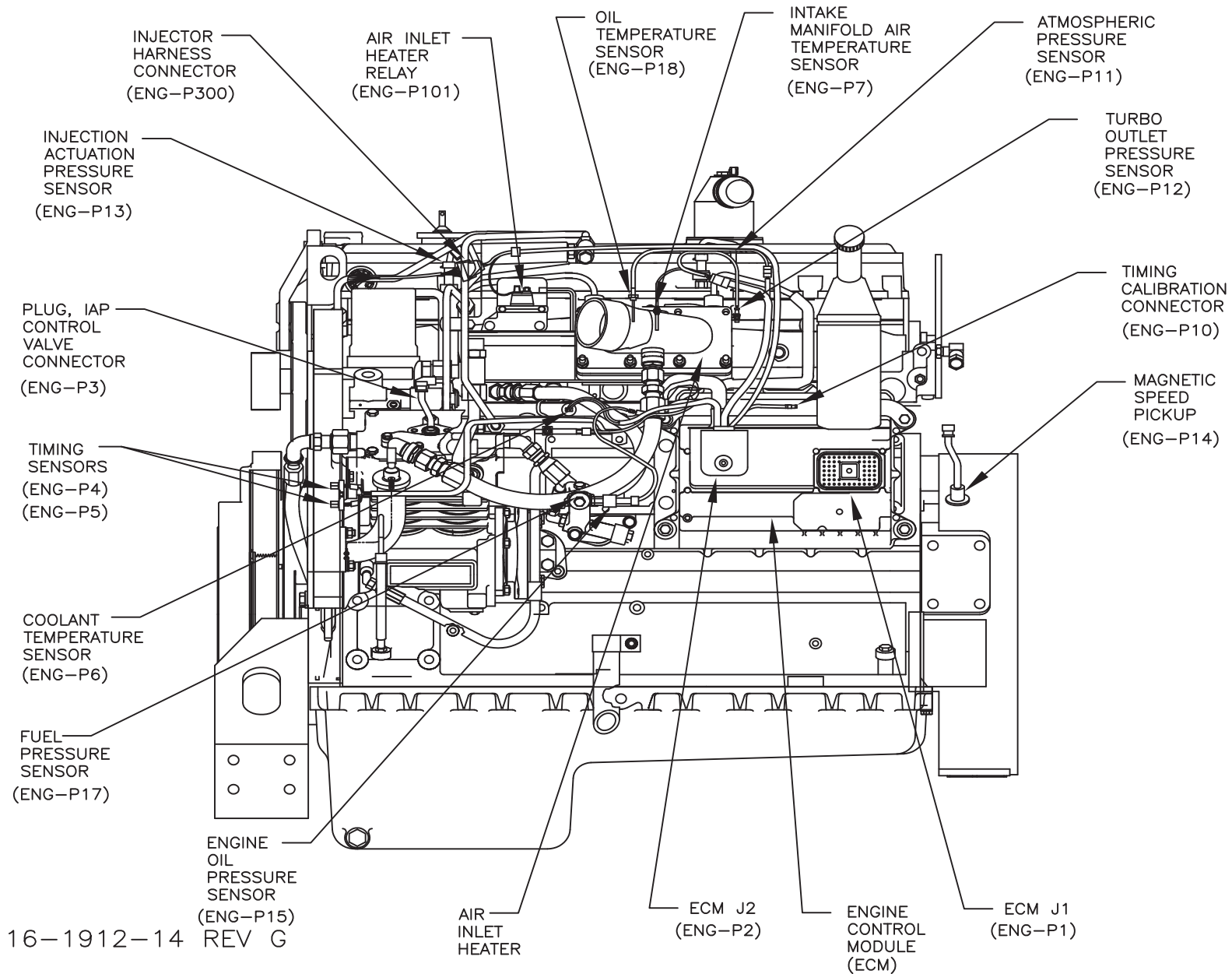
ECM J2 ENGINE HARNESS

100kW ENGINE HARNESSSES - SCHEMATIC DIAGRAM



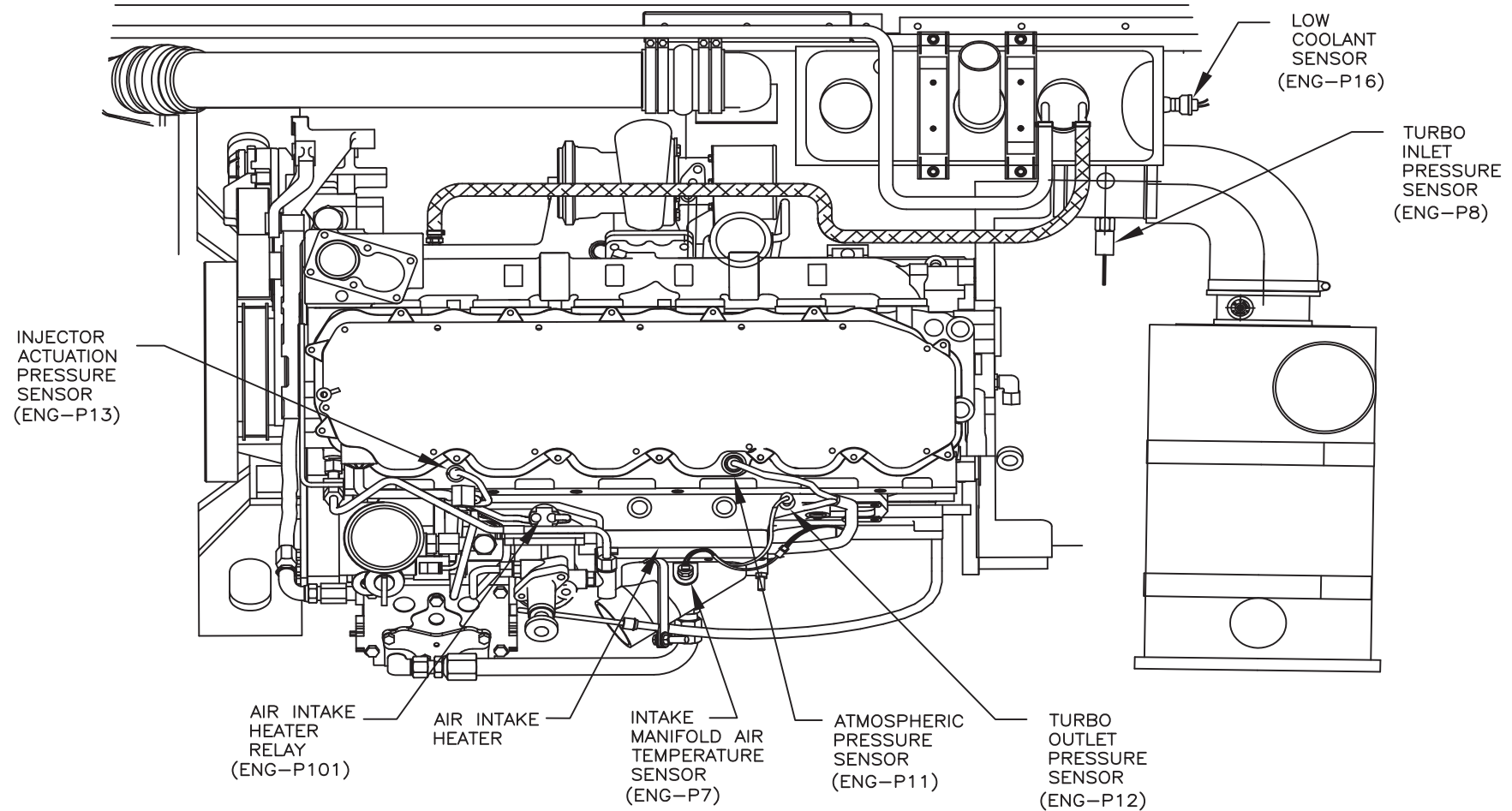
PN: 0116-1912-13 REV G

100 KW ENGINE SENSOR LOCATION- LEFT SIDE



PN: 0116-1912-14 REV G

100 KW ENGINE SENSOR LOCATION- TOP



PN: 0116-1912-14 REV G

GLOSSARY

Term	Definition
Bus	The common power conducting wires or bars to which all power sources within the power system are connected through their individual circuit breakers.
Dead Bus	A bus from which all the available power sources are disconnected.
De-energize	To remove voltage from a circuit or device in order to deactivate it.
Droop	Paralleling mode that allows slight fluctuations in frequency so that lagging generator set can match frequency of companion generator.
EMI	Electromagnetic interference is any electromagnetic disturbance that interrupts, obstructs or other wise degrades or limits the effective performance of electronics and electrical equipment as a result of spurious emissions and responses.
Energize	To apply voltage to a circuit or device in order to activate it.
Excitation voltage	DC voltage applied from the voltage regulator to the generator exciter field windings.
Generator overload condition	Load greater than the load for which the system or mechanism was intended. For TQGs, overload is defined as the condition when current in all three phases exceeds 100% of rated current or when current in a single phase exceeds 130% of rated current.
Ground fault circuit interrupter (GFCI)	A device intended for the protection of personnel that functions to deenergize a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protection device of the supply circuit. The TQG convenience receptacle is protected by a GFCI.
Incoming generator	The generator that is being connected to the bus.
Isochronous	Paralleling mode that requires precise matching of frequency for companion generators.
kV	Kilovolt. One kilovolt equals 1,000 volts.
KVAR	Kilovolt amperes reactive. Measure of reactive power.
KVARhr	Kilovolt amperes reactive hours. Measure of reactive power over time.
kW	Kilowatt. One kilowatt equals 1,000 watts. Measure of real power.
Load bus	Common power conducting wires or bars to which all generator set loads are connected through their individual circuit breakers.
Overcurrent condition	Any current in excess of the rated current of equipment. The condition may result from overload, short circuit, or ground fault.
Paralleling	The procedure for synchronizing and connecting two or more generator sets to a common load bus.

GLOSSARY - Continued

Term	Definition
Reverse power	Power flows from one generator set into another generator set when operating in parallel. For the TQGs, reverse shutdown power occurs when reverse power exceeds 17% of rated value.
TQG control circuit	Primarily consists of 24 VDC circuitry, meters and controls for generator set starting, stopping, monitory, and fault annunciation.
Wet stacking	Buildup of unburned diesel fuel and carbon residues in the engine and exhaust system of diesel engines. Wet stacking can cause an oily, tar-like residue to exit from the exhaust pipe.

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SCHEMATIC AND WIRING DIAGRAM LEGEND

REFERENCE DESIGNATION	ITEM DESCRIPTION	REFERENCE DESIGNATION	ITEM DESCRIPTION
A1	GENERATOR SET CONTROL (GSC)	J7	A1 CONNECTOR
A2	ALARM MODULE	J8	FUEL SWITCH PUMP CONTROL
A3	DIGITAL VOLTAGE REGULATOR (DVR)	J11	FUEL SWITCH LOW LEVEL SHUTDOWN
A4	LOAD SHARING MODULE (LSM)	J30	CONNECTOR, CONTROL BOX 37 PIN
A5	AC TRANSFORMER BOX (ATB)	J31	CONNECTOR, CONTROL BOX 19 PIN
A6	BUSS TRANSFORMER BOX (BTB)	J32, J33	CONNECTOR, PARALLELING
A7	RESISTOR ASSY	J37	CONNECTOR, CONTROL BOX
A8	ENGINE CONTROL MODULE (ECM)	J101	CONVENIENCE RECEPTACLE
AFP	AUXILIARY FUEL PUMP	K1	MAIN LOAD CONTACTOR
AFPR	AUXILIARY FUEL PUMP RELAY	KAFF	RELAY AUXILIARY FUEL PUMP
AFPS	AUXILIARY FUEL PUMP SWITCH	KFF	RELAY FIELD FLASH
AFPV	AUXILIARY FUEL PUMP SOLENOID VALVE	KR	MAIN CONTACTOR RELAY
ALM	ALARM	L1, L2, L3	LOAD LEADS
ALT	ALTERNATOR	LCL	LOW COOLANT LEVEL SENSOR
AR	ALARM RESET	LFL	LOW FUEL LEVEL
AS	ALARM SILENCE SWITCH	LSM	LOAD SHARING MODULE
ATB	AC TRANSFORMER BOX	LT	LAMP TEST SWITCH
BDS	BATTERY DISCONNECT SWITCH	MAN	MANUAL
BSS	BATTLE SHORT SWITCH	MPU	MAGNETIC SPEED PICKUP
BTB	BUS TRANSFORMER BOX	N	NEUTRAL
CATSW1	FUEL FILTER RESET	NEU	NEUTRAL
CATSW2	OIL FILTER RESET	OL/SC	OVERLOAD / SHORT CIRCUIT MODULE
CB1	DC POWER CIRCUIT BREAKER	P7	A1 CONNECTOR
CB2	STARTER SOLENOID CIRCUIT BREAKER	P8	FUEL SWITCH PUMP CONTROL
CB3	CIRCUIT BREAKER AND GFCI PROTECTION FOR CONVENIENCE RECEPTACLE	P11	FUEL SWITCH LOW LEVEL SHUTDOWN
CB4	ECM POWER CIRCUIT BREAKER	P30	CONTROL BOX 37 PIN
CB5	ALTERNATOR CIRCUIT BREAKER	P31	CONTROL BOX 19 PIN
CCCT	CROSS CURRENT COMPENSATION (OR DROOP) TRANSFORMER	P32	PARALLEL CABLE PLUGS
CCL	CONTACTOR CLOSED LIGHT	P37	CONTROL BOX /A1 CONNECTOR
CCS	CONTACTOR CONTROL SWITCH	PL1, PL2, PL3	PANEL ILLUMINATION LIGHT
CDR	COOL DOWN RELAY	PLS	PANEL LIGHT SWITCH
CT1, CT2, CT3	CURRENT TRANSFORMERS, LOAD OUTPUT	PS	PINION SOLENOID (STARTER SOLENOID)
CT7, CT8, CT9	CURRENT TRANSFORMER, LOAD SHARING	PSR	PROGRAMMABLE SPARE RELAY
CTR	CRANK TERMINATION RELAY	PSU	PARALLEL / SINGLE UNIT SWITCH
D1	DIODE MAIN POWER	PT2, PT3	POTENTIAL TRANSFORMERS FOR POWER INPUT TO A3 (DVR)
D2	DIODE DEAD CRANK BLOCKING	R1	RESISTOR FIELD FLASH
D3	DIODE FIELD FLASH BLOCKING	R2	RESISTOR VOLTAGE DROOP
D4	DIODE BREAKER CLOSURE BLOCKING	R3	RESISTOR DEAD BUS
DBHI	DEAD BUS RELAY HIGH VOLTAGE SENSING	R4	DC AMMETER SHUNT
DBLO	DEAD BUS RELAY LOW VOLTAGE SENSING	RM	RELAY MODULE
DCA	DC AMMETER	RR	RUN RELAY
DCS	DEAD CRANK SWITCH	SM	STARTER MOTOR
ECS	ENGINE CONTROL SWITCH (MASTER)	SMMS	STARTER MOTOR MAGNETIC SWITCH
EGR	ELECTRONIC GOVERNOR RELAY	SMR	STARTER MOTOR RELAY
ENG HTR	ENGINE HEATER	SMS	SYNCHRONIZING MODE SELECTOR SWITCH
ESPB	EMERGENCY STOP PUSH BUTTON	SR	SLAVE RECEPTACLE
F1, F2, F3	FUSE, POTENTIAL TRANSFORMERS	SRY	SLAVE RELAY
FCR	FUEL CONTROL RELAY	SSP	SPEED SETTING POTENTIOMETER
FL1	LOW LEVEL FUEL ALARM SWITCH	T1-T10	GENERATOR LINE LEADS
FL2A	AUX FUEL PUMP OFF SWITCH	TB1	GENERATOR RECONNECTION BOARD
FL2B	AUX FUEL PUMP ON SWITCH	TB2	LOAD CONNECTION BOARD
FLG	FUEL LEVEL GAUGE	TB5	TERMINAL STRIP (ENGINE GENERATOR)
FLSU	FUEL LEVEL SENDING UNIT	V1, V2, V3, V4	VARISTOR
FLT1, FLT2, FLT3, FLT4	FILTER, EMI	VAR	VOLTAGE ADJUST RHEOSTAT
G1	GENERATOR		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER, CONVIENCE RECEPTACLE		
GFR	GENERATOR FAULT RELAY		
GND	GROUND		
HTR1, HTR2	HEATER RESISTOR WINTERIZATION		
IDS	ISOCHRONOUS DROOP SWITCH		

- NOTES:
1. DC VOLTAGES SHOWN ARE NOMINAL VALUES. VOLTAGES MAY VARY BETWEEN 20-32VDC UNLESS OTHERWISE SPECIFIED.
 2. AC VOLTAGES SHOWN ARE NOMINAL VALUES. VOLTAGE MAY VARY ±10%.
 3. GSC A1 RELAY MODULE PIN NUMBERS ARE PREFIXED BY RM.
 4. J37 CONNECTS TO THE ENGINE CONTROL PANEL INTERFACE HARNESS.
 5.  NUMBER REFERS TO INTERCONNECTION BEARING SAME NUMBER.



- SYMBOL LEGEND
-  RELAY MODULE TERMINAL
 -  GSC CONNECTOR CONTACT

Figure FO-1. 100 kW TQG Electrical Power Schematic Diagram (Sheet 1 of 6).

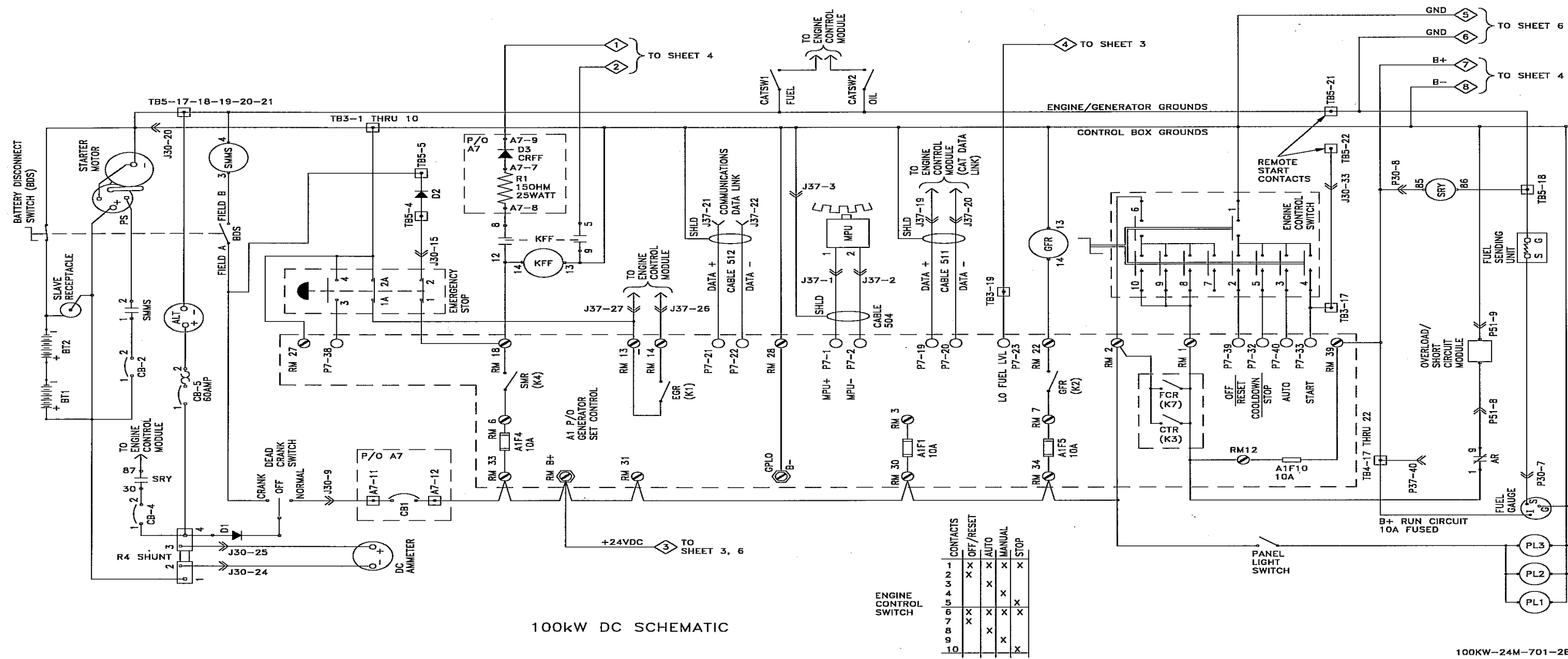


Figure FO-1. 100 kW TQG Electrical Power Schematic Diagram (Sheet 2 of 6).

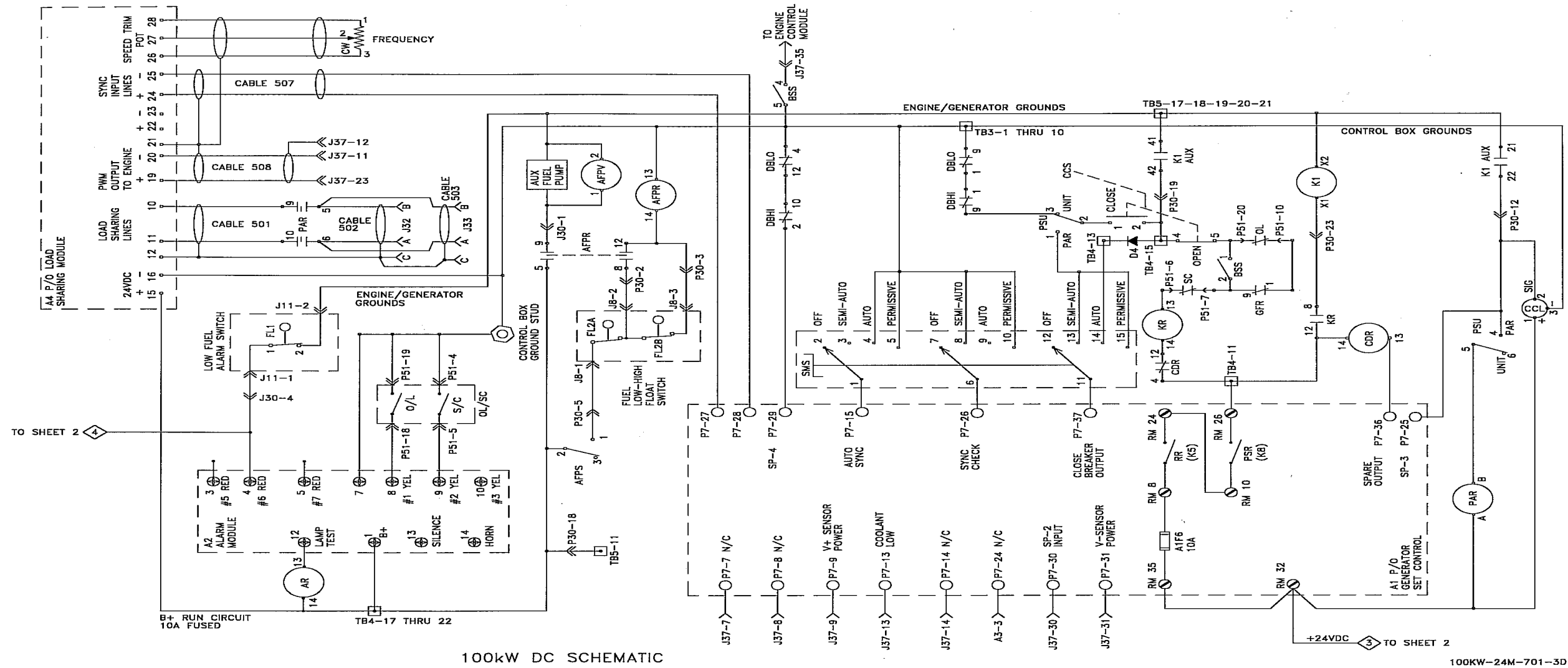


Figure FO-1. 100 kW Electrical Power Schematic Diagram (Sheet 3 of 6).

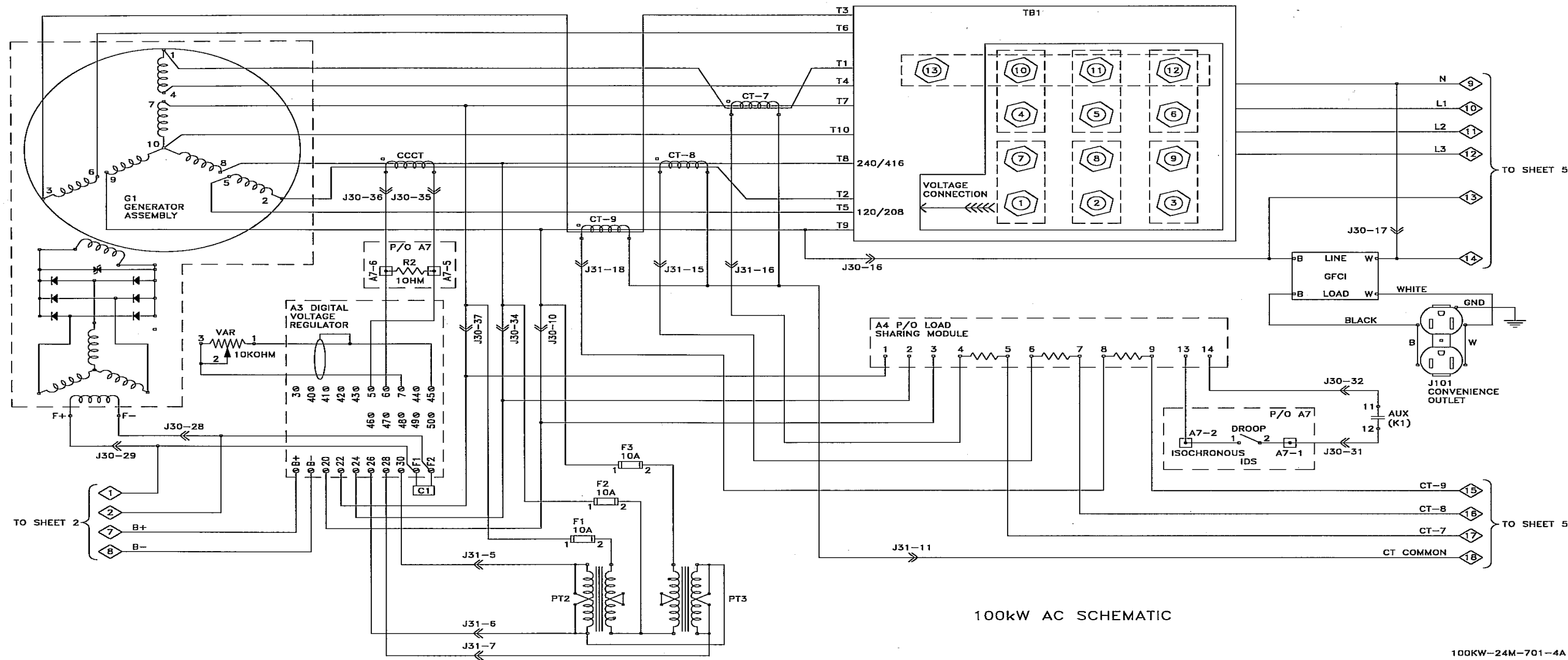


Figure FO-1. 100 kW TQG Electrical Power Schematic Diagram (Sheet 4 of 6).

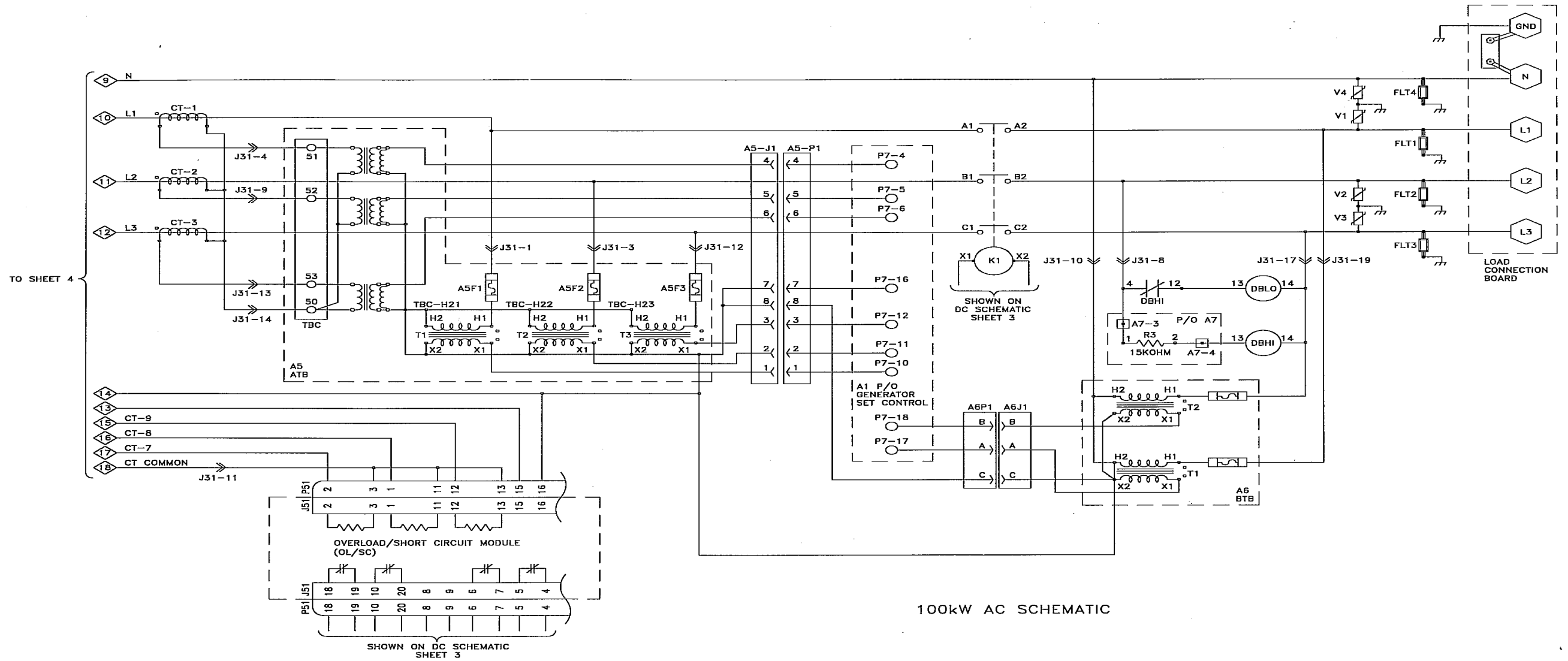


Figure FO-1. 100 kW TQG Electrical Power Schematic Diagram (Sheet 5 of 6).

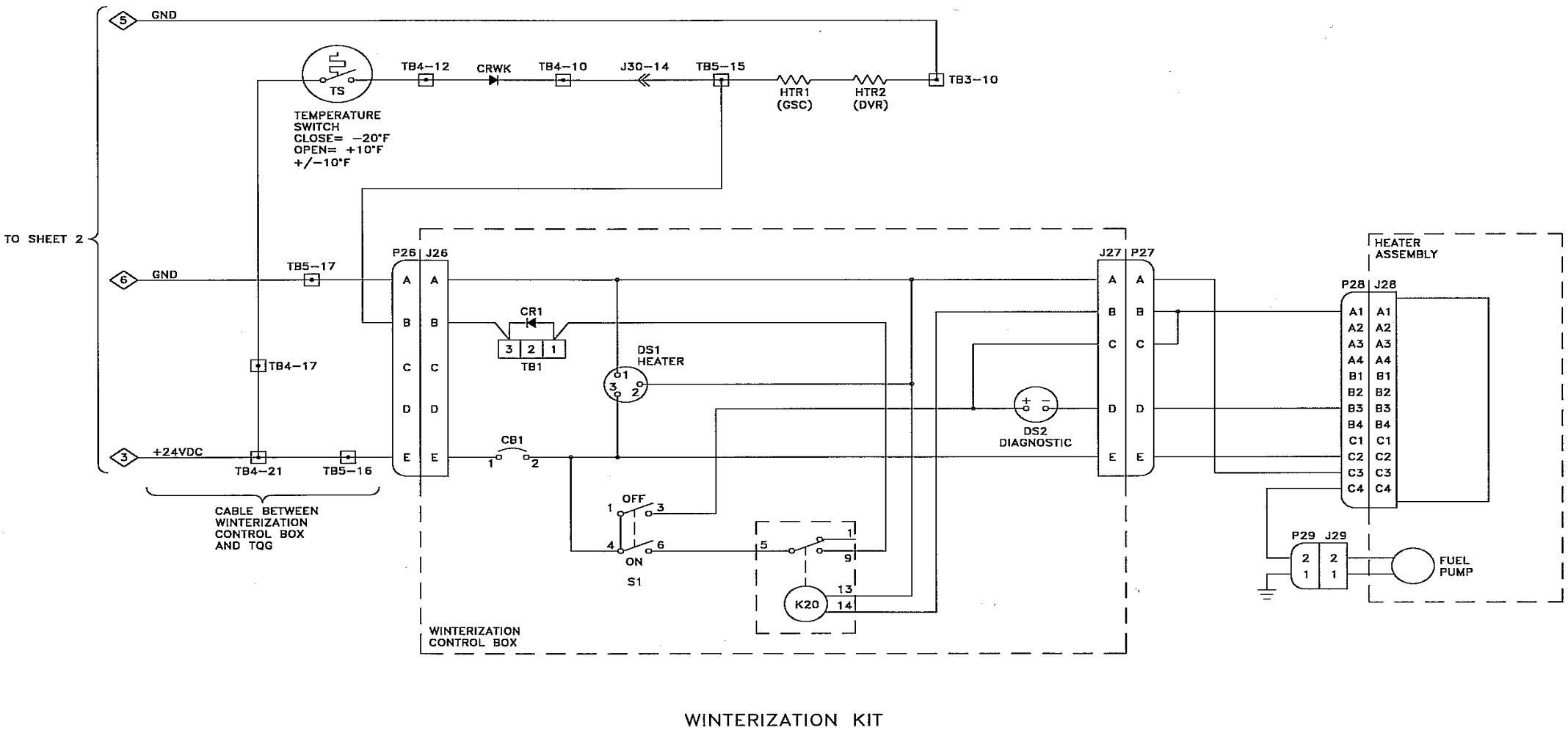


Figure FO-1. 100 kW TQG Electrical Power Schematic Diagram (Sheet 6 of 6).

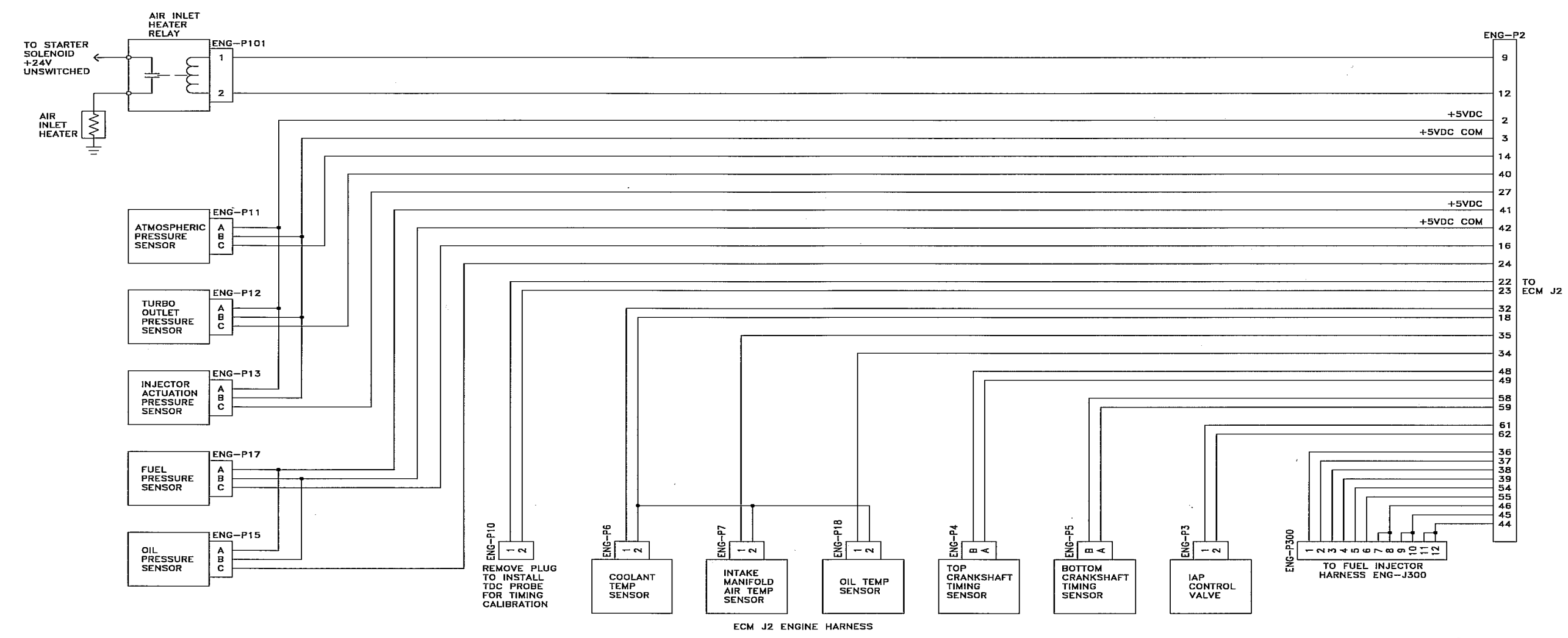


Figure FO-2. 100 kW Engine Harnesses - Schematic Diagram (Sheet 1 of 2).

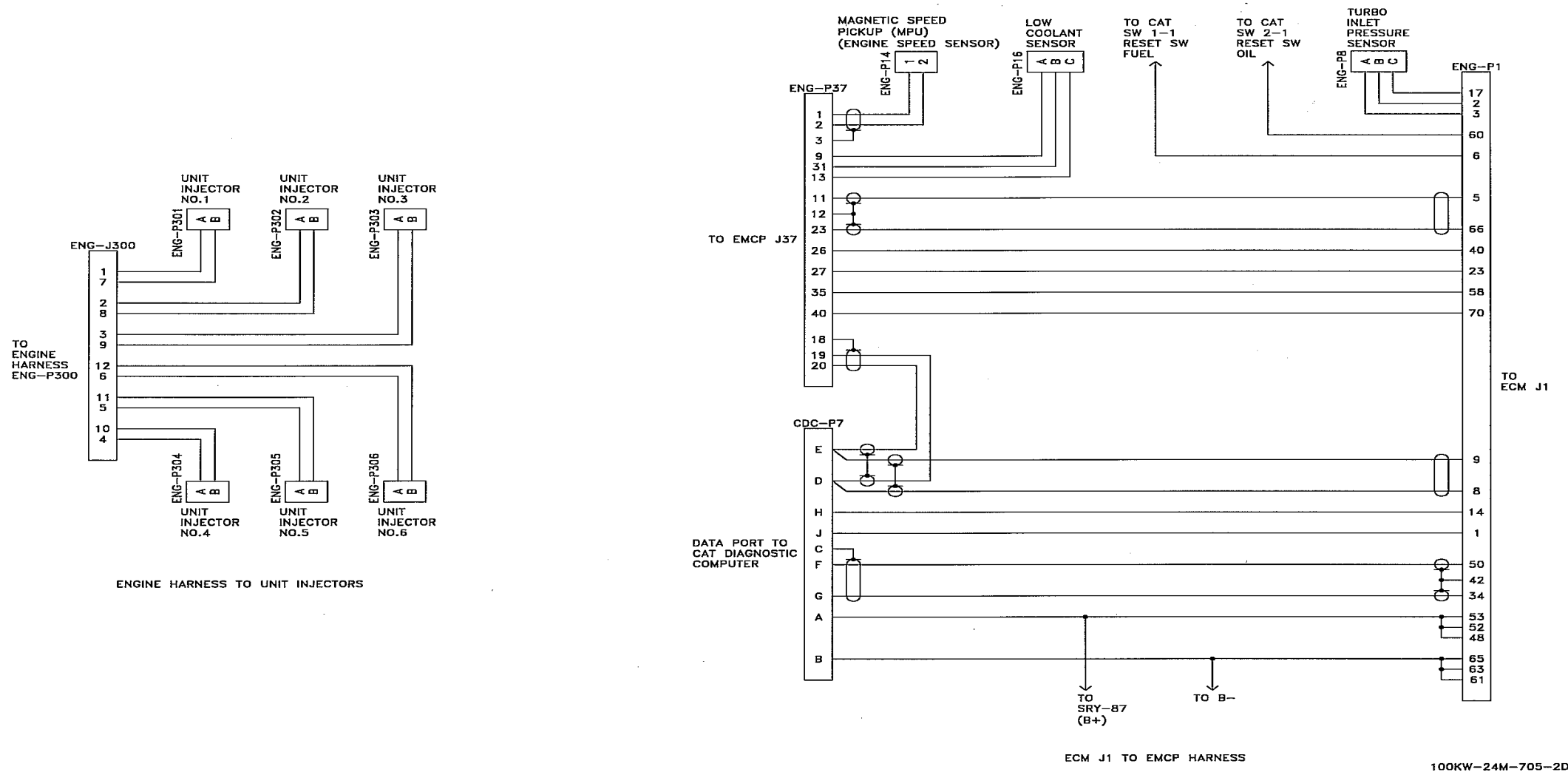
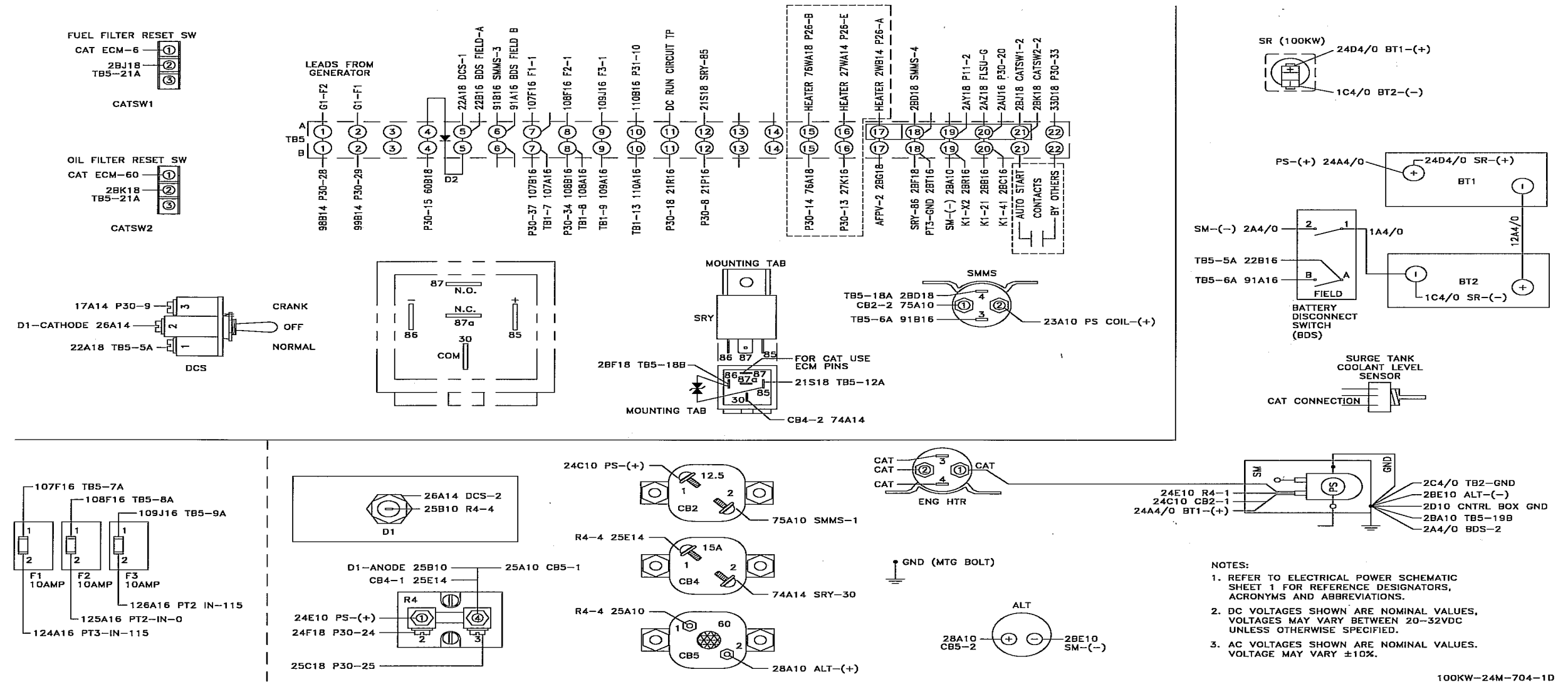
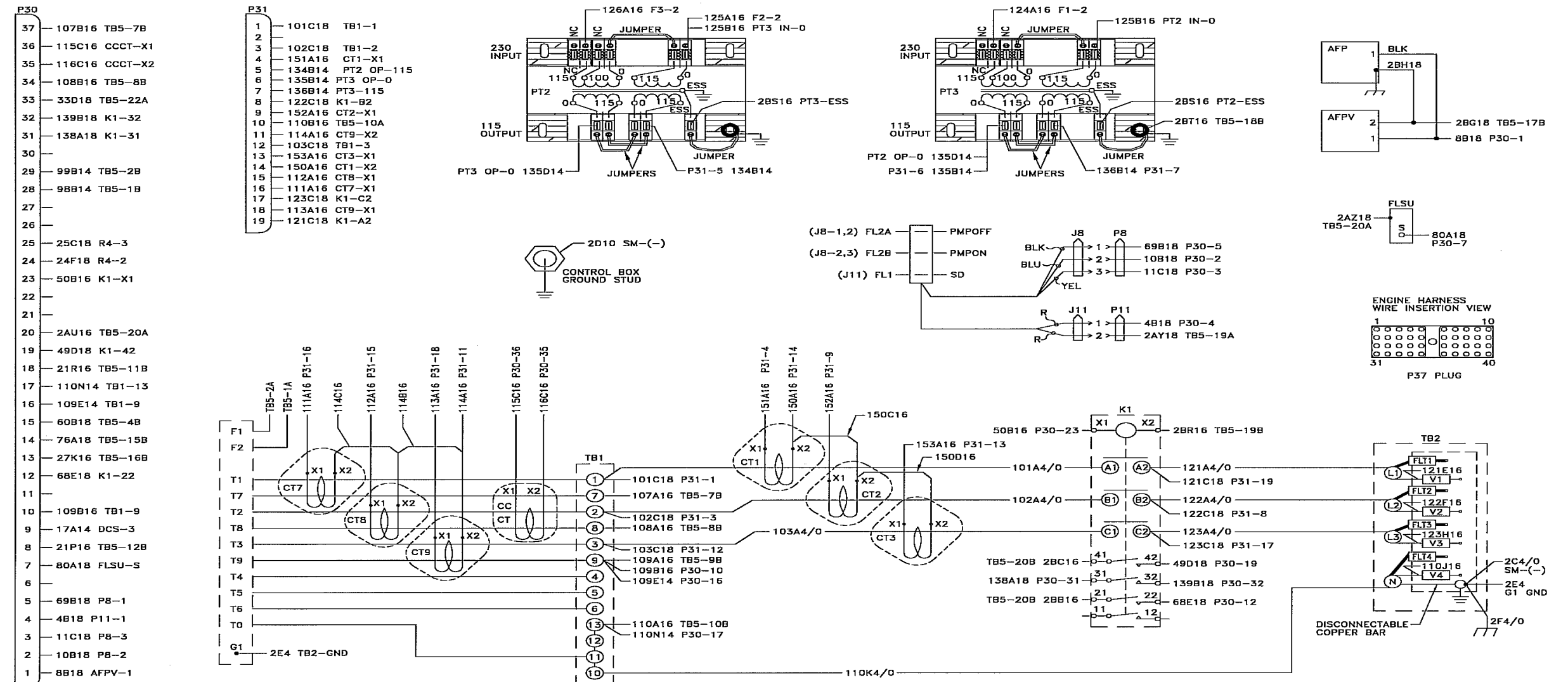


Figure FO-2. 100 kW Engine Harnesses - Schematic Diagram (Sheet 2 of 2).





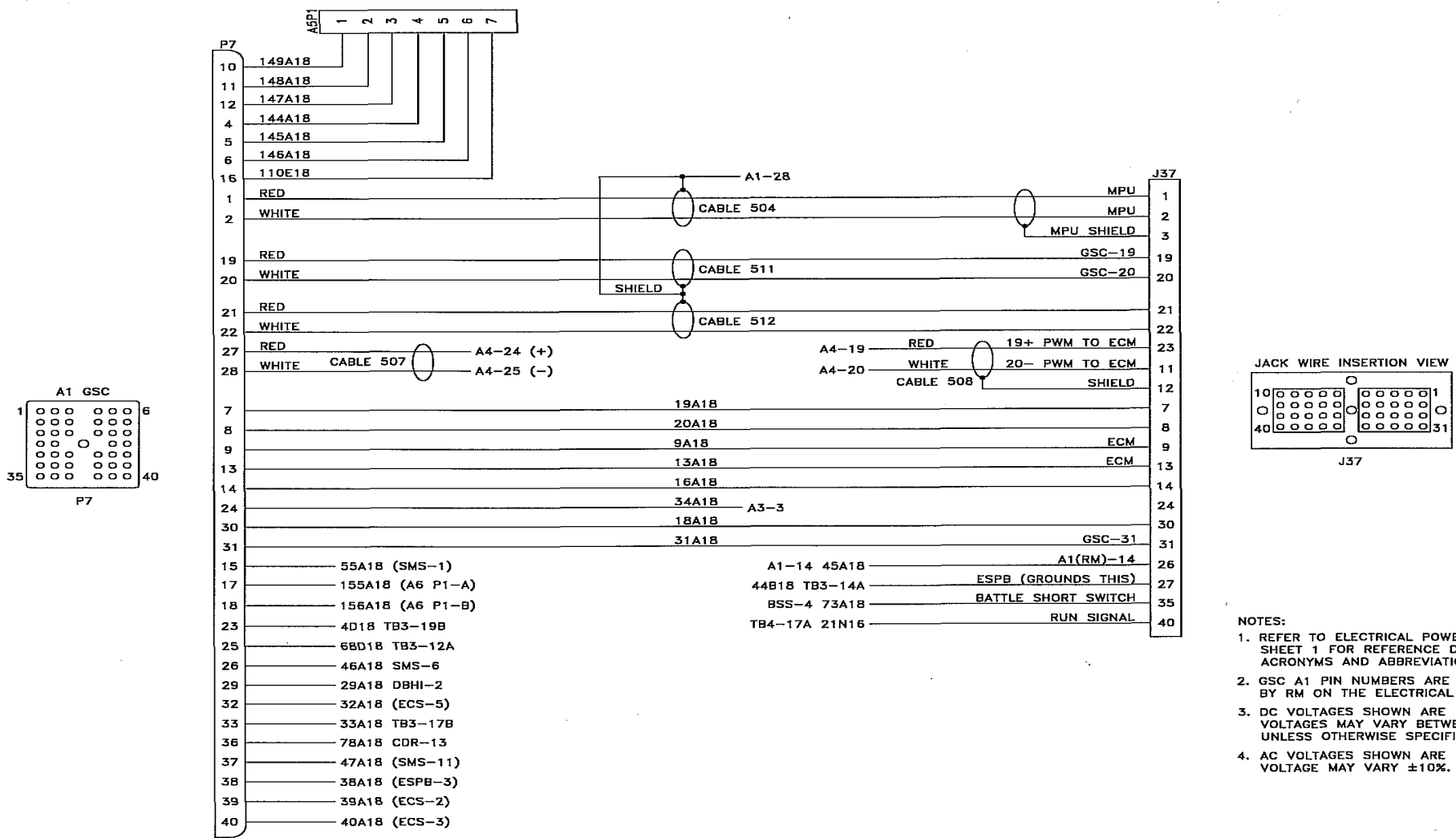


Figure FO-4. Control Box Wiring Diagram (Sheet 1 of 5).

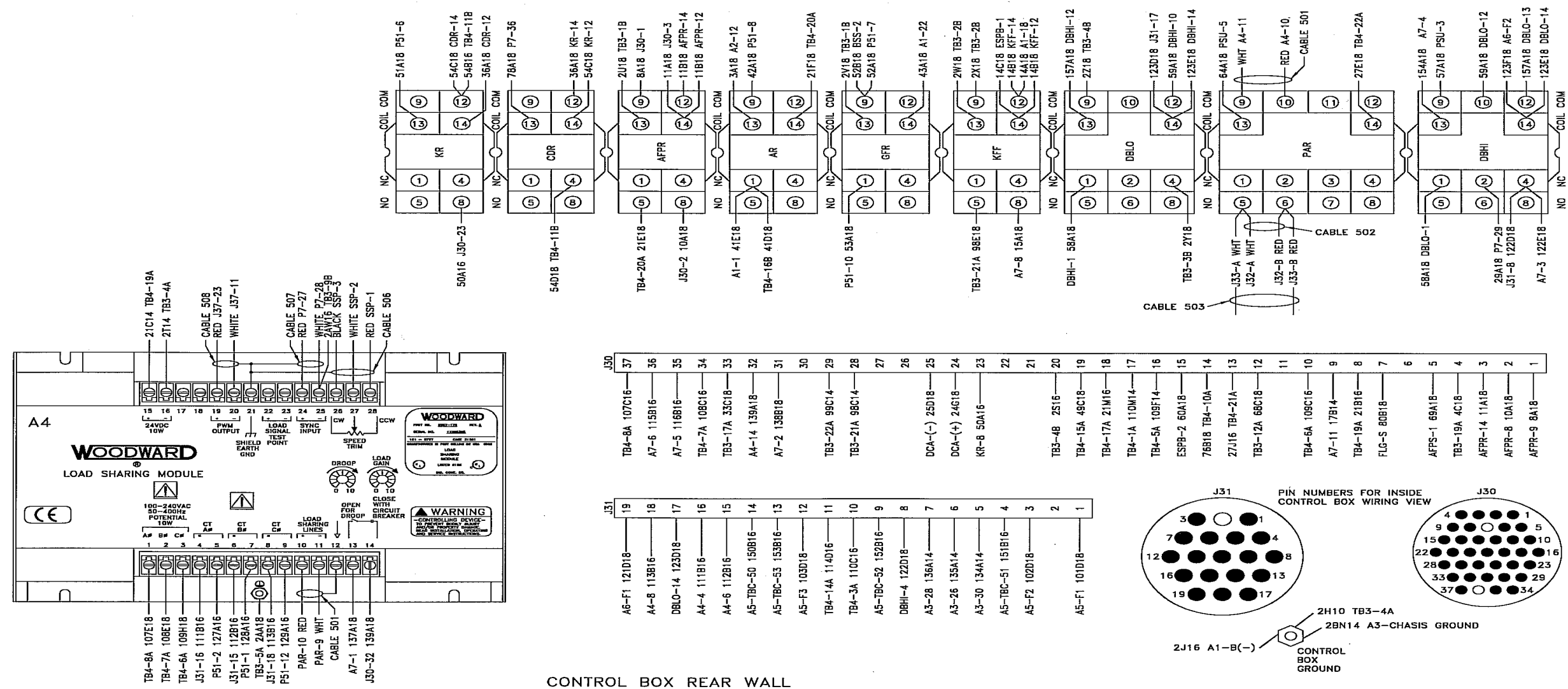
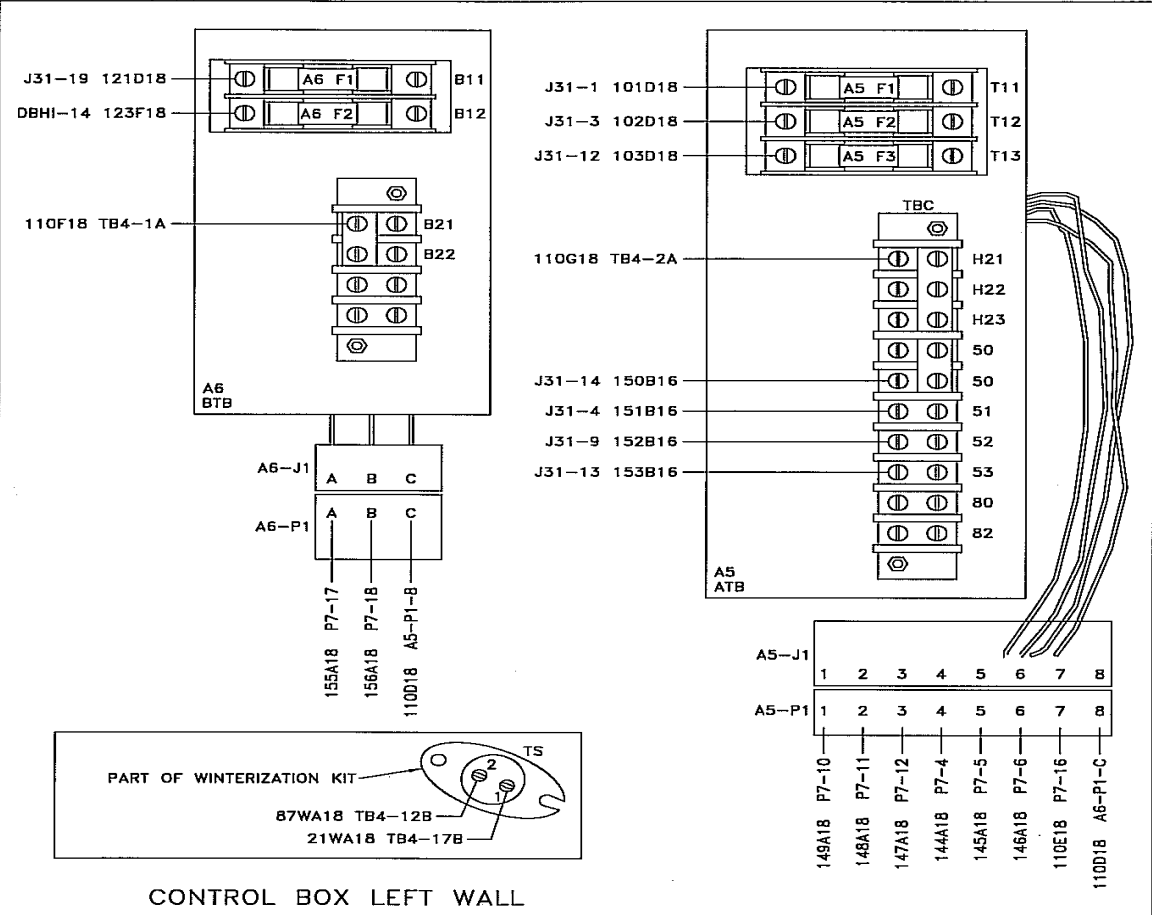
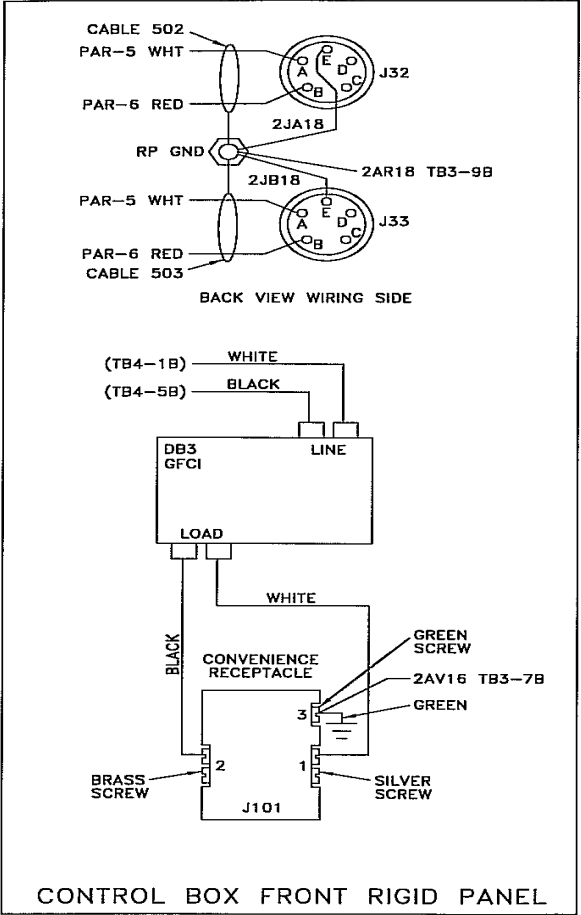


Figure FO-4. Control Box Wiring Diagram (Sheet 2 of 5).



CONTROL BOX FRONT
LEFT AND RIGHT WALLS

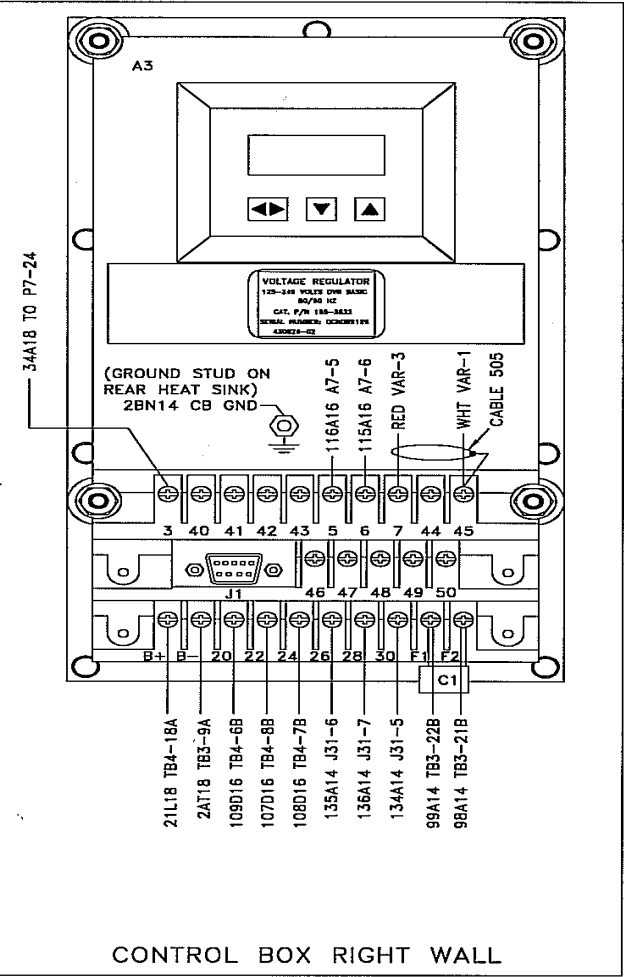


Figure FO-4. Control Box Wiring Diagram (Sheet 3 of 5).

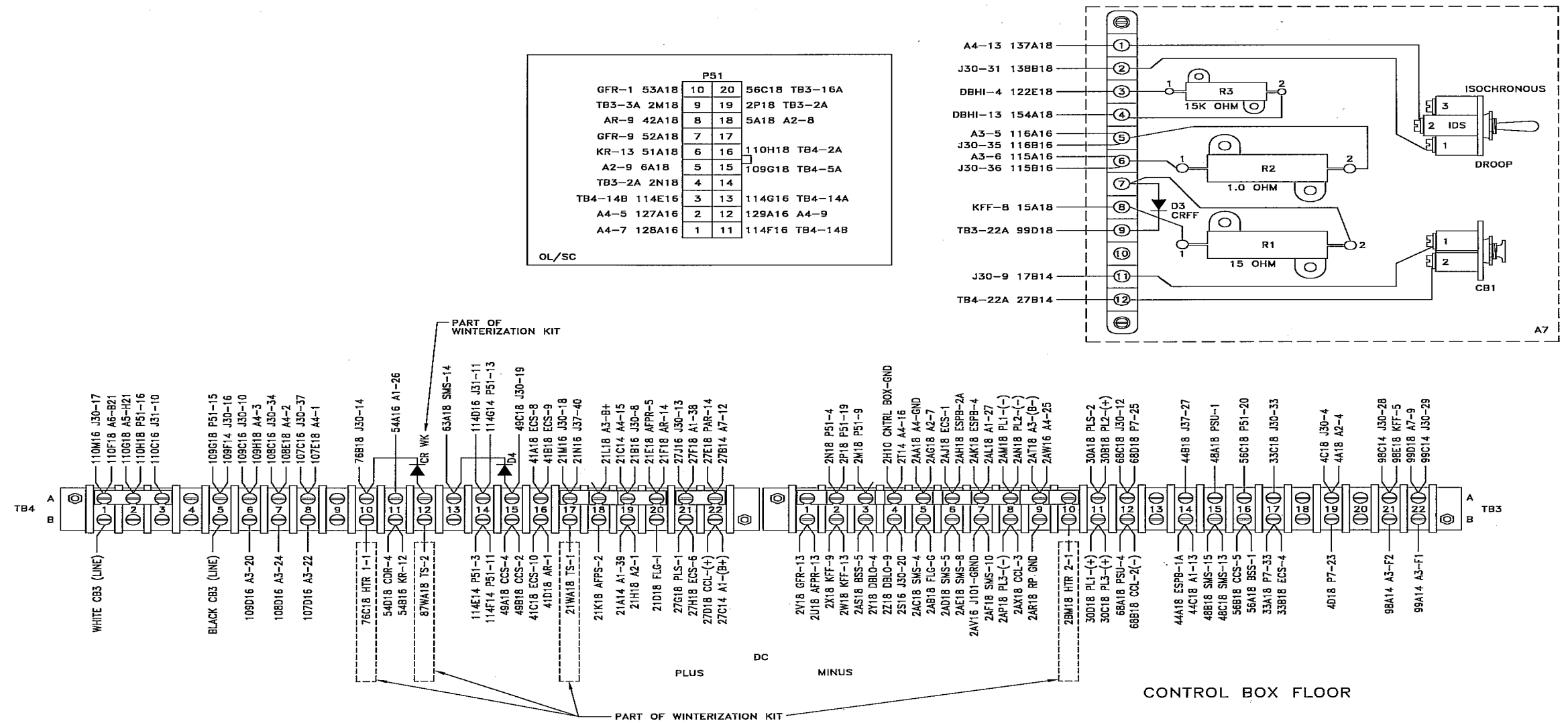


Figure FO-4. Control Box Wiring Diagram (Sheet 4 of 5).

THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeter = 0.01 Meters = 0.3937 inches
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 inches
 1 kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
 1 Kilogram = 100 Grams = 2.2 lb.1 Cu. Meter = 1,000,000
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Millimeter = 0.001 Liters = 0.0338 Fluid Ounces
 1 Liter = 1000 Millimeters = 32.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeter = 0.155 Sq. Inches
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Inches
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
 1 Cu. Centimeters = 35.31 Cu. Feet

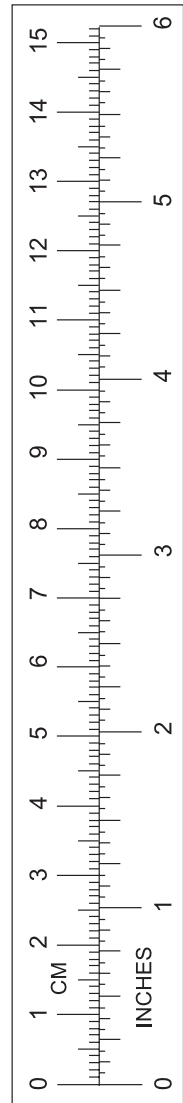
TEMPERATURE

$5/9 (^{\circ}\text{F} - 32) = ^{\circ}\text{C}$
 212° Fahrenheit is equivalent to 100° Celsius
 90° Fahrenheit is equivalent to 32.2° Celsius
 32° Fahrenheit is equivalent to 0° Celsius
 $9/5 ^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches.....	Centimeters.....	2.540
Feet.....	Meters.....	0.305
Yards.....	Meters.....	0.914
Miles.....	Kilometers.....	1.609
Square Inches.....	Square Centimeters.....	6.451
Square Feet.....	Square Meters.....	0.093
Square Yards.....	Square Meters.....	0.836
Square Miles.....	Square Kilometers.....	2.590
Acres.....	Square Hectometers.....	0.405
Cubic Feet.....	Cubic Meters.....	0.028
Cubic Yards.....	Cubic Meters.....	0.765
Fluid Ounces.....	Milliliters.....	29.573
Pints.....	Liters.....	0.473
Quarts.....	Liters.....	0.946
Gallons.....	Liters.....	3.785
Ounces.....	Grams.....	28.349
Pounds.....	Kilograms.....	0.454
Short Tons.....	Metric Tons.....	0.907
Pound-Feet.....	Newton-Meters.....	1.356
Pounds per Square Inch.....	Kilo pascals.....	6.895
Miles per Gallon.....	Kilometers per Liter.....	0.425
Miles per Hour.....	Kilometers per Hour.....	1.609

TO CHANGE	TO	D I V I D E BY
Centimeters.....	Inches.....	2.540
Meters.....	Feet.....	0.305
Meters.....	Yards.....	0.914
Kilometers.....	Miles.....	1.609
Square Centimeters.....	Square Inches.....	6.451
Square Meters.....	Square Feet.....	0.093
Square Meters.....	Square Yards.....	0.836
Square Kilometers.....	Square Miles.....	2.590
Square Hectometers.....	Acres.....	0.405
Cubic Meters.....	Cubic Feet.....	0.028
Cubic Meters.....	Cubic Yards.....	0.765
Milliliters.....	Fluid Ounces.....	29.573
Liters.....	Pints.....	0.473
Liters.....	Quarts.....	0.946
Liters-Meters.....	Gallons.....	3.785
Grams.....	Ounces.....	28.349
Kilograms.....	Pounds.....	0.454
Metric Tons.....	Short Tons.....	0.907
Newton-Meters.....	Pound-Feet.....	1.356
Kilo pascals.....	Pounds per Square Inch.....	6.895
Kilometers per Liter.....	Miles per Gallon.....	0.425
Kilometers per Hour.....	Miles per Hour.....	1.609



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