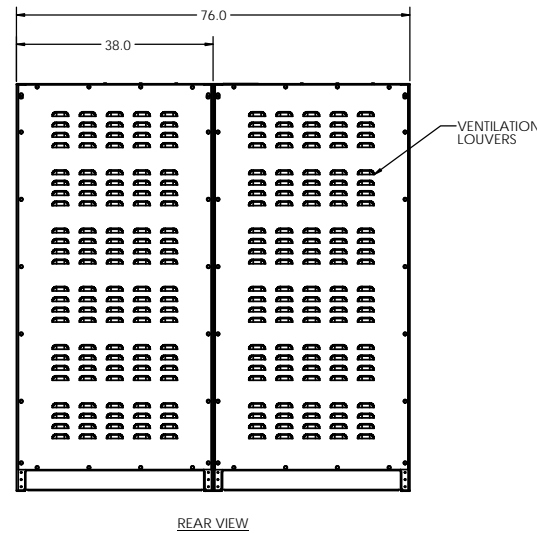
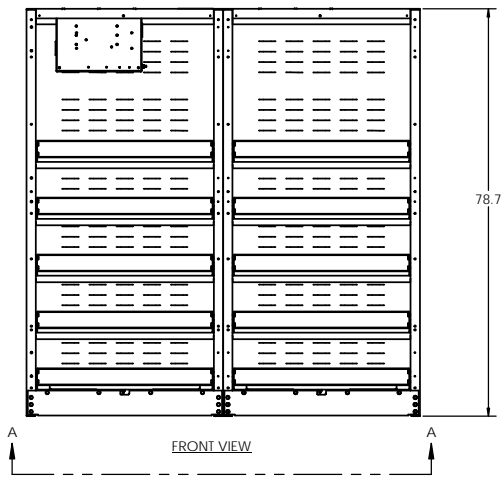
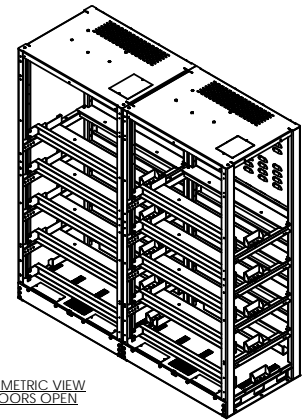


SECTION A-A  
BOTTOM VIEW



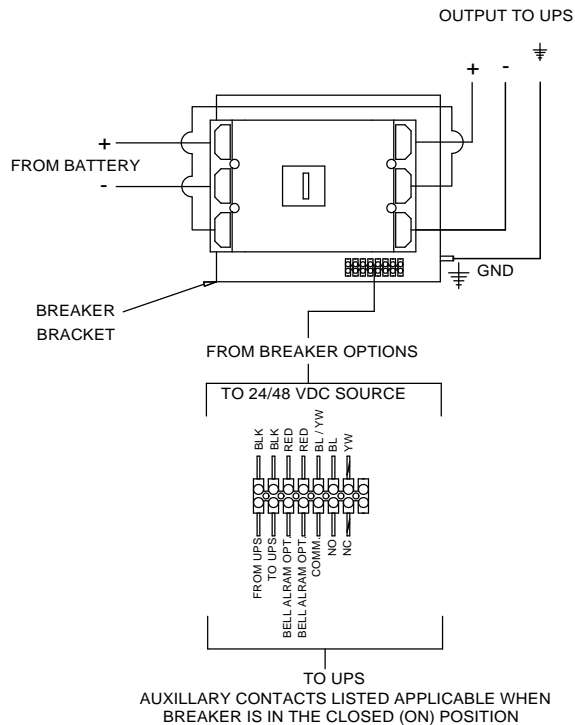
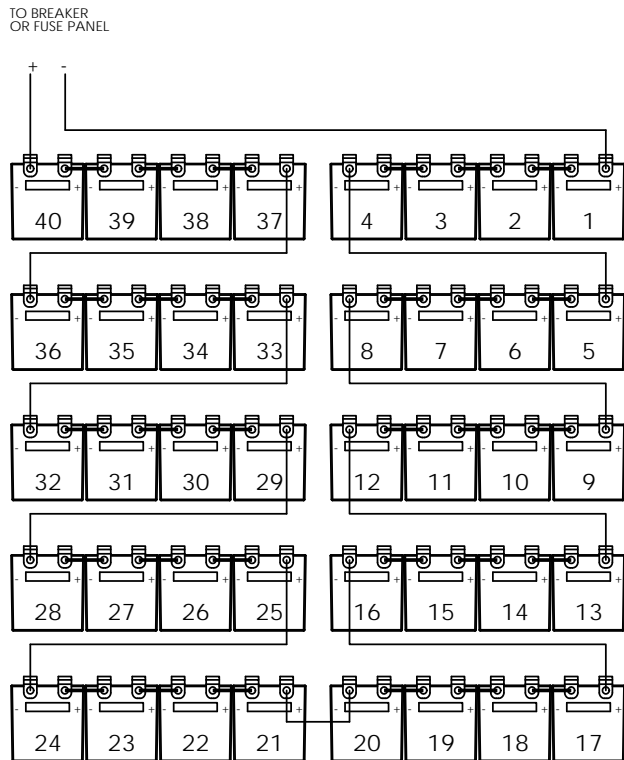
**RACK NOTES:**

1. EMPTY RACK WEIGHT 876 LBS. TOTAL, 2 RACKS FOR 480V STRING
2. FULLY WELDED FRAME. MANUFACTURED FROM HEAVY GAUGE STEEL.
3. ALL BATTERY TERMINALS HAVE POLYCARBONATE COVER.
4. OPTIONAL WALL MOUNTED BREAKER ENCLOSURES AVAILABLE.
5. POWDER COATED WITH A CORROSION RESISTANT POWDER USING A FIVE STAGE EMERSON PRETREATMENT PROCESS.
6. BATTERIES CAN BE ACCESSED FROM FRONT, REAR, AND BOTH SIDES.
7. CUSTOM DESIGNED PALLETS FOR SHIPPING ANYWHERE LOCALLY AND GLOBALLY (UPON REQUEST).
8. BATTERY RACK CAN BE MOVED WITH A NORMAL PALLET JACK FROM FRONT AND REAR.
9. STANDARD AND CUSTOM SPILL CONTAINMENT OPTIONS ARE AVAILABLE.

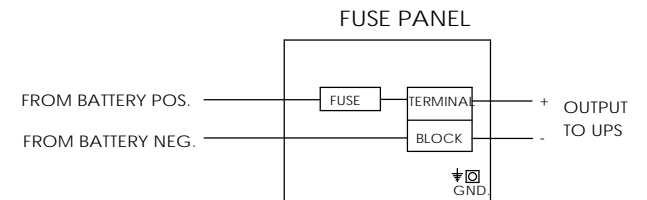
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TITLE: BATTERY RACK, 12V FT, 4D BATTERY, 480V					
PROJECTION:	NAME	DATE	SIZE	DWG. NO.	REV
DRAWN BY: RNA		3-5-13	D	EFR53 - SPEC	B
SCALE: 1:12				SHEET 1 OF 3	

## BREAKER DETAIL



## FUSE OPTION



BATTERY CONFIGURATION TABLE					
BATTERY MODEL NUMBER	BATTERY MANUFACTURER			MAXIMUM NUMBER OF BATTERIES PER STRING (2 CABINETS)	
	ENERSYS	C & D	EAST PENN	INTERSTATE	
	12HX680	UPS12-745MRF	4DHR6500	12MJ4500F	40
			HR7000ET		

### ELECTRICAL NOTES:

1. ALL CABLES ARE UL LISTED.
2. ALL BREAKERS ARE UL RECOGNIZED.
3. ALL FUSES ARE UL RECOGNIZED, TYPE A50P, A70P OR EQUIVALENT. ALWAYS REPLACE WITH SAME TYPE OR ITS EQUIVALENT.
4. TERMINAL BLOCKS ARE UL RECOGNIZED, 600V RATED.
5. RACKS ARE SHIPPED WITH THE BREAKER IN THE TRIPPED POSITION.
6. RACK GROUND CONNECTION IS A 5/16-18 THREADED STUD.
7. CABLES BETWEEN BATTERY RACK TO UNINTERRUPTIBLE POWER SUPPLY ARE OPTIONAL.

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PROJECTION:	DRAWN BY: RNA	NAME: RNA	DATE: 3-5-13	SIZE: D	DWG. NO.: EFR53 - SPEC
				SCALE: 1:12	REV: B
				SHEET 2 OF 3	

ESS FRONT TERMINAL RACK SYSTEM MATRIX											
ESS EFR53 RACK SYSTEM PART NUMBERS											
E F R 5 3 A E 40 HX680 B 04 A											
DIGIT 1	DIGIT 2	DIGIT 3	DIGIT 4	DIGIT 5	DIGIT 6	DIGIT 7	DIGIT 8-9	DIGIT 10-14	DIGIT 15	DIGIT 16-17	DIGIT 18
			CABINET MODEL								
	TYPE OF BATTERY	TYPE OF CABINET OR RACK	NUMBER OF TIERS	BATTERY TYPE	COLOR	HEIGHT (INCHES)	BATTERY QUANTITY	BATTERY MODEL PER MANUFACTURER	BREAKER OR FUSE	AMPS	BREAKER OPTION
E = ESS STANDARD	F = FRONT TERMINAL	R = RACK	5 = 5 TIER OF BATTERIES	3 = 12V FT (4D ONLY)	**A = BLACK	**E = 78.7	40	ENERSYS	B = BREAKER	01 = 1000 AMPS	A = 24 VDC SHUNT TRIP, AUX CONTACT
C = CETER TAP CABLING					B = BEIGE		36	HX680 - 12HX680		02 = 800 AMPS	B = 48 VDC SHUNT TRIP, AUX CONTACT
S = SPLIT BUS CABLING					C = LIEBERT GRAY		32	C & D		03 = 700 AMPS	C = 24 VDC UVR, AUX CONTACT
					D = MITSUBISH BEIGE		30	745MR - UPS12-745MRF		04 = 600 AMPS	D = 48 VDC UVR, AUX CONTACT
					E = MGE WHITE		24	EASET PENN		05 = 500 AMPS	E = 120 VDC SHUNT TRIP, AUX CONTACT
					F = TOSHIBA BLACK			HR650 - 4DHR6500		06 = 450 AMPS	F = 240 VDC SHUNT TRIP, AUX CONTACT
					G = GE WHITE			HR700 - HR7000ET		07 = 400 AMPS	G = 120 VDC UVR, AUX CONTACT
					H = LIEBERT BLACK			INTERSTATE		08 = 350 AMPS	H = 240 VDC UVR, AUX CONTACT
					I = EATON BLACK			MJ450 - 12MJ4500F		09 = 300 AMPS	J = 24VDC UVR W/BELL ALARM
					J = LIGHT GRAY					10 = 250 AMPS	K = BELL ALARM
										11 = 225 AMPS	
										12 = 200 AMPS	
										13 = 175 AMPS	
										14 = 150 AMPS	
										15 = 125 AMPS	
										16 = 100 AMPS	
										17 = 75 AMPS	
										18 = 50 AMPS	
										19 = 40 AMPS	
										20 = 30 AMPS	
										20 = 30 AMPS	
▶ **REPRESENTS STANDARD COLOR FOR ALL ESS RACKS (DIGIT 6)											
▶ **REPRESENTS ESS STANDARD HEIGHT OF TOP TERMINAL BATTERY RACKS (DIGIT 7) ONLY HEIGHT AVAILABLE FOR THIS RACK											

**PART NUMBER GUIDE:**

1. REFERENCE THE BATTERY PART NUMBER GUIDE TABLE WHEN ORDERING A RACK.
  2. WHEN PLACING ORDER, INDICATE THE QTY OF RACKS. NO DASHES ARE TO BE INCLUDED IN PART NUMBER. OVERALL PART NUMBER OF SYTEM IS ALWAYS 18 DIGITS LONG.
  3. THE BASE NUMBER (DIGITS 1-5) WILL ALWAYS BE THE SAME.
  4. DIGITS 6-7 WILL FOLLOW THE BASE NUMBER INDICATING THE COLOR AND HEIGHT OF THE RACK.
  5. DIGITS 8-18 MAKE UP THE REST OF THE SYSTEM PART NUMBER WHICH INCLUDE OPTIONS FOR BATTERY QUANTITIES, BATTERY MODEL, AND BREAKER OPTIONS.
  6. EXAMPLE: **EFR53AE** - THIS REPRESENTS A STANDARD **EFR53** RACK, WITH A POWDER COAT FINISH OF STANDARD BLACK AND 78.7" HEIGHT.
- ▶ PLEASE NOTE, ONLY STANDARD RACKS (COLOR AND HEIGHT) ARE IN STOCK. MINIMUM ORDERS OF 20 OR MORE RACKS ARE REQUIRED FOR NON STANDARD RACKS UNLESS IT IS THROUGH OEM CONTRACTS.

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DRAWN BY: RNA	DATE: 3-5-13	SIZE: D	DWG. NO.: EFR53 - SPEC	SCALE: 1:12	
				SHEET 3 OF 3	