PURCHASE ORDER

Tuxtla GAS ENGINEERING LTD.

PO NUMBER **1072 - P - 006**
PAGE 1 OF 1

CLIENT AFE: **5238 FC**
CLIENT COST CODE: **9342-911**
TUXTLA COST CODE: **2300**

ORDER DATE: SEPTEMBER 7, 2000
DELIVERY DATE: SEPTEMBER 28, 2000

VENDOR:

WESCO DISTRIBUTION - CANADA, INC.
810 - 59th Avenue S.E.
Calgary, Alberta
T2H 2G5
Telephone: (403) 259-0837 Fax: (403) 258-0210
ATTENTION: JEFF HANSON

F.O.B. POINT	VENDOR YARD
TERMS	NET 30 DAYS
LOCATION	JOARCAM - 6-29-49-21 W4M
ITEM	MCC

PLEASE SUPPLY THE FOLLOWING ITEMS/SERVICES/EQUIPMENT BEING PURCHASED FOR THE ACCOUNT OF CABRE EXPLORATION LTD. SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS APPEARING ON THE FACE AND BACK HEREOF.

ITEM	QUANTITY	DESCRIPTION	UNIT PRICE	TOTAL AMOUNT
1	1	Your quotation # C-3-00-1900 Cutler Hammer Series 2100 MCC Please include the following and send to TUXTLA GAS ENGINEERING ITD. ATTENTION: **SID SAXENA** ☐ three (3) copies of the MTR's with invoice ☐ one (1) copy of pipe material Release Number, if required for pick-up ☒ three (3) copies of the as-built drawings ☒ one (1) copy of a priced spare parts list (if any)		
	CLIENT PLEASE SIGN HERE →	THIS IS TO ADVISE THAT THIS PURCHASE ORDER ISSUED BY TUXTLA GAS ENGINEERING LTD., FOR MATERIALS AND/OR SERVICES FOR CABRE EXPLORATION LTD. IS ISSUED WITH THE AUTHORIZATION OF CABRE EXPLORATION LTD. AND FOR THE ACCOUNT OF CABRE EXPLORATION LTD. **SIGNED:** **FOR CABRE EXPLORATION LTD.** **TITLE:** **DATE:**		

SHIP TO:

T.B.A.

INVOICE TO:
CABRE EXPLORATION LTD.
C/O TUXTLA GAS ENGINEERING LTD.
1020, 2424 - 4th Street S.W.
CALGARY, ALBERTA T2S 2T4
ATTENTION: FARAH KARIMIAN

COPY 1: VENDOR
COPY 2: VENDOR ACKNOWLEDGEMENT COPY
COPY 3: TUXTLA
COPY 4: CABRE EXPLORATION LTD.

ORIGINATED
BY: CHUCK THOMAS

APPROVED
BY: SID SAXENA
FOR: TUXTLA GAS ENGINEERING LTD.

VENDOR: PLEASE SIGN BELOW TO ACKNOWLEDGE RECEIPT AND RETURN TO TUXTLA GAS ENGINEERING LTD.

NAME (PLEASE PRINT)

SIGNATURE

DRAWN	DATE	ISSUE 0
G. BRIGGS	10.24.00	

CUTLER-HAMMER CANADA

PRL 3000 SERVICE ENTRANCE PANEL C/W

PRL4 PANEL, 2000A MAX MAIN BRKR, 600V

07-489590

DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED | SCALE ~~N~~ | CALGARY SATELLITE PLANT

ASSEMBLY REFERENCE NUMBER PAGE 2

SINGLE LINE DRAWING NUMBER PAGE 3

BREAKER TERMINALS PER DRAWING # C04A312

SERVICE

480 VOLTS 3 Ø 3 W

MAIN INCOMING

MAIN BREAKER

TYPE CRD320T33W POLES 3

FRAME 2000 AMPERES

TRIP 1600 AMPERES

☐ INTEGRAL GROUND FAULT PROTECTION

TIME _____ SET AT _____

PICKUP _____ SET AT _____

CABLE

4 X 500 MCM (per) Ø & N

UTILITY CT TYPE: RCT5 RATIO: 1600:5

BUSSING

AMPERES 2000

☐ TIN PLATED ALUMINUM

■ TIN PLATED COPPER

BRACING KA 50

BUS RATING LABEL 2000 AMPERES

SHORT CIRCUIT RATING 25 KA RMS SYM.

ENCLOSURE:

BOX - ASA 16 GREY

TRIM - ASA 61 GREY

EEMAC 1 - STANDARD

OPTIONS:

■ GROUND BUS COPPER (FULL LENGTH)

■ SPRINKLER PROOF

■ CHANEL SILLS

NOTES:

1. NO DISTRIBUTION SECTION
2. TO BE CLOSE COUPLED TO A 1600 AMP MCC
3. C/W IQ4130 DIGITAL METERING

CUSTOMER CABRE EXPLORATION LTD

DISTRIBUTOR WESCO

PROJECT TUXTLA GAS ENG LTG

CONSULTANT _____

CUSTOMER # 1072-P-006

DISTRIBUTOR # D/S 2550-257427

PRELIMINARY FOR APPROVAL ☐

APPROVED FOR CONSTRUCTION ■

DRAWN	DATE	ISSUE 0
G. BRIGGS	10.24.00	

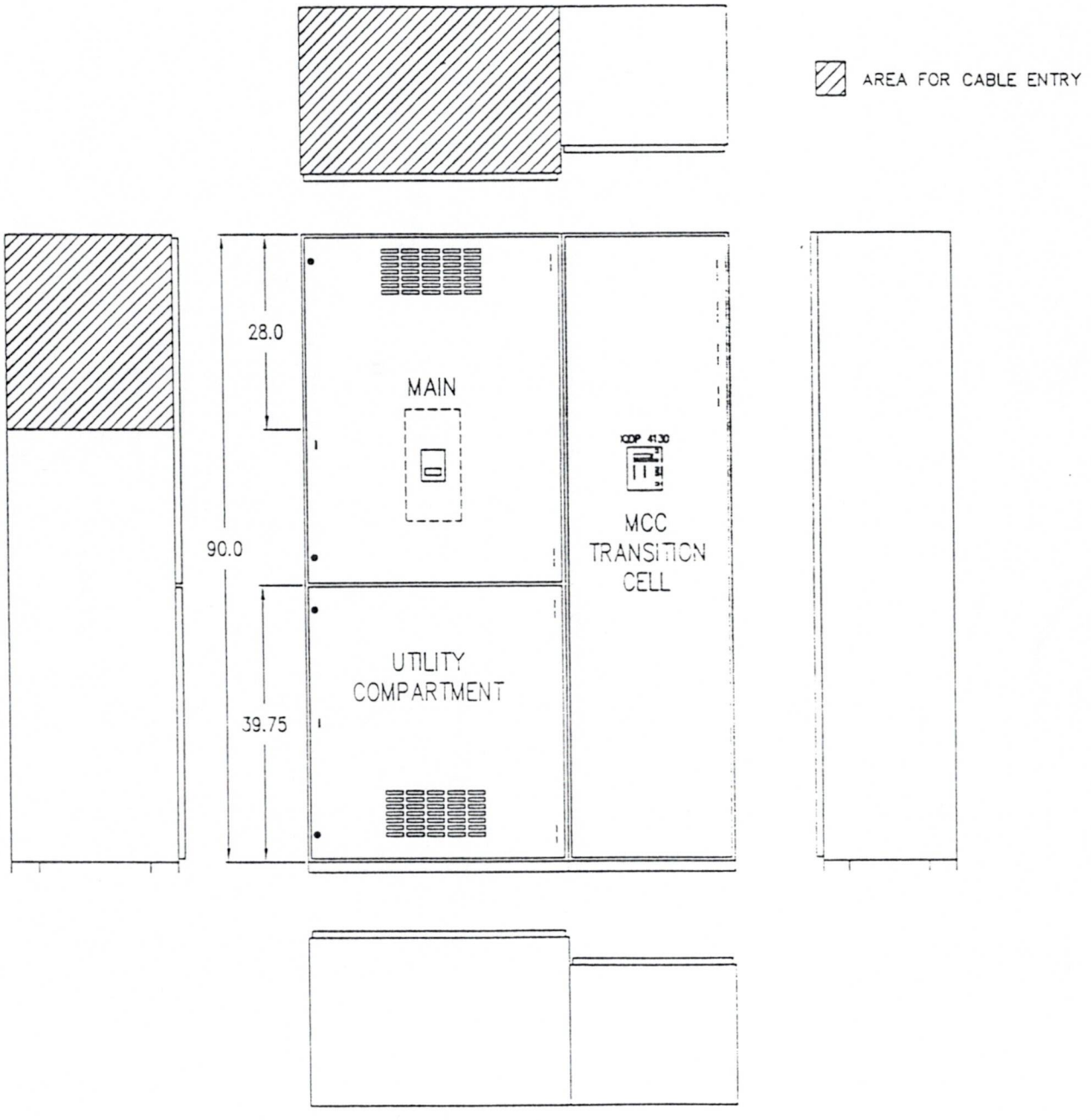
CUTLER–HAMMER CANADA

PRL 3000 SERVICE ENTRANCE PANEL C/W

PRL4 PANEL, 2000A MAX MAIN BRKR, 600V

07–489590

DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED	SCALE —N—	CALGARY SATELLITE PLANT



NOTES:

1. SHOP REFERENCE DRAWING – 5D66256, 5D66257
2. THE PANEL IS DESIGNED TO MEET ALL C.S.A. CODE REQUIREMENTS FOR SERVICE ENTRANCE.
   - SEALING SCREWS PROVIDED ON MAIN BREAKER COVER AND UTILITY SECTION DOOR.
   - MAIN BREAKER PROVIDED WITH PADLOCK DEVICE.
   - NEUTRAL GROUNDING PROVIDED PER CODE REQUIREMENTS.
3. UTILITY COMPARTMENT PER UTILITY REQUIREMENTS AND INCLUDES ALL NECESSARY MOUNTING HARDWARE. UNLESS OTHERWISE SPECIFIED, PROVISIONS WILL BE SUPPLIED FOR NEMA BAR TYPE CURRENT TRANSFORMERS.
   - WESTINGHOUSE KT.6B, SANGAMO MV–6 AND HAMMOND CM6
4. FOR SINGLE LINE DRAWING SEE 3A15666

DRAWN	DATE	ISSUE 0
G. BRIGGS	10.24.00	

CUTLER-HAMMER CANADA

PRL 3000 SERVICE ENTRANCE PANEL C/W
PRL4 PANEL, 2000A MAX MAIN BRKR, 600V

07-489590

DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED	SCALE —N—	CALGARY SATELLITE PLANT

1. FUTURE EXTENSION

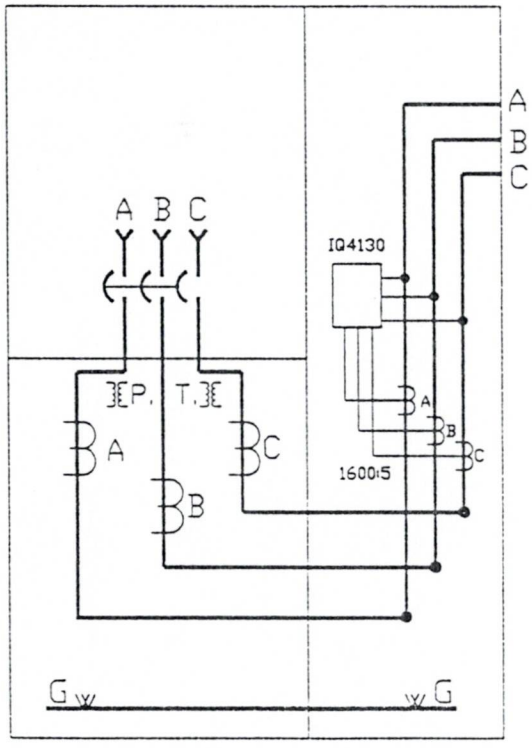


FIGURE 1

NOTES:
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   - WESTINGHOUSE KT.6B, SANGAMO MV-6 AND HAMMOND CM6
4. FOR SINGLE LINE DRAWING SEE 3A15666

DRAWN	DATE	ISSUE 0
G. BRIGGS	10.24.00	

CUTLER-HAMMER CANADA

IQ 4130 DIGITAL METERING

MATERIAL LIST

07-489590

DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED | SCALE ~~N~~ | CALGARY SATELLITE PLANT

ITEM	DEVICE	DESCRIPTION	STYLE #	REF. DWG. #	QTY.	SYMBOL
	IQ	DIGITAL METERING SYSTEM CUTLER-HAMMER IQ DP-4000	8793C15G01		1	CH

DIRECT READING METERED VALUES

-AC AMPERE PHASE A/B/C +/- 0.3% ACCURACY
-AC VOLTAGE PHASE A-B/B-C/C-A
A-N/B-N/C-N +/- 0.3% ACCURACY
-WATTS +/- 0.6% ACCURACY
-VARS +/- 0.6% ACCURACY
-VA +/- 0.6% ACCURACY
-POWER FACTOR +/- 1% ACCURACY
-FREQUENCY +/- 0.1Hz ACCURACY
-WATT HOURS +/- 0.6% ACCURACY
-VAR-HOURS +/- 0.6% ACCURACY
-VA-HOURS +/- 0.6% ACCURACY
-% THD(THROUGH 31st HARMONIC)
-DEMAND VALUES: CURRENT(per phase), WATTS, VARS, VA(in 5,10,15,20,25,30,45,60 minute windows)

FIELD SETTABLE PROTECTION FUNCTIONS
WITH TRIP AND/OR ALARM OUTPUTS

-PHASE LOSS (VOLTAGE OR CURRENT)
-PHASE UNBALANCE (VOLTAGE) (1)
-PHASE REVERSAL (VOLTAGE)
-OVERVOLTAGE (1)
-UNDERVOLTAGE (1)

DESCRIPTION OF PROTECTION FUNCTIONS

PHASE LOSS	VOLTAGE-PHASE LOSS OCCURS IF LESS THAN 50% OF NOMINAL LINE VOLTAGE IS DETECTED. (2) CURRENT-PHASE LOSS OCCURS IF SMALLEST PHASE CURRENT IS LESS THAN 1/16 OF THE LARGEST PHASE CURRENT.
PHASE UNBALANCE	OCCURS IF THE MAXIMUM DEVIATION BETWEEN ANY TWO PHASES EXCEEDS THE AMOUNT OF UNBALANCE AS A PERCENT OF NOMINAL LINE VOLTAGE PRESET BY DIP SWITCHES. RANGE:5 TO 40%(5% INCREMENTS)
PHASE REVERSAL	OCCURS IF ANY TWO PHASES BECOME REVERSED FOR MORE THAN ONE SECOND.
OVER VOLTAGE	DIP SWITCH SETTING OF PERCENT OF NOMINAL LINE VOLTS. RANGE: 105 TO 140% (5% INCREMENTS)
UNDER VOLTAGE	DIP SWITCH SETTING OF PERCENT OF NOMINAL LINE VOLTS. RANGE: 95% TO 60% (5% INCREMENTS)
DELAY	ALLOWS EXISTENCE OF OVERVOLTAGE, UNDERVOLTAGE, OR VOLTAGE UNBALANCE BEFORE AN ALARM OR TRIP OCCURS. RANGE: 0-20 SEC.(1 SEC. INCREMENT)

(1) PERCENT TRIP LEVEL & TRIP TIME INTERVAL IS FIELD SETTABLE.
(2) UPDATES ITSELF 2/SEC. ALL OTHER PROTECTION FUNCTIONS 1/SEC.

SYMBOL'S: S - STOCK CH - CUTLER-HAMMER PURCHASE P - OUTSIDE PURCHASE C - CUSTOMER SUPPLIED

PAGE	DESCRIPTION	DRAWING CHANGES 10/13/00
1	MCC MASTER DRAWING INDEX	A
2	MCC STRUCTURE LAYOUT / SPEC.	A
3	MCC UNIT SPEC. / NAME PLATES	A
4	WIRING DIAGRAM WD-1	A
5	WIRING DIAGRAM WD-2	A
	INFORMATION PAGES ONLY	
100	STARTER DEFINITION 3A15041	
101	FREEDOM STARTER INFORMATION	
102	OUTLINE AND FLOOR PLAN (20")	

PAGES	REVISION REMARKS
L	ISSUED FOR APPROVAL

SPECIAL NOTES

MCC STRUCTURE TYPE

☐ ADVANTAGE MCC

■ FREEDOM 2100 MCC

ORDER STATUS

■ We are holding manufacturing pending receipt of these approval drawings

☐ We are proceeding with manufacturing per these drawings

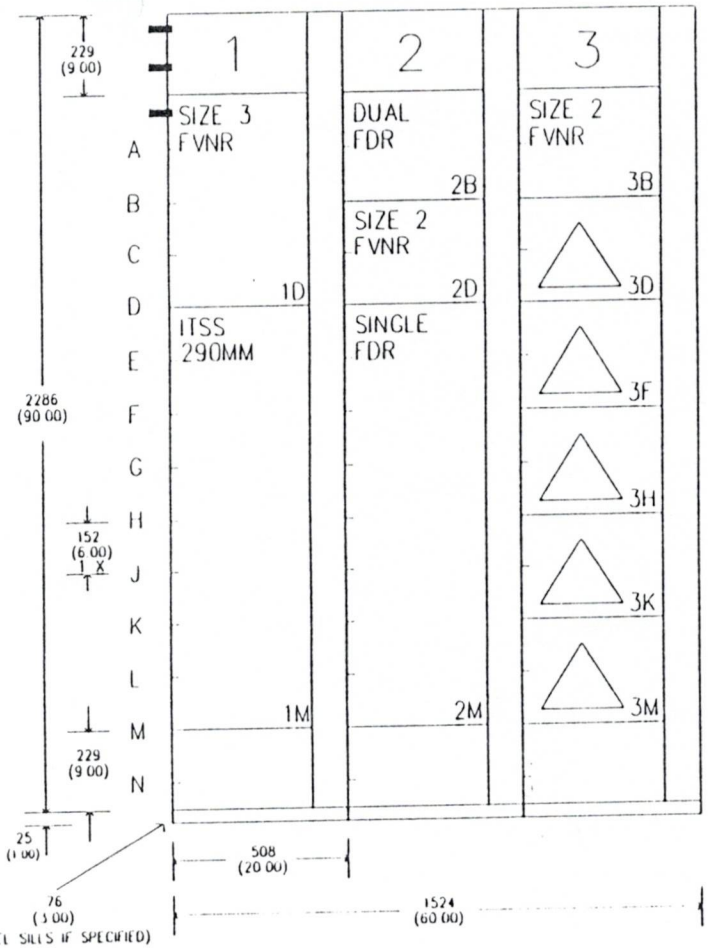
PRINTS	CORRESPONDENT	CUSTOMER ORDER #	SALES OFFICE
1	S. ARMSTRONG	D/S 2550-257427	TP17262

IMPORTANT

IT IS THE PURCHASERS RESPONDSIBILITY TO OBTAIN ANY NECESSARY LOCAL AND/OR PROVINCIAL INSPECTION AUTHORITY APPROVAL. WHEN RETURNING DRAWINGS THE PURCHASER SHOULD CONFIRM THAT SUCH APPROVAL HAS BEEN OBTAINED OR IS NOT REQUIRED.

DFTR	DATE	Cutler-Hammer	AIRDRIE, ALBERTA
EM	10/13/00		
APPD	DATE	TITLE CABRE JOARCAM	
APPD	DATE	TYPE LV MOTOR CONTROL CENTRE	MASTER DRAWING INDEX

PRODUCT CODE	REVISION	DWG SIZE	G.O.	S.O.	PAGE
PG370	A	A	37-4070	37E4070	1



NOTE:

CELL 1 TO BE SPLICED TO LVDA SUPPLIED SERVICE ENTRANCE SECTION

MAIN

SERVICE			480V, 3PH, 3W, 60HZ
DEVICE	☐LUGS	☐BREAKER	☐ SWITCH
DEVICE RATING		■N/A	☐XXXX AMP
CABLE ENTRY	☐TOP	☐BOTTOM	NA
CABLE SIZE			NA
CABLES PER PHASE			NA
LUG TYPE		☐SCREW	☐CRIMP
24" PULL BOX		☐YES	■NONE
OUTGOING CABLES		☐TOP	■BOTTOM

BUS

HORIZONTAL (TIN PLATED)	☐AL.	■COPPER	1600 AMP
VERTICAL		COPPER TIN PLATED	
CELL 1			800 AMP
CELL 2			1200 AMP
CELL 3			400 AMP
ISOLATION	■POLYESTER BARRIER	☐LABYRINTH	☐SHUTTERS
GROUND - HORZ		600 AMP	COPPER
GROUND LOCATION	■TOP	☐	BOTTOM
GROUND - VERT	☐YES	■	NONE
NEUTRAL (TPCu)	☐XXX AMP	■	NONE
BUS BRACING(KA RMS SYM)	■42	☐65	☐100

ENCLOSURE

ENCLOSURE TYPE	■1 (STD)	☐1A (Gasketted)	
		☐2 (DRIP PROOF)	
	☐12 (INDUSTRIAL DUST TIGHT)		
MOUNTING	■FRONT ONLY	☐BACK TO BACK	
DEPTH	☐16"	■21"	☐41"
BOTTOM PLATES		☐YES	■NO
DRIP HOOD		☐YES	■NO
CHANNEL SILLS			NONE
PAINT FINISH			ASA-61
SPACE HEATER		☐YES	■NO

SYMBOLS

△ FUTURE SPACE

∅ UNUSABLE SPACE

+ SPARE UNIT

DFTR EM	DATE 10/13/00	Cutler-Hammer AIRDRIE, ALBERTA
APPD	DATE	TITLE CABRE JOARCAM
APPD	DATE	TYPE LV MOTOR CONTROL CENTRE / MCC LAYOUT/SPECIFICATION
PRODUCT CODE PG370	REVISION A / DWG SIZE A	G.O. 37-4070 / S.O. 37E4070 / PAGE 2

SECT NO	UNIT NO.	UNIT CAT # SEE D. A15041 FOR DEFINITION	HP	FLA	HEATER ■ WITH MCC ☐ BY OTHERS	CIRCUIT BREAKER NON-VISA ■ VISA ☐ TYPE	TRIP	I.C. @ 480 (KA)	DWG NO.	NOTES
F1	D	E3A20624	50	65	H2022-3	HMCP100R3C	LOW	100	WD-1	
F1	M	N6A20648	400	460		HMCP600L6W	LOW	65	WD-2	
F2	BL	BDAHFD12				HFD3050	50A	65		
F2	BR					HFD3050	50A	65		
F2	D	E2A20612	25	34	H2014B-3	HMCP050K2C	LOW	100	WD-1	
F2	M	BFAHND56				HND31200	1200AT	65		
F3	B	E2A20612	15	21	H2012B-3	HMCP050K2C	LOW	100	WD-1	

NAME PLATES

☐ BLACK ANODIZED ALUM ■ LAMICOID

LETTER SIZE (.125" HI) ■ 1.0 x 2.5 ☐ 2.0 x 2.5

☐ BLACK LETTERS/WHITE ■ WHITE LETTERS/BLACK

LINE 1 OR 4	LINE 2 OR 5	LINE 3 OR 6
TBA		
TBA		
TBA		
TBA		
TBA		
TBA		
TBA		

CONTROL CIRCUIT

■ 120V
■ INDIVIDUAL TRANSFORMER
■ SECONDARY FUSE
☐ PRIMARY FUSES SIZE 1 & LARGER
■ STND VA ☐ EXTRA VA
☐ SEPARATE SOURCE
☐ COMMON TRANSFORMER
☐ PANELBOARD IN MCC
☐ EXTERNAL SOURCE

CONTROL WIRING

■ I ☐ II
☐ A ■ B ☐ C
☐ #14 RED TEW
■ #16 RED TEW
■ SLEEVE TYPE TAGS AT BOTH ENDS
☐ HEATSHRINK TAGS AT BOTH ENDS

TERMINAL BLOCKS

☐ STD PRESSURE
■ PULL APART
☐ OTHER

PILOT LIGHTS

■ C-H 10250T ☐ NEON
☐ FULL VOLTAGE
■ TRANSFORMER
☐ PUSH TO TEST

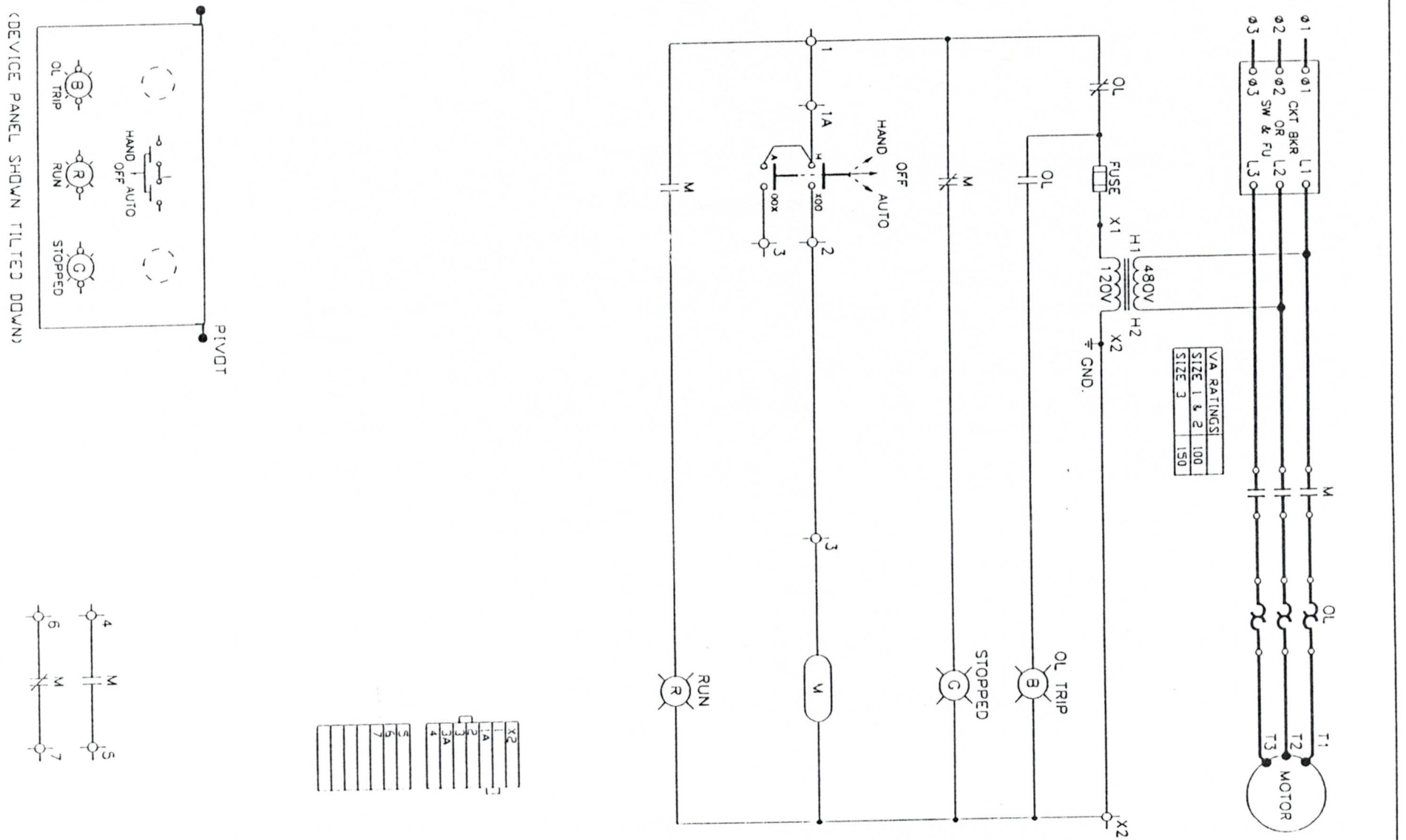
OVERLOAD PROTECTION

■ C-H C306
☐ ADVANTAGE
☐ BA - A200

BELL ALARM ☐ YES ■ NO

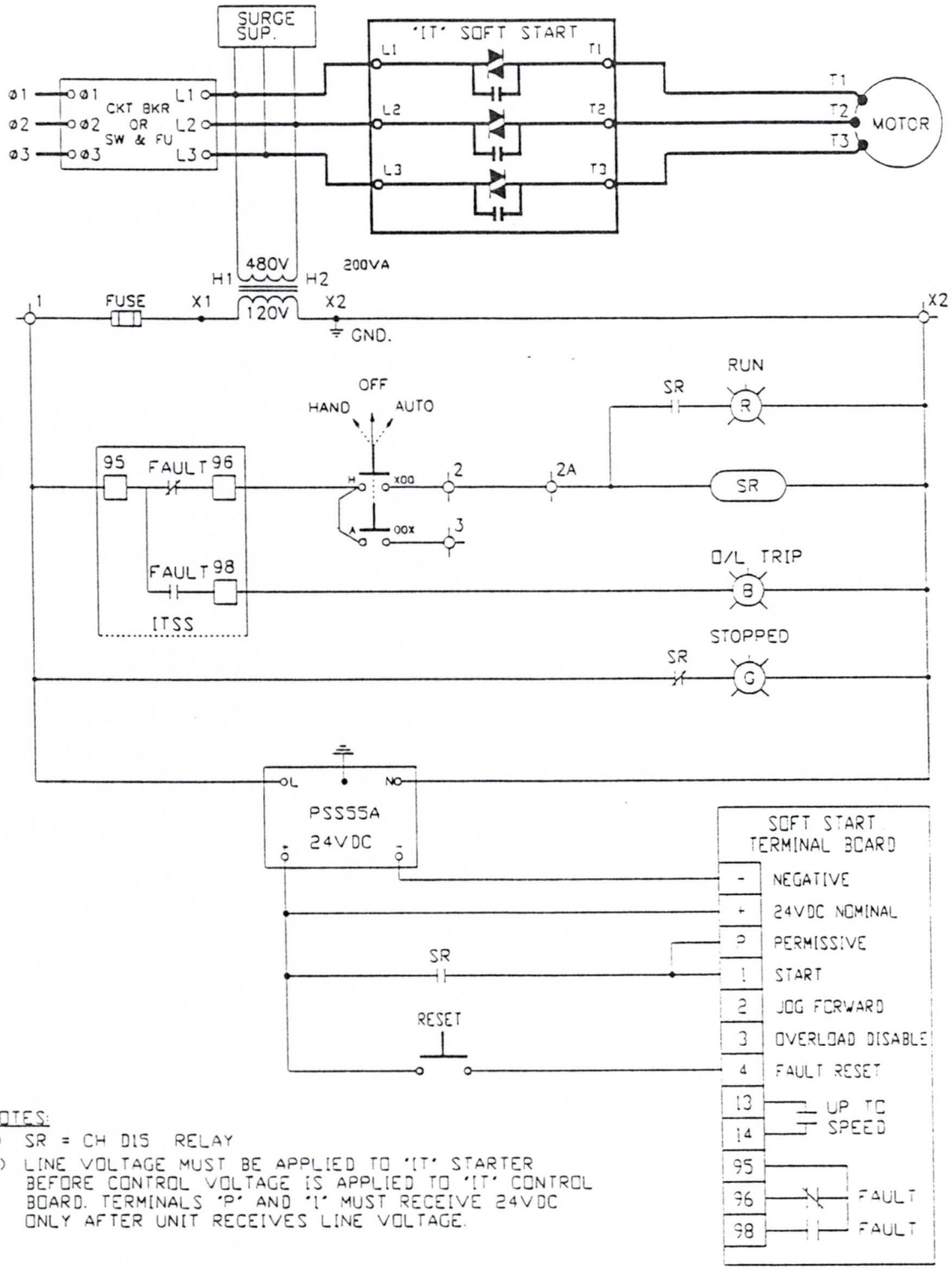
SERVICE FACTOR ☐ 1.0 ■ 1.15

DFTR	DATE	Cutler-Hammer	AIRDRIE, ALBERTA
EM	10/13/00		
APPD	DATE	TITLE CABRE JOARCAM	
APPD	DATE	TYPE LV MOTOR CONTROL CENTRE	UNIT SPECIFICATION/NAMEPLATES
PRODUCT CODE PG370	REVISION A	DWG SIZE A	G.O. 37-4070
			S.O 37E4070
			PAGE 3



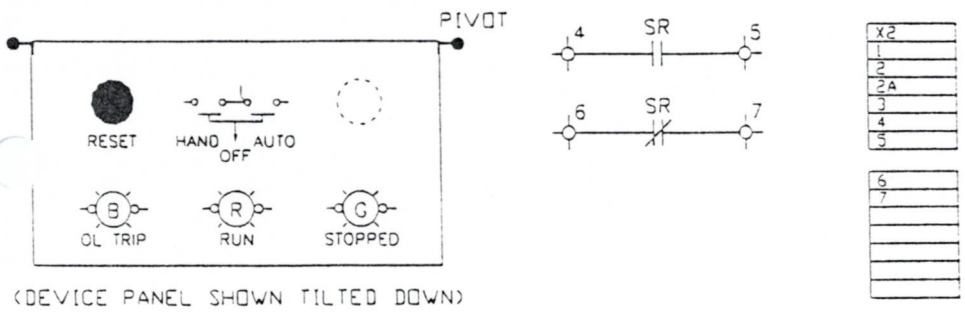
THE INFORMATION ON THIS DOCUMENT IS CREATED BY CUTLER-HAMMER. IT IS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED	DFTR EM	DATE 10/13/00	Cutler-Hammer AIRDRIE, ALBERTA		
	APPD	DATE	TITLE CABRE JOARCAM		
	APPD	DATE	TYPE LV MOTOR CONTROL CENTRE		WD-1
PRODUCT CODE PG370	REVISION A	DWG SIZE A	G.O. 37-4070	S.O. 37E4070	PAGE 4

FILE:



NOTES:

1) SR = CH DIS RELAY
2) LINE VOLTAGE MUST BE APPLIED TO 'IT' STARTER BEFORE CONTROL VOLTAGE IS APPLIED TO 'IT' CONTROL BOARD. TERMINALS 'P' AND '1' MUST RECEIVE 24VDC ONLY AFTER UNIT RECEIVES LINE VOLTAGE.



(DEVICE PANEL SHOWN TILTED DOWN)

Cutler-Hammer AIRDRIE, ALBERTA

TITLE: CABRE JOARCAM

TYPE: LV MOTOR CONTROL CENTRE

WD-2

PAGE 5

S.O. 37E4070

G.O. 37-4070

DFTR EM — DATE 10/13/00

APPD — DATE

APPD — DATE

REVISION A

DWG SIZE A

PRODUCT CODE PG370

FILE:

STARTERS

W 1 A 206 12 — ADVANTAGE, SIZE 1, SERIES 2100 MECH, CB TYPE VNR, 2X HIGH

STARTER TYPE

A - A200	S - SV9000 VFD
E - FREEDOM NEMA	D - COMPETITOR VFD
F - FREEDOM IEC	R - TRU-START SOLID STATE
V - VACUUM	T - COMPETITOR SOLID STATE
W - ADVANTAGE	N - IT INTELLIGENT SOLID STATE

STARTER SIZE

-STARTER TYPES A, E, V, W - USE NEMA SIZE (1-6)

-STARTER TYPE F - USE IEC SIZE (A-R)

-STARTER TYPE S (SV9000) USE TABLE

VFD RATING	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
CONT TORQ HP	.75	1	1.5	2	3	-	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	-	200	250	300
VAR TORQ HP	1	1.5	2	3	-	5	7.5	10	15	20	25	30	40	50	60	75	100	125	150	-	200	250	300	400
CONT TORQ kW	-	.75	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250
VAR TORQ kW	-	1.1	1.5	2.2	3	4	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160	200	250	315

-STARTER TYPE D (COMP VFD) USE - X

-STARTER TYPE R (SOLID STATE) USE TABLE

SS FRAME RATING	A	B	C	D	E	F	G	H	J
TRU-START	15A	30A	50A	75A	125A	200A	360A	500A	600A
EASY START 120 (ES)	45A	70A	120A	180A	250A	560A			
EASY START ADVANTAGE	45A	90A	135A	270A	360A	540A	760A		

-STARTER TYPE T (COMP SOLID STATE) USE - X

-STARTER TYPE N (IT SOLID STATE) USE TABLE

IT SS FRAME SIZE	2	4	5	6
	65mm	110mm	200mm	290mm

MECH/DISCONNECT COMBINATION

A - SERIES 2100	BREAKER	F - CMCU	DS SWITCH
B - CMCU	BREAKER	G - ROTARY	DS SWITCH
C - SLIDER (UNITROL)	BREAKER	H - SERIES 2100	K SWITCH
D - ROTARY	BREAKER	J - SLIDER (UNITROL)	K SWITCH
E - SERIES 2100	DS SWITCH	K - STROMBERG	STROMBERG

HEIGHT (UNIT HEIGHT IN INCHES)

STARTER CODE

-STARTER TYPE A, E, F, V, W, N

	FUSIBLE	CB *	CB * & LIMITER	STND I.C. TM CB	HIGH I.C. TM CB LIMITERS	INTER I.C. TM CB
FVNR	204	206	207			
FVR	214	216	217			
RVAT AUTOXFMR	694	696	697			
RV PART WIND	794	796	797			
RV STAR DELTA	894	896	897			
2 SPEED 2 WND	964	966	967			
2 SPEED 1 WND	954	956	957			
FVNR CONTACTOR	24C			26C	27C	28C

-STARTER TYPE S & D

	FUSIBLE	CB *	CB * & LIMITER	INTER I.C. TM CB
SV9000 M3 FRAME	M3_4	M3_6	M3_7	M3_8
SV9000 M4b FRAME	M4b4	M4b6	M4b7	M4b8
SV9000 M5b FRAME	M5b4	M5b6	M5b7	M5b8
SV9000 M5 FRAME	M5_4	M5_6	M5_7	M5_8
SV9000 M6 FRAME	M6_4	M6_6	M6_7	M6_8
SV9000 M7 FRAME	M7_4	M7_6	M7_7	M7_8
SV9000 M8 FRAME	M8_4	M8_6	M8_7	M8_8
SV9000 M9 FRAME	M9_4	M9_6	M9_7	M9_7
COMPETITOR VFD	554	556	557	558

-STARTER TYPE R & T

	FUSIBLE	CB *	CB * & LIMITER	INTER I.C. TM CB
TRU-START	304	306	307	308
EASY START - ES	334	336	337	338
ES ADVANTAGE	344	346	347	348
COMPETITOR SS	354	356	357	358
IT SS	364	366	367	368

CB * CAN BE A HMCP OR A STANDARD I.C. THERMAL MAG CB

FEEDERS & MAINS

BF A HFD 12 — CB TYPE FEEDER, SERIES 2100 MECH, HFD CB, 2X HIGH

HEIGHT (UNIT HEIGHT IN INCHES)

TYPE OF FEEDER/MAIN

BF - BREAKER (FEEDER)	
BD - DUAL BREAKER (FEEDER)	
BM - BREAKER (MAIN)	
SF - FUSIBLE SWITCH (FEEDER)	
SD - DUAL FUSIBLE SW (FEEDER)	
SM - FUSIBLE SWITCH (MAIN)	

FEEDER-MAIN CODE

BREAKER TYPE	STND I.C.	INTERMEDIATE I.C.	HIGH I.C.	MOULDED CASE SW
F-FRAME BREAKER	HFD	FDC	HFDL	FMCS
K-FRAME BREAKER	KD	HKD	KDC	KMCS
L-FRAME BREAKER	LD	HLD	LDC	LMCS
N-FRAME BREAKER	ND	HND	NDC	NMCS
R-FRAME BREAKER	RD	-	RDC	RMCS
SPB BREAKER	SPB	-	-	-

FUSIBLE SW RATING	CODE
30A FUSIBLE SWITCH	30
60A FUSIBLE SWITCH	60
100A FUSIBLE SWITCH	100
200A FUSIBLE SWITCH	200
400A FUSIBLE SWITCH	400
600A FUSIBLE SWITCH	600
800A FUSIBLE SWITCH	800
1200A FUSIBLE SWITCH	1200

MECH/DISCONNECT COMBINATION

A - SERIES 2100	BREAKER
B - CMCU	BREAKER
C - SLIDER (UNITROL)	BREAKER
D - ROTARY	BREAKER
E - SERIES 2100	DS SWITCH
F - CMCU	DS SWITCH
G - ROTARY	DS SWITCH
H - SERIES 2100	K SWITCH
J - SLIDER (UNITROL)	K SWITCH
K - STROMBERG	STROMBERG
X - NONE	

CB INTERRUPTING RATINGS

CB FRAME	600V	480V	240V	
HFD	25KA	65KA	65KA	STND IC
KD	25KA	35KA	65KA	STND IC
LD	25KA	35KA	65KA	STND IC
ND	25KA	35KA	65KA	STND IC
FDC	35KA	100KA	200KA	INTERM IC
HKD	35KA	65KA	100KA	INTERM IC
HLD	35KA	65KA	100KA	INTERM IC
HND	35KA	65KA	100KA	INTERM IC
RD	50KA	65KA	125KA	STND IC
KDC	50KA	100KA	200KA	HI IC
LDC	50KA	100KA	200KA	HI IC
NDC	50KA	100KA	200KA	HI IC
RDC	65KA	100KA	200KA	HI IC
SPB	65KA	100KA	125KA	HI IC
HFD/CLIM	100KA	100KA	100KA	HI IC

DFTR	DATE	Cutler-Hammer	AIRDRIE, ALBERTA
EM	10/13/00		
APPD	DATE	TITLE CABRE JOARCAM	
APPD	DATE	TYPE LV MOTOR CONTROL CENTRE	STARTER DEFINITION 3A15041
PRODUCT CODE PG370	REVISION A	DWG SIZE A	G.O. 37-4070 / S.O. 37E4070 / PAGE 100

HEATER BLOCK SELECTION - STANDARD TRIP - CLASS 20

OVERLOAD RELAY SIZE	MOTOR FULL LOAD AMP RATING DIAL POSITION A	B	C	D	CATALOG # INCL 3 HEATER PACKS
FOR USE WITH EEMAC SIZE 1-2 SERIES B IEC SIZE A-F SERIES C, SIZES G-K SERIES B					
32 AMP or 75 AMP	.254	.306	.359	.411	H2001B-3
	.375	.452	.530	.607	H2002B-2
	.560	.676	.791	.907	H2003B-3
	.814	.983	1.15	1.32	H2004B-3
	1.20	1.45	1.71	1.96	H2005B-3
	1.79	2.16	2.53	2.90	H2006B-3
	2.15	2.60	3.04	3.49	H2007B-3
	3.23	3.90	4.56	5.23	H2008B-3
	4.55	5.50	6.45	7.40	H2009B-3
	6.75	8.17	9.58	11.0	H2010B-3
	9.14	10.8	12.4	14.0	H2011B-3
	14.0	16.9	19.9	22.8	H2012B-3
	18.7	22.7	26.7	30.7	H2013B-3
	23.5	28.5	33.5	38.5	H2014B-3
FOR USE WITH EEMAC SIZE 2, IEC SIZE G-K - SERIES B					
75 AMP	29.0	34.0	39.1	44.1	H2015B-3
	39.6	45.5	51.5	57.4	H2016B-3
	53.9	60.9	67.9	74.9	H2017B-3
FOR USE WITH EEMAC SIZES 3-4, IEC SIZES L-N - SERIES A					
105 AMP or 144 AMP	18.0	20.2	22.3	24.5	H2018-3
	24.6	27.6	30.5	33.4	H2019-3
	33.5	37.5	41.5	45.6	H2020-3
	45.7	51.2	56.7	62.1	H2021-3
	62.2	69.7	77.1	84.6	H2022-3
	84.7	95.0	105.0	115.0	H2023-3
	106.0	118.0	131.0	144.0	H2024-3
FOR USE WITH SIZE 5 STARTERS - SERIES B					
32 AMP with CT'S	49	59	69	79	H2004B-3
	72	87	103	118	H2005B-3
	107	130	152	174	H2006B-3
	129	156	182	209	H2007B-3
	194	234	274	---	H2008B-3
FOR USE WITH SIZE 6 STARTERS - SERIES B					
32 AMP with CT'S	144	174	205	235	H2005B-3
	215	259	304	348	H2006B-3
	258	312	365	419	H2007B-3
	388	468	547	---	H2008B-3

CONTROL TRANSFORMER FUSING & STND SIZING FOR FREEDOM STARTERS

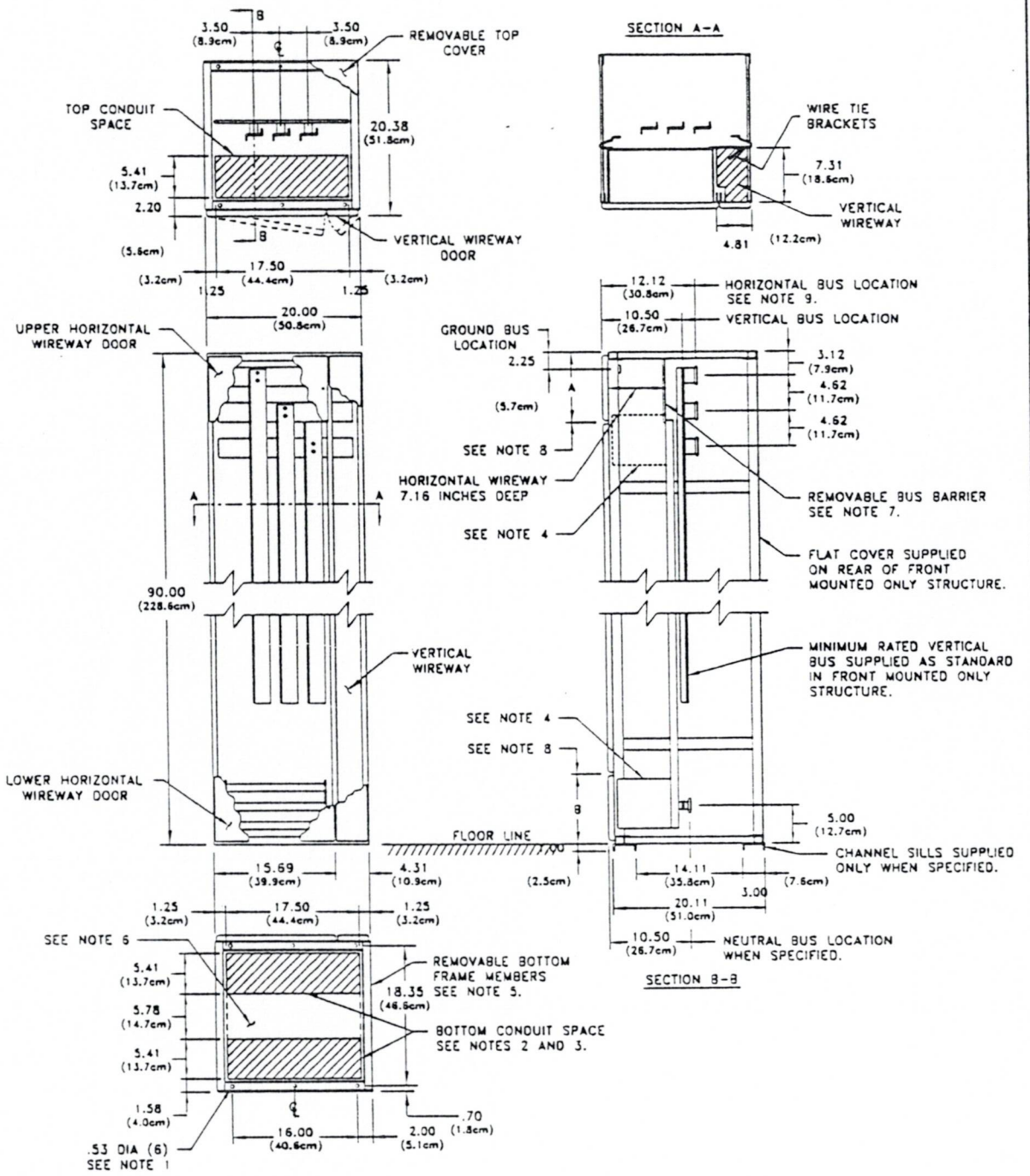
CCT VA	PRIMARY FUSE AMPS 600V	480V	208V	SECONDARY FUSE AMPS 120V	24V	STND CCT FOR FREEDOM ACROSS THE LINE STARTER
50	1	1	3	.6	2.8	
100	3	3	3	1.5	7	SIZE 1-2
150	3	3	6	2	10	SIZE 3
200	3	3	6	2.8	15	SIZE 4-5
250	3	3	10	4	N/A	
300	6	6	10	4	N/A	
350	6	6	10	7	N/A	
500	6	6	10	7	N/A	

FREEDOM COIL CHARACTERISTICS

STARTER SIZE	INRUSH WATTS	INRUSH VA	SEALED WATTS	SEALED VA
1	95	230	7.8	28
2	95	230	7.8	28
3	112	390	13	50
4	240	1158	27	100
5	240	1158	27	100

WIRE (75° C) SIZES - AWG OR kcmil - FREEDOM STARTERS

POWER TERMINALS - CONTACTORS	
SIZE 1	#8-#14 STRANDED, #8-#14 SOLID - CU ONLY
SIZE 2	#3-#14 (UPPER) AND/OR #6-#14 (LOWER) CU ONLY - STRANDED OR SOLID
POWER TERMINALS - LOAD (OVERLOAD RELAY)	
HEATER PACK # H2001B-H2010B	#14 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2011B	#12 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2012B	#10 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2013B-H2014B	#8 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2015B	#6 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2016B	#4 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2017B	#3 MIN - CU ONLY (STRANDED OR SOLID)
HEATER PACK # H2015A-H2017A	#14-#2 MIN - CU ONLY (STRANDED OR SOLID)
POWER TERMINALS - LINE AND LOAD	
SIZE 3	#1/0 - #14 AL/CU
SIZE 4	#3/0 - #8 AL/CU
SIZE 5	750 kcmil - #2 or (2) 250 kcmil - #3/0 AL/CU



NOTES:
1. MINIMUM LENGTH OF ANCHOR BOLT IS 2 INCHES (.38-16 RECOMMENDED).
2. RECOMMENDED MAXIMUM CONDUIT HEIGHT ABOVE FLOOR LINE IS 3.50 INCHES.
3. MAXIMUM CONDUIT SPACE WITH CHANNEL SILLS IS 17.50 X 14.11 INCHES.
4. MASTER TERMINAL BLOCK (MTB) ASSEMBLY IS FURNISHED FOR TYPE 'C' WIRING ONLY. WHEN LOCATION IS NOT SPECIFIED THE MTB WILL BE SUPPLIED AT THE BOTTOM.
5. FOR MULTIPLE STRUCTURE ASSEMBLIES EITHER ONE OR BOTH OF THESE MEMBERS ARE REMOVED TO PROVIDE MAXIMUM UNRESTRICTED CONDUIT SPACE AT THE BOTTOM OF THE MCC.
6. THIS CONDUIT SPACE IS NOT RECOMMENDED WHEN A NEUTRAL BUS IS REQUIRED. THE SPACE IS OTHERWISE AVAILABLE.
7. REAR HORIZONTAL BUS BARRIER IS NOT SUPPLIED IN FRONT MOUNTED ONLY STRUCTURE.
8. STANDARD HORIZONTAL WIREWAY ARRANGEMENT:
   WITHOUT MASTER TERMINAL BLOCK: A & B = 9 INCHES.
   WITH MASTER TERMINAL BLOCK AT BOTTOM: A & B = 9 INCHES.
   WITH MASTER TERMINAL BLOCK AT TOP:
   A = 15 INCHES, B = 3 INCHES (ALL CABLE MUST EXIT TOP).
9. HORIZONTAL BUS LOCATION DIMENSION IS TO FIRST BAR. MAXIMUM AMPACITY IS 2000A ALUMINUM OR 2500A COPPER BUS. NUMBER AND SIZE OF BARS DEPENDS ON AMPACITY RATING.

STANDARD VERTICAL SECTION
20 INCHES WIDE WITH 4 INCH WIREWAY
21 INCHES DEEP
FRONT MOUNTED ONLY

Cutler-Hammer AIRDRIE, ALBERTA

DFTR EM	DATE 10/13/00	TITLE CABRE JOARCAM	
APPD	DATE		
APPD	DATE	TYPE LV MOTOR CONTROL CENTRE	FRONT MOUNT 21" DEEP
REVISION A	DWG SIZE A	G.O. 37-4070	S.O. 37E4070
PRODUCT CODE PG370			PAGE 102