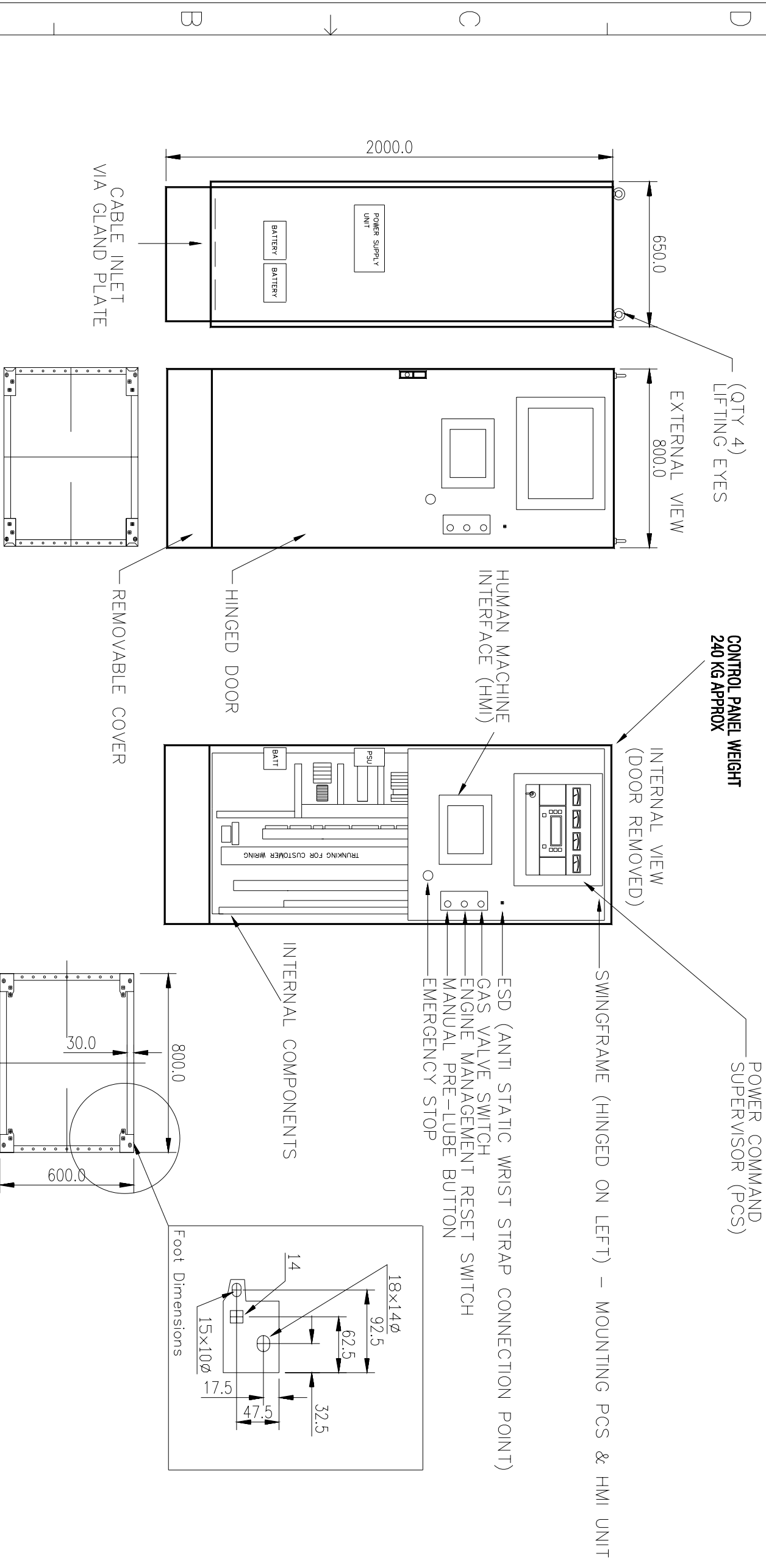


03005626 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6697	B	1	ECOR RELEASE ONLY	-	K.Williams	03/03/03



TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE	TITLE	DWG No.	SHEET	DWG SIZE
0.09-4.99 = ± 0.15 / -0.08	XEB086	M.Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK	0300-5626	1 OF 1	A3
5.00-9.99 = ± 0.20 / -0.10		P.Gosel	20/03/02				
10.00-17.49 = ± 0.25 / -0.13		R.Hozelton	03/03/03				
17.50-24.99 = ± 0.30 / -0.13							

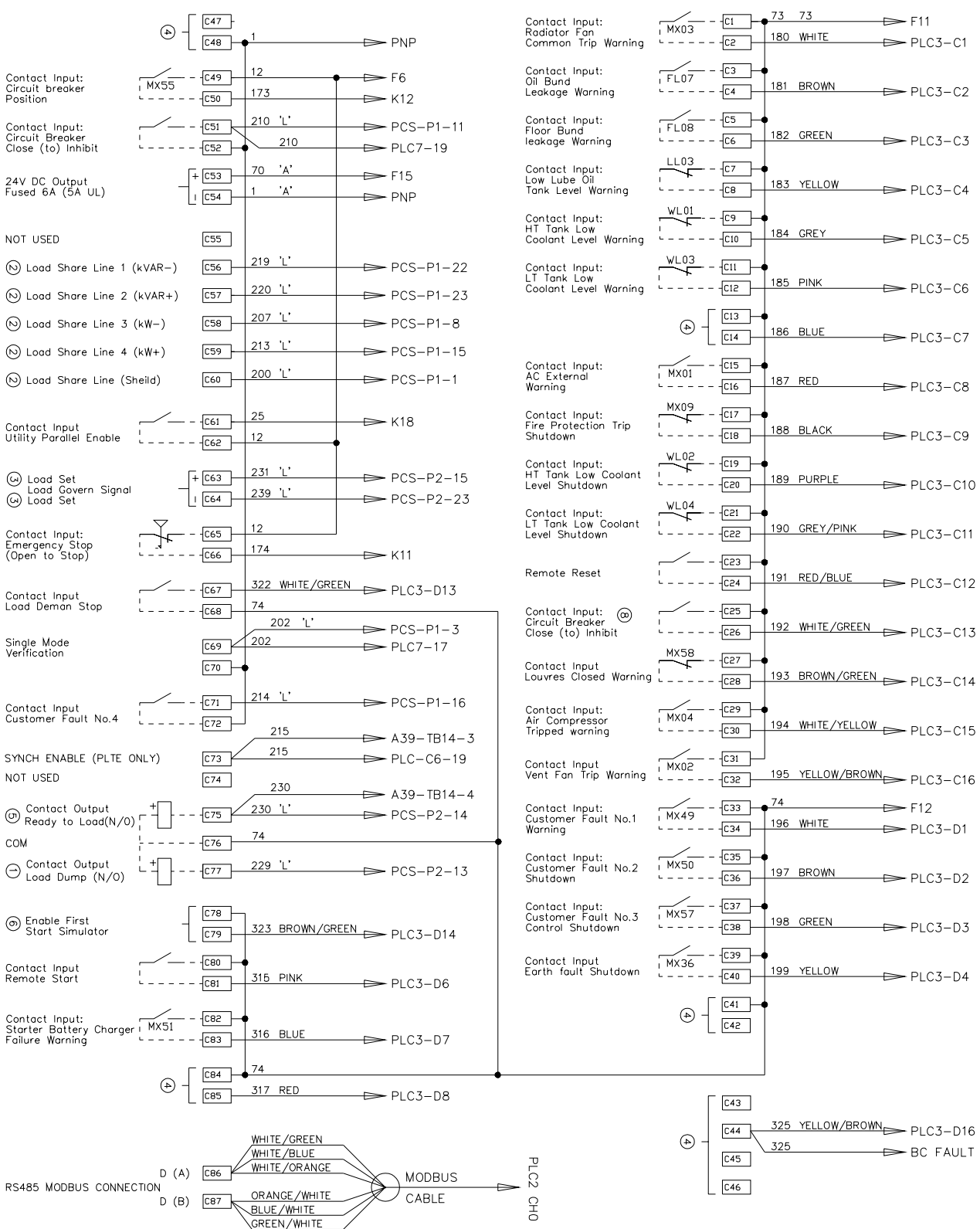
AutocAD DO NOT SCALE PRINT ANGLE TOL. $\pm 1.0^\circ$ SCALE: 1:1

0630-2367 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK5123	B	1	C55,75,76,78,79 & NOTE ALTD	2/3B	K.Williams	10/07/02
ERK5903	C	1	TAG & WIRES ADDED TO C69	2B	K.Williams	21/10/02
ERK6578	D	1	C78/79 & NOTE 6 ADDED	1B	K.Williams	31/01/03
ERK6750	E	1	K19 DELD C73/74 (CAR-1477)	2B	K.Williams	10/03/03
ERK7571	F	1	AC External is made a Warning	2C	CS	18/07/03
ERK7571	F	2	Load Share Line Polarity swapped	3B	CS	18/07/03

Customer Connection Notes:

- 0V DC output (switched). Output goes high if an overload or under frequency condition occurs. Max. rating 2A, occurs.
- Parallel load share lines (0-1mA). Use 4 conductor shielded cable, 1sqmm stranded. Maximum run 152 metres.
- Analogue 0-5V DC inputs to control genset load in utility paralleling mode.
- Not for use by customer.
- 0V DC output (switched). Output goes high when genset is ready to load, ie up to speed & volts. Max. rating 2A.
- Link C78/79 to enable Master First Start Simulator function ONLY enable on Single Genset / PLTE applications.
- Terminals are suitable for cable upto a maximum size of 2.5mm² (16AWG).
- This is the preferred input for the CB inhibit Control (used to be C51 & C52).

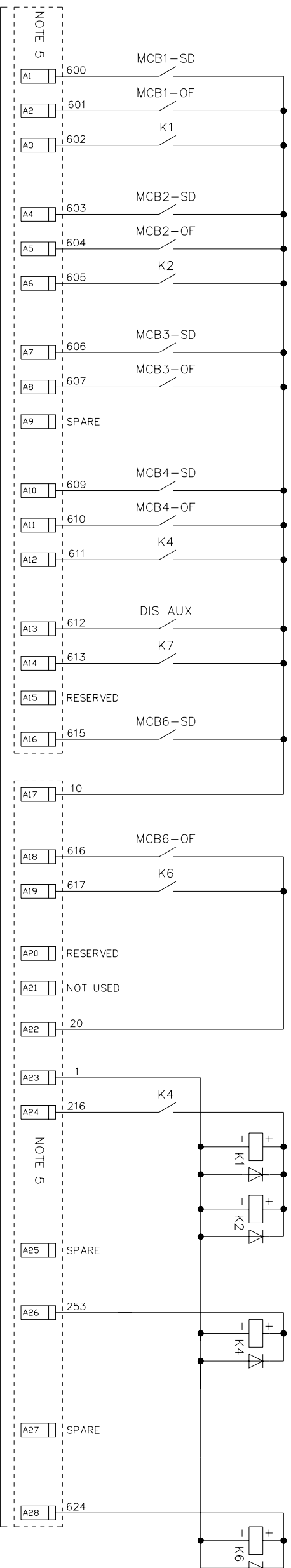


TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	DATE	TITLE
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-74.99 = ±0.30/-0.13	COPIED FROM XE8066	M.Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
DIM X.XX = ±0.5 X.XXX = ±0.15	THIRD ANGLE PROJECTION	P.Goessel	10/03/03	WD-GENSET
APPROVED	R.Hozellon	FIRST USED ON	10/03/03	

AutocAD DO NOT SCALE PRINT ANGLE TOL. ±1.0° SCALE: 1 OF 1

0630-2366 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerold	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02



TO GEN CONTROL PANEL

WIRING NOTES

1. ALL WIRING TO BE TRI-RATED SWITCHGEAR WIRE, UL STYLE 1015, CSA TYPE TEW, BS6231, TO COMPLY WITH BOTH UL AND BS REQUIREMENTS.
2. AC AND DC WIRING TO BE SEGREGATED.
3. MINIMUM WIRING SIZE TO BE NOT LESS THAN 0.5 sq.mm. UNLESS OTHERWISE STATED.
 'A' SIZE NOT LESS THAN 1.0 sq.mm.
 'B' SIZE NOT LESS THAN 2.5 sq.mm.
 'C' SIZE NOT LESS THAN 4.0 sq.mm.
 'D' SIZE NOT LESS THAN 6.0 sq.mm.
4. WIRING TO BE COLOUR CODED AS SHOWN. NON COLOUR CODED CABLE TO BE GREY. WHERE ABBREVIATIONS ARE USED
 BK = BLACK
 OR = ORANGE
 GN/Y = GREEN/YELLOW
 ALL EARTH CABLES TO BE GREEN/YELLOW WHETHER INDICATED ON THE DRAWINGS OR NOT.
5. INTERNAL CONNECTIONS TO TERMINALS TO BE BY 11 AND 16 WAY CONNECTORS. CONNECTORS TO BE FITTED INTO THE SIDE OF THE TERMINALS.
6. TERMINALS 3L1, 3N, 9L1, 9N AND MCB3 TO BE GROUPED TOGETHER AND PROTECTED BY PERSPEX SHIELD.

REF	DESCRIPTION
DIS	ISOLATOR, 63A
K1	CONTACTOR, ENGINE HEATER CONTROL
K2	CONTACTOR, ENGINE HEATER CONTROL
K4	CONTACTOR, COOLANT CIRC PUMP CONTROL
K6	CONTACTOR, OIL PRIMING PUMP CONTROL
K7	RELAY, UNDERVOLTAGE SENSING
MCB1	MCB, HEATER 1
MCB2	MCB, HEATER 2
MCB3	MCB, ALTERNATOR HEATER
MCB4	MCB, COOLANT CIRC. PUMP
MCB6	MCB, OIL PRIMING PUMP
MCB7	MCB, UNDERVOLTAGE SENSING RELAY
MCB8	MCB, LOCAL AC SUPPLY
MCB9	MCB, LOCAL AC SUPPLY

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	DATE
DIM X X.X X.XX = ±0.5 = ±0.3 = ±0.15	THIRD ANGLE PROJECTION	M.Fitzgerold	16/01/02
LI 10.00-17.49 = +0.25/-0.13 17.50-24.99 = +0.30/-0.13	THIS DOCUMENT IS THE PROPERTY OF CUMMINS AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	P.Goessel	20/03/02
ANGLE TOL. SCALE:	±1.0°	R.Hozzelton	18/12/02

COMPONENTS LIST	DRWN	DATE	TITLE
DIS	M.Fitzgerold	16/01/02	Cummins Power Generation Columbus Avenue, Monston, Ramsgate Kent, CT12 5BF, England, UK
K1	P.Goessel	20/03/02	WD - GENSET
K2	R.Hozzelton	18/12/02	
K4			
K6			
K7			
MCB1			
MCB2			
MCB3			
MCB4			
MCB6			
MCB7			
MCB8			
MCB9			

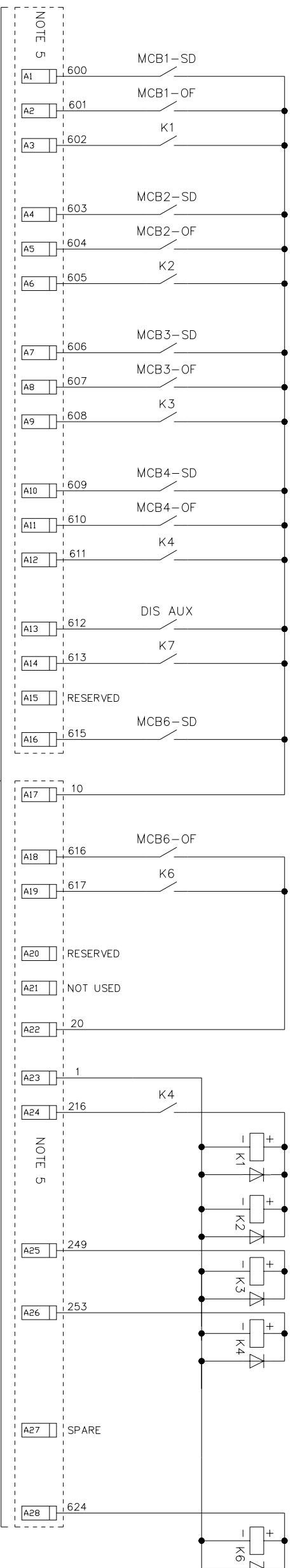
Autocad	DO NOT SCALE PRINT	ANGLE TOL.	SCALE:	±1.0°

PGK	DWG No.	0630-2366	SHEET	1 OF 1	DWG SIZE	A3

0630-2365

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02



TO GEN CONTROL PANEL

WIRING NOTES

1. ALL WIRING TO BE TRI-RATED SWITCHGEAR WIRE, UL STYLE 1015, CSA TYPE TEW, BS6231, TO COMPLY WITH BOTH UL AND BS REQUIREMENTS.
2. AC AND DC WIRING TO BE SEGREGATED.
3. MINIMUM WIRING SIZE TO BE NOT LESS THAN 0.5 sq.mm. UNLESS OTHERWISE STATED.
 - 'A' SIZE NOT LESS THAN 1.0 sq.mm.
 - 'B' SIZE NOT LESS THAN 2.5 sq.mm.
 - 'C' SIZE NOT LESS THAN 4.0 sq.mm.
 - 'D' SIZE NOT LESS THAN 6.0 sq.mm.
4. WIRING TO BE COLOUR CODED AS SHOWN. NON COLOUR CODED CABLE TO BE GREY. WHERE ABBREVIATIONS ARE USED BK = BLACK OR = ORANGE GN/Y = GREEN/YELLOW ALL EARTH CABLES TO BE GREEN/YELLOW WHETHER INDICATED ON THE DRAWINGS OR NOT.
5. INTERNAL CONNECTIONS TO TERMINALS TO BE BY 11 AND 16 WAY CONNECTORS. CONNECTORS TO BE FITTED INTO THE SIDE OF THE TERMINALS.

REF	DESCRIPTION
DIS	ISOLATOR, 63A
K1	CONTACTOR, ENGINE HEATER CONTROL
K2	CONTACTOR, ENGINE HEATER CONTROL
K3	CONTACTOR, ALTERNATOR HEATER CONTROL
K4	CONTACTOR, COOLANT CIRC. PUMP CONTROL
K6	CONTACTOR, OIL PRIMING PUMP CONTROL
K7	RELAY, UNDERVOLTAGE SENSING
MCB1	MCB, HEATER 1
MCB2	MCB, HEATER 2
MCB3	MCB, ALTERNATOR HEATER
MCB4	MCB, COOLANT CIRC. PUMP
MCB6	MCB, OIL PRIMING PUMP
MCB7	MCB, UNDERVOLTAGE SENSING RELAY
MCB8	MCB, LOCAL AC SUPPLY
MCB9	MCB, LOCAL AC SUPPLY

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE	TITLE	DWG No.	SHEET	DWG SIZE
DIM X X.X X.XX = ±0.5 = ±0.3 = ±0.15	XEB063 	M.Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK	0630-2365	1 of 1	A3
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13	THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	P.Goessel	20/03/02	WD- GENSET	0630-2365	1 of 1	A3
DRWN CHECKED APPROVED	M.Fitzgerald P.Goessel R.Hozzelton	NAME M.Fitzgerald P.Goessel R.Hozzelton	DATE 16/01/02 20/03/02 18/12/02	TITLE WD- GENSET	DWG No. 0630-2365	SHEET 1 of 1	DWG SIZE A3

4

3

2

1

0630-2364

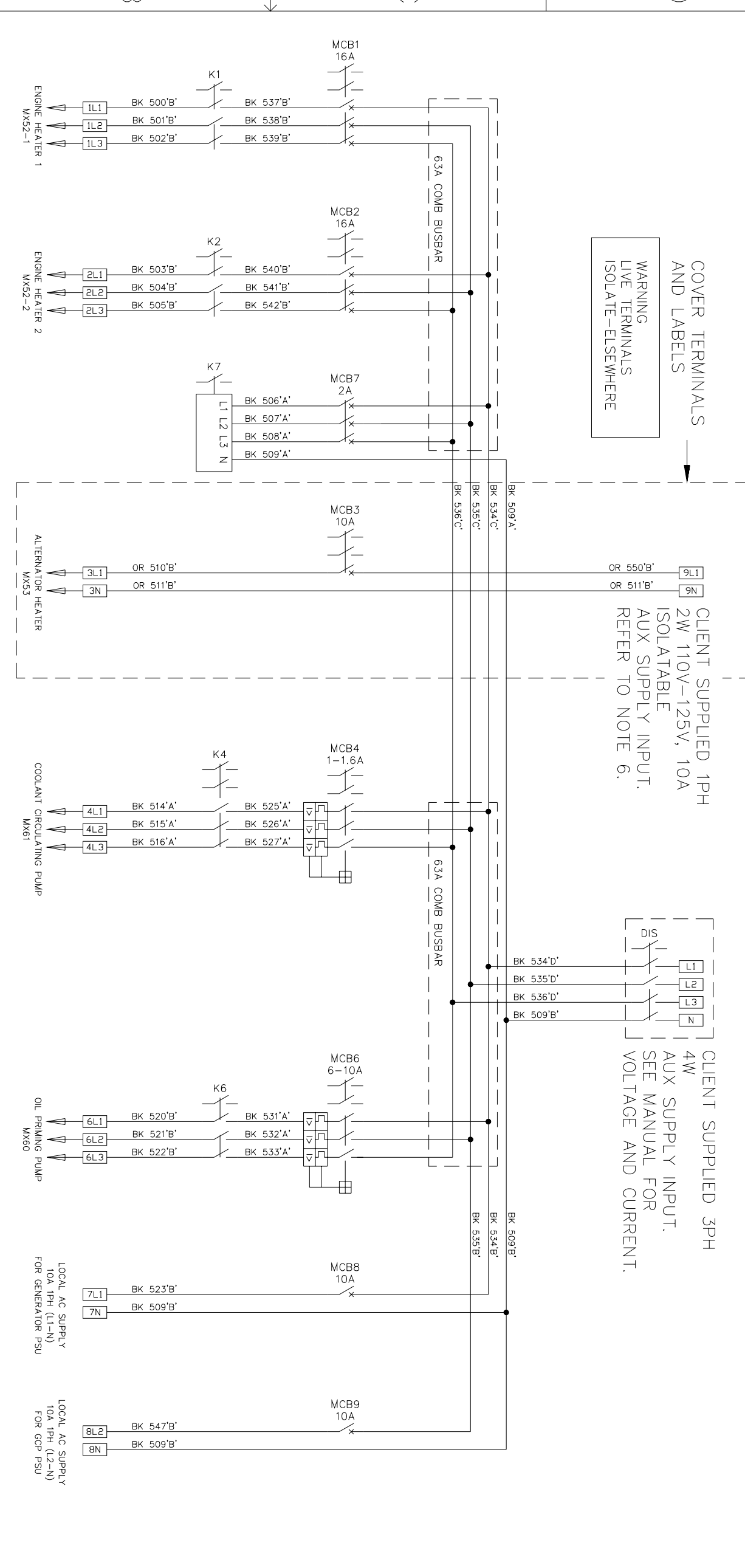
A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A		PRODUCTION RELEASE		M Fitzgerald	16/01/02
ERK6085	B	1	6A MCB NOW 10A	C3	D Smith	12/11/02
		2	A' WIRE NOW 'B'	B,D3	D Smith	12/11/02

COVER TERMINALS AND LABELS
WARNING LIVE TERMINALS ISOLATE-ELSEWHERE

CLIENT SUPPLIED 1PH 2W 110V-125V, 10A ISOLATABLE AUX SUPPLY INPUT. REFER TO NOTE 6.

CLIENT SUPPLIED 3PH 4W AUX SUPPLY INPUT. SEE MANUAL FOR VOLTAGE AND CURRENT.



SEE GEN SET WIRING CIRCUIT (ENGINE CONNECTIONS)

ONLY USED WITH 240V PSU OPTION FOR 110V PSU OPTIONS SUPPLY MUST BE SUITABLY PROTECTED AND CONNECTED TO PSU DIRECTLY

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE	TITLE
DIM X.XX = ±0.5 X.XXX = ±0.15	XEB059	M Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
0.09-4.99 = +0.15/-0.08 5.00-9.99 = +0.20/-0.10 10.00-17.99 = +0.25/-0.13 17.50-24.99 = +0.30/-0.13		P Goessel	20/03/02	WD-GENSET
		R Hazellon	20/03/02	

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0°
		SCALE:	

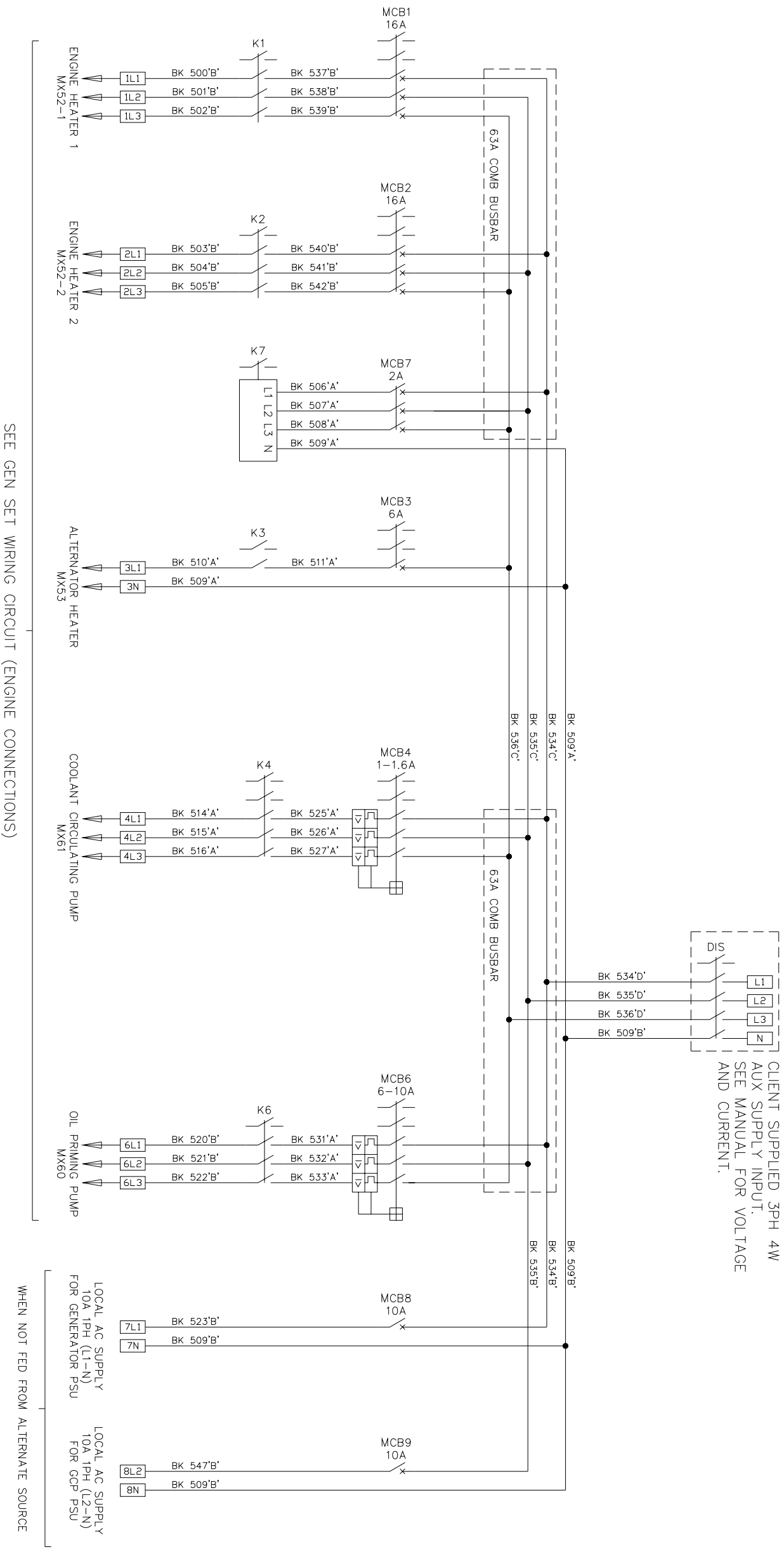


Pgk SITE CODE DWG No. 0630-2364 SHEET 1 OF 1 DWG SIZE A3

0630-2363

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A		PRODUCTION RELEASE		M Fitzgerald	16/01/02
ERK6085	B		4A MCB NOW 6A	C3	D Smith	12/11/02



SEE GEN SET WIRING CIRCUIT (ENGINE CONNECTIONS)

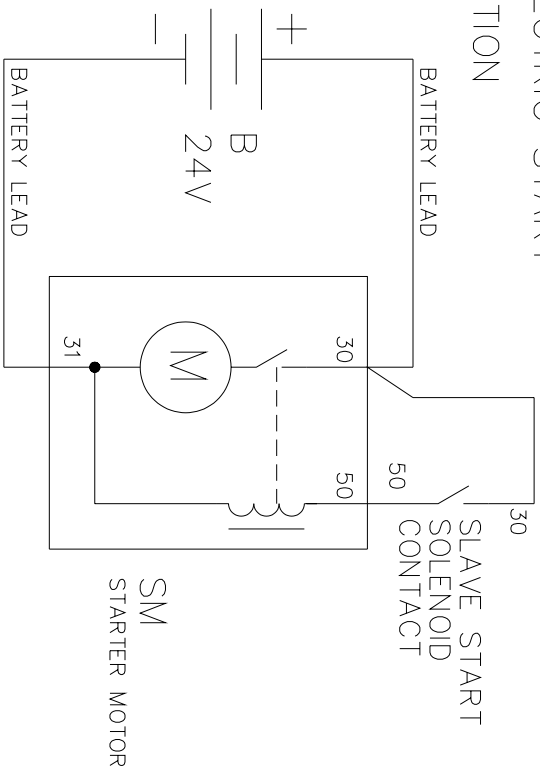
TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	XEB062	NAME	DATE	TITLE
DIM X X.X X.XX = ±0.5 = ±0.3 = ±0.15	THIRD ANGLE PROJECTION		M Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.49 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13	THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE		P Goessel	20/03/02	
APPROVED	R Hazellon	FIRST USED ON			WD-GENSET
AutocAD	DO NOT SCALE PRINT	ANGLE TOL. SCALE:	P GK		DWG No. 0630-2363
4		±1.0°			SHEET 1 OF 1
					DWG SIZE A3

0630-2362

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02

ELECTRIC START
OPTION



1. STARTER BATTERY REQUIRES ITS OWN BATTERY CHARGER.
2. CHARGER SHOULD HAVE CHARGER FAILURE VOLT FREE CONTACT (CLOSE ON FAULT)
3. WIRE CHARGER FAILURE CONTACT TO GCP TERMINALS C82 AND C83.

COMPONENTS LIST 0630-2361

REF	DESCRIPTION
ES	PUSHBUTTON, EMERGENCY STOP
KWT	TRANSUDUCER, KILOWATTS
MX52-1	HEATER, ENGINE, 6KW 3PH
MX52-2	HEATER, ENGINE, 6KW 3PH
MX53	HEATER, ALTERNATOR, 340W 1PH
MX60	PUMP, OIL PRIMING 3PH
MX61	PUMP, COOLANT CIRCULATING 3PH

COMPONENTS LIST 0630-2356

REF	DESCRIPTION
A36	PT/CT MODULE
A37	REGULATOR, VOLTAGE, DRIVER MODULE
CT1-3	TRANSFORMER, CURRENT, INSTRUMENT, L1-L3
CT4-6	TRANSFORMER, CURRENT, PROTECTION, L1-L3
FA1-3	FUSE, 2A, ALTERNATOR SENSING, L1-L3
MX16	RTD, WINDING TEMPERATURE, L1-L3
MX17	RTD, BEARING TEMPERATURE, DE & NDE
MX37	DIODE FAILURE UNIT

WIRING NOTES

1. ALL WIRING TO BE TRI-RATED SWITCHGEAR WIRE, UL STYLE 1015, CSA TYPE TEW, BS6231, TO COMPLY WITH BOTH UL AND BS REQUIREMENTS.
2. AC AND DC WIRING TO BE SEGREGATED.
3. MINIMUM WIRING SIZE TO BE NOT LESS THAN 0.5 sq.mm. UNLESS OTHERWISE STATED.
'A' SIZE NOT LESS THAN 1.0 sq.mm.
'B' SIZE NOT LESS THAN 2.5 sq.mm.
4. WIRING TO BE COLOUR CODED AS SHOWN. NON COLOUR CODED CABLE TO BE GREY, (DC AND AC<50V UNLESS OTHERWISE STATED).
WHERE ABBREVIATIONS ARE USED: -
BK = BLACK (AC<50V UNLESS OTHERWISE STATED)
OR = ORANGE (TO BE ISOLATED ELSEWHERE)
GN/Y = GREEN/YELLOW
ALL EARTH CABLES TO BE GREEN/YELLOW WHETHER INDICATED ON THE DRAWINGS OR NOT.
5. INTERNAL CONNECTIONS TO TERMINALS,
E1-E24 BY 24 WAY CONNECTOR
E25-E46 BY 22 WAY CONNECTOR
E47-E52 BY 6 WAY CONNECTOR
E53-E62 BY 10 WAY CONNECTOR
E101-E119 BY 19WAY CONNECTOR
E201-E220 BY 20 WAY CONNECTOR
6. ALTERNATOR VOLTAGE SENSING TRANSFORMER ONLY REQUIRED IF ALTERNATOR OUTPUT VOLTAGE ABOVE 480V. BELOW 480V SENSING WIRES FROM A36 CAN BE WIRED DIRECT TO ALTERNATOR TERMINALS.
7. WHEN MX37, DIODE FAILURE OPTION, IS NOT FITTED, WIRE FIELD (F2) DIRECT TO A37 TERMINAL P10-3.

CONNECTORS TO BE FITTED INTO THE SIDE OF THE TERMINALS, EXTERNAL WIRING TO TOP CONNECTORS OR SIDE SCREW TERMINALS.

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE
DM	XE8076	M.Fitzgerald	16/01/02
DL		P.Goessel	20/03/02
LI		R.Hozelton	18/12/02

Cummins
Cummins Power Generation
Columbus Avenue, Manston, Ramsgate
Kent, CT12 5BF, England, UK

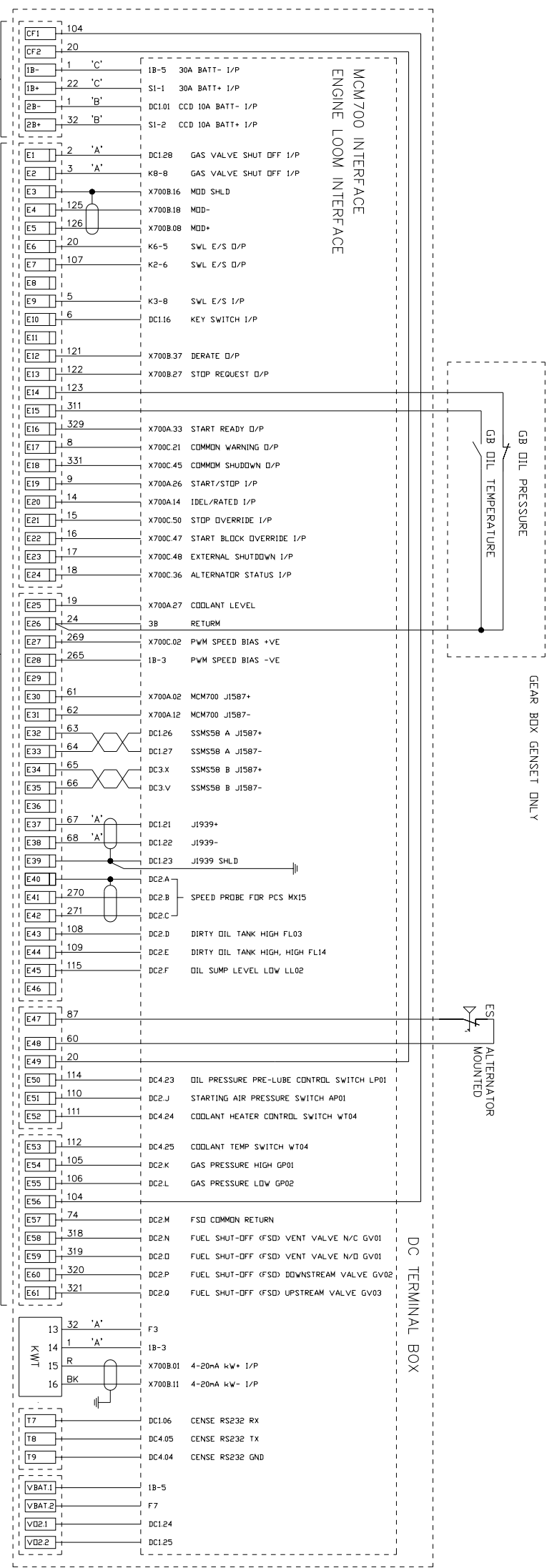
TITLE: **WD- GENSET**

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0°
4		SCALE:	

LI	0.09-4.99 = ±0.15/-0.08	THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	APPROVED	R.Hozelton	FIRST USED ON	
DL	5.00-9.99 = ±0.20/-0.10		CHECKED	P.Goessel		
DM	10.00-17.99 = ±0.25/-0.13		FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2			
LI	17.50-24.99 = ±0.30/-0.13					

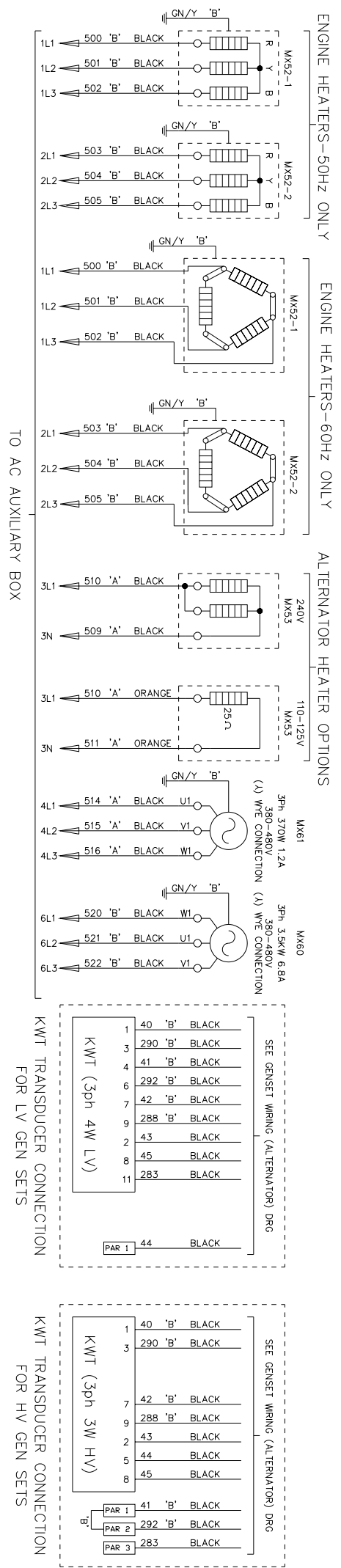
Pgk	DWG No.	0630-2362	SHEET	1 OF 1	DWG SIZE	A3
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REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE		M.Fitzgerald	16/01/02
ERK4763	B	1	CHANGE IN TERMINAL 39		M.F.	31/05/02



TO GEN SET
DC POWER SUPPLY

TO GEN CONTROL PANEL (GCP)
NOTE 5



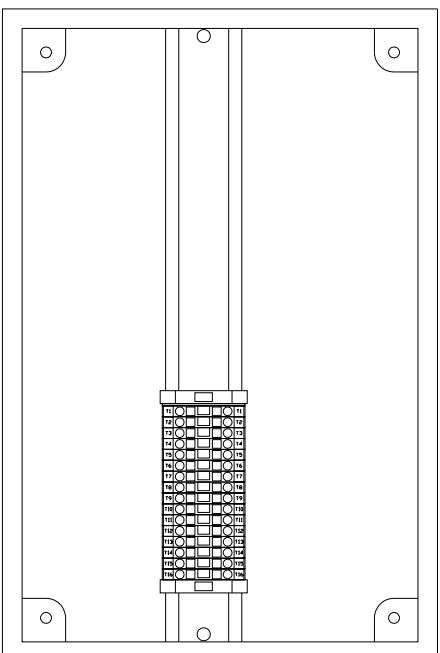
TO AC AUXILIARY BOX

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	DATE	TITLE
±0.5	XERO74	M.Fitzgerald	16/01/02	Cummins Power Generation
±0.3		P.Goessel	20/03/02	Columbus Avenue, Manston, Ramsgate
±0.15		R.Hozzelton	20/03/02	Kent, CT12 5BF, England, UK
0.09-4.99 = +0.15/-0.08		APPROVED		WD GENSET
5.00-9.99 = +0.20/-0.10		FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2	FIRST USED ON	DWG No. 0630-2361
10.00-17.99 = +0.25/-0.13				1 OF 1
17.50-24.99 = +0.30/-0.13				DWG SIZE A3

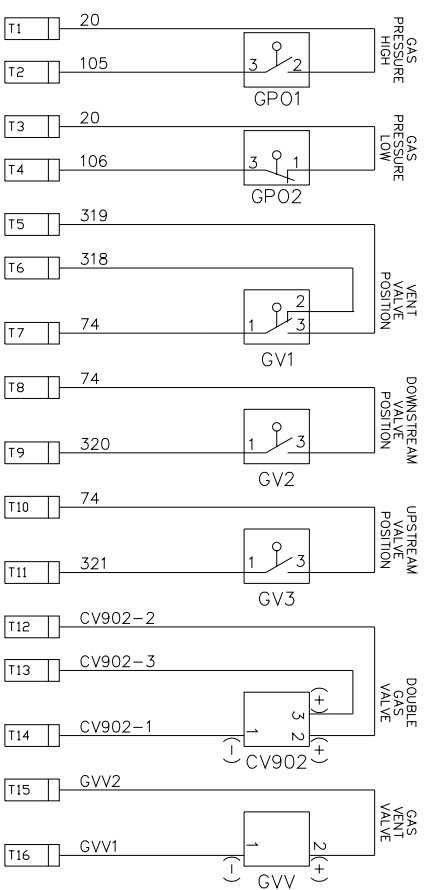
0630-2360

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerold	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02



TERMINAL BOX LAYOUT



WIRING SCHEMATIC

INTERCONNECTIONS

INTERCONNECTIONS		TO	
FROM	GEN SET	TERMINAL	BOX
20	T1	T1	20
105	T2	T2	105
20	T3	T3	20
106	T4	T4	106
319	T5	T5	319
318	T6	T6	318
74	T7	T7	74
74	T8	T8	74
320	T9	T9	320
74	T10	T10	74
321	T11	T11	321
CV902(2)	T12	T12	CV902(2)
CV902(3)	T13	T13	CV902(3)
CV902(1)	T14	T14	CV902(1)
GVV(2)	T15	T15	GVV(2)
GVV(1)	T16	T16	GVV(1)

WIRING NOTES:-
1. ALL WIRING TO BE TO BS6231.

2. ALL CONTROL WIRING TO BE 0.5mm Sq UNLESS MARKED
'A'=1.0mm 'B'=2.5mm 'C'=4.0mm 'D'=6.0mm 'E'=10.0mm

AutocAD		DO NOT SCALE PRINT		ANGLE TOL.	±1.0°	SCALE:			
TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO COPIED FROM		XEB081		THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE			
DM	X	±0.5	THIRD ANGLE PROJECTION	CHECKED		P.Goessel		APPROVED	
DI	X.XX	±0.3		DRAWN		M.Fitzgerold		NAME	
LI	5.00-9.99	+0.20/-0.10		DATE		16/01/02		DATE	
LO	10.00-17.99	+0.25/-0.13		CHECKED		18/12/02		DATE	
HI	17.50-24.99	+0.30/-0.13		APPROVED		R.Hozellen		DATE	
FOR DIMENSIONING AND TOLERANCING, SEE BS 308 Part 2		INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2		FIRST USED ON				DATE	
PGK		SITE CODE		TITLE		Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK		DATE	
DWG No.		0630-2360		SHEET		1 OF 1		DWG SIZE	
A3									

4

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1

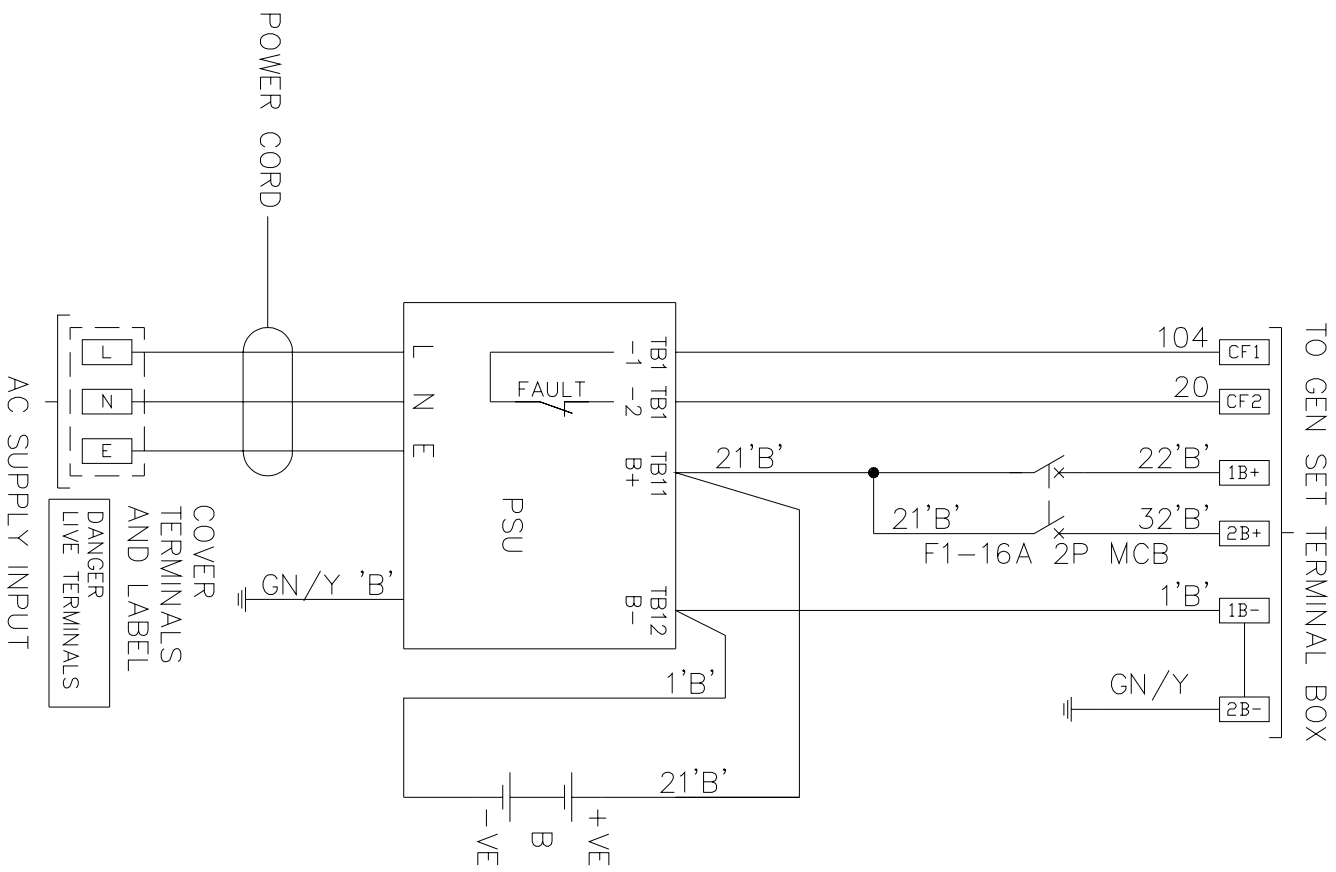
0630-2357 A3

REL. No.	LR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	Mike Aitken	27/03/01
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02
ERK8090	C		1MCB(16A-2P) was 2MCB(10A-1P)	D3	E.Costa	07/10/03

COMPONENTS LIST
REF DESCRIPTION
B BATTERY
F1 MCB 16A 2P TYPE C
PSU POWER SUPPLY UNIT 20A

WIRING NOTES

1. ALL WIRING TO BE TRI-RATED SWITCHGEAR WIRE, UL STYLE 1015, CSA TYPE TEW, BS6231, TO COMPLY WITH BOTH UL AND BS REQUIREMENTS.
2. AC AND DC WIRING TO BE SEGREGATED.
3. MINIMUM WIRING SIZE TO BE NOT LESS THAN 0.5 sq.mm. UNLESS OTHERWISE STATED.
'A' SIZE NOT LESS THAN 1.0 sq.mm.
'B' SIZE NOT LESS THAN 2.5 sq.mm.
4. WIRING TO BE COLOUR CODED AS SHOWN. NON COLOUR CODED CABLE TO BE GREY. WHERE ABBREVIATIONS ARE USED
BK = BLACK
OR = ORANGE
GN/Y = GREEN/YELLOW
ALL EARTH CABLES TO BE GREEN/YELLOW WHETHER INDICATED ON THE DRAWINGS OR NOT.



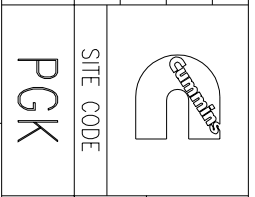
AC SUPPLY INPUT

COVER
TERMINALS
AND LABEL
DANGER
LIVE TERMINALS

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0°
4		SCALE:	

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	XEB057
0.09-4.99 = ±0.15/-0.08		
5.00-9.99 = ±0.20/-0.10		
10.00-17.99 = ±0.25/-0.13		
17.50-24.99 = ±0.30/-0.13		

NAME	DATE
Mike Aitken	27/03/01
P.Goesel	20/3/02
R.Hozelton	18/12/02



Cummins Power Generation
Columbus Avenue, Manston, Ramsgate
Kent, CT12 5BF, England, UK

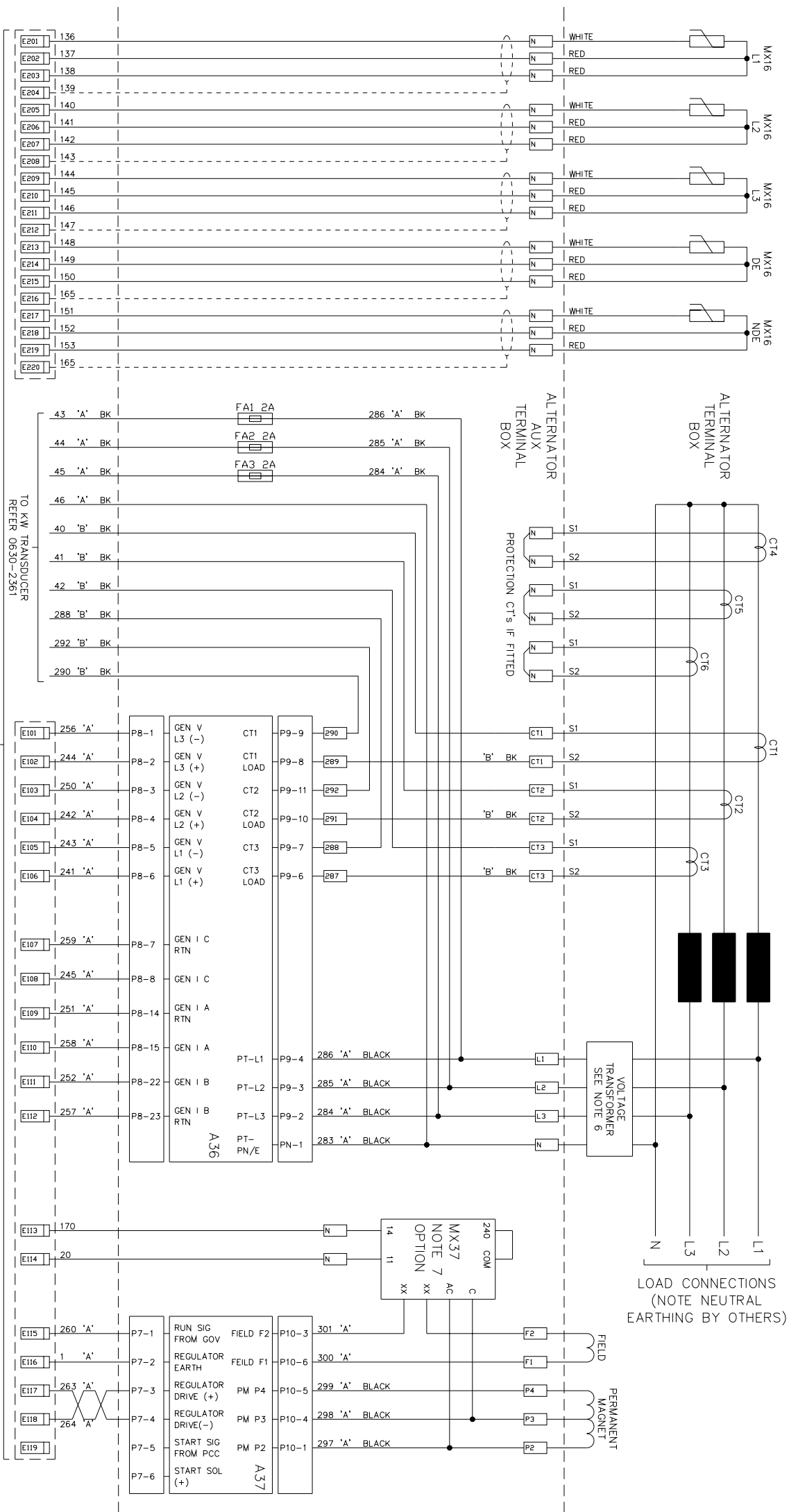
TITLE: **WD- GENSET**

DWG No. **0630-2357**

SHEET **1** OF **1**

DWG SIZE **A3**

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02



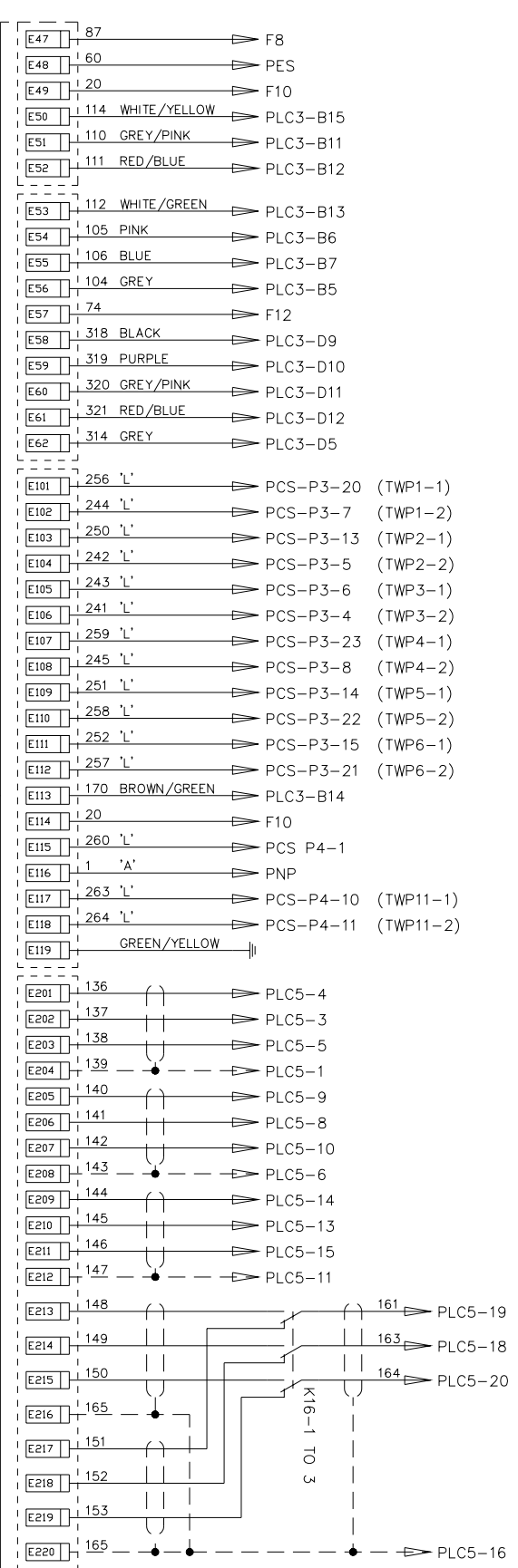
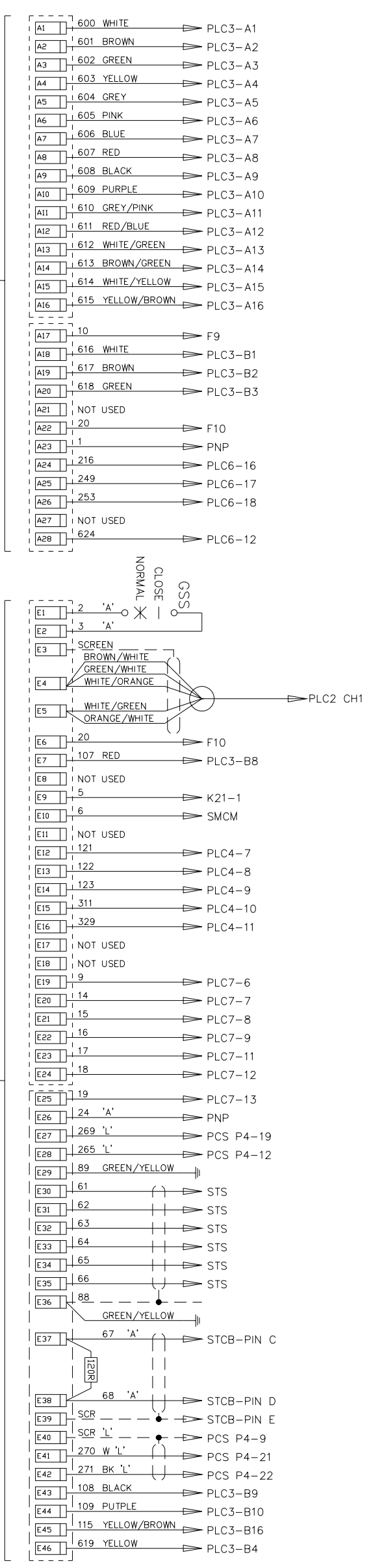
TO GEN CONTROL PANEL (GCP) - NOTE 5
TO KW TRANSDUCER REFER 0630-2361

GEN SET
TERMINAL
BOX

AutocAD		DO NOT SCALE PRINT		ANGLE TOL.	±1.0°
4		3		2	
1		2		1	
TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO COPER FROM XE8075		NAME	
DIM		THIRD ANGLE PROJECTION		DATE	
X = ±0.5		THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE		16/01/02	
XX = ±0.15		FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2		20/03/02	
XXX = ±0.15		APPROVED		18/12/02	
0.09-4.99 = ±0.15/-0.08		DRAWN		M.Fitzgerald	
5.00-9.99 = ±0.20/-0.10		CHECKED		P.Goessel	
10.00-17.99 = ±0.25/-0.13		FIRST USED ON			
17.50-24.99 = ±0.30/-0.13		SITE CODE		WD- GENSET	
		TITLE		Cummins Power Generation Columbus Avenue, Monston, Ramsgate Kent, CT12 5BF, England, UK	
		PGK		DWG No. 0630-2356	
		SHEET 1 OF 1		DATE 16/01/02	
		DWG SIZE A3		DRAWN K.Williams	

0620-0262 A3

REL. No.	LTR	No.	REVISION	ZONE	DRN	CHKR	APPROVED	DATE
ERK6031	A	1	PRODUCTION RELEASE	-	KW	DM	MORTON	05/11/02



TO GEN SET - GEN SET TERMINAL BOX
NOTE 6

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	DATE	TITLE
DIM X.XX = ±0.5 X.XXX = ±0.15	COPIED FROM	K. Williams	05/11/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
THIRD ANGLE PROJECTION	CHECKED	D MORTON	06/11/02	
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13	FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2	D MORTON	06/11/02	CONNECTION DIAGRAM

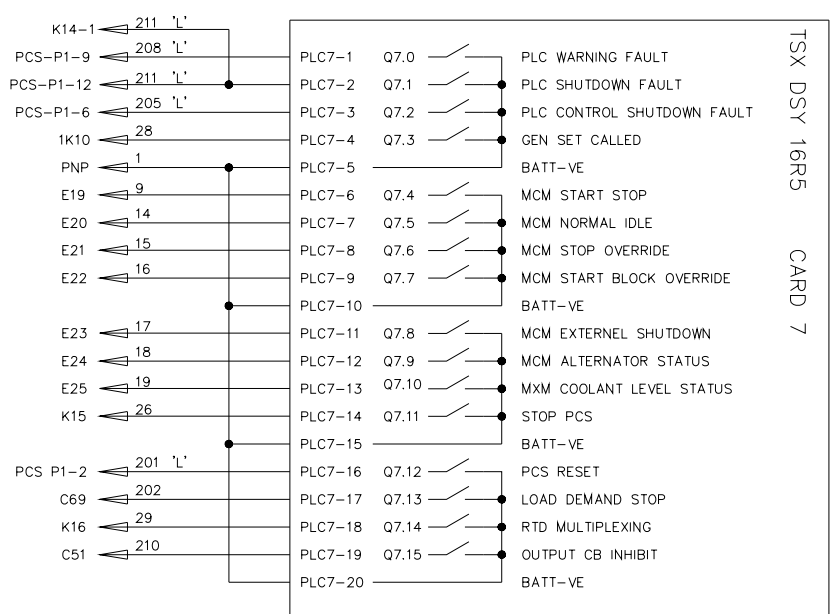
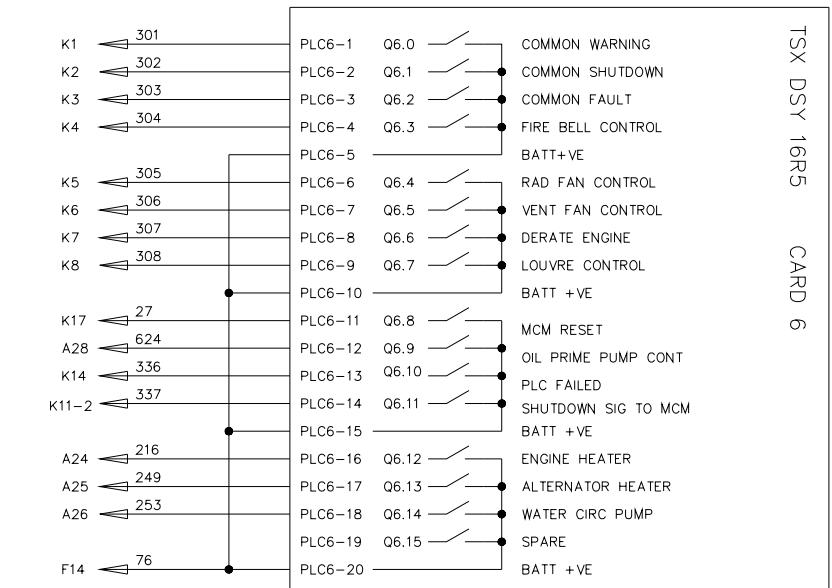
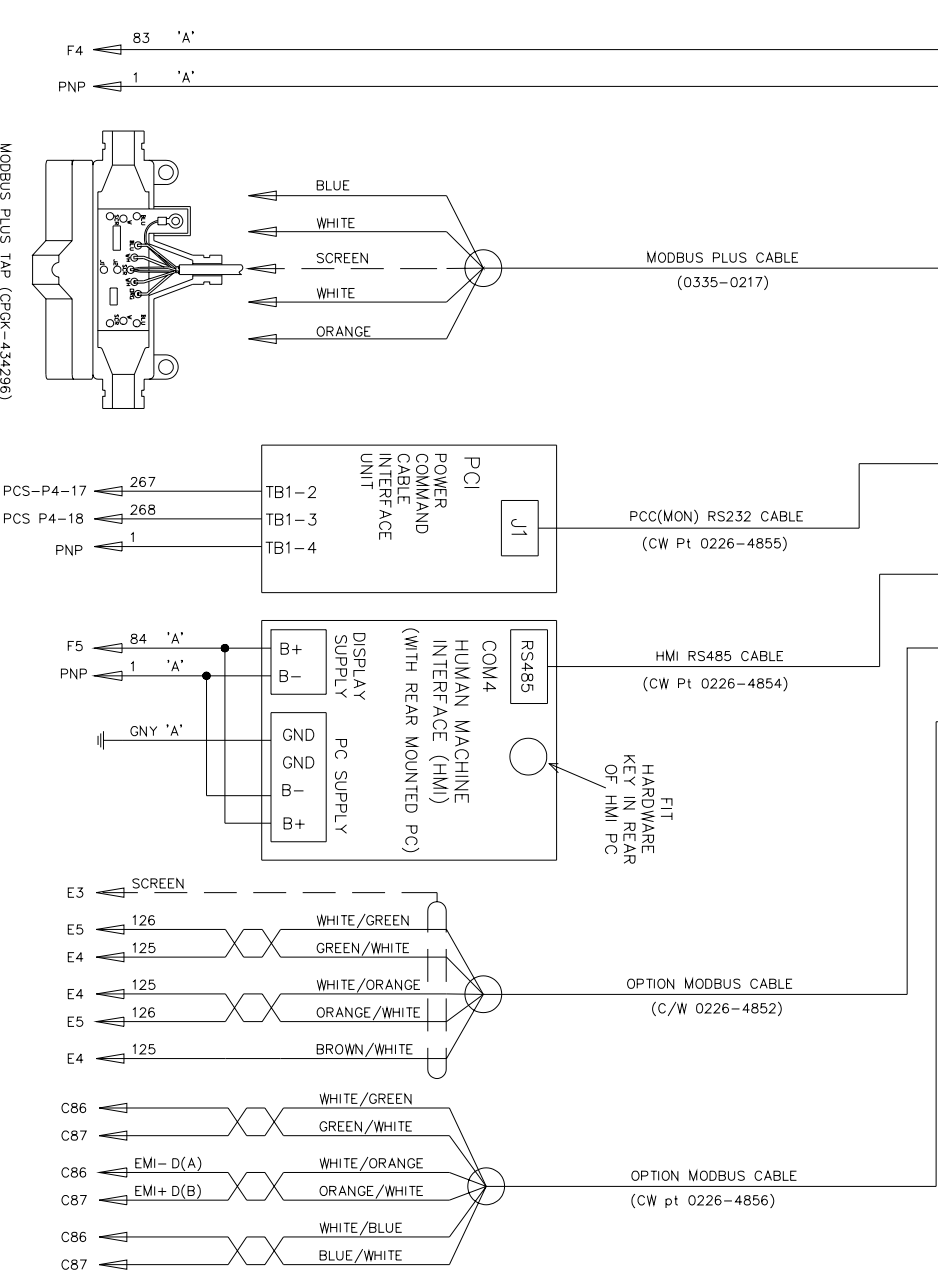
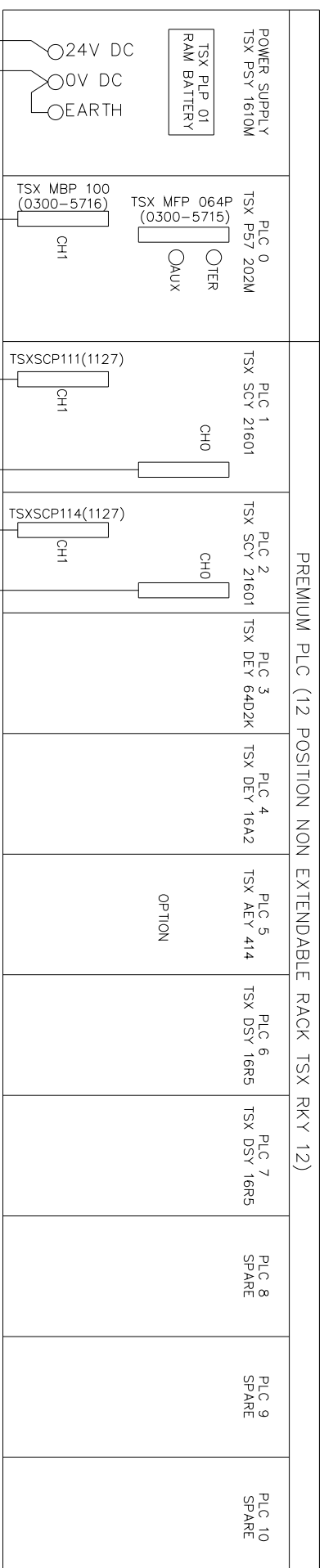
AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	SCALE:
		±1.0°	

REL. No.	LTR	No.	REVISION	ZONE	DRN	CHKR	APPROVED	DATE
ERK6031	A	1	PRODUCTION RELEASE	-	KW	DM	MORTON	05/11/02

DWG No.	SHEET	DWG SIZE
0620-0262	1 OF 1	A3

0620-0261 A3

REL. No.	LTR	No.	REVISION	ZONE	DRN	CHKR	APPROVED	DATE
ERK6031	A	1	PRODUCTION RELEASE	-	KW	DM	MORTON	05/11/02



(FOR DETAILS OF CONFIGURATION AS A THROUGH CONNECTOR OR TERMINATOR CONNECTOR, REFER TO NETWORK CONFIGURATION IN DIGITAL MASTER CONTROLLER)

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO
0.09-4.99 = ±0.15/-0.08	COPED FROM
5.00-9.99 = ±0.20/-0.10	
10.00-17.99 = ±0.25/-0.13	
17.50-24.99 = ±0.30/-0.13	

NAME	DATE
K. Williams	05/11/02
D. MORTON	06/11/02
D. MORTON	06/11/02

Modbus Plus Tap at PLC 0
 Cummins Power Generation
 Columbus Avenue, Manston, Ramsgate
 Kent, CT12 5BF, England, UK

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0°
SCALE:			

THIRD ANGLE PROJECTION	
------------------------	--

APPROVED	D. MORTON	FIRST USED ON	06/11/02
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P.G.K.	DWG No.	0620-0261	SHEET	1 OF 1	DWG SIZE	A3
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4

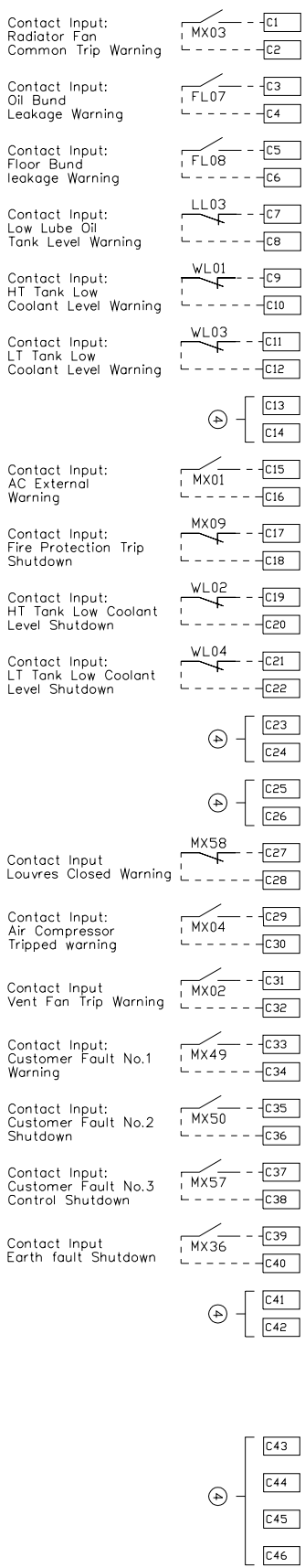
3

2

1

0620-0245 A3

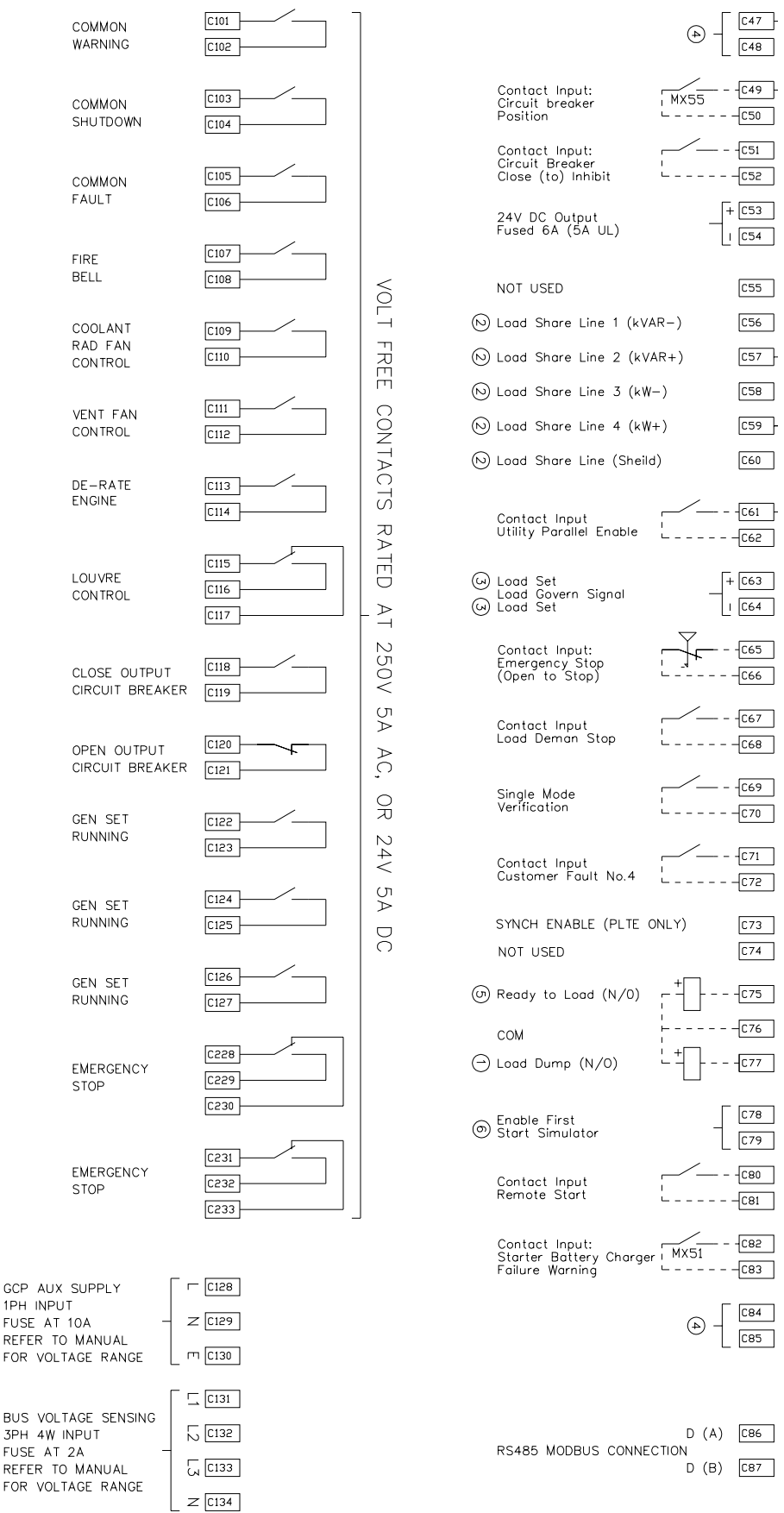
REL. No.	LR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK5123	B	1	C55,76,77,78,79 & NOTE ALTD	-	K.Williams	10/07/02
ERK5903	C	1	C60/70 TAG ADDED	2C	K.Williams	21/10/02
ERK6578	D	1	C78/79 & NOTE 6 ADDED	1C	K.Williams	31/01/03
ERK7571	E	1	Relay Note 250V	2B	CS	01/08/03



Customer Connection Notes:

- 0V DC output (switched). Output goes high if an overload or under frequency condition occurs. Max. rating 2A.occurs.
- Parallel load share lines (0-1mA). Use 4 conductor shielded cable,1sqmm stranded. Maximum run 152 metres.
- Analogue 0-5V DC inputs to control genset load in utility paralleling mode.
- Not for use by customer.
- 0V DC output (switched). Output goes high when genset is ready to load, ie up to speed & volts. Max. rating 2A.
- Link C78 & C79 to enable Master First Start Simulator function ONLY enable on Single Genset / PLTE applications.
- Terminals are suitable for cable upto a maximum size of 2.5mm² (16AWG).

VOLT FREE CONTACTS RATED AT 250V 5A AC, OR 24V 5A DC



GCP AUX SUPPLY
1PH INPUT
FUSE AT 10A
REFER TO MANUAL
FOR VOLTAGE RANGE

BUS VOLTAGE SENSING
3PH 4W INPUT
FUSE AT 2A
REFER TO MANUAL
FOR VOLTAGE RANGE

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE	TITLE
DIM X.XX = ±0.5 X.XXX = ±0.15	XEB083	M.Fitzgerald	16/01/02	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13	THIRD ANGLE PROJECTION	P.Goessel	20/03/02	CONNECTION DIAGRAM
THIS DOCUMENT IS THE PROPERTY OF CUMMINS AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	APPROVED	R.Hozellen	31/01/03	
	CHECKED			
	FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2			
	FIRST USED ON			

AutocAD DO NOT SCALE PRINT ANGLE TOL. ±1.0° SCALE:

4

3

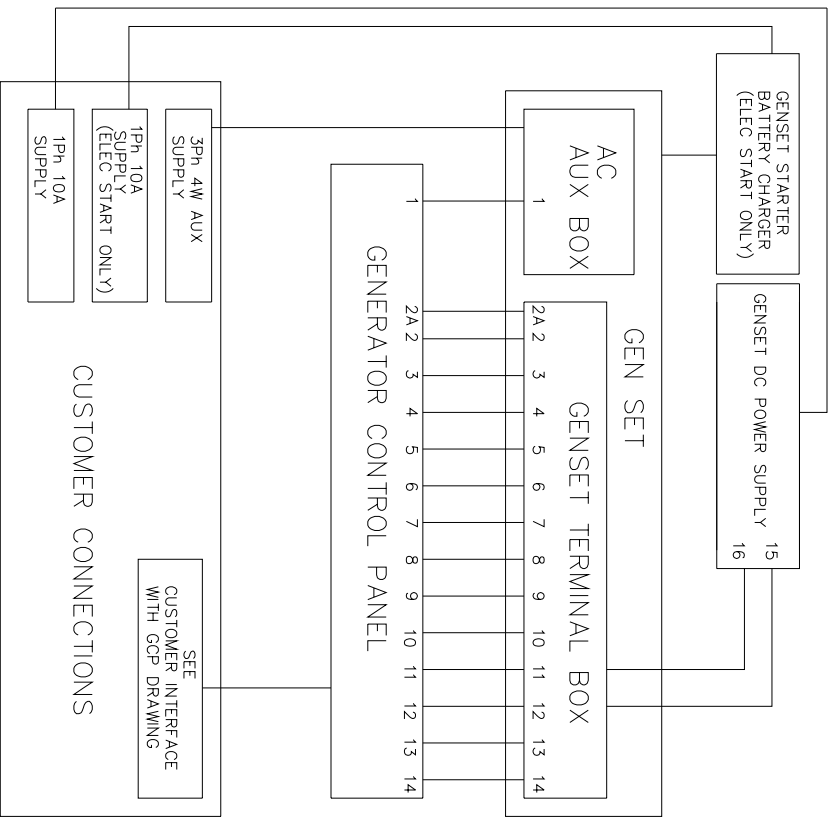
2

1

DWG No. 0620-0245 SHEET 1 OF 1 DWG SIZE A3

0620-0243 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	23/11/01
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02



INTERCON 1 - AUX CONTROL AND MONITORING				
VOLTAGE - 24V DC				
CABLE - 28 Core 1.5mm SCREENED				
NOTE :- EARTH SCREEN AT GCP END ONLY				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
600	A1	A1	600	1
601	A2	A2	601	2
602	A3	A3	602	3
603	A4	A4	603	4
604	A5	A5	604	5
605	A6	A6	605	6
606	A7	A7	606	7
607	A8	A8	607	8
608	A9	A9	608	9
609	A10	A10	609	10
610	A11	A11	610	11
611	A12	A12	611	12
612	A13	A13	612	13
613	A14	A14	613	14
615	A15	A15	614	15
616	A16	A16	615	16
617	A17	A17	10	17
618	A18	A18	616	18
617	A19	A19	617	19
618	A20	A20	618	20
20	A21	A21	20	21
20	A22	A22	20	22
1	A23	A23	1	23
216	A24	A24	216	24
249	A25	A25	249	25
253	A26	A26	253	26
253	A27	A27	253	26
624	A28	A28	624	28

INTERCON 2 - CONTROL AND MONITORING				
VOLTAGE - 24V DC				
CABLE - 25 Core 1.5mm				
NOTE :- EARTH SCREEN AT GCP END ONLY				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
2	E1	E1	2	1
3	E2	E2	3	2
20	E6	E6	20	3
107	E7	E7	107	4
4	E8	E8	4	5
5	E9	E9	5	6
6	E10	E10	6	7
7	E11	E11	6	7
121	E12	E12	121	9
122	E13	E13	122	10
123	E14	E14	123	11
311	E15	E15	311	12
329	E16	E16	329	13
8	E17	E17	8	14
331	E18	E18	319	15
9	E19	E19	9	16
14	E20	E20	14	17
15	E21	E21	15	18
16	E22	E22	16	19
17	E23	E23	17	20
18	E24	E24	18	21
19	E25	E25	19	22
24	E26	E26	24	23
108	E43	E43	108	24
109	E44	E44	109	25

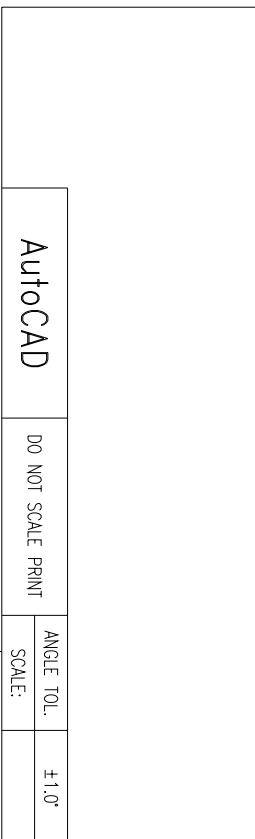
INTERCON 2A - CONTROL AND MONITORING				
VOLTAGE - 24V DC				
CABLE - 25 Core 1.5mm				
NOTE :- EARTH SCREEN AT GCP END ONLY				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
115	E45	E45	115	1
619	E46	E46	619	2
87	E47	E47	87	3
60	E48	E48	60	4
20	E49	E49	20	5
114	E50	E50	114	6
110	E51	E51	110	7
111	E52	E52	111	8
112	E53	E53	112	9
105	E54	E54	105	10
106	E55	E55	106	11
104	E56	E56	104	12
74	E57	E57	74	13
318	E58	E58	318	14
319	E59	E59	319	15
320	E60	E60	320	16
321	E61	E61	321	17
314	E62	E62	314	18
170	E113	E113	170	19
20	E114	E114	20	20
260	E115	E115	260	21
1	E116	E116	1	22
				23
				24
				25

INTERCON 3 - MCM700 MODBUS				
VOLTAGE - COMMUNICATIONS				
CABLE - 2 Core 1.5mm SCREENED				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
126	E5	E5	126	2

INTERCON 4 - SPEED BIASING				
VOLTAGE - 4-20mA SIGNAL				
CABLE - 2 Core 1.0mm SCREENED				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
269	E27	E27	269	1
265	E28	E28	265	2
SCRN	E29	E29	89	SCRN

INTERCON 1 - AUX CONTROL AND MONITORING				
VOLTAGE - 24V DC				
CABLE - 28 Core 1.5mm SCREENED				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
600	A1	A1	600	1
601	A2	A2	601	2
602	A3	A3	602	3
603	A4	A4	603	4
604	A5	A5	604	5
605	A6	A6	605	6
606	A7	A7	606	7
607	A8	A8	607	8
608	A9	A9	608	9
609	A10	A10	609	10
610	A11	A11	610	11
611	A12	A12	611	12
612	A13	A13	612	13
613	A14	A14	613	14
615	A15	A15	614	15
616	A16	A16	615	16
617	A17	A17	10	17
618	A18	A18	616	18
617	A19	A19	617	19
618	A20	A20	618	20
20	A21	A21	20	21
20	A22	A22	20	22
1	A23	A23	1	23
216	A24	A24	216	24
249	A25	A25	249	25
253	A26	A26	253	26
253	A27	A27	253	26
624	A28	A28	624	28

INTERCON 2 - CONTROL AND MONITORING				
VOLTAGE - 24V DC				
CABLE - 25 Core 1.5mm				
FROM GEN SET	TERM	TO GCP	WIRE	INTERCON CABLE CORE ID
2	E1	E1	2	1
3	E2	E2	3	2
20	E6	E6	20	3
107	E7	E7	107	4
4	E8	E8	4	5
5	E9	E9	5	6
6	E10	E10	6	7
7	E11	E11	6	7
121	E12	E12	121	9
122	E13	E13	122	10
123	E14	E14	123	11
311	E15	E15	311	12
329	E16	E16	329	13
8	E17	E17	8	14
331	E18	E18	319	15
9	E19	E19	9	16
14	E20	E20	14	17
15	E21	E21	15	18
16	E22	E22	16	19
17	E23	E23	17	20
18	E24	E24	18	21
19	E25	E25	19	22
24	E26	E26	24	23
108	E43	E43	108	24
109	E44	E44	109	25



TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	DATE
0.09-4.99 = +0.15/-0.08	GCP180-04A1	M.Fitzgerald	23/11/01
5.00-9.99 = +0.20/-0.10		P.Goessel	21/03/02
10.00-17.49 = +0.25/-0.13		R.Hozelton	18/12/02
17.50-24.99 = +0.30/-0.13			

THIRD ANGLE PROJECTION	CHECKED	APPROVED	FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2
	P.Goessel	R.Hozelton	

Cummins Power Generation
 Columbus Avenue, Manston, Ramsgate
 Kent, CT12 5BF, England, UK

PGK SITE CODE

TITLE: **CONNECTION DIAGRAM**

DWG No. **0620-0243**

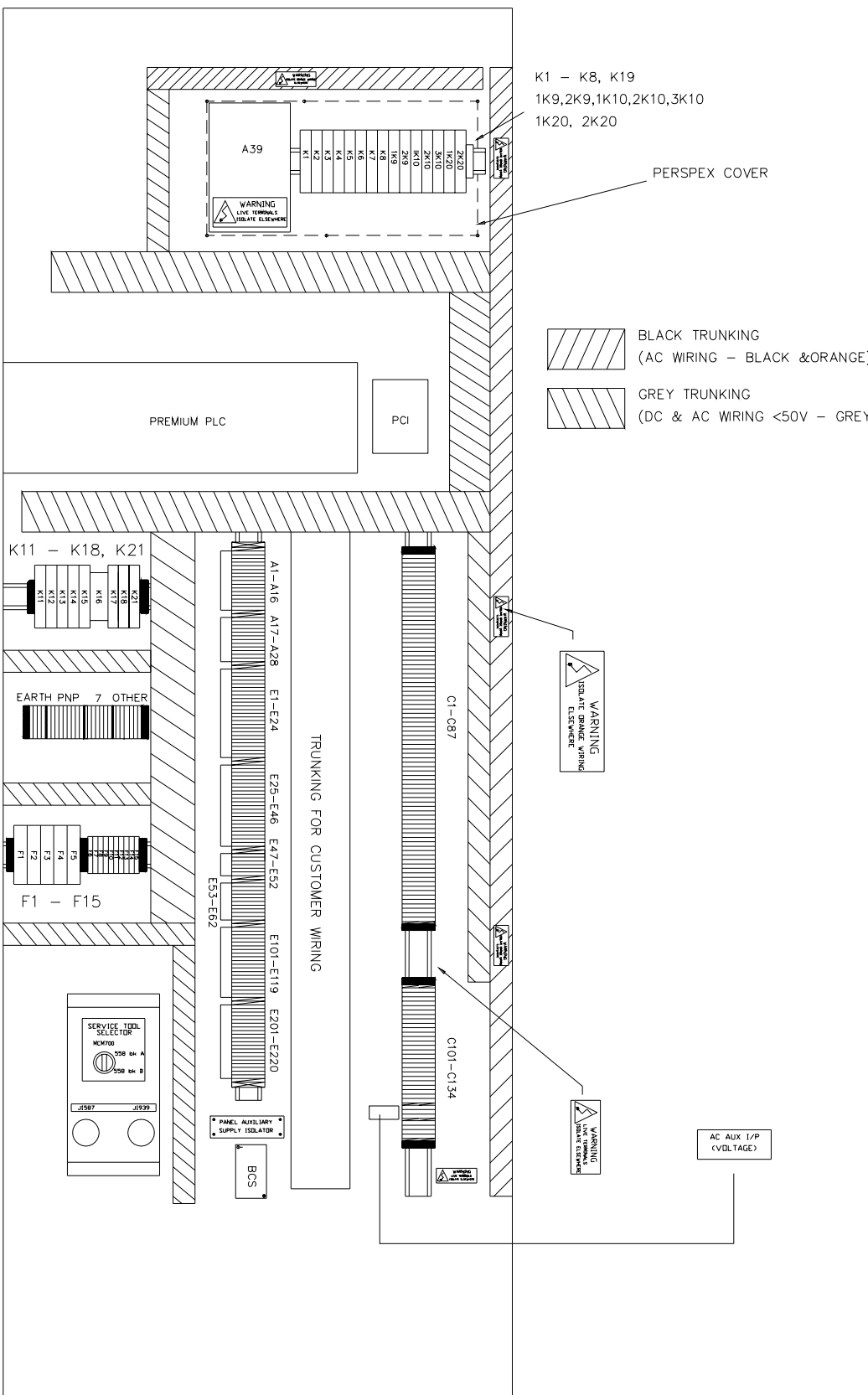
SHEET 1 OF 1

DWG SIZE A3

0620-0242

A3

REL. No.	LTR	No.	REVISION	ZONE	DRN	CHKR	APPROVED	DATE
ERK6289	A	1	PRODUCTION RELEASE	-	KW	DM	MORTON	09/12/02
ERK6750	B	1	K19 DELETED (CAR-1477)	4B	KW	DM	MORTON	10/03/03



COMPONENTS LIST		COMPONENTS LIST	
REF	DESCRIPTION	REF	DESCRIPTION
A39	PT. BUS SENSING	K8	RELAY, 24VDC, LOUVRE CONTROL
BCS	ISOLATOR, PANEL AUXILIARY SUPPLY	1K9	RELAY, 24VDC, CIRCUIT BREAKER CLOSING CONTROL
F1	MCB, 10A, GCP POWER SUPPLY OUTPUT	2K9	RELAY, 24VDC, CIRCUIT BREAKER CLOSING CONTROL
F2	MCB, 10A, GCP BATTERY OUTPUT	1K10	RELAY, 24VDC, GENSET RUNNING
F3	MCB, 4A, PCS DC SUPPLY	2K10	RELAY, 24VDC, GENSET RUNNING
F4	MCB, 4A, PLC DC SUPPLY	3K10	RELAY, 24VDC, GENSET RUNNING
F5	MCB, 4A, HMI DC SUPPLY	K11	RELAY, 24VDC, CUSTOMER EMERGENCY STOP
F6	FUSE, 2A, DC CONTROL	K12	RELAY, 24VDC, GENSET OUTPUT BREAKER CLOSED
F7	FUSE, 2A, SERVICE TOOL DC SUPPLY	K13	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
F8	FUSE, 0.5A FASTBLOW, GENSET AND EMERGENCY STOP	K14	RELAY, 24VDC, PLC FAILED
F9	FUSE, 0.5A FASTBLOW, PLC CARD 3 'A' INPUTS	K15	RELAY, 24VDC, STOP PCS SLAVE
F10	FUSE, 0.5A FASTBLOW, PLC CARD 3 'B' INPUTS	K16	RELAY, 24VDC, RTD MULTIPLEX
F11	FUSE, 0.5A FASTBLOW, PLC CARD 3 'C' INPUTS	K17	RELAY, 24VDC, ENGINE MANAGEMENT RESET
F12	FUSE, 0.5A FASTBLOW, PLC CARD 3 'D' INPUTS	K18	RELAY, 24VDC, UTILITY PARALLEL ENABLE
F13	FUSE, 0.5A, FASTBLOW, PLC CARD 4	1K20	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
F14	FUSE, 6.3A(5A UL) FASTBLOW, PLC CARD 6	2K20	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
F15	FUSE, 6.3A(5A UL) FASTBLOW, PLC CARD 7	K21	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
K1	RELAY, 24VDC, COMMON WARNING	PNP	PANEL NEGATIVE POINT
K2	RELAY, 24VDC, COMMON SHUTDOWN	PCI	INTERFACE, POWER COMMAND CABLE
K3	RELAY, 24VDC, COMMON FAULT		
K4	RELAY, 24VDC, FIRE BELL		
K5	RELAY, 24VDC, COOLANT RAD FAN CONTROL		
K6	RELAY, 24VDC, VENT FAN CONTROL		
K7	RELAY, 24VDC, GENSET DE-RATE		

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	SCALE:	±1.0°
4				

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE
DIM X = ±0.5 XX = ±0.3 XXX = ±0.15 0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13		K. Williams	09/12/02
		D MORTON	11/03/03

PGK SITE CODE

CONNECTION DIAGRAM

TITLE
 Cummins Power Generation
 Columbus Avenue, Manston, Ramsgate
 Kent, CT12 5BF, England, UK

DWG No. 0620-0242

SHEET 1 OF 1
 DWG SIZE A3

0620-0241 A3

REL. No.	LR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02
ERK6750	C	1	K19 DELETED (CAR-1477)	-	K.Williams	10/03/03

COMPONENTS LIST 0620-0234

REF	DESCRIPTION
GSS	SWITCH, GAS VALVE

COMPONENTS LIST 0620-0240

REF	DESCRIPTION
A39	PT. BUS SENSING
BATT	BATTERY, 24VDC, GCP, SEALED LEAD ACID 10Ah
BC	POWER SUPPLY UNIV, 24VDC 10A, GCP
BCS	ISOLATOR, PANEL AUXILIARY SUPPLY
F1	MCB, 10A, GCP POWER SUPPLY OUTPUT
F2	MCB, 10A, GCP BATTERY OUTPUT
K1	RELAY, 24VDC, COMMON WARNING
K2	RELAY, 24VDC, COMMON SHUTDOWN
K3	RELAY, 24VDC, COMMON FAULT
K4	RELAY, 24VDC, FIRE BELL
K5	RELAY, 24VDC, COOLANT RAD FAN CONTROL
K6	RELAY, 24VDC, VENT FAN CONTROL
K7	RELAY, 24VDC, GENSET DE-RATE
K8	RELAY, 24VDC, LOUVRE CONTROL
K9	RELAY, 24VDC, CIRCUIT BREAKER CLOSING CONTROL
2K9	RELAY, 24VDC, CIRCUIT BREAKER CLOSING CONTROL
1K10	RELAY, 24VDC, GENSET RUNNING
2K10	RELAY, 24VDC, GENSET RUNNING
3K10	RELAY, 24VDC, GENSET RUNNING
1K20	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
2K20	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP

COMPONENTS LIST 0620-0239


REF	DESCRIPTION
F3	MCB, 4A, PCS DC SUPPLY
F4	MCB, 4A, PLC DC SUPPLY
F5	MCB, 4A, HMI DC SUPPLY
F6	FUSE, 2A, DC CONTROL
F7	FUSE, 2A, SERVICE TOOL DC SUPPLY
F8	FUSE, 0.5A FASTBLOW, GENSET AND EMERGENCY STOP
F9	FUSE, 0.5A FASTBLOW, PLC CARD 3 'A' INPUTS
F10	FUSE, 0.5A FASTBLOW, PLC CARD 3 'B' INPUTS
F11	FUSE, 0.5A FASTBLOW, PLC CARD 3 'C' INPUTS
F12	FUSE, 0.5A FASTBLOW, PLC CARD 3 'D' INPUTS
F13	FUSE, 0.5A FASTBLOW, PLC CARD 4
F14	FUSE, 6.3A(5A UL) FASTBLOW, PLC CARD 6
F15	FUSE, 6.3A(5A UL) FASTBLOW, PLC CARD 7
K11	RELAY, 24VDC, CUSTOMER EMERGENCY STOP
K12	RELAY, 24VDC, GENSET OUTPUT BREAKER CLOSED
K13	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
K14	RELAY, 24VDC, PLC FAILED
K15	RELAY, 24VDC, STOP PCS SLAVE
K16	RELAY, 24VDC, RTD MULTIPLEX
K17	RELAY, 24VDC, ENGINE MANAGEMENT RESET
K18	RELAY, 24VDC, UTILITY PARALLEL ENABLE
K21	RELAY, 24VDC, ENGINE AND GCP EMERGENCY STOP
PBOP	PUSHBUTTON, MANUAL OIL PRIMING
PES	PUSHBUTTON, GCP EMERGENCY STOP
PNP	PANEL NEGATIVE POINT
SMCM	SWITCH, ENGINE MANAGEMENT RESET
STCA	CONNECTOR, SERVICE TOOL - J1587 PROTOCOL
STCB	CONNECTOR, SERVICE TOOL - J1939 PROTOCOL
STS	SWITCH, SERVICE TOOL SELECTOR

WIRING NOTES

- ALL WIRING TO BE TRI-RATED SWITCHGEAR WIRE, UL STYLE 1015, CSA TYPE TEW, BS6231, TO COMPLY WITH BOTH UL AND BS REQUIREMENTS.
 - AC AND DC WIRING TO BE SEGREGATED.
 - MINIMUM WIRING SIZE TO BE NOT LESS THAN 0.5 sq.mm, UNLESS OTHERWISE STATED.
'A' SIZE NOT LESS THAN 1.0 sq.mm.
'B' SIZE NOT LESS THAN 2.5 sq.mm.
 - WIRING TO BE COLOUR CODED AS SHOWN. NON COLOUR CODED CABLE TO BE GREY, (DC AND AC<50V UNLESS OTHERWISE STATED).
WHERE ABBREVIATIONS ARE USED: -
BK = BLACK (AC>50V UNLESS OTHERWISE STATED)
OR = ORANGE (TO BE ISOLATED ELSEWHERE)
GN/Y = GREEN/YELLOW
ALL EARTH CABLES TO BE GREEN/YELLOW WHETHER INDICATED ON THE DRAWINGS OR NOT.
 - CABLES MARKED TWP ARE TWISTED PAIRS.
IE TWP1-1 AND TWP1-2 ARE A TWISTED PAIR.
 - INTERNAL CONNECTIONS TO TERMINALS.
A1-A16 BY 16 WAY CONNECTOR
A17-A28 BY 12 WAY CONNECTOR
E1-E24 BY 24 WAY CONNECTOR
E25-E46 BY 22 WAY CONNECTOR
E47-E52 BY 6 WAY CONNECTOR
E53-E62 BY 10 WAY CONNECTOR
E101-E119 BY 19WAY CONNECTOR
E201-E220 BY 20 WAY CONNECTOR
- CONNECTORS TO BE FITTED INTO THE SIDE OF THE TERMINALS, EXTERNAL WIRING TO TOP CONNECTORS OR SIDE SCREW TERMINALS.

AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0'
4		SCALE:	

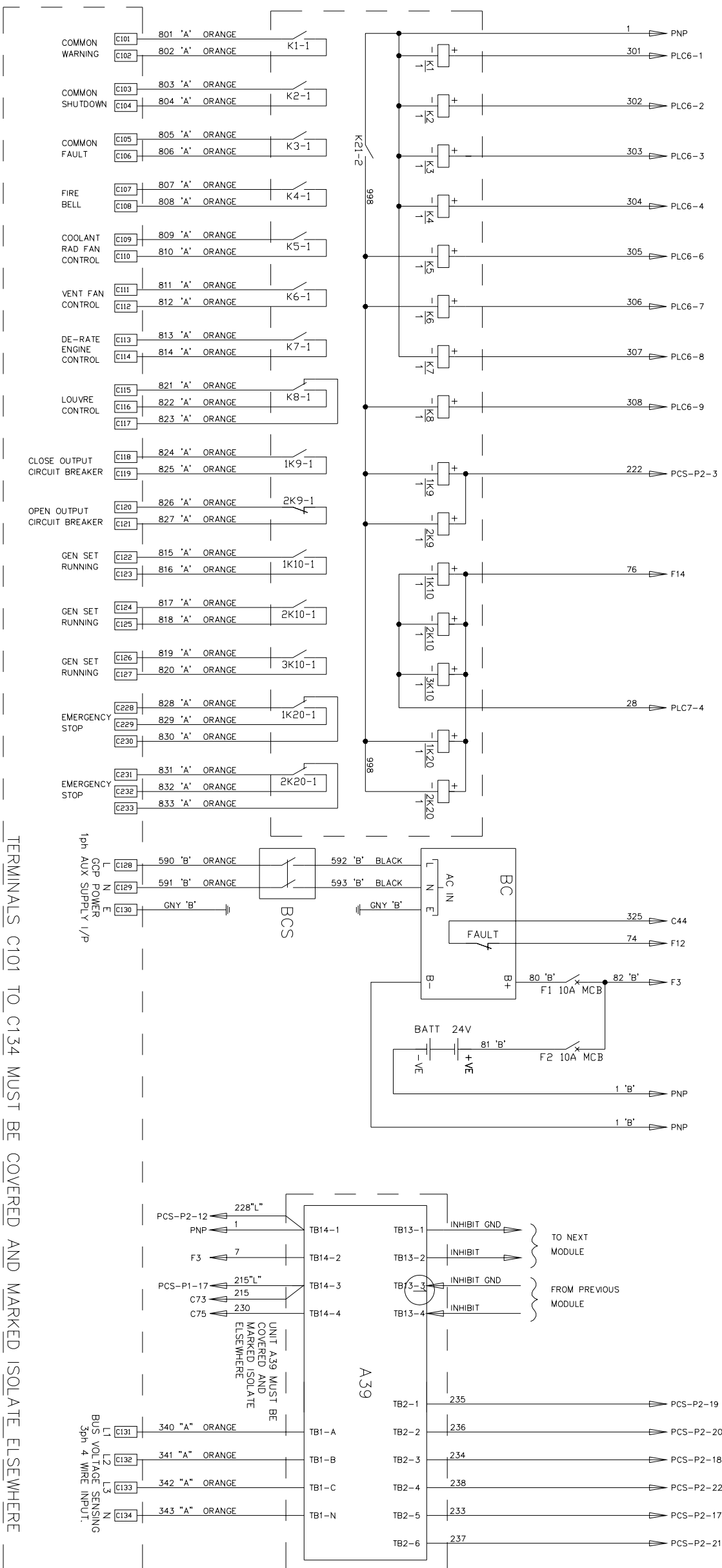
TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	NAME	DATE
DL X X.X X.XX = ±0.5 = ±0.3 = ±0.15	XEB072	M.Fitzgerald	16/01/02
0.09-4.99 = ±0.15/-0.08 5.00-9.99 = ±0.20/-0.10 10.00-17.99 = ±0.25/-0.13 17.50-24.99 = ±0.30/-0.13	THIRD ANGLE PROJECTION	P.Goessel	10/03/03
	APPROVED	R.Hozellen	10/03/03

	TITLE CONNECTION DIAGRAM	DWG No. 0620-0241	SHEET 1 OF 1	DWG SIZE A3

Cummins Power Generation
Columbus Avenue, Manston, Ramsgate
Kent, CT12 5BF, England, UK

0620-0240 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK4534	B	1	TERMINALS TB13 & TB14 ADDED	1C	M.F.	10/05/02
ERK5903	C	1	TB13-2 & 4 WERE GND	1C	K.Williams	21/10/02
ERK6578	D	1	A39 TB14-1,2,3 TAGS ALTD	1C	K.Williams	30/01/02
ERK6750	E	1	K19 DELETED (CAR-1477)	1C	K.Williams	10/03/03
ERK7571	F	1	Cable Num added 228 'L'	2B	C. Spellmon	18/07/03



RELAYS K1 TO K10, K20 HAVE BUILT IN SPIKE SUPPRESSION DIODES.
RELAYS K1 TO K10 MUST BE COVERED AND MARKED ISOLATE ELSEWHERE

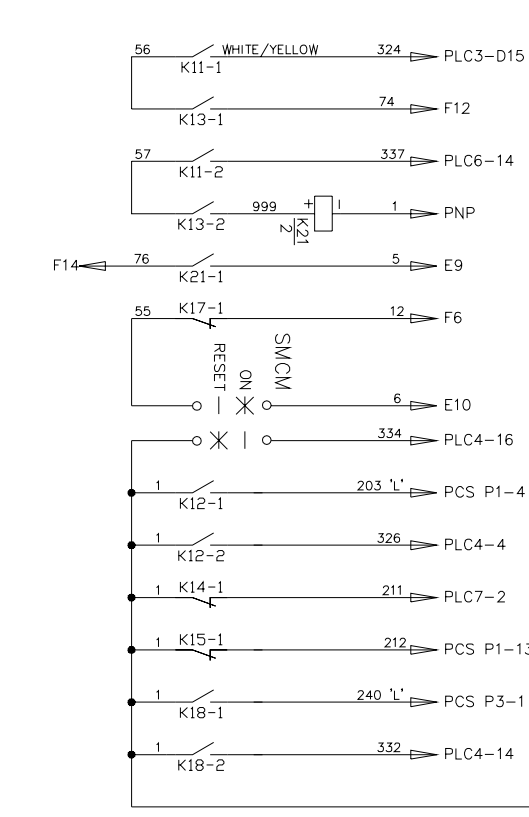
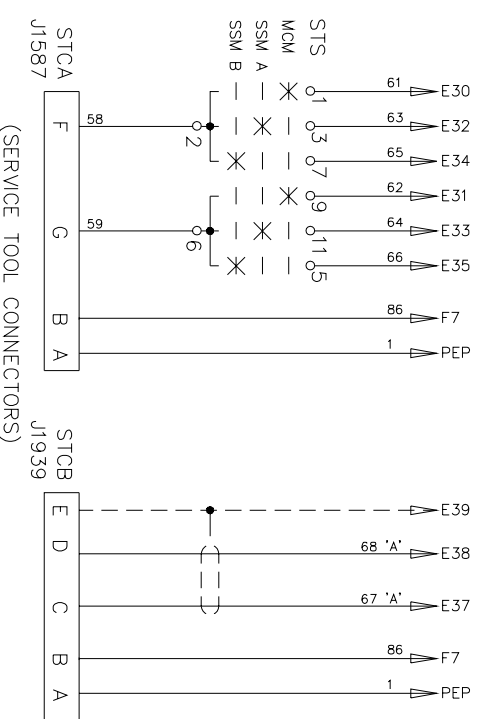
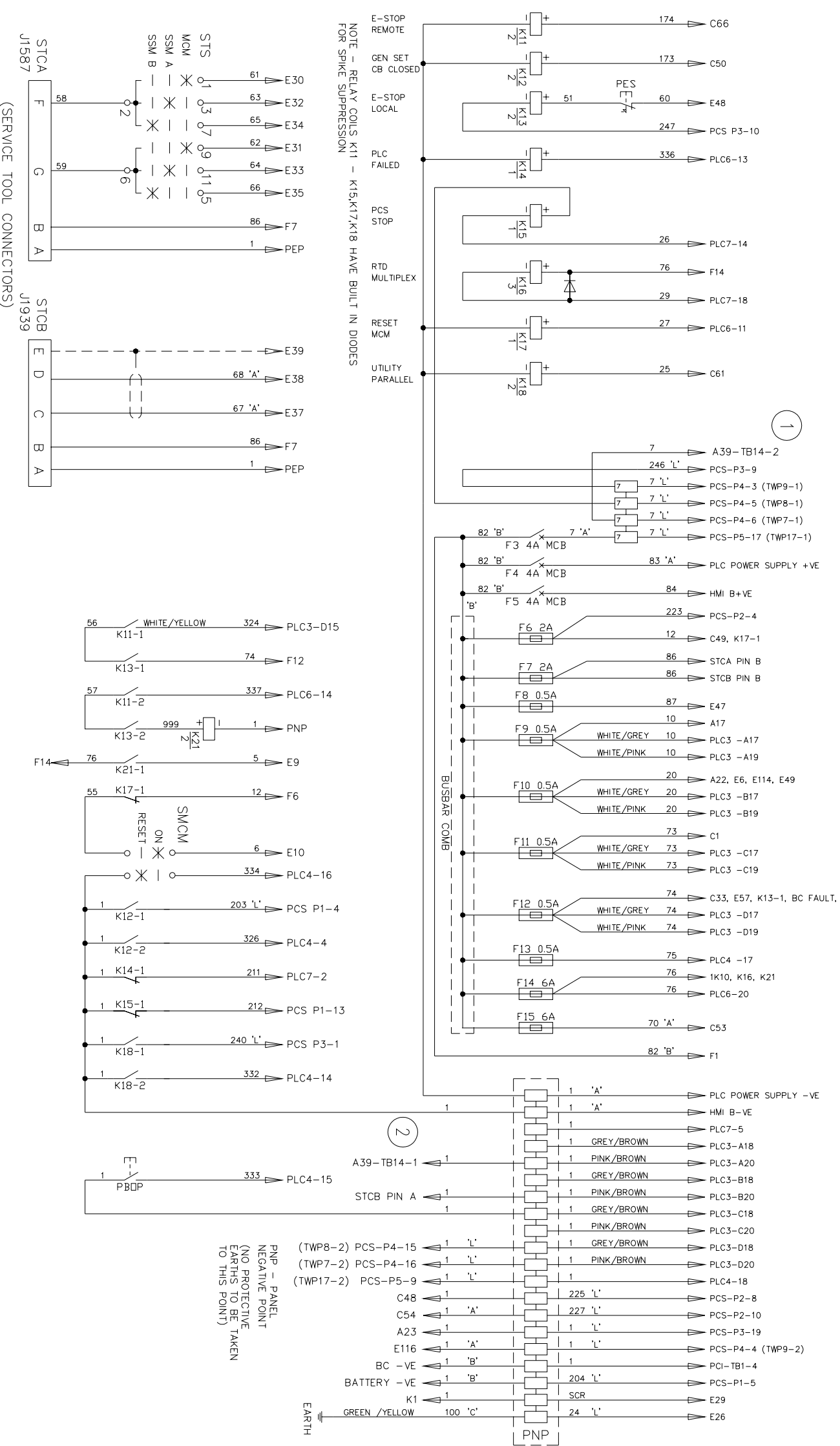
TERMINALS C101 TO C134 MUST BE COVERED AND MARKED ISOLATE ELSEWHERE

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TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO COPIED FROM		XEB071		THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE		
DIM		X		±0.5		THIRD ANGLE PROJECTION		
X.X		=		±0.3		FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2		
X.XX		=		±0.15		APPROVED		
0.09-4.99 = +0.15/-0.08		5.00-9.99 = +0.20/-0.10		10.00-17.99 = +0.25/-0.13		R.Hozellen		
17.50-24.99 = +0.30/-0.13		FIRST USED ON		10/03/03		P.G.K		
DRAWN		M.Fitzgerald		DATE		16/01/02		
CHECKED		P.Goessel		DATE		10/03/03		
TITLE		Cummins Power Generation		Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK		SITE CODE		
CONNECTION DIAGRAM		DWG No.		0620-0240		SHEET		
1 OF 1		A3		SIZE		A3		

0620-0239

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK4534	B	1	A39-TB14-2 ADDED TO TERMINAL 7	3C	M.F.	10/05/02
ERK4534	B	2	A39-TB14-1 ADDED	1B	M.F.	10/05/02
ERK6750	C	1	K19 DELETED (CAR-1477)	3C	K.Williams	10/03/03
ERK6807	D	1	SCREEN E36 DELETED	4B	K.Williams	17/03/03
ERK7571	E	1	Connection changed from PLC3-B19	2D	CS	18/07/03
ERK8142	F	1	Fuse F5 changed from 5A to 4A	3C	CS	20/10/03

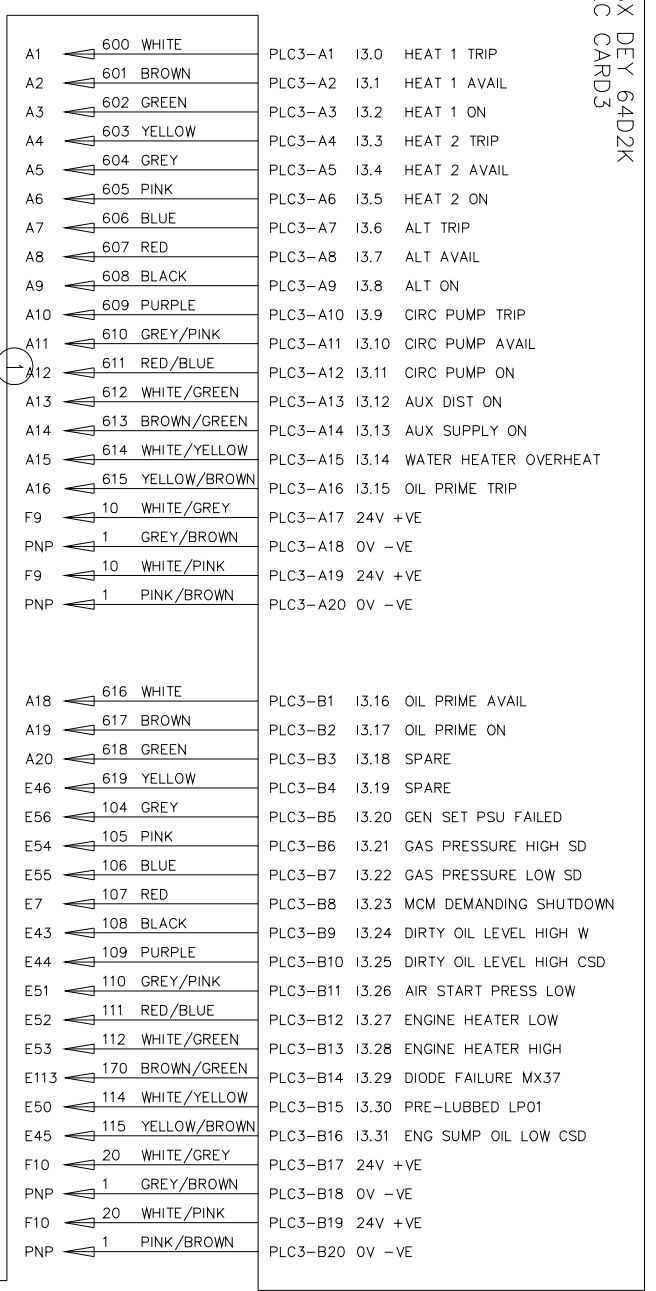


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4		3		2		1		A	
TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO		XEB070		NAME		DATE	
DIM		X.XX = ±0.5		X.XX = ±0.3		X.XX = ±0.15		16/01/02	
0.09-4.99 = ±0.15/-0.08		5.00-9.99 = ±0.20/-0.10		10.00-17.99 = ±0.25/-0.13		17.50-24.99 = ±0.30/-0.13		10/03/03	
THIRD ANGLE PROJECTION		CHECKED		P.Goessel		APPROVED		R.Hazelton	
THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE		FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2		FIRST USED ON		SITE CODE		PGK	
Cummins Power Generation		Columbus Avenue, Manston, Ramsgate		Kent, CT12 5BF, England, UK		TITLE		CONNECTION DIAGRAM	
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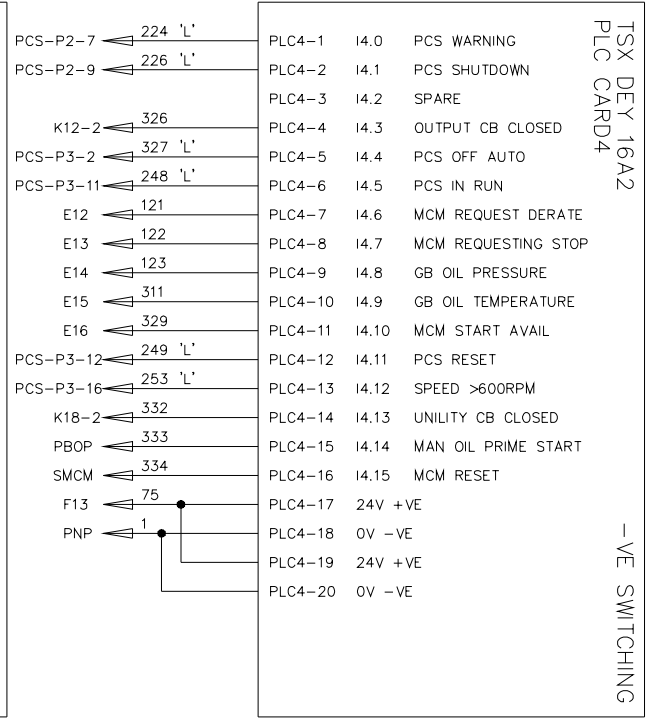
0620-0238 A3

REL. No.	LR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK4534	B	1	PLC3-D14 13.61 CHANGE TO SPARE	2B	M.F.	10/05/02
ERK6063	C	1	C13 TAG WAS REMOVE RESET KEY	4B	K.Williams	07/11/02
ERK6578	D	1	PLC3-D14 TAG ADDED	2B	K.Williams	30/01/03
ERK7148	E	1	WATER HEATER OVERHEAT ADDED	4D	K.Williams	30/04/03
ERK7571	F	1	BARRING GEAR I/P CHANGED TO SPARE	3D	CS	01/08/03

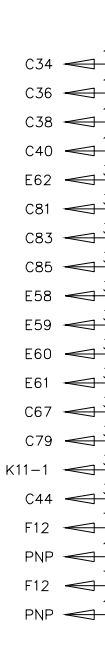
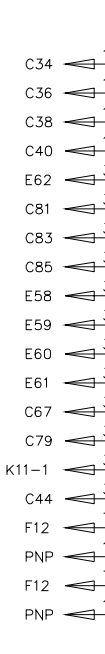
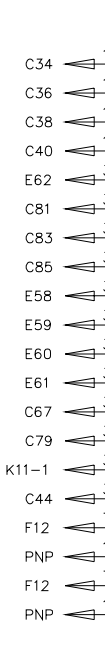
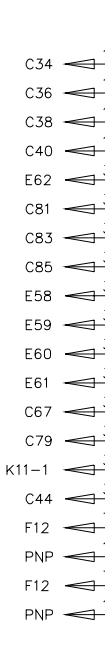
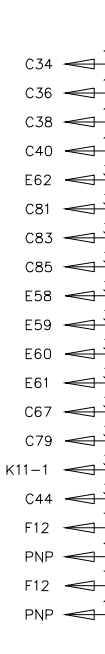
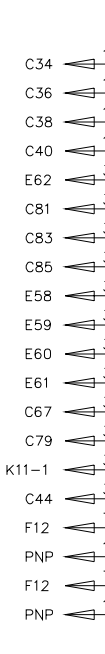
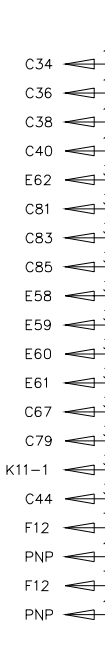
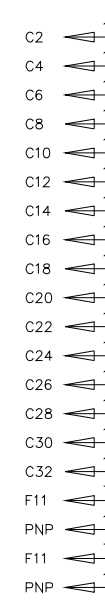
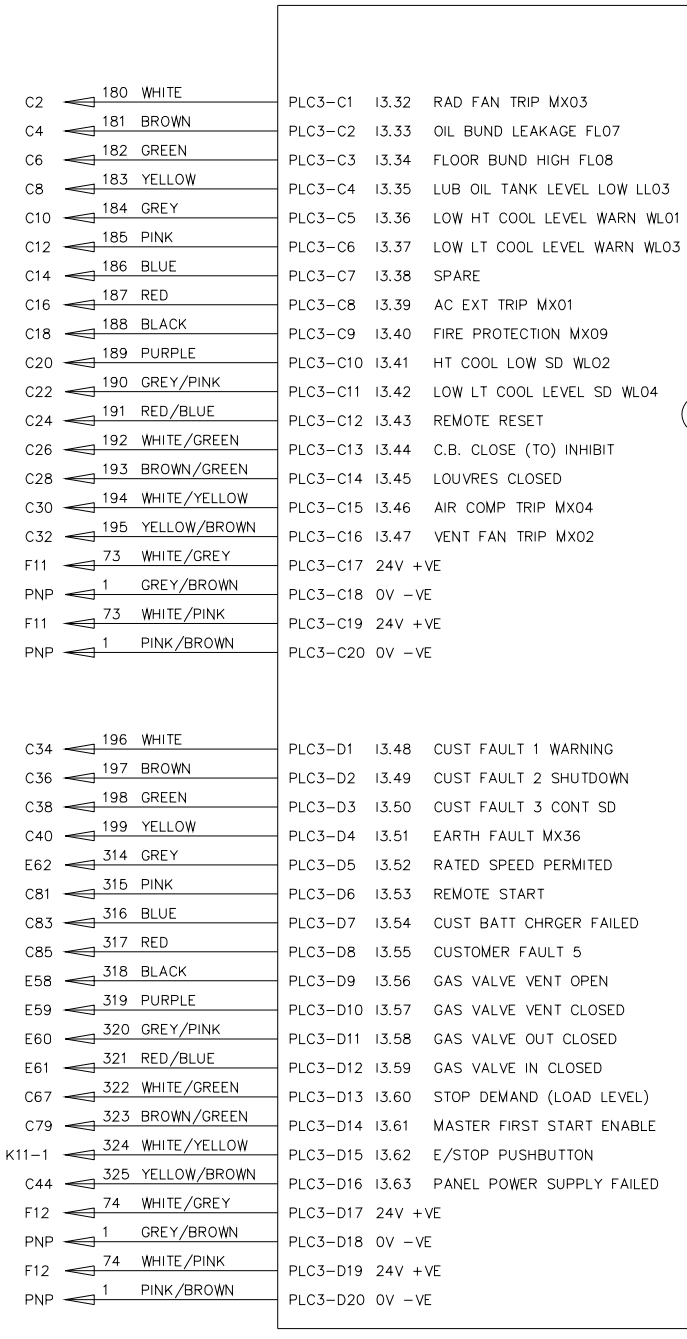
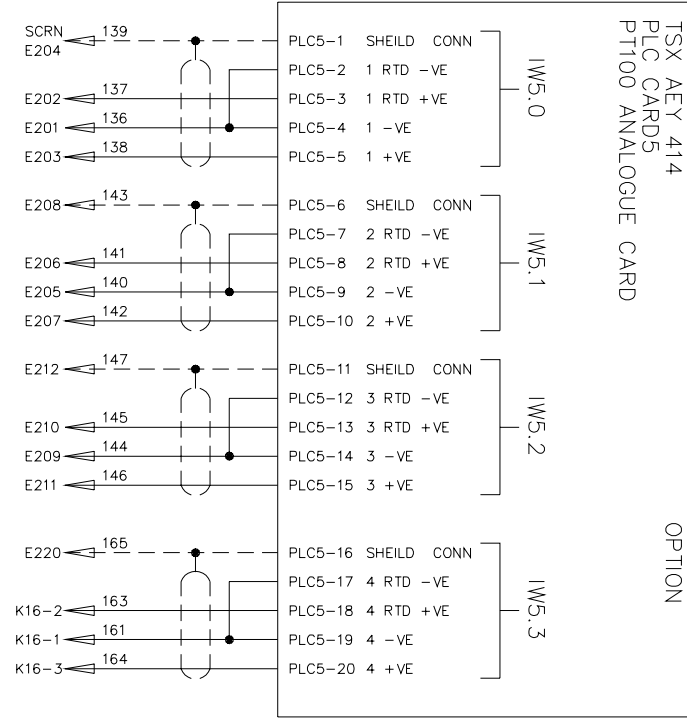
TSX DEY 64D2K
PLC CARD3



TSX DEY 16A2
PLC CARD4



TSX AEY 414
PLC CARDS
PT100 ANALOGUE CARD



0620-0237

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	23/11/01
ERK6361	B	1	ECOR RELEASE ONLY	-	K.Williams	18/12/02
ERK6807	C	1	INTERCON 5 CABLE ALTERED	4D	K.Williams	17/03/03

INTERCON 5 - J1587 PROTOCOL

VOLTAGE - COMMUNICATIONS

CABLE - UNSHIELDED 1.5mm SCRND 3 TWISTED PAIRS

FROM	TO	INTERCON
GEN SET GCP180-01A1	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
61	E30	E30
62	E31	E31
63	E32	E32
64	E33	E33
65	E34	E34
66	E35	E35

INTERCON 8 - ALT WINDING L1 RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
136	E201	E201
137	E202	E202
138	E203	E203
139	E204	E204

INTERCON 11 - ALT DRIVE END BREAKING RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
148	E213	E213
149	E214	E214
150	E215	E215
165	E216	E216

INTERCON 14 - VOLTAGE REGULATOR PWM SIGNAL

VOLTAGE - 3K Hz LOW LEVEL SIGNAL

CABLE - 2 Core 1.5mm SCREENED TWISTED PAIR

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
263	E117	E117
264	E118	E118

INTERCON 15 - GEN SET POWER SUPPLY

VOLTAGE - 24V DC

CABLE - 4 Core 4.0mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
22	1B+	22
1	1B-	1
32	2B+	32
1	2B-	1

INTERCON 6 - J1939 PROTOCOL

VOLTAGE - COMMUNICATIONS

CABLE - 2 Core 1.5 mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A1	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
67	E37	E37
68	E38	E38
SCRN	E39	E39

INTERCON 9 - ALT WINDING L2 RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
140	E205	E205
141	E206	E206
142	E207	E207
143	E208	E208

INTERCON 12 - ALT NON DRIVE END BREAKING RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
151	E217	E217
152	E218	E218
153	E219	E219
165	E220	E220

INTERCON 16 - GEN SET POWER SUPPLY FAULT

VOLTAGE - 24V DC

CABLE - 2 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
104	CF1	CF1
20	CF2	CF2

INTERCON 7 - ENGINE SPEED PROBE

VOLTAGE - LOW LEVEL AC SIGNAL

CABLE - 2 Core 1.0mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A1	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
270	E41	E41
271	E42	E42

INTERCON 10 - ALT WINDING L3 RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
144	E209	E209
145	E210	E210
146	E211	E211
147	E212	E212

INTERCON 13 - 18V AC SIGNALS

VOLTAGE - CT'S AND 18V AC

CABLE - 12 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
256	E101	E101
244	E102	E102
250	E103	E103
242	E104	E104
243	E105	E105
241	E106	E106
259	E107	E107
245	E108	E108
251	E109	E109
258	E110	E110
252	E111	E111
257	E112	E112

INTERCON 14 - GEN SET POWER SUPPLY FAULT

VOLTAGE - 24V DC

CABLE - 2 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
104	CF1	CF1
20	CF2	CF2

INTERCON 5 - J1587 PROTOCOL

VOLTAGE - COMMUNICATIONS

CABLE - UNSHIELDED 1.5mm SCRND 3 TWISTED PAIRS

FROM	TO	INTERCON
GEN SET GCP180-01A1	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
61	E30	E30
62	E31	E31
63	E32	E32
64	E33	E33
65	E34	E34
66	E35	E35

INTERCON 8 - ALT WINDING L1 RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
136	E201	E201
137	E202	E202
138	E203	E203
139	E204	E204

INTERCON 11 - ALT DRIVE END BREAKING RTD

VOLTAGE - LOW LEVEL DC SIGNAL

CABLE - 3 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
148	E213	E213
149	E214	E214
150	E215	E215
165	E216	E216

INTERCON 14 - VOLTAGE REGULATOR PWM SIGNAL

VOLTAGE - 3K Hz LOW LEVEL SIGNAL

CABLE - 2 Core 1.5mm SCREENED TWISTED PAIR

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
263	E117	E117
264	E118	E118

INTERCON 15 - GEN SET POWER SUPPLY

VOLTAGE - 24V DC

CABLE - 4 Core 4.0mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
22	1B+	22
1	1B-	1
32	2B+	32
1	2B-	1

INTERCON 16 - GEN SET POWER SUPPLY FAULT

VOLTAGE - 24V DC

CABLE - 2 Core 1.5mm SCREENED

FROM	TO	INTERCON
GEN SET GCP180-01A2	GCP GCP180-03A1	CABLE
WIRE	TERM	WIRE
104	CF1	CF1
20	CF2	CF2

TOLERANCE UNLESS OTHERWISE SPECIFIED

0.09-4.99 = ±0.15/-0.08

5.00-9.99 = ±0.20/-0.10

10.00-17.99 = ±0.25/-0.13

17.50-24.99 = ±0.30/-0.13

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APPROVED: Rhazellen

FIRST USED ON: 17/03/03

FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2

DATE: 23/11/01

DATE: 18/12/02

DATE: 17/03/03

DRAWN: M.Fitzgerald

CHECKED: P.Goessel

DATE: 21/03/02

DATE: 17/03/03

DATE: 23/11/01

DATE: 21/03/02

DATE: 17/03/03

DATE: 23/11/01

DATE: 21/03/02

DATE: 17/03/03

DATE: 23/11/01

DATE: 18/12/02

NAME: M.Fitzgerald

NAME: P.Goessel

DATE: 21/03/02

DATE: 17/03/03

DATE: 23/11/01

DATE: 21/03/02

DATE: 17/03/03

DATE: 23/11/01

DATE: 21/03/02

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DATE: 21/03/02

DATE: 17/03/03

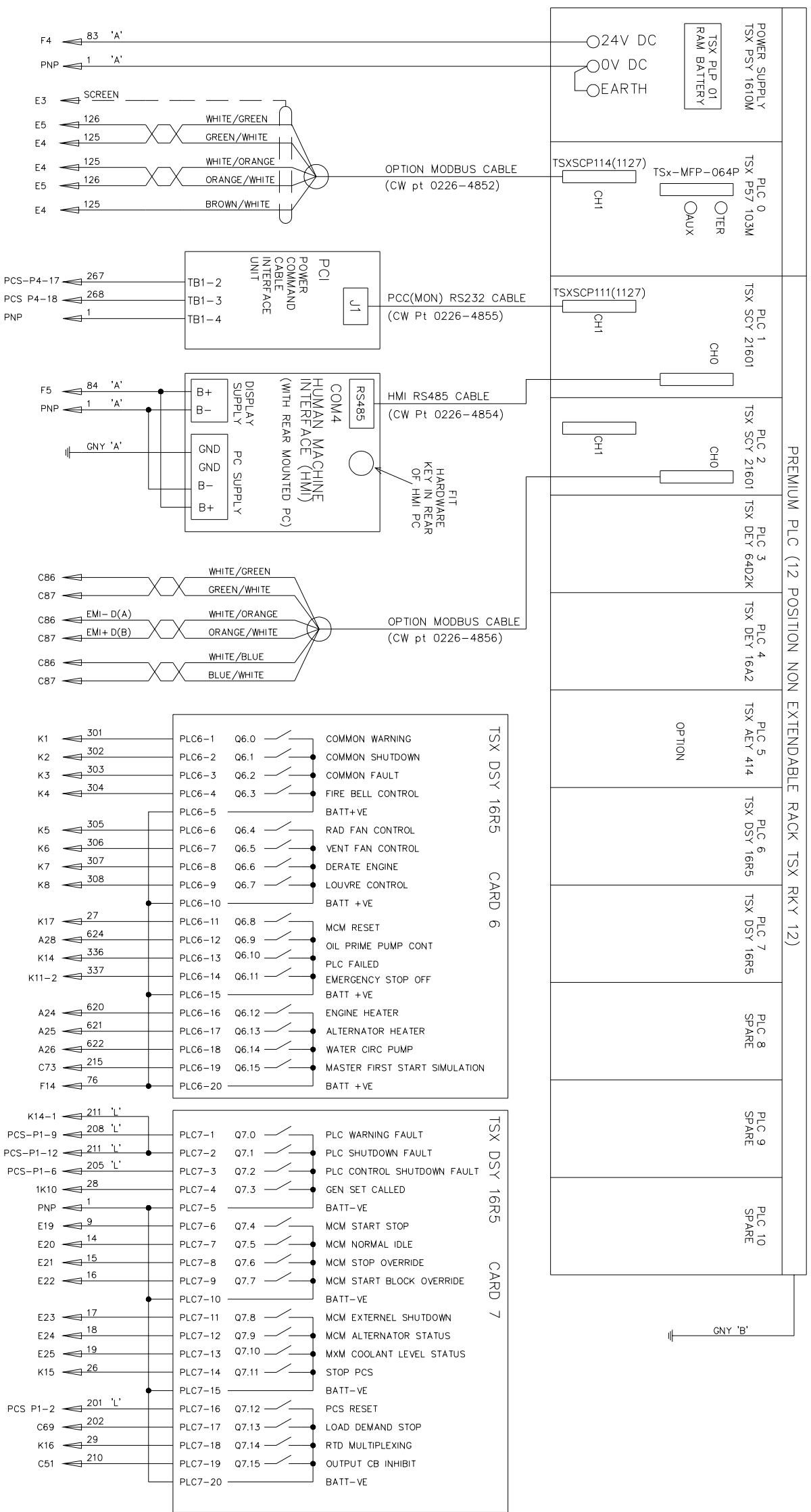
DATE: 23/11/01

DATE: 18/12/02

0620-0236

A3

REL. No.	LR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK4534	B	1	WIRE 215 DELETED	1A	M.F.	10/05/02
ERK4534	B	2	MASTER FIRST START CHANG. TO SPARE	1B	M.F.	10/05/02
ERK4970	C	1	MODBUS CABLE	B4	M.Fitzgerald	25/06/02
ERK5903	D	1	WIRE 202 WAS PCS P1-3	1A	K.Williams	21/10/02
ERK6578	E	1	PLC6-19 TAG ADDED	2B	K.Williams	30/01/03
ERK6605	F	1	PLC6-19 WIRE WAS 219	2B	K.Williams	05/02/03
ERK7662	G	1	NEW GPU, 06.11 E.STOP OFF	2B	K.Williams	01/08/03
ERK8142	H	1	UPDATED WIRE NUMBERS	2A	CS	16/10/03

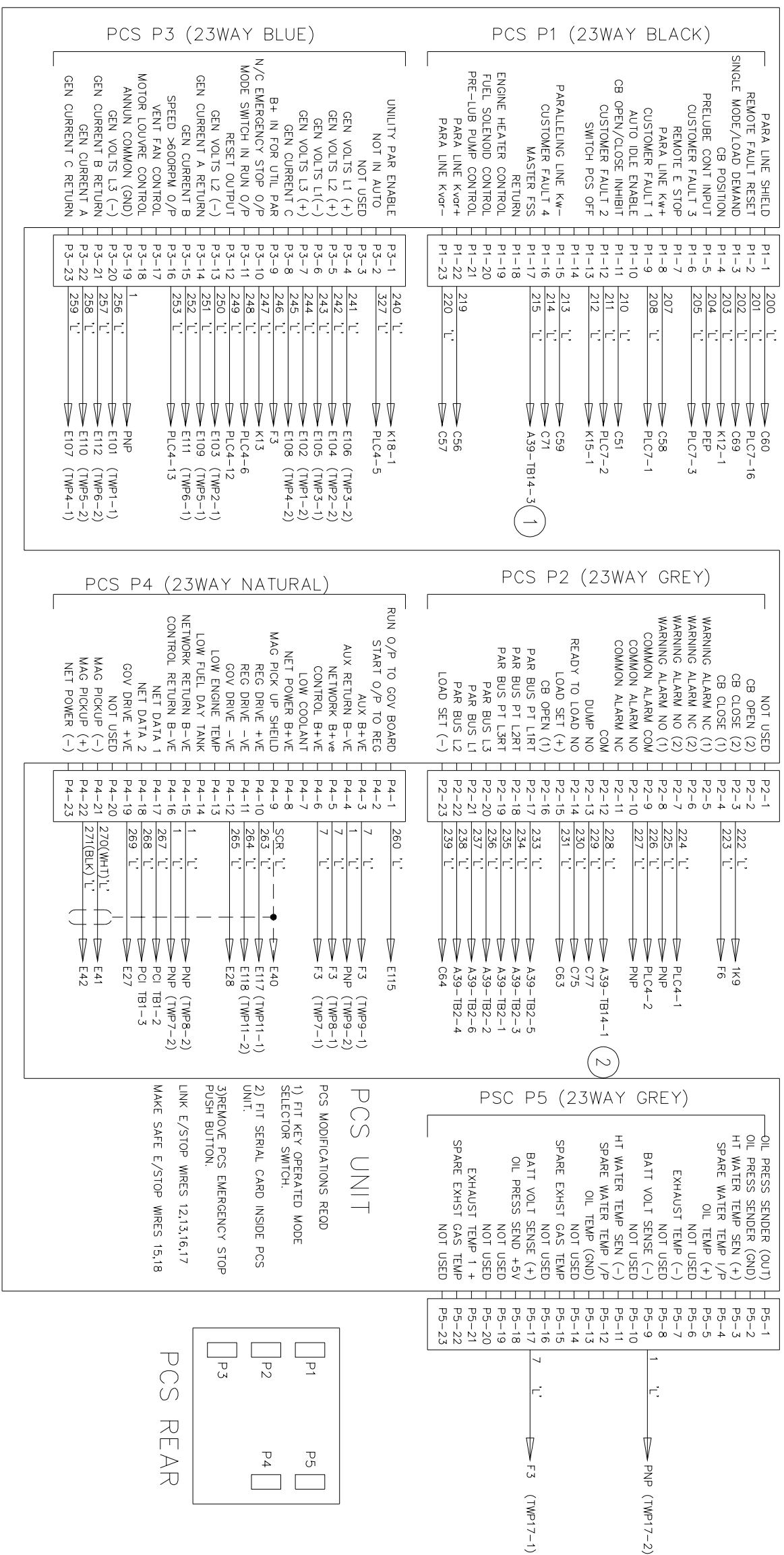


AutocAD		DO NOT SCALE PRINT		ANGLE TOL.		SCALE:		±1.0°	
DIM		TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO		XEB0069		THIRD ANGLE PROJECTION	
L		5.00-9.99 = +0.20/-0.10		COPED FROM		-		THIS DOCUMENT IS THE PROPERTY OF CUMMINS AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DISCLOSED, USED OR REPRODUCED WITHOUT THE EXPRESS WRITTEN AUTHORIZATION OF CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	
H		10.00-17.99 = +0.25/-0.13		DRAWN		M.Fitzgerald		DATE	
I		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
J		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
K		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
L		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
M		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
N		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
O		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
P		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
Q		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
R		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
S		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
T		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
U		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
V		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
W		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
X		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
Y		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
Z		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
AA		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
AB		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
AC		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
AD		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
AE		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
AF		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
AG		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
AH		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
AI		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
AJ		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
AK		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
AL		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
AM		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
AN		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
AO		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
AP		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
AQ		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
AR		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
AS		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
AT		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
AU		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
AV		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
AW		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
AX		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
AY		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
AZ		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
BA		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
BB		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
BC		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
BD		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
BE		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
BF		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
BG		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
BH		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
BI		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
BJ		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
BK		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
BL		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
BM		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
BN		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
BO		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
BP		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
BQ		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
BR		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
BS		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
BT		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
BU		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
BV		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
BW		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
BX		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
BY		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
BZ		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
CA		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
CB		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
CC		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
CD		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
CE		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
CF		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
CG		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
CH		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
CI		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
CJ		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
CK		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
CL		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
CM		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
CN		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
CO		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
CP		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
CQ		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
CR		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
CS		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
CT		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
CU		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
CV		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
CW		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
CX		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
CY		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
CZ		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
CA		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
CB		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
CC		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
CD		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
CE		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
CF		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
CG		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
CH		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
CI		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
CJ		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
CK		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
CL		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
CM		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
CN		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
CO		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
CP		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
CQ		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/03	
CR		0.09-4.99 = +0.15/-0.08		NAME		M.Fitzgerald		DATE	
CS		5.00-9.99 = +0.20/-0.10		CHECKED		P.Goessel		26/03/02	
CT		10.00-17.99 = +0.25/-0.13		APPROVED		R.Hozellen		05/02/03	
CU		17.50-24.99 = +0.30/-0.13		NAME		M.Fitzgerald		DATE	
CV		0.09-4.99 = +0.15/-0.08		CHECKED		P.Goessel		26/03/02	
CW		5.00-9.99 = +0.20/-0.10		APPROVED		R.Hozellen		05/02/03	
CX		10.00-17.99 = +0.25/-0.13		NAME		M.Fitzgerald		DATE	
CY		17.50-24.99 = +0.30/-0.13		CHECKED		P.Goessel		26/03/02	
CZ		0.09-4.99 = +0.15/-0.08		APPROVED		R.Hozellen		05/02/03	
CA		5.00-9.99 = +0.20/-0.10		NAME		M.Fitzgerald		DATE	
CB		10.00-17.99 = +0.25/-0.13		CHECKED		P.Goessel		26/03/02	
CC		17.50-24.99 = +0.30/-0.13		APPROVED		R.Hozellen		05/02/0	

0620-0235

A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	1		PRODUCTION RELEASE	-	Mike Aitken	08/01/01
ERK4534	B	1	C55 CHANGED TO A39-TB14-3	3C	M.F.	10/05/02
ERK4534	B	2	C76 CHANGED TO A39-TB14-2	2C	M.F.	10/05/02
ERK5903	C	1	WIRE 202 WAS PLCT7-17	4D	KW	21/10/02
ERK7571	D	1	Connection change A39 TB14-1	2C	CS	18/07/03



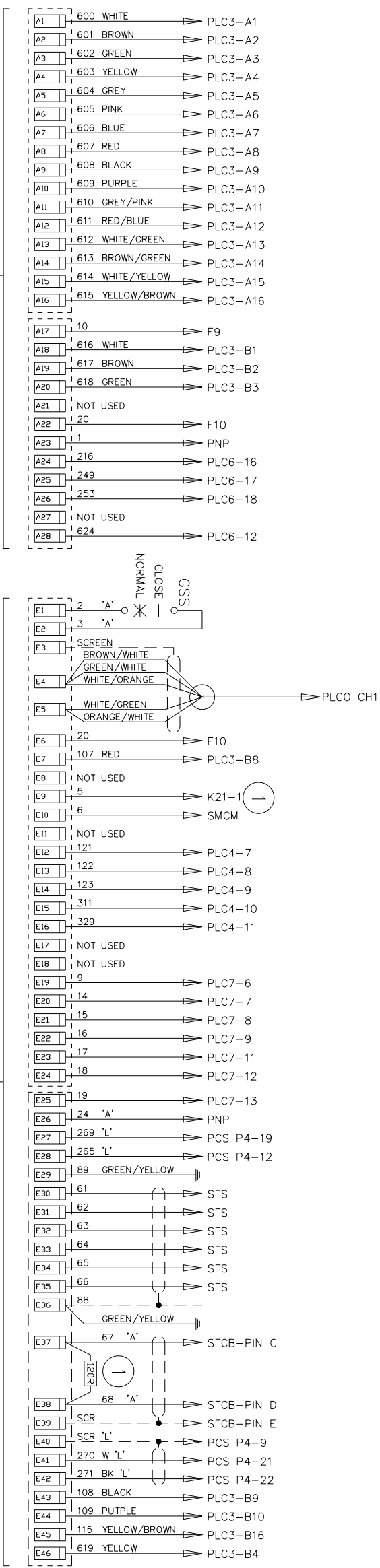
TOLERANCE UNLESS OTHERWISE SPECIFIED		SIMILAR TO		NAME		DATE		TITLE	
±0.5	±0.3	XEB067	THIRD ANGLE PROJECTION	Mike Aitken	08/01/01	Cummins Power Generation		Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK	
±0.15	±0.15			P.Goessel	20/03/02	CONNECTION DIAGRAM		Kent, CT12 5BF, England, UK	
±0.15	±0.15			R.hozelton	20/03/02	PGK		DWC No. 0620-0235	
±0.15	±0.15					SITE CODE		SHEET 1 OF 1	
±0.15	±0.15					DWC No. 0620-0235		DWC SIZE A3	

AutocAD DO NOT SCALE PRINT ANGLE TOL. ±1.0° SCALE: 4

3 2 1

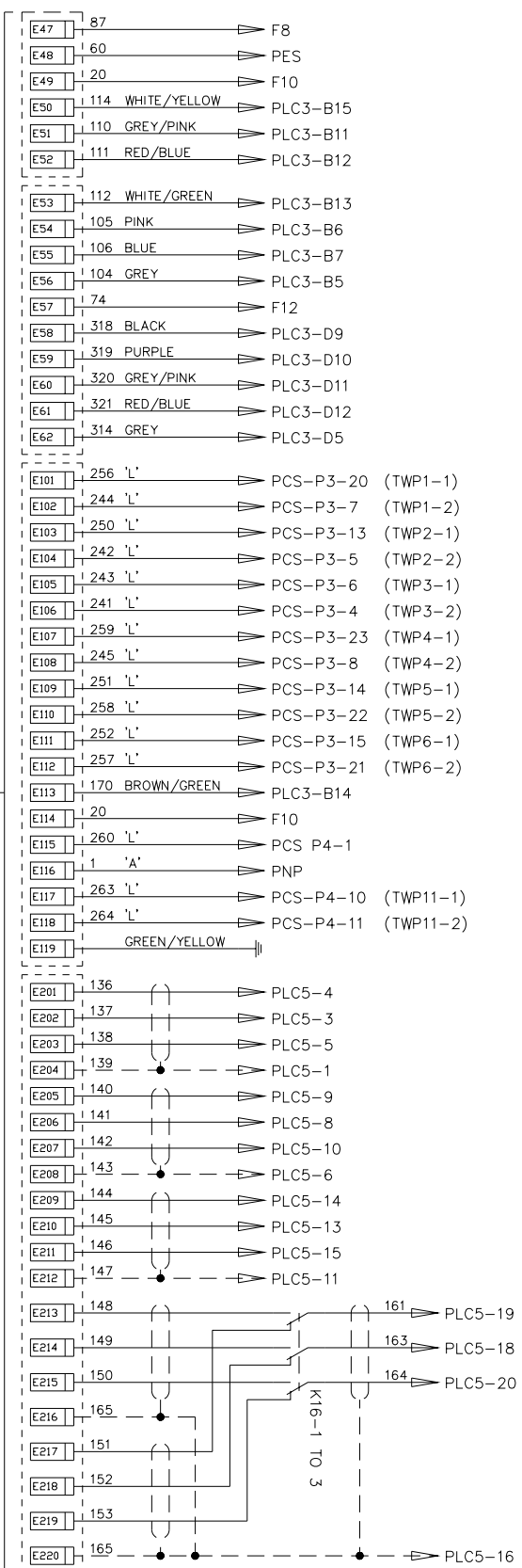
0620-0234 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	Mike Aitken	08/01/01
ERK4698	B	1	CHANGES IN TERMINALS 9 & 38	C1&2	M.Fitzgerald	23/05/02



TO GEN SET - AC TERMINAL BOX
NOTE 6

TO GEN SET - GEN SET TERMINAL BOX
NOTE 6



TO GEN SET - GEN SET TERMINAL BOX
NOTE 6

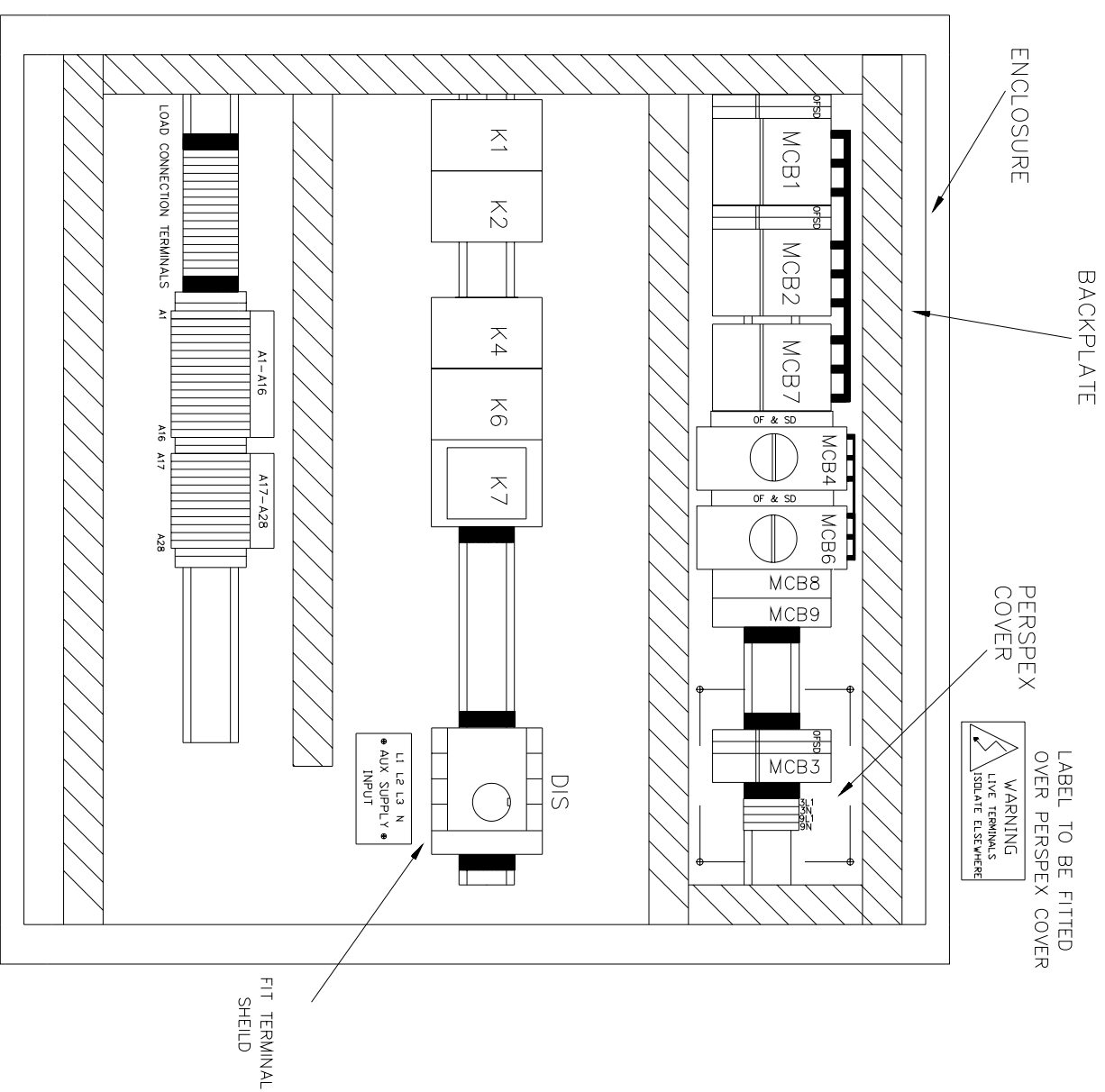
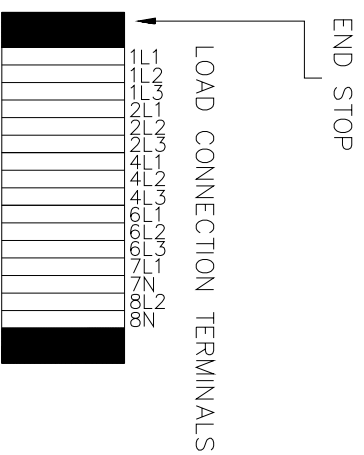
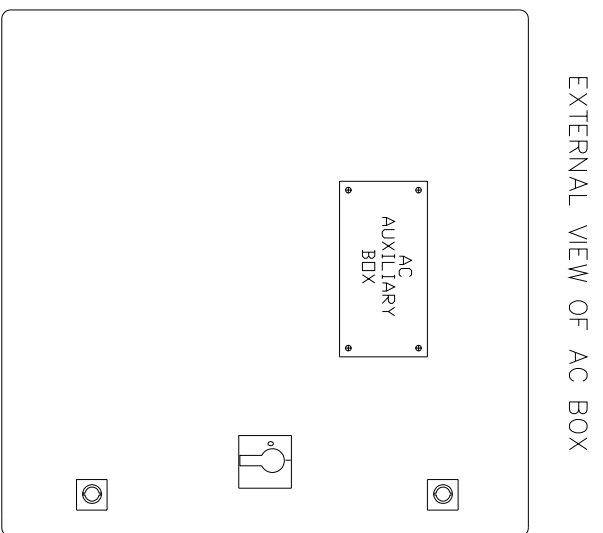
TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO	NAME	TITLE
DIM X.XX = ±0.5 X.XX = ±0.3 X.XX = ±0.15	COPED FROM XEB005	Mike Aitken	Cummins Power Generation Columbus Avenue, Manston, Ramsgate Kent, CT12 5BF, England, UK
0.09-4.99 = +0.15/-0.08 5.00-9.99 = +0.20/-0.10 10.00-17.99 = +0.25/-0.13 17.50-24.99 = +0.30/-0.13	THIRD ANGLE PROJECTION	P.Goessel	CONNECTION DIAGRAM
THIS DOCUMENT IS THE PROPERTY OF CUMMINS AND IS CONFIDENTIAL. INFORMATION WHICH IS NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	APPROVED R.Hozelton	FIRST USED ON 26/03/02	DWG No. 0620-0234
FOR INTERPRETATION AND DIMENSIONING, SEE BS 308 Part 2	CHECKED P.Goessel	DATE 08/01/01	SHEET 1 OF 1
AutocAD	DO NOT SCALE PRINT	ANGLE TOL. SCALE: ±1.0°	DWG SIZE A3



0319-4702 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6448	B	1	ECOR RELEASE	-	K.Williams	07/01/03

COMPONENTS LIST	DESCRIPTION
DIS	ISOLATOR, 63A
K1	CONTACTOR, ENGINE HEATER CONTROL
K2	CONTACTOR, ENGINE HEATER CONTROL
K4	CONTACTOR, COOLANT CIRC PUMP CONTROL
K6	CONTACTOR, OIL PRIMING PUMP CONTROL
K7	RELAY, UNDERVOLTAGE SENSING
MCB1	MCB, HEATER 1
MCB2	MCB, HEATER 2
MCB3	MCB, ALTERNATOR HEATER
MCB4	MCB, COOLANT CIRC. PUMP
MCB6	MCB, OIL PRIMING PUMP
MCB7	MCB, UNDERVOLTAGE SENSING RELAY
MCB8	MCB, LOCAL AC SUPPLY
MCB9	MCB, LOCAL AC SUPPLY



AutocAD	DO NOT SCALE PRINT	ANGLE TOL.	±1.0°
		SCALE:	

TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	XEB061
DM	X	±0.5
	X.X	±0.3
	X.XX	±0.15
LI	0.09-4.99	±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

DRWEN	NAME	DATE
M.Fitzgerald		16/01/02
P.Goessel		20/03/02
R.Hozelton		07/01/03

Garrett

Cummins Power Generation
Columbus Avenue, Manston, Ramsgate
Kent, CT12 5BF, England, UK

PGK

BOX - CONTROL

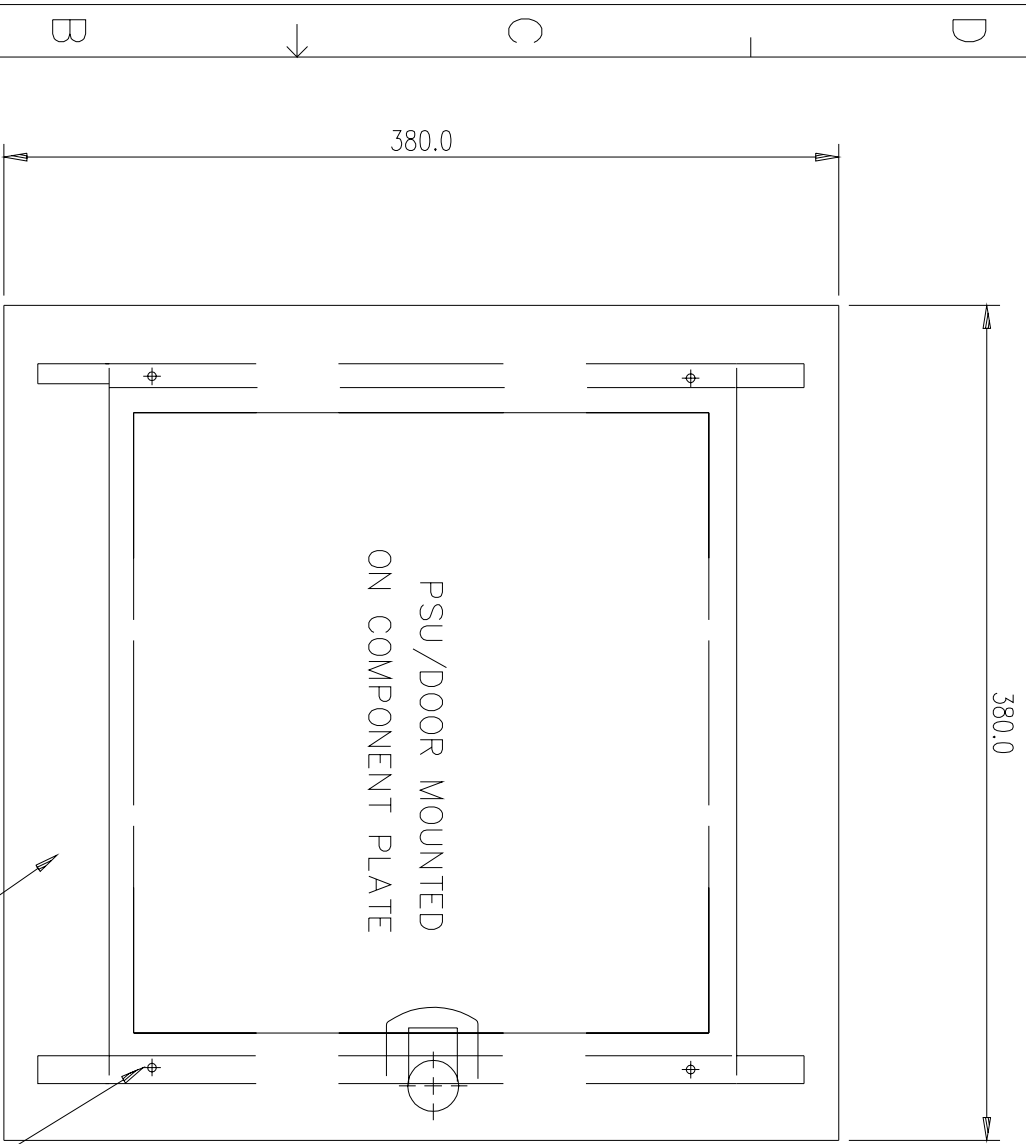
0319-4702

1 OF 1

A3

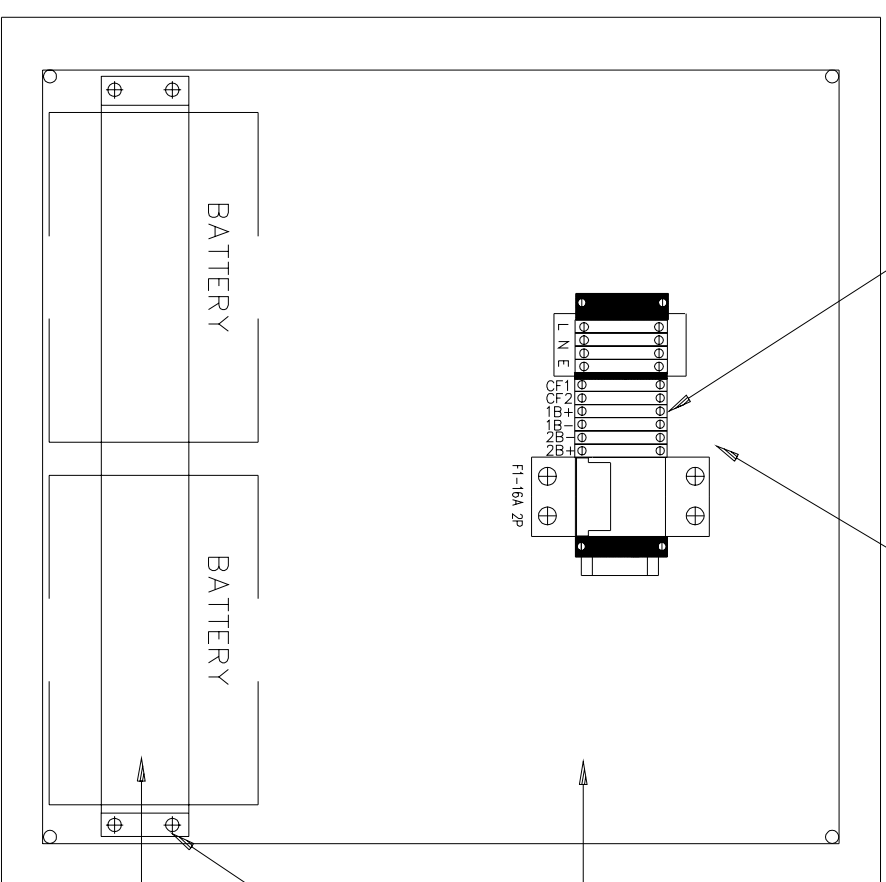
0300-5627 A3

REL. No.	LTR	No.	REVISION	ZONE	DRAWN	DATE
ERK3874	A	1	PRODUCTION RELEASE	-	M.Fitzgerald	16/01/02
ERK6697	B	1	ECOR RELEASE ONLY		K.Williams	03/03/03
ERK8090	C		1MCB(16A-2P) was 2MCB(10A-1P)	C2	E.Costa	07/10/03



FOR WIRING SEE DWG No XE8057

INTERNAL LAYOUT OF COMPONENTS



4x 5.0mm SCREWS

4x 5.0mm SCREWS

SEE NOTE 1

NOTES.

1. BATTERIES TO BE MOUNTED ON BOTTOM OF ENCLOSURE, SIDE BY SIDE, HELD IN BY A 40mm BRACKET SECURED TO BACKPLATE.
2. POWER SUPPLY UNIT WEIGHT APPROX. 30kg.

COMPONENT PLATE SCREWED TO DOOR VERTICAL STRENGTHENERS.

AutocAD	DO NOT SCALE PRINT	ANGLE TOL. SCALE:	±1.0°
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TOLERANCE UNLESS OTHERWISE SPECIFIED	SIMILAR TO COPIED FROM	THIRD ANGLE PROJECTION
X XX XXX	-	
±0.5 ±0.3 ±0.15	XE8058	

0.09-4.99 = +0.15/-0.08	THIS DOCUMENT IS THE PROPERTY OF CUMMINS POWER GENERATION. IT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION WHICH MUST NOT BE DUPLICATED, USED OR DISCLOSED OTHER THAN AS EXPRESSLY AUTHORIZED BY CUMMINS POWER GENERATION OR ITS REPRESENTATIVE	DRWMN	M.Fitzgerald	NAME	DATE
5.00-9.99 = +0.20/-0.10		CHECKED	P.Goessel		16/01/02
10.00-17.49 = +0.25/-0.13		APPROVED	R.Hozellen	FIRST USED ON	20/3/02
17.50-24.99 = +0.30/-0.13					03/03/03

PGK	SITE CODE
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DWG No.	0300-5627	SHEET	1 OF 1	DWG SIZE	A3
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Cummins Power Generation
Columbus Avenue, Manston, Ramsgate
Kent, CT12 5BF, England, UK

POWER SUPPLY-CONTROL

4

3

2

1