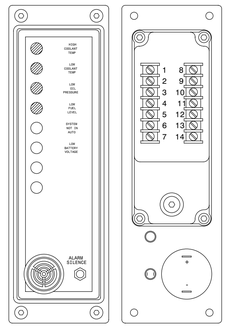
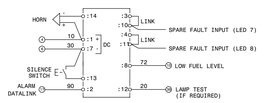
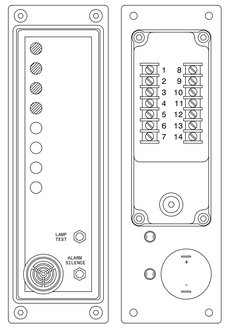


(FRONT) (REAR)

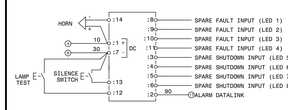
TERM. No.	CONNECTION DESCRIPTION
1	WIRE No. 10 (GSC RM39) & HORN +VE
2	WIRE No. 90 (GSC 40 WAY No. 35) ALARM DATALINK
3	JUMPER TO 10
4	JUMPER TO 11
5	NOT CONNECTED
6	NOT CONNECTED
7	WIRE No. 30 (GSC RM27) & SILENCE SWITCH
8	LOW FUEL LEVEL SWITCHED -VE INPUT
9	NOT CONNECTED
10	LED 7 (SPARE)
11	LED 8 (SPARE)
12	LAMP TEST -VE INPUT (IF REQUIRED)
13	SILENCE SWITCH
14	HORN -VE

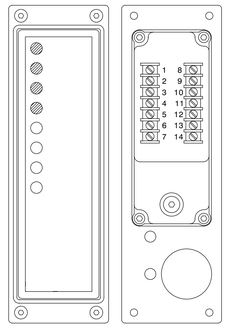




(FRONT) (REAR)

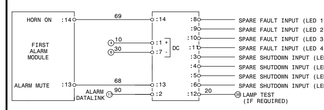
TERM. No.	CONNECTION DESCRIPTION
1	WIRE No. 10 (GSC RM39) & HORN +VE
2	WIRE No. 90 (GSC 40 WAY No. 35) ALARM DATALINK
3	LED 5 SWITCHED -VE INPUT
4	LED 6 SWITCHED -VE INPUT
5	LED 7 SWITCHED -VE INPUT
6	LED 8 SWITCHED -VE INPUT
7	WIRE No. 30 (GSC RM27) & SILENCE SWITCH
8	LED 1 SWITCHED -VE INPUT
9	LED 2 SWITCHED -VE INPUT
10	LED 3 SWITCHED -VE INPUT
11	LED 4 SWITCHED -VE INPUT
12	LAMP TEST
13	SILENCE SWITCH
14	HORN -VE

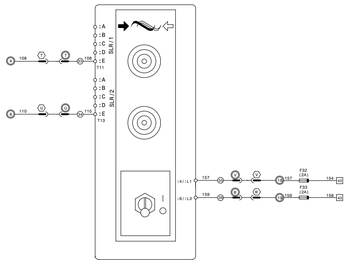




(FRONT) (REAR)

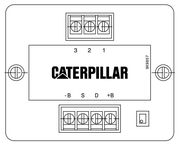
TERM. No.	CONNECTION DESCRIPTION
1	WIRE No. 10 (GSC RM39)
2	WIRE No. 90 (GSC 40 WAY No. 35) ALARM DATALINK
3	LED 5 SWITCHED -VE INPUT
4	LED 6 SWITCHED -VE INPUT
5	LED 7 SWITCHED -VE INPUT
6	LED 8 SWITCHED -VE INPUT
7	WIRE No. 30 (GSC RM27)
8	LED 1 SWITCHED -VE INPUT
9	LED 2 SWITCHED -VE INPUT
10	LED 3 SWITCHED -VE INPUT
11	LED 4 SWITCHED -VE INPUT
12	LAMP TEST -VE INPUT (IF REQUIRED)
13	TERMINAL No. 13 ON 1st ALARM MODULE (ALM MUTE)
14	TERMINAL No. 14 ON 1st ALARM MODULE (HORN ON)





NOTE ON SYNC MODULE:
FOR 208V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN D
FOR 240V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN C
FOR 380V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN B
FOR 380V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN B
FOR 400V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN B
FOR 415V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN A
FOR 440V SYSTEM 10R & 11D SHOULD BE CONNECTED TO RESISTOR PIN A
FOR 600V SYSTEM 10R & 11D SHOULD BE CONNECTED TO SINGLE RESISTOR

PWM MODULE



CATERPILLAR®

RENR8077
March 2004

Schematic

3406C & 3456 Generator Set with EMCP II+ Electrical System

3406C Gen Set:	3456 Gen Set:	SR4B Generator:
C2G1-UP	C1G1-UP	L5A1-UP
C5G1-UP	C3G1-UP	L6B1-UP
	C4G1-UP	L7A1-UP

Volume 1

Printed in U.S.A.

ABBREVIATIONS

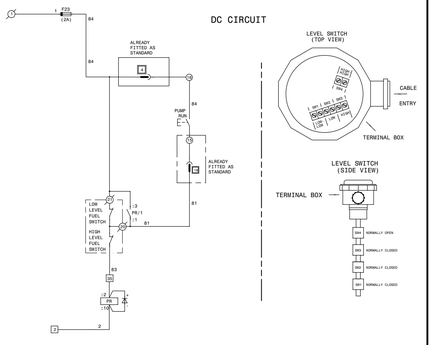
ASR	AIR SHUT-OFF RELAY	GSC	GENERATOR SET CONTROL
ATB	AC TRANSFORMER BOX	HET	HIGH ENGINE TEMPERATURE
CR	CONTROL RELAY	HOT	HIGH OIL TEMPERATURE
CTR	CRANK TERMINATION RELAY	KW	KILOWATT
EGR	ELECTRONIC GOVERNOR RELAY	LCL	LOW COOLANT LEVEL
FCR	FUEL CONTROL RELAY	LOP	LOW OIL PRESSURE
GFR	GENSET FAULT RELAY	POT	POTENTIOMETER
GPH1	GROUND POST HIGH	SCR	SCREEN
GPLO	GROUND POST LOW	SMR	STARTER MOTOR RELAY

SYMBOLS

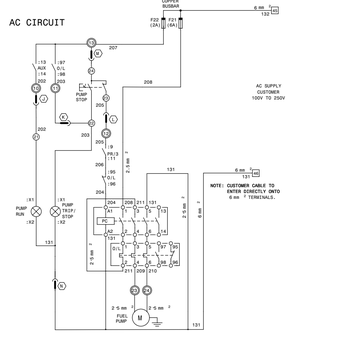
FUSE
EMERGENCY STOP PUSHBUTTON
PANEL LAMP
RELAY COIL
TRANZORB
SCREEN CABLE
RELAY CONTACT N/O
PANEL LAMP SWITCH
EARTH
ENGINE CONTROL SWITCH
CIRCUIT BREAKER
POTENTIOMETER
CHASSIS CUSTOMER TERMINAL
CHASSIS DC TERMINAL
CHASSIS AC TERMINAL
DOOR TERMINAL
CHASSIS TO DOOR DC SOCKET
ENGINE SOCKET
CHASSIS TO DOOR AC SOCKET
POWER TERMINAL
GSC 40 WAY HARNESS CONNECTOR
GSC RELAY MODULE TERMINAL
ATB TERMINAL

PUMPED FUEL SUPPLY FROM BELOW FLOOR LEVEL BULK TANK TO BASETANK
FUEL SYSTEM No. 1

DC CIRCUIT

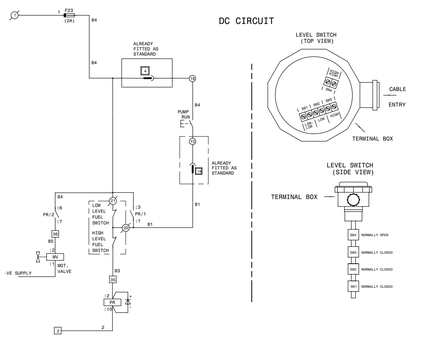


AC CIRCUIT

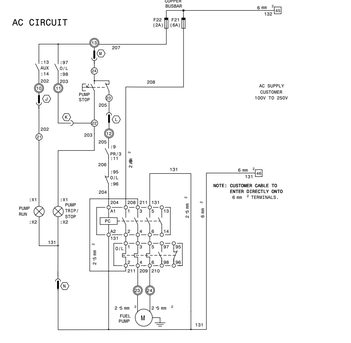


FUEL PUMPED FROM FREE STANDING BULK TANK
FUEL SYSTEM No. 3

DC CIRCUIT

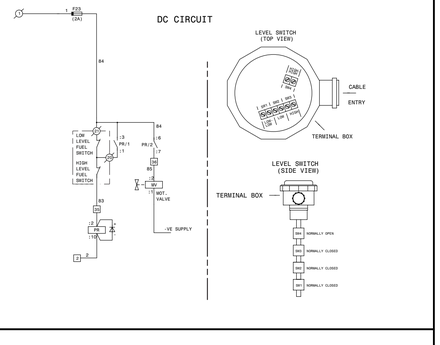


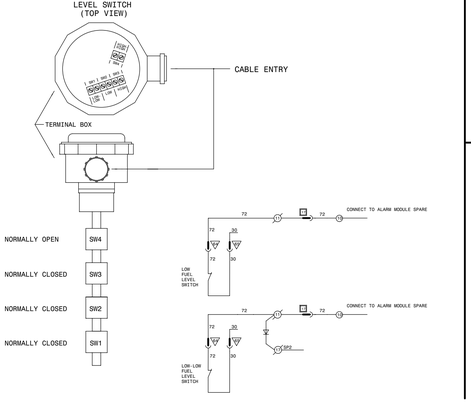
AC CIRCUIT

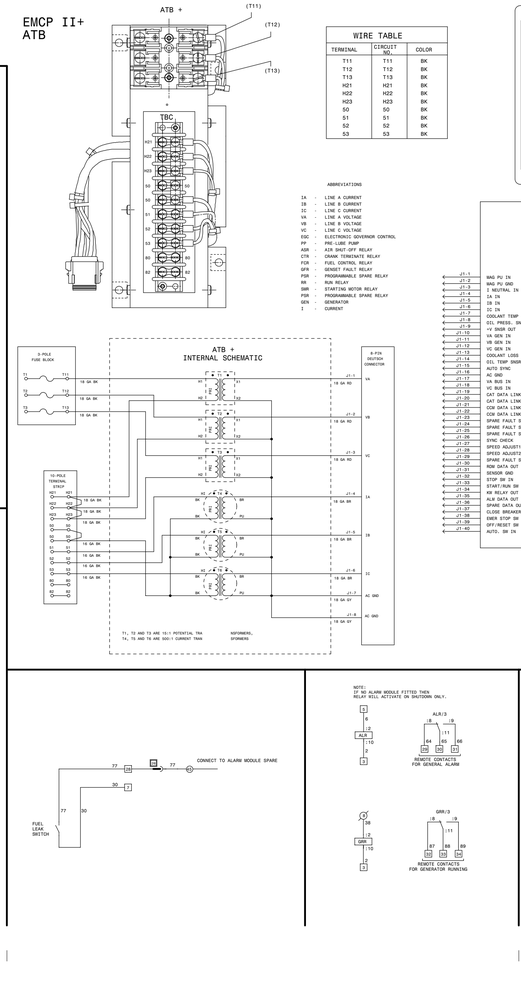


GRAVITY FUEL SUPPLY FROM HIGH LEVEL BULK TANK TO BASETANK
FUEL SYSTEM No. 2

DC CIRCUIT

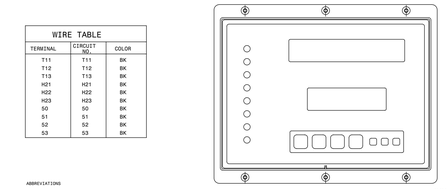


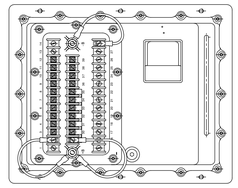




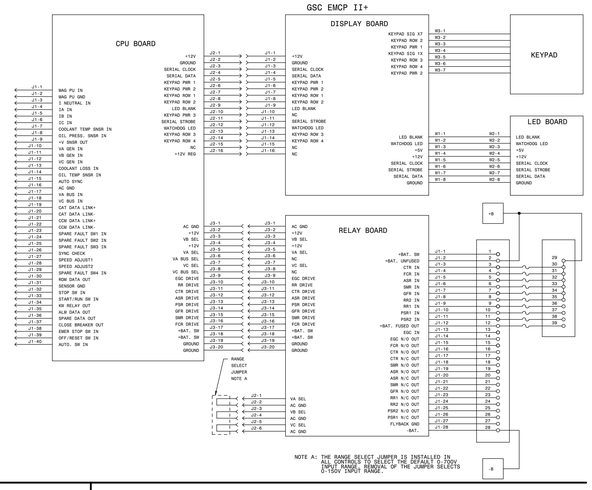
ABBREVIATIONS

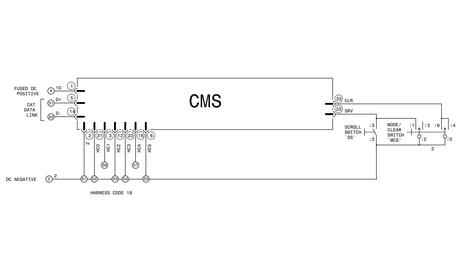
IA	- LINE A CURRENT	PR	- PRESSURE RELAY
IB	- LINE B CURRENT	RR	- RUN RELAY
IC	- LINE C CURRENT	SMR	- STARTING MOTOR RELAY
VA	- LINE A VOLTAGE	PSM	- PROGRAMMABLE SPARE RELAY
VB	- LINE B VOLTAGE	GEN	- GENERATOR
VC	- LINE C VOLTAGE	I	- CURRENT
EGC	- ELECTRONIC GOVERNOR CONTROL		
PP	- PRE-LUBE PUMP		
ASR	- AIR SHUT-OFF RELAY		
CTR	- CRANK TERMINATE RELAY		
FCR	- FUEL CONTROL RELAY		
GFR	- GENSET FAULT RELAY		
PSM	- PROGRAMMABLE SPARE RELAY		





GSC EMCP II+





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30 Page, TRM

AC TRANSFORMER BOX (ATB)

GENERATOR SET CONTROL (GSC)

P2/2

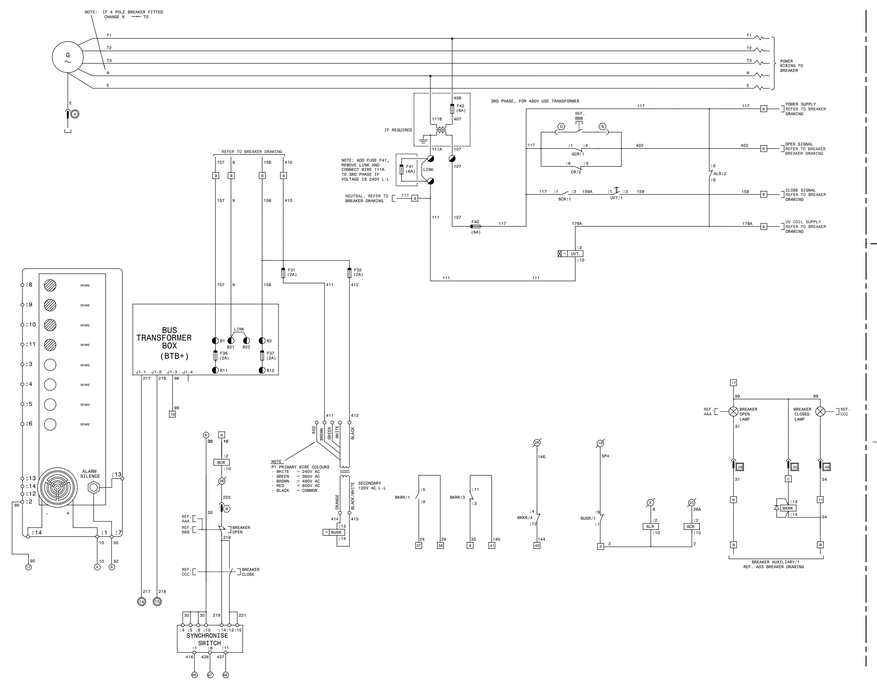
P1/2

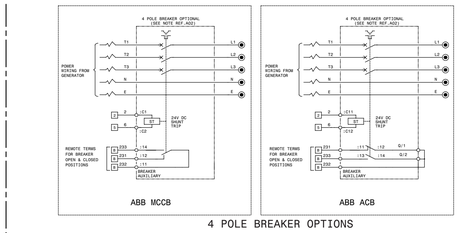
1. IF THE FAULT SHUTDOWN INDICATOR IS FLASHING THEN THE LINK SHOULD BE TEMPORARILY FITTED. THE GSC SETPOINTS MUST BE PROGRAMMED IN OFF/RESET WHEN A FAULT SHUTDOWN IS ACTIVE. IF THE FAULT ALARM INDICATOR IS FLASHING THE GSC CAN BE PROGRAMMED WITH THE CONTROL SWITCH IN ANY POSITION.

DIAGRAM-WIRING
(EMCP II+)
235-0829

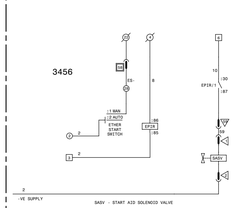
DIAGRAM-WIRING
(ENGINE SCHEMATIC)
236-5745

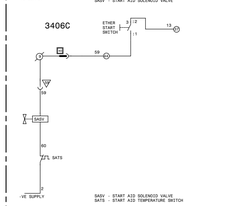
VOLUME 1
3406 WITH EMCP II+



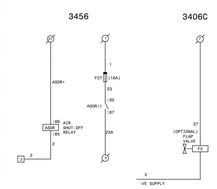


4 POLE BREAKER OPTIONS

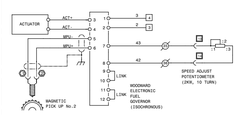




START AID OPTIONS

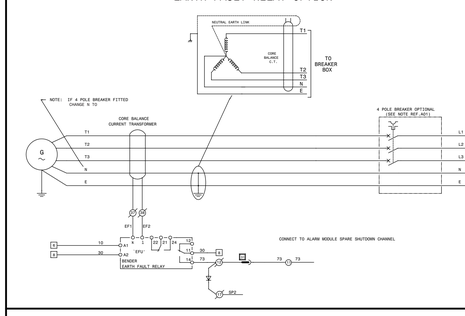


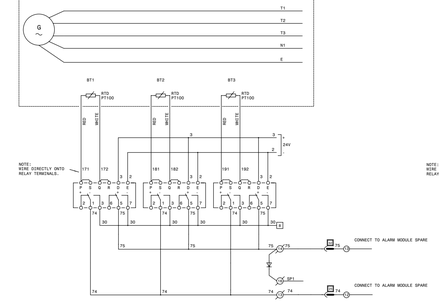
AIR SHUT-OFF OPTIONS

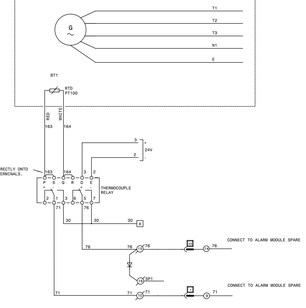


GOVERNOR OPTION

EARTH FAULT RELAY OPTION

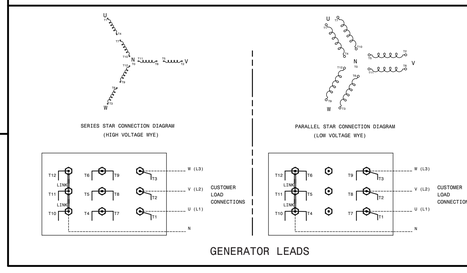




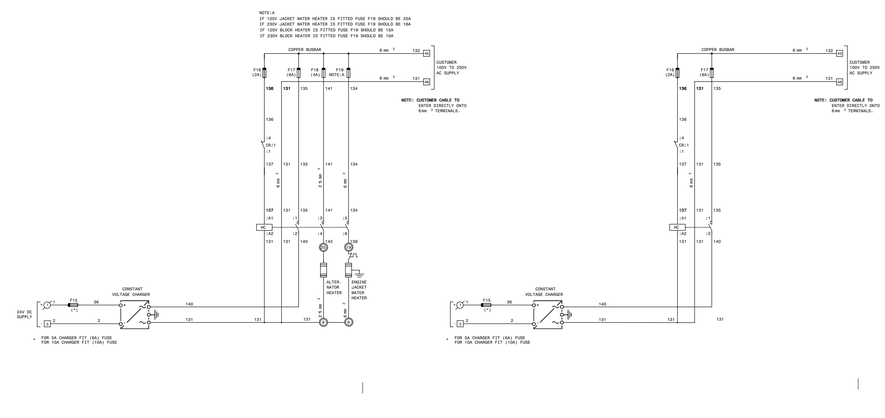


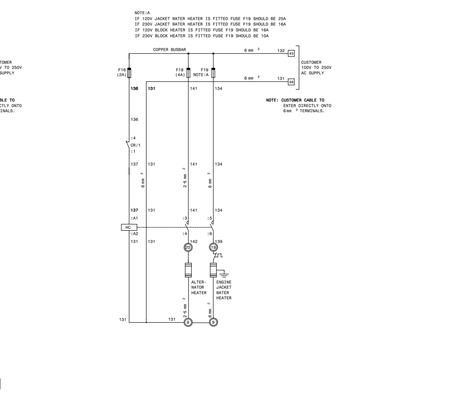
THERMOCOUPLE RELAY OPTIONS

HEATER OPTIONS



GENERATOR LEADS





CATERPILLAR®

RENR8077
March 2004

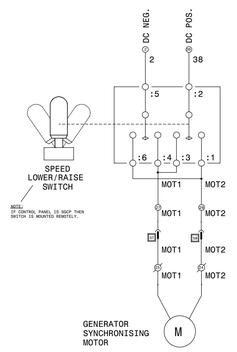
Schematic

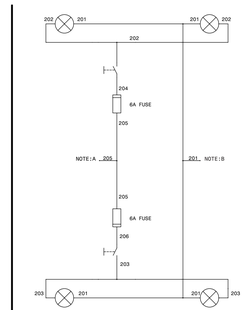
3406C & 3456 Generator Set with EMCP II + Electrical System

3406C Gen Set:	3456 Gen Set:	SR4B Generator:
C2G1-UP	C1G1-UP	L5A1-UP
C5G1-UP	C3G1-UP	L6B1-UP
	C4G1-UP	L7A1-UP

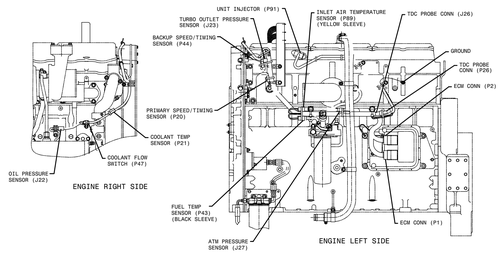
Volume 2

Printed in U.S.A.

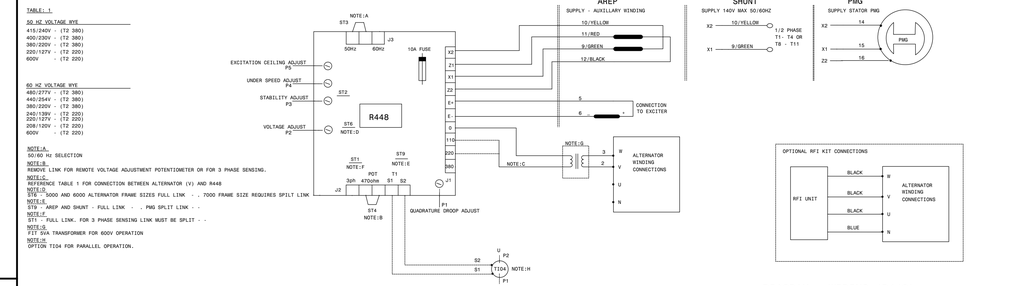


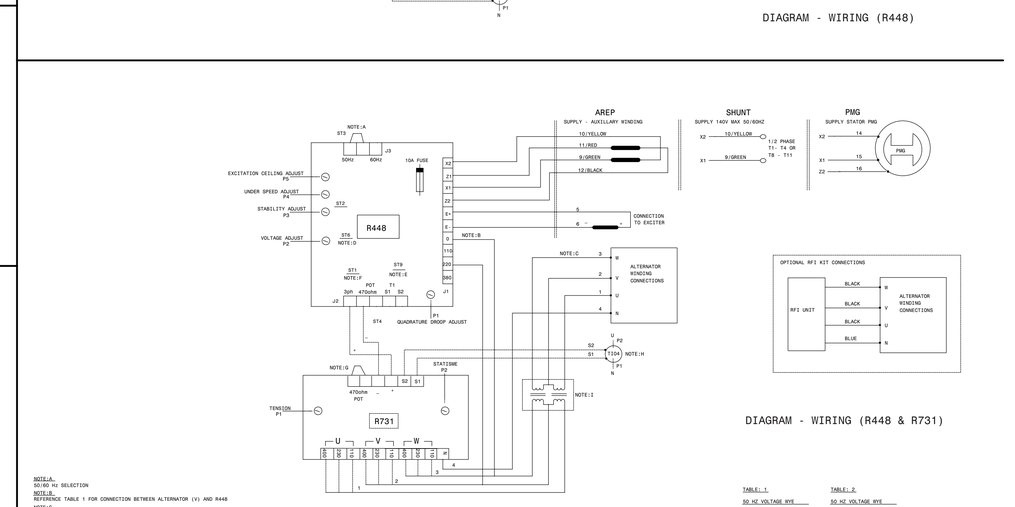


NOTE A: CONNECT TO POSITIVE ON STARTER MOTOR
NOTE B: CONNECT TO NEGATIVE ON STARTER MOTOR OR BATTERY ISOLATOR



3456 ENGINE COMPONENT LOCATIONS





NOTE:A.
50/60 Hz SELECTION
NOTE:B.
REFERENCE TABLE 1 FOR CONNECTION BETWEEN ALTERNATOR (V) AND R448
NOTE:C.
REFERENCE TABLE 2 FOR CONNECTION BETWEEN ALTERNATOR AND R731
NOTE:D
STS - 5000 AND 6000 ALTERNATOR FRAME SIZES FULL LINK - . 7000 FRAME SIZE REQUIRES SPILT LINK - - .
STB - AREP AND SHUNT - FULL LINK - - . PMG SPLIT LINK - - .
NOTE:E
ST1 - FULL LINK. FOR 3 PHASE SENSING LINK MUST BE SPLIT — — .
NOTE:G
REMOVE FOR OPTIONAL VOLTAGE ADJUST POT.
NOTE:H
OPTION T104 FOR PARALLEL OPERATION. WITHOUT 3 PHASE SENSING CONNECT TO S1 AND S2 ON R448 ONLY. STANDARD POSITION ON PHASE U.
FOR CT PARALLEL OPERATION ON PHASE V - MODIFY R731 VOLTAGE SENSING AS FOLLOWS - U(R731) -> V(ALT) , V(R731) -> W(ALT) , W(R731) -> U(ALT).
NOTE:I
FIT 2 x 5VA TRANSFORMERS FOR 600V OPERATION

TABLE: 1

50 HZ VOLTAGE WYE
415/240V - (T1,T2&T3 380)
400/230V - (T1,T2&T3 380)
380/220V - (T1,T2&T3 380)
220/127V - (T1,T2&T3 220)
600V - (T1,T2&T3 220)

60 HZ VOLTAGE WYE
480/277V - (T1,T2&T3 380)
440/254V - (T1,T2&T3 380)
380/220V - (T1,T2&T3 380)
240/139V - (T1,T2&T3 220)
220/127V - (T1,T2&T3 220)
208/120V - (T1,T2&T3 220)
600V - (T1,T2&T3 220)

TABLE: 2

50 HZ VOLTAGE WYE
415/240V - (T1,T2&T3 380)
400/230V - (T1,T2&T3 380)
380/220V - (T1,T2&T3 380)
220/127V - (T1,T2&T3 220)
600V - (T1,T2&T3 220)

60 HZ VOLTAGE WYE
480/277V - (T1,T2&T3 380)
440/254V - (T1,T2&T3 380)
380/220V - (T1,T2&T3 380)
240/139V - (T1,T2&T3 220)
220/127V - (T1,T2&T3 220)
208/120V - (T1,T2&T3 220)
600V - (T1,T2&T3 220)

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30 Page, TRM

RENR8077 VOL 2

30 Page, B&W, TRM

SPEED CONTROL

SPEED ADJUST POTENTIOMETER (1K , 10 TURN)

VOLTS ADJUST POTENTIOMETER (1K, 1 TURN)

470 ohm POT ST4 R448 AVR

AC TRANSFORMER BOX (ATB)

METERING C.T.S

4 POLE BREAKER OPTIONAL

1. IF THE FAULT SHUTDOWN INDICATOR IS FLASHING THEN THE LINK SHOULD BE TEMPORARILY FITTED. THE GSC SETPOINTS MUST BE PROGRAMMED IN OFF/RESET WHEN A FAULT SHUTDOWN IS ACTIVE. IF THE FAULT ALARM INDICATOR IS FLASHING THE GSC CAN BE PROGRAMMED WITH THE CONTROL SWITCH IN ANY POSITION.

ECM

GENERATOR SET CONTROL (GSC)

- LOW OIL PRESSURE
- EMERGENCY STOP
- HIGH WATER TEMPERATURE
- ENGINE OVERSPEED
- OVERCRANK
- LOW COOLANT LEVEL (SPARE 1)
- HIGH OIL TEMPERATURE (SPARE 2)
- SPARE 3
- FAULT SHUTDOWN
- FAULT ALARM

SET OP6 SETPOINT SP17 TO 6
SET OP6 SETPOINT SP18 TO 7

SERVICE CONNECTOR

ABBREVIATION:
ALT ALTERNATOR
CB CIRCUIT BREAKER
DIG DIGITAL
CIS CUSTOMER IGNITION SWITCH
ECM ELECTRONIC CONTROL MODULE
NC NO CONNECTION
PWM PULSE WIDTH MODULATION
SM STARTING MOTOR
SWMS START MOTOR MAG SWITCH

NOTE A: VOLTS ADJUST CONNECTION WHEN USING A R448 REGULATOR
NOTE B: VOLTS ADJUST CONNECTION WHEN USING A CDVR REGULATOR

DIAGRAM-WIRING (EMCP II+)
235-0745
DIAGRAM-WIRING (ENGINE SCHEMATIC)
234-3205
DIAGRAM-WIRING (ENGINE HARNESS)
145-3850

VOLUME 2
3456 WITH EMCP II+