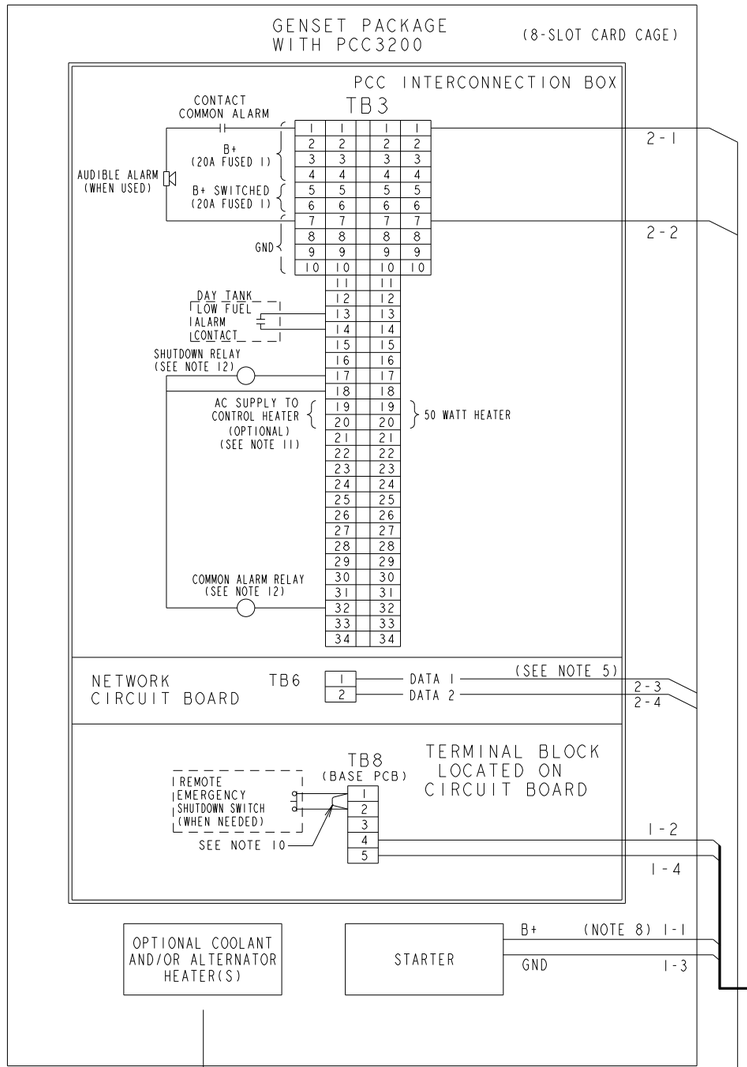
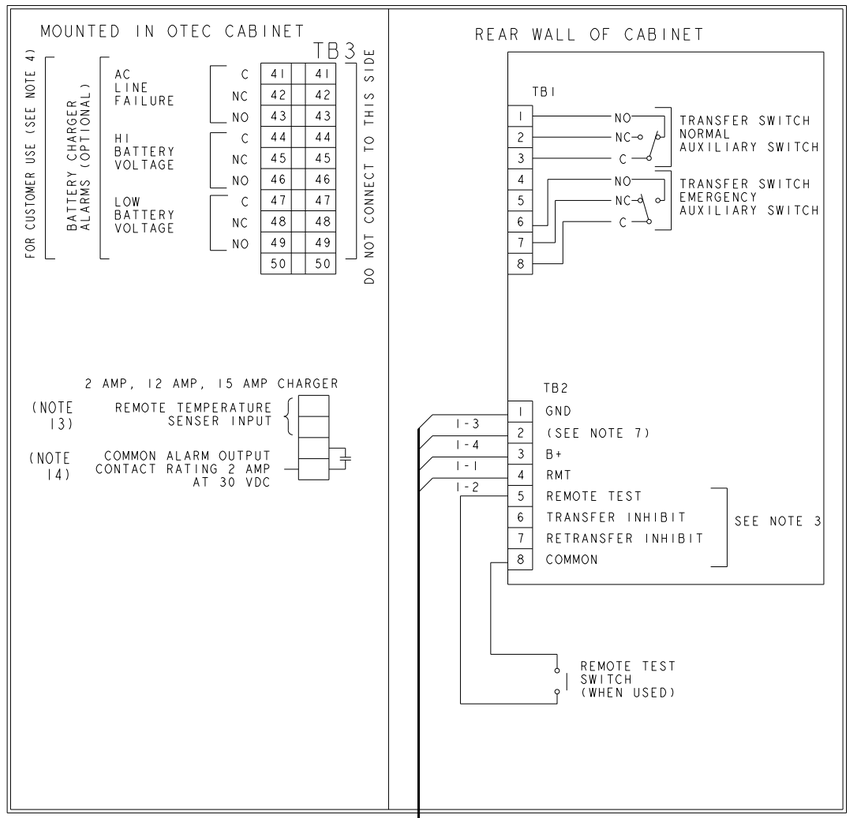
0630_2810	D	Pro/ENGINEER	METRIC DWG

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	1	SEE SHEET 9	-	J/M	RS	SCROGGINS	14JAN09
		2	SEE SHEET 10	-	J/M	RS	SCROGGINS	14JAN09





(NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. REFER TO ONAN 900-0529 POWERCOMMAND NETWORK INSTALLATION & OPERATION MANUAL FOR WIRING INSTRUCTIONS, WIRE SIZE, AND LENGTH. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO NETWORK. PART # 0334-1350 OR EQUAL.
6. INPUTS FOR CUSTOMER FAULTS. GROUNDED SIGNAL REQUIRED TO ACTIVATE INPUT (MAX 50 MA.)
7. ON PCC 3200 CONTROLS NO JUMPER IS REQ'D BETWEEN TB1-1 & TB1-2.
8. CONFIGURATION SHOWN IS FOR ATS-MOUNTED BATTERY CHARGER. IF WALL-MOUNTED CHARGER IS USED, CONNECT B+ AND GND FROM CHARGER DIRECTLY TO BATTERY OR STARTER.
9. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
10. OPEN CONNECTION TO INITIATE EMERGENCY STOP. THESE TERMINALS MUST BE SHORTED TOGETHER IF REMOTE EMERGENCY STOP OPTION NOT USED. JUMPER SHOWN BETWEEN TB8-1 AND TB8-2 NOT SUPPLIED WITH UNIT.
11. 120VAC OR 240VAC AT 50W.
12. CUSTOMER SUPPLIED EITHER 12 OR 240VDC RELAYS OUTPUT SIGNAL 20ma @ 24VDC MAX.
13. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
14. THE FOLLOWING FAILS WILL CAUSE A BATTTERY CHARGER ALARM OUTPUT: LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).

QTY	ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

	mm	Inch
DIM	X ± 1 .X ± 0.8 .XX ± 0.38	.X ± .XX ± .XXX±
HOLE	0.99 4.99 +0.15/-0.08 5.00 9.99 +0.20/-0.10 10.00-17.49 +0.25/-0.13 17.50-24.99 +0.30/-0.13	.004-.200 +.006/-.003 .201-.421 +.008/-.004 .422-.703 +.010/-.005 .704-.999 +.012/-.005
ANG TOL± 1.0 °		
DRAWN TO SCALE OF 1/1		

SIM TO 0630_1974 D
COPIED FROM -
THIRD ANGLE PROJECTION

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ MFG ☑	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

TITLE: WD-INTERCONNECTION

DWG NO 0630_2810 | SHEET 1 OF 10 | DWG SIZE D

0630_2810 | D | Pro/ENGINEER | METRIC DWG

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	------	-	JFM	RS	SCROGGINS	14JAN09

OTEC UTILITY TO GENSET

GENSET PACKAGE WITH PCC3100

PCC INTERCONNECTION BOX

TB1

B+ (20A FUSE)	1	1
SWITCH B+ (10A FUSE)	2	2
GROUND	3	3
GROUND	4	4
REMOTE START	5	5
REMOTE EMERGENCY STOP	6	6
COMMON ALARM (N/O)	7	7
COMMON ALARM (COMMON)	8	8
COMMON ALARM (N/C)	9	9
BREAKER CONTROL (N/O)	10	10
BREAKER CONTROL (N/O)	11	11
NET POWER (+)	12	12
NET POWER (-)	13	13
NET DATA 1	14	14
NET DATA 2	15	15
CUSTOMER FAULT 1	16	16
CUSTOMER FAULT 2	17	17
CUSTOMER FAULT 3	18	18
CUSTOMER FAULT 4	19	19
FAULT RESET	20	20
ENGINE IDLE	21	21
LOW FUEL	22	22
NOT ON AUTO	23	23
PRE-HIGH ENGINE TEMP	24	24
HIGH ENGINE TEMP	25	25
OVERSPEED	26	26
OVERCRANK	27	27
LOW ENGINE TEMP	28	28
LOW FUEL	29	29
LOW COOLANT	30	30
PRE-LOW OIL PRESSURE	31	31
LOW OIL PRESSURE	32	32
COMMON	33	33
RETURN	34	34
RUPTURE BASIN	35	35
CONT HTR 1	36	36
CONT HTR 2	37	37
(N/O) READY TO LOAD	38	38
(N/O) LOAD DUMP	39	39
COMMON	40	40

(SEE NOTE 6)

(SEE NOTE 7)

AC SUPPLY TO CONTROL HEATER (OPT)

AUDIBLE ALARM (WHEN USED)

REMOTE EMERGENCY STOP SWITCH (WHEN USED)

DAYTANK LOW FUEL ALARM CONTACT

2-1 2-2 1-1 1-3 1-2 2-10 2-8 2-6 2-5 2-4 2-11 2-12 2-15 2-9 2-7 2-13 1-4 2-14 1-5 2-3

SPLICE BY INSTALLER

MOUNTED IN OTEC CABINET

FOR CUSTOMER USE (SEE NOTE 5)

BATTERY CHARGER ALARMS (OPTIONAL)

TB3

AC LINE FAILURE	C	41	41
	NC	42	42
	NO	43	43
HI BATTERY VOLTAGE	C	44	44
	NC	45	45
	NO	46	46
LOW BATTERY VOLTAGE	C	47	47
	NC	48	48
	NO	49	49
		50	50

DO NOT CONNECT TO THIS SIDE

2 AMP, 12 AMP, 15 AMP CHARGER

(NOTE 12) REMOTE TEMPERATURE SENSER INPUT

(NOTE 13) COMMON ALARM OUTPUT CONTACT RATING 2 AMP AT 30 VDC

REAR WALL OF CABINET

TB1

1	NO	TRANSFER SWITCH NORMAL AUXILIARY SWITCH
2	NC	
3	C	
4	NO	TRANSFER SWITCH EMERGENCY AUXILIARY SWITCH
5	NC	
6	C	
7		
8		

1-4 1-5

TB2

1	GND	(SEE NOTE 8)
2		
3	B+	
4	RMT	
5	REMOTE TEST	SEE NOTE 4
6	TRANSFER INHIBIT	
7	RETRANSFER INHIBIT	
8	COMMON	

1-3 1-1 1-2

REMOTE TEST SWITCH (WHEN USED)

RUN #1 SEE NOTE 1

RUN #2 SEE NOTE 2

RUN #2 SEE NOTE 2

RUN #2 SEE NOTE 2 SEE NOTE 11

ANNUNCIATOR 300-4510-XX

TB1

2-1	1	24VDC
	2	12VDC (SELECT ONE)
2-2	3	GND
2-3	4	GEN RUNNING
2-13	5	UTILITY ON
2-14	6	EPS LOADED
2-9	7	PRE-LOP
2-7	8	LOP
2-8	9	PRE-HET
2-6	10	HET
2-11	11	LET
2-5	12	OVERSPEED
2-4	13	OVERCRANK
2-10	14	NOT IN AUTO
2-12	15	CHARGER MALFUNCTION
	16	LOW FUEL
	17	CUSTOMER FAULT 1
	18	NO CONNECTION
	19	
	20	
	21	
	22	
	23	
	24	

TB2

	1	NO CONNECTION
	2	
	3	
2-15	4	LOW COOLANT
	5	CUSTOMER FAULT 2
	6	CUSTOMER FAULT 3
	7	
	8	

ANNUNCIATOR 300-5929

TB1

1	CUSTOMER FAULT 1
2	CUSTOMER FAULT 2
3	CUSTOMER FAULT 3
2-14 4	GENSET SUPPLYING LOAD
2-15 5	CHARGER AC FAILURE
2-12 6	LOW COOLANT LEVEL
2-13 7	LOW FUEL LEVEL
8	NORMAL UTILITY OR CHECK GENSET
9	
10	
11	
12	
13	
14	
2-2 15	GND
2-1 NC 16	BATT
17	GND

TB3

1
2
3
4
5
6
7
8

TB2

1	GND
2-10 2	NOT IN AUTO
2-3 3	GENSET RUNNING
4	
5	
6	
2-4 7	FAIL TO START
2-11 8	LOW COOLANT TEMP
2-8 9	PRE-HIGH ENGINE TEMP
2-6 10	HIGH ENGINE TEMP
2-9 11	PRE-LOW OIL PRESSURE
2-7 12	LOW OIL PRESSURE
2-5 13	OVERSPEED
14	

0541-0814 ANNUNCIATOR

2-1	3	B+
2-2	6	GND
	1	DATA1
	2	DATA2

(SEE NOTE 6)

(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR 300-4510 ANNUNCIATOR, RUN #2-GENSET TO ANNUNCIATOR-ALL LEADS, USE COL. A.
3. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH1 SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
4. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
5. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
6. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EEXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWOK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).
7. INPUTS FOR CUSTOMER FAULTS. GROUNDED SIGNAL REQUIRED TO ACTIVATE INPUT (MAX 50 MA.)
8. INSTALL JUMPER BETWEEN TB2-1 & TB2-2. FOR SETS WITH PCC 3100 CONTROL.
9. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
10. CONTACTS RATED: 2 AMPS AT 30 VDC OR 0.60 AMPS AT 120 VAC.
11. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
12. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
13. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT: LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).
14. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EEXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWOK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).

DO NOT SCALE PRINT

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

TOLERANCE UNLESS OTHERWISE SPECIFIED

	mm	Inch
DIM X	± 1	± .1
DIM .X	± 0.8	± .XX
DIM .XX	± 0.38	± .XXX
HOLE 0.99 - 4.99	+0.15/-0.08	+.006/-.003
HOLE 5.00 - 9.99	+0.20/-0.10	+.008/-.004
HOLE 10.00 - 17.49	+0.25/-0.13	+.010/-.005
HOLE 17.50 - 24.99	+0.30/-0.13	+.012/-.005

SW TO 0630_1974 D

COPIED FROM -

THIRD ANGLE PROJECTION

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR	J MILLER	02-13-04
MFG		
APPROVED	J MILLER	02-13-04

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

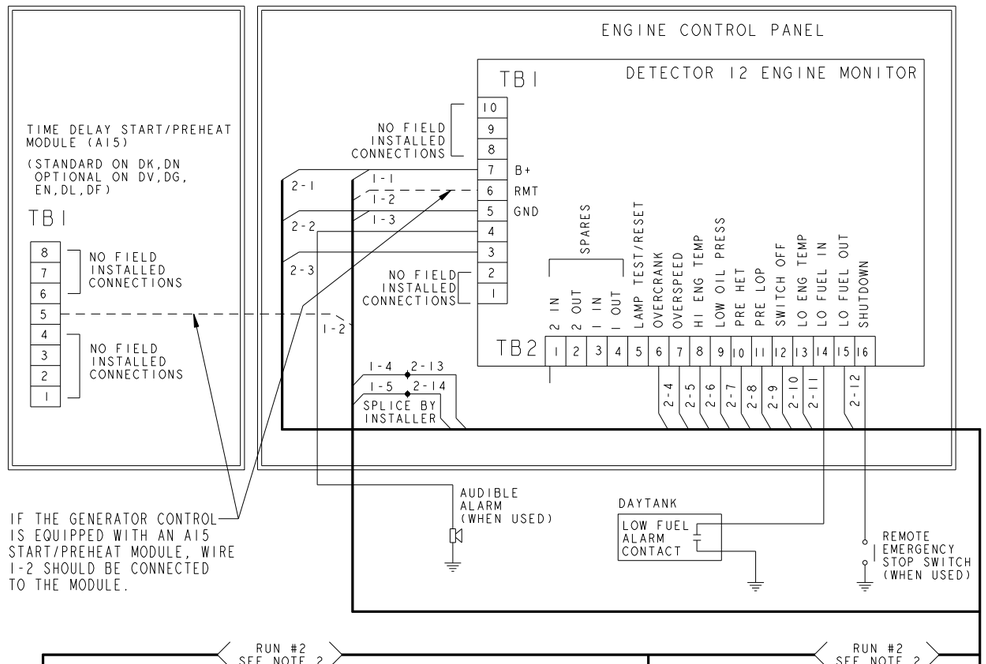
TITLE: WD-INTERCONNECTION

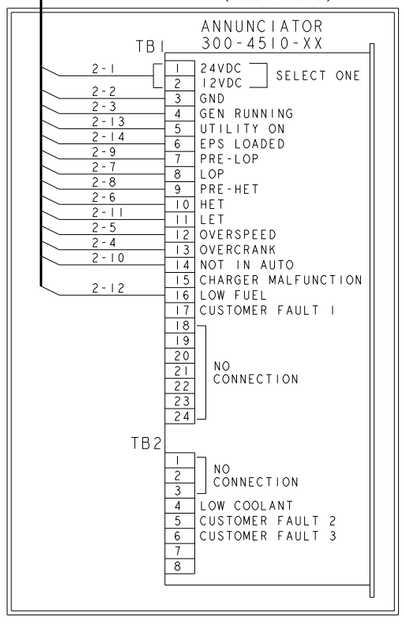
DWG NO: 0630_2810 | SHEET 2 of 10 | DRG SIZE D

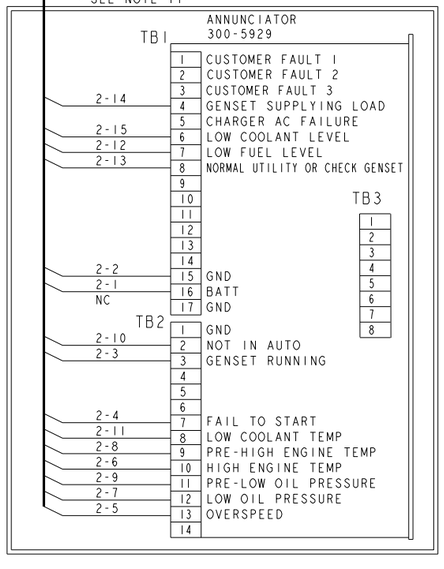
0630_2810	D	Pro/ENGINEER	METRIC DWG

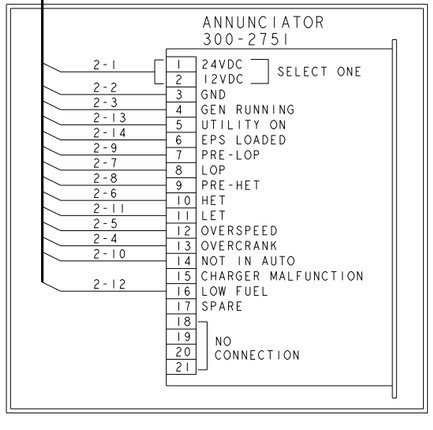
REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09

CUMMINS POWERGENERATOR SET WITH DETECTOR CONTROL

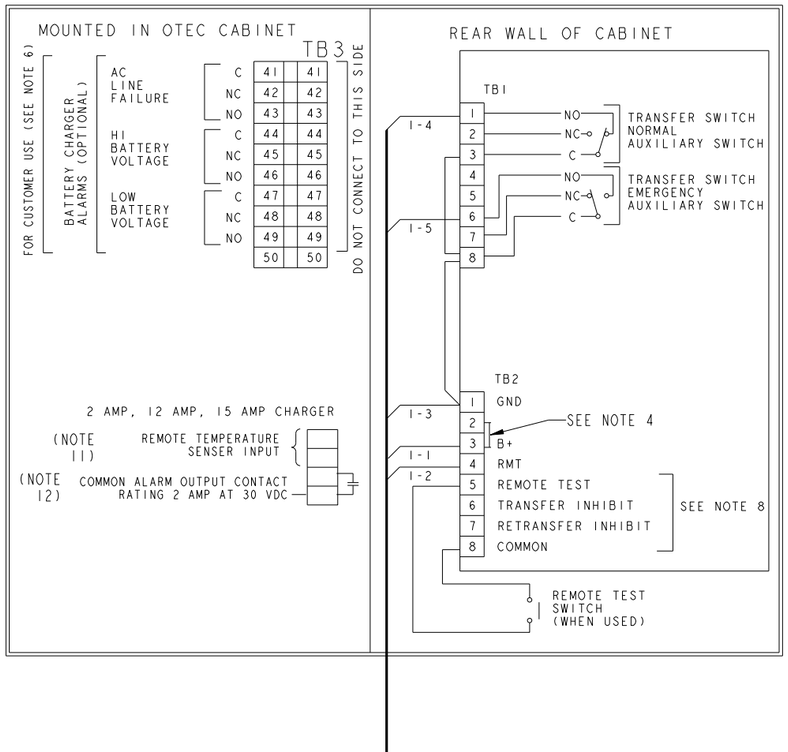








OTEC UTILITY TO GENSET



NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. RUN #2-GENSET TO ANNUNCIATOR-ALL LEADS, USE COL. A.
3. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH) SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
4. INSTALL JUMPER BETWEEN TB2-2 & TB2-3.
5. 300-4510-XX ANNUNCIATOR MAY BE USED ALSO. WIRE TB1 AS SHOWN.
6. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
7. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
8. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
9. CONTACTS RATED: 2 AMPS AT 30 VDC OR 0.60 AMPS AT 120 VAC.
10. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
11. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
12. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
    LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).
13. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EEXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWOK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).

(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	inch
	X ± 1 .X ± 0.8 .XX ± 0.38	.X ± .XX ± .XXX ±
HOLE	0.00-4.99 +0.15/-0.08 5.00-9.99 +0.20/-0.10 10.00-17.49 +0.25/-0.13 17.50-24.99 +0.30/-0.13	.004-.200 +.006/-.003 .201-.421 +.008/-.004 .422-.703 +.010/-.005 .704-.999 +.012/-.005

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

SW TO 0630_1974 D

COPIED FROM - -

THIRD ANGLE PROJECTION

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ MFG ☒	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON

OTEC

SITE CODE PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

TITLE: WD-INTERCONNECTION .

DWG NO 0630_2810

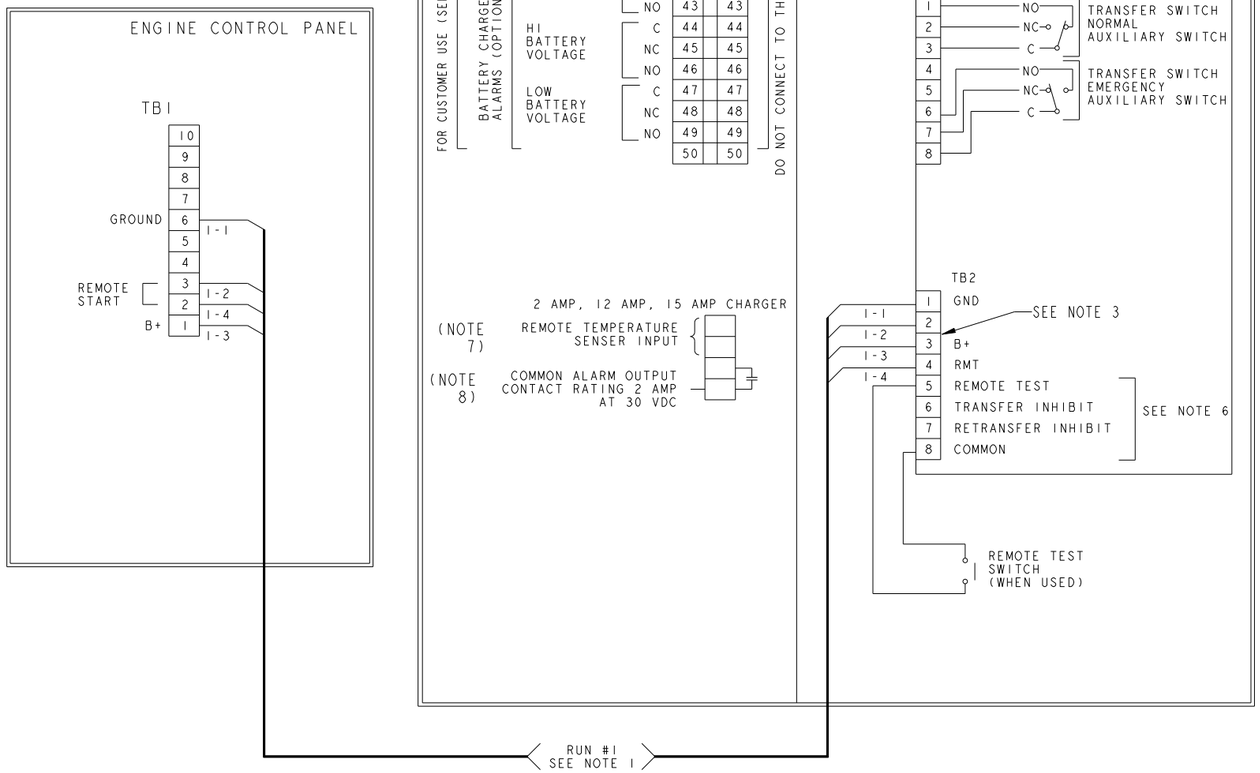
SHEET 3 OF 10

SIZE D

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09

OTEC
UTILITY TO GENSET

CUMMINS POWERGENERATOR SET
SERIES GGDB ALL SPECS, GN SPEC B,
DN SPEC B WITH TWO WIRE CONTROL



(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   - WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   - WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   - WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   - WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   - WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. DO NOT INSTALL JUMPER BETWEEN TB2-2 & TB2-3 OR BETWEEN TB2-2 & TB2-1.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
6. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
7. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
8. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
   LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	Inch
	X ± 1	.X ±
	.X ± 0.8	.XX ±
	.XX ± 0.38	.XXX±
HOLE	0.99- 4.99 ±0.15/-0.08	.004-.200 +.006/-.003
	5.00- 9.99 ±0.20/-0.10	.201-.421 +.008/-.004
	10.00-17.49 ±0.25/-0.13	.422-.703 +.010/-.005
	17.50-24.99 ±0.30/-0.13	.704-.999 +.012/-.005

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

SIM TO 0630_1974 D
COPIED FROM - -
THIRD ANGLE PROJECTION

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ MFG ☐	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

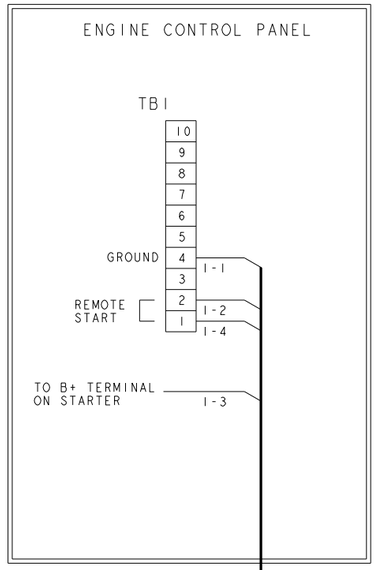
TITLE: WD-INTERCONNECTION .

DWG NO: 0630_2810 | SHEET 4 OF 10 | DWG SIZE D

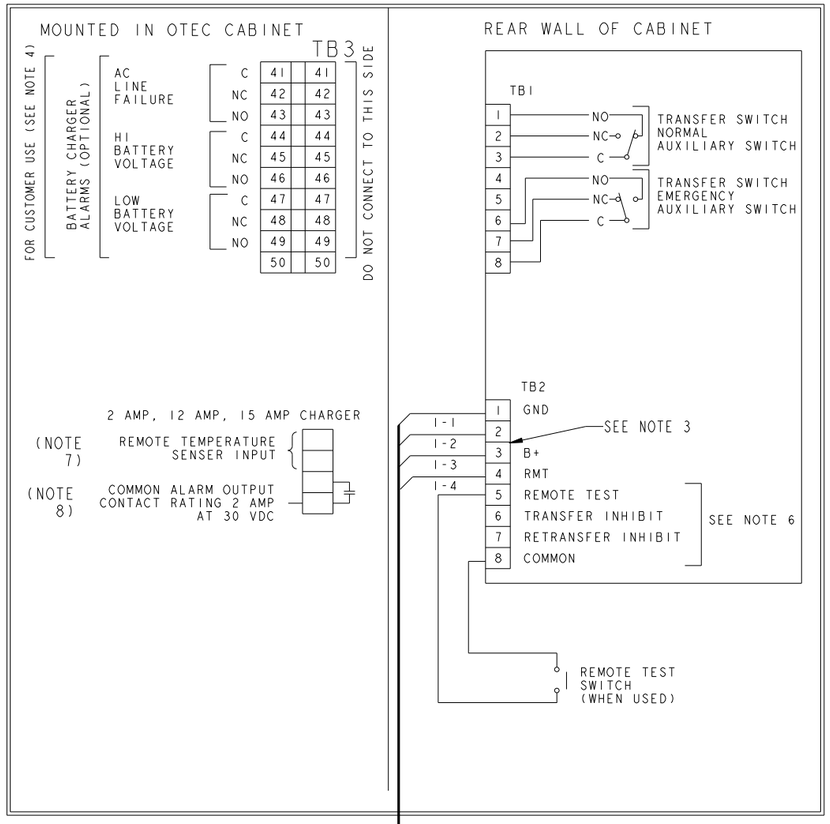
REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09

CUMMINS POWERGENERATOR SET

SERIES GN SPEC A,DN SPEC A WITH TWO WIRE CONTROL



OTEC UTILITY TO GENSET



(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. DO NOT INSTALL JUMPER BETWEEN TB2-2 & TB2-3 OR BETWEEN TB2-2 & TB2-1.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
6. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
7. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
8. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
   LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	inch
	X ± 1 .X ± 0.8 .XX ± 0.38	.X ± .XX ± .XXX±
HOLE	0.00-4.99 +0.15/-0.08 5.00-9.99 +0.20/-0.10 10.00-17.49 +0.25/-0.13 17.50-24.99 +0.30/-0.13	.004-.200 +.006/-.003 .201-.421 +.008/-.004 .422-.703 +.010/-.005 .704-.999 +.012/-.005

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

SW TO 0630_1974 D

COPIED FROM - -

THIRD ANGLE PROJECTION

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ MFG ☑	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

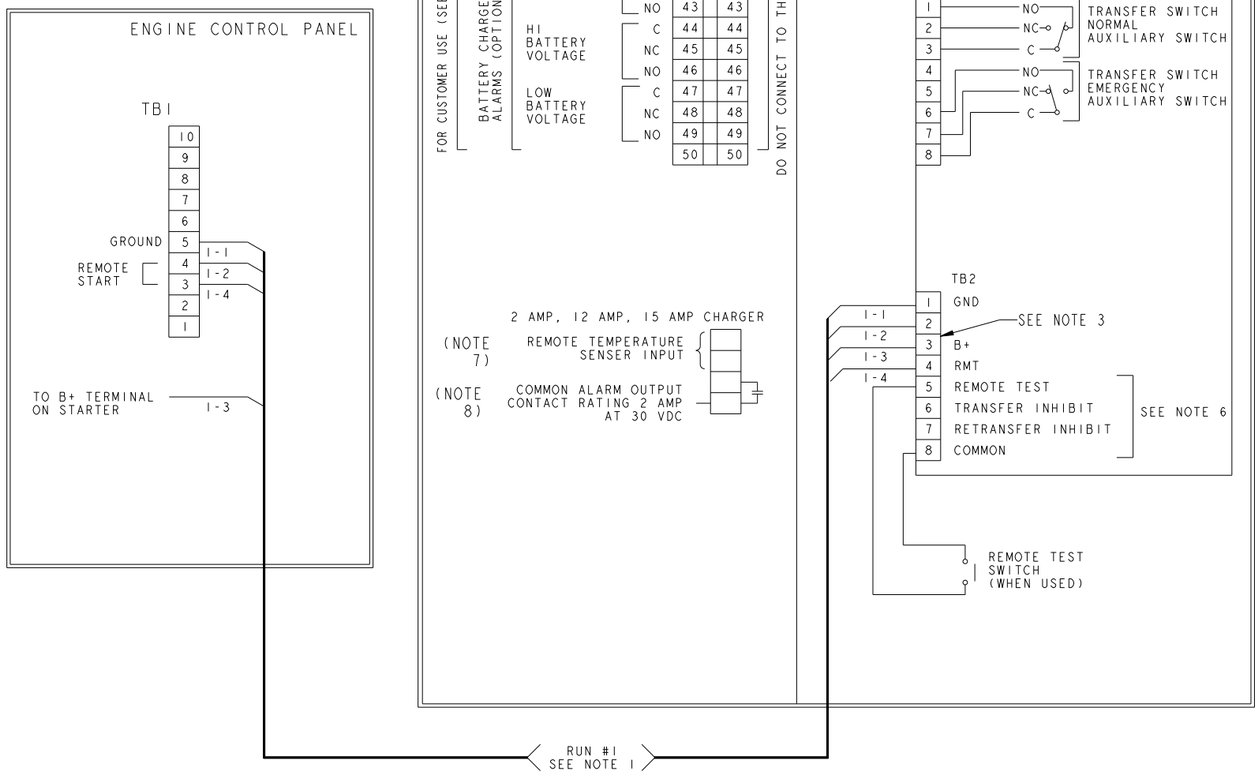
TITLE: WD-INTERCONNECTION .

DWG NO: 0630_2810 | SHEET 5 OF 10 | DWG SIZE D

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09

OTEC
UTILITY TO GENSET

CUMMINS POWERGENERATOR SET SERIES DG, GGFB, GGFC, GGHB, GGHC, GGHD WITH TWO WIRE CONTROL



(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. DO NOT INSTALL JUMPER BETWEEN TB2-2 & TB2-3 OR BETWEEN TB2-2 & TB2-1.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
6. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
7. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
8. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
   LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	inch
	X ± 1	.X ±
	.X ± 0.8	.XX ±
	.XX ± 0.38	.XXX ±
HOLE	0.99- 4.99 ±0.15/-0.08	.004-.200 +.006/-.003
	5.00- 9.99 ±0.20/-0.10	.201-.421 +.008/-.004
	10.00-17.49 ±0.25/-0.13	.422-.703 +.010/-.005
	17.50-24.99 ±0.30/-0.13	.704-.999 +.012/-.005

ANG TOL± 1.0 | DRAWN TO SCALE OF 1/1

SIM TO 0630_1974 D
COPIED FROM - -
THIRD ANGLE PROJECTION

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ MFG ☒	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

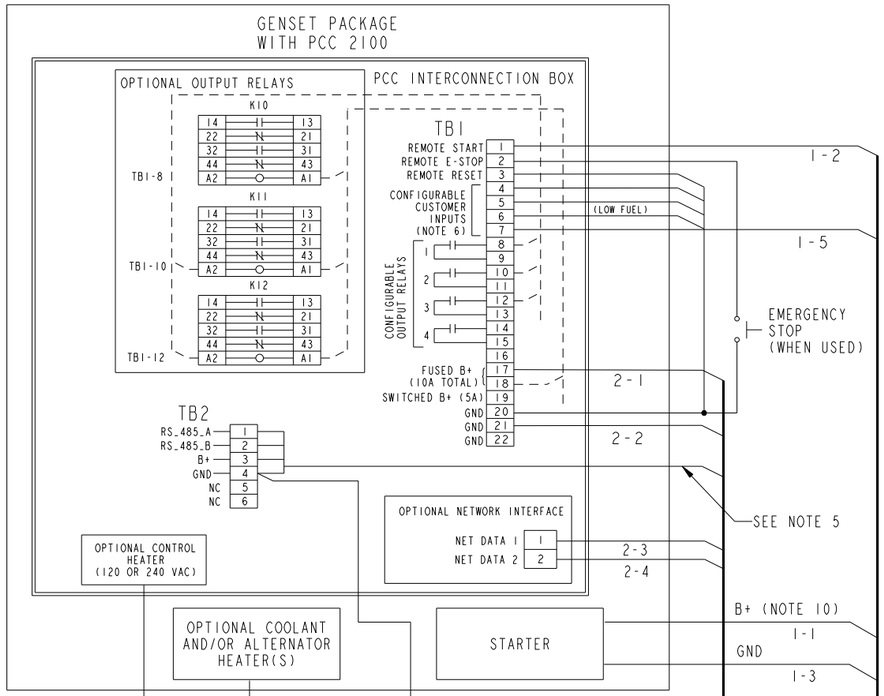
CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

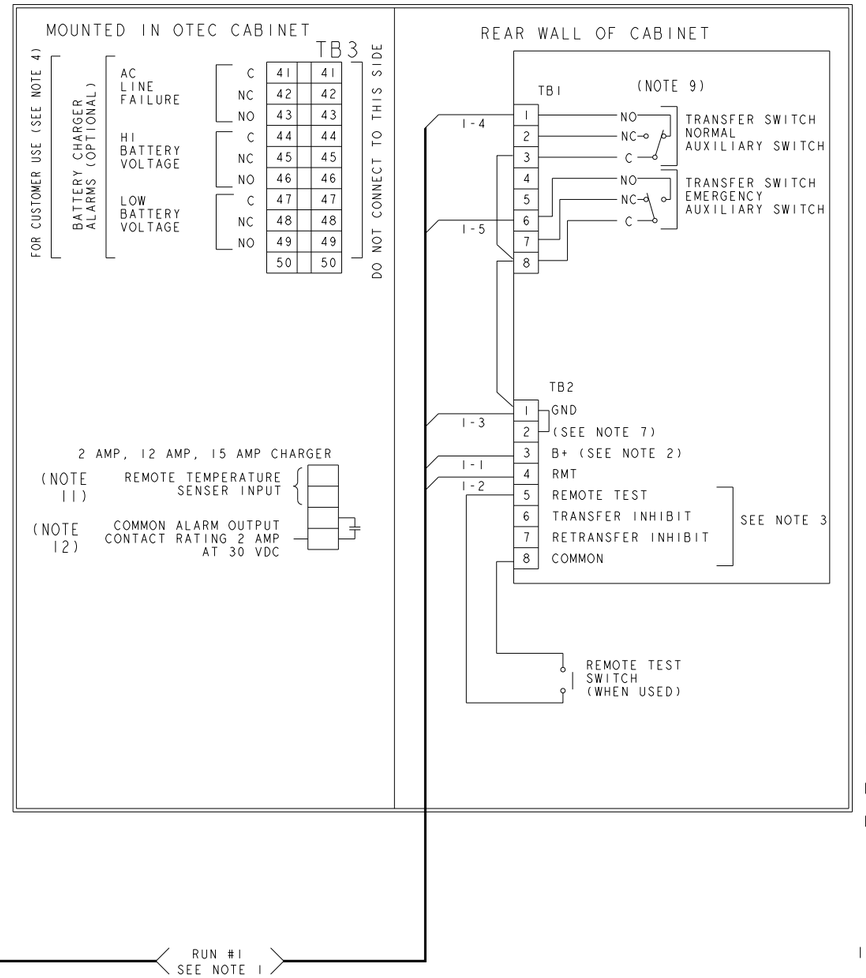
TITLE: WD-INTERCONNECTION

DWG NO: 0630_2810 | SHEET: 6 OF 10 | DWG SIZE: D

0630_2810	D	Pro/ENGINEER	METRIC DWG

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09





(NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8), FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT. CLOSE TO ACTIVATE.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. REFER TO ONAN 900-0529 POWERCOMMAND NETWORK INSTALLATION & OPERATION MANUAL FOR WIRING INSTRUCTIONS, WIRE SIZE, AND LENGTH. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO NETWORK. PART # 0334-1350 OR EQUAL.
6. CONNECTIONS TO TBI-4 THRU 7 ON GENSET ARE FOR CUSTOMER USE AND MAY BE CONFIGURED TO DISPLAY CUSTOM ALARM MESSAGES ON GENSET CONTROL. LOW FUEL IS REQUIRED FOR NFPA110 COMPLIANCE.
7. INSTALL JUMPER BETWEEN TB2-1 & TB2-2.
8.
9. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
10. CONFIGURATION SHOWN IS FOR ATS-MOUNTED BATTERY CHARGER. IF WALL-MOUNTED CHARGER IS USED, CONNECT B+ AND GND FROM CHARGER DIRECTLY TO BATTERY OR STARTER.
11. USE THE REMOTE TEMPERATURE PROBE (0193-0530).
12. THE FOLLOWING FAILURES WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
    LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).
13.
14. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
15. 0300-5929 COMMUNICATION ONLY AVAILABLE WITH PCC2100 SOFTWARE VERSION 2.400 OR HIGHER.

DO NOT SCALE PRINT

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	inch
	X ± 1	.X ±
	.X ± 0.8	.XX ±
	.XX ± 0.38	.XXX±

SCALE	mm	inch
	0.99- 4.99 ±0.15/-0.08	.004-.200 +.006/-.003
	5.00- 9.99 +0.20/-0.10	.201-.421 +.008/-.004
	10.00-17.49 +0.25/-0.13	.422-.703 +.010/-.005
	17.50-24.99 +0.30/-0.13	.704-.999 +.012/-.005

SW to 0630_1974 D

COPIED FROM - -

THIRD ANGLE PROJECTION

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR ☐ WFG ☑	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON OTEC

SITE CODE PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

TITLE WD-INTERCONNECTION

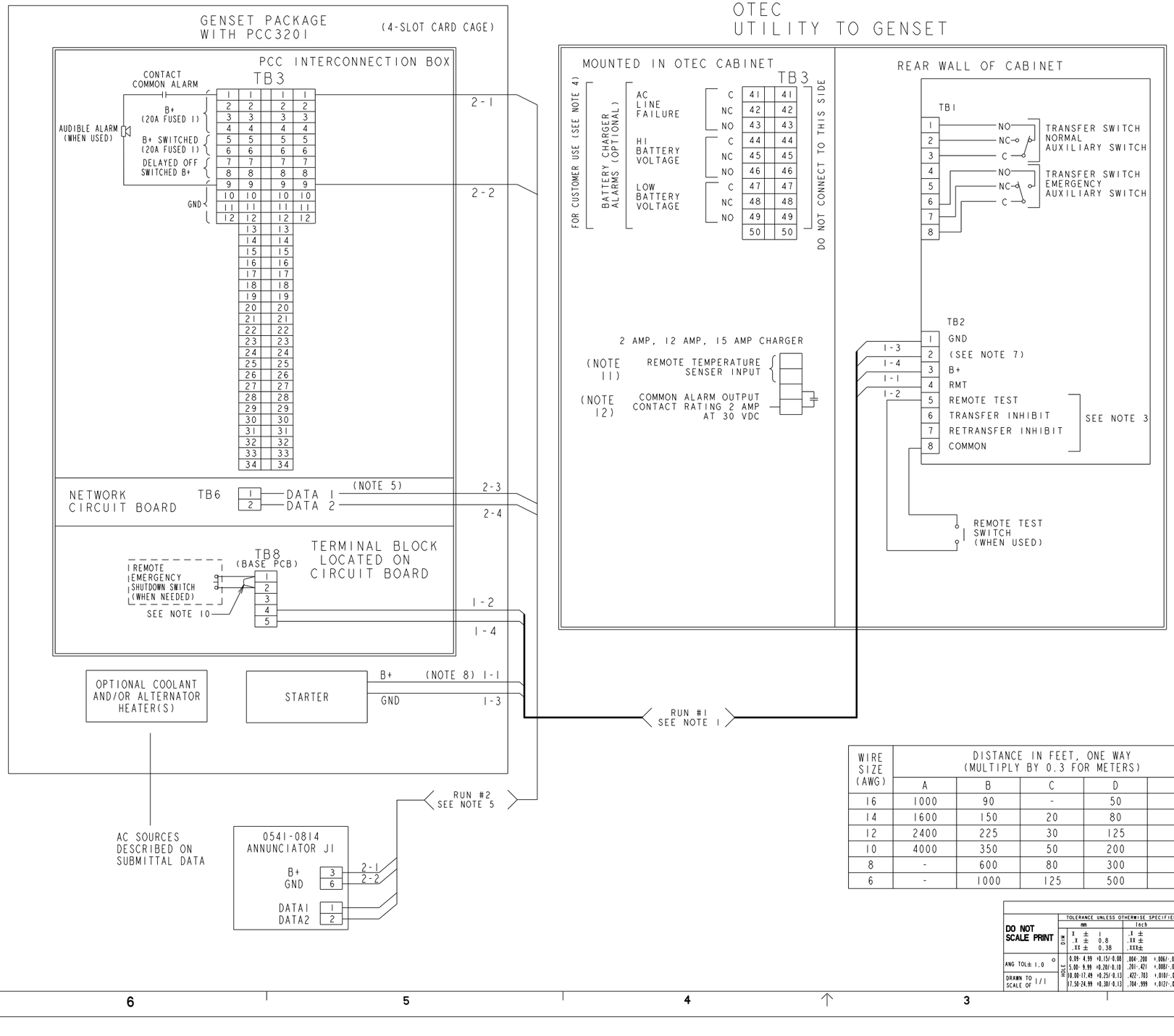
DWG NO 0630_2810

SHEET 7 OF 10

DWG SIZE D

0630_2810	D	Pro/ENGINEER	METRIC DWG

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	-	--------	-	JFM	RS	SCROGGINS	14JAN09



NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
3. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETRANSFER INHIBIT TO ACTIVATE.
4. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
5. REFER TO ONAN 900-0529 POWERCOMMAND NETWORK INSTALLATION & OPERATION MANUAL FOR WIRING INSTRUCTIONS, WIRE SIZE, AND LENGTH. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO NETWORK. PART # 0334-1350 OR EQUAL.
6. INPUTS FOR CUSTOMER FAULTS. GROUNDED SIGNAL REQUIRED TO ACTIVATE INPUT (MAX 50 MA.)
7. ON PCC 3200 CONTROLS NO JUMPER IS REQ'D BETWEEN TB1-1 & TB1-2.
8. CONFIGURATION SHOWN IS FOR ATS-MOUNTED BATTERY CHARGER. IF WALL-MOUNTED CHARGER IS USED, CONNECT B+ AND GND FROM CHARGER DIRECTLY TO BATTERY OR STARTER.
9. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
10. OPEN CONNECTION TO INITIATE EMERGENCY STOP THESE TERMINALS MUST BE SHORTED TOGETHER IF REMOTE EMERGENCY STOP OPTION NOT USED. JUMPER SHOWN BETWEEN TB8-1 AND TB8-2 NOT SUPPLIED WITH UNIT.
11. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
12. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
    LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

DIM	mm	inch
	X ± 1	.X ±
	.X ± 0.8	.XX ±
	.XX ± 0.38	.XXX ±
HOLE	0.09-4.99 +0.15/-0.08	.004-.200 +.006/-.003
	5.00-9.99 +0.20/-0.10	.201-.421 +.008/-.004
	10.00-17.49 +0.25/-0.13	.422-.703 +.010/-.005
	17.50-24.99 +0.30/-0.13	.704-.999 +.012/-.005

ANG TOL± 1.0 °

DRAWN TO SCALE OF 1/1

SIM TO 0630_1974 D

COPIED FROM - -

THIRD ANGLE PROJECTION

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR □ MFG ☑	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

TITLE: WD-INTERCONNECTION .

DWG NO: 0630_2810

SHEET: 8 OF 10

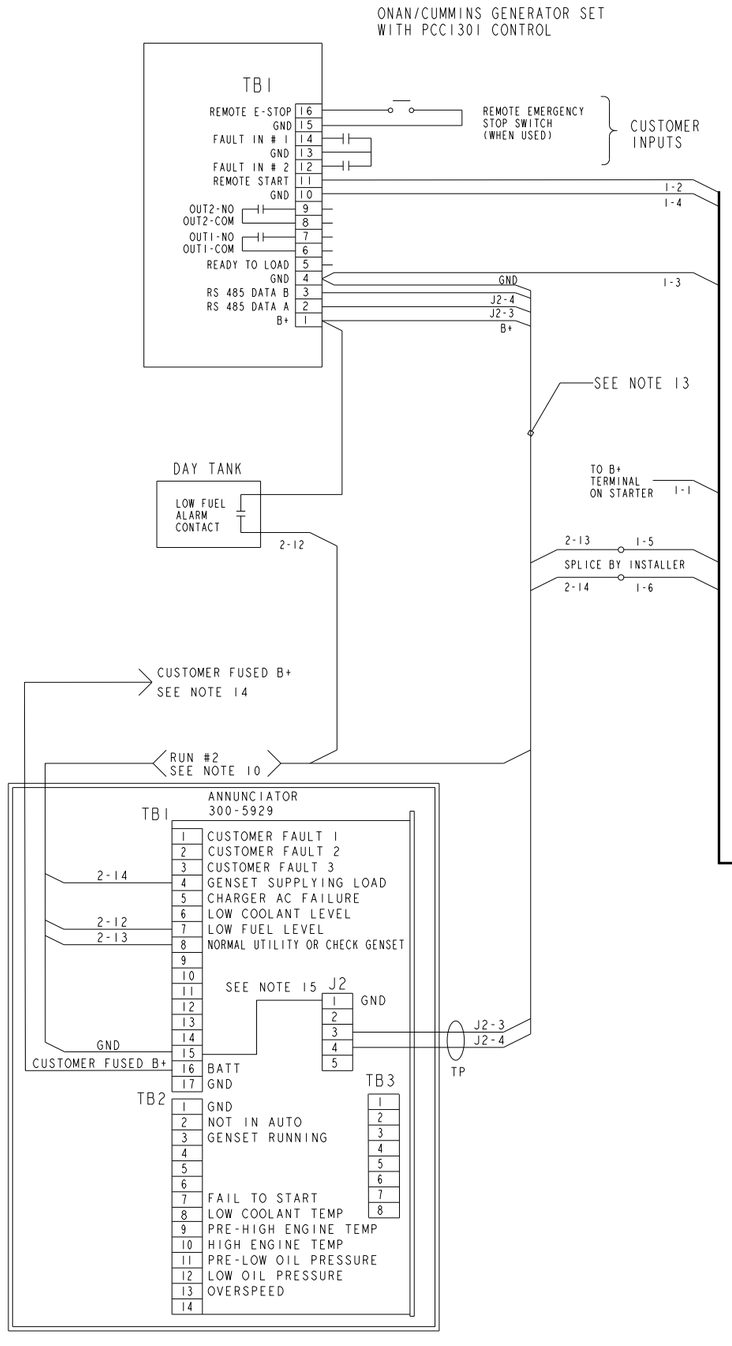
SIZE: D

0630_2810	D	Pro/ENGINEER	METRIC DWG

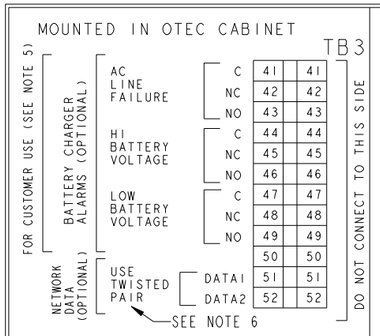
REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	1	NOTE WAS ONAN/CUMMINS GENERATOR	-	J.F.M	RS	SCROGGINS	14JAN09
			SET WITH PCC1301 CONTROL	-	J.F.M	RS	SCROGGINS	14JAN09

OTEC UTILITY TO GENSET

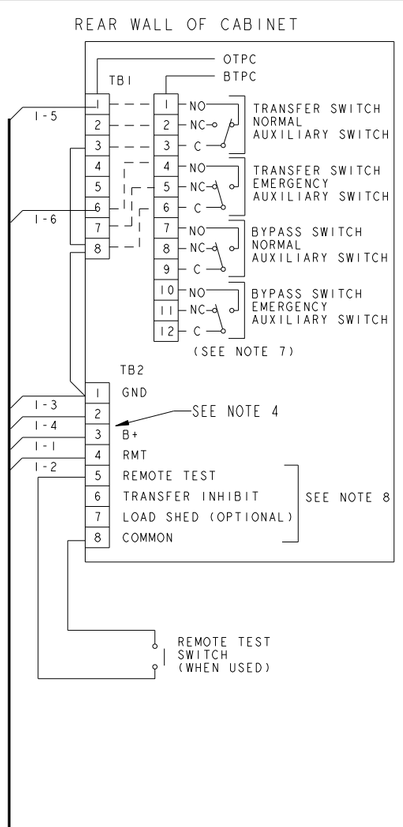
ONAN/CUMMINS GENERATOR SET
WITH PCC1301 CONTROL



MOUNTED IN OTEC CABINET



REAR WALL OF CABINET



WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. RUN #2-GENSET TO ANNUNCIATOR-ALL LEADS, USE COL. A
3. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
4. DO NOT INSTALL JUMPER BETWEEN TB2-2 & TB2-3 AND TB2-1 & TB2-2.
5. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
6. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO THE NETWORK.
7. TRANSFER SWITCH SHOWN CLOSED TO NORMAL BYPASS SWITCH SHOWN IN NEUTRAL POSITION.
8. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND LOAD SHED. CLOSE TO ACTIVATE.
9. CONTACTS RATED: 2 AMPS AT 30 VDC OR 0.60 AMPS AT 120 VAC.
10. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
11. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
12. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
    LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).
13. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EEXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWOK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).
14. CUSTOMER SUPPLIED FUSED B+ SOURCE. USE AT LEAST 5 AMP FUSE, WIRE SIZE, USE COL.A.
15. J2-1 CAN BE INTERCONNECTED TO PROVIDE A COMMON LOGIC REFERANCE WHEN APPLICABLE. J2-1 CAN BE USED TO INTERCONNECT TWO CONTROLS WHERE ONE OF THE CONTROLS USES A FLOATING DC POWER SUPPLY NOT CONNECTED TO EARTH GROUND AND THE OTHER IS CONNECTED TO EARTH GROUND. OTHERWISE, USING J2-1 CAN INDUCE A GROUND LOOP.

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED
mm: X ±1, .X ±0.8, .XX ±0.38
inch: .X ±, .XX ±, .XXX±
HOLE: 3.99-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13; .004-.200 +.006/-.003; .201-.421 +.008/-.004; .422-.703 +.010/-.005; .704-.999 +.012/-.005
ANG TOL± 1.0°
DRAWN TO SCALE OF 1/1

SW TO 0630_1974 D
COPIED FROM -
THIRD ANGLE PROJECTION

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	REF DES

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR / MFG	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

MODEL FIRST USED ON: OTEC

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

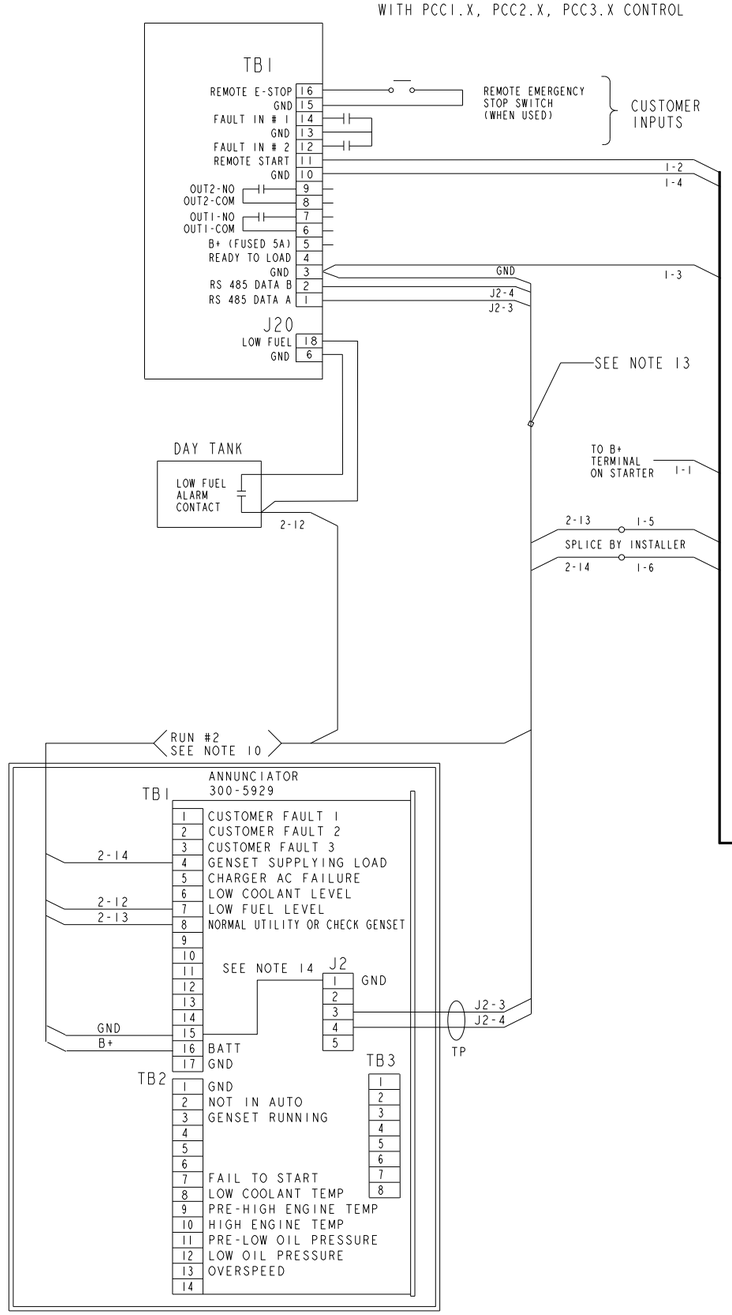
TITLE: WD-INTERCONNECTION .

DWG NO: 0630_2810 | SHEET: 9 OF 10 | DWG SIZE: D

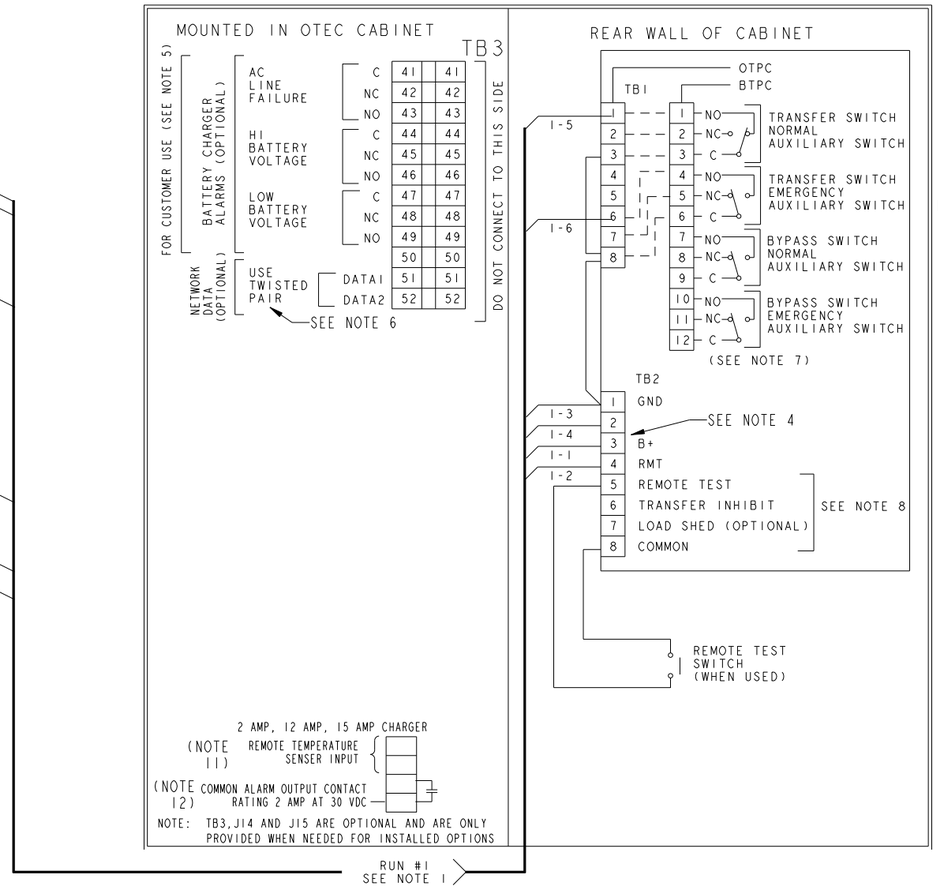
0630_2810 | D | Pro/ENGINEER | METRIC DWG

REL NO	LTR	NO	REVISION	ZONE	DR	CHKR	APPROVED	DATE
ECO-103227	F	2	ADDED THIS SHEET	-	JFM	RS	SCROGGINS	14JAN09

ONAN/CUMMINS GENERATOR SET WITH PCC1.X, PCC2.X, PCC3.X CONTROL



OTEC UTILITY TO GENSET



WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)				
	A	B	C	D	E
16	1000	90	-	50	-
14	1600	150	20	80	5
12	2400	225	30	125	10
10	4000	350	50	200	15
8	-	600	80	300	25
6	-	1000	125	500	40

NOTES:

1. WIRE SIZES MUST BE AS FOLLOWS:
   RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE MUST BE INCREASED IF A BATTERY CHARGER IS INSTALLED IN THE SWITCH.
   WITH NO BATT CHARGER-LEADS 1-1, -2, -3, -4, -5 USE COL A.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1, &1-3 USE COL B.
   WITH 12/15 AMP CHARGER MAXIMUM VOLTAGE DROP OF 1.5 VOLTS, LEADS 1-1 & 1-3 USE COL. C.
   WITH 2 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, &1-3 USE COL D.
   WITH 12/15 AMP CHARGER, MAXIMUM VOLTAGE DROP OF 0.75 VOLTS, LEADS 1-1, & 1-3 USE COL E. TO MEET THE NFPA110 REQUIREMENT TO RETURN A FULLY DISCHARGED BATTERY TO 100% OF IT'S AMPERE-HOUR RATING WITHIN 24 HOURS USE COL. E.
2. RUN #2-GENSET TO ANNUNCIATOR-ALL LEADS, USE COL. A
3. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
4. DO NOT INSTALL JUMPER BETWEEN TB2-2 & TB2-3 AND TB2-1 & TB2-2.
5. CONTACTS RATED: 4 AMPS AT 30 VDC OR 120V MAX.
6. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO THE NETWORK.
7. TRANSFER SWITCH SHOWN CLOSED TO NORMAL BYPASS SWITCH SHOWN IN NEUTRAL POSITION.
8. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND LOAD SHED. CLOSE TO ACTIVATE.
9. CONTACTS RATED: 2 AMPS AT 30 VDC OR 0.60 AMPS AT 120 VAC.
10. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
11. USE THE INVENTER REMOTE TEMPERATURE PROBE (0193-0530).
12. THE FOLLOWING FAILS WILL CAUSE A BATTERY CHARGER ALARM OUTPUT:
    LOW BATTERY VOLTAGE, HIGH BATTERY VOLTAGE, LOW AC INPUT VOLTAGE, HIGH AC INPUT VOLTAGE OVERCURRENT, HIGH CHARGER TEMPERATURE, BATTERY FAILURE, HIGH BATTERY TEMPERATURE (NOT AVAILABLE ON 2 AMP CHARGER).
13. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EEXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWOK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).
14. J2-1 CAN BE INTERCONNECTED TO PROVIDE A COMMON LOGIC REFERANCE WHEN APPLICABLE. J2-1 CAN BE USED TO INTERCONNECT TWO CONTROLS WHERE ONE OF THE CONTROLS USES A FLOATING DC POWER SUPPLY NOT CONNECTED TO EARTH GROUND AND THE OTHER IS CONNECTED TO EARTH GROUND. OTHERWISE, USING J2-1 CAN INDUCE A GROUND LOOP.

ITEM	PART NO	DWG SIZE	DESCRIPTION OR MATERIAL	QTY	REF DES

DO NOT SCALE PRINT

TOLERANCE UNLESS OTHERWISE SPECIFIED

	mm	inch
DIM X	± 1	± .1
DIM .X	± 0.8	± .XX
DIM .XX	± 0.38	± .XXX
ANG TOL	± 1.0°	
HOLE 0.00-4.99	+0.15/-0.08	+.006/-.003
HOLE 5.00-9.99	+0.20/-0.10	+.008/-.004
HOLE 10.00-17.49	+0.25/-0.13	+.010/-.005
HOLE 17.50-24.99	+0.30/-0.13	+.012/-.005

DRAWN TO SCALE OF 1/1

SIM TO 0630_1974 D
COPIED FROM - -

THIRD ANGLE PROJECTION

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ANSI Y14.5M-1982

MODEL FIRST USED ON: OTEC

	NAME	DATE
DR	G_COLLEEN	02-13-04
CHKR / MFG	J MILLER	02-13-04
APPROVED	J MILLER	02-13-04

SITE CODE: PGA

CUMMINS POWER GENERATION
1400 73RD AVE NE
MINNEAPOLIS, MINNESOTA 55432

TYPE: WD-INTERCONNECTION .

DWG NO: 0630_2810 | SHEET 10 OF 10 | SIZE D