



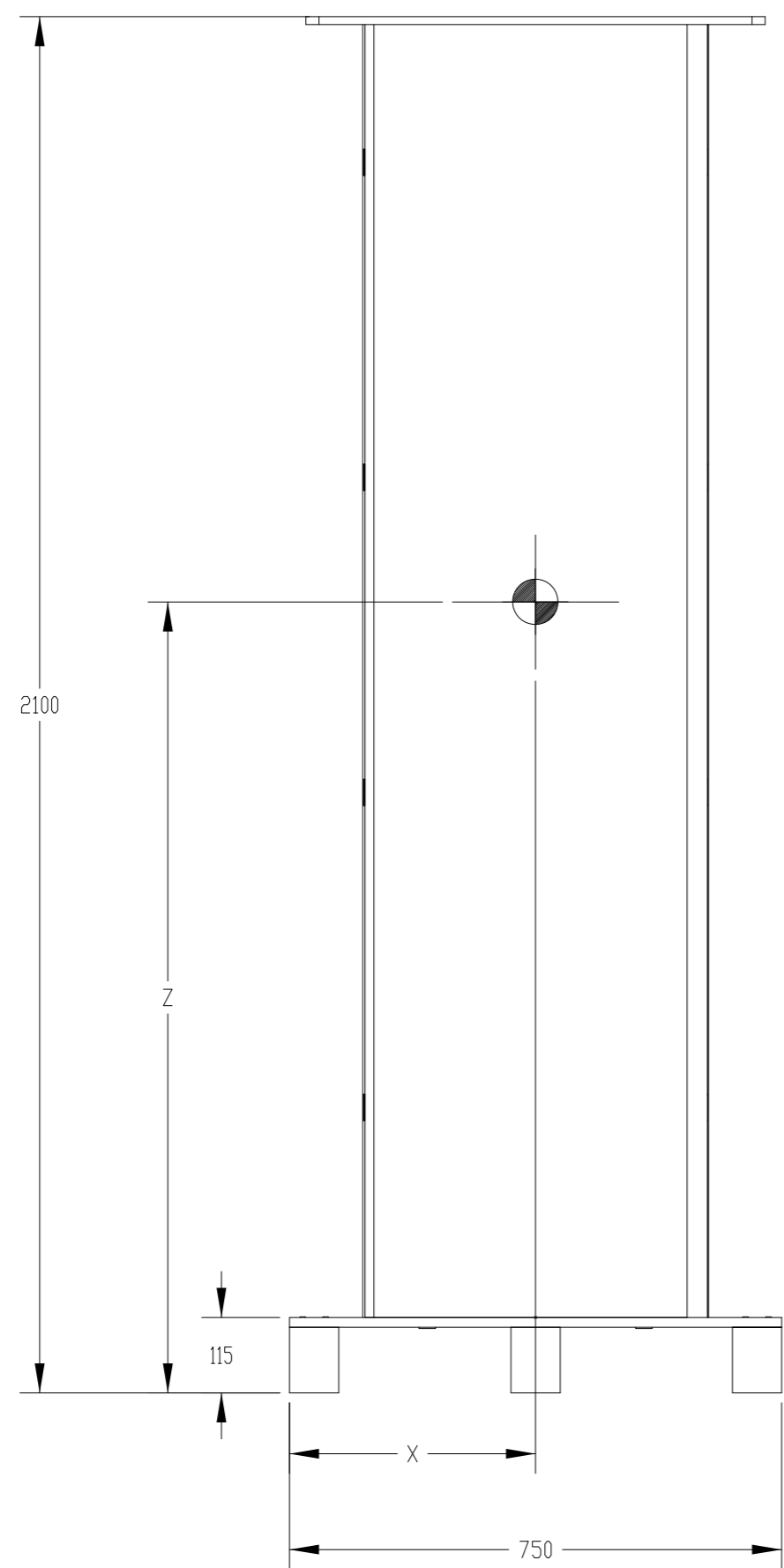
Powering Business Worldwide



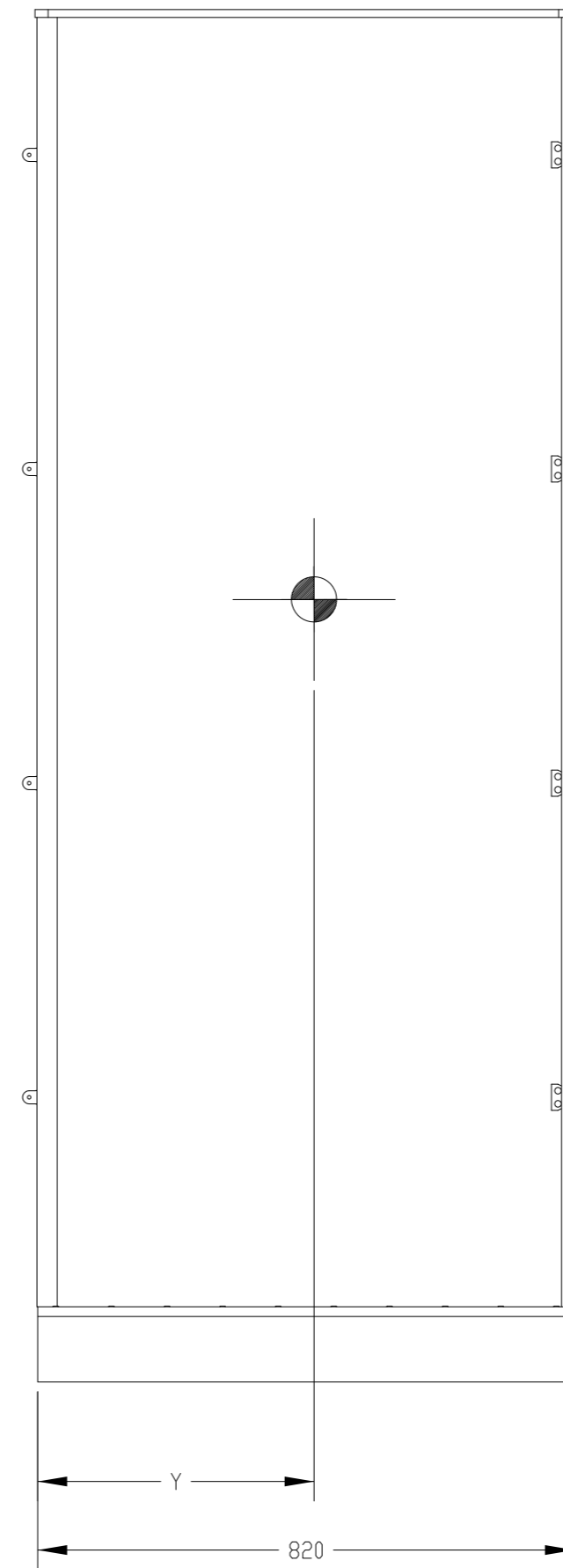
SITE PLANNING DATA 93PS Marine 30-40 kW

Page 1	Packaging Dimensions
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Page 5	Electrical Wiring of Single Unit
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METRIC					
<small>DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.</small>					
DESCRIPTION: Site planning drawing 93PS Marine 30-40kW					
ORIGINATED:	HUOTARI J.	25-AUG-2017	ECD:	NAME:	REVISION: 01
MODIFIED:	ALAPASSI T.	22 DEC 2017	DOCUMENT TYPE:	P-110000617	STATE: Release
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SAFETY:					SHEET:
APPROVED:					0 OF 9
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FRONT VIEW



SIDE VIEW

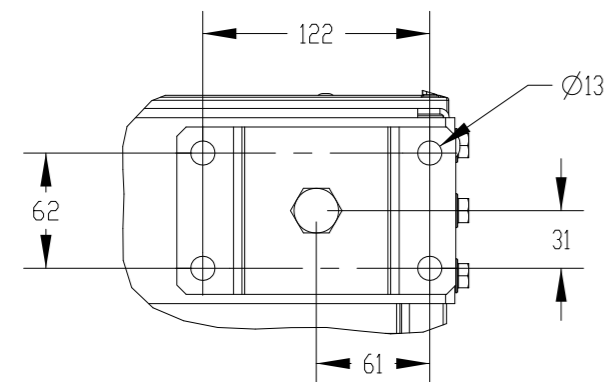
Approx. Center of Gravity			
Transformers	X [mm]	Y [mm]	Z [mm]
0	375	500	1300
1	375	500	1150
2	375	500	1050

Product Specifications					
UPS Rating		Shipping Dimensions WxDxH	Approx. Shipping Weight with 2 Transformers	Approx. Shipping Weight with 1 Transformer	Approx. Shipping Weight without Transformers
kVA	kW	mm	kg	kg	kg
30-40	30-40	750x820x2100	617	442	242

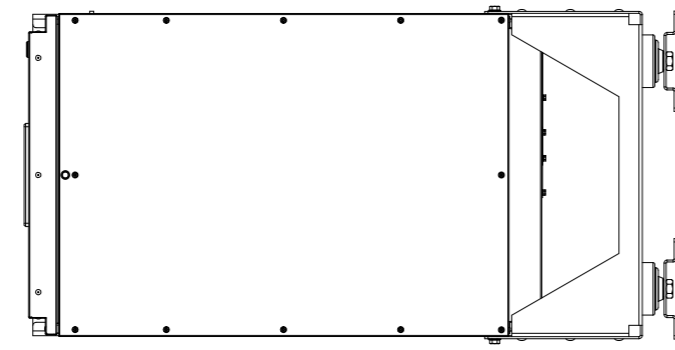
Notes

- The COG dimensions are approximated values with pallet and packaging including transformer amount variations.
The COG dimensions of UPS cabinet with package are X=375 mm, Y=500 mm, Z=1050 mm with 2 transformers, X=375 mm, Y=500 mm, Z=1150 mm with one transformer and X=375 mm, Y=500 mm, Z=1300 without transformers.
Maximum recommended tilting angle during shipment: 15°.
- Pallet and other wood packing materials are compliant with ISPM-15 guidelines.
- Store the unit in dry and clean environment. Protect the unit from high humidity, rain or other direct exposure.
- Optimal storing temperature for the unit without batteries is +15 °C to +30 °C and for batteries +20 °C to +25 °C. of immediate damage.
- Units without batteries can be stored in -25 °C to +55 °C without risk.
- Storing batteries above +25 °C will shorten the battery lifetime.
- Batteries can be stored for six months without charging in temperatures between +20 °C to +25 °C, but batteries should not be stored uninstalled more than absolutely necessary.
- Batteries stored above +25 °C shall be charged every four months.
- Storing batteries longer than recommended without charging can harm the battery cells permanently.

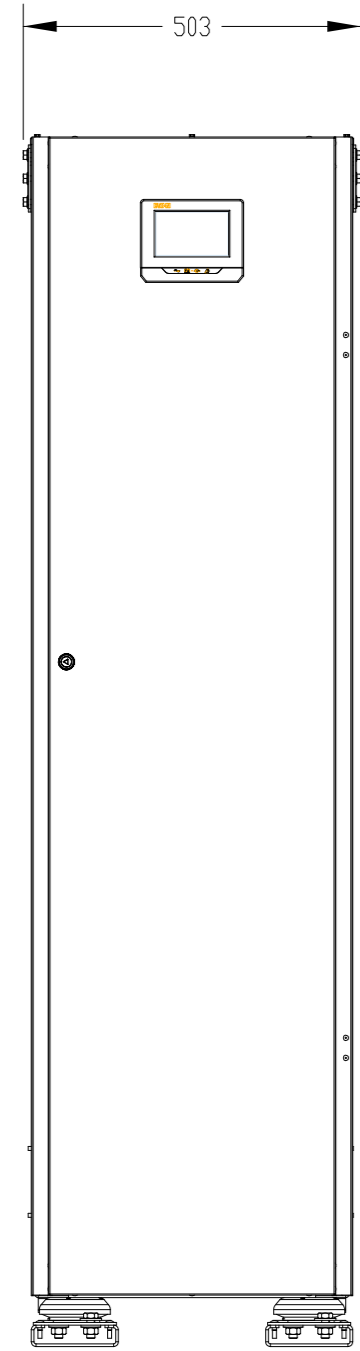
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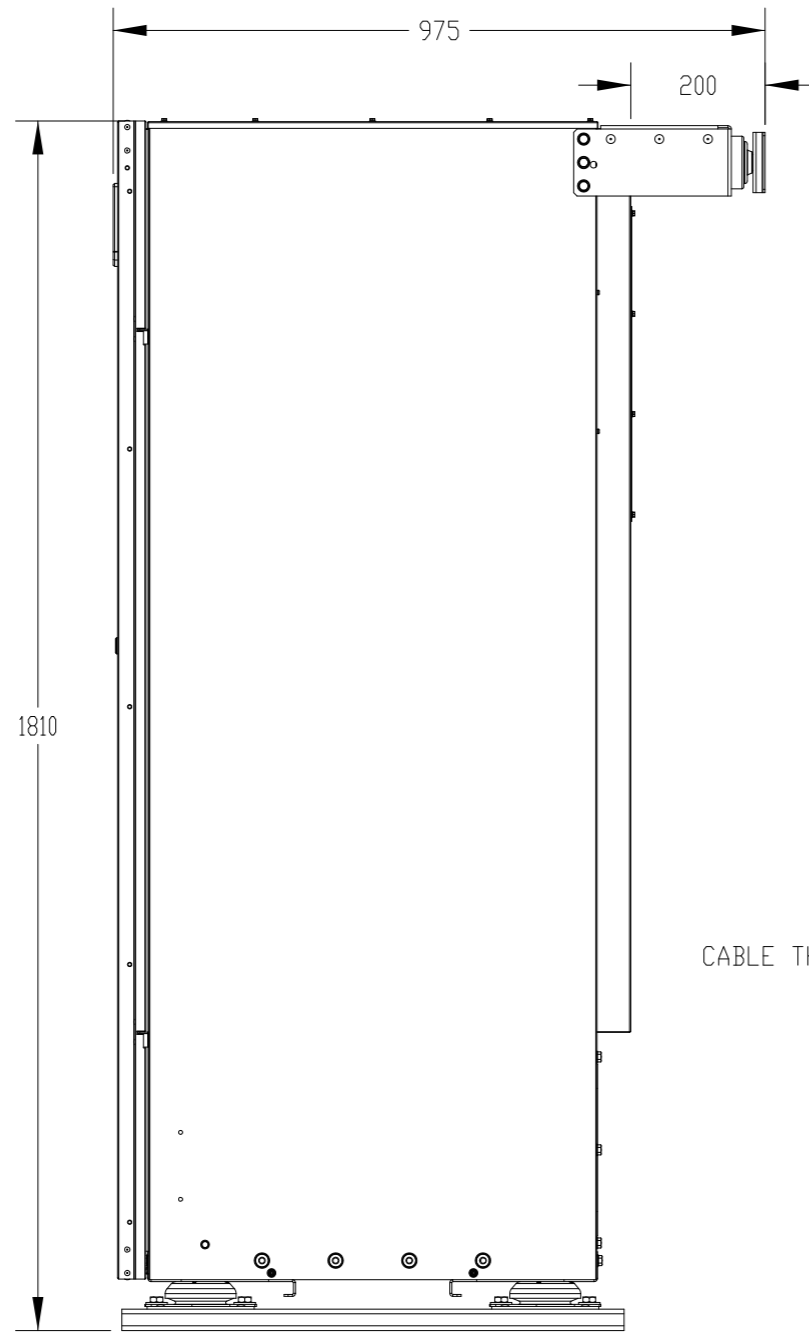
DETAIL C
SCALE 1:4



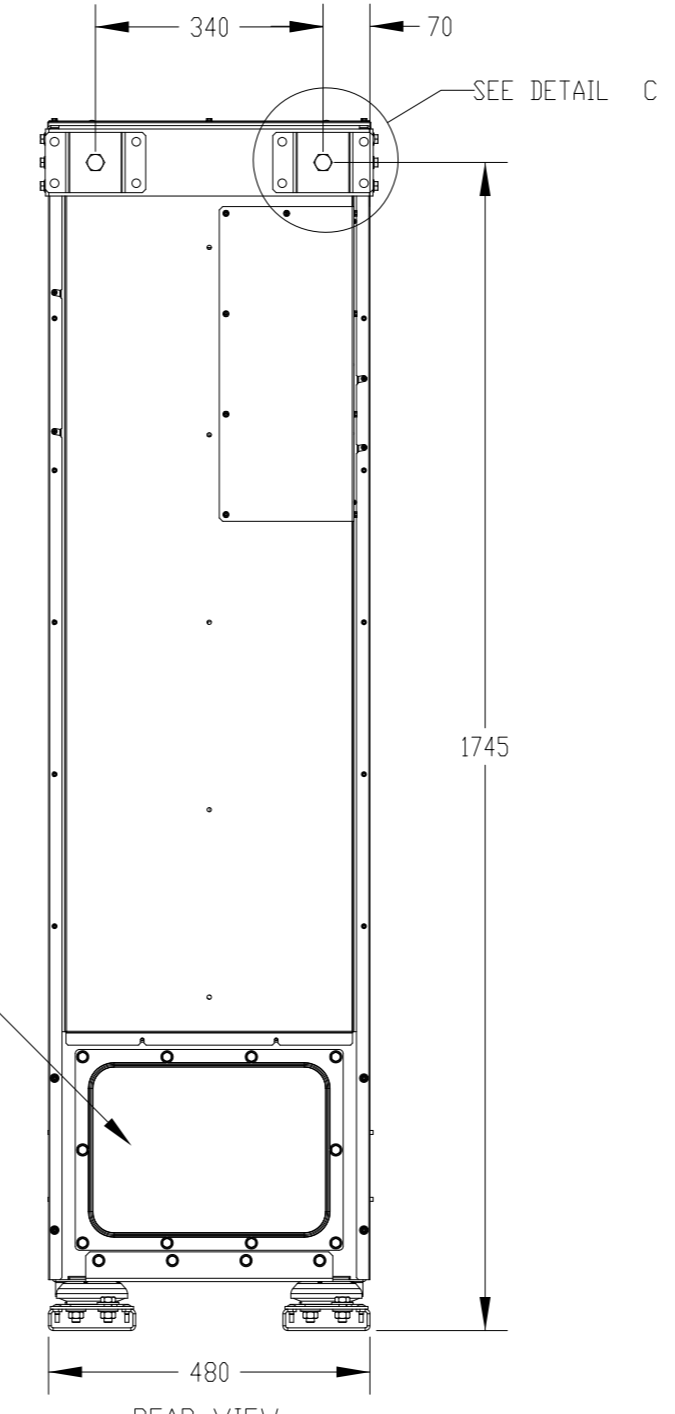
TOP VIEW



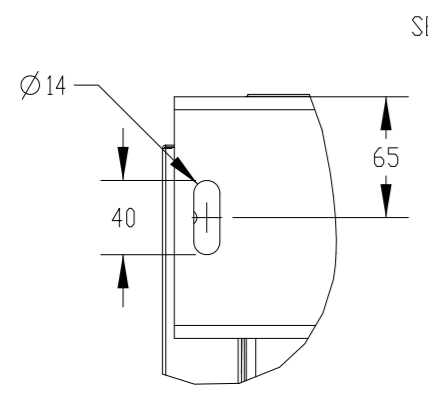
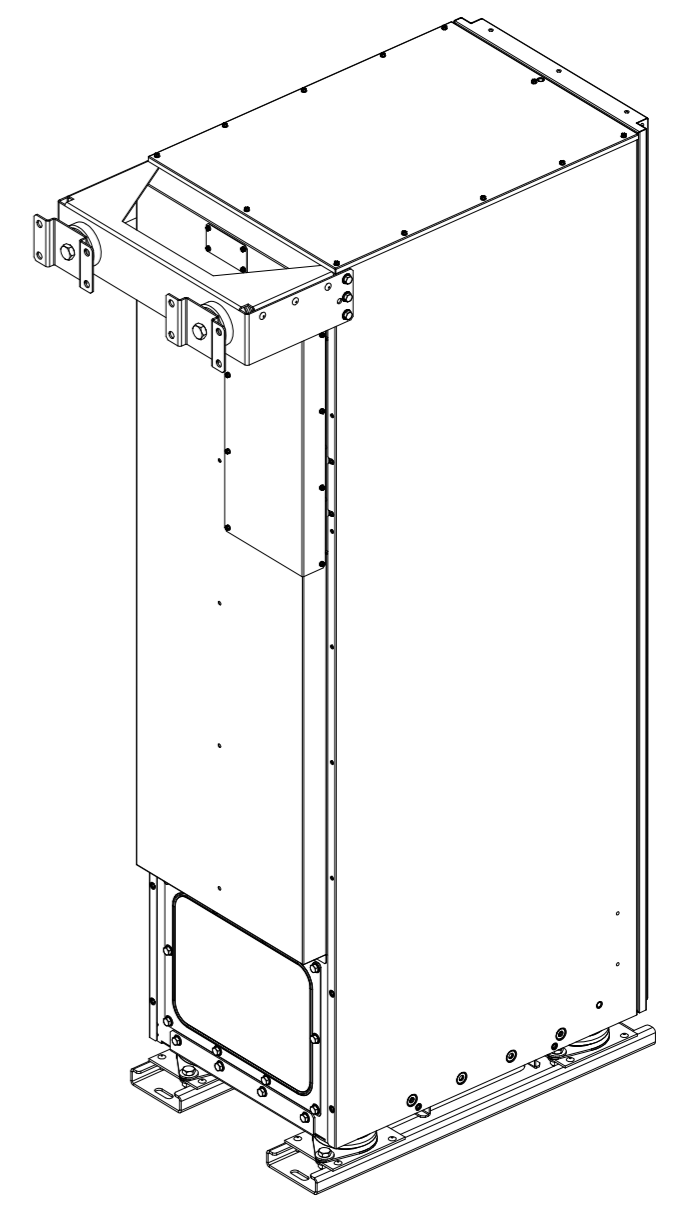
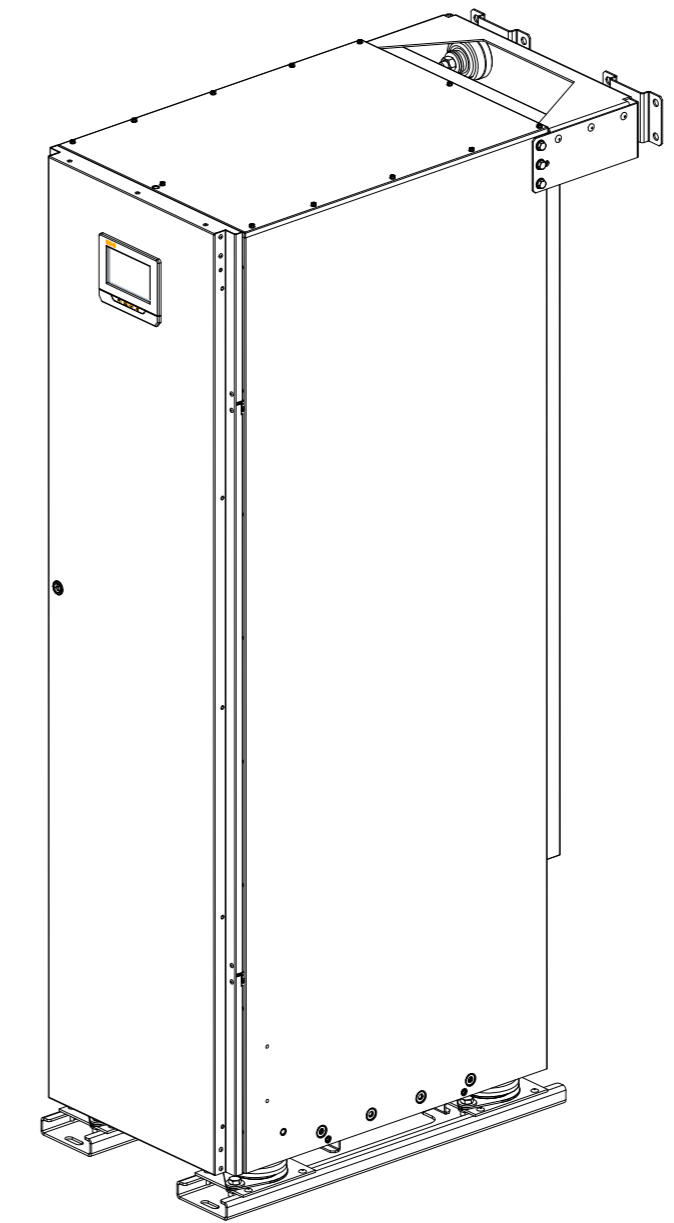
FRONT VIEW



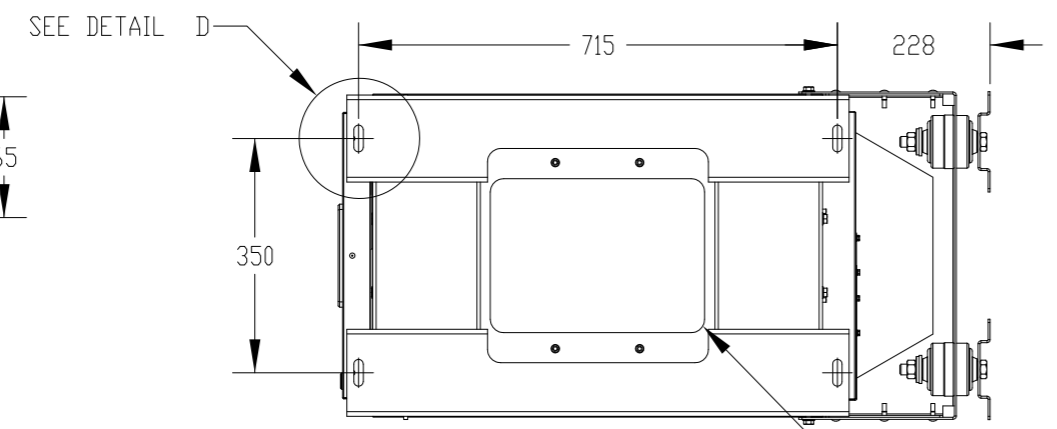
RIGHT VIEW



REAR VIEW



DETAIL D
SCALE 1:4



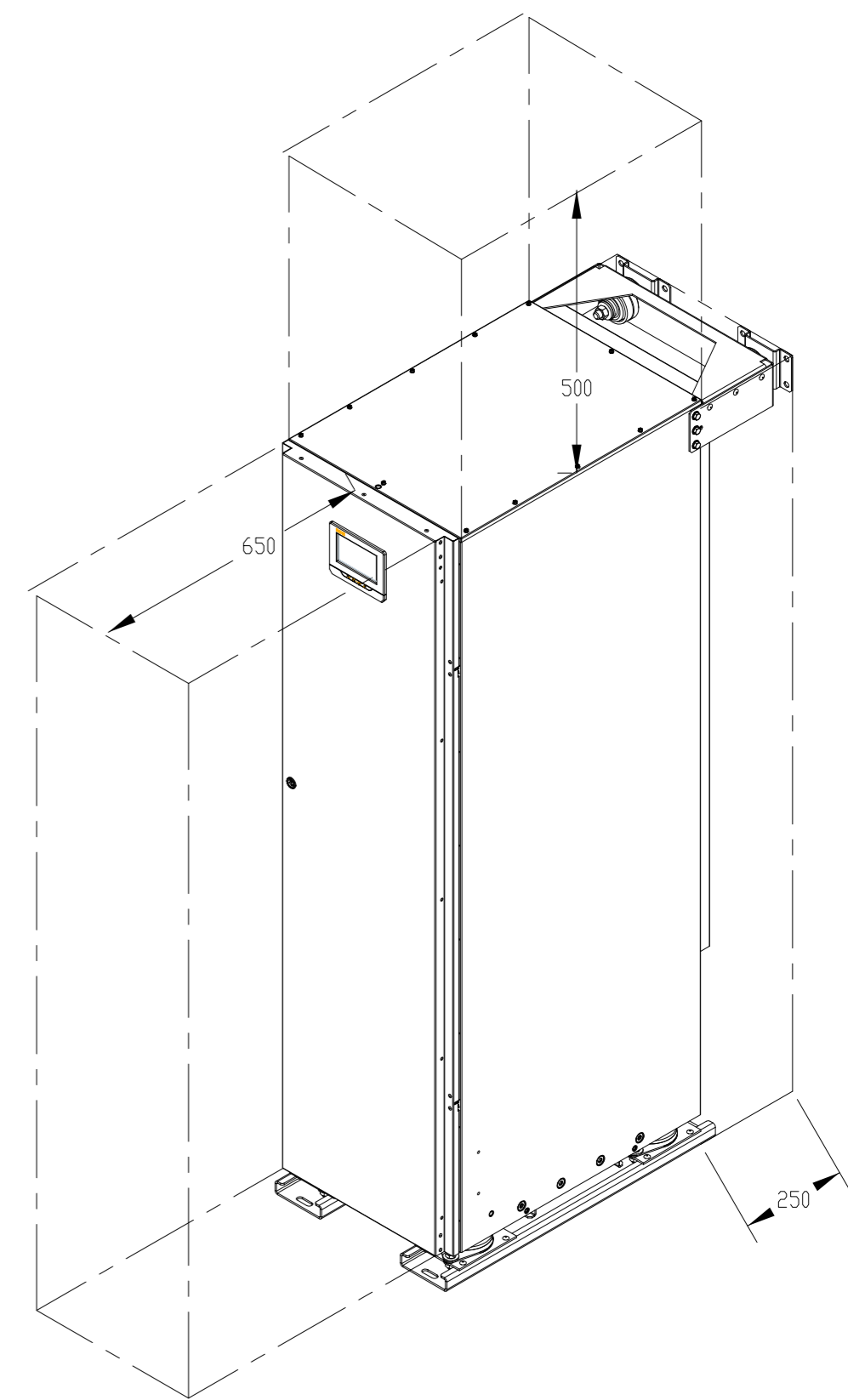
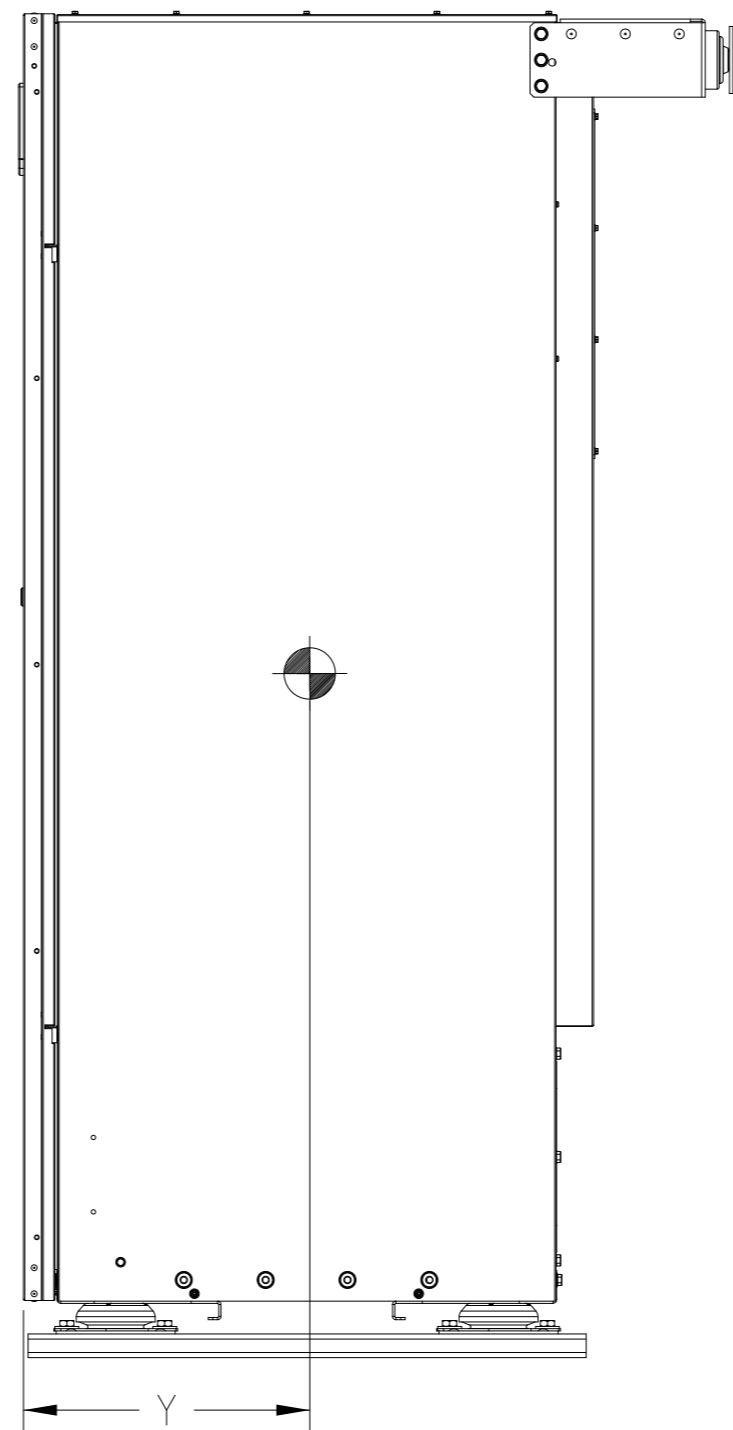
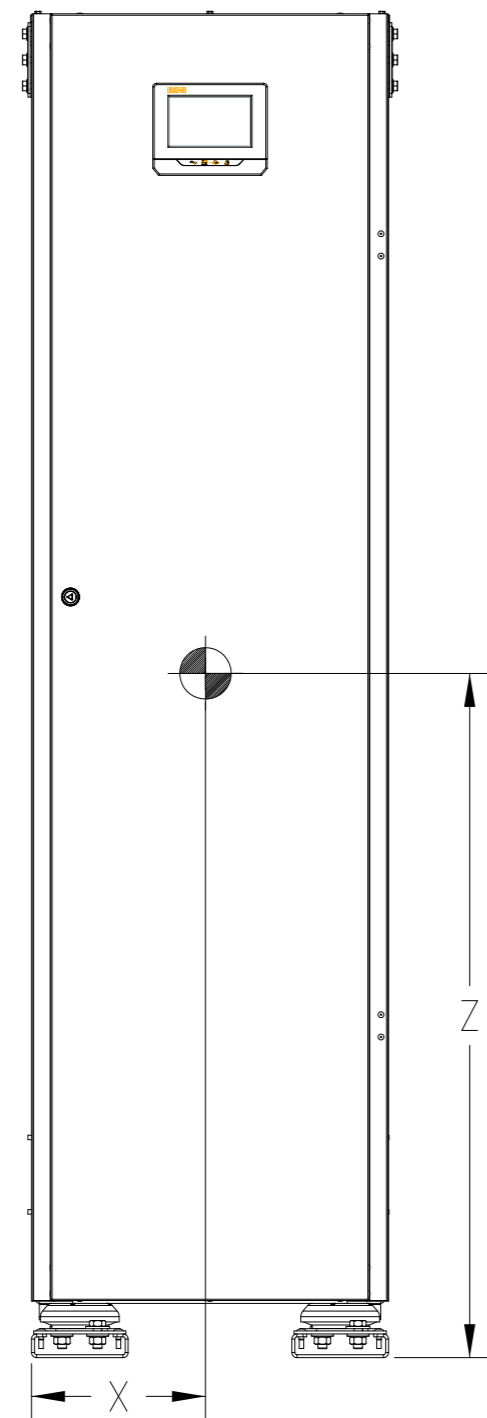
BOTTOM VIEW

CABLE THROUGH PLATE

Product Specifications							
UPS Rating		Max Heat Dissipation at 100% Load with 2 Transformers	Cabinet Dimensions WxDxH	Approx. Weight Cabinet With 2 Transformers	Approx. Weight Cabinet With 1 Transformer	Approx. Weight Cabinet without Transformers	Floor Landing
kVA	kW	kW	mm	kg	kg	kg	kg/m ²
30	30	1.9	503x975x1810	582	407	207	1.478
40	40	2.6	503x975x1810	582	407	207	1.478

- Notes:
1. The system must be installed in a temperature and humidity controlled indoor area free of conductive contaminants.
 2. Continuous ambient temperature range: 0-45 °C (32-113 °F) at sea level; Maximum relative humidity: 95% non-condensing.
 3. The UPS can be installed in line-up-and-match or standalone configurations.
 4. There are 2 blind cable through steel plates (bottom and rear side) that should be custom-modified to suit conduit sizes.

METRIC		THIRD ANGLE PROJECTION		EATON	
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Clearances	
From Top of cabinet	500 mm
From Front of cabinet	650 mm
From Back of cabinet	250 mm

Notes

1. The COG dimensions are approximated values including different transformer variations.
2. The COG dimensions of UPS cabinet without package are X=240 mm, Y=400 mm, Z=1170 mm with 2 transformers, X=240 mm, Y=400 mm, Z=1020 mm with 1 transformer and X=240 mm, Y=400 mm, Z=920 mm with no transformers
3. Minimum overhead clearance above the UPS cabinet is 500 mm (20in.) for servicing space.
4. Minimum 650 mm (26in.) clearance in front of the UPS cabinet is required for cooling air intake and servicing space.
5. Minimum 250 mm (10in.) clearance in back of the UPS cabinet is required for cooling air exhaust.

Approx. Center of Gravity			
Transformers	X [mm]	Y [mm]	Z [mm]
0	240	400	1170
1	240	400	1020
2	240	400	920

UPS Color	Ingress Protection Class
Grey (RAL 7035) textured powder coat, min. thickness 0.05 mm.	IP 23

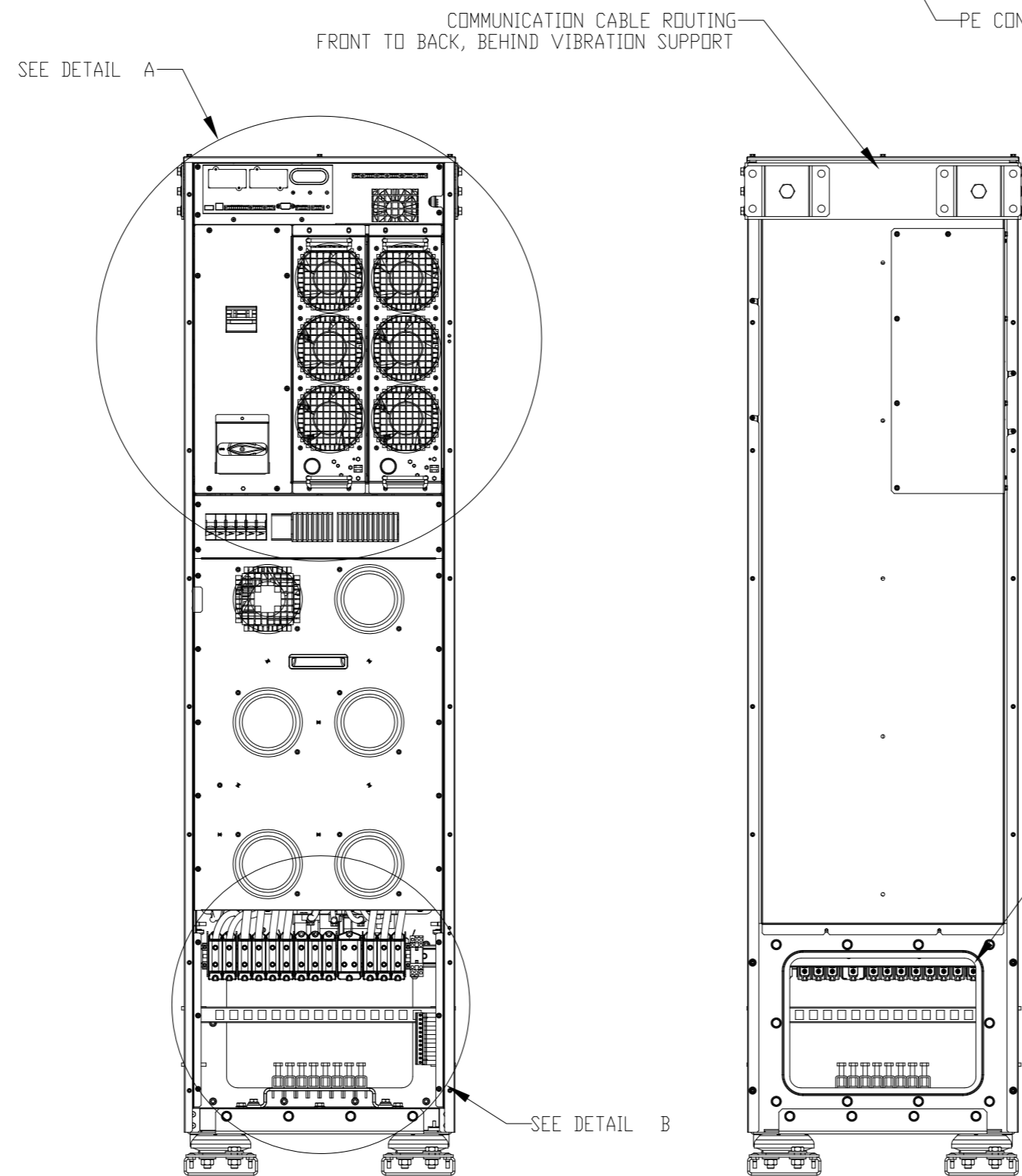
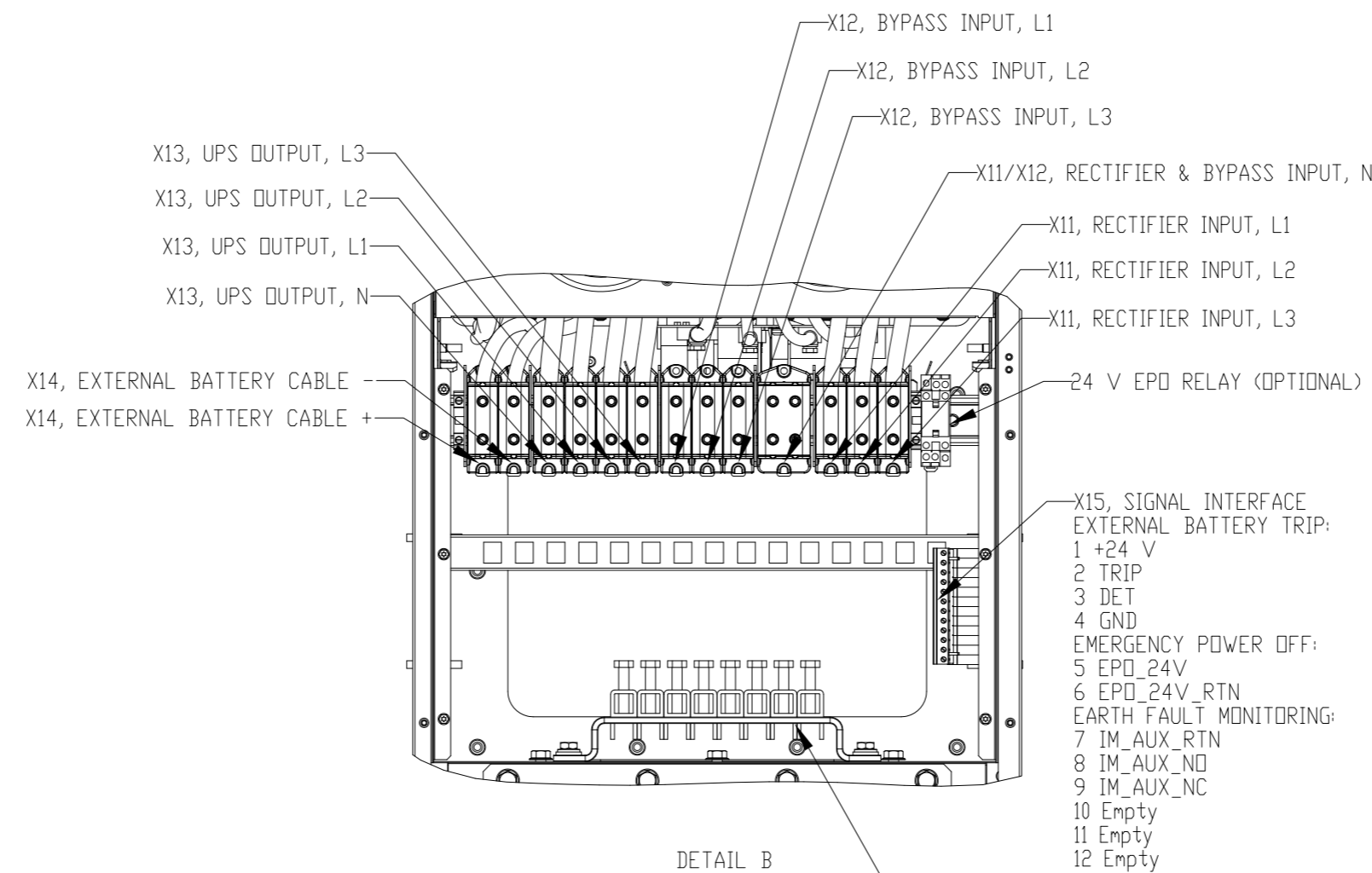
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Minimum recommended cable and fuse sizes for rectifier and bypass input, UPS output and external battery bank (Internal transformers are used for voltages other than 380, 400 and 415 Vac)		UPS rating	
		30 kW	40 kW
208Vac	Phase cable (mm ²)	50	70
	PE cable (mm ²)	25	35
	Rectifier and bypass fuse (A)	125	160
230Vac	Phase cable (mm ²)	35	50
	PE cable (mm ²)	16	25
	Rectifier and bypass fuse (A)	100	125
380Vac	Phase cable (mm ²)	16	25
	PE cable (mm ²)	16	16
	Rectifier and bypass fuse (A)	63	80
400Vac	Phase cable (mm ²)	16	25
	PE cable (mm ²)	16	16
	Rectifier and bypass fuse (A)	63	80
415Vac	Phase cable (mm ²)	16	25
	PE cable (mm ²)	16	16
	Rectifier and bypass fuse (A)	63	80
440Vac	Phase cable (mm ²)	16	25
	PE cable (mm ²)	16	16
	Rectifier and bypass fuse (A)	50	63
480Vac	Phase cable (mm ²)	16	25
	PE cable (mm ²)	16	16
	Rectifier and bypass fuse (A)	50	63
690Vac	Phase cable (mm ²)	6	10
	PE cable (mm ²)	6	10
	Rectifier and bypass fuse (A)	32	50
Ext. Batteries	Positive & negative line (mm ²)	1x35	1x35
	PE cable (mm ²)	1x16	1x16
	Battery fuse (A)	160	160

Maximum conductor cross sections for rectifier input, bypass input, UPS output and external battery bank with solid wire 95 mm² and stranded wire with ferrule 70 mm². PE maximum conductor cross section 70 mm². Always use ferrule with stranded wire.

Power upgrading of the UPS is possible only if the sizing of external cables is sufficient. Alternatively, external cabling must be upgraded as well. The type of the fuses is gG.

Cable sizing is based on IEC 60364-5-52 and IEC 60364-5-54. Sizing is for installation method C (wall installation) with max conductor temperature: 70°C, ambient temperature: 30°C. If you use aluminium cables, Eaton EMEA Sales Support can provide sizing recommendations.



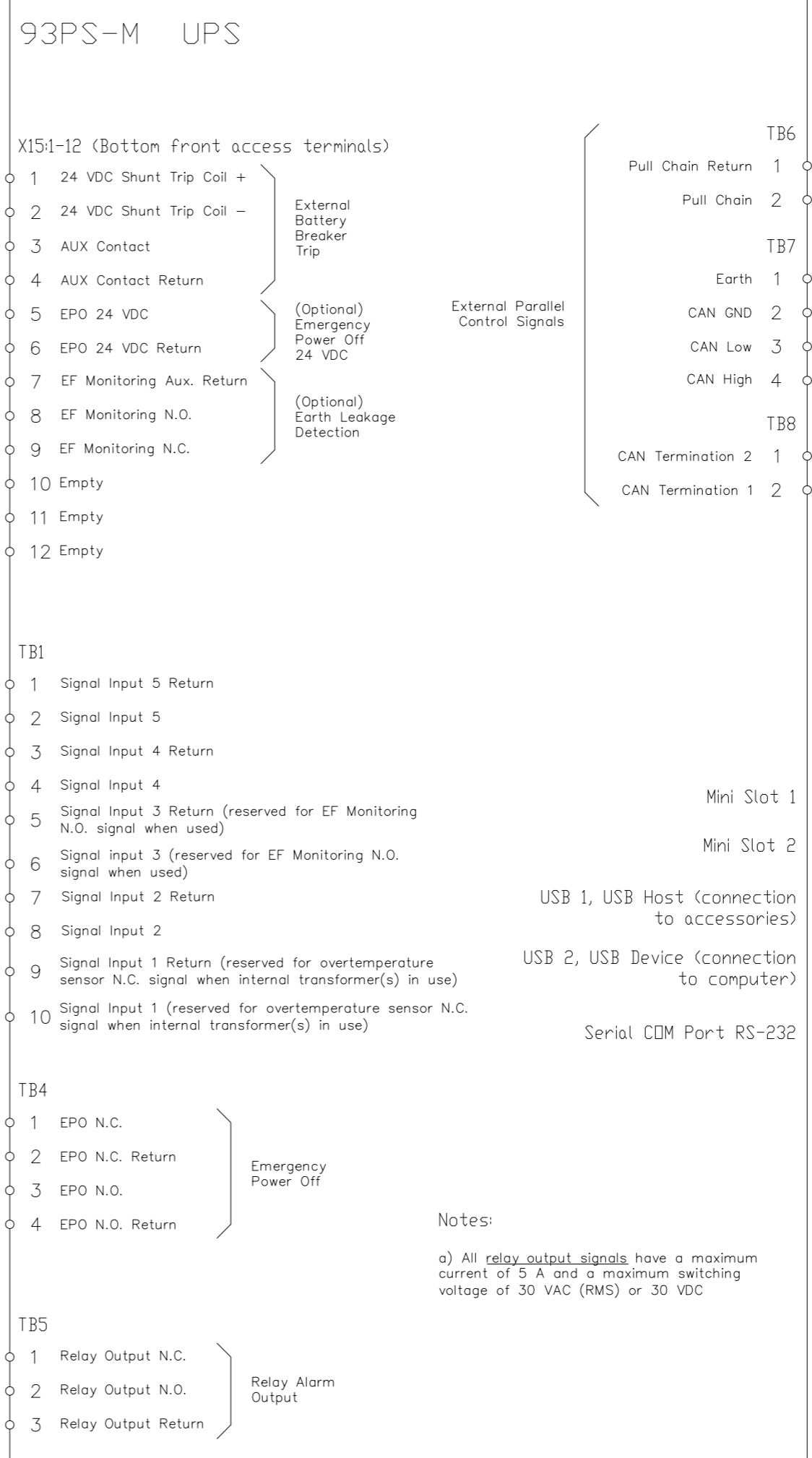
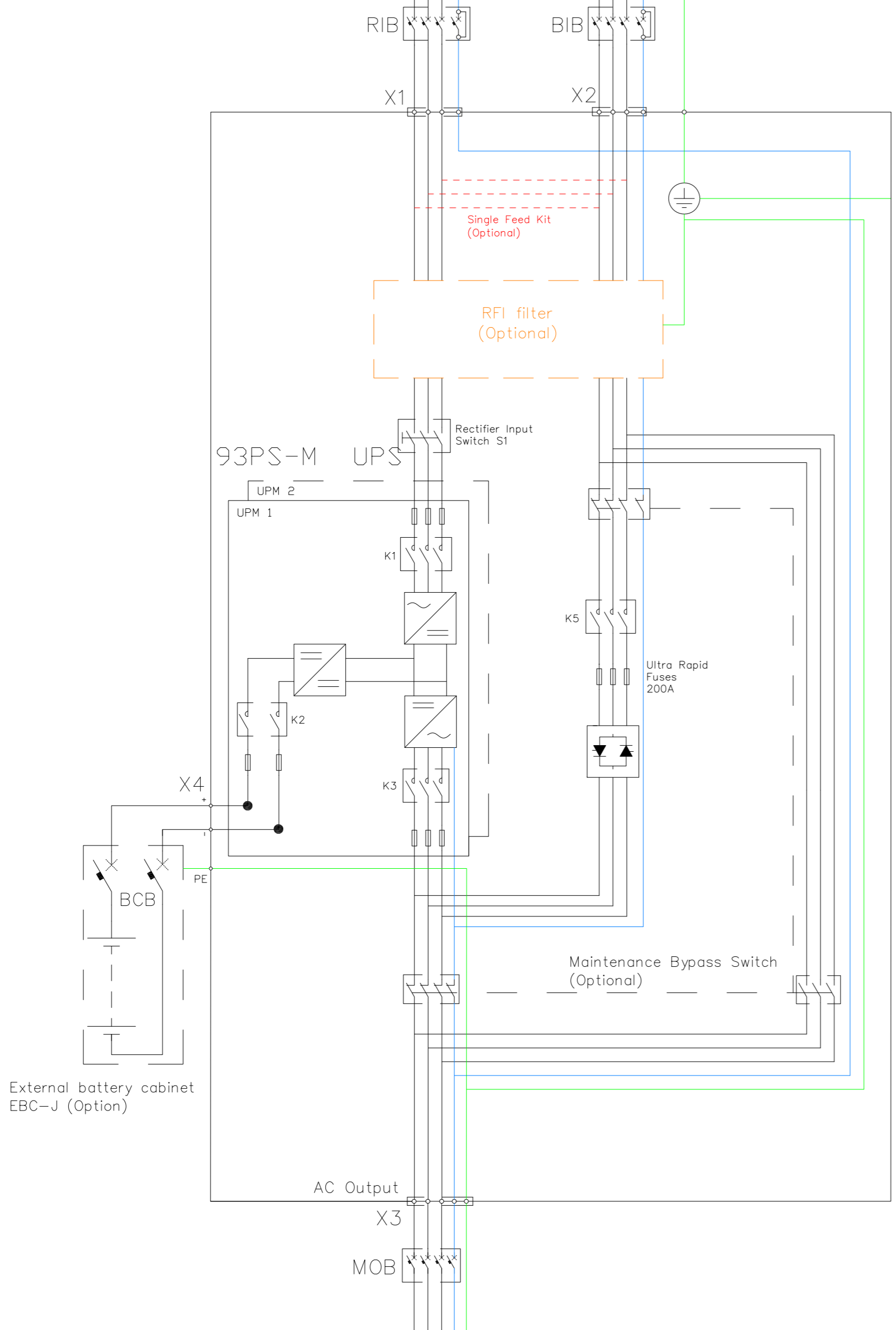
CONNECTIONS WITH FRONT PANEL, AND BOTTOM DEAD-FRONT PANEL REMOVED

REAR VIEW

Note: Configurations with input transformer or single feed kit do not have bypass input terminals.

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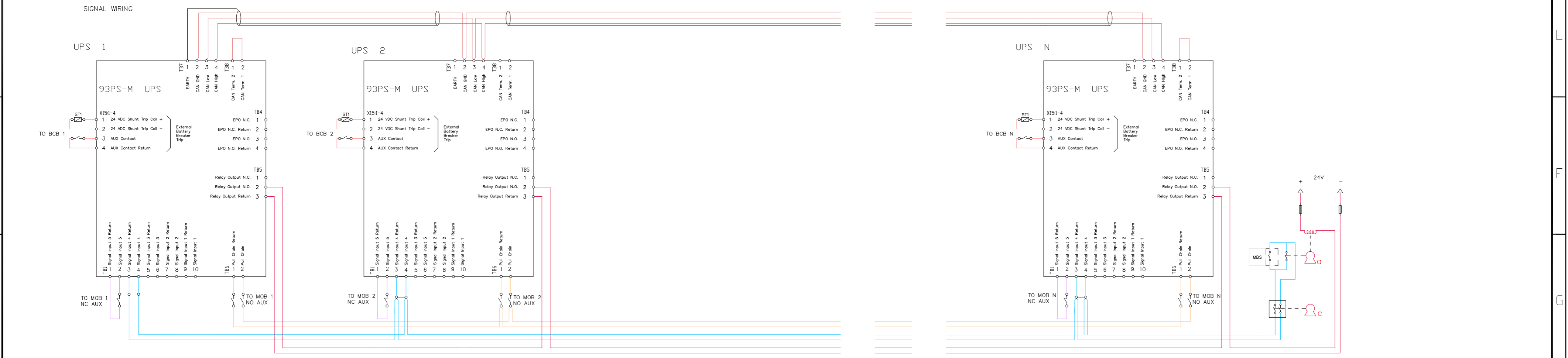
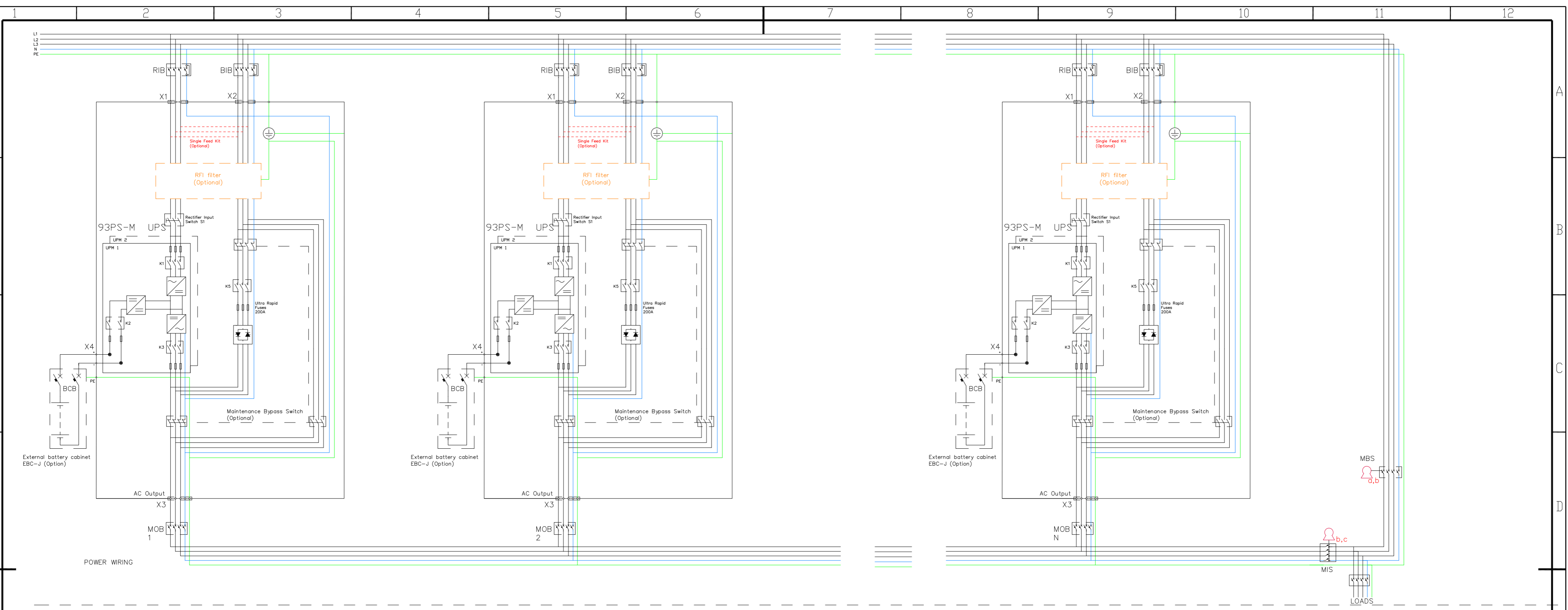
L1
L2
L3
N
PE



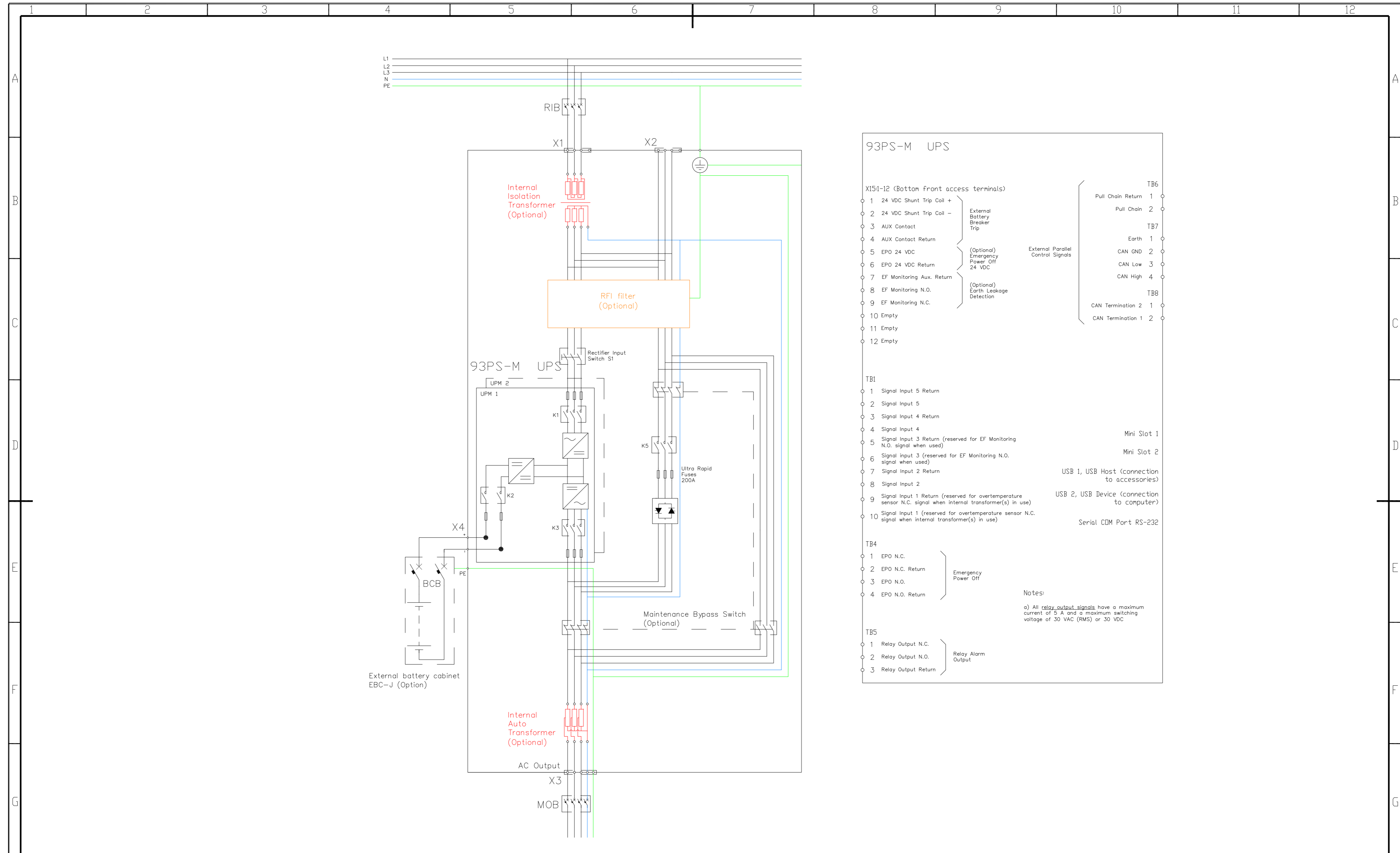
Optional Single Feed Kit
Rectifier, static bypass and MBS (when used) lines are fed from input terminals X1.

Optional RFI Filter
This filter attenuates EMI noise as follows:
Conducted emissions - DNV Class A EMC criteria and IEC 62040-2 C2
Radiated emissions - DNV Class A EMC criteria and IEC 62040-2 C2

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DESCRIPTION: 93PS Marine 30/40KW Wiring Single Unit					
ORIGINATED: Miguel Moreira	21.12.2017	ECO:	NAME:	REVISION: 01	SIZE: A2
CHECKED:		DOCUMENT TYPE:	P-110000617	STATE: Release	SCALE: 1:10
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<p>MBS STATUS (Provided by others, Installed by others) 0.75 - 2.5mm² twisted pair (if possible, else shielded) No earth needed</p> <p>MOB STATUS (Provided by others, Installed by others) 0.75 - 2.5mm² twisted pair (if possible, else shielded) No earth needed</p> <p>PCAN (DUAL AS OPTION) Provided by Eaton, Installed by Eaton</p>	<p>PULL CHAIN (REDUNDANT ON BYP STATUS) Provided by Eaton, Installed by Eaton</p> <p>ON BYPASS STATUS (NO INVERTORS ONLINE) 0.75 - 2.5mm², provided by others, Installed by others</p>	<p>Mechanical bypass interlocking sequence</p> <ol style="list-style-type: none"> Place UPS system to bypass. On bypass status (K3) will energize Key A solenoid to release it Removing key A will switch on "force bypass" to the UPS system Place key A to MBS breaker and close breaker. Key B will be released. Aux contact of MBS will keep "force bypass" on UPS system Place key B to MIS breaker and open MIS to isolate UPS system from load. Key C will be released Place key C to its dedicated keyhole to release "force bypass" command to allow UPS system testing 	<table border="1"> <tr> <td colspan="2"> </td> <td colspan="2"> </td> <td colspan="2"> </td> </tr> <tr> <td colspan="6"> <small>DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.</small> </td> </tr> <tr> <td colspan="6"> DESCRIPTION: 93PS Marine 30/40KW Wiring Parallel Units </td> </tr> <tr> <td> <small>ORIGINATED:</small> Miguel Moreira <small>MODIFIED:</small> <small>CHECKED:</small> <small>SAFETY:</small> <small>APPROVED:</small> </td> <td> <small>DATE:</small> 21.12.2017 <small>ECO:</small> <small>DOCUMENT TYPE:</small> AUTOCAD DRAWING </td> <td> <small>NAME:</small> P-110000617 </td> <td> <small>REVISION:</small> 01 <small>STATE:</small> Release </td> <td> <small>SIZE:</small> A2 <small>SCALE:</small> 1:1 <small>SHEET:</small> 6 OF 9 </td> <td></td> </tr> <tr> <td colspan="6"> <small>NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION: THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREON, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION AND IS MERELY ON LOAN AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY TAKING POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER ADVERSE TO THE INTERESTS OF EATON AND THAT NO PORTION OF THIS DOCUMENT MAY BE COPIED OR OTHERWISE REPRODUCED WITHOUT THE PRIOR WRITTEN CONSENT OF EATON. IN THE CASE OF CONFLICTING CONTRACTUAL PROVISIONS, THIS NOTICE SHALL GOVERN THE STATUS OF THIS DOCUMENT.</small> </td> </tr> </table>							<small>DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.</small>						DESCRIPTION: 93PS Marine 30/40KW Wiring Parallel Units						<small>ORIGINATED:</small> Miguel Moreira <small>MODIFIED:</small> <small>CHECKED:</small> <small>SAFETY:</small> <small>APPROVED:</small>	<small>DATE:</small> 21.12.2017 <small>ECO:</small> <small>DOCUMENT TYPE:</small> AUTOCAD DRAWING	<small>NAME:</small> P-110000617	<small>REVISION:</small> 01 <small>STATE:</small> Release	<small>SIZE:</small> A2 <small>SCALE:</small> 1:1 <small>SHEET:</small> 6 OF 9		<small>NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION: THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREON, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION AND IS MERELY ON LOAN AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY TAKING POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER ADVERSE TO THE INTERESTS OF EATON AND THAT NO PORTION OF THIS DOCUMENT MAY BE COPIED OR OTHERWISE REPRODUCED WITHOUT THE PRIOR WRITTEN CONSENT OF EATON. IN THE CASE OF CONFLICTING CONTRACTUAL PROVISIONS, THIS NOTICE SHALL GOVERN THE STATUS OF THIS DOCUMENT.</small>					
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93PS-M UPS

X151-12 (Bottom front access terminals)

1	24 VDC Shunt Trip Coil +	External Battery Breaker Trip
2	24 VDC Shunt Trip Coil -	
3	AUX Contact	External Parallel Control Signals
4	AUX Contact Return	
5	EPO 24 VDC	(Optional) Emergency Power Off 24 VDC
6	EPO 24 VDC Return	
7	EF Monitoring Aux. Return	(Optional) Earth Leakage Detection
8	EF Monitoring N.O.	
9	EF Monitoring N.C.	
10	Empty	
11	Empty	
12	Empty	

TB6	
Pull Chain Return 1	
Pull Chain 2	
TB7	
Earth 1	
CAN GND 2	
CAN Low 3	
CAN High 4	
TB8	
CAN Termination 2 1	
CAN Termination 1 2	

TB1		
1	Signal Input 5 Return	
2	Signal Input 5	
3	Signal Input 4 Return	
4	Signal Input 4	Mini Slot 1
5	Signal Input 3 Return (reserved for EF Monitoring N.O. signal when used)	Mini Slot 2
6	Signal Input 3 (reserved for EF Monitoring N.O. signal when used)	
7	Signal Input 2 Return	USB 1, USB Host (connection to accessories)
8	Signal Input 2	USB 2, USB Device (connection to computer)
9	Signal Input 1 Return (reserved for overtemperature sensor N.C. signal when internal transformer(s) in use)	Serial COM Port RS-232
10	Signal Input 1 (reserved for overtemperature sensor N.C. signal when internal transformer(s) in use)	

TB4		
1	EPO N.C.	Emergency Power Off
2	EPO N.C. Return	
3	EPO N.O.	
4	EPO N.O. Return	

Notes:
a) All relay output signals have a maximum current of 5 A and a maximum switching voltage of 30 VAC (RMS) or 30 VDC

TB5		
1	Relay Output N.C.	Relay Alarm Output
2	Relay Output N.O.	
3	Relay Output Return	

Optional input isolation transformer, Dyn11, 50kVA, 50/60 Hz

Standard voltages:
690/400V, 480/400V, 440/400V, 415/400V
400/400V, 380/400V, 230/400V, 208/400V

Optional output auto transformer, YNan0, 40kVA, 50/60 Hz

Standard voltages:
400/690V, 400/480V, 400/440V, 400/415V
400/380V, 400/230V, 400/208V

Optional Internal Transformers Special Configurations:

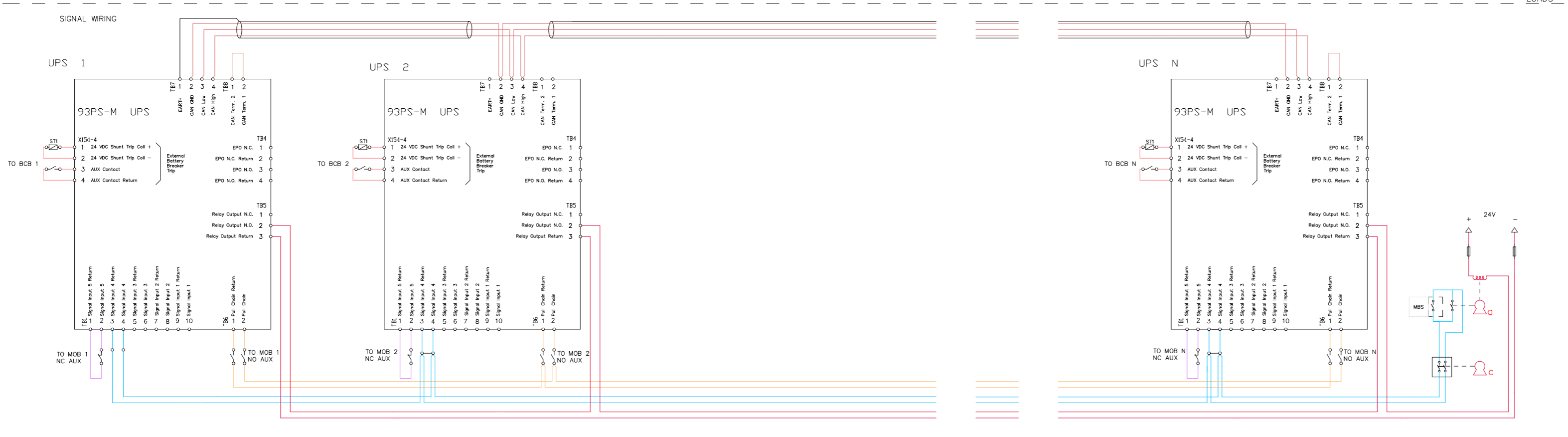
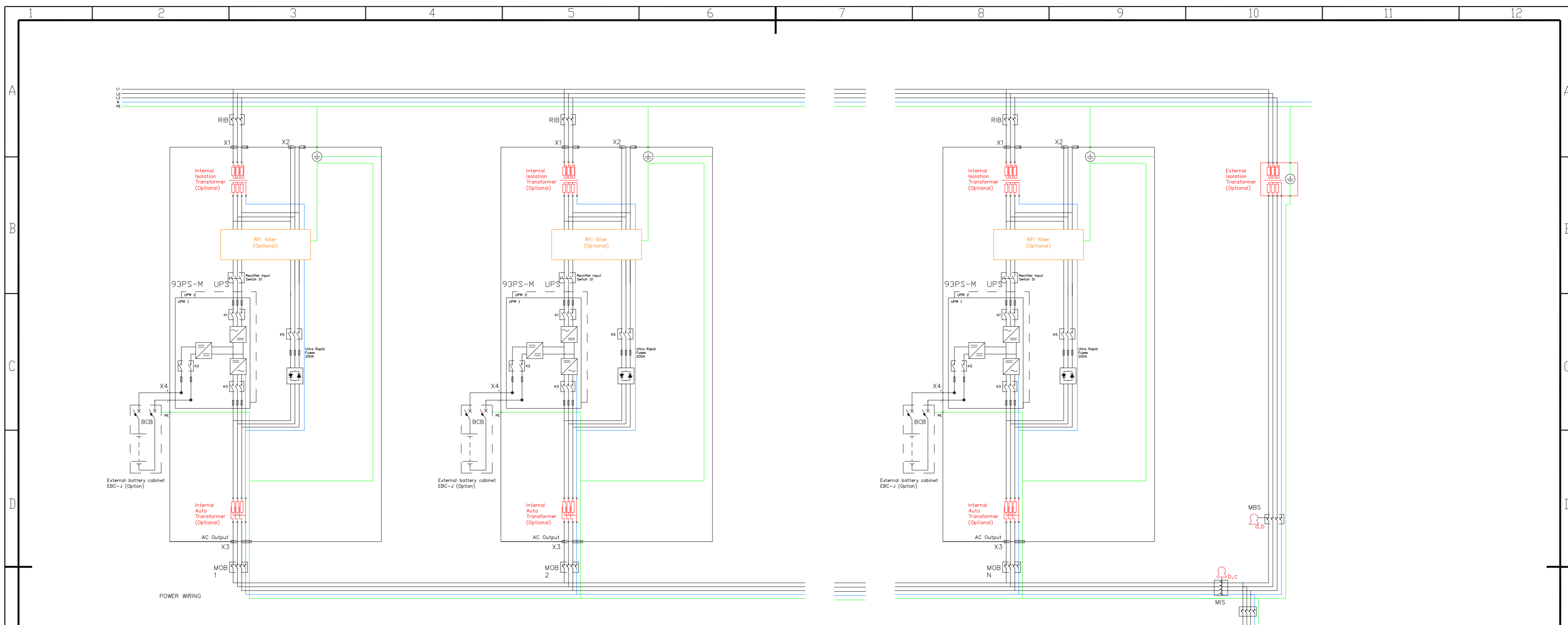
Please contact Sales-Support-CPS-EMEA@Eaton.com for any of the configurations below:

1. Output isolation transformer
2. Non-standard transformer voltages
3. Separate rectifier and bypass transformer
4. Bypass transformer only
5. Bypass and output transformers

Specifications of Internal Standard Transformers:

1. Voltage tolerance range +/- 10%
2. Isolation transformers operate with 97% efficiency and auto transformers 96% efficiency
3. Temperature class F
4. Temperature rise 85°C
5. Max inrush current 8 x In
6. Transformers are equipped with temperature sensors in the secondary windings, 150 °C (N.C.), 3 pcs total
7. Transformers comply with IEC 60076, IEC 60950-1 and IEC 62477-1

METRIC		THIRD ANGLE PROJECTION		EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: 93PS Marine 30/40KW Wiring Single Unit W/ Int. Transformer(s)					
ORIGINATED: Miguel Moreira	21.12.2017	ECO:	NAME:	REVISION: 01	SIZE: A2
CHECKED:		DOCUMENT TYPE:	P-110000617	STATE: Release	SCALE: 1:10
SAFETY:		AUTOCAD DRAWING			SHEET: 7 OF 9
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- MBS STATUS (Provided by others, Installed by others)
0.75 - 2.5mm² twisted pair (if possible, else shielded)
No earth needed
- MOB STATUS (Provided by others, Installed by others)
0.75 - 2.5mm² twisted pair (if possible, else shielded)
No earth needed
- PCAN (DUAL AS OPTION)
Provided by Eaton, Installed by Eaton
- PULL CHAIN (REDUNDANT ON BYP STATUS)
Provided by Eaton, Installed by Eaton
- ON BYPASS STATUS (NO INVERTORS ONLINE)
0.75 - 2.5mm², provided by others, Installed by others

- Mechanical bypass interlocking sequence**
1. Place UPS system to bypass. On bypass status (K3) will energize Key A solenoid to release it
 2. Removing key A will switch on "force bypass" to the UPS system
 3. Place key A to MBS breaker and close breaker. Key B will be released.
 4. Aux contact of MBS will keep "force bypass" on UPS system
 5. Place key B to MIS breaker and open MIS to isolate UPS system from load. Key C will be released
 6. Place key C to it's dedicated keyhole to release "force bypass" command to allow UPS system testing
- UPSs WITH INTERNAL TRANSFORMERS**
External bypass line shall have a transformer that creates the same phase shift between primary and secondary coils as the internal transformers, as well as having the same voltage ratio of the input/output of the system

METRIC			EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.				
DESCRIPTION: 93PS Marine 30/40KW Wiring Parallel Units W/ Int. Transformer(s)				
ORIGINATED:	21.12.2017	ECO:	NAME:	REVISION:
MODIFIED:		DOCUMENT TYPE:	P-110000617	01
CHECKED:		AUTOCAD DRAWING		SCALE: 1:1
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UPS Rating		AC Input	3P+Bolted N Rectifier Input Switch (RIS)			3P+Bolted N Bypass Input Switch (BIS)			AC Output	4P Inverter AC output Breaker MOB			Battery Breaker (BCB) (Ratings at the end of discharge, 1.67VPC)				For Single Unit Maintenance Bypass Switch (MBS)	For Parallel Units Common Maintenance Bypass Switch (MBS)		
			Nominal Current without transformer	Nominal Current before transformer	Maximum Current before transformer	Nominal Current before transformer	Maximum Current before transformer at 10% under voltage	Intergrated Bypass Fuse		Output Current	Inverter Short Circuit Current	Auxiliary Switches	Rating, nominal	Rating, maximum	Common Battery Configuration (UPS Battery)	Trip Device (Shunt Trip)	Auxiliary Switches	Nominal Current before transformer	Nominal Current before transformer	Auxiliary Switches
kVA	kW	V	A	A	A	A	Type	V	A	A / 300 ms	Qty	VDC	VDC	A	VDC	Qty	A	A	Qty	
30	30	208	-	89	124	83	114	200 FEE	208	81	121	2	480	580	66	24	1	124	124xN	1
		230	-	81	112	75	104	200 FEE	230	73	109	2	480	580	66	24	1	112	112xN	1
		380	48	49	68	46	63	200 FEE	380	44	66	2	480	580	66	24	1	68	68xN	1
		400	46	46	64	43	60	200 FEE	400	42	63	2	480	580	66	24	1	64	64xN	1
		415	44	45	62	42	57	200 FEE	415	40	61	2	480	580	66	24	1	62	62xN	1
		440	-	42	58	39	54	200 FEE	440	38	57	2	480	580	66	24	1	58	58xN	1
		480	-	39	54	36	50	200 FEE	480	35	52	2	480	580	66	24	1	54	54xN	1
690	-	27	37	25	35	200 FEE	690	24	36	2	480	580	66	24	1	37	37xN	1		
40	40	208	-	119	153	111	153	200 FEE	208	107	161	2	480	580	88	24	1	153	153xN	1
		230	-	108	139	100	138	200 FEE	230	97	146	2	480	580	88	24	1	139	139xN	1
		380	63	65	84	61	84	200 FEE	380	59	88	2	480	580	88	24	1	84	84xN	1
		400	61	62	80	58	79	200 FEE	400	56	84	2	480	580	88	24	1	80	80xN	1
		415	58	60	77	56	77	200 FEE	415	54	81	2	480	580	88	24	1	77	77xN	1
		440	-	56	73	52	72	200 FEE	440	51	76	2	480	580	88	24	1	73	73xN	1
		480	-	52	66	48	66	200 FEE	480	47	70	2	480	580	88	24	1	66	66xN	1
690	-	36	46	33	46	200 FEE	690	32	49	2	480	580	88	24	1	46	46xN	1		

METRIC					
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING. DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: Site planning drawing 93PS Marine 30-40kW					
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MODIFIED:	ALAPASSI T.	13 DEC 2017	DOCUMENT TYPE:	P-110000617	STATE: RELEASE
CHECKED:			PRO-E DRAWING		SCALE: 1:20
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