

Schematic

**Connection Diagrams:
SR4 & SR4B Generators
Voltage Regulators
Options**

Important Safety Information

Most accidents involving product operation, maintenance, and repair are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. A person must be alert to potential hazards. This person should also have the necessary training, skills and tools to perform these functions properly.

Improper operation, lubrication, maintenance or repair of this product can be dangerous and could result in injury or death.

Do not operate or perform any lubrication, maintenance or repair on this product, until you have read and understood the operation, lubrication, maintenance and repair information.

Safety precautions and warnings are provided in this manual and on the product. If these hazard warnings are not heeded, bodily injury or death could occur to you or other persons.

The hazards are identified by the "Safety Alert Symbol" and followed by a "Signal Word" such as "WARNING" as shown below.



The meaning of this safety alert symbol is as follows:

Attention! Become Alert! Your Safety is Involved.

The message that appears under the warning, explaining the hazard, can be either written or pictorially presented.

Operations that may cause product damage are identified by NOTICE labels on the product and in this publication.

Caterpillar cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this publication and on the product are therefore not all inclusive. If a tool, procedure, work method or operating technique not specifically recommended by Caterpillar is used, you must satisfy yourself that it is safe for you and others. You should also ensure that the product will not be damaged or made unsafe by the operation, lubrication, maintenance or repair procedures you choose.

The information, specifications, and illustrations in this publication are on the basis of information available at the time it was written. The specifications, torques, pressures, measurements, adjustments, illustrations, and other items can change at any time. These changes can affect the service given to the product. Obtain the complete and most current information before starting any job. Caterpillar dealers have the most current information available. For a list of the most current publication form numbers available, see the Service Manual Contents Microfiche, REG1139F.

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NOTE: A "C" in the left margin is an indication of a change from the former issue.

Generator Set Information Sheet

Customer Designation _____

Engine Model Number _____

Engine Arrangement Number _____

Engine Serial Number _____

Generator Arrangement Number _____

Generator Serial Number _____

Generator Frame Size _____

Voltage Rating _____ KW Rating _____

Excitation System: S.E. _____ P.M. _____

When servicing this generator, refer to the following diagrams.

Main Stator: Number of Leads _____ Diagram Number _____

Main Revolving Field: Diagram Number _____

Voltage Regulator: Diagram Number _____

Options: Diagram Number _____

ALL SR4 & SR4B Generators (Except 3500 Engines With SR4B)

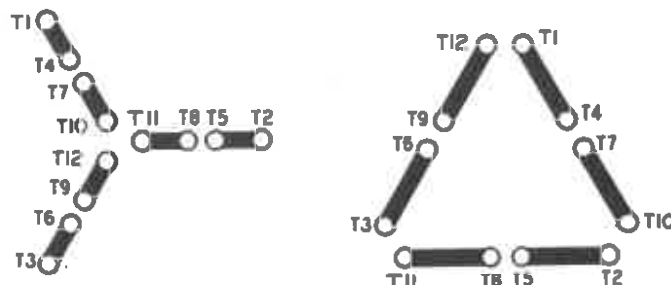
Introduction

The Diagrams that follow apply to the SR4 & SR4B Generators (except for SR4B used with 3500 Engines).

NOTE: Diagrams for the SR4B used with 3500 Engines appear later in this manual.

Main Stator (Armature) Connections And Voltage Sensing Leads

12 LEAD, WYE AND DELTA CONNECTION

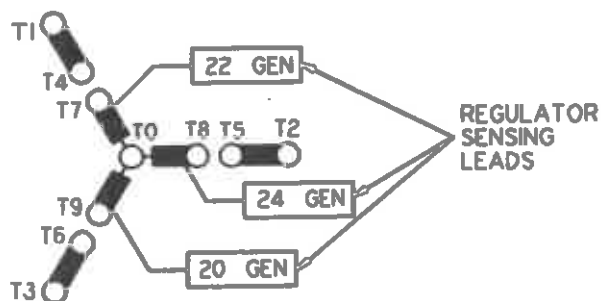


WYE CONNECTION					REGULATOR SENSING		
VOLTAGE	L1 U	L2 V	L3 W	N	TIE TOGETHER		
LOW	(T1,T7)	(T2,T8)	(T3,T9)	(T4,T5,T6,T10,T11,T12)			
HIGH	T1	T2	T3	(T10,T11,T12)	(T4,T7)	(T5,T8)	(T6,T9)

DELTA CONNECTION						REGULATOR SENSING		
L1 U	L2 V	L3 W	TIE TOGETHER			20	22	24
(T1,T12)	(T2,T10)	(T3,T11)	(T4,T7)	(T5,T8)	(T6,T9)	T1	T2	T3

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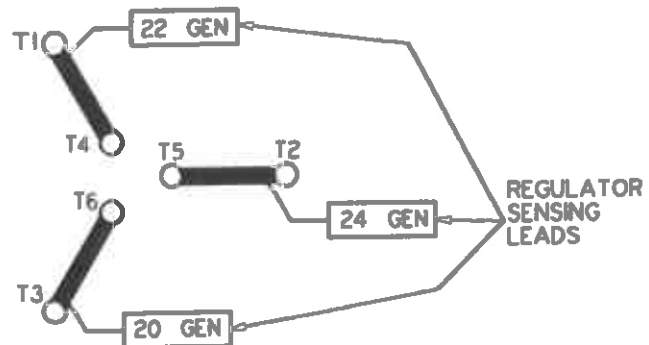
10 LEAD WYE CONNECTION



WYE CONNECTION					REGULATOR SENSING LEADS		
VOLTAGE	L1 U	L2 V	L3 W	N	TIE TOGETHER		
LOW	(T1,T7)	(T2,T8)	(T3,T9)	(T4,T5,T6,T10)			
HIGH	T1	T2	T3	T10	(T4,T7)	(T5,T8)	(T6,T9)

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6 LEAD WYE CONNECTION



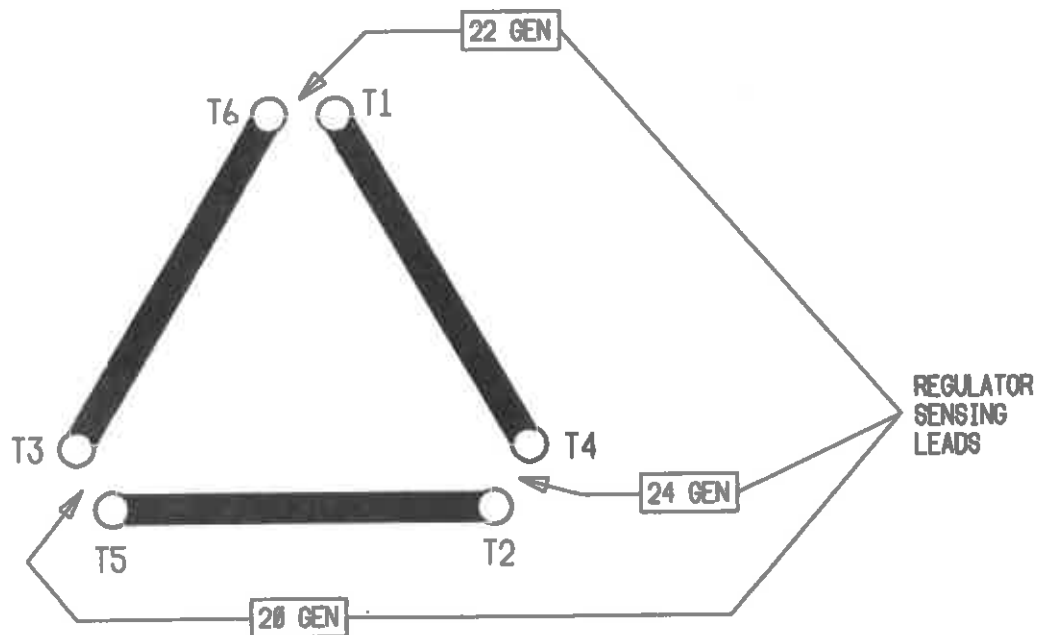
NOTE:
REGULATOR SENSING
LEADS MAY NOT BE
INSTALLED ON MEDIUM
VOLTAGE GENERATORS

C32115P1

WYE CONNECTION

L1	L2	L3	N
U	V	W	
T1	T2	T3	(T4,T5,T6)

6 LEAD DELTA CONNECTION

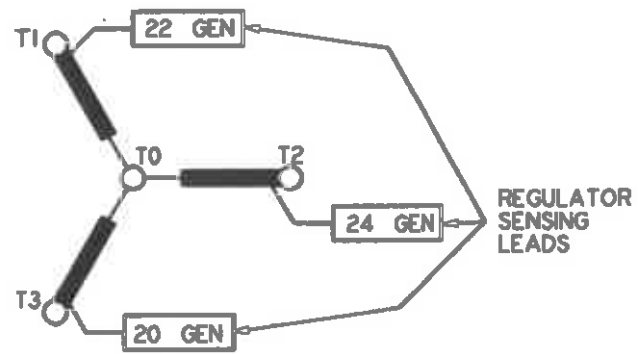


DELTA CONNECTION			REGULATOR SENSING		
L1	L2	L3	20	22	24
U	V	W			
(T1,T6)	(T2,T4)	(T3,T5)	T3	T1	T2

NOTE:
REGULATOR SENSING
LEADS MAY NOT BE
INSTALLED ON MEDIUM
VOLTAGE GENERATORS

C32116P1

4 LEAD WYE CONNECTION



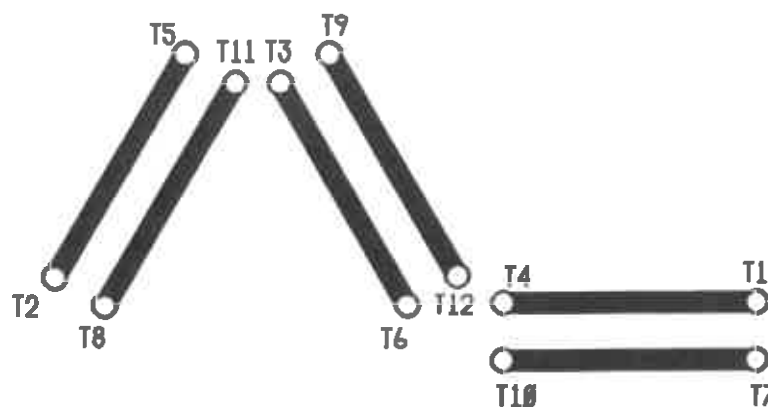
NOTE:
REGULATOR SENSING
LEADS MAY NOT BE
INSTALLED ON MEDIUM
VOLTAGE GENERATORS

WYE CONNECTION

L1	L2	L3	N
U	V	W	
T1	T2	T3	T0

C32117P1

12 LEAD SINGLE PHASE CONNECTION



GENERATOR CONNECTION			CONNECT TOGETHER	REG SENSE LEADS	
L1 U	L2 V	N W		20	24
(T2, T8)	(T1, T7)	(T4, T6, T10, T12)	(T3, T5, T9, T11)	T2	T1

NOTE: FOR PARALLEL OPERATION, T8 LEAD GOES THROUGH WINDOW OF DROOP TRANSFORMER

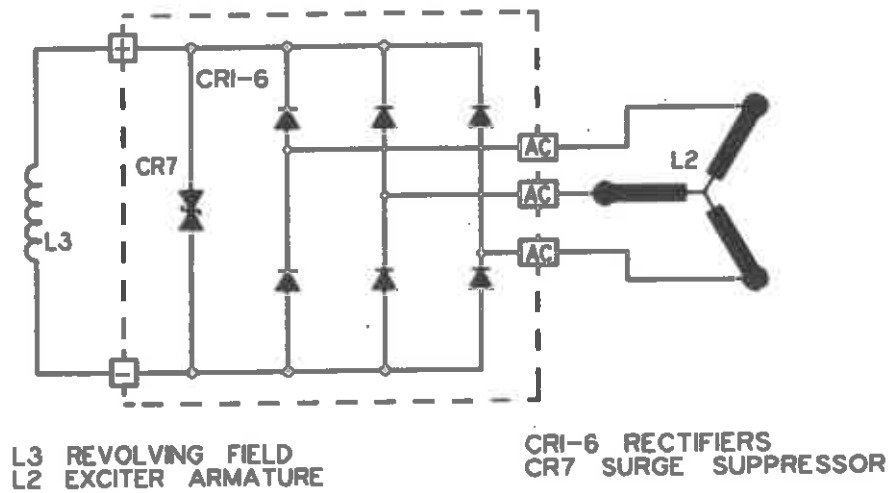
WITH VR-3 VOLTAGE REGULATOR, CONNECT JUMPER WIRE BETWEEN VOLTAGE REGULATOR TERMINALS 20 AND 28.

WITH VR-4 VOLTAGE REGULATOR, JUMPER WIRE IS NOT REQUIRED.

C32118P1

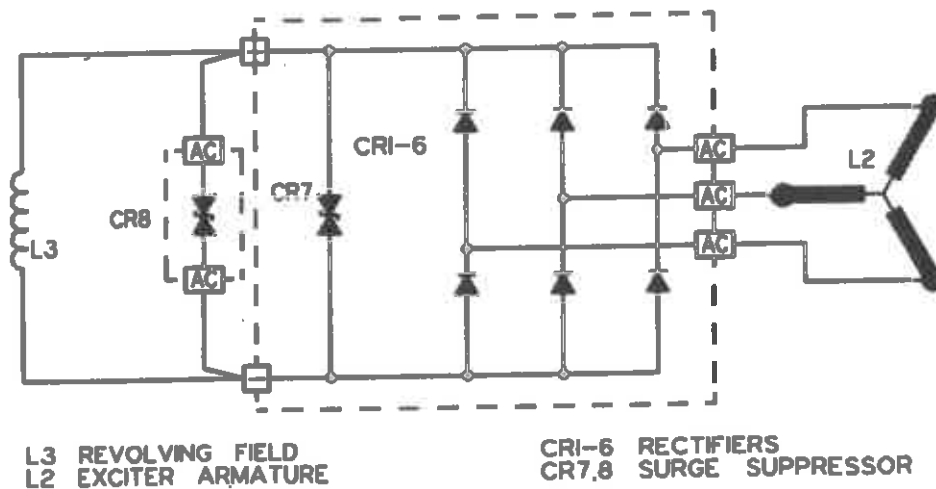
Main Revolving Field Connections

DIODE BLOCK



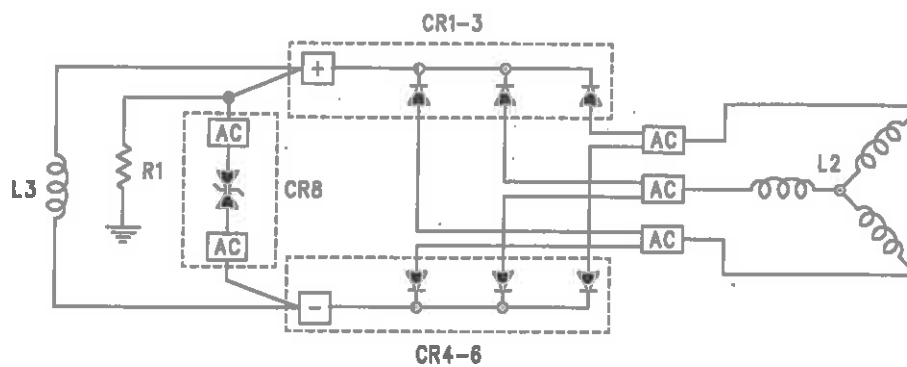
C32119P1

DIODE BLOCK AND SURGE SUPPRESSOR



C32120P1

TWO DIODE BLOCKS AND SURGE SUPPRESSOR

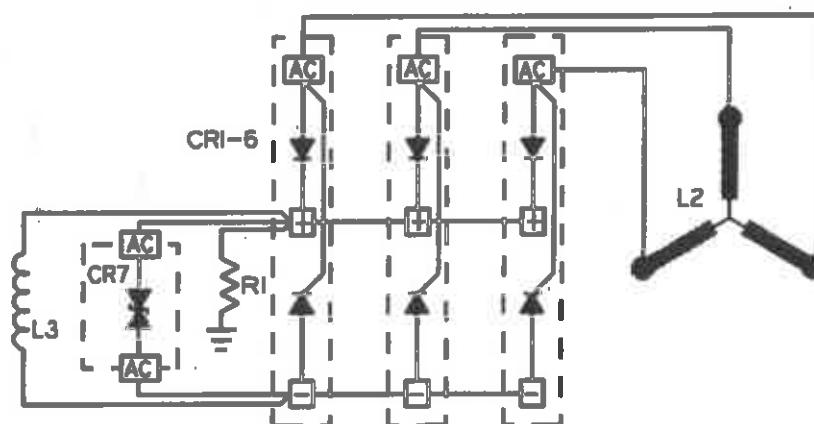


L2 EXCITER ARMATURE
L3 REVOLVING FIELD
R1 STATIC DISCHARGE RESISTOR

CR1-6 RECTIFIERS
CR8 SURGE SUPPRESSOR

D52284

THREE DIODE BLOCKS AND SURGE SUPPRESSOR

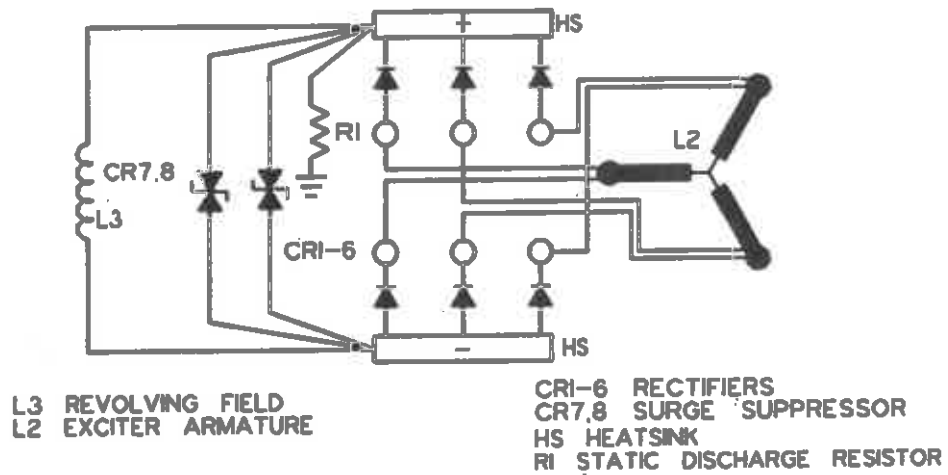


L3 REVOLVING FIELD
L2 EXCITER ARMATURE

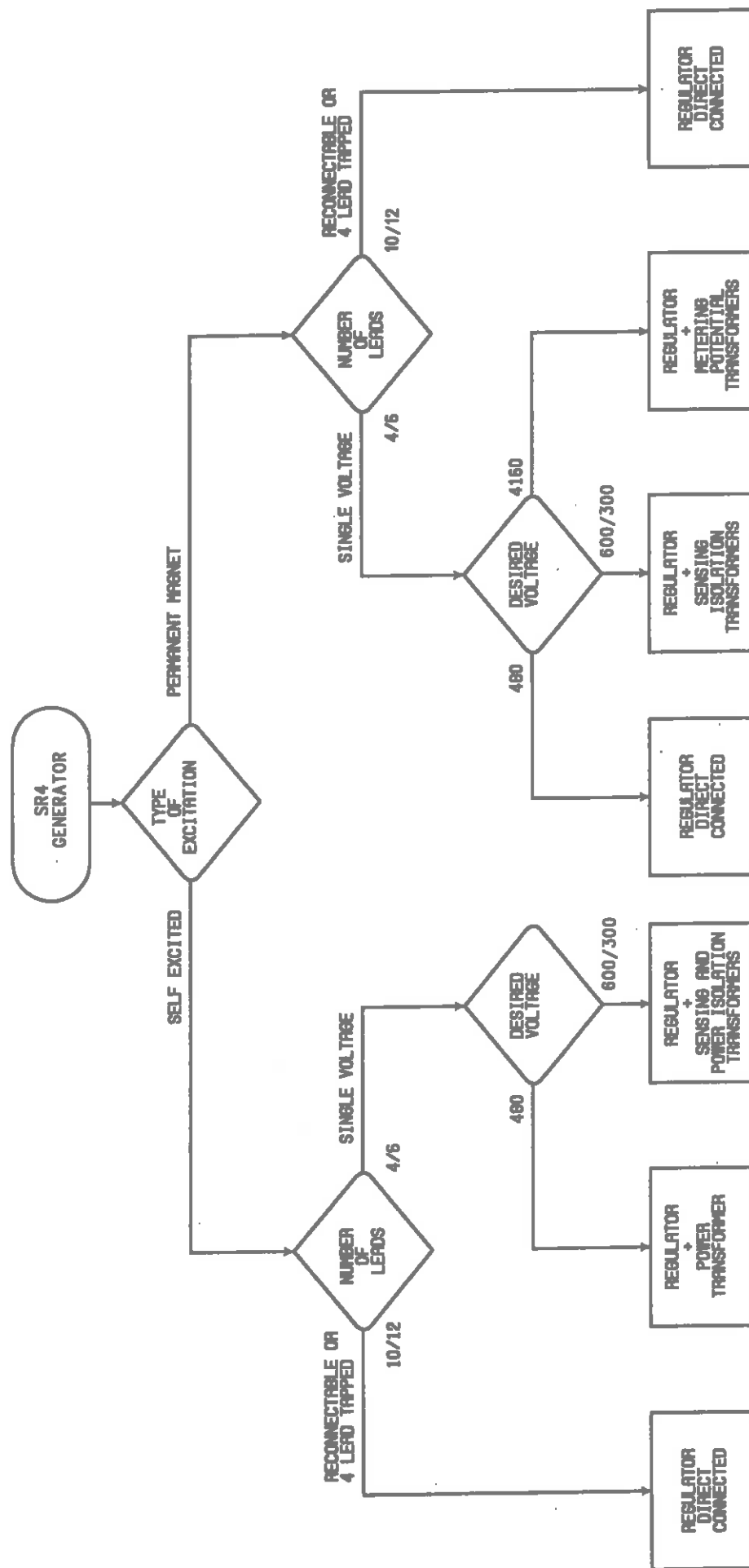
CR1-6 RECTIFIERS
CR7 SURGE SUPPRESSOR
R1 STATIC DISCHARGE RESISTOR

C32121P1

SIX DIODES AND TWO SURGE SUPPRESSORS



C32122P1

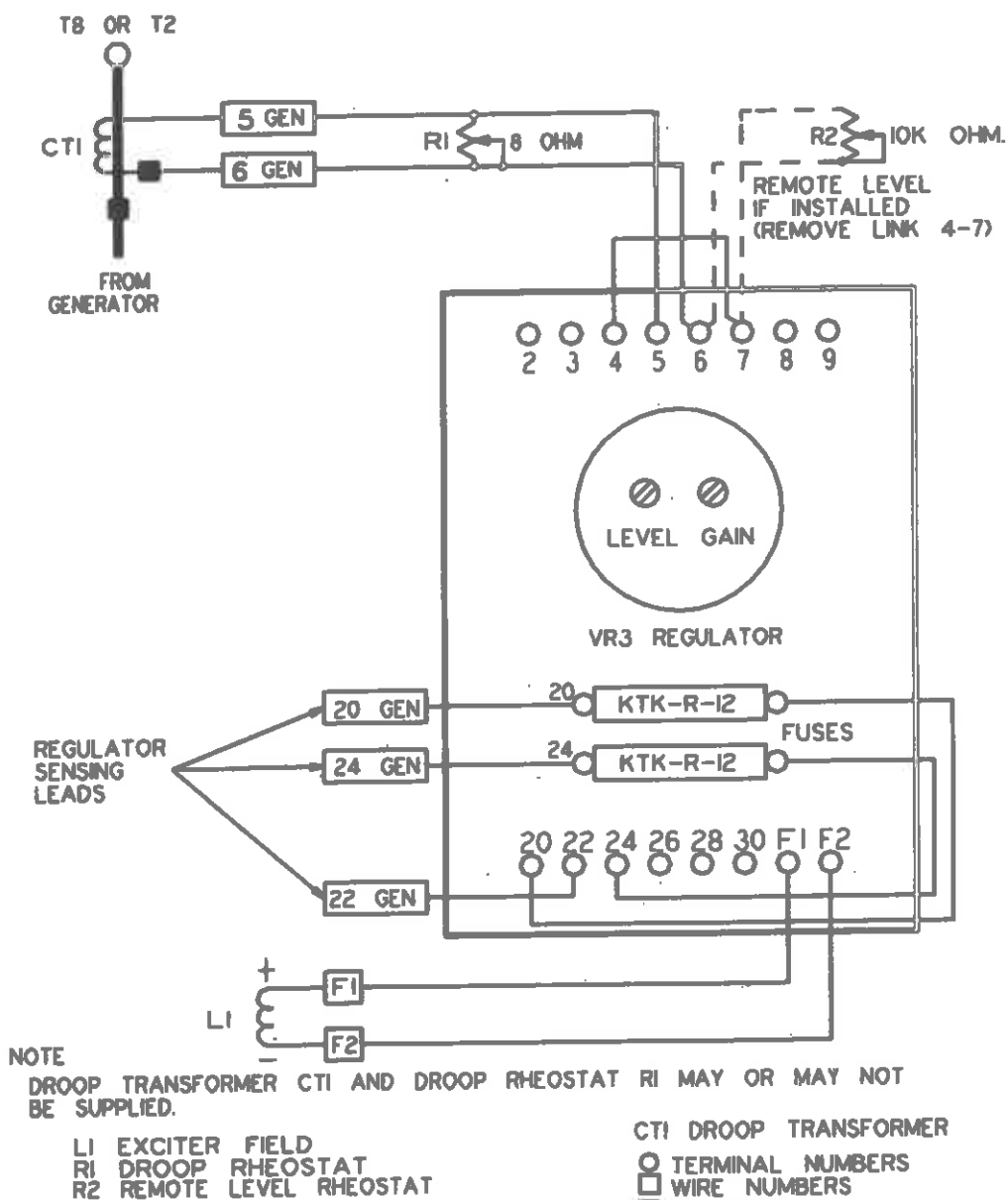


NOTE: VOLTAGES SHOWN ARE 60 Hz EQUIVALENTS

SELECTION GUIDE FOR VOLTAGE REGULATOR

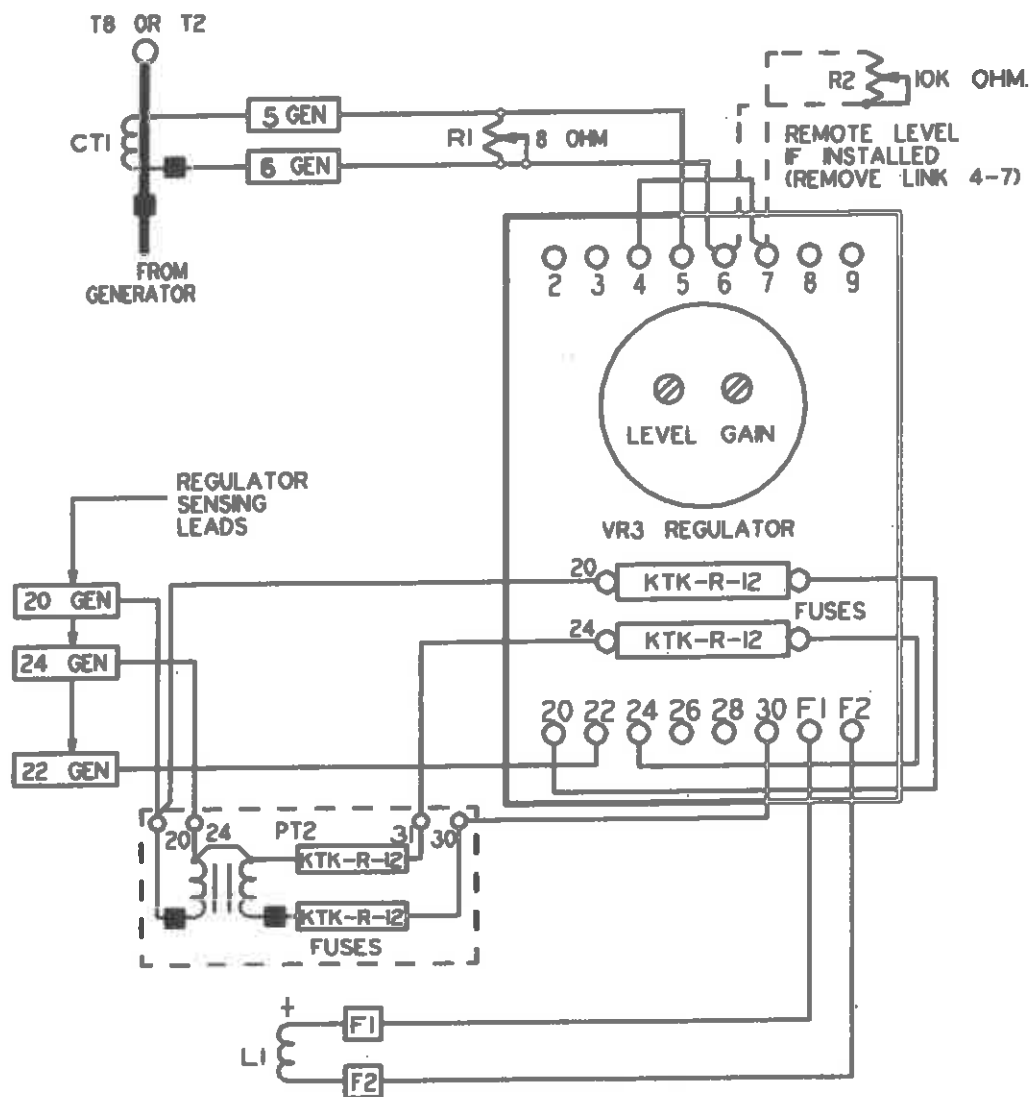
VR3 Voltage Regulator Connections

SELF EXCITED WITH DIRECT CONNECTION TO GENERATOR



C37008P1

SELF EXCITED WITH POWER TRANSFORMER, 4/6 LEAD GEN



NOTE

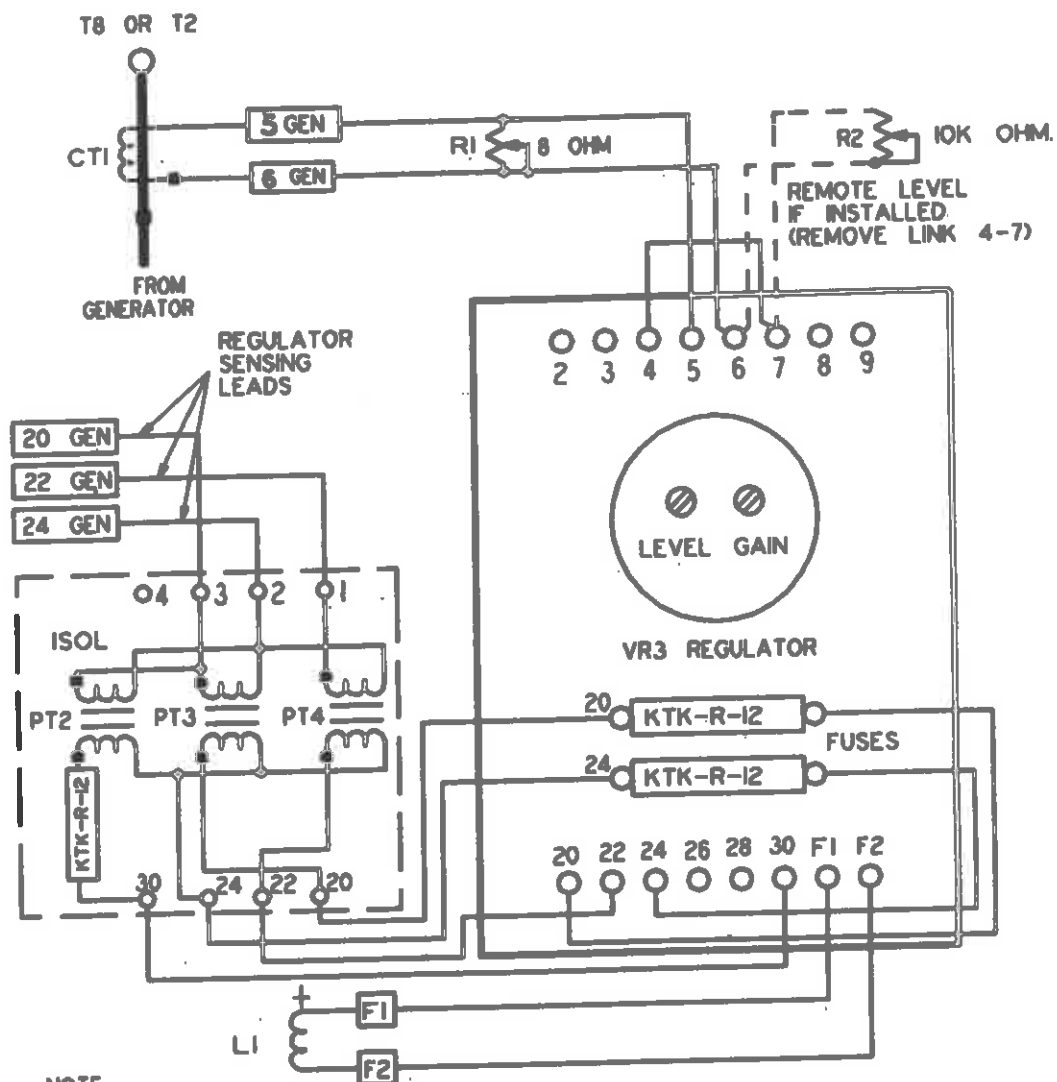
DROOP TRANSFORMER CTI AND DROOP RHEOSTAT RI MAY OR MAY NOT BE SUPPLIED

LI EXCITER FIELD
RI DROOP RHEOSTAT
R2 REMOTE LEVEL RHEOSTAT
CTI DROOP TRANSFORMER

PT2 POWER TRANSFORMER
○ TERMINAL NUMBERS
□ WIRE NUMBERS
■ POLARITY

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S.E. WITH PWR AND SENSING ISOLATION TRANS



NOTE

DROOP TRANSFORMER CTI AND DROOP RHEOSTAT RI MAY OR MAY NOT BE SUPPLIED

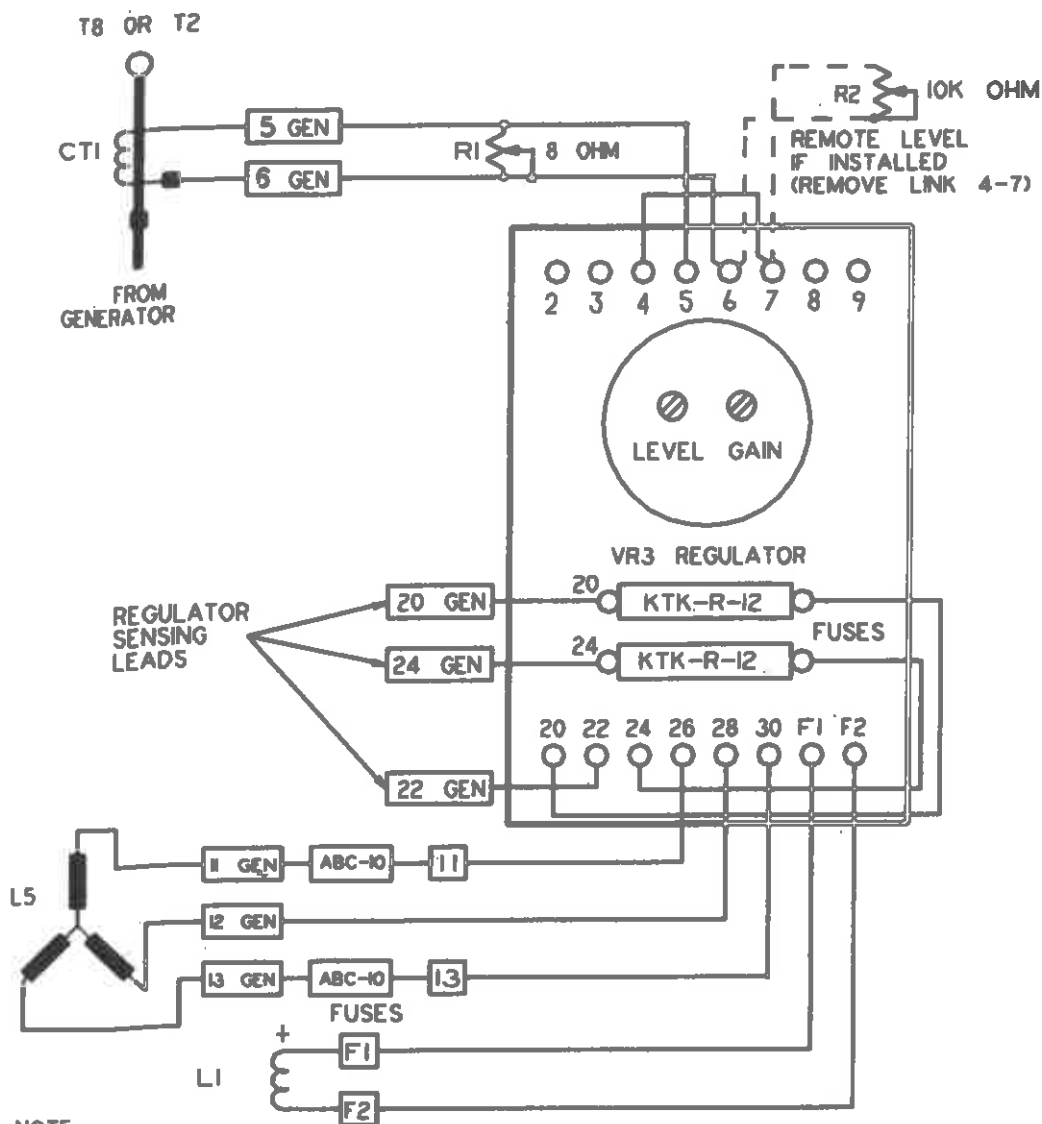
LI EXCITER FIELD
RI DROOP RHEOSTAT
R2 REMOTE LEVEL RHEOSTAT
ISOL ISOLATION TRANSFORMER

CTI DROOP TRANSFORMER
PT2 POWER TRANSFORMER
PT3, PT4 SENSING TRANSFORMER

○ TERMINAL NUMBERS
□ WIRE NUMBERS
■ POLARITY

C37056P1

P.M. EXC WITH DIRECT CONN TO GENERATOR



NOTE

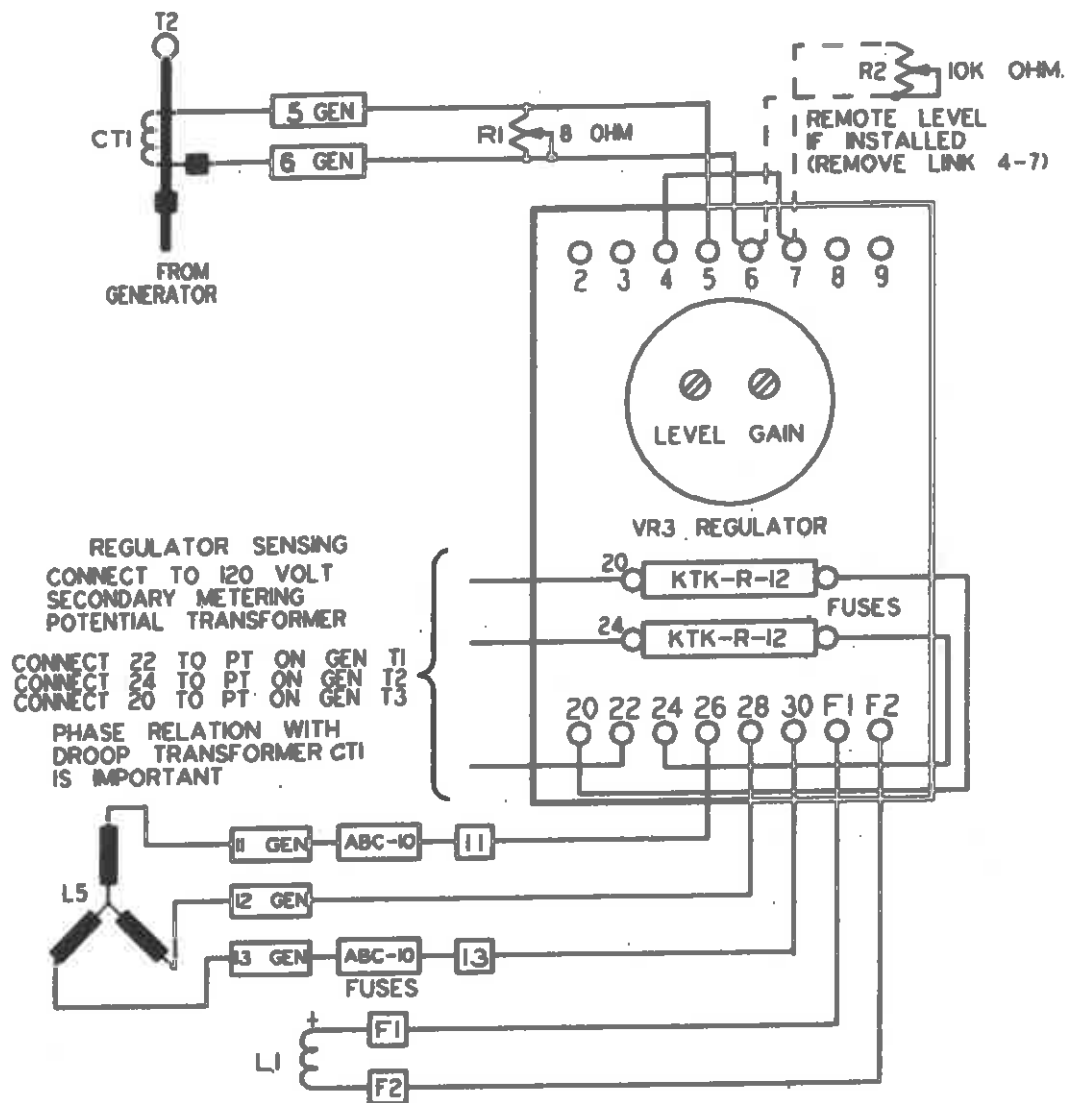
DROOP TRANSFORMER CT1 AND DROOP RHEOSTAT R1 MAY OR MAY NOT BE SUPPLIED.

L1 EXCITER FIELD
L5 P.M. EXCITER STATOR
R1 DROOP RHEOSTAT
R2 REMOTE LEVEL RHEOSTAT

CT1 DROOP TRANSFORMER
○ TERMINAL NUMBERS
□ WIRE NUMBERS
■ POLARITY

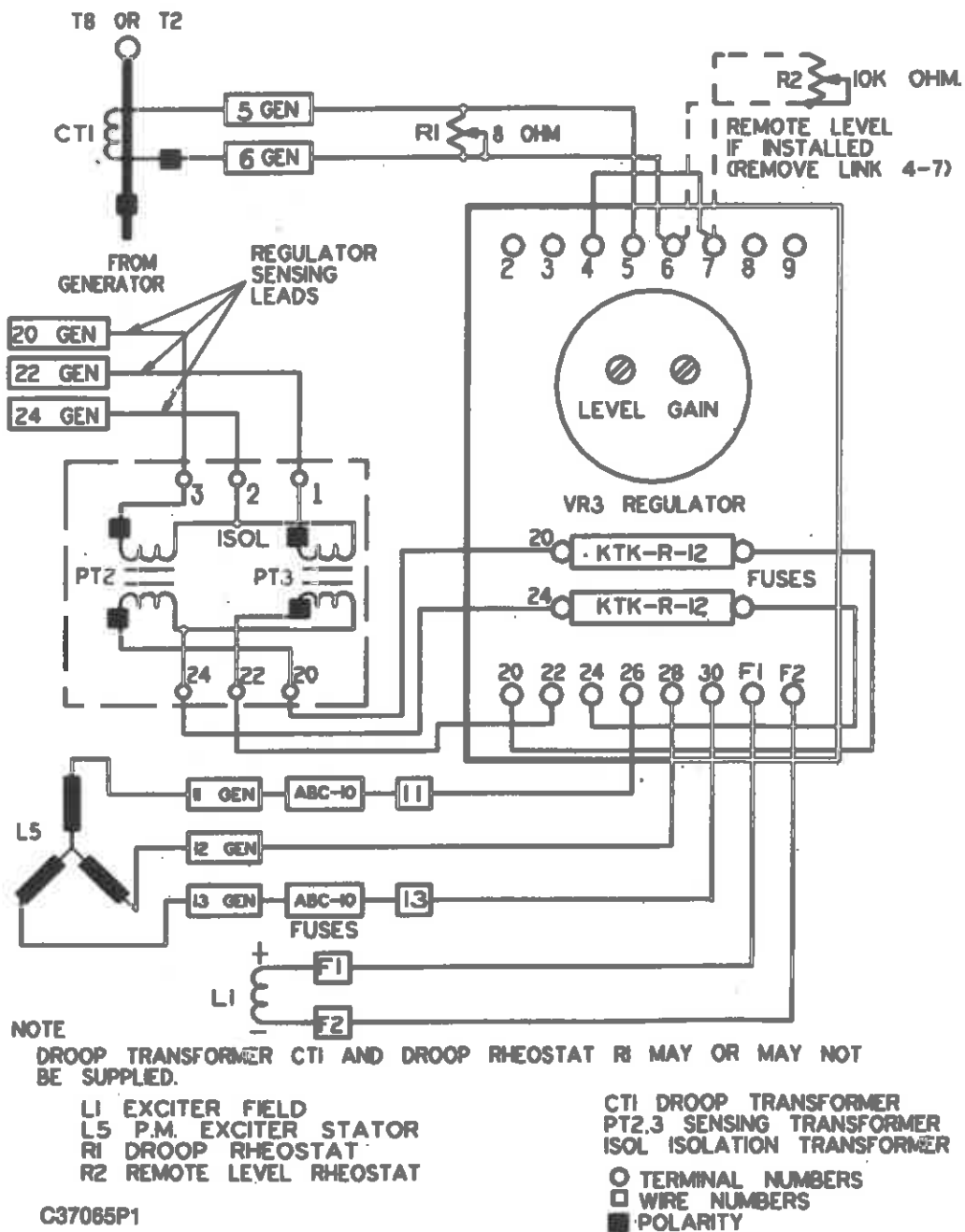
C37057P1

P.M. EXC W/CONN TO METERING POT TRANS



C30386P1

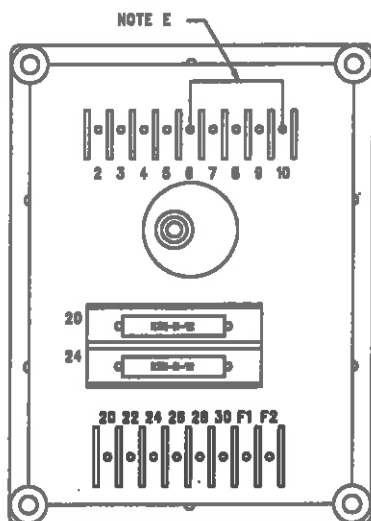
P.M. EXC W/CONN TO ISOLATION TRANS



C37065P1

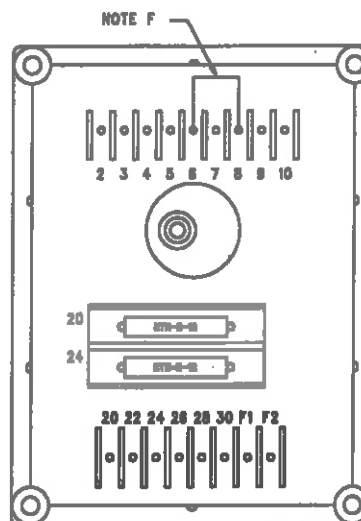
VR3F Voltage Regulator Connections

KNEE FREQUENCY SELECTION



NOTE E: INSTALL JUMPER FOR 60 HZ OPERATION; REMOVE FOR 50 HZ OPERATION.

UNDERFREQUENCY SLOPE SELECTION



NOTE F: INSTALL JUMPER FOR 1:1 V/HZ SLOPE; REMOVE FOR 2:1 V/HZ UNDERFREQUENCY SLOPE.

D52287

Physical differences between the VR3 and VR3F minor. The Gain adjustment hole is eliminated and another terminal is added to the upper row (terminal 10) on the VR3F.

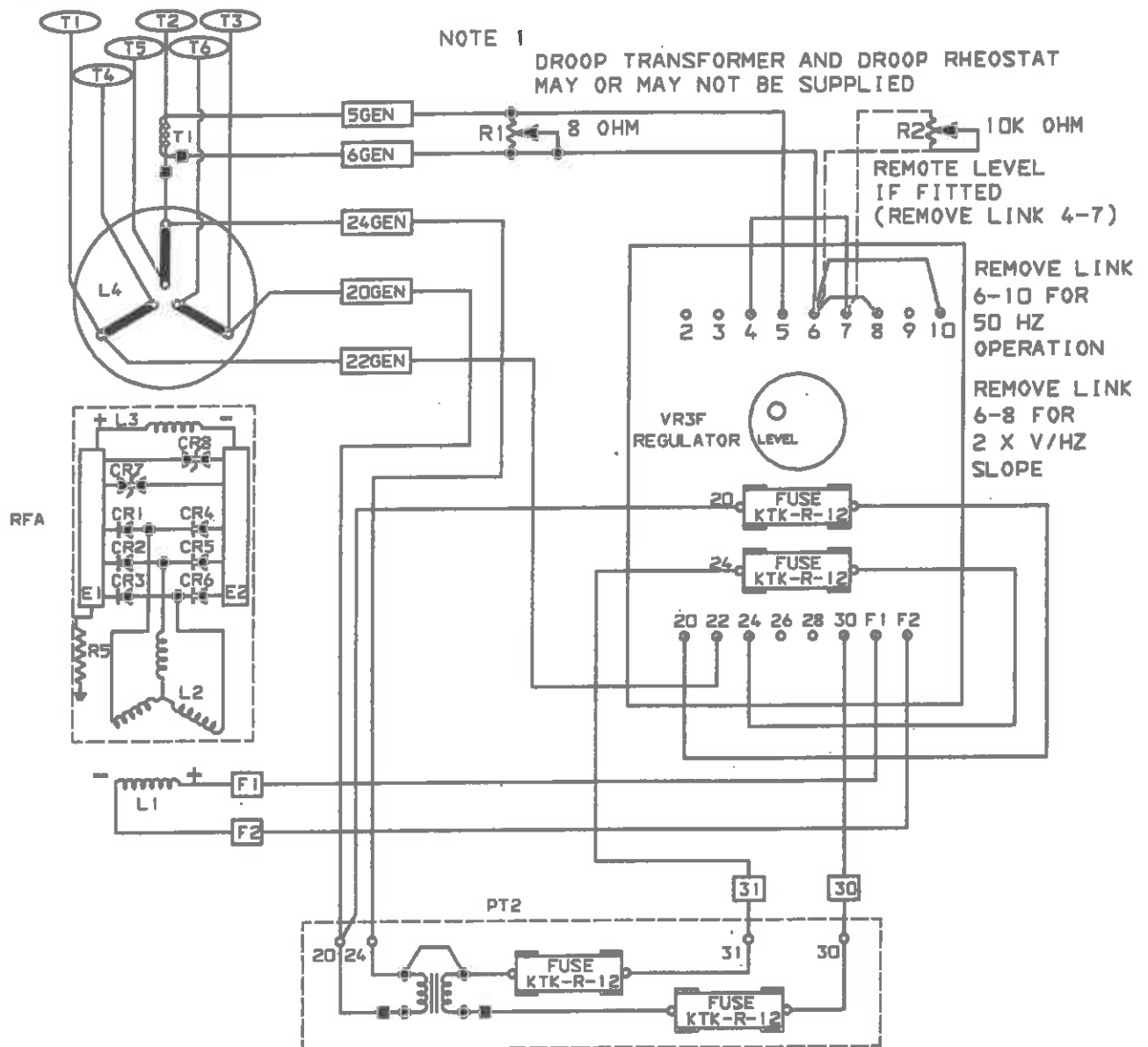
All VR3F connections to the generator or external options are identical to the VR3 Self Excited and the VR3 Permanent Magnet Excited. The additional wiring for the VR3F is shown in the previous diagram.

The following applies to both VR3F designs (Self Excited and Permanent Magnet Excited):

- To determine the knee frequency, install a jumper from terminal 6 to terminal 10 on the regulator if operating at 60 Hz. If operating at 50 Hz, remove the jumper.
- To determine the underfrequency slope selection, install a jumper from terminal 6 to terminal 8 on the regulator if a 1:1 Volts/Hertz underfrequency slope is desired. IF a 2:1 Volts/Hertz underfrequency slope is desired, remove the jumper.

TYPICAL SELF EXCITED VR3F

C39908P1



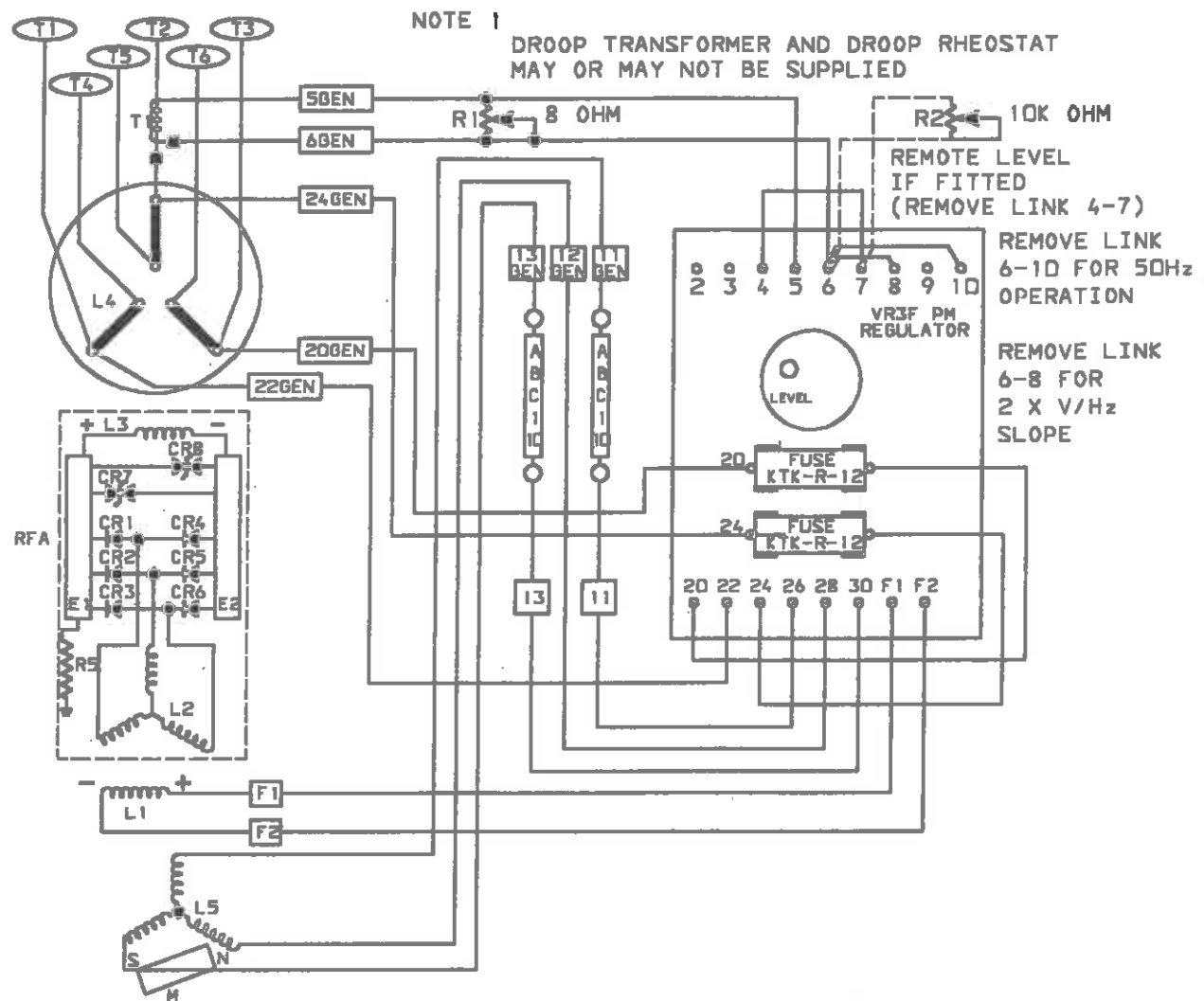
CR1-6 ROTATING RECTIFIERS
CR7,8 SURGE SUPPRESSION DIODES
E1 POSITIVE HEAT SINK
E2 NEGATIVE HEAT SINK
L1 EXCITER FIELD
L2 EXCITER ARMATURE
L3 ROTATING FIELD
L4 STATOR

R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
R2 REMOTE LEVEL RHEOSTAT
R5 SUPPRESSION RESISTOR
RFA REVOLVING FIELD ASS'Y
T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
PT2 POWER TRANSFORMER ASSEMBLY
O TERMINAL BOARD NUMBER
□ WIRE NUMBER
■ POLARITY MARKING

SR-4 GENERATOR SCHEMATIC (4/6 LEAD, SELF-EXCITED W/ POWER TRANSFORMER)

NOTE 1: GENERATOR STATOR LEADS TERMINALS T4, T5, AND T6 WILL BE INTERNALLY CONNECTED TO FORM THE NEUTRAL LEAD (TO) ON FOUR LEAD GENERATORS.

TYPICAL PM EXCITED VR3F



CR1-6 ROTATING RECTIFIERS
CR7,8 SURGE SUPPRESSION DIODES
E1 POSITIVE HEAT SINK
E2 NEGATIVE HEAT SINK
L1 EXCITER FIELD (STATOR)
L2 EXCITER ARMATURE (ROTOR)
L3 ROTATING FIELD (MAIN ROTOR)
L4 STATOR (MAIN STATOR)

L5 PM EXCITER STATOR
M ROTATING PERMANENT MAGNET
R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
R2 REMOTE LEVEL RHEOSTAT
R5 SUPPRESSION RESISTOR
RFA REVOLVING FIELD ASS'Y
T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
O TERMINAL BOARD NUMBER
□ WIRE NUMBER
■ POLARITY MARKING

SR-4 GENERATOR SCHEMATIC (4/6 LEAD, PERMANENT MAGNETIC EXCITED
W/ 2 PM FUSES)

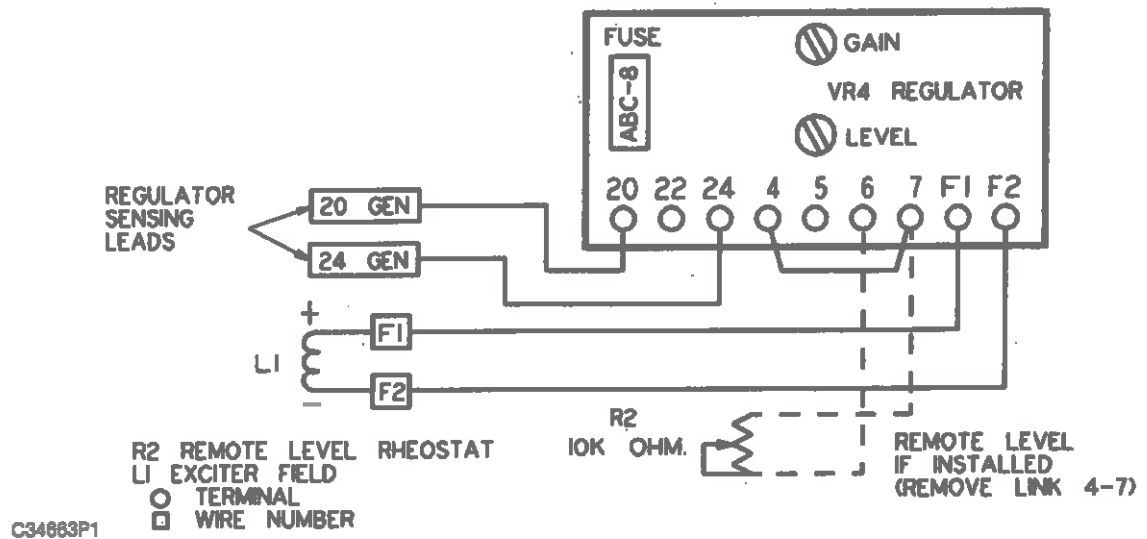
NOTE : GENERATOR STATOR LEADS TERMINALS T4, T5 AND T6 CAN BE CONNECTED
TO FORM THE NEUTRAL LEAD (TD) ON SIX LEAD GENERATORS.

NOTE : VR3F PM REGULATOR, TERMINAL 26 IS CONNECTED TO PMG OUTPUT AND NOT TO
GENERATOR NEUTRAL (TD) AS ON PREVIOUS REGULATORS.

C69412P1

VR4 Voltage Regulator Connections

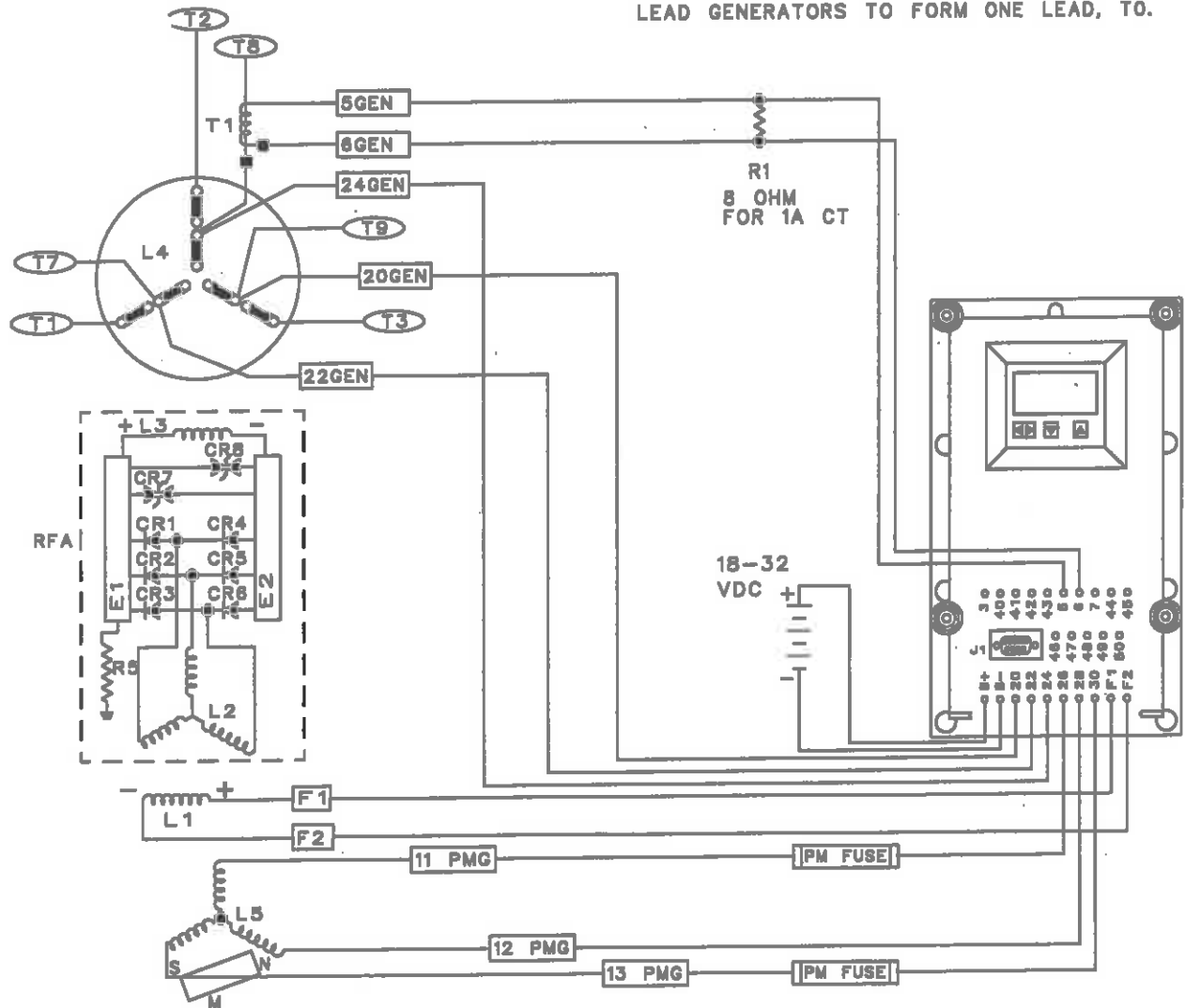
SELF EXCITED WITH DIRECT CONNECTION TO GENERATOR



Digital Voltage Regulator Connections

10 / 12 LEAD WITH DIRECT CONNECTION TO GENERATOR

NOTE: GENERATOR STATOR LEADS T10, T11, & T12 WILL BE INTERNALLY CONNECTED ON 10 LEAD GENERATORS TO FORM ONE LEAD, T0.



CR1-6 ROTATING RECTIFIERS
 CR7,8 SURGE SUPPRESSION DIODES
 E1 POSITIVE HEAT SINK
 E2 NEGATIVE HEAT SINK
 L1 EXCITOR FIELD (STATOR)
 L2 EXCITER ARMATURE(ROTOR)
 L3 REVOLVING FIELD(MAIN ROTOR)
 L4 MAIN STATOR
 L5 PM EXCITOR STATOR

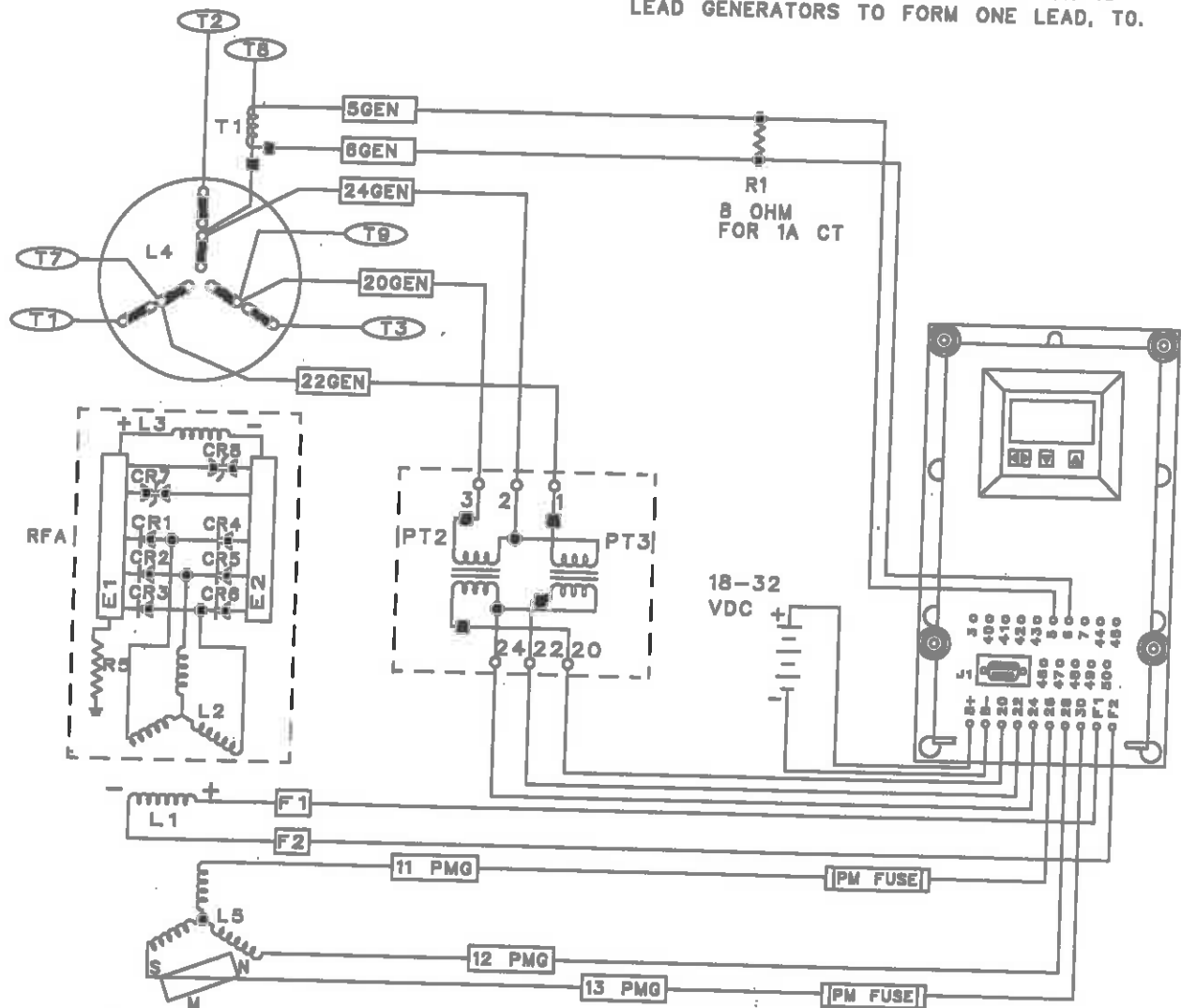
M ROTATING PERMANENT MAGNET
 R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
 R5 SUPPRESSION RESISTOR
 RFA REVOLVING FIELD ASS'Y
 T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
 □ WIRE NUMBER
 ○ TERMINAL BOARD NUMBER
 ■ POLARITY MARKING

NOTE 1: DROOP TRANSFORMER AND DROOP RHEOSTAT MAY OR MAY NOT BE SUPPLIED

D15725

10 / 12 LEAD WITH SENSING ISOLATION TRANSFORMER

NOTE: GENERATOR STATOR LEADS T10, T11, & T12 WILL BE INTERNALLY CONNECTED ON 10 LEAD GENERATORS TO FORM ONE LEAD, T0.



CR1-6 ROTATING RECTIFIERS
 CR7,8 SURGE SUPPRESSION DIODES
 E1 POSITIVE HEAT SINK
 E2 NEGATIVE HEAT SINK
 L1 EXCITOR FIELD (STATOR)
 L2 EXCITER ARMATURE (ROTOR)
 L3 REVOLVING FIELD (MAIN ROTOR)
 L4 MAIN STATOR
 L5 PM EXCITOR STATOR

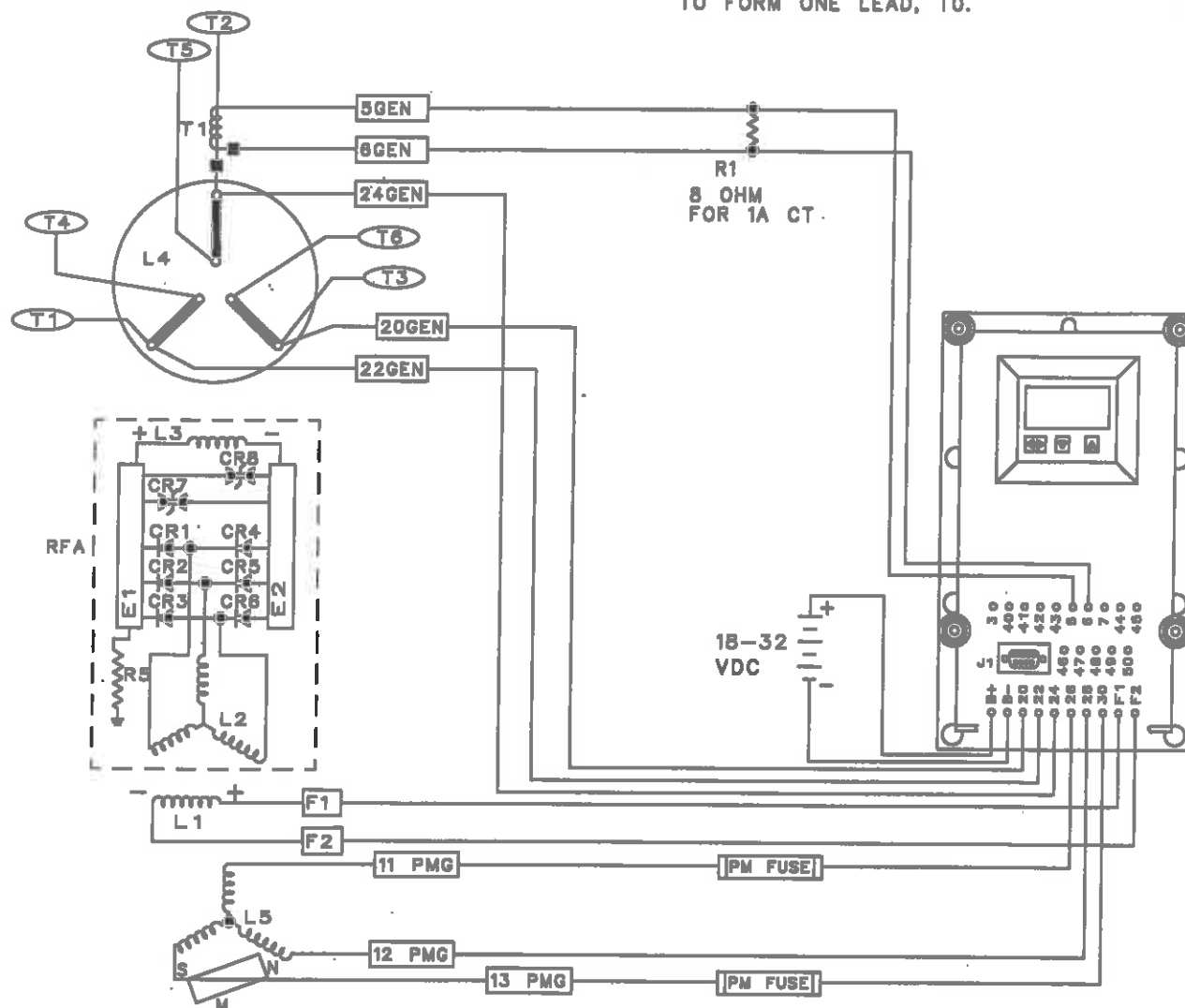
M ROTATING PERMANENT MAGNET
 R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
 R5 SUPPRESSION RESISTOR
 RFA REVOLVING FIELD ASS'Y
 T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
 PT2, PT3 SENSING ISOLATION TRANSFORMERS
 □ WIRE NUMBER
 ○ TERMINAL BOARD NUMBER
 ■ POLARITY MARKING

NOTE 1: DROOP TRANSFORMER AND DROOP RHEOSTAT MAY OR MAY NOT BE SUPPLIED

D15726

4 / 6 LEAD WITH DIRECT CONNECTION TO GENERATOR

NOTE: GENERATOR STATOR LEADS T4, T5, & T6
WILL BE CONNECTED ON 4 LEAD GENERATORS
TO FORM ONE LEAD, TO.



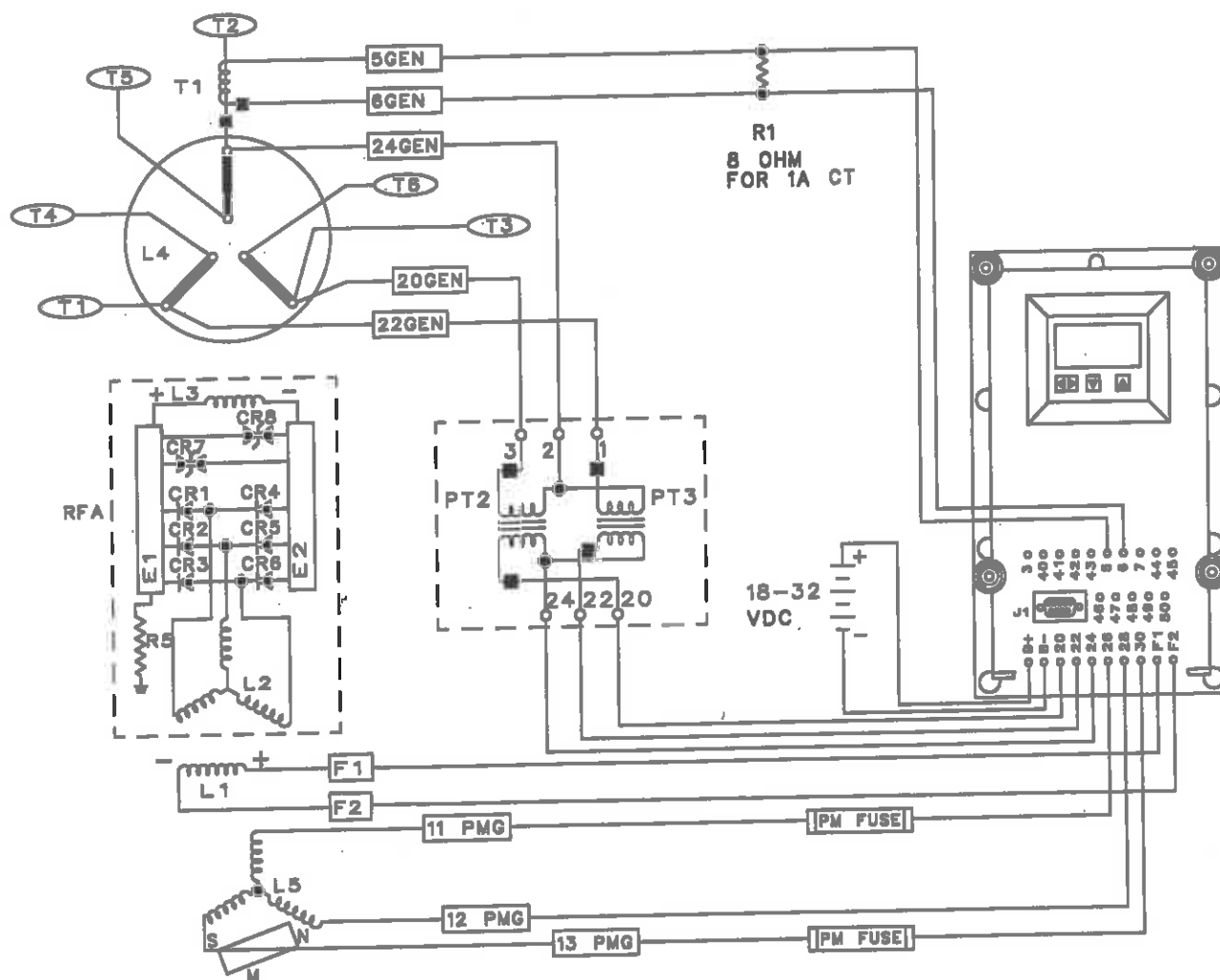
CR1-6 ROTATING RECTIFIERS
CR7,8 SURGE SUPPRESSION DIODES
E1 POSITIVE HEAT SINK
E2 NEGATIVE HEAT SINK
L1 EXCITOR FIELD (STATOR)
L2 EXCITER ARMATURE (ROTOR)
L3 REVOLVING FIELD (MAIN ROTOR)
L4 MAIN STATOR
L5 PM EXCITOR STATOR

M ROTATING PERMANENT MAGNET
R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
R5 SUPPRESSION RESISTOR
RFA REVOLVING FIELD ASS'Y
T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
□ WIRE NUMBER
○ TERMINAL BOARD NUMBER
■ POLARITY MARKING

NOTE 1: DROOP TRANSFORMER AND
DROOP RHEOSTAT MAY OR MAY NOT
BE SUPPLIED.

D15723

4 / 6 LEAD WITH SENSING ISOLATION TRANSFORMER



CR1-6 ROTATING RECTIFIERS
 CR7,8 SURGE SUPPRESSION DIODES
 E1 POSITIVE HEAT SINK
 E2 NEGATIVE HEAT SINK
 L2 EXCITER ARMATURE(ROTOR)
 L3 REVOLVING FIELD(MAIN ROTOR)
 L4 MAIN STATOR

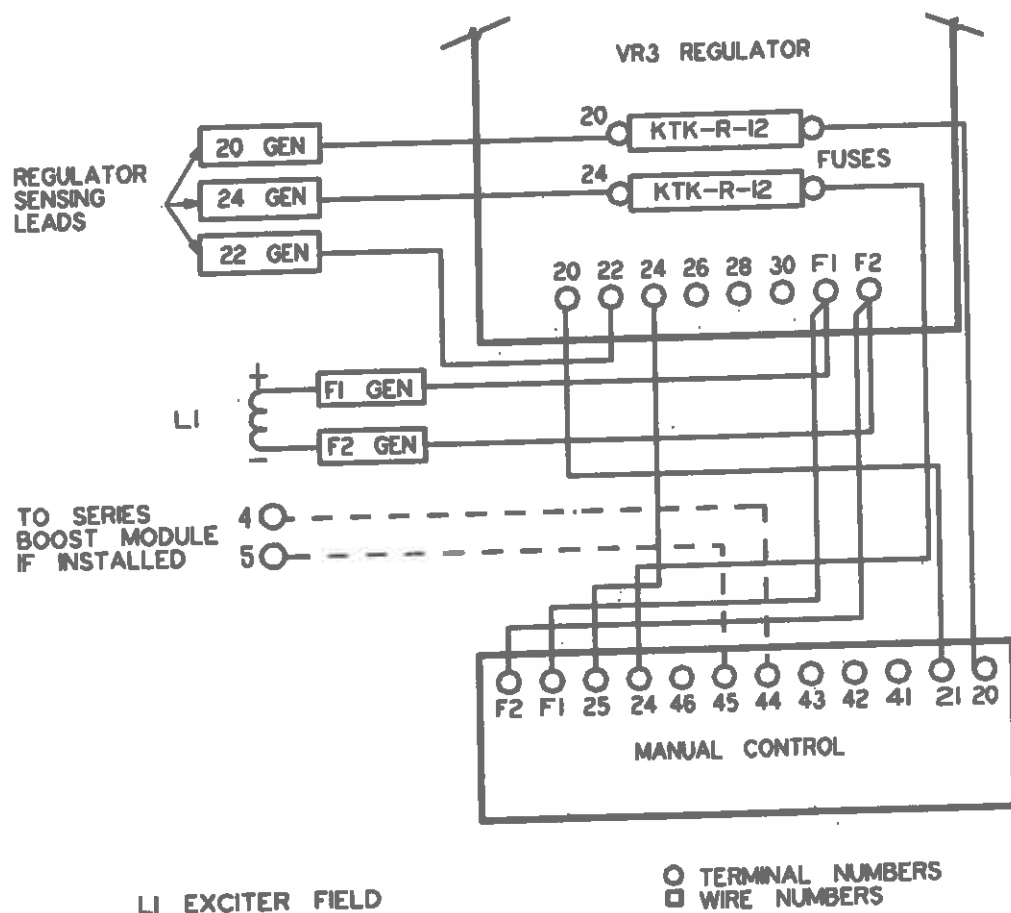
PT2, PT3 SENSING/ISOLATION TRANSFORMERS
 M ROTATING PERMANENT MAGNET
 R1 VOLTAGE DROOP RHEOSTAT (SEE NOTE 1)
 R5 SUPPRESSION RESISTOR
 RFA REVOLVING FIELD ASS'Y
 T1 VOLTAGE DROOP TRANSFORMER (SEE NOTE 1)
 □ WIRE NUMBER
 ○ TERMINAL BOARD NUMBER
 ■ POLARITY MARKING

NOTE 1: DROOP TRANSFORMER AND
 DROOP RHEOSTAT MAY OR MAY NOT
 BE SUPPLIED

015724

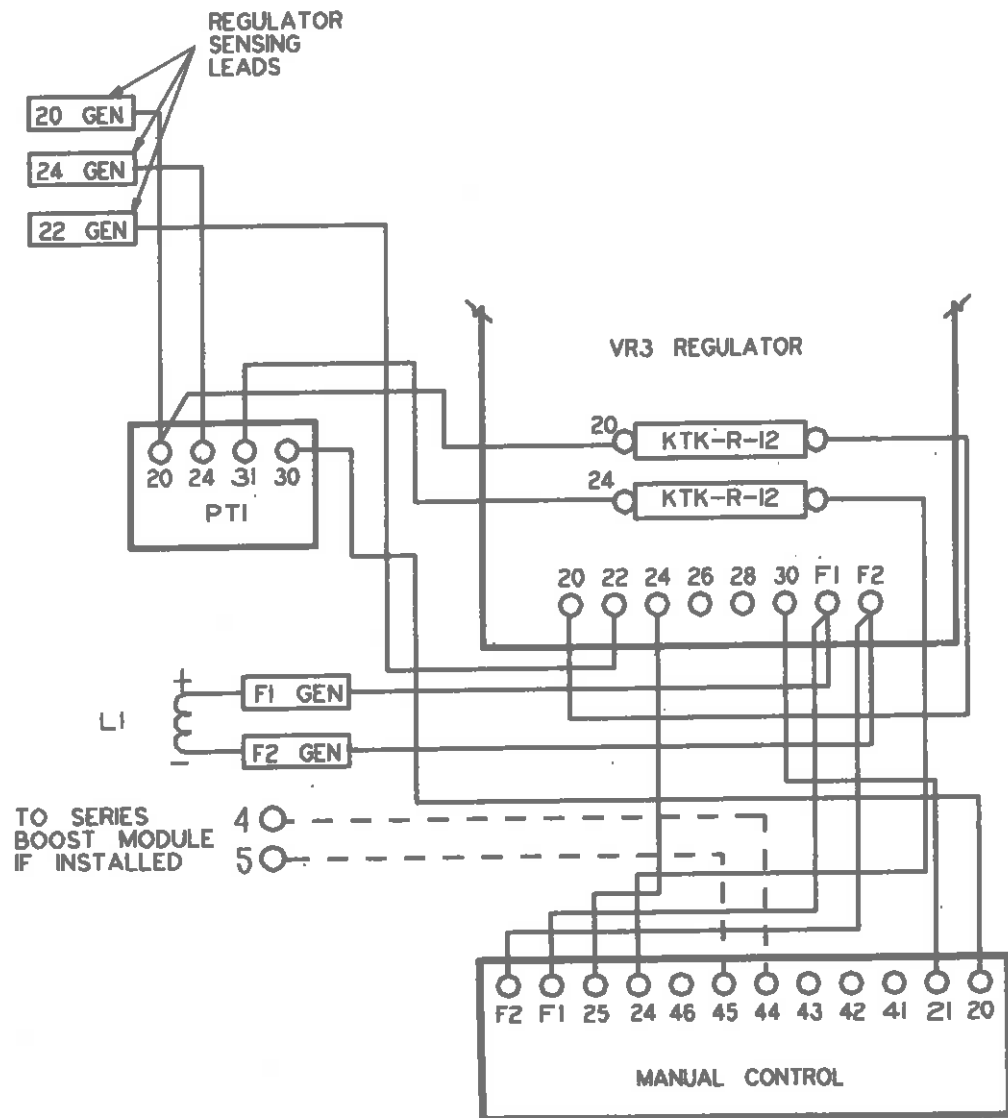
Options

MANUAL CONTROL WITH SELF EXCITATION



C34864P1

MANUAL CONTROL WITH POWER TRANSFORMER

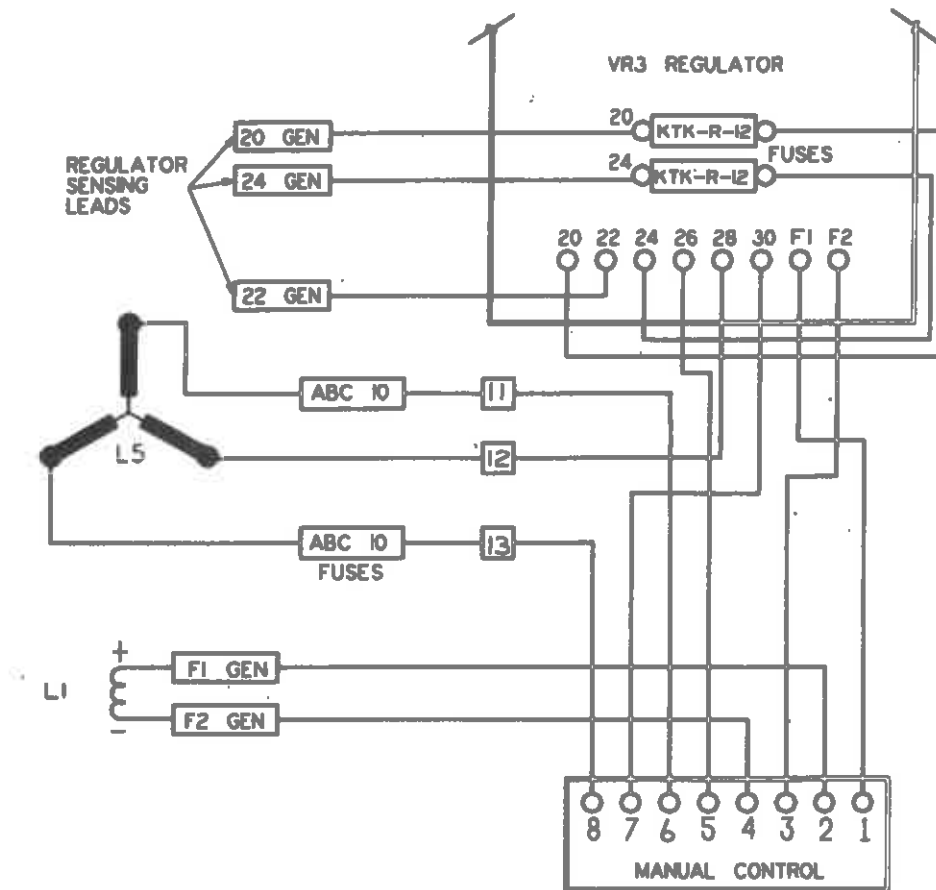


LI EXCITER FIELD
PTI POWER TRANSFORMER

○ TERMINAL NUMBERS
□ WIRE NUMBERS

C34865P1

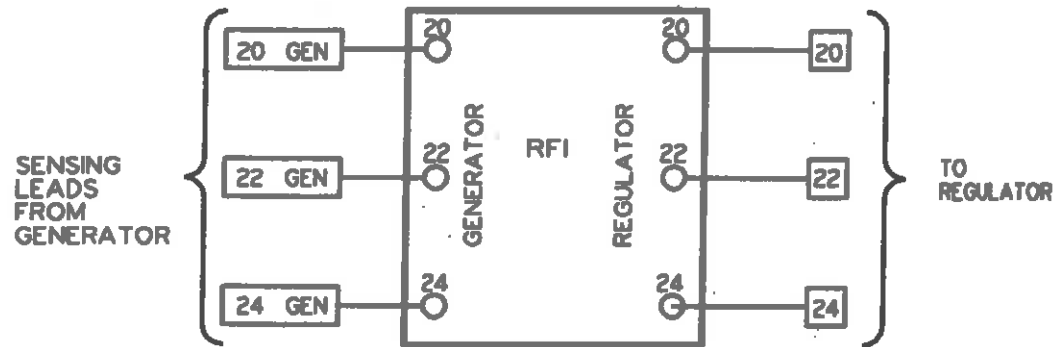
MANUAL CONTROL WITH P.M. EXCITER



L1 EXCITER FIELD
L5 PM STATOR
C37007P1

○ TERMINAL NUMBERS
□ WIRE NUMBERS

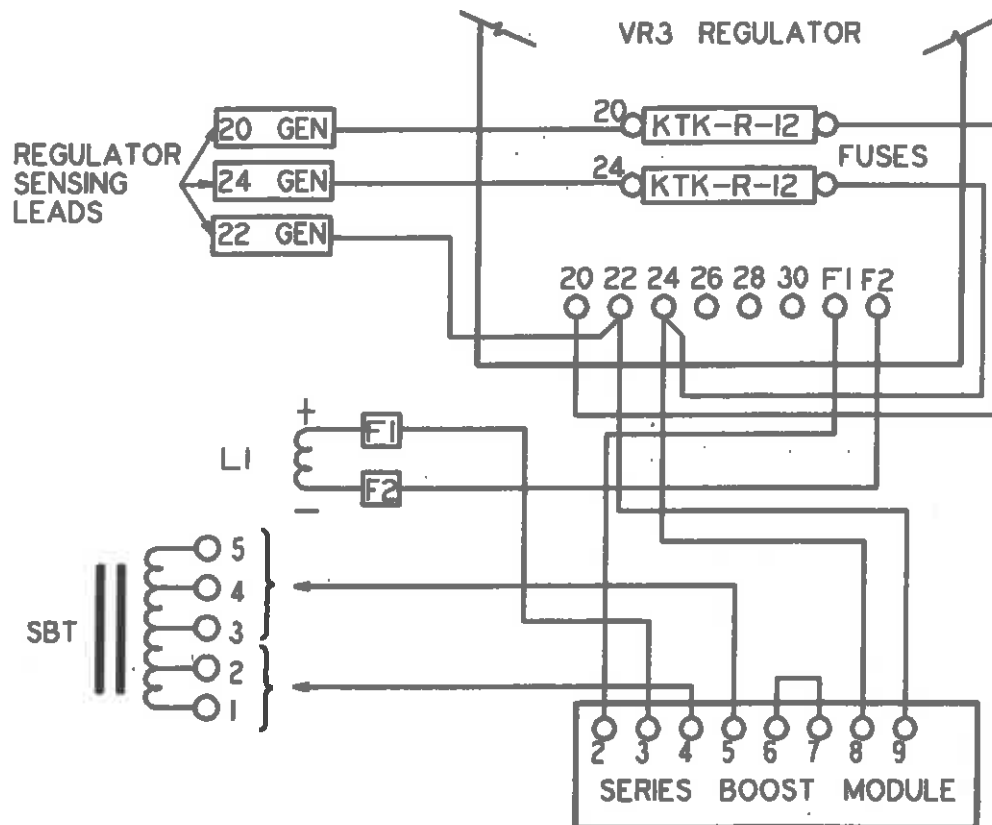
RADIO INTERFERENCE FILTER



RFI RADIO INTERFERENCE SUPPRESSOR

C34887P1

SERIES BOOST WITH VR3 VOLTAGE REGULATOR



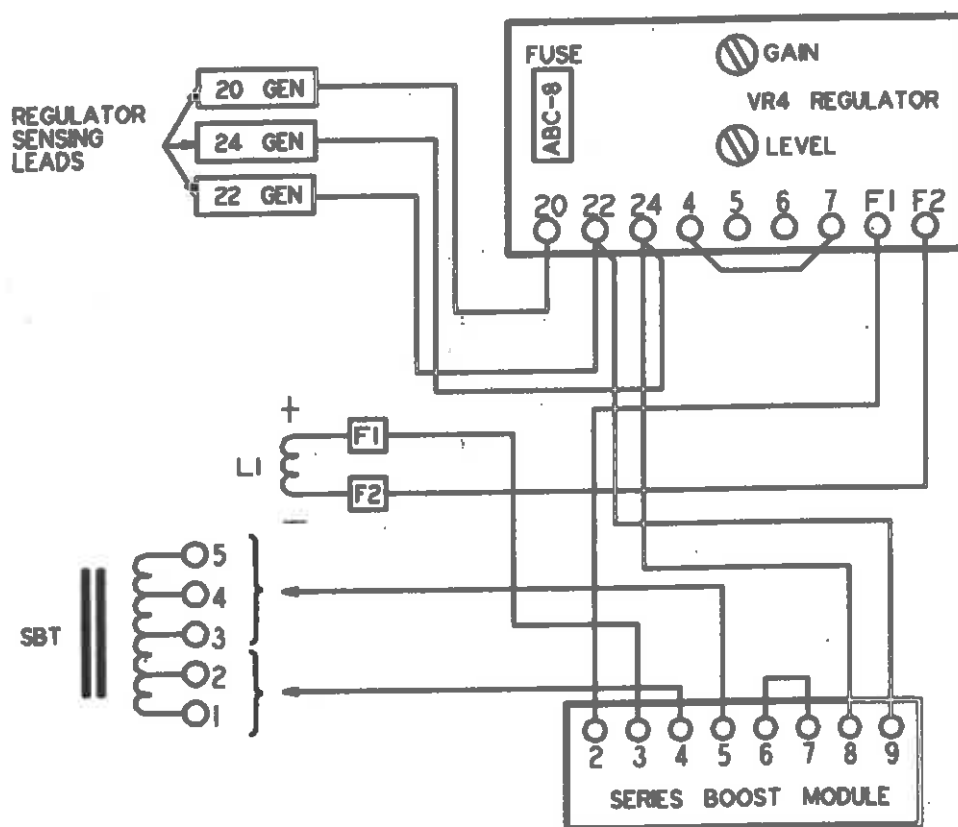
NOTE
REMOVE LINK 6-7 FOR 50 HZ OPERATION

LI EXCITER FIELD
SBT SERIES BOOST TRANSFORMER

○ TERMINAL NUMBERS
□ WIRE NUMBERS

C34688P1.

SERIES BOOST WITH VR4 VOLTAGE REGULATOR



NOTE

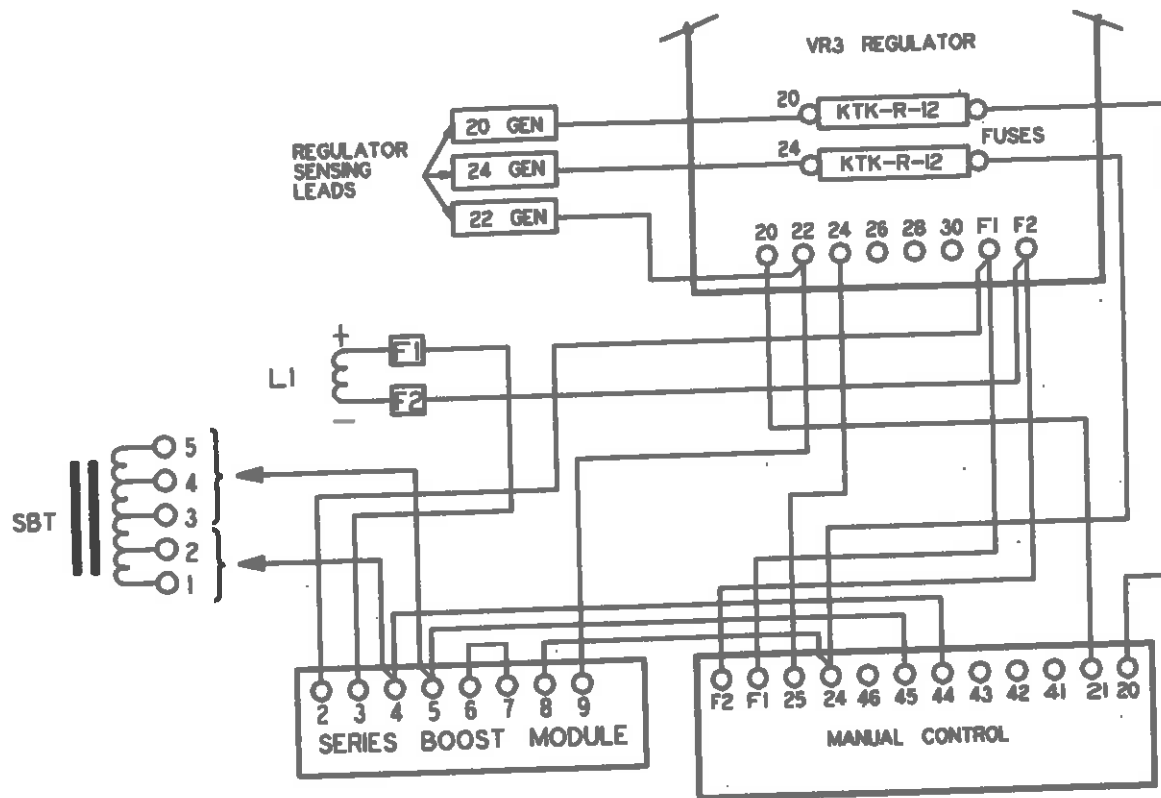
REMOVE LINK 6-7 FOR 50 HZ OPERATION

LI EXCITER FIELD
SBT SERIES BOOST TRANSFORMER

○ TERMINAL NUMBERS
□ WIRE NUMBERS

G34009P1

MANUAL CONT AND SERIES BOOST W/SELF EXC



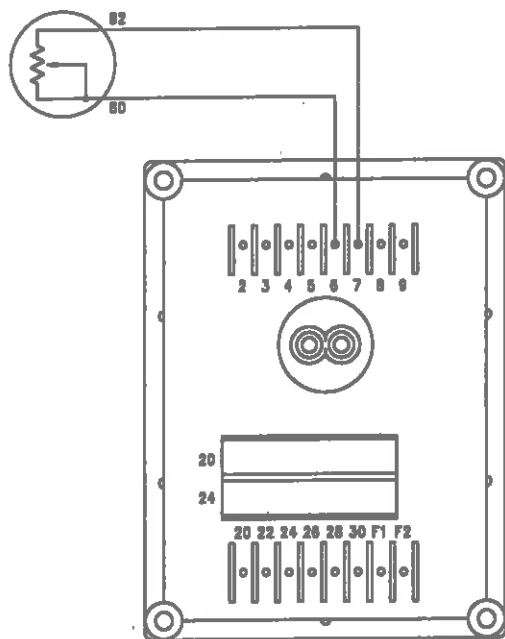
NOTE
REMOVE LINK 6-7 FOR 50 HZ OPERATION

LI EXCITER FIELD
SBT SERIES BOOST TRANSFORMER

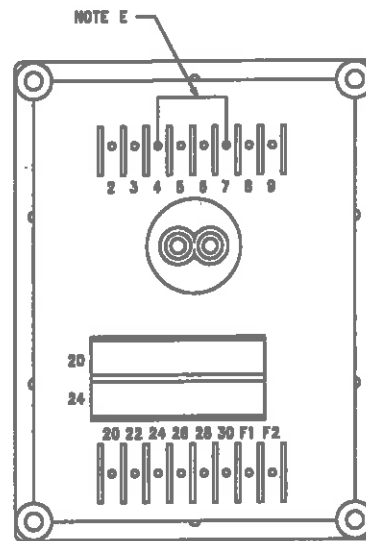
○ TERMINAL NUMBERS
□ WIRE NUMBERS

C34870P1

REMOTE VOLTAGE ADJUST RHEOSTAT CONNECTIONS



CONNECTION WHEN REMOTE VOLTAGE
ADJUST RHEOSTAT IS PROVIDED

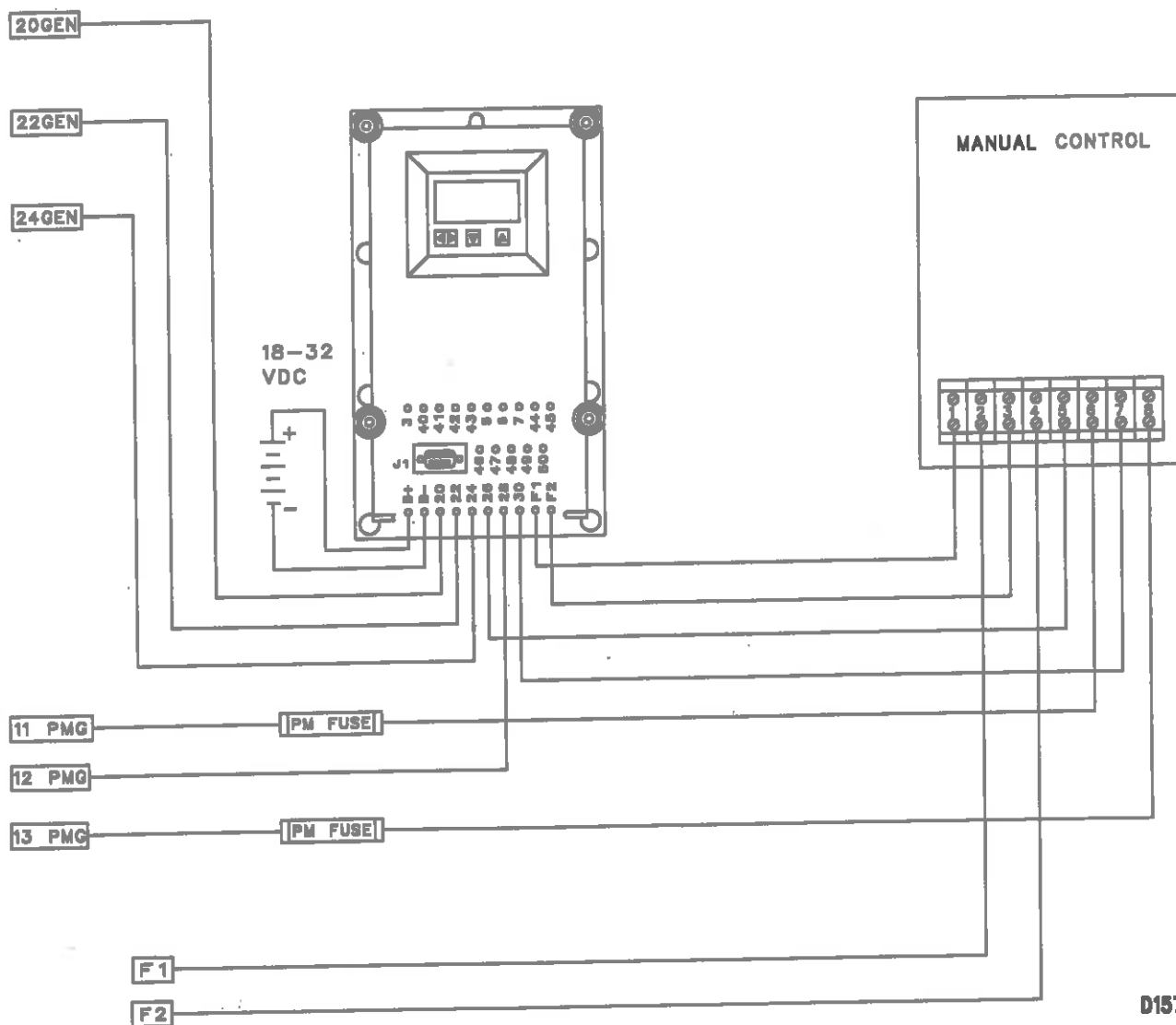


CONNECTION WITH NO REMOTE
VOLTAGE ADJUST RHEOSTAT

NOTE E: JUMPER MUST BE INSTALLED IF REMOTE VOLTAGE ADJUST RHEOSTAT IS NOT PROVIDED.

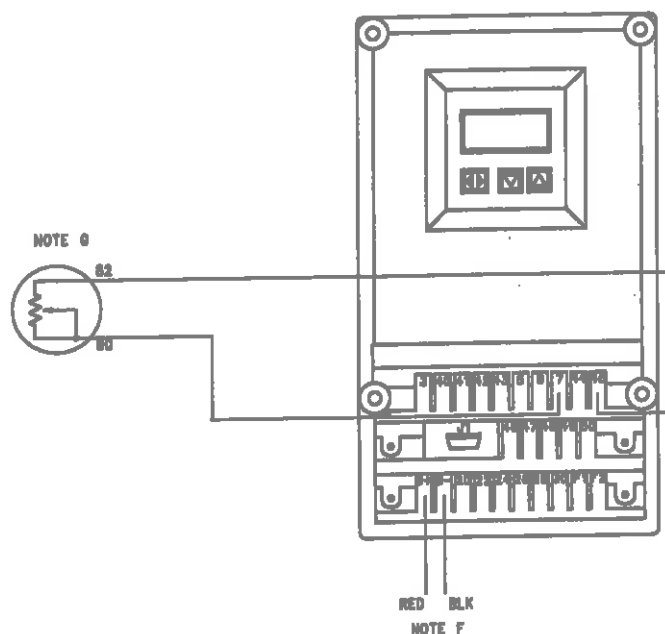
D52299

DIGITAL VOLTAGE REGULATOR WITH MANUAL CONTROL



D15722

DIGITAL VOLTAGE REGULATOR WITH REMOTE VAR

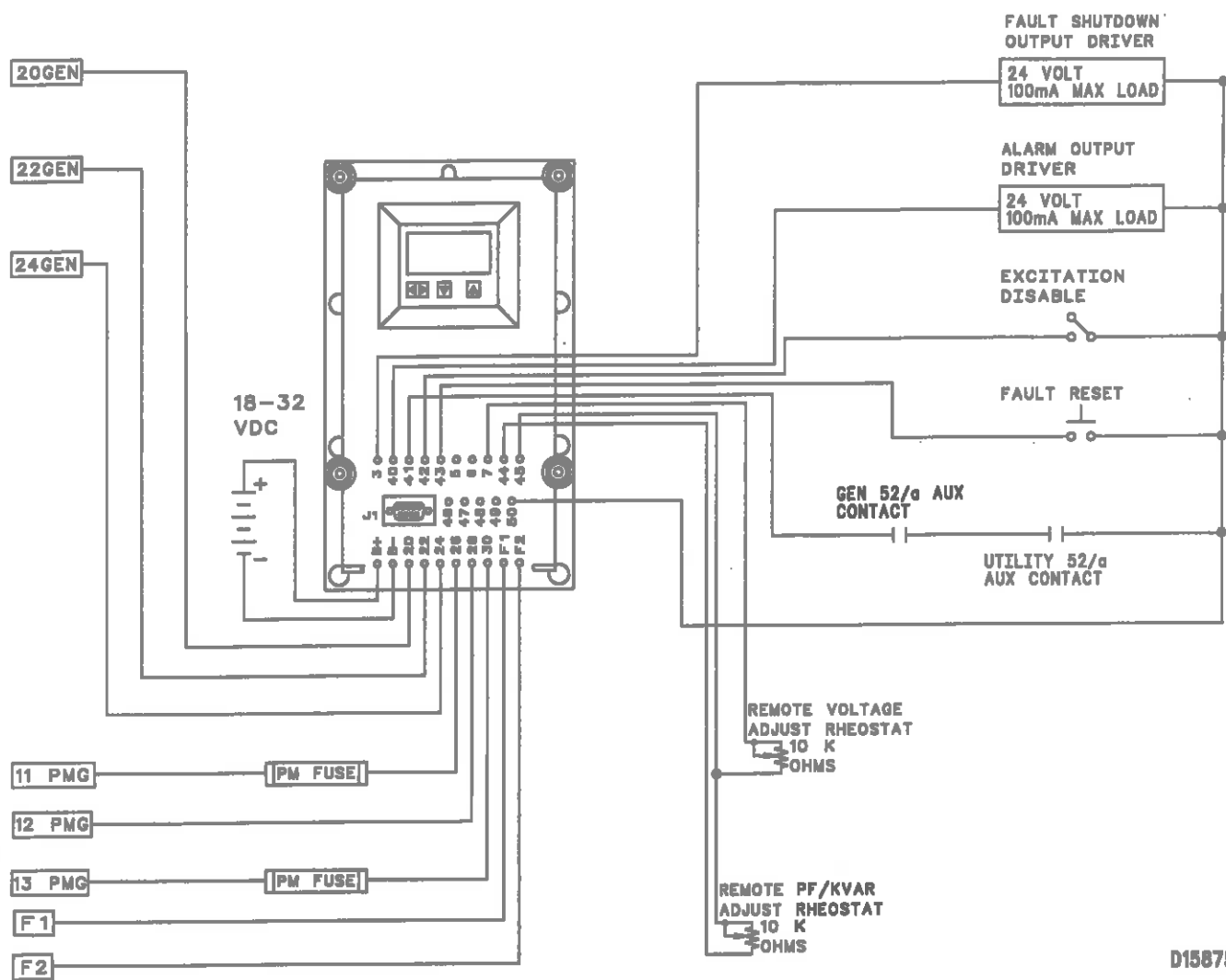


NOTE F: IF EMCP EXISTS, HARNESS AS. 128-0830 IS REQUIRED TO PROVIDE POWER. IF NO EMCP IS PRESENT, MATCH WIRE IDENTITIES USING P3FD-T162 FOR B+ AND P8FD-T162 FOR B- ON GAS ENGINES. DIESEL ENGINES USE 40LJKL166 FOR B+ AND 40LJKL166 FOR B-. IF NO EMCP AND NO WIRING HARNESS IS PROVIDED USE 130-3582 HARNESS FOR DIGITAL VOLTAGE REGULATOR BATTERY POWER.

NOTE G: OPTIONAL REMOTE VOLTAGE ADJUST RHEOSTAT IS LOCATED IN THE CONTROL PANEL, IF PROVIDED.

D52291

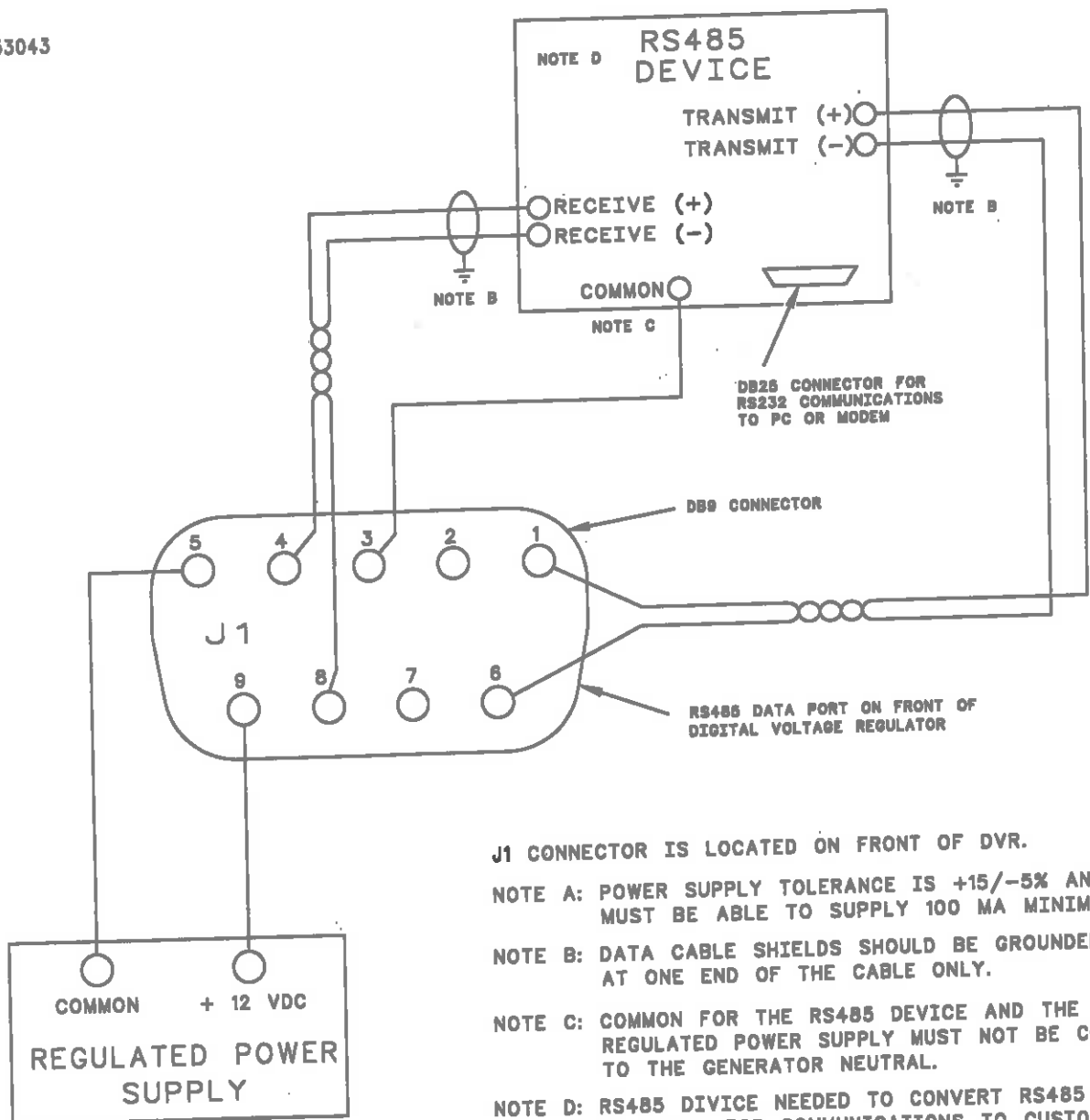
DIGITAL VOLTAGE REGULATOR CUSTOMER OPTIONS



D15875

DIGITAL VOLTAGE REGULATOR REMOTE COMMUNICATIONS CONNECTIONS

D53043



J1 CONNECTOR IS LOCATED ON FRONT OF DVR.

NOTE A: POWER SUPPLY TOLERANCE IS $\pm 15\%$ AND MUST BE ABLE TO SUPPLY 100 MA MINIMUM.

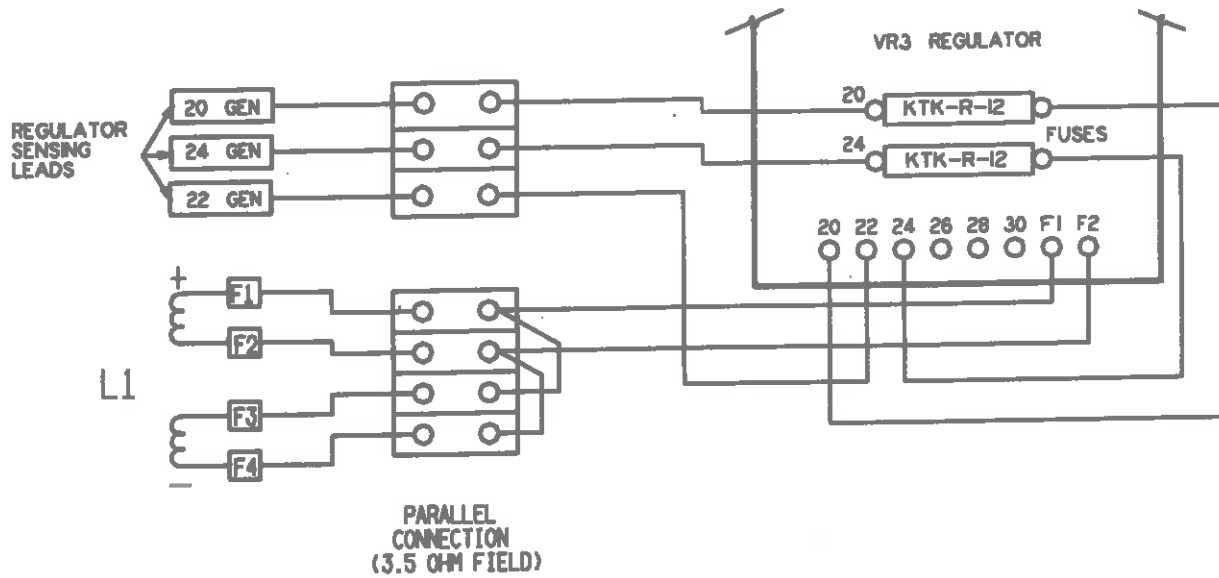
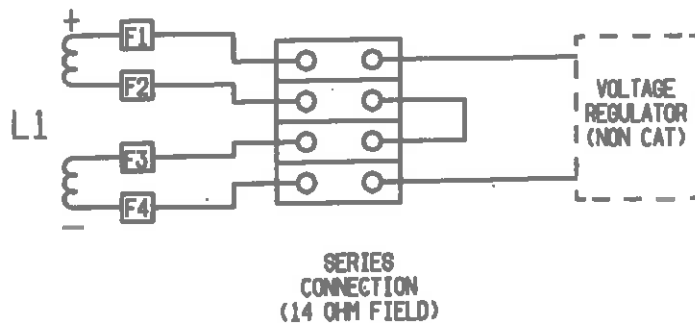
NOTE B: DATA CABLE SHIELDS SHOULD BE GROUNDED AT ONE END OF THE CABLE ONLY.

NOTE C: COMMON FOR THE RS485 DEVICE AND THE REGULATED POWER SUPPLY MUST NOT BE CONNECTED TO THE GENERATOR NEUTRAL.

NOTE D: RS485 DEVICE NEEDED TO CONVERT RS485 DATA TO RS232 FOR COMMUNICATIONS TO CUSTOMER PC OR MODEM

Oil Field SR4 Generators

EXC FLD CONN (SERIES AND PARALLEL)



C34871P1

All SR4B Generators Used With 3500 Engines

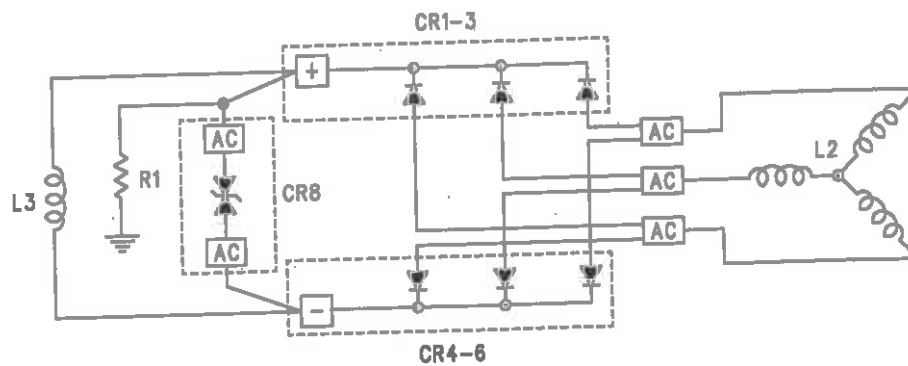
Introduction

The Diagrams that follow apply to the SR4B Generators used with 3500 Engines.

NOTE: Diagrams for the SR4 and other SR4B Generators appear at the beginning of this manual.

Main Revolving Field Connections

TWO DIODE BLOCKS AND SURGE SUPPRESSOR

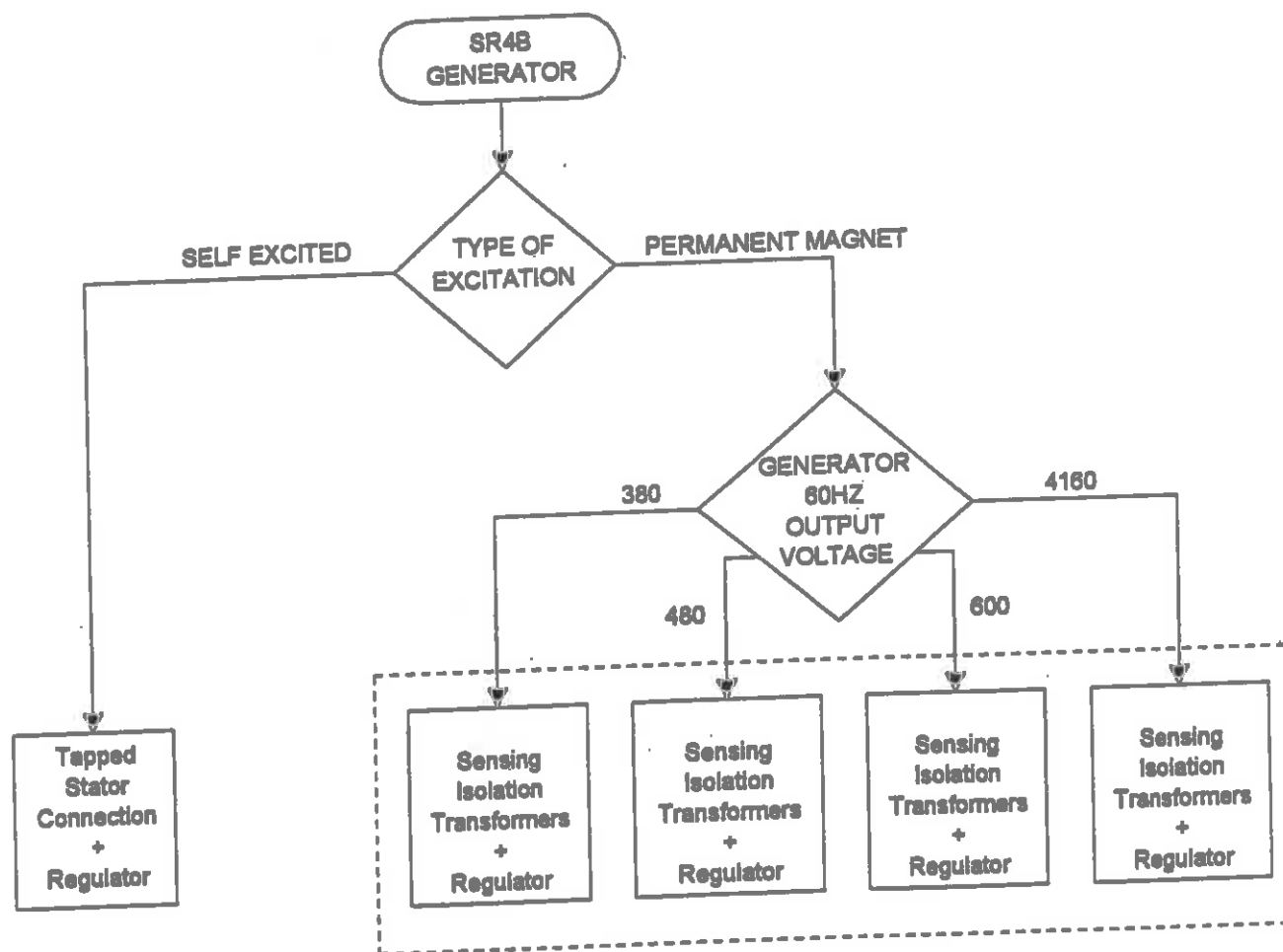


L2 EXITER ARMATURE
L3 REVOLVING FIELD
R1 STATIC DISCHARGE RESISTOR

CR1-6 RECTIFIERS
CR8 SURGE SUPPRESSOR

D52284

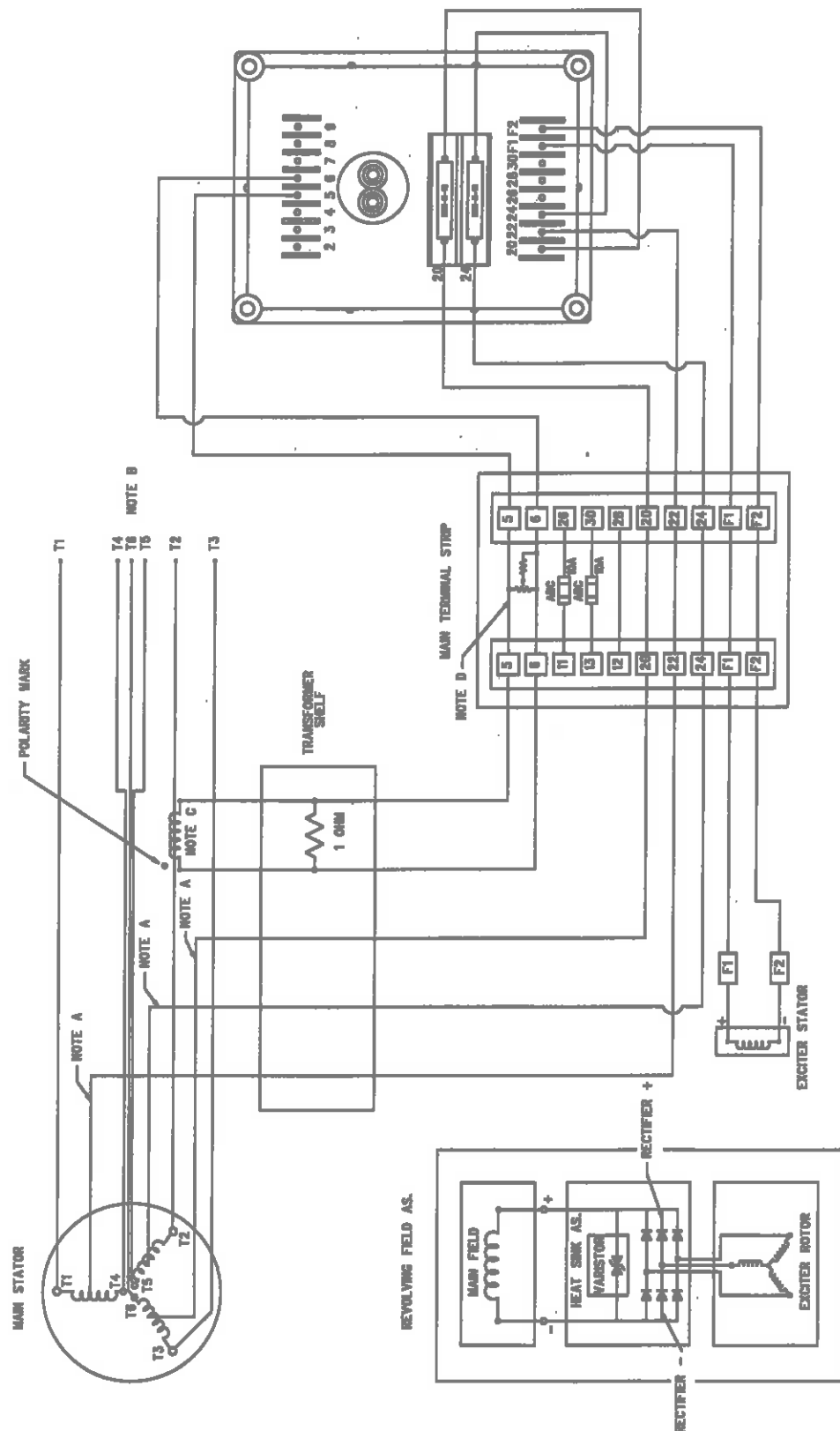
Selection Chart For SR4B Voltage Regulator



NOTE: VOLTAGES SHOWN ARE 60 Hz EQUIVALENTS

VR3 Voltage Regulator Connections

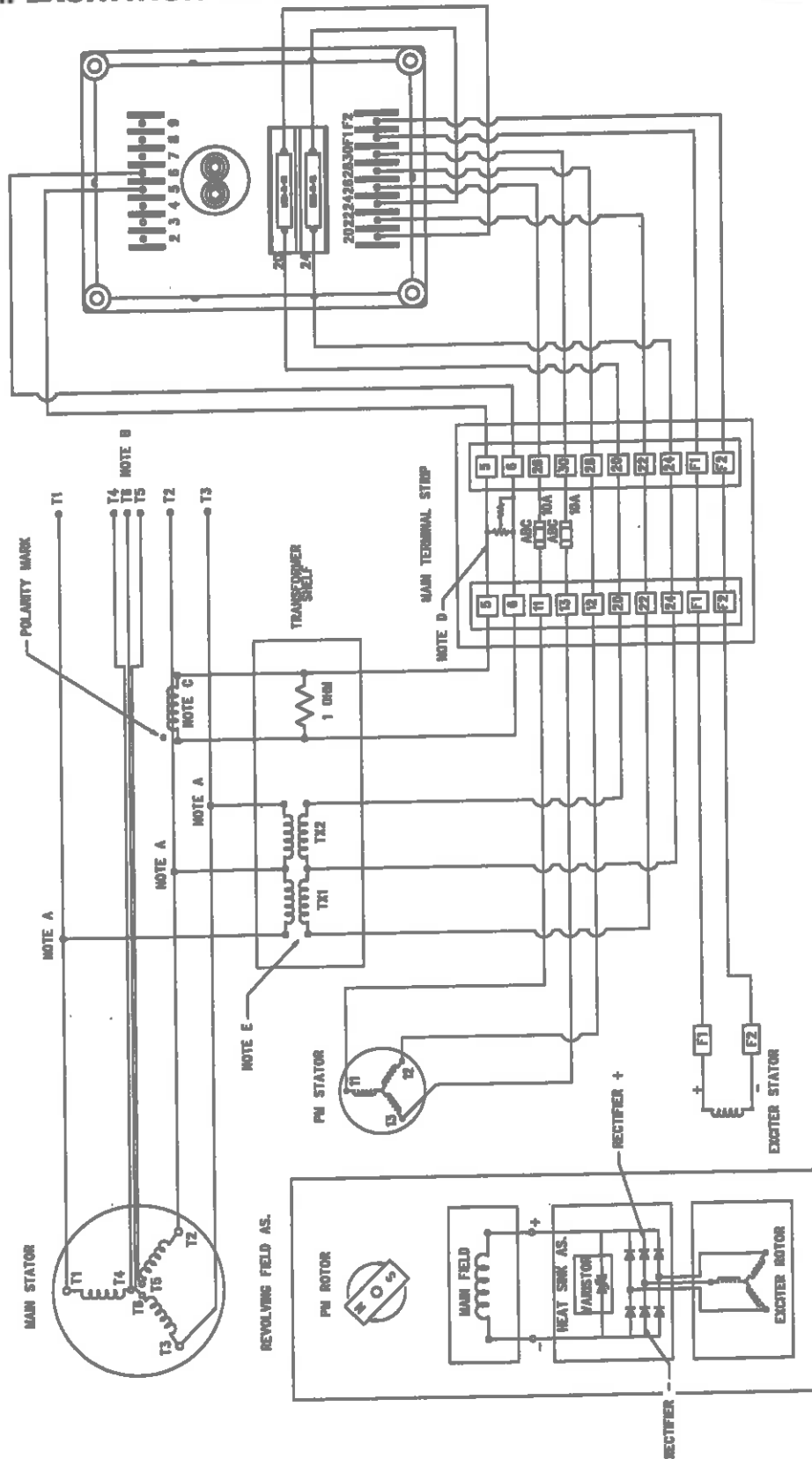
SELF EXCITED WITH DIRECT CONNECTION TO GENERATOR



NOTE A: CONNECTIONS ARE MADE DIRECTLY TO THE GENERATOR STATOR AND TAPPED TO THE MIDPOINT.
 NOTE B: CONNECT T4, T5, & T6 TO THE TO POWER BUSS BAR.
 NOTE C: CURRENT TRANSFORMER IS TO BE INSTALLED ON THE GENERATOR SIDE OF THE T2 POWER BUSS BAR. POLARITY MARK MUST BE ON THE SIDE OPPOSITE THE GLASS BOARD.
 NOTE D: DROOP MODULE

D52296

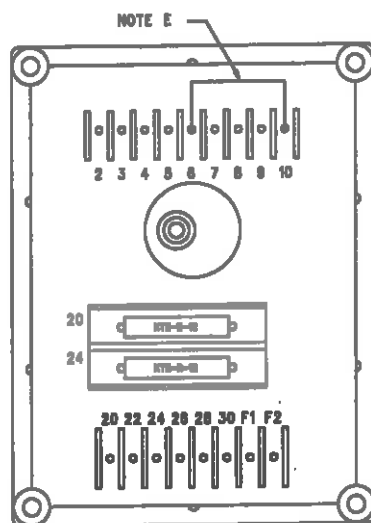
P.M. EXCITATION WITH CONNECTIONS TO ISOLATION TRANSFORMERS



D52301

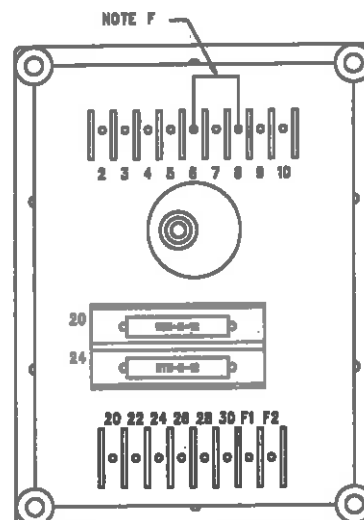
VR3F Voltage Regulator Connections

KNEE FREQUENCY SELECTION



NOTE E: INSTALL JUMPER FOR 60 HZ OPERATION; REMOVE FOR 50 HZ OPERATION.

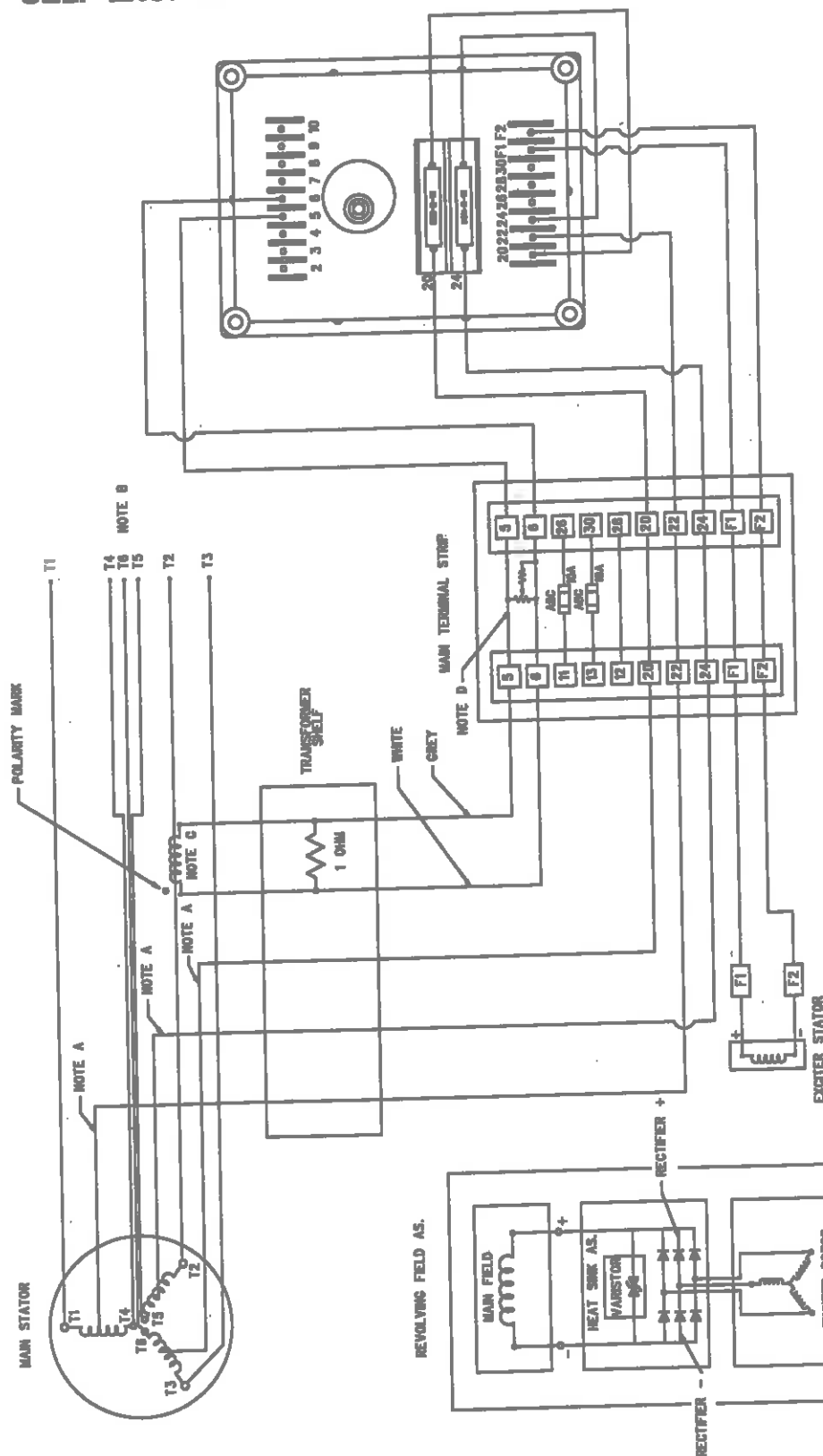
UNDERFREQUENCY SLOPE SELECTION



NOTE F: INSTALL JUMPER FOR 1:1 V/Hz SLOPE; REMOVE FOR 2:1 V/Hz UNDERFREQUENCY SLOPE.

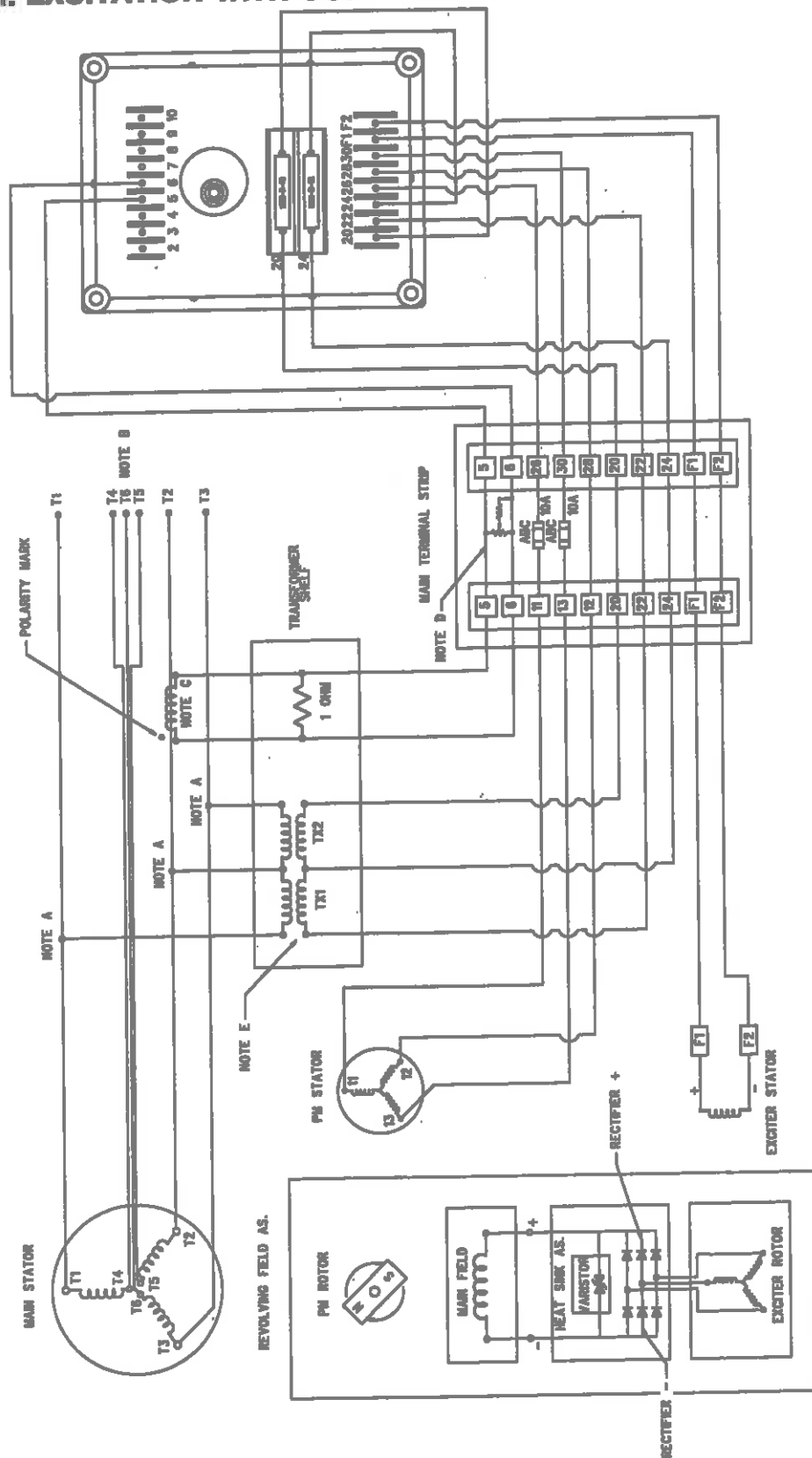
D52287

SELF EXCITED WITH DIRECT CONNECTION TO GENERATOR



D52288

P.M. EXCITATION WITH CONNECTIONS TO ISOLATION TRANSFORMERS

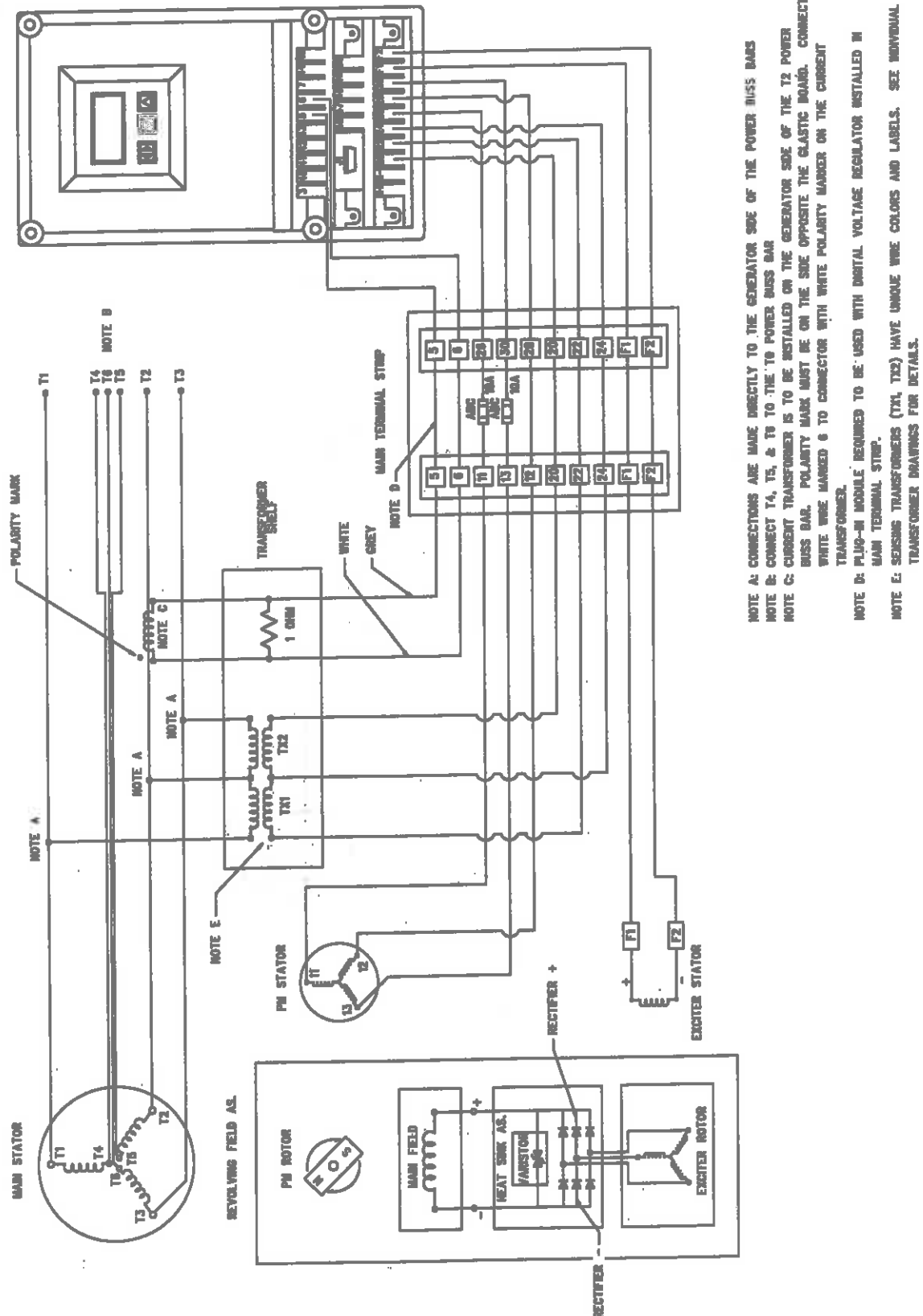


- NOTE A: CONNECTIONS ARE MADE DIRECTLY TO THE GENERATOR SIDE OF THE POWER BUSS BARS
- NOTE B: CONNECT T4, T5, & T6 TO THE T0 POWER BUSS BAR
- NOTE C: CURRENT TRANSFORMER IS TO BE INSTALLED ON THE GENERATOR SIDE OF THE T2 POWER BUSS BAR. POLARITY MARK MUST BE ON THE SIDE OPPOSITE THE GLASS BOARD.
- NOTE D: DROP MODULE
- NOTE E: SENSING TRANSFORMERS (TX1, TX2) HAVE UNIQUE WIRE COLORS AND LABELS. SEE INDIVIDUAL TRANSFORMER DRAWINGS FOR DETAILS.

D52304

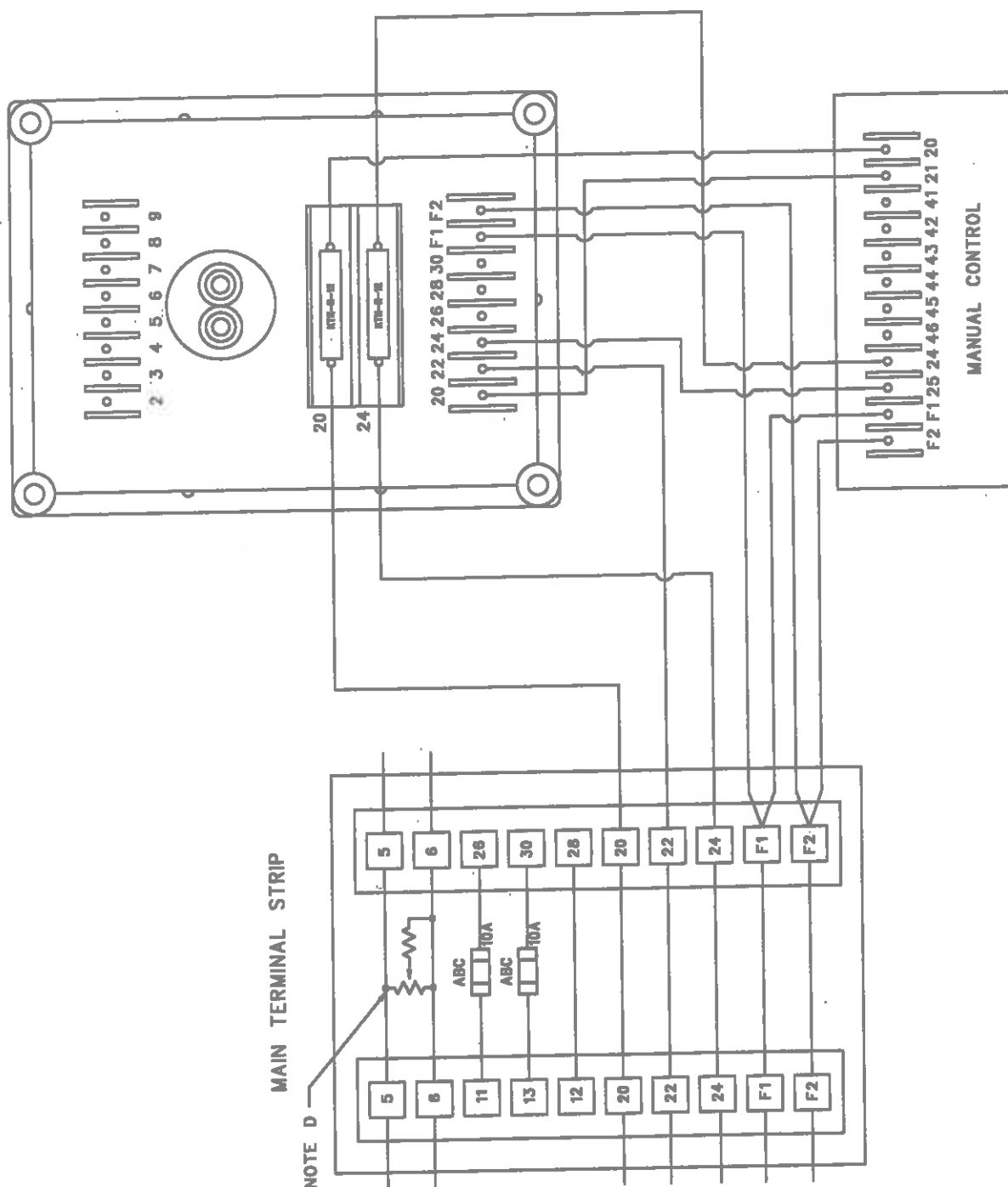
Digital Voltage Regulator Connections

P.M. EXCITATION WITH CONNECTIONS TO ISOLATION TRANSFORMERS



Options Used With 3500 Engines

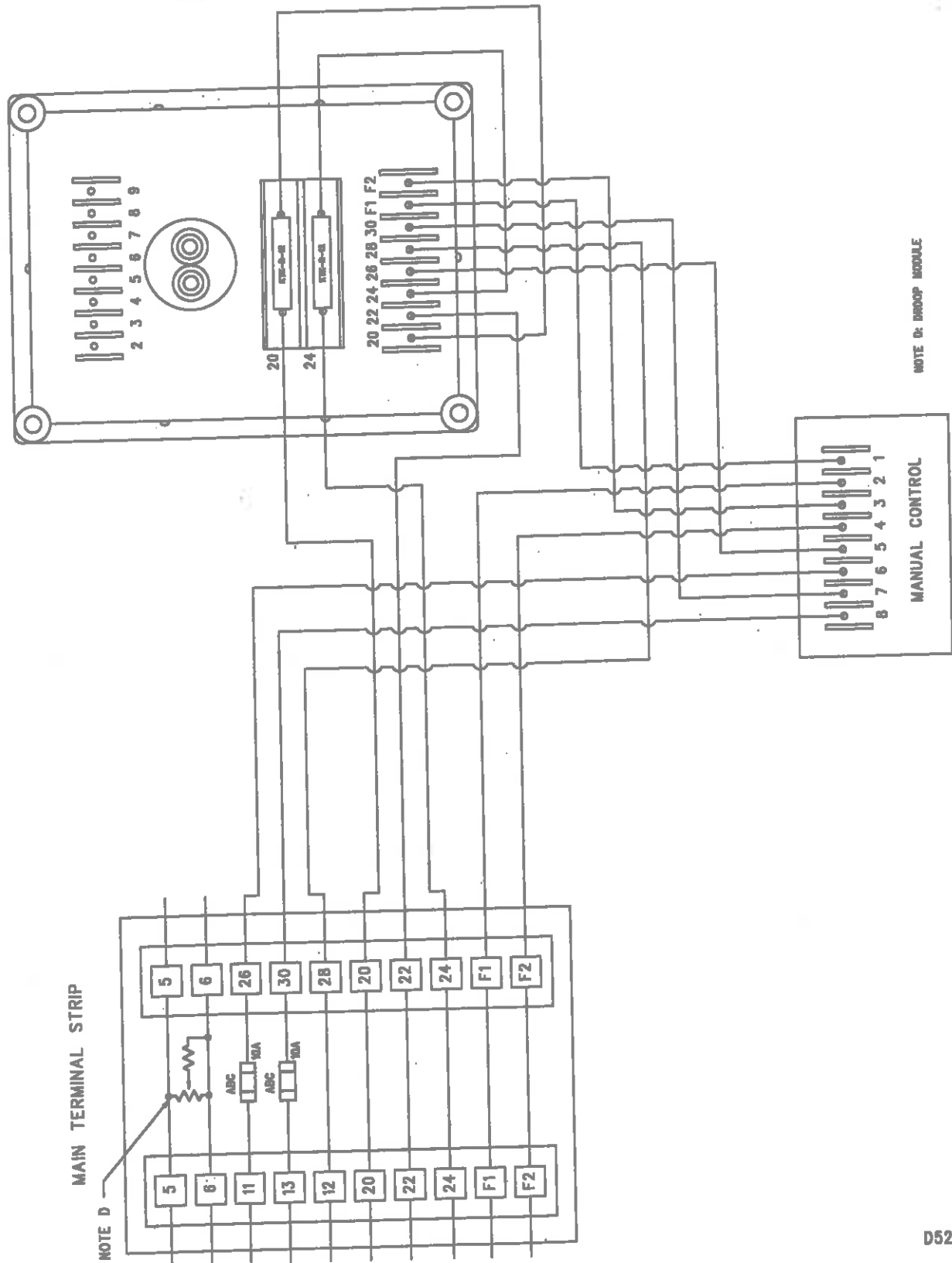
VR3 WITH MANUAL VOLTAGE CONTROL AND SELF EXCITATION



NOTE D: DROOP MODULE.

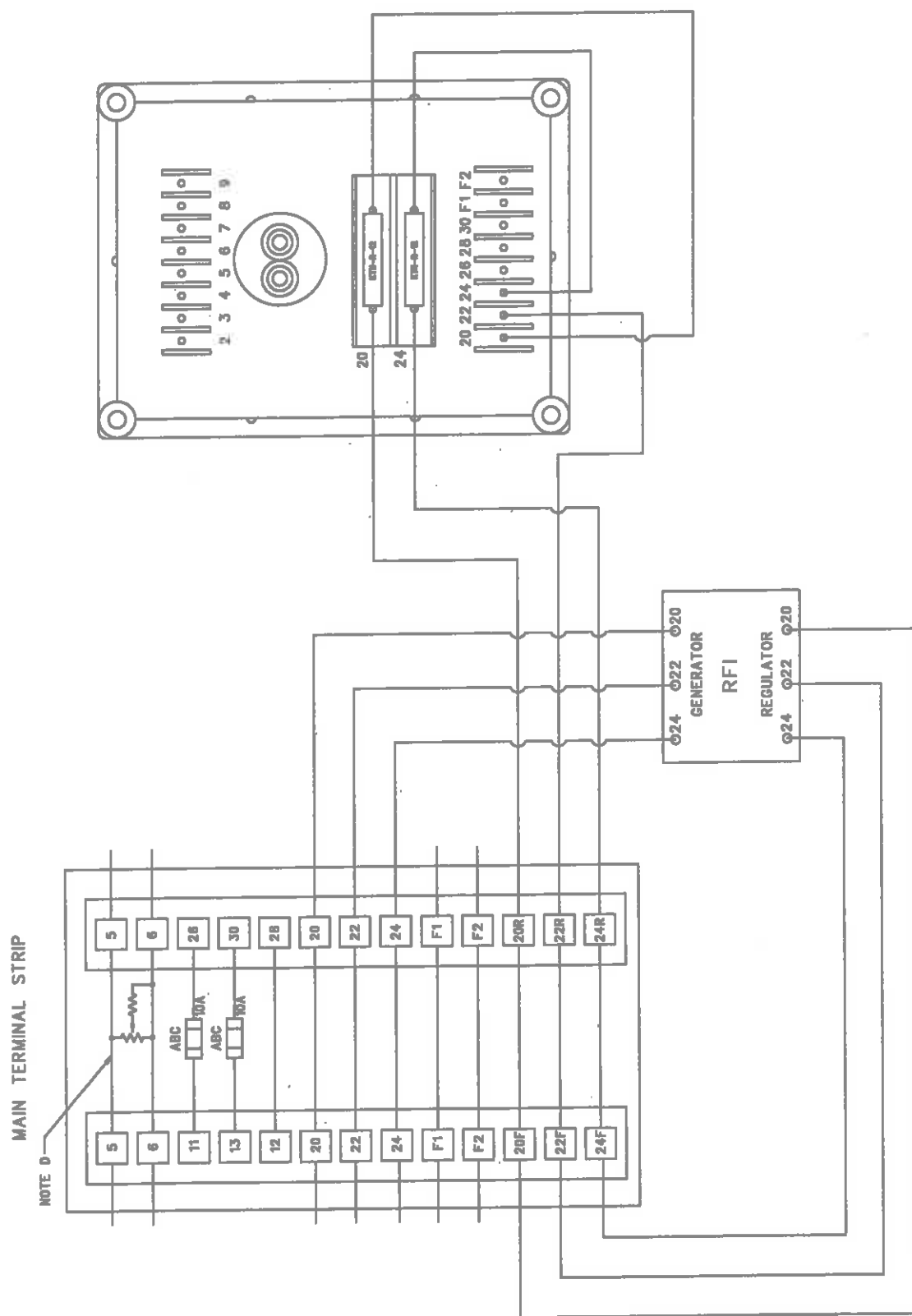
D52297

VR3 MANUAL CONTROL WITH P.M. EXCITATION



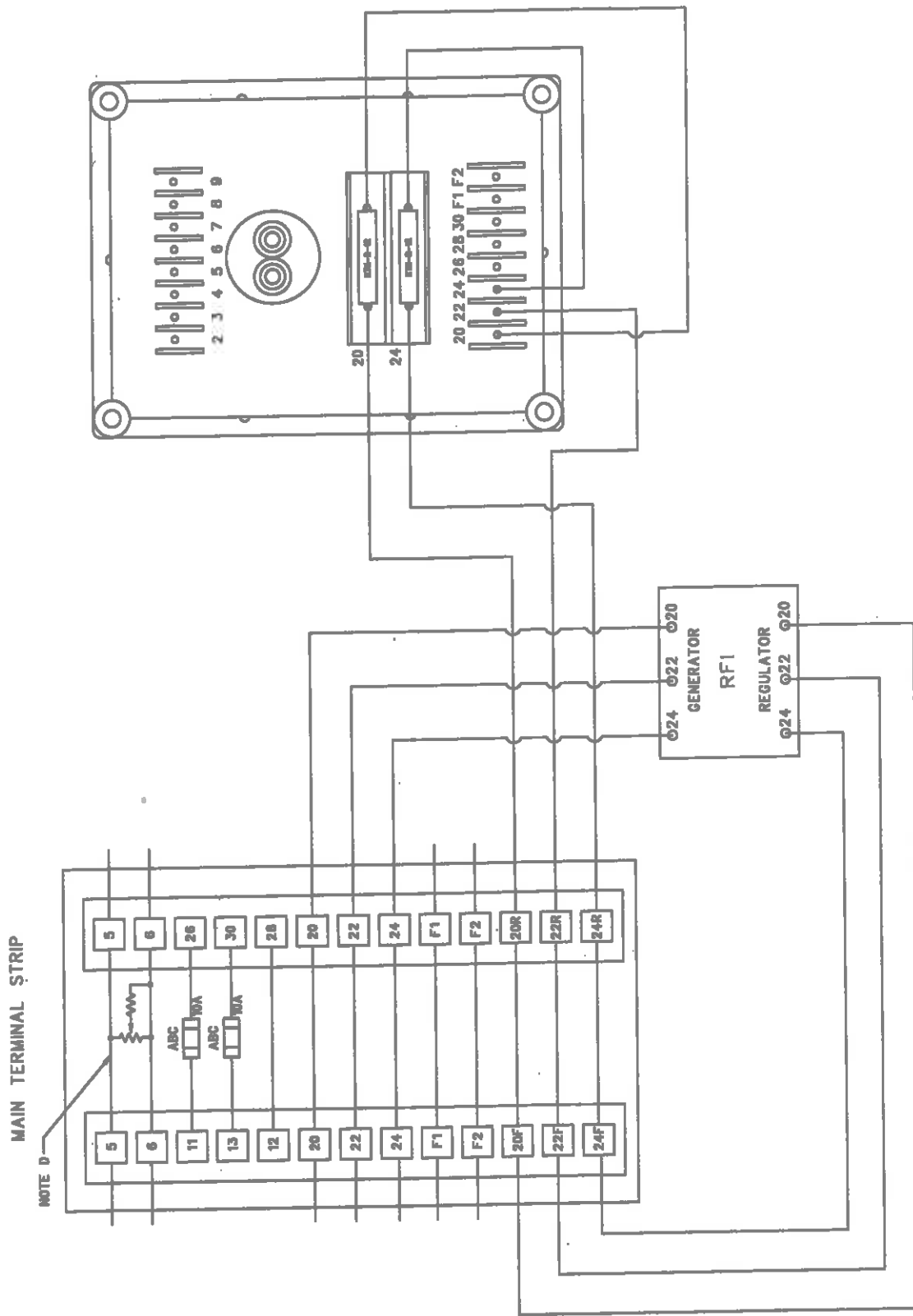
D52302

Connection Diagrams



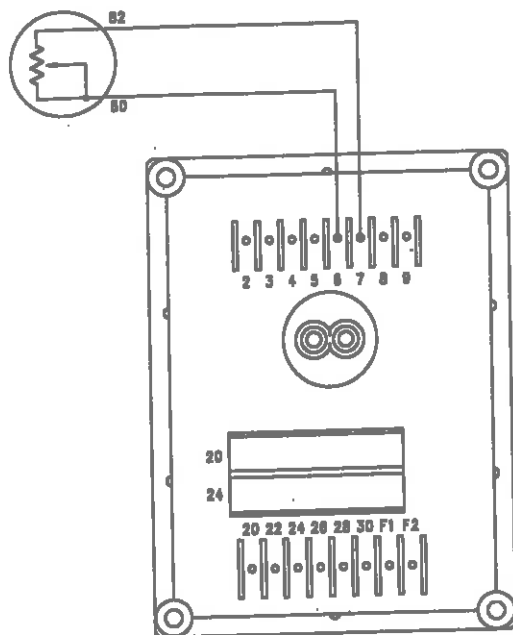
NOTE D: DROOP MODULE

VR3 WITH RADIO INTERFERENCE FILTER AND P.M. EXCITATION

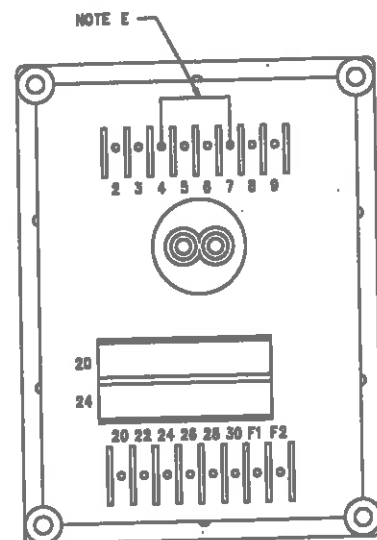


D52303

REMOTE VOLTAGE ADJUST RHEOSTAT CONNECTIONS



CONNECTION WHEN REMOTE VOLTAGE
ADJUST RHEOSTAT IS PROVIDED

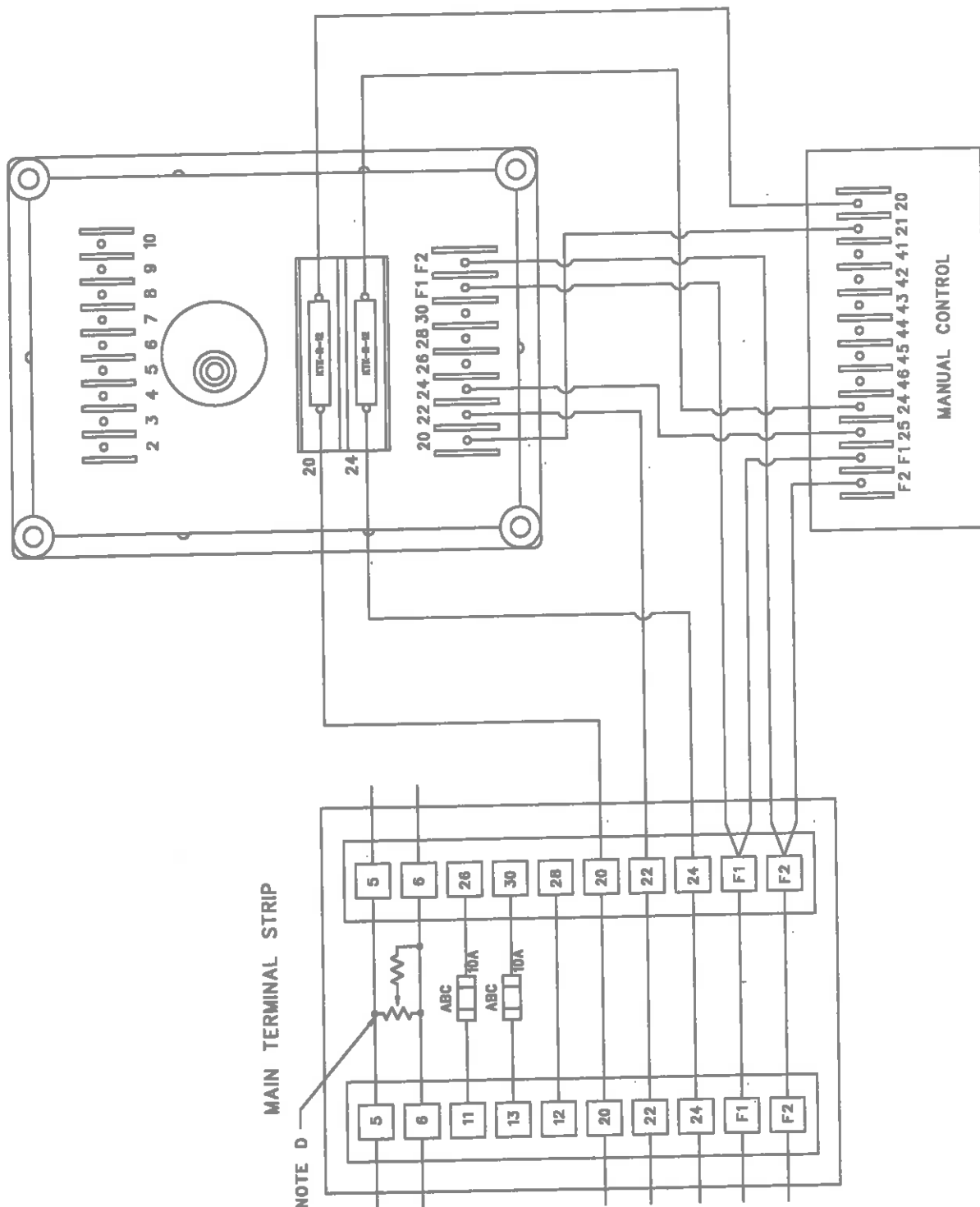


CONNECTION WITH NO REMOTE
VOLTAGE ADJUST RHEOSTAT

NOTE E: JUMPER MUST BE INSTALLED IF REMOTE VOLTAGE ADJUST RHEOSTAT IS NOT PROVIDED.

052289

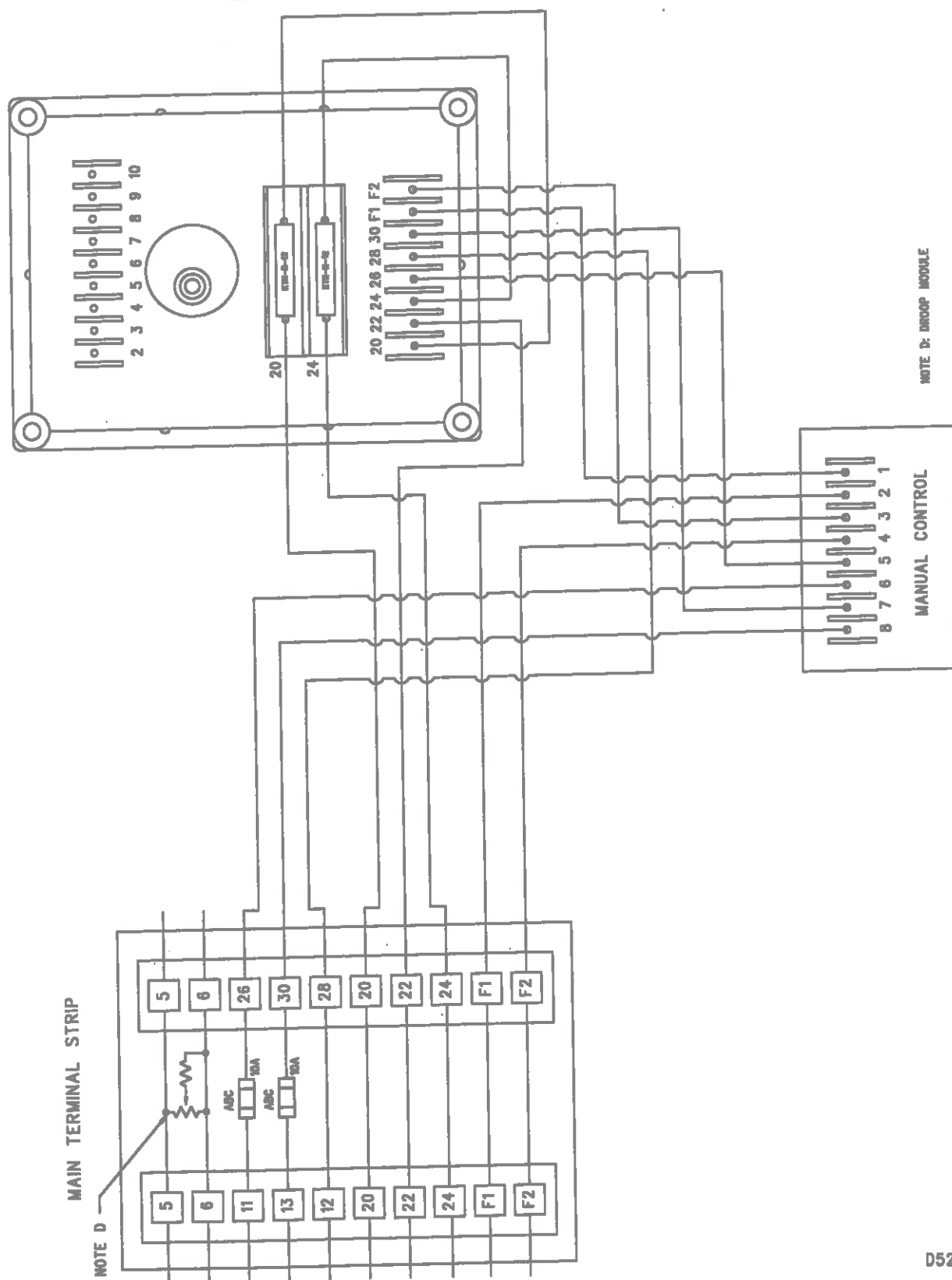
VR3F WITH MANUAL VOLTAGE CONTROL AND SELF EXCITATION



NOTE D: DROOP MODULE

D52289

VR3F WITH MANUAL CONTROL AND P.M. EXCITATION

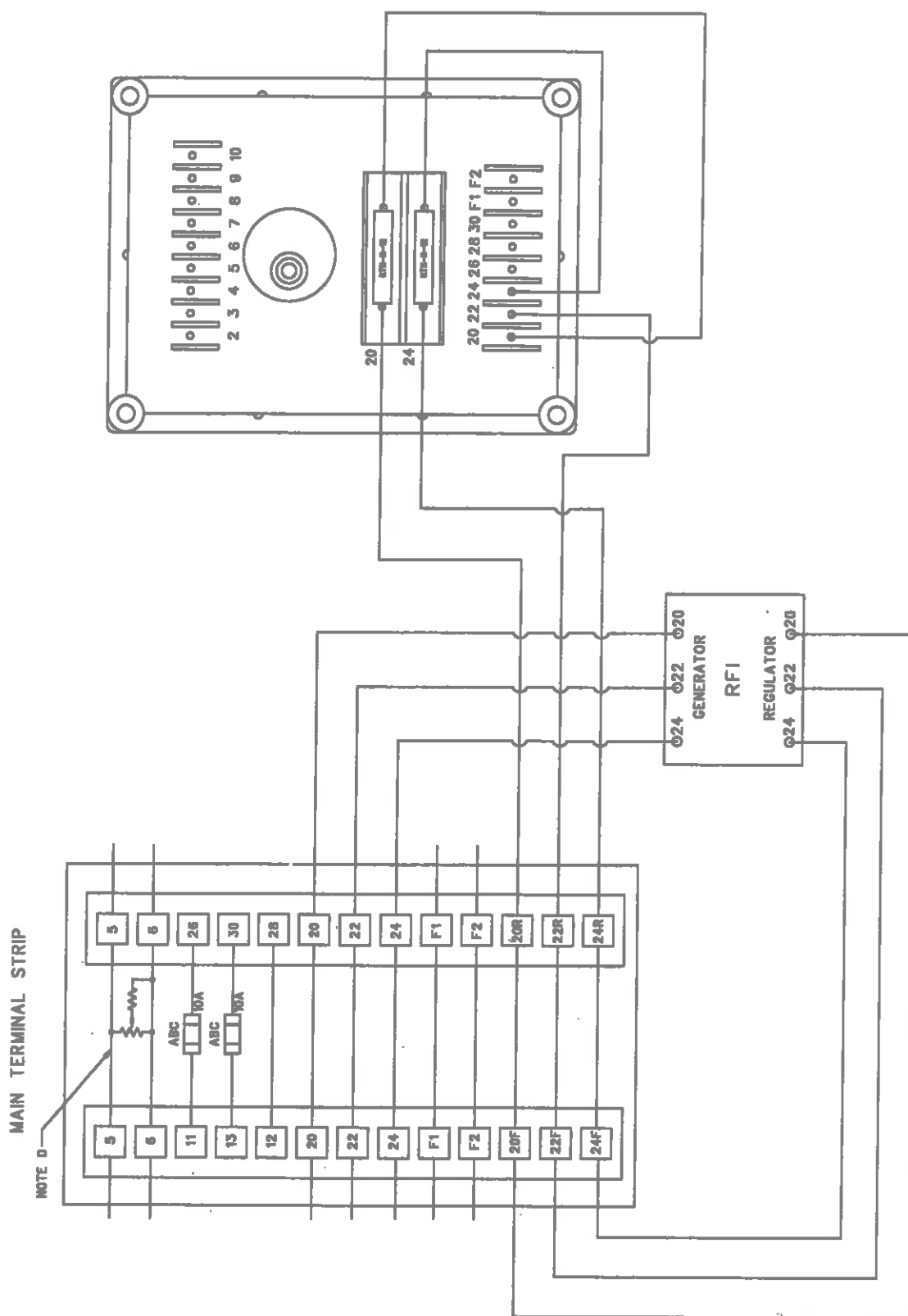


NOTE D: DRICOP MODULE

MANUAL CONTROL

D52305

VR3F WITH RADIO INTERFERENCE FILTER AND SELF EXCITATION



NOTE D: DROOP MODULE

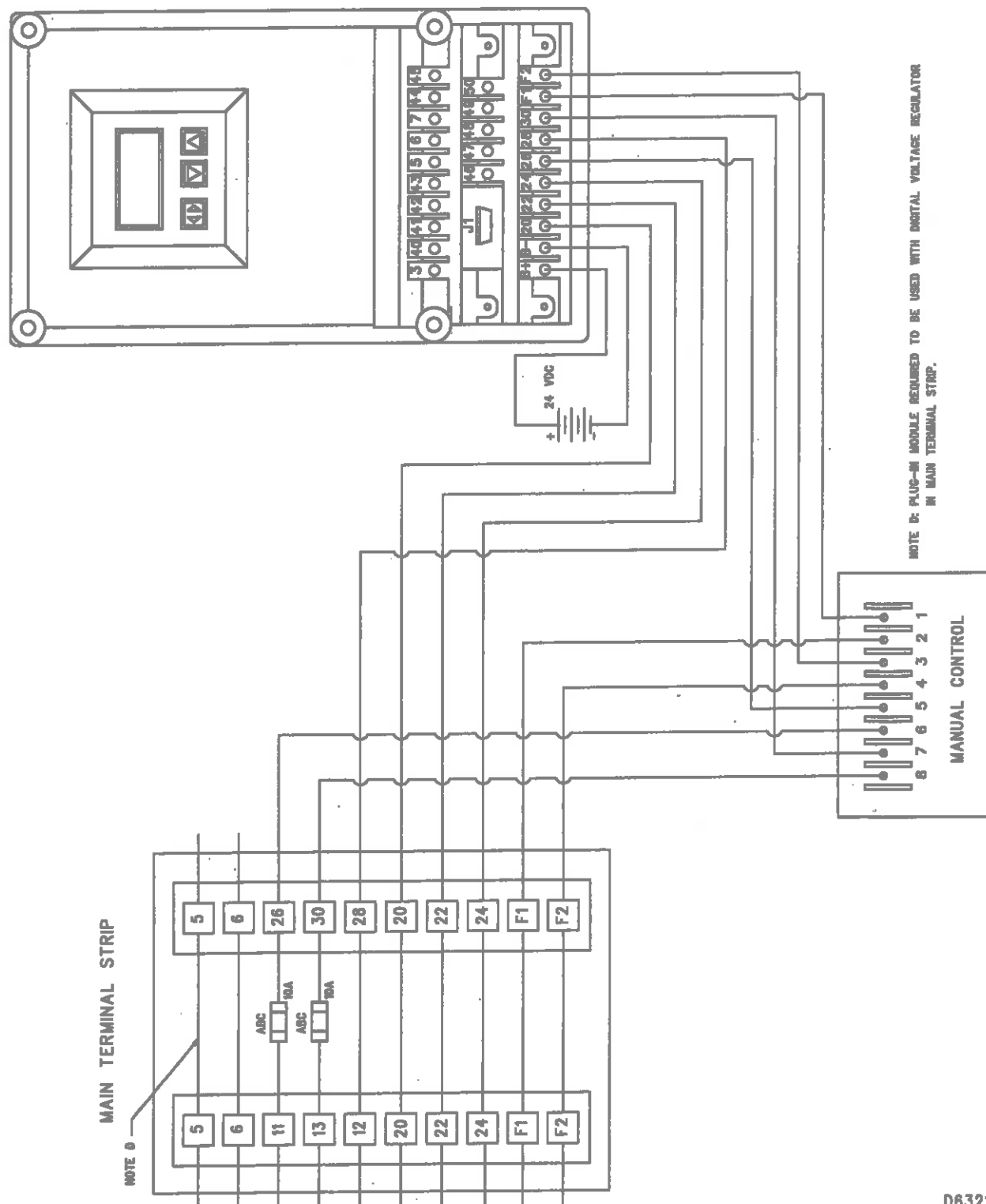
D52290

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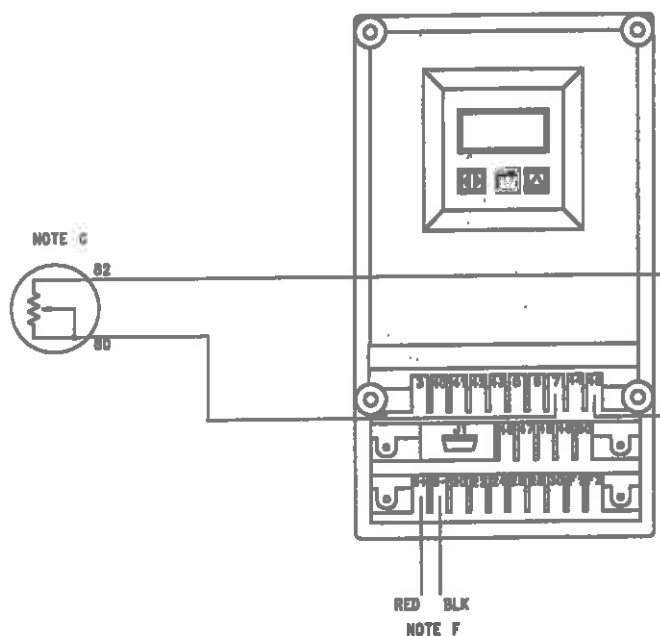
D5230

DIGITAL VOLTAGE REGULATOR WITH MANUAL CONTROL



D63211

DIGITAL VOLTAGE REGULATOR WITH REMOTE VAR

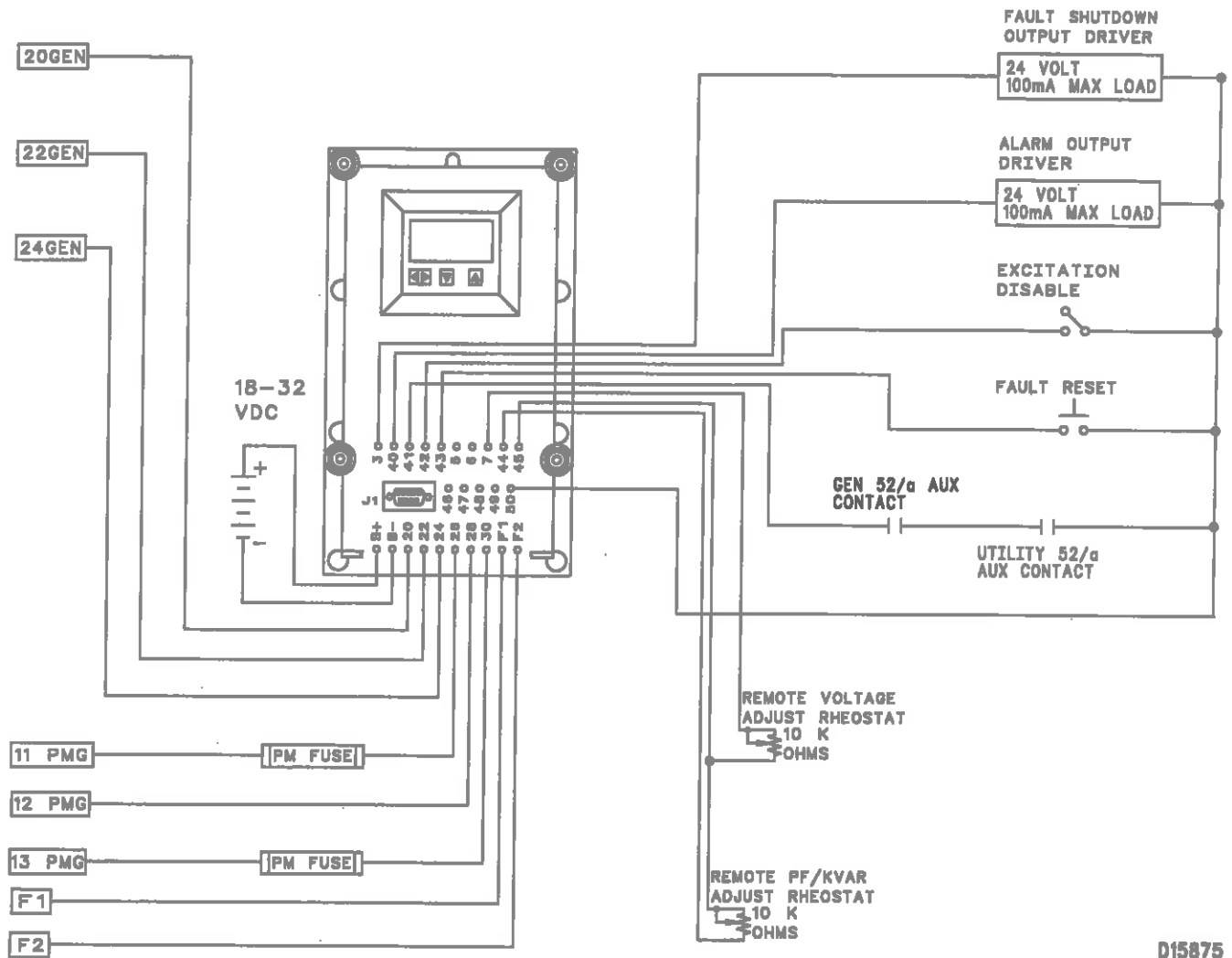


NOTE F: IF EMCP EXISTS, HARNESS AS. 128-0830 IS REQUIRED TO PROVIDE POWER. IF NO EMCP IS PRESENT, MATCH WIRE IDENTITIES USING P3FD-T182 FOR B+ AND P4FD-T182 FOR B- ON GAS ENGINES. DIESEL ENGINES USE 40KJL188 FOR B+ AND 40LJL188 FOR B-. IF NO EMCP AND NO WIRING HARNESS IS PROVIDED USE 130-3582 HARNESS FOR DIGITAL VOLTAGE REGULATOR BATTERY POWER.

NOTE G: OPTIONAL REMOTE VOLTAGE ADJUST RHEOSTAT IS LOCATED IN THE CONTROL PANEL, IF PROVIDED.

D52291

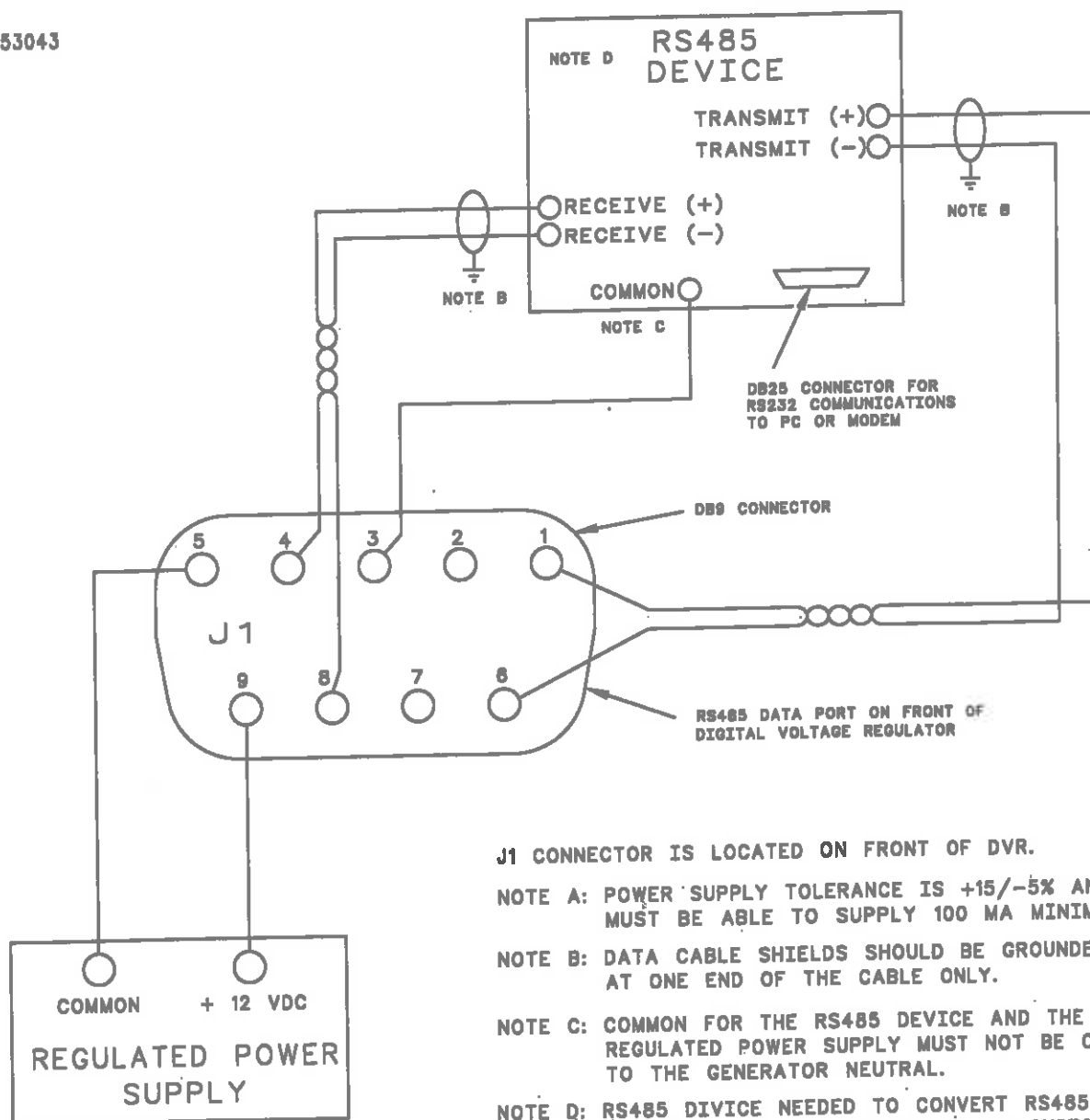
DIGITAL VOLTAGE REGULATOR CUSTOMER OPTIONS



D15875

DIGITAL VOLTAGE REGULATOR REMOTE COMMUNICATIONS CONNECTIONS

D53043



J1 CONNECTOR IS LOCATED ON FRONT OF DVR.

NOTE A: POWER SUPPLY TOLERANCE IS $\pm 15\%$ AND MUST BE ABLE TO SUPPLY 100 MA MINIMUM.

NOTE B: DATA CABLE SHIELDS SHOULD BE GROUNDED AT ONE END OF THE CABLE ONLY.

NOTE C: COMMON FOR THE RS485 DEVICE AND THE REGULATED POWER SUPPLY MUST NOT BE CONNECTED TO THE GENERATOR NEUTRAL.

NOTE D: RS485 DEVICE NEEDED TO CONVERT RS485 DATA TO RS232 FOR COMMUNICATIONS TO CUSTOMER PC OR MODEM