



PURCHASE ORDER

PQ NUMBER **1089-P-007**
PAGE 1 OF 1CLIENT A/E: **5237FC**
CLIENT COST CODE: **9341-911**
TUXTLA COST CODE: **2303**ORDER DATE: **AUGUST 31, 2000**DELIVERY DATE: **3-4 WEEKS**

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	FACTORY, CALAGARY, ALBERTA
TERMS	NET 30 DAYS
LOCATION	JOARCAM 6-29-49-21 W4M
ITEM	MOTOR CONTROL CENTER

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
		As per Wesco Quotation # C3-00-1730 to Sutton, Thomas Engineering dated August 18, 2000. Please include the following and send to TUXTLA GAS ENGINEERING LTD. ATTENTION: ED GNENZ ☒ five (5) copies of the Data Manuals ☐ two (2) copies of the QC manuals ☐ five (5) copies of the as-built drawings ☐ one (1) copy of a priced spare parts list 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:		INVOICE TO:		
T.B.A.		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

ORIGINATED

APPROVED

COPY 2: VENDOR ACKNOWLEDGEMENT COPY

BY: **CHUCK THOMAS**BY: **ED GNENZ**

COPY 3: TUXTLA

FOR: TUXTLA GAS ENGINEERING LTD.

COPY 4: CABRE EXPLORATION LTD.

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

NAME (PLEASE PRINT)

SIGNATURE

37E4050

DRAWING CHANGES

ES

REVISION REMARKS

ALL ISSUED FOR CONSTRUCTION

PAGE

DESCRIPTION

9/20/00

A

A

A

A

A

1 MCC MASTER DRAWING INDEX

2 MCC STRUCTURE LAYOUT / SPEC.

3 MCC UNIT SPEC. / NAME PLATES

4 WIRING DIAGRAM WD-1

5 WIRING DIAGRAM WD-2

SPECIAL NOTES

MCC STRUCTURE TYPE

MCC #1

☐ ADVANTAGE MCC☒ FREEDOM 2100 MCC

INFORMATION PAGES ONLY

100 STARTER DEFINITION 3A15041

101 FREEDOM STARTER INFORMATION

102 OUTLINE AND FLOOR PLAN (20")

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

2P

S. ARMSTRONG

DS2550-240887

CALGARY TP17233

IMPORTANT

IT IS THE PURCHASER'S RESPONSIBILITY 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.

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PRODUCT CODE
PG370

DFTR

RW

APPD

APPD

REVISION
A

DATE

9/20/00

DATE

DATE

DWG SIZE
A

Cutler-Hammer

AIRDRIE, ALBERTA

TITLE SUTTON THOMAS
CABRE / JOARCHTYPE
LV MOTOR CONTROL CENTRE

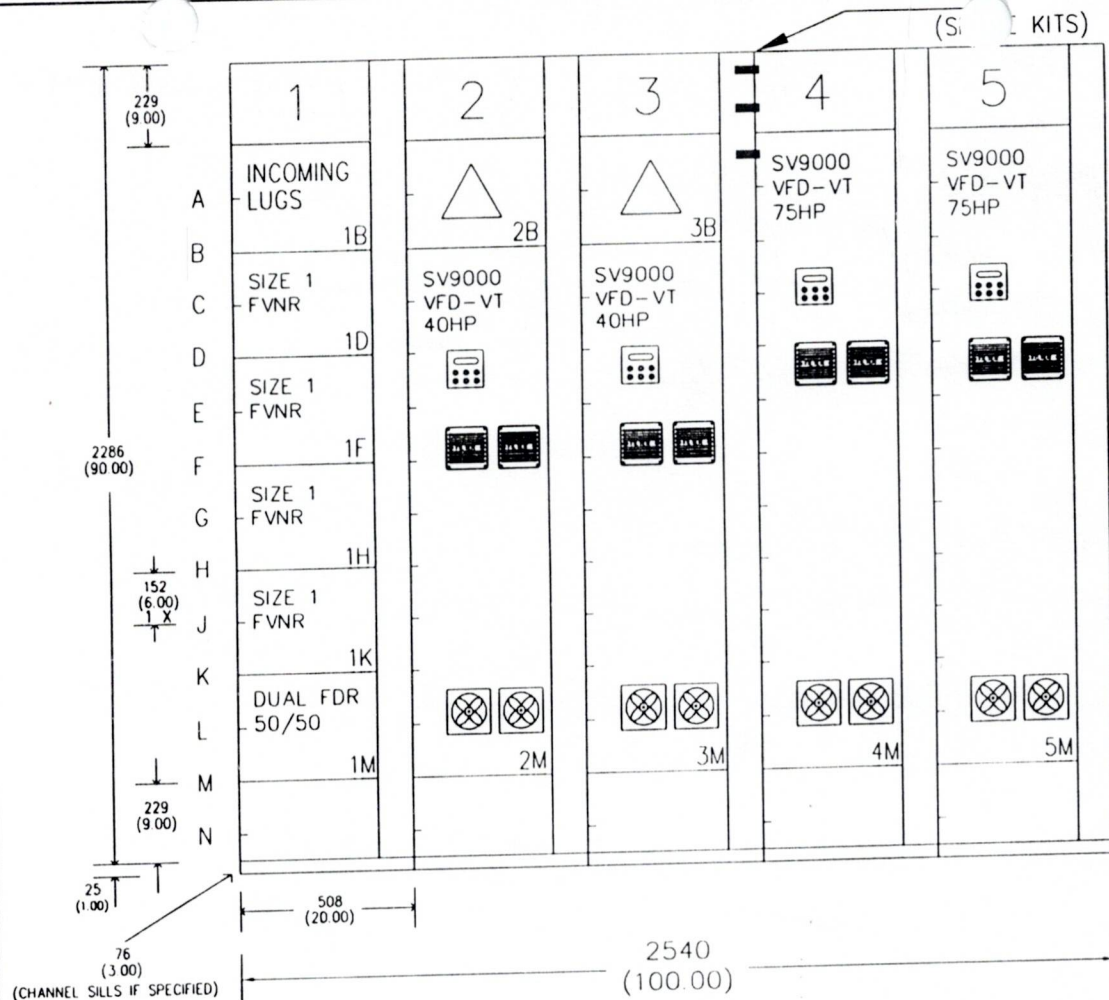
MASTER DRAWING INDEX

G.O. 37-4050

S.O.

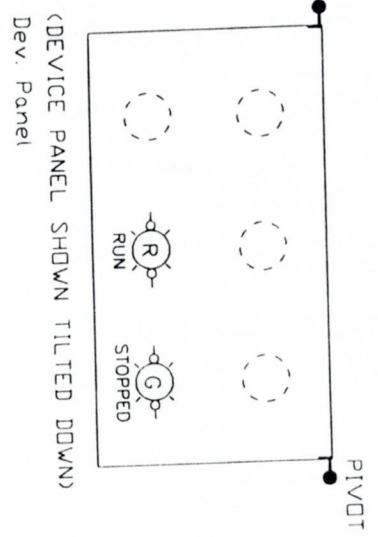
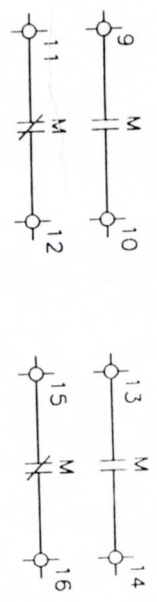
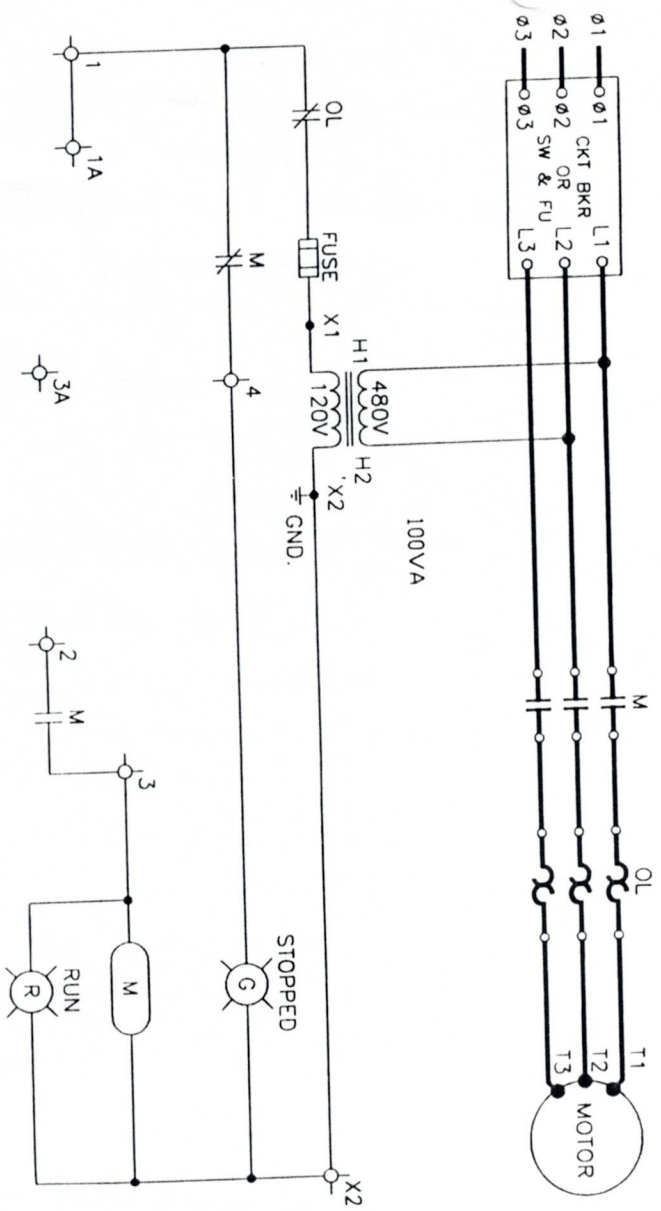
37E4050

PAGE
1



MAIN SERVICE DEVICE DEVICE RATING CABLE ENTRY CABLE SIZE CABLES PER PHASE LUG TYPE 24" PULL BOX OUTGOING CABLES		480V, 3PH, 3W, 60HZ ☒ LUGS ☐ BREAKER ☐ SWITCH ☐ TOP ☐ BOTTOM ☐ N/A ☐ XXXX AMP CELL # 1 350MCM CELL # 2 ☒ SCREW ☐ CRIMP ☐ YES ☒ NONE ☒ TOP ☒ BOTTOM		BUS HORIZONTAL (TIN PLATED) ☐ AL. ☒ COPPER 600 AMP PLATED 600 AMP COPPER 400 AMP COPPER 300 AMP COPPER ☒ TOP ☐ BOTTOM ☐ YES ☒ NONE ☐ XXX AMP ☒ NONE ☐ 42 ☒ 65 ☐ 100		ENCLOSURE ENCLOSURE TYPE ☐ 1 (STD) ☒ 1A (Gasketed) ☐ 2 (DRIP PROOF) ☐ 12 (INDUSTRIAL DUST TIGHT) ☒ FRONT ONLY ☐ BACK TO BACK ☐ 16" ☒ 21" ☐ 41" ☐ YES ☒ NO ☐ YES ☒ NO FACTORY INSTALLED SPACE HEATER ☐ YES ☒ NO		SYMBOLS △ FUTURE SPACE ∅ UNUSABLE SPACE + SPARE UNIT	
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.				DFTW DATE 9/20/00 RW APPD DATE APPD DATE		Cutler-Hammer AIRDRIE, ALBERTA TITLE SUTTON THOMAS CABRE / JOARCH TYPE LV MOTOR CONTROL CENTRE MCC LAYOUT/SPECIFICATION			
PRODUCT CODE PG370				REVISION A DWG SIZE A		G.O. 37-4050 S.O. 37E4050			
						PAGE 2			

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X2
1
1A
2
3
3A
4
9
10
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12
13
14
15
16

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.				DATE 9/21/00		Cutler-Hammer		AIRDRIE, ALBERTA	
PRODUCT CODE PG370				DATE		TITLE SUTTON THOMAS CABRE / JOARCH		PAGE 4	
REVISION A				DATE		TYPE LV MOTOR CONTROL CENTRE		WIRING DIAGRAM WD-1	
DWG SIZE A				DATE		G.O. 37-4050		S.O. 37E4050	

STARTERS

STARTER TYPE

A - A200
E - FREEDOM NEMA
F - FREEDOM IEC
V - VACUUM
W - ADVANTAGE

S - SV9000 VFD
D - COMPETITOR VFD
R - TRU-START SOLID STATE
T - COMPETITOR SOLID STATE
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	11	15	22	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	-	11	15	22	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
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

FEEDERS & MAINS

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)

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

BF A HFD 12

CB TYPE FEEDER, SERIES 2100 MECH, HFD CB, 2X HIGH

HEIGHT (UNIT HEIGHT IN INCHES)

FEEDER-MAIN CODE

BREAKER TYPE	STND I.C.	INTER MEDIATE I.C.	HIGH I.C.	MOULDED CASE SW	FUSIBLE SW RATING	CODE
F-FRAME BREAKER	HFD	FDC	HFDL	FMCS	30A FUSIBLE SWITCH	30
K-FRAME BREAKER	KD	HKD	KDC	KMCS	60A FUSIBLE SWITCH	60
L-FRAME BREAKER	LD	HLD	LDC	LMCS	100A FUSIBLE SWITCH	100
N-FRAME BREAKER	ND	HND	NDC	NMCS	200A FUSIBLE SWITCH	200
R-FRAME BREAKER	RD	-	RDC	RMCS	400A FUSIBLE SWITCH	400
SPB BREAKER	SPB	-	-	-	600A FUSIBLE SWITCH	600
					800A FUSIBLE SWITCH	800
					1200A FUSIBLE SWITCH	1200

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
RND	35KA	65KA	100KA	INTERM IC
KDC	50KA	65KA	125KA	STND 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

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PRODUCT CODE
PG370

DFTR
RW
DATE
9/20/00
APPD
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REVISION
A
DWG SIZE
A

Cutler-Hammer

AIRDRIE, ALBERTA

TITLE
SUTTON THOMAS
CABRE / JOARCH

TYPE
LV MOTOR CONTROL CENTRE

STARTER DEFINITION 3A15041

G.O. 37-4050

S.O. 37E4050

PAGE
100

ADVANTAGE, SIZE 1, SERIES 2100 MECH, CB TYPE, F, 2X HIGH

HEIGHT (UNIT HEIGHT IN INCHES)

STARTER CODE

-STARTER TYPE A, E, F, V, W, N	FUSIBLE	CB # & LIMITER	STND I.C. TM CB	HIGH I.C. TM CB	INTER I.C. TM CB
FVNR	204	206	207		
FVR	214	216	217		
RVAT AUTOXFM	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 # & LIMITER	INTER I.C. TM CB
SV9000 M3 FRAME	M3.4	M3.6	M3.7
SV9000 M4b FRAME	M4b.4	M4b.6	M4b.7
SV9000 M5b FRAME	M5b.4	M5b.6	M5b.7
SV9000 M5 FRAME	M5.4	M5.6	M5.7
SV9000 M6 FRAME	M6.4	M6.6	M6.7
SV9000 M7 FRAME	M7.4	M7.6	M7.7
SV9000 M8 FRAME	M8.4	M8.6	M8.7
SV9000 M9 FRAME	M9.4	M9.6	M9.7
COMPETITOR VFD	554	556	557
			558

-STARTER TYPE R & T

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

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

HEATER PACK SELECTION - STANDARD TRIP - CLASS 20

OVERLOAD RELAY SIZE	MOTOR FULL LOAD AMP RATING				CATALOG # INCL 3 HEATER PACKS
	DIAL POSITION				
	A	B	C	D	
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	115	132	H2004B-3
	120	145	171	196	H2005B-3
	179	216	253	290	H2006B-3
	215	260	304	349	H2007B-3
	323	390	456	523	H2008B-3
	455	550	645	740	H2009B-3
	675	817	958	110	H2010B-3
	914	108	124	140	H2011B-3
	140	169	199	228	H2012B-3
	187	227	267	307	H2013B-3
	235	285	335	385	H2014B-3
FOR USE WITH EEMAC SIZE 2, IEC SIZE G-K - SERIES B					
75 AMP	290	340	391	441	H2015B-3
	396	455	515	574	H2016B-3
	539	609	679	749	H2017B-3
FOR USE WITH EEMAC SIZES 3-4, IEC SIZES L-N - SERIES A					
105 AMP or 144 AMP	180	202	223	245	H2018-3
	246	276	305	334	H2019-3
	335	375	415	456	H2020-3
	457	512	567	621	H2021-3
	622	697	771	846	H2022-3
	847	950	1050	1150	H2023-3
	1060	1180	1310	1440	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			SECONDARY FUSE AMPS		STND CCT FOR FREEDOM ACROSS THE LINE STARTER
	600V	480V	208V	120V	24V	
50	1	1	3	.6	2.8	SIZE 1-2 SIZE 3 SIZE 4-5
100	3	3	3	1.5	7	
150	3	3	6	2	10	
200	3	3	6	2.8	15	
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		SEALED	
	WATTS	VA	WATTS	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

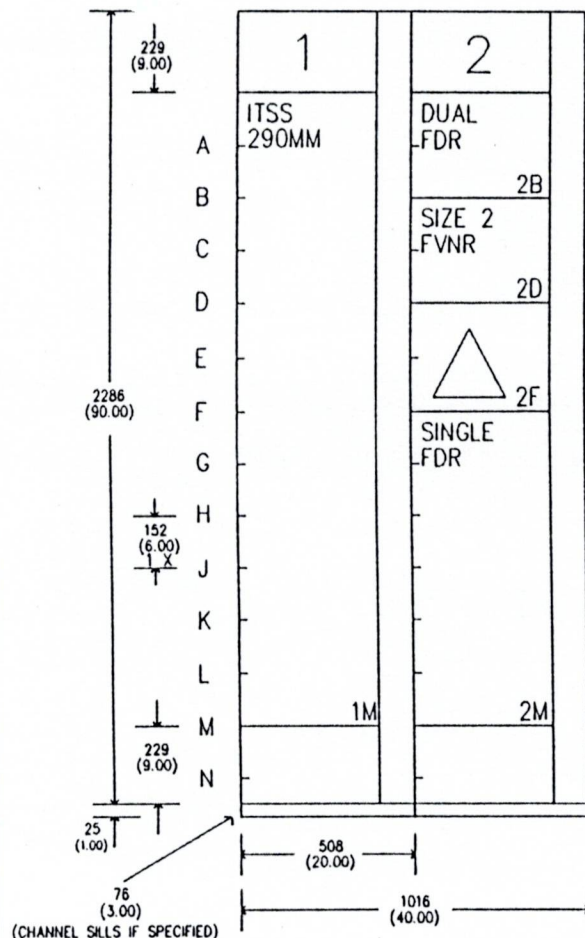
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PRODUCT CODE
PG370

DFTR RW	DATE 9/20/00
APPD	DATE
APPD	DATE
REVISION A	DWG SIZE A

Cutler-Hammer		AIRDRIE, ALBERTA	
TITLE SUTTON THOMAS CABRE / JOARCH		TYPE LV MOTOR CONTROL CENTRE	
FREEDOM STARTER INFO		S.O. 37E4050	
G.O. 37-4050		PAGE 101	

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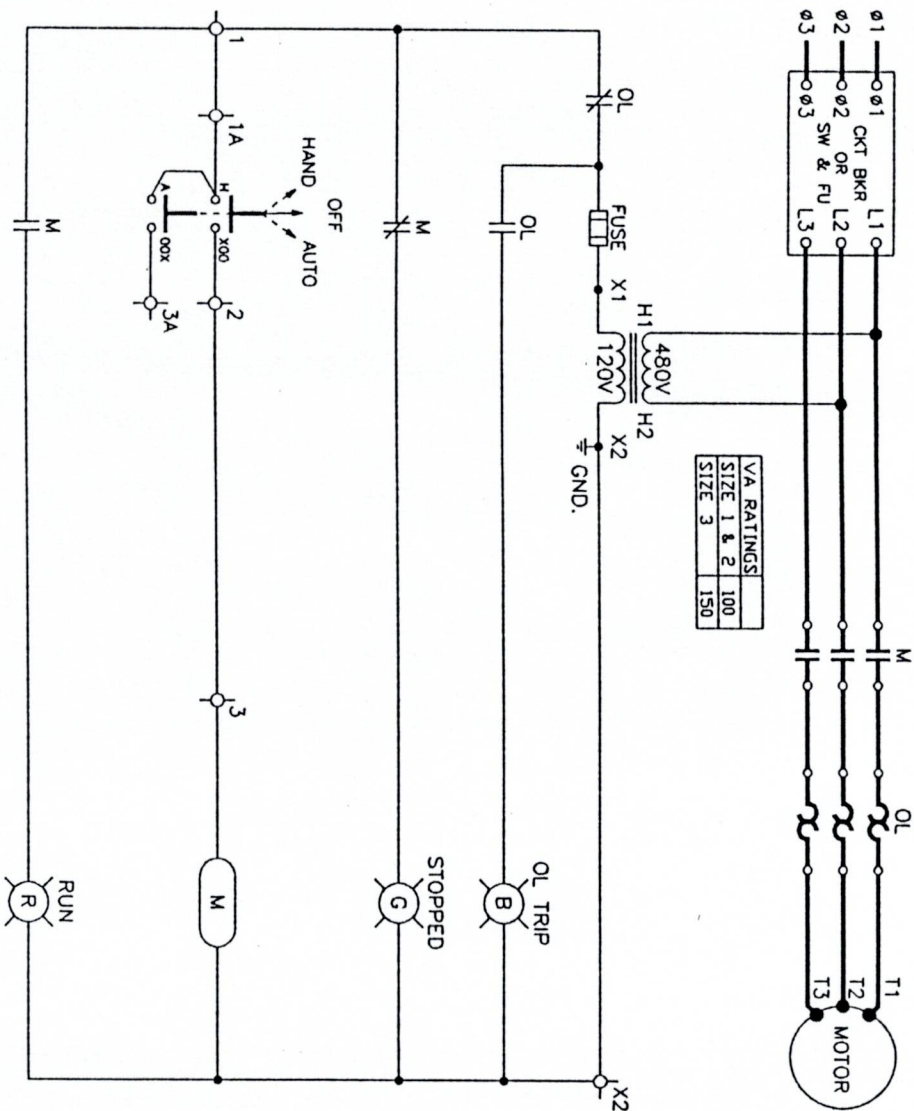


NOTE:

CELL 1 TO BE SPLICED TO LVDA SUPPLIED SERVICE ENTRANCE SECTION

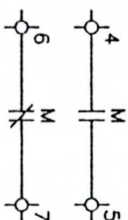
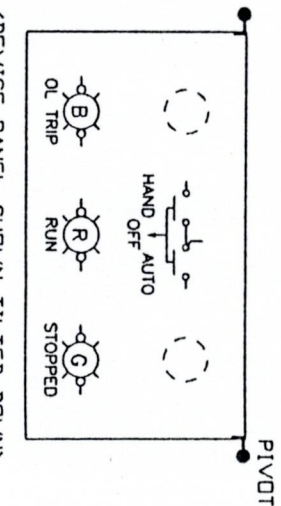
MAIN SERVICE DEVICE ☐ LUGS ☐ BREAKER ☐ SWITCH DEVICE RATING ☐ N/A ☐ XXXX AMP CABLE ENTRY ☐ TOP ☐ BOTTOM CABLE SIZE NA CABLES PER PHASE NA LUG TYPE ☐ SCREW ☐ CRIMP 24" PULL BOX ☐ YES ☐ NONE OUTGOING CABLES ☐ TOP ☐ BOTTOM		BUS HORIZONTAL (TIN PLATED) ☐ AL. ☒ COPPER 1600 AMP COPPER TIN PLATED CELL 1 800 AMP CELL 2 1200 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 (Gasketed) ☐ 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
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.		DATE 10/13/00 APPD DATE APPD DATE		Cutler-Hammer AIRDRIE, ALBERTA TITLE CABRE JOARCAM TYPE LV MOTOR CONTROL CENTRE MCC LAYOUT/SPECIFICATION		
PRODUCT CODE PG370		REVISION E		DWG SIZE A		
		G.O. 37-4070		S.O. 37E4070		
				PAGE 2		

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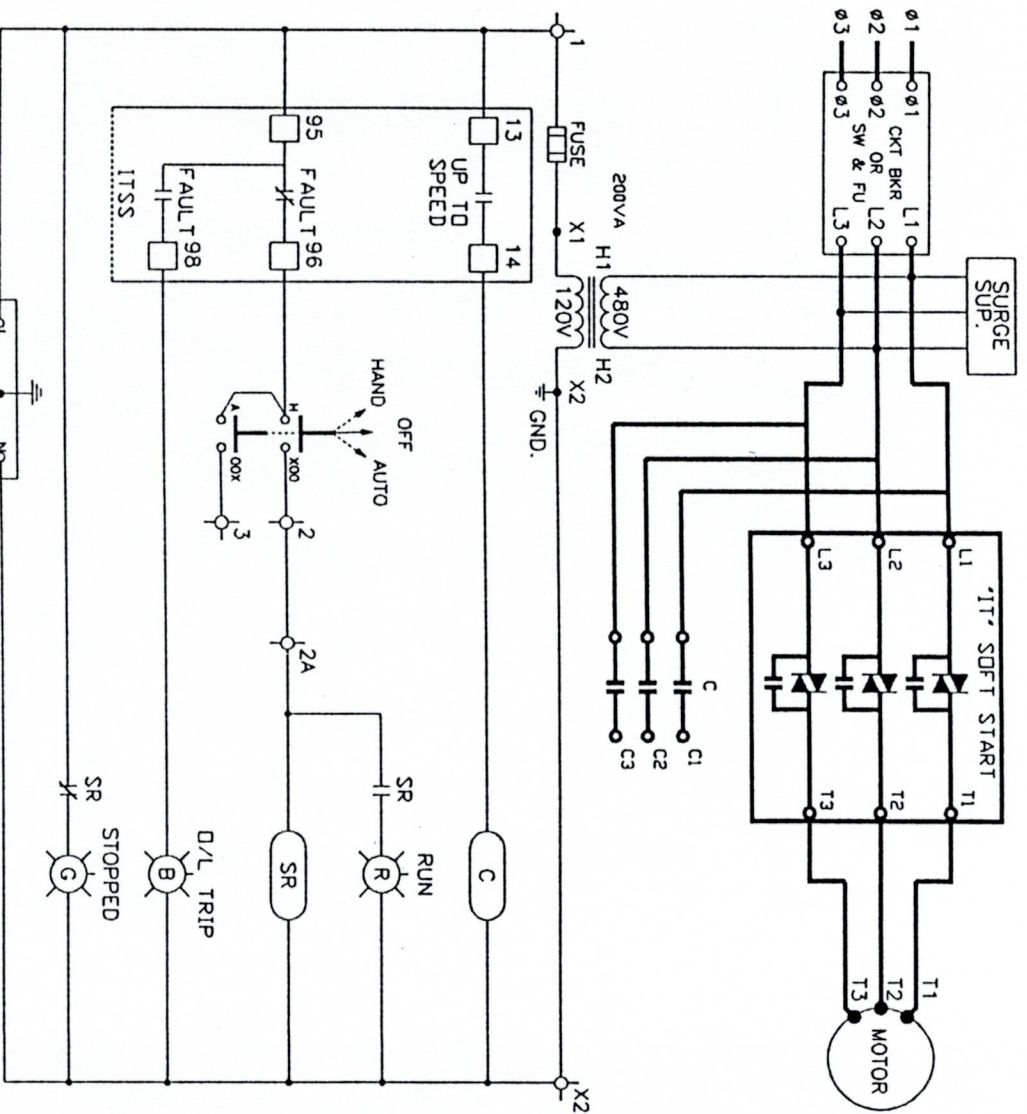


V/A RATINGS		
SIZE 1 & 2	100	
SIZE 3	150	

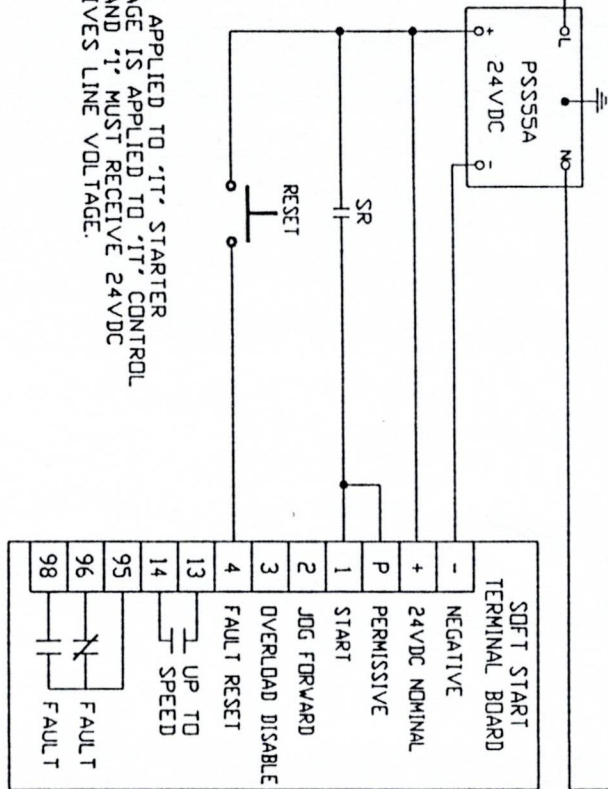
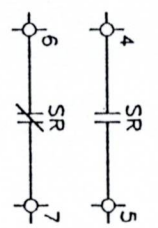
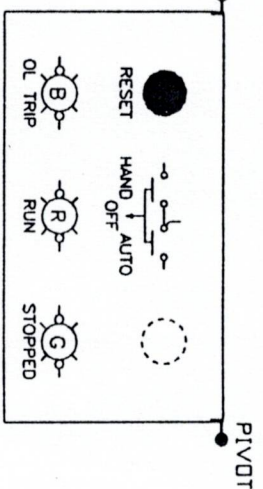
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THE INFORMATION ON THIS DOCUMENT IS CREATED BY CUTLER-HAMMER. IT IS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT IS SUPPLIED	DFTR EM		DATE 10/13/00		Cutler-Hammer				AIRDRIE, ALBERTA			
	APPD		DATE		TITLE CABRE JOARCAM							
	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	



- 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 'I' MUST RECEIVE 24VDC ONLY AFTER UNIT RECEIVES LINE VOLTAGE.
 - 3) C = SIZE 4 CONTACTOR



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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(DEVICE PANEL SHOWN TILTED DOWN)

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	APPD	DATE	TITLE CABRE JOARCAM					
	APPD	DATE	TYPE LV MOTOR CONTROL CENTRE				WD-2	
PRODUCT CODE PG370	REVISION E	DWG SIZE A	G.O. 37-4070		S.O. 37E4070		PAGE 5	

STARS

STARTER TYPE

A - A200
E - FREEDOM NEMA
F - FREEDOM IEC
V - VACUUM
W - ADVANTAGE

S - SV9000 VFD
D - COMPETITOR VFD
R - TRU-START SOLID STATE
T - COMPETITOR SOLID STATE
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	315
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
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

W 1 A 206 12

ADVANTAGE, SIZE 1, SERIES 2100 MECH, CB TYPE, 2X HIGH

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	INTER I.C. TM CB
FVNR	204	206	207			
FVR	214	216	217			
RVAT AUTOXFM	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	M9.8
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

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)

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

BF A HFD 12

CB TYPE FEEDER, SERIES 2100 MECH, HFD CB, 2X HIGH

HEIGHT (UNIT HEIGHT IN INCHES)

FEEDER-MAIN CODE

BREAKER TYPE	STND I.C.	INTER MEDIATE I.C.	HIGH I.C.	MOULDED CASE SW	FUSIBLE SW RATING	CODE
F-FRAME BREAKER	HFD	FDC	HFDL	FMCS	30A FUSIBLE SWITCH	30
K-FRAME BREAKER	KD	HKD	KDC	KMCS	60A FUSIBLE SWITCH	60
L-FRAME BREAKER	LD	HLD	LDC	LMCS	100A FUSIBLE SWITCH	100
N-FRAME BREAKER	ND	HND	NDC	NMCS	200A FUSIBLE SWITCH	200
R-FRAME BREAKER	RD	-	RDC	RMCS	400A FUSIBLE SWITCH	400
SPB BREAKER	SPB	-	-	-	600A FUSIBLE SWITCH	600
					800A FUSIBLE SWITCH	800
					1200A FUSIBLE SWITCH	1200

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

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PRODUCT CODE
PG370

DATE
10/13/00

DATE

DATE

REVISION
A

DWG SIZE
A

Cutler-Hammer

AIRDRIE, ALBERTA

TITLE CABRE JOARCAM

TYPE
LV MOTOR CONTROL CENTRE

STARTER DEFINITION 3A15041

G.O. 37-4070

S.O. 37E4070

PAGE
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HEA. JACK SELECTION - STANDARD TRIP - CLASS 20

OVERLOAD RELAY SIZE	MOTOR FULL LOAD AMP RATING				CATALOG # INCL 3 HEATER PACKS
	DIAL POSITION				
	A	B	C	D	
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			SECONDARY FUSE AMPS		STND CCT FOR FREEDOM ACROSS THE LINE STARTER
	600V	480V	208V	120V	24V	
50	1	1	3	.6	2.8	SIZE 1-2 SIZE 3 SIZE 4-5
100	3	3	3	1.5	7	
150	3	3	6	2	10	
200	3	3	6	2.8	15	
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		SEALED	
	WATTS	VA	WATTS	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

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PRODUCT CODE
PG370

DATE
10/13/00

DATE

DATE

REVISION
A

DWG SIZE
A

Cutler-Hammer

AIRDRIE, ALBERTA

TITLE CABRE JOARCAM

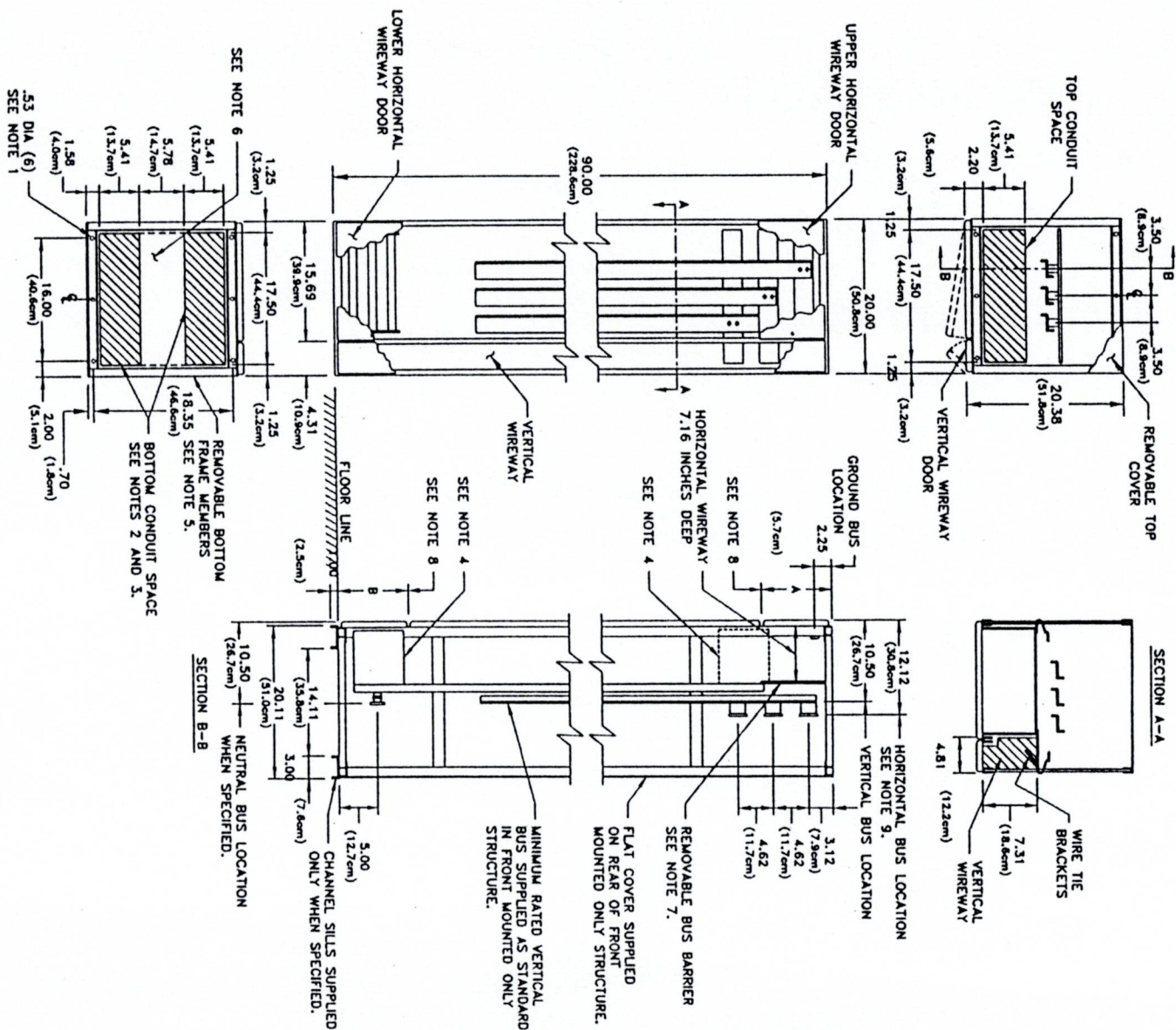
TYPE
LV MOTOR CONTROL CENTRE

FREEDOM STARTER INFO

G.O. 37-4070

S.O. 37E4070

PAGE
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- NOTES:
1. MINIMUM LENGTH OF ANCHOR BOLT IS 2 INCHES (50.8mm) 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: 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 APARTNESS IS 2500 MINIMUM OR 2500 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

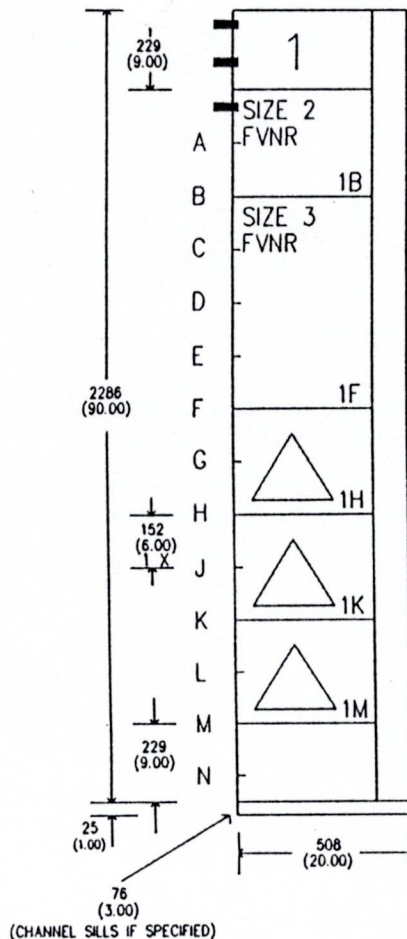
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PRODUCT CODE
PG370

DATE	10/13/00
DFTR	EM
DATE	
APPD	
DATE	
APPD	
REVISION	A
DWG. SIZE	A

Cutler-Hammer		AIRDRIE, ALBERTA	
TITLE		CABRE JOARCAM	
TYPE		LV MOTOR CONTROL CENTRE	
G.O.		FRONT MOUNT 21" DEEP	
37-4070		37E4070	
S.O.		PAGE	
		102	

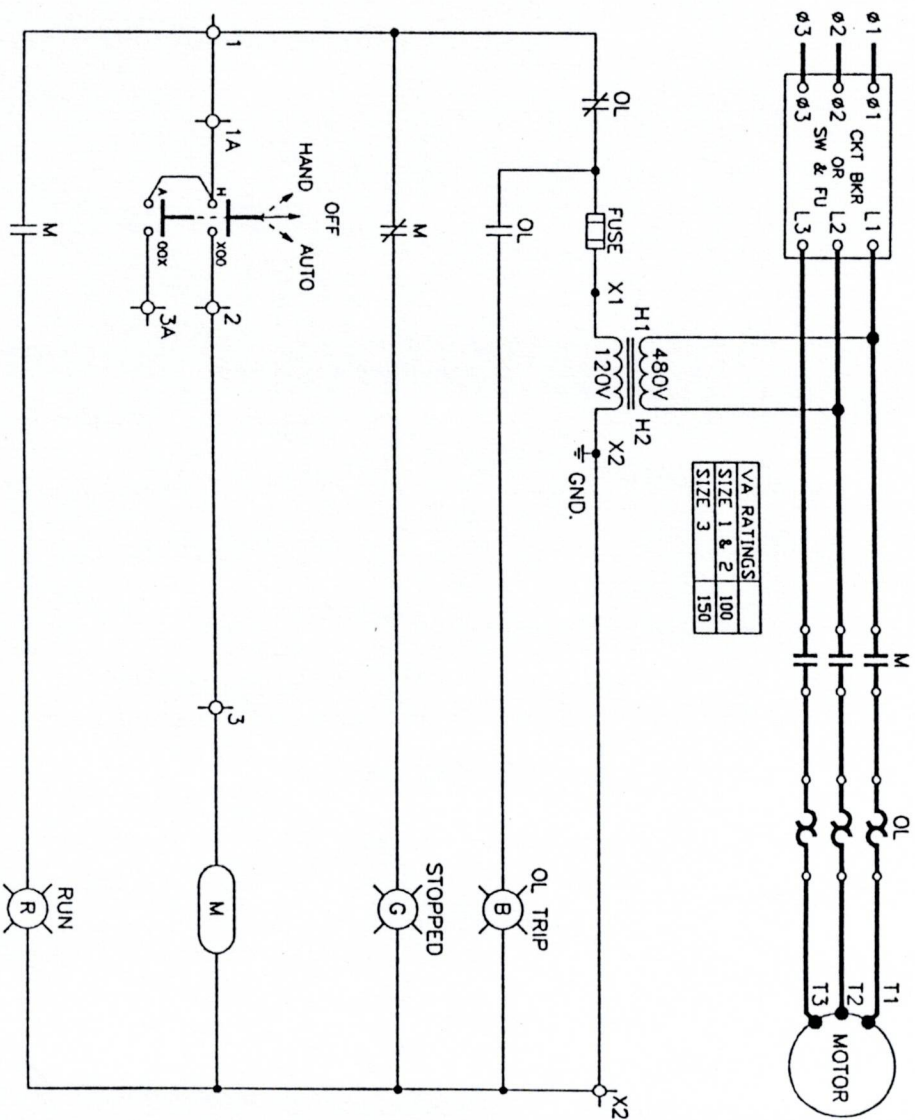
		DRAWING CHANGES							AGES	REVISION REMARKS			37E4109	
		10/24/00	11/07/00						ALL	ISSUED FOR CONSTRUCTION				
									2-3	SIZE 3 FVNR ADDED TO F1F			E	
PAGE	DESCRIPTION													
1	MCC MASTER DRAWING INDEX	A	B											
2	MCC STRUCTURE LAYOUT / SPEC.	A	B											
3	MCC UNIT SPEC. / NAME PLATES	A	B											
4	WIRING DIAGRAM WD-1	A	A											
									SPECIAL NOTES			MCC STRUCTURE TYPE		
												☐ ADVANTAGE MCC		
												☒ FREEDOM 2100 MCC		
INFORMATION PAGES ONLY									ORDER STATUS	☐ We are holding manufacturing pending receipt of these approval drawings.				
100	STARTER DEFINITION 3A15041								☒	We are proceeding with manufacturing per these drawings.				
101	FREEDOM STARTER INFORMATION								PRINTS	CORRESPONDENT	CUSTOMER ORDER #	SALES OFFICE		
102	OUTLINE AND FLOOR PLAN (20")								1	S. ARMSTRONG	D/S 2550-333371	CALGARY 17273		
IMPORTANT														
IT IS THE PURCHASERS RESPONSIBILITY 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.														
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		DATE		Cutler-Hammer AIRDRIE, ALBERTA						
				EM		10/24/00								
				APPD		DATE		TITLE CABRE JOARCAM						
				APPD		DATE		TYPE		LV MOTOR CONTROL CENTRE			MASTER DRAWING INDEX	
PRODUCT CODE PG370				REVISION A		DWG SIZE A		G.O. 37-4109		S.O. 37E4109		PAGE 1		



NOTE: CELL 1 TO BE SPLICED TO 37E4070

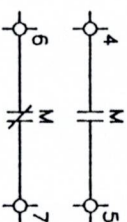
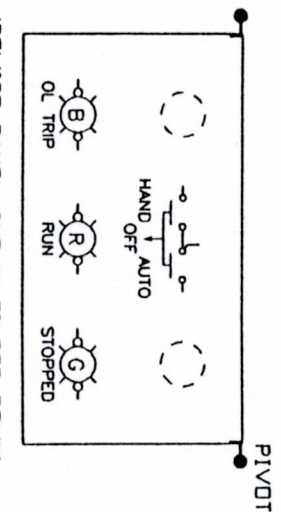
MAIN SERVICE DEVICE CABLE ENTRY CABLE SIZE CABLES PER PHASE LUG TYPE 24" PULL BOX OUTGOING CABLES		480V, 3PH, 3W, 60HZ ☐ LUGS ☐ BREAKER ☐ SWITCH ☐ TOP ☐ BOTTOM ☐ SCREW ☐ CRIMP ☐ YES ☐ NONE ☐ TOP ☐ BOTTOM		BUS HORIZONTAL (TIN PLATED) ☐ AL. ☒ COPPER VERTICAL CELL 1 ISOLATION ☒ POLYESTER BARRIER ☐ LABYRINTH ☐ SHUTTERS GROUND - HORZ ☐ 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 (Gasketed) ☐ 2 (DIP 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 ☐ YES ☒ NONE PAINT FINISH ☐ YES ☒ NO SPACE HEATER ☐ YES ☒ NO		SYMBOLS △ FUTURE SPACE ∅ UNUSABLE SPACE + SPARE UNIT
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.				DATE 10/24/00 APPD DATE APPD DATE		Cutler-Hammer AIRDRIE, ALBERTA TITLE CABRE JOARCAM TYPE LV MOTOR CONTROL CENTRE G.O. 37-4109 S.O. 37E4109		
PRODUCT CODE PG370				REVISION B		DWG SIZE A		
						PAGE 2		

[illegible]



V/A RATINGS		
SIZE 1 & 2	100	
SIZE 3	150	

X2	1	2	3	4	5	6	7
1A	2	3	3A	4	5	6	7



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PRODUCT CODE
PG370

DFTR
EM

APPD

APPD

REVISION
A

DATE
10/24/00

DATE

DATE

DWG SIZE
A

Cutler-Hammer AIRDRIE, ALBERTA

TITLE
CABRE JOARCAM

TYPE
LV MOTOR CONTROL CENTRE

G.O.
37-4109

S.O.
37E4109

WD-1

PAGE
4

STARS

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

STARTER TYPE

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

HEIGHT (UNIT HEIGHT IN INCHES)

STARTER CODE

-STARTER TYPE A, E, F, V, W, N	FUSIBLE	CB #	LIMITER	STND I.C. TM CB	HIGH I.C. TM CB	INTER I.C. TM CB
FVNR	204	206	207			
FVR	214	216	217			
RVAT AUTOXFM	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 #	LIMITER	INTER I.C. TM CB
SV9000 M3 FRAME	M3_4	M3_6	M3_7	M3_8
SV9000 M4b FRAME	M4b_4	M4b_6	M4b_7	M4b_8
SV9000 M5b FRAME	M5b_4	M5b_6	M5b_7	M5b_8
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_8
COMPETITOR VFD	554	556	557	558

-STARTER TYPE R & T

	FUSIBLE	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

BFA HFD 12 CB TYPE FEEDER, SERIES 2100 MECH, HFD CB, 2X HIGH

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)

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

HEIGHT (UNIT HEIGHT IN INCHES)

FEEDER-MAIN CODE

BREAKER TYPE	STND I.C.	INTER MEDIATE I.C.	HIGH I.C.	MOLDDED CASE SV	FUSIBLE SW RATING	CODE
F-FRAME BREAKER	HFD	FDC	HFDL	FMCS	30A FUSIBLE SWITCH	30
K-FRAME BREAKER	KD	HKD	KDC	KMCS	60A FUSIBLE SWITCH	60
L-FRAME BREAKER	LD	HLD	LDC	LMCS	100A FUSIBLE SWITCH	100
N-FRAME BREAKER	ND	HND	NDC	NMCS	200A FUSIBLE SWITCH	200
R-FRAME BREAKER	RD	-	RDC	RMCS	400A FUSIBLE SWITCH	400
SPB BREAKER	SPB	-	-	-	600A FUSIBLE SWITCH	600
					800A FUSIBLE SWITCH	800
					1200A FUSIBLE SWITCH	1200

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

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.

OFTR DATE 10/24/00
EM
APPD DATE
APPD DATE

Cutler-Hammer AIRDRIE, ALBERTA
TITLE CABRE JOARCAM
TYPE LV MOTOR CONTROL CENTRE
STARTER DEFINITION 3A15041

PRODUCT CODE PG370

REVISION A

DWG SIZE A

G.O. 37-4109

S.O. 37E4109

PAGE 100

HEA ACK SELECTION - STANDARD TRIP - CLASS 20

OVERLOAD RELAY SIZE	MOTOR FULL LOAD AMP RATING				CATALOG # INCL 3 HEATER PACKS
	DIAL POSITION				
	A	B	C	D	
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

CCT VA	PRIMARY FUSE AMPS			SECONDARY FUSE AMPS		STND CCT FOR FREEDOM ACROSS THE LINE STARTER
	600V	480V	208V	120V	24V	
CONTROL TRANSFORMER FUSING & STND SIZING FOR FREEDOM STARTERS	50	1	1	3	.6	2.8
	100	3	3	3	1.5	7
	150	3	3	6	2	10
	200	3	3	6	2.8	15
	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		SEALED	
		WATTS	VA	WATTS	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

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PRODUCT CODE
PG370

DFTR EM	DATE 10/24/00
APPD	DATE
APPD	DATE
REVISION A	DWG SIZE A

Cutler-Hammer		AIRDRIE, ALBERTA	
TITLE CABRE JOARCAM		TYPE LV MOTOR CONTROL CENTRE	
G.O. 37-4109		FREEDOM STARTER INFO	
S.O. 37E4109		PAGE 101	

WRAPPER INSPECTION CHECK LIST

JOB NUMBER # 3704050TOTAL # OF UNIT 9

A200 C-H ADVANTAGE

SERIES 2100 ☐ ☐ ☐
☐ FREEDOM 21 ☐ ☐ ☐
☒ FREEDOM 2100 ☐ ☒ ☐
☐ ADVANTAGE ☐ ☐ ☐
☐ OTHER ☐ ☐ ☐

SYSTEM VOLTAGE : 480 V, 3 PH, 5 W, 60 HZCONTROL VOLTAGE : 120 VCPT ☒NEMA ☒ I.E.C. ☐SEPARATE SOURCE ☐

1. BREAKER TYPE - STD ☒
 - VISI ☐
 - CURRENT LIMITER ☐

2. FUSIBLE TYPE - YES ☐
 - NO ☒

IF FUSIBLE:
 FUSE CLASS: N/A

3. O/L PROTECT. - TYPE BA ☐
 - TYPE AA ☐
 - FREEDOM ☒
 - ADVA. ☐
 - N/A ☐
 - BELL ALARM { YES ☐
 NO ☒

4. CONTROL WIRING - # 14 ☐
 - # 16 ☒
 - OTHER ☐

5. TERMINAL BLOCKS - STD ☐
 - PULL APART ☒
 - OTHER ☐

6. WIRE MARKERS - YES ☒
 - NO ☐
 HEAT SHRINK - YES ☐
 - NO ☒

7. DEVICE LIGHTS
 - FULL VOLTAGE ☐
 - TRANSFORMER TYPE ☒
 - PUSH TO TEST ☐
 - TRANSFORMER
 PUSH TO TEST ☐
 - N/A ☐

8. DEVICE SWITCHES
 - STANDARD ☐
 - SPRING RETURN ☐
 - N/A ☒

9. HEATERS REQUIRED - YES ☒
 - NO ☐

10. LABELS - ENGLISH ONLY ☒
 - FRENCH/ENGLISH ☐
 - FRENCH ONLY ☐

11. PHASE INDICATION - YES ☐
 - NO ☒

12. CLEAR / INSULATION CHECK - YES ☒
 - N/A ☐

13. CONNECTIONS TIGHT/TORQUED ☒
 STAB ALIGNMENT ☒

ELECTRICAL INSPECTIONS

14. CONTINUITY/PHASE CHECK - YES ☒
 - N/A ☐

15. FUNCTIONAL TEST - YES ☒
 - N/A ☐

16. DIELECTRIC TEST ☒

COMMENTS: _____

SPECTED BY: _____

DATE: 04000700

STAMP:



REVISION #: 04

REVISION DATE: 09/02/97

FINAL ASSEMBLY INSPECTION POINT

SHOP ORDER # 37E4050

ASSEMBLED BY (COMPLETE 1ST CHECK LIST)

Anthony Lopez

DATE Oct 5/00 REV. B

STRUCTURES

- 1st 2nd
- ☒ ☐ Visual Inspection
(Layout, Hinges, C clamps, Black Clips)
 - ☒ ☐ Special Color _____
 - ☒ ☐ Horizontal Bus Size 600 Amp
 - ☒ ☐ Vertical Bus Size 600 Amp 400 Amp
 - ☒ ☐ Horizontal Ground Bus Size
 - ☒ Material ☐ Phase Tape
 - ☒ Top ☐ Bottom
 - ☒ ☐ Vertical Ground Bus Size
 - ☐ Material ☐ Phase Tape
 - ☒ ☐ Ground Terminals (# of units)
 - ☒ ☐ Ground lugs at Both Ends
 - ☒ ☐ Main Incoming Lugs
 - ☒ Top ☐ Bottom Entry
 - ☒ Torque \ Marked
 - ☒ Lug Type/Style Screw
 - ☒ ☐ Gasketing ☐ 12 ☐ 1A
 - ☒ ☐ Splice Kit
 - ☒ 3 phase ☐ Neutral ☒ Ground
 - ☒ ☐ Bottom plates
 - ☒ ☐ Lag bolt tight & Lifting Clips
 - ☒ ☐ Barriers installed
 - ☒ ☐ Stab Covers
 - ☒ ☐ Clearance insulation
 - ☒ ☐ Silver plated bus
 - ☒ ☐ Ground Clips

INITIALS (1ST) AL

WRAPPERS

- ☐ Second Half of pull apart TB's Installed
- ☐ Units all tested and stamped
- ☐ Units installed per layout (pg. 2)
- ☐ All units locked in place
- ☐ Hockey puck spacers installed
- ☐

WRAPPERS cont.

- ☐ Stab fully engaged
- ☐ Silver plated stabs
- ☐ Ground Clip
- ☐ Phase Taped

FINAL

- ☐ Doors
 - ☐ Interlocks operates
 - ☐ Operating Mech. Function Smoothly
 - ☐ Line up and close easily
 - ☐ Reset installed and operate
- ☐ Wiring Diagrams inside of doors
- ☐ Inter wiring ☐ Heat shrink markers
 - ☐ TB terminals tight
- ☐ Special insulation where applicable
- ☐ CT ratio's checked
 - ☐ Transformer \ Capacitor sizes checked
- ☐ Heaters installed

Labeling

- ☐ Reverse Fed to Main Breaker
- ☐ Correct Wire Way Labels
 - ☐ For Assistance ☐ Ground
 - ☐ Caution/Warning ☐ Torque list
- ☐ Nameplate match layout
 - ☐ Spelling ☐ Style
- ☐ CSA \ UL ID label on all Units
- ☐ LOGO _____
- ☐ Separate Source
- ☐ Pride Label (last wire way)
- ☐ Program Labels(advantage, VFD's, PLC, Metering, etc..)
- ☐ Advantage 4 sec. Blank label
- ☐ Service Entrance

Comments:

Checked by (2nd) _____

Date _____

DA NOTE PAD

[illegible]

AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION & TEST RECORD SHEET

FORM # 10W01F04

CUSTOMER: Sutton Thomas

ORDER NO.: 37E4050

WRAPPER INSPECTION

- ☒ WRAPPERS HAVE BEEN TESTED IN ACCORDANCE WITH INSPECTION & TEST REQUIREMENTS.
- ☒ WRAPPERS HAVE INSPECTION STAMP.
- ☒ INSPECTION OF WRAPPERS HAS BEEN LOGGED IN THE INPROCESS INSPECTION LOG.
- ☒ SPOT CHECK TRANSFORMER:
PRIMARY 480 V SEC 120 V
- ☒ SEPARATE SOURCE _____ VOLTS
- ☒ PULL APART TB'S COMPLETE

STRUCTURE INSPECTION

- ☒ CELLS AND SHIPPING SECTION PER M.I.
- ☒ VERTICAL & HORIZONTAL BUS PER M.I.
- ☒ GROUND & NEUTRAL BUS PER M.I.
- ☒ PHASE SEQUENCE IS CORRECT.
- ☒ BUS BAR SPACING IS PER M.I.
- ☒ STANDARD HARDWARE IS INCLUDED IN BUS BAR & STRUCTURE ASSEMBLIES.
- ☒ BUS BOLTS ARE TORQUED AND MARKED (23' LBS ON 38-16 BOLTS).
- ☒ VERTICAL BUS ISOLATION. ☒ GLASS POLYESTER
☐ LABYRINTH
☐ C/W SHUTTERS
- ☒ STAB CUTOUT COVERS ARE INSTALLED PER M.I.
- ☒ DIVIDER PANS ARE INSTALLED PER M.I.
- ☒ BARRIERS ARE INSTALLED PER M.I.
- ☒ GASKETTING IS INSTALLED PER M.I. (TYPE 1A)
- ☒ SPECIAL BUS BAR ASSEMBLY AND/OR FIXED UNITS ARE INSTALLED PER M.I.
- ☒ VERTICAL BUS IS LONG ENOUGH FOR ALL POSSIBLE LOCATIONS (PRESENT & FUTURE).
- ☒ CLEARANCE/INSULATION CHECK
- ☒ TOP COVERS ☒ GRIP CAPS ☒ BACKSHEETS
- ☒ BOTTOM PLATES
- ☒ LIFTING CLIPS & ASSOCIATED HARDWARE
- ☒ STRUCTURES LAG BOLTED TO SHIPPING SKIDS

COMMENTS:

PRE-SHIPMENT INSPECTION

- ☒ WRAPPERS HAVE INSPECTOR'S STAMP AND FORM # 10W01F01 IS INCLUDED WITH ORDER
- ☒ STRUCTURES HAVE BEEN INSPECTED AND FORM # 10W01F02 IS INCLUDED WITH ORDER
- ☒ FINAL ASSEMBLY HAS BEEN INSPECTED AND FORM # 10W01F03 IS INCLUDED WITH ORDER
- ☒ WRAPPERS ARE LOCATED PER M.I. AND SECURELY FASTENED.
- ☒ WRAPPER STABS FULLY ENGAGE VERTICAL BUS.
- ☒ HANDLE MECH'S AND DOOR INTERLOCKS FUNCTION PROPERLY.
- ☒ SPLICE KITS ATTACHED TO CELL # F4
- ☒ SPLICE KIT DRAWING SUPPLIED
- ☒ METERS, RELAYS, SWITCHES, KEYPADS, ETC. MATCH M.I.
- ☒ INTERWIRING, COMMUNICATION WIRING - PER WD'S.
- ☒ WIRE CONNECTIONS ARE SECURE.
- ☒ WIRE MARKERS PER M.I. ☒ HEAT SHRINK
- ☒ ELECTRICAL COMPONENTS FUNCTION PROPERLY.
- ☒ POINTS TO OTHER EQUIPMENT PER M.I.
- ☒ SERVICE ENTRANCE/ INC. REQUIREMENTS PER M.I.
- ☒ LOGO AND C.S.A. RATING NAMEPLATES ARE CORRECT AND PROPERLY INSTALLED -
ORDER TYPE (NAME): freedom 2100
- ☒ OTHER NAMEPLATES AND LABELS ARE CORRECT AND PROPERLY INSTALLED.
- ☒ ALL FOREIGN OBJECTS HAVE BEEN REMOVED.
- ☒ OVERALL APPEARANCE & COLOR MATCH CHECKED.
- ☒ DRAWINGS & M.I. UPDATED (IF REQUIRED).
- ☒ MATERIAL SHORTAGES: ☒ NONE
☐ PER SHIPPING REPORTS
- ☒ INSTRUCTION BOOK, LEAFLETS, TEST REPORTS & MANUALS IN DOCUMENT POCKET (and/or)
- ☒ TEST TAG HAS BEEN APPLIED.

INSPECTED BY Tom H

DATE Oct 13/00

STAMP:



REVISION # 6

REVISION DATE: 11/13/98

AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION CUSTOMER TEST REPORT

FORM # 10W01F05

CUSTOMER: Sutton Thomas ORDER NO.: 37E4050

GENERAL INSPECTION:

COMMENTS:

- (1) WRAPPERS ☒ O.K.
(2) STRUCTURES ☒ O.K.

WIRING:

COMMENTS:

- (1) STARTER WIRING CHECKED ☒ O.K.
(2) FUNCTION TESTED ☒ O.K.
(3) WIRING CONTINUITY CHECKED ☒ O.K.

DI-ELECTRIC TESTS:

COMMENTS:

- (1) CONTROL WIRING - 1500 VOLTS 1 SECOND TEST ☒ O.K.
(2) POWER WIRING - 2640 VOLTS 1 SECOND TEST ☒ O.K.
(3) BUS BARS - 2500 VOLTS 1 MINUTE TEST ☒ O.K.

NOTE: CANADIAN STANDARDS ASSOCIATION AND EEMAC SPECIFY DI-ELECTRIC TESTS AT TWICE RATED VOLTAGE PLUS 1000 VOLTS FOR 1 MINUTE, OR 20% HIGHER THAN THIS VALUE FOR 1 SECOND.

GENERAL APPEARANCE

☒ O.K.

ADDITIONAL COMMENTS.

INSPECTED BY [Signature]

DATE: Oct 13/00

STAMP:



REVISION #: 4

REVISION DATE: 11/13/97

PAGE

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

FORM # 10W01F02

2 OF 2

SHIPPING SPLIT

2 OF 2

PLEASE USE BLUEPRINTS: STRUCTURE M.I.
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.

JOB # : 37E4050

STRUCTURE (TILT) SECTION

□ BRACING: 42K: □ 65K: □ 100K: □

- ☒ CHECK REVISION ON SCHEDULE yes
☒ BUS BOLT COVERS (LABYRINTH): YES: □ N/A: ☒
☒ HORIZONTAL BUS BARRIER FOR LABYRINTH: YES: □ N/A: ☒
☒ HORIZONTAL BUS PUNCHED AT ENDS FOR SPLICE: ☒
☒ LAGGED IN PROPER SPOT ☒ (SINGLE CELLS LAGGED IN ALL (4) CORNERS)
☒ HORIZONTAL BARRIERS INSTALLED: ☒
☒ HORIZONTAL BUS AMP: 600 CU: ☒ AL: □ SIZE: 2" # BARS/PHASE: 1
☒ HORIZONTAL TO VERTICAL BUS SPACERS INSTALLED. yes
☒ BUS BOLT TORQUE CHECKED: (PLEASE INITIAL) 1. LP CHECK (1) WITH TORQUE WRENCH ☒
☒ TORQUE CONNECTIONS MARKED: yes
☒ HORIZONTAL BUS BAR LINED UP. ☒ CUTOFF VERTICAL BUS IS AT RIGHT ANGLE TO H BUS. N/A: ☒
☒ GROUND BUS (TOP HORIZ.): N/A: ☒ CU: ☒ AL: □ TIN-PLATE: □ SIZE: 1"
☒ GROUND BUS (BOTTOM HORIZ.): N/A: ☒ CU: ☒ AL: □ TIN-PLATE: □ SIZE: 1"
☒ GROUND BUS (VERTICAL): N/A: ☒ CU: ☒ AL: □ TIN-PLATE: □ SIZE: 1"
☒ NEUTRAL BUS: N/A: ☒ CU: ☒ AL: □ TIN-PLATE: □ SIZE: 1"
☒ CHANNEL SILLS: YES: ☒ N/A: ☒ INSTALLED: ☒ LOOSE: □ HARDWARE: □
☒ CHANNEL SILL COVER PLATE: YES: ☒ N/A: ☒ QTY: 1
☒ C-CLAMPS INSTALLED: ☒
☒ PLUG NUTS INSTALLED: YES: ☒ N/A: ☒
☒ DRIP HOODS: YES: ☒ N/A: ☒
☒ ON B/B STRUCTURES. CHECK F1/R1, F2/R2 LAYOUTS: YES: ☒ N/A: ☒
☒ GRND LUG: YES: ☒ N/A: ☒ QTY: 1 NEUTRAL LUG: YES: ☒ N/A: ☒ QTY: 1 TAPED: YES: ☒ N/A: ☒
☒ SPLICE KIT: YES: ☒ N/A: ☒ TAPED: ☒ SPLICE BAG WITH HARDWARE: YES: ☒ N/A: ☒
☒ WHEELS ON RIGHT LOCATION & NAILS IN: YES: ☒ N/A: ☒ COMMENTS:
☒ B/B LABELS ON BACK SIDE PAN DIVIDERS: YES: ☒ N/A: ☒
☒ LIFTING CLIPS: YES: ☒ N/A: ☒ QTY: 1
☒ SIDE SHEET: YES: ☒ N/A: ☒ QTY: 1

DATE: Sept 28, 00 CHECKED BY: 1. Lin Pines (FINAL CHECKLISTED): Harry

DOOR SECTION

- ☒ CHECK REVISION ON SCHEDULE BOARD yes
☒ CORRECT TYPE WIREWAY LABELS INSTALLED: YES: ☒
☒ UNITS ARE: FUSIBLE: □ BREAKER TYPE: ☒
☒ DOOR APPEARANCE (NO SCRATCHES, GOUGES, OR CHIPS): good
☒ SPECIAL COLOURS: YES: ☒ N/A: ☒
☒ DOOR ALIGNMENT ACCEPTABLE yes
☒ CORRECT TYPE DOOR NAMEPLATE: N/A YES: ☒
☒ BOLTS ON FORMED COVERS TIGHTENED: N/A YES: ☒
☒ GASKETTING ON DOORS: YES: ☒ N/A: ☒
☒ DOORS & DOC. POCKETS HAVE NO SHARP EDGES: YES: ☒
☒ WIGGLE DOORS TO CHECK FOR LOOSE HINGES: YES: ☒
☒ CLOSE ALL 1/4 TURN FASTENERS: YES: ☒
☒ BLOW OUT STRUCTURE

COMMENTS:

DATE: Sept 28, 00 CHECKED BY: 1. AmerindaDATE: Sept 28, 00 CHECKED BY: 2. Karen

REVISION #: 15

REVISION DATE: 12/09/98

PAGE

1 OF 2

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

FORM # 10W01F02

PLEASE USE BLUEPRINTS: STRUCTURE M.I.
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.

JOB # :

37E 4050

SHIPPING SPLIT

L OF 2

VERTICAL BUS SECTION

- ☒ VERTICAL BUS AMPS: CELL # F1 600A CELL # F2 600A CELL # F3 600A CELL # / / A
- ☒ CHECK REVISION ON SCHEDULE Yes
- ☒ VERTICAL BUS MODIFIED: YES ☒ N/A ☐ CUTOFF LINE: / PUNCHING LINES: Line 1, L2
- ☒ ISOLATION BARRIER'S MODIFIED: YES ☐ N/A ☒ AT LINES: /
- ☒ LABYRINTH MODIFIED: YES ☐ N/A ☒ AT LINE: / FOR INC.: / CUT OFF: /
- ☒ C.T.'S ON VERTICAL BUS: YES ☐ N/A ☒
- ☒ TORQUE CHECKED ON VERTICAL Yes COMMENTS:

DATE: Sept 27/00 CHECKED BY: Scott Bryant

STRUCTURE (JIG) SECTION

- ☒ CHECK REVISION ON SCHEDULE Yes
- ☒ ISOLATION BARRIER: ISOLATION: ☒ LABYRINTH: ☐ BARE: ☐
- ☒ OFFSET PLATE MODIFIED: YES ☐ N/A ☒ AT LINE: /
- ☒ GROMMETS WITH SPECIAL PAN DIVIDER: YES: ☐ N/A: ☒
- ☒ CUTOFF COVERS INSTALLED: YES: ☒ N/A: ☐
- ☒ BUS BOLT COVERS (ISOLATION): YES: ☒ N/A: ☐
- ☒ SHUTTER ASSEMBLIES INSTALLED: YES: ☐ N/A: ☒
- ☒ GROUND CLIP BRACKETS ON PAN DIVIDERS: YES: ☒ N/A: ☐ OR - VERTICAL GROUND BUS YES: ☐ N/A: ☒
- ☒ HINGES IN RIGHT LOCATION, AND INSTALLED / (PAY SPECIAL ATTENTION TO 32" CELL & 44" CELL HINGES)
- ☒ WRAPPER LAYOUT MATCHES M.I. /
- ☒ CHECK LOCATION AND QTY OF BLACK CLIPS: ☒ FUTURE SPACE: ☒ GAL. CLIP ON FUTURE SPACE: ☒
- VERTICAL BUS IS PRESENT IN EVERY POSSIBLE STAB LOCATION (PRESENT & FUTURE) ☒
- (PAY PARTICULAR ATTENTION TO THE BOTTOM UNIT, REAR SIDE)
- ☒ GASKETING: YES: ☒ 1A: ☒ 12: ☐ N/A: ☐ BLACK STRIPS ON BULLNOSE: YES: ☒ N/A: ☐ (ENDS OF LINEUP ONLY)
- ☒ BOTTOM PLATES: YES: ☐ N/A: ☒ GASKETED: YES: ☐ N/A: ☒
- ☒ INCOMING LINE KIT: YES: ☐ INSTALLED: ☐ N/A: ☒ COLORED, TAPED, TORQUED: YES: ☐ N/A: ☒
- ☒ CABLE TIES INSTALLED: YES: ☒ N/A: ☐
- ☒ NEUTRAL BUS BRACKETS INSTALLED YES: ☐ N/A: ☒
- ☒ WASHERS ON BK. GASKET AT SHIP SPLITS YES: ☐ N/A: ☒
- ☒ CHECK SHIPPING SPLITS TO M.I. /
- ☒ INTERCELL BARRIERS, L'ATIONS & STYLES CHECKED YES: ☐ N/A: ☒

COMME: /DATE: Sept 28/00 CHECKED BY: [Signature]

REVISION #: 15

REVISION DATE: 12/09/98

PAGE

2 OF 2

SUB # : 37E4050

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

SHIPPING SPLIT

1 OF 2

FORM # 10W01F02

PLEASE USE BLUEPRINTS: STRUCTURE M.I.:
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.

STRUCTURE (TILT) SECTION

□ BRACING: 42K: □ 65K: □ 100K: □

- ☒ CHECK REVISION ON SCHEDULE yes
☒ BUS BOLT COVERS (LABYRINTH): YES: □ N/A: ☒
☒ HORIZONTAL BUS BARRIER FOR LABYRINTH: YES: □ N/A: ☒
☒ HORIZONTAL BUS PUNCHED AT ENDS FOR SPLICE: ☒
☒ LAGGED IN PROPER SPOT ☒ (SINGLE CELLS LAGGED IN ALL (4) CORNERS)
☒ HORIZONTAL BARRIERS INSTALLED: ☒
☒ HORIZONTAL BUS AMP: 605 CU: ☒ AL: ☒ SIZE: 2" # BARS/PHASE: 1
☒ HORIZONTAL TO VERTICAL BUS SPACERS INSTALLED. yes
☒ BUS BOLT TORQUE CHECKED: (PLEASE INITIAL) 1. LP CHECK (1) WITH TORQUE WRENCH ☒
☒ TORQUE CONNECTIONS MARKED: yes
☒ HORIZONTAL BUS BAR LINED UP. ☒ CUTOFF VERTICAL BUS IS AT RIGHT ANGLE TO H BUS N/A: ☒
☒ GROUND BUS (TOP HORIZ.): N/A: ☒ CU: ☒ AL: ☒ TIN-PLATE: ☒ SIZE: 1"
☒ GROUND BUS (BOTTOM HORIZ.): N/A: ☒ CU: ☒ AL: ☒ TIN-PLATE: ☒ SIZE: 1"
☒ GROUND BUS (VERTICAL): N/A: ☒ CU: ☒ AL: ☒ TIN-PLATE: ☒ SIZE: 1"
☒ NEUTRAL BUS: N/A: ☒ CU: ☒ AL: ☒ TIN-PLATE: ☒ SIZE: 1"
☒ CHANNEL SILLS: YES: ☒ N/A: ☒ INSTALLED: ☒ LOOSE: ☒ HARDWARE: ☒
☒ CHANNEL SILL COVER PLATE: YES: ☒ N/A: ☒ QTY: 1
☒ C-CLAMPS INSTALLED: ☒
☒ PLUG NUTS INSTALLED: YES: ☒ N/A: ☒
☒ DRIP HOODS: YES: ☒ N/A: ☒
☒ ON B/B STRUCTURES, CHECK F1/R1, F2/R2 LAYOUTS: YES: ☒ N/A: ☒
☒ GRND LUG: YES: ☒ N/A: ☒ QTY: 1 NEUTRAL LUG: YES: ☒ N/A: ☒ QTY: 1 TAPED: YES: ☒ N/A: ☒
☒ SPLICE KIT: YES: ☒ N/A: ☒ TAPED: ☒ SPLICE BAG WITH HARDWARE: YES: ☒ N/A: ☒
☒ WHEELS ON RIGHT LOCATION & NAILS IN: YES: ☒ COMMENTS:
☒ B/B LABELS ON BACK SIDE PAN DIVIDERS: YES: ☒ N/A: ☒
☒ LIFTING CLIPS: YES: ☒ N/A: ☒ QTY: 4
☒ SIDE SHEET: YES: ☒ N/A: ☒ QTY: 1

(FINAL CHECKLISTED):

DATE: Sept 28/00 CHECKED BY: 1. Len Perin 2. Darryl

DOOR SECTION

- ☒ CHECK REVISION ON SCHEDULE BOARD yes
☒ CORRECT TYPE WIREWAY LABELS INSTALLED: YES: ☒
☒ UNITS ARE: FUSIBLE: ☒ BREAKER TYPE: ☒
☒ DOOR APPEARANCE (NO SCRATCHES, GOUGES, OR CHIPS): good
☒ SPECIAL COLOURS: YES: ☒ N/A: ☒
☒ DOOR ALIGNMENT ACCEPTABLE yes
☒ CORRECT TYPE DOOR NAMEPLATE: YES: ☒
☒ BOLTS ON FORMED COVERS TIGHTENED: YES: ☒
☒ GASKETTING ON DOORS: YES: ☒ N/A: ☒
☒ DOORS & DOC. POCKETS HAVE NO SHARP EDGES: YES: ☒
☒ WIGGLE DOORS TO CHECK FOR LOOSE HINGES: YES: ☒
☒ CLOSE ALL 1/4 TURN FASTENERS: YES: ☒
☒ BLOW OUT STRUCTURE

COMMENTS:

DATE: Sept 28, 00CHECKED BY: 1. AmandaDATE: Sept 25, 01CHECKED BY: 2. Karen

REVISION #: 15

REVISION DATE: 12/09/98

PAGE

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

FORM # 10W01F02

1 OF 2

SHIPPING SPLIT

2 OF 2

PLEASE USE BLUEPRINTS: STRUCTURE M.I.:
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.JOB # : 37E 4050

VERTICAL BUS SECTION

- ☒ VERTICAL BUS AMPS: CELL # F4 600 A CELL # F5 600 A CELL # / / A CELL # / / A
- ☒ CHECK REVISION ON SCHEDULE YES
- ☒ VERTICAL BUS MODIFIED: YES ☒ N/A ☐ CUTOFF LINE: 10 PUNCHING LINES: 100
- ☒ ISOLATION BARRIER'S MODIFIED: YES ☒ N/A ☐ AT LINES: 13"
- ☒ LABYRINTH MODIFIED: YES ☐ N/A ☒ AT LINE: / FOR INC.: / CUT OFF: /
- ☒ C.T.'S ON VERTICAL BUS: YES ☐ N/A ☒
- ☒ TORQUE CHECKED ON VERTICAL YES

COMMENTS: V-BUS CUT 3" LONGER THAN 10
SO THAT BRACE WOULD REMAIN IN
STANDARD LOCATION.

DATE: Sept 24/00 CHECKED BY: [Signature]

STRUCTURE (JIG) SECTION

- ☒ CHECK REVISION ON SCHEDULE YES
- ☒ ISOLATION BARRIER: ISOLATION: ☒ LABYRINTH: ☐ BARE: ☐
- ☒ OFFSET PLATE MODIFIED: YES ☐ N/A ☒ AT LINE: /
- ☒ GROMMETS WITH SPECIAL PAN DIVIDER: YES: ☐ N/A: ☒
- ☒ CUTOUT COVERS INSTALLED: YES: ☒ N/A: ☐
- ☒ BUS BOLT COVERS (ISOLATION): YES: ☒ N/A: ☐
- ☒ SHUTTER ASSEMBLIES INSTALLED: YES: ☐ N/A: ☒
- ☒ GROUND CLIP BRACKETS ON PAN DIVIDERS: YES: ☒ N/A: ☐ OR - VERTICAL GROUND BUS YES: ☐ N/A: ☒
- ☒ HINGES IN RIGHT LOCATION, AND INSTALLED / (PAY SPECIAL ATTENTION TO 32" CELL & 44" CELL HINGES)
- ☒ WRAPPER LAYOUT MATCHES M.I. /
- ☒ CHECK LOCATION AND QTY OF BLACK CLIPS: ☒ FUTURE SPACE: ☒ GAL. CLIP ON FUTURE SPACE: ☒
- VERTICAL BUS IS PRESENT IN EVERY POSSIBLE STAB LOCATION (PRESENT & FUTURE) ☒
- (PAY PARTICULAR ATTENTION TO THE BOTTOM UNIT, REAR SIDE)
- ☒ GASKETING: YES: ☒ 1A: ☒ 12: ☐ N/A: ☐ BLACK STRIPS ON BULLNOSE: YES: ☒ N/A: ☐ (ENDS OF LINEUP ONLY)
- ☒ BOTTOM PLATES: YES: ☐ N/A: ☒ GASKETED: YES: ☐ N/A: ☒
- ☒ INCOMING LINE KIT: YES: ☐ INSTALLED: ☐ N/A: ☒ COLORED, TAPED, TORQUED: YES: ☐ N/A: ☒
- ☒ CABLE TIES INSTALLED: YES: ☒ N/A: ☐
- ☒ NEUTRAL BUS BRACKETS INSTALLED YES: ☐ N/A: ☒
- ☒ WASHERS ON BK. GASKET AT SHIP SPLITS YES: ☐ N/A: ☒
- ☒ CHECK SHIPPING SPLITS TO M.I. /
- ☒ INTERCELL BARRIERS, L.ATIONS & STYLES CHECKED YES: ☐ N/A: ☒

COMME: /DATE: Sept 28/00 CHECKED BY: [Signature]

REVISION #: 15

REVISION DATE: 12/09/98

** TOTAL PAGE.010 **

AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION & TEST RECORD SHEET

FORM # 10W01F04

CUSTOMER: CABRE JoARCAM

ORDER NO.: 37E 4070

WRAPPER INSPECTION

☒ WRAPPERS HAVE BEEN TESTED IN ACCORDANCE WITH INSPECTION & TEST REQUIREMENTS.

☒ WRAPPERS HAVE INSPECTION STAMP.

☒ INSPECTION OF WRAPPERS HAS BEEN LOGGED IN THE INPROCESS INSPECTION LOG.

☒ SPOT CHECK TRANSFORMER:

PRIMARY 480 V SEC 120 V

☒ SEPARATE SOURCE N/A VOLTS

☒ PULL APART TB'S COMPLETE

STRUCTURE INSPECTION

☒ CELLS AND SHIPPING SECTION PER M.I.

☒ VERTICAL & HORIZONTAL BUS PER M.I.

☒ GROUND & NEUTRAL BUS PER M.I.

☒ PHASE SEQUENCE IS CORRECT.

☒ BUS BAR SPACING IS PER M.I.

☒ ALL STANDARD HARDWARE IS INCLUDED BUS BAR & STRUCTURE ASSEMBLIES.

☒ BUS BOLTS ARE TORQUED AND MARKED (23' LBS ON 38-16 BOLTS).

☒ VERTICAL BUS ISOLATION: ☒ GLASS POLYESTER
☒ LABYRINTH
☒ C/W SHUTTERS

☒ STAB CUTOUT COVERS ARE INSTALLED PER M.I.

☒ DIVIDER PANS ARE INSTALLED PER M.I.

☒ BARRIERS ARE INSTALLED PER M.I.

☒ GASKETTING IS INSTALLED PER M.I. (TYPE N/A)

☒ SPECIAL BUS BAR ASSEMBLY AND/OR FIXED UNITS ARE INSTALLED PER M.I.

☒ VERTICAL BUS IS LONG ENOUGH FOR ALL POSSIBLE LOCATIONS (PRESENT & FUTURE).

☒ CLEARANCE/INSULATION CHECK

☒ TOP COVERS N/A DRIP CAPS ☒ BACKSHEETS

☒ BOTTOM PLATES

☒ LIFTING CLIPS & ASSOCIATED HARDWARE 2

☒ STRUCTURES LAG BOLTED TO SHIPPING SKIDS 4

COMMENTS:

PRE-SHIPMENT INSPECTION

☒ WRAPPERS HAVE INSPECTOR'S STAMP AND FORM # 10W01F01 IS INCLUDED WITH ORDER

☒ STRUCTURES HAVE BEEN INSPECTED AND FORM # 10W01F02 IS INCLUDED WITH ORDER

☒ FINAL ASSEMBLY HAS BEEN INSPECTED AND FORM # 10W01F03 IS INCLUDED WITH ORDER

☒ WRAPPERS ARE LOCATED PER M.I. AND SECURELY FASTENED.

☒ WRAPPER STABS FULLY ENGAGE VERTICAL BUS.

☒ HANDLE MECH'S AND DOOR INTERLOCKS FUNCTION PROPERLY.

☒ SPLICE KITS ATTACHED

TO CELL # 1 LH SIDE

☒ SPLICE KIT DRAWING SUPPLIED

☒ METERS, RELAYS, SWITCHES, KEYPADS, ETC. MATCH M.I.

☒ INTERWIRING, COMMUNICATION WIRING - PER WD'S

☒ WIRE CONNECTIONS ARE SECURE.

☒ WIRE MARKERS PER M.I. N/A HEAT SHRINK

☒ ELECTRICAL COMPONENTS FUNCTION PROPERLY.

☒ JOINTS TO OTHER EQUIPMENT PER M.I.

☒ SERVICE ENTRANCE/ CLOSE COUPLED INC. REQUIREMENTS PER M.I.

☒ LOGO AND C.S.A. RATING NAMEPLATES ARE CORRECT AND PROPERLY INSTALLED -

ORDER TYPE (NAME): FREEDOM-2100

☒ OTHER NAMEPLATES AND LABELS ARE CORRECT AND PROPERLY INSTALLED.

☒ ALL FOREIGN OBJECTS HAVE BEEN REMOVED.

☒ OVERALL APPEARANCE & COLOR MATCH CHECKED.

☒ DRAWINGS & M.I. UPDATED (IF REQUIRED).

☒ MATERIAL SHORTAGES: ☒ NONE

☒ N/A PER SHIPPING REPORTS

☒ INSTRUCTION BOOK, LEAFLETS, TEST REPORTS & MANUALS IN DOCUMENT POCKET (and/or)

☒ TEST TAG HAS BEEN APPLIED.

INSPECTED BY: R. J. Jolems

DATE: NOV 6/00

STAMP:



AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION CUSTOMER TEST REPORT

FORM # 10W01F05

CUSTOMER: CABRE - JOARCAN

ORDER NO.: 37E4070

GENERAL INSPECTION:

COMMENTS:

(1) WRAPPERS

☒ O.K.

(2) STRUCTURES

☒ O.K.

WIRING:

COMMENTS:

(1) STARTER WIRING CHECKED

☒ O.K.

(2) FUNCTION TESTED

☒ O.K.

(3) WIRING CONTINUITY CHECKED

☒ O.K.

DI-ELECTRIC TESTS:

COMMENTS:

(1) CONTROL WIRING- 1500 VOLTS

1 SECOND TEST

☒ O.K.

(2) POWER WIRING - 2640 VOLTS

1 SECOND TEST

☒ O.K.

(3) BUS BARS - 2500 VOLTS

1 MINUTE TEST

☒ O.K.

NOTE: CANADIAN STANDARDS ASSOCIATION AND EEMAC SPECIFY DI-ELECTRIC TESTS AT TWICE RATED VOLTAGE PLUS 1000 VOLTS FOR 1 MINUTE, OR 20% HIGHER THAN THIS VALUE FOR 1 SECOND.

GENERAL APPEARANCE

☒ O.K.

ADDITIONAL COMMENTS,

INSPECTED BY: R. J. G. Jones

DATE: Nov 6/00

STAMP:



REVISION #: 4

REVISION DATE: 11/13/97

FINAL ASSEMBLY INSPECTION POINT

SHOP ORDER # 3TE 4070

ASSEMBLED BY (COMPLETE 1ST CHECK LIST)

SAM

DATE Nov 06/2000 REV. D

STRUCTURES

1st 2nd

☒ ☒ Visual Inspection
(Layout, Hinges, C clamps, Black Clips)

☒ ☒ Special Color 1

☒ ☒ Horizontal Bus Size 1600 A / cut PL

☒ ☒ Vertical Bus Size 1200 - 800 A / cut PL

☒ ☒ Horizontal Ground Bus Size

☒ ☒ Material ☒ Phase Tape

☒ ☒ Top ☒ Bottom

☒ ☒ Vertical Ground Bus Size

☐ Material ☐ Phase Tape

☒ ☒ Ground Terminals (# of units)

☒ ☒ Ground lugs at Both Ends

☒ ☒ Main Incoming Lugs

☐ Top ☐ Bottom Entry

☐ Torque \ Marked

☐ Lug Type/Style

☒ ☒ Gasketing ☐ 12 ☐ 1A

☒ ☒ Splice Kit

☐ 3 phase ☐ Neutral ☐ Ground

☒ ☒ Bottom plates

☒ ☒ Lag bolt tight & Lifting Clips

☒ ☒ Barriers installed

☒ ☒ Stab Covers

☒ ☒ Clearance insulation

☒ ☒ Silver plated bus

☒ ☒ Ground Clips

INITIALS (1ST) SAM

WRAPPERS

☒ Second Half of pull apart TB's Installed

☒ Units all tested and stamped

☒ Units installed per layout (pg. 2)

☒ All units locked in place

☒ Hockey puck spacers installed

☐

WRAPPERS cont.

☒ Stab fully engaged

☒ Silver plated stabs

☒ Ground Clip

☒ Phase Taped

FINAL

☒ Doors

☒ Interlocks operates

☒ Operating Mech. Function Smoothly

☒ Line up and close easily

☒ Reset installed and operate

☒ Wiring Diagrams inside of doors

☒ Inter wiring ☐ Heat shrink markers

☐ TB terminals tight

☒ Special insulation where applicable

☒ CT ratio's checked

☒ Transformer \ Capacitor sizes checked

☒ Heaters installed

Labeling

☒ Reverse Fed to Main Breaker

☒ Correct Wire Way Labels

☒ For Assistance ☒ Ground

☒ Caution/Warning ☒ Torque list

☒ Nameplate match layout

☒ Spelling ☒ Style

☒ CSA \ UL ID label on all Units

☒ LOGO FREEDOM 2100

☒ Separate Source

☒ Pride Label (last wire way)

☒ Program Labels(advantage, VFD's, PLC, Metering, etc..)

☒ Advantage 4 sec. Blank label

☒ Service Entrance

Comments:

Checked by (2nd) Steve Nguyen

Date Nov 16/00

02/16/00

INSPECTED BY: Ben

DATE: 3 Nov 00

STAMP:



COMMENTS:

ELECTRICAL INSPECTIONS

1. BREAKER TYPE - STD ☒ - VISI ☐ - CURRENT LIMITER ☐
2. FUSIBLE TYPE - YES ☒ - NO ☐ IF FUSIBLE: ALL
3. O/L PROTECT. - TYPE BA ☐ - TYPE AA ☐ - FREEDOM ☒ - ADVA. ☐ - N/A ☐ - BELL ALARM { YES ☒ NO ☒
4. CONTROL WIRING - # 14 ☐ - # 16 ☒ - OTHER ☐
5. TERMINAL BLOCKS - STD ☐ - PULL APART ☒ - OTHER ☐
6. WIRE MARKERS - YES ☒ - NO ☐ HEAT SHRINK - YES ☐ - NO ☒

- | 7. | DEVICE LIGHTS |
|-------------------------------------|----------------------------------|
| ☐ | - FULL VOLTAGE |
| ☒ | - TRANSFORMER TYPE |
| ☐ | - PUSH TO TEST |
| ☐ | - TRANSFORMER |
| ☐ | - PUSH TO TEST |
| ☐ | - N/A |
| ☐ | DEVICE SWITCHES |
| ☒ | - STANDARD |
| ☐ | - SPRING RETURN |
| ☐ | - N/A |
| ☒ | HEATERS REQUIRED - YES |
| ☐ | - NO |
| ☒ | 10. LABELS - ENGLISH ONLY |
| ☐ | - FRENCH/ENGLISH |
| ☐ | - FRENCH ONLY |
| ☐ | 11. PHASE INDICATION - YES |
| ☒ | - NO |
| ☒ | 12. CLEAR/INSULATION CHECK - YES |
| ☐ | - N/A |
| ☒ | 13. CONNECTIONS TIGHT/TORQUED |
| ☐ | STAB ALIGNMENT |
| ELECTRICAL INSPECTIONS | |
| ☒ | 14. CONTINUITY/PHASE CHECK - YES |
| ☐ | - N/A |
| ☒ | 15. FUNCTIONAL TEST - YES |
| ☐ | - N/A |
| ☐ | 16. DIELECTRIC TEST |

A200 C-H ADVANTAGE

JOB NUMBER # 3ZE-4020 TOTAL # OF UNIT

WRAPPER INSPECTION CHECK LIST

FORM # 10W01F01

SYSTEM VOLTAGE : 480V, 3 PH, 3 W, 60 HZ

CONTROL VOLTAGE : 120V

CPT

☐ NEMA ☒ I.E.C. ☐

☐ SEPARATE SOURCE

Low Voltage Control Assemblies, Airdrie, AB

DeviceNet and Solid State Starter Checklist

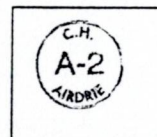
Job Number: 37E-4070**DeviceNet**

Total Number of Unit(s): _____

Physical Media (Test Prior to Applying Power)Trunk Cable(s) ☐Drop Cable(s) ☐T-Connector(s) ☐Male / Female T's Facing Right Way ☐Terminating Resistor(s) ☐Device Termination(s) ☐Device(s) ☐Power Supply(ies) ☐**Functional Test (Using NetView and / or NetSolver)**Module Status (MS) LED ☐Network Status (NS) LED ☐Node Address (NA) LED per M.I. ☐Baud Rate per M.I. _____ kbaud ☐Set Parameters per M.I. ☐Auxiliary Feedback "FB" Input Status ☐**For DeviceNet SV9000**Fieldbus Application "smf073cg.hex" loaded ☐Parameter P1.15 set to 0 ☐Parameter P0.1 set to 0 ☐Parameter P10.1 set to 1 ☐**Comments:**

Inspected By: _____

Date: _____

Solid State StarterTotal Number of Unit(s): 1**Physical Media (Test Prior to Applying Power)**Starter Type: 5801V65N3SSerial Number: 3000644System Voltage: 480 V 3 0 60 HzRating: 500 HP N/A AControl and Power Wiring ☐Option Card(s) N/A ☐Line Reactor N/A ☐Load Filter N/A ☐ByPass Contactor N/A ☐**Functional Test**Set Application per Wiring Diagram ☒Set Parameters per M.I. ☒Check for Operation ☒4 - 20 mA Input ☒Speed Pot Input ☒Cooling Fan(s) ☒☐☐☐☐**Comments:**Inspected By: BEN KOVDate: NOV 6 / 00

PAGE

F 2

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

FORM # 10W01F02

JOB # : 37E4070

SHIPPING SPLIT

1 OF 1

PLEASE USE BLUEPRINTS. STRUCTURE M.I.
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.

VERTICAL BUS SECTION

- ☒ VERTICAL BUS AMPS: CELL # F1 800 A CELL # F2 600 A CELL # --- A CELL # --- A
- ☒ CHECK REVISION ON SCHEDULE YES
- ☒ VERTICAL BUS MODIFIED: YES ☐ N/A ☒ CUTOFF LINE: --- PUNCHING LINES: ---
- ☒ ISOLATION BARRIER'S MODIFIED: YES ☐ N/A ☒ AT LINES: ---
- ☒ LABYRINTH MODIFIED: YES ☐ N/A ☒ AT LINE: --- FOR INC.: --- CUT OFF: ---
- ☒ C.T.'S ON VERTICAL BUS: YES ☐ N/A ☒
- ☒ TORQUE CHECKED ON VERTICAL YES

COMMENTS:

DATE: NOV 2/00 CHECKED BY: Scott Bryant

STRUCTURE (JIG) SECTION

- ☒ CHECK REVISION ON SCHEDULE ☒
- ☒ ISOLATION BARRIER: ISOLATION: ☒ LABYRINTH: ☐ BARE: ☐
- ☒ SET PLATE MODIFIED: YES ☐ N/A ☒ AT LINE: ---
- ☒ GROMMETS WITH SPECIAL PAN DIVIDER: YES: ☐ N/A: ☒
- ☒ CUTOFF COVERS INSTALLED: YES: ☒ N/A: ☐
- ☒ BUS BOLT COVERS (ISOLATION): YES: ☒ N/A: ☐
- ☒ SHUTTER ASSEMBLIES INSTALLED: YES: ☐ N/A: ☒
- ☒ GROUND CLIP BRACKETS ON PAN DIVIDERS: YES: ☒ N/A: ☐ OR - VERTICAL GROUND BUS YES: ☐ N/A: ☐
- ☒ HINGES IN RIGHT LOCATION, AND INSTALLED ☒ (PAY SPECIAL ATTENTION TO 32" CELL & 44" CELL HINGES)
- ☒ WRAPPER LAYOUT MATCHES M.I. ☒
- ☒ CHECK LOCATION AND QTY OF BLACK CLIPS: ☒ FUTURE SPACE: ☐ GAL. CLIP ON FUTURE SPACE: ☐
- VERTICAL BUS IS PRESENT IN EVERY POSSIBLE STAB LOCATION (PRESENT & FUTURE) ☐
- (PAY PARTICULAR ATTENTION TO THE BOTTOM UNIT, REAR SIDE)
- ☒ GASKETING: YES: ☐ 1A: ☐ 12: ☐ N/A: ☒ BLACK STRIPS ON BULLNOSE: YES: ☒ N/A: ☐
- ☒ BOTTOM PLATES: YES: ☐ N/A: ☒ GASKETED: YES: ☐ N/A: ☒ (ENDS OF LINEUP ONLY)
- ☒ INCOMING LINE KIT: YES: ☐ INSTALLED: ☐ N/A: ☒ COLORED, TAPED, TORQUED: YES: ☐ N/A: ☒
- ☒ CABLE TIES INSTALLED: YES: ☒ N/A: ☐
- ☒ NEUTRAL BUS BRACKETS INSTALLED YES: ☐ N/A: ☒
- ☒ WASHERS ON BK. GASKET AT SHIP SPLITS YES: ☐ N/A: ☒
- ☒ CHECK SHIPPING SPLITS TO M.I. ☒
- ☒ PERCELL BARRIERS, LITATIONS & STYLES CHECKED YES: ☐ N/A: ☒

COMMENTS:

DATE: Nov 4/00 CHECKED BY: Gary

AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION & TEST RECORD SHEET

FORM # 10W01F04

CUSTOMER: CALICO

ORDER NO.: 3704109

WRAPPER INSPECTION

- ☒ WRAPPERS HAVE BEEN TESTED IN ACCORDANCE WITH INSPECTION & TEST REQUIREMENTS.
- ☒ WRAPPERS HAVE INSPECTION STAMP.
- ☒ INSPECTION OF WRAPPERS HAS BEEN LOGGED IN THE INPROCESS INSPECTION LOG.
- ☒ SPOT CHECK TRANSFORMER:
PRIMARY 480 V SEC 120 V
- ☒ SEPARATE SOURCE VOLTS
- ☒ PULL APART TB'S COMPLETE

STRUCTURE INSPECTION

- ☒ CELLS AND SHIPPING SECTION PER M.I.
- ☒ VERTICAL & HORIZONTAL BUS PER M.I.
- ☒ GROUND & NEUTRAL BUS PER M.I.
- ☒ PHASE SEQUENCE IS CORRECT.
- ☒ BUS BAR SPACING IS PER M.I.
- ☒ ALL STANDARD HARDWARE IS INCLUDED BUS BAR & STRUCTURE ASSEMBLIES.
- ☒ BUS BOLTS ARE TORQUED AND MARKED (23'/LBS ON .38-16 BOLTS).
- ☒ VERTICAL BUS ISOLATION: ☒ GLASS POLYESTER
☐ LABYRINTH
☐ C/W SHUTTERS
- ☒ STAB CUTOUT COVERS ARE INSTALLED PER M.I.
- ☒ DIVIDER PANS ARE INSTALLED PER M.I.
- ☒ BARRIERS ARE INSTALLED PER M.I.
- ☒ GASKETTING IS INSTALLED PER M.I. (TYPE 1)
- ☒ SPECIAL BUS BAR ASSEMBLY AND/OR FIXED UNITS ARE INSTALLED PER M.I.
- ☒ VERTICAL BUS IS LONG ENOUGH FOR ALL POSSIBLE LOCATIONS (PRESENT & FUTURE).
- ☒ CLEARANCE/INSULATION CHECK
- ☒ TOP COVERS ☒ DRIP CAPS ☒ BACKSHEETS
- ☒ BOTTOM PLATES
- ☒ LIFTING CLIPS & ASSOCIATED HARDWARE
- ☒ STRUCTURES LAG BOLTED TO SHIPPING SKIDS

COMMENTS:

PRE-SHIPMENT INSPECTION

- ☒ WRAPPERS HAVE INSPECTOR'S STAMP AND FORM # 10W01F01 IS INCLUDED WITH ORDER
- ☒ STRUCTURES HAVE BEEN INSPECTED AND FORM # 10W01F02 IS INCLUDED WITH ORDER
- ☒ FINAL ASSEMBLY HAS BEEN INSPECTED AND FORM # 10W01F03 IS INCLUDED WITH ORDER
- ☒ WRAPPERS ARE LOCATED PER M.I. AND SECURELY FASTENED.
- ☒ WRAPPER STABS FULLY ENGAGE VERTICAL BUS.
- ☒ HANDLE MECH'S AND DOOR INTERLOCKS FUNCTION PROPERLY.
- ☒ SPLICE KITS ATTACHED TO CELL # 1
- ☒ SPLICE KIT DRAWING SUPPLIED
- ☒ METERS, RELAYS, SWITCHES, KEYPADS, ETC. MATCH M.I.
- ☒ INTERWIRING, COMMUNICATION WIRING - PER WD'S
- ☒ WIRE CONNECTIONS ARE SECURE.
- ☒ WIRE MARKERS PER M.I. ☒ HEAT SHRINK
- ☒ ELECTRICAL COMPONENTS FUNCTION PROPERLY.
- ☒ JOINTS TO OTHER EQUIPMENT PER M.I.
- ☒ SERVICE ENTRANCE/ INC. REQUIREMENTS PER M.I.
- ☒ LOGO AND C.S.A. RATING NAMEPLATES ARE CORRECT AND PROPERLY INSTALLED -
ORDER TYPE (NAME): CH 2100
- ☒ OTHER NAMEPLATES AND LABELS ARE CORRECT AND PROPERLY INSTALLED.
- ☒ ALL FOREIGN OBJECTS HAVE BEEN REMOVED.
- ☒ OVERALL APPEARANCE & COLOR MATCH CHECKED.
- ☒ DRAWINGS & M.I. UPDATED (IF REQUIRED).
- ☒ MATERIAL SHORTAGES: ☒ NONE
☐ PER SHIPPING REPORTS
- ☒ INSTRUCTION BOOK, LEAFLETS, TEST REPORTS & MANUALS IN DOCUMENT POCKET (and/or)

☒ TEST TAG HAS BEEN APPLIED

INSPECTED BY: [Signature]

DATE: 07/20/00

STAMP:



AIRDRIE MOTOR CONTROL CENTRES
FINAL INSPECTION CUSTOMER TEST REPORT

FORM # 10W01F05

CUSTOMER: CABIRG

ORDER NO.: 3754109

GENERAL INSPECTION:

COMMENTS:

- (1) WRAPPERS ☒ O.K.
(2) STRUCTURES ☒ O.K.

WIRING:

COMMENTS:

- (1) STARTER WIRING CHECKED ☒ O.K.
(2) FUNCTION TESTED ☒ O.K.
(3) WIRING CONTINUITY CHECKED ☒ O.K.

DI-ELECTRIC TESTS:

COMMENTS:

- (1) CONTROL WIRING- 1500 VOLTS 1 SECOND TEST ☒ O.K.
(2) POWER WIRING - 2640 VOLTS 1 SECOND TEST ☒ O.K.
(3) BUS BARS - 2500 VOLTS 1 MINUTE TEST ☒ O.K.

NOTE: CANADIAN STANDARDS ASSOCIATION AND EEMAC SPECIFY DI-ELECTRIC TESTS AT TWICE RATED VOLTAGE PLUS 1000 VOLTS FOR 1 MINUTE, OR 20% HIGHER THAN THIS VALUE FOR 1 SECOND.

GENERAL APPEARANCE

☒ O.K.

ADDITIONAL COMMENTS,

INSPECTED BY: 

DATE: 07/10/00

STAMP:



REVISION #: 4

REVISION DATE: 11/13/97

WRAPPER INSPECTION CHECK LIST

FORM # 10W01F01

JOB NUMBER # 37E4109 TOTAL # OF UNIT #2

A200 C-H ADVANTAGE

- ☐ SERIES 2100 ☐ ☐ ☐
☐ FREEDOM 21 ☐ ☐ ☐
☒ FREEDOM 2100 ☐ ☒ ☐
☐ ADVANTAGE ☐ ☐ ☐
☐ OTHER _____ ☐ ☐ ☐

SYSTEM VOLTAGE : 480V, 3 PH, 3 W, 60 HZCONTROL VOLTAGE : 120VCPT ☒SEPARATE SOURCE ☐

1. BREAKER TYPE - STD ☒
 - VISI ☐
 - CURRENT LIMITER ☐

2. FUSIBLE TYPE - YES ☐
 - NO ☒

IF FUSIBLE:
FUSE CLASS: _____

3. O/L PROTECT. - TYPE BA ☐
 - TYPE AA ☒
 - FREEDOM ☒
 - ADVA. ☐
 - N/A ☐
 - BELL ALARM { YES ☐
 NO ☐

4. CONTROL WIRING - # 14 ☐
 - # 16 ☒
 - OTHER ☐

5. TERMINAL BLOCKS - STD ☐
 - PULL APART ☒
 - OTHER ☐

6. WIRE MARKERS - YES ☒
 - NO ☐
 HEAT SHRINK - YES ☐
 - NO ☒

7. DEVICE LIGHTS
 - FULL VOLTAGE ☐
 - TRANSFORMER TYPE ☒
 - PUSH TO TEST ☐
 - TRANSFORMER
 PUSH TO TEST ☐
 - N/A ☐

8. DEVICE SWITCHES
 - STANDARD ☒
 - SPRING RETURN ☐
 - N/A ☐

9. HEATERS REQUIRED - YES ☒
 - NO ☐

10. LABELS - ENGLISH ONLY ☒
 - FRENCH/ENGLISH ☐
 - FRENCH ONLY ☐

11. PHASE INDICATION - YES ☒
 - NO ☐

12. CLEAR./INSULATION CHECK - YES ☒
 - N/A ☐

13. CONNECTIONS TIGHT/TORQUED ☒
 STAB ALIGNMENT ☒

ELECTRICAL INSPECTIONS

14. CONTINUITY/PHASE CHECK - YES ☒
 - N/A ☐

15. FUNCTIONAL TEST - YES ☒
 - N/A ☐

16. DIELECTRIC TEST ☒

COMMENTS: _____

INSPECTED BY: Tom RDATE: Nov 3/00

STAMP:



REVISION #: 04

REVISION DATE: 09/02/97

PAGE

FORM # 10W01F02

OF 2

STRUCTURE ASSEMBLY INPROCESS INSPECTION POINTS

PLEASE USE BLUEPRINTS, STRUCTURE M.I.;
PAGE 2 OF M.I. AND TRANSMITTAL SHEET
TO COMPLETE THIS CHECKLIST.

JOB # : 37E4109

SHIPPING SPLIT

1 OF 1

VERTICAL BUS SECTION

- ☒ VERTICAL BUS AMPS: CELL # E1 601A CELL # / /A CELL # / /A CELL # / /A
- ☒ CHECK REVISION ON SCHEDULE YES
- ☒ VERTICAL BUS MODIFIED: YES ☐ N/A ☒ CUTOFF LINE: / PUNCHING LINES: /
- ☒ ISOLATION BARRIER'S MODIFIED: YES ☐ N/A ☒ AT LINES: /
- ☒ LABYRINTH MODIFIED: YES ☐ N/A ☒ AT LINE: / FOR INC.: / CUT OFF: /
- ☒ C.T.'S ON VERTICAL BUS: YES ☐ N/A ☒
- ☒ TORQUE CHECKED ON VERTICAL YES

COMMENTS:

DATE: NOV 3/00 CHECKED BY: Scott Bergant

STRUCTURE (JIG) SECTION

- ☒ CHECK REVISION ON SCHEDULE
- ☒ ISOLATION BARRIER: ISOLATION: ☒ LABYRINTH: ☐ BARE: ☐
- ☒ OFFSET PLATE MODIFIED: YES ☐ N/A ☒ AT LINE: /
- ☒ GROMMETS WITH SPECIAL PAN DIVIDER: YES: ☒ N/A: ☐
- ☒ CUTOFF COVERS INSTALLED: YES: ☒ N/A: ☐
- ☒ BUS BOLT COVERS (ISOLATION): YES: ☒ N/A: ☐
- ☒ SHUTTER ASSEMBLIES INSTALLED: YES: ☐ N/A: ☒
- ☒ GROUND CLIP BRACKETS ON PAN DIVIDERS: YES: ☒ N/A: ☐ OR - VERTICAL GROUND BUS YES: ☐ N/A: ☒
- ☒ HINGES IN RIGHT LOCATION, AND INSTALLED (PAY SPECIAL ATTENTION TO 32" CELL & 44" CELL HINGES)
- ☒ WRAPPER LAYOUT MATCHES M.I.
- ☒ CHECK LOCATION AND QTY OF BLACK CLIPS ☒ FUTURE SPACE: ☐ GAL. CLIP ON FUTURE SPACE: ☐
- VERTICAL BUS IS PRESENT IN EVERY POSSIBLE STAB LOCATION (PRESENT & FUTURE) ☒
- (PAY PARTICULAR ATTENTION TO THE BOTTOM UNIT, REAR SIDE)
- ☒ GASKETING: YES: ☐ 1A: ☐ 12: ☐ N/A: ☒ BLACK STRIPS ON BULLNOSE: YES: ☐ N/A: ☒
- ☒ BOTTOM PLATES: YES: ☐ N/A: ☒ GASKETED: YES: ☐ N/A: ☒ (ENDS OF LINEUP ONLY)
- ☒ INCOMING LINE KIT: YES: ☐ INSTALLED: ☐ N/A: ☒ COLORED, TAPED, TORQUED: YES: ☐ N/A: ☒
- ☒ CABLE TIES INSTALLED: YES: ☒ N/A: ☐
- ☒ NEUTRAL BUS BRACKETS INSTALLED YES: ☐ N/A: ☒
- ☒ WASHERS ON BK. GASKET AT SHIP SPLITS YES: ☐ N/A: ☒
- ☒ CHECK SHIPPING SPLITS TO M.I.
- ☒ INTERCELL BARRIERS, LOCATIONS & STYLES CHECKED YES: ☒ N/A: ☐

COMMENTS:

DATE: 11/04/00 CHECKED BY: J. Blywell

FINAL ASSEMBLY INSPECTION POINT

SHOP ORDER # 37E4109

ASSEMBLED BY (COMPLETE 1ST CHECK LIST)

(QDS)

DATE Nov 6 / 00 REV. B

STRUCTURES

1st 2nd

- ☒ ☒ Visual Inspection
(Layout, Hinges, C clamps, Black Clips)
- ☒ ☒ Special Color
- ☒ ☒ Horizontal Bus Size 1600 A
- ☒ ☒ Vertical Bus Size 400 A
- ☒ ☒ Horizontal Ground Bus Size
 - ☒ Material ☒ Phase Tape
 - ☒ Top ☒ Bottom
- ☒ ☒ Vertical Ground Bus Size
 - ☒ Material ☒ Phase Tape
- ☒ ☒ Ground Terminals (# of units)
- ☒ ☒ Ground lugs at Both Ends
- ☒ ☒ Main Incoming Lugs
 - ☒ Top ☒ Bottom Entry
 - ☒ Torque \ Marked
 - ☒ Lug Type/Style
- ☒ ☒ Gasketing ☒ 12 ☒ 1A
- ☒ ☒ Splice Kit
 - ☒ 3 phase ☒ Neutral ☒ Ground
- ☒ ☒ Bottom plates
- ☒ ☒ Lag bolt tight & Lifting Clips
- ☒ ☒ Barriers installed
- ☒ ☒ Stab Covers
- ☒ ☒ Clearance insulation
- ☒ ☒ Silver plated bus
- ☒ ☒ Ground Clips

INITIALS (1ST)

WRAPPERS

- ☒ Second Half of pull apart TB's Installed
- ☒ Units all tested and stamped
- ☒ Units installed per layout (pg. 2)
- ☒ All units locked in place
- ☒ Hockey puck spacers installed
- ☐

WRAPPERS cont.

- ☒ Stab fully engaged
- ☒ Silver plated stabs
- ☒ Ground Clip
- ☒ Phase Taped

FINAL

- ☒ Doors
 - ☒ Interlocks operates
 - ☒ Operating Mech. Function Smoothly
 - ☒ Line up and close easily
 - ☒ Reset installed and operate
- ☒ Wiring Diagrams inside of doors
- ☒ Inter wiring ☒ Heat shrink markers
- ☒ TB terminals tight
- ☒ Special insulation where applicable
- ☒ CT ratio's checked
 - ☒ Transformer \ Capacitor sizes checked
- ☒ Heaters installed

Labeling

- ☒ Reverse Fed to Main Breaker
- ☒ Correct Wire Way Labels
 - ☒ For Assistance ☒ Ground
 - ☒ Caution/Warning ☒ Torque list
- ☒ Nameplate match layout
 - ☒ Spelling ☒ Style
- ☒ CSA \ UL ID label on all Units
- ☒ LOGO Freedom 2100
- ☒ Separate Source
 - ☒ Pride Label (last wire way)
- ☒ Program Labels(advantage, VFD's, PLC, Metering, etc..)
- ☒ Advantage 4 sec. Blank label
- ☒ Service Entrance

Comments:

Checked by (2nd)

Date Nov 7 / 00 02/16/00