



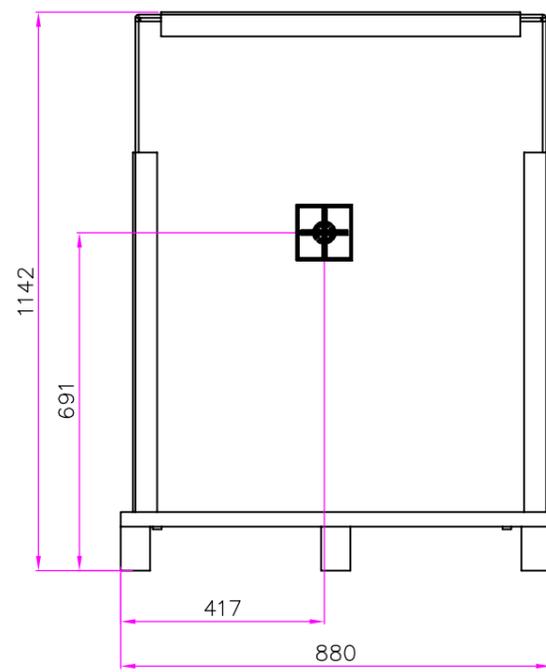
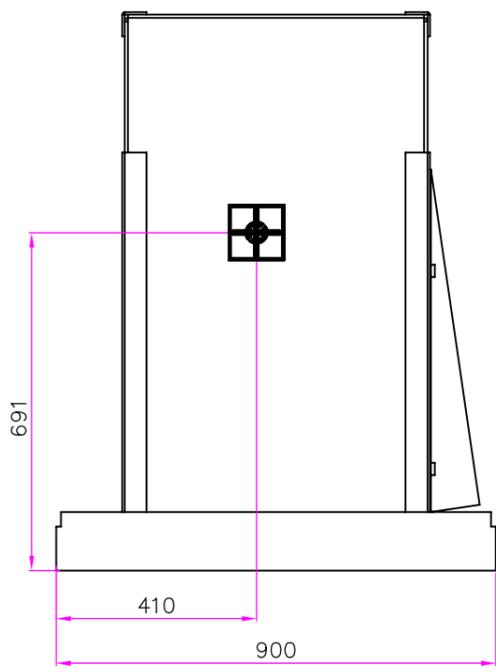
Powering Business Worldwide

SITE PLANNING DATA 93E 15-20KVA

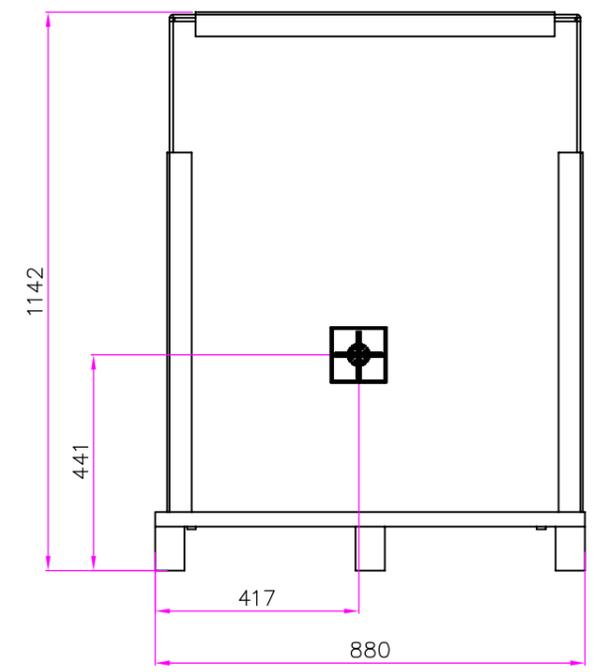
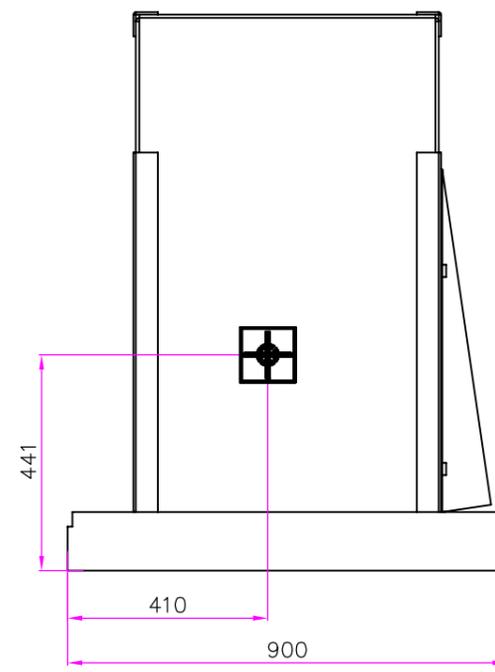
Page 1	Packaging Dimensions
Page 2	Dimensional Drawings
Page 3	COG and Clearance Dimensions
Page 4	Customer Connections
Page 5	Electrical Wiring of Single Unit
Page 6	Electrical & Signal Wiring of Parallel Units
Page 7	Product Specifications



METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION			
<small>DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.</small>							
DESCRIPTION: 93E 15-20KVA							
ORIGINATED: Atif Rasheed	28-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2		
CHECKED:		DOCUMENT TYPE:		STATE: RELEASED	SCALE: 1:1		
SAFETY:					SHEET: OF		
APPROVED:		<small>EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS LOANED TO YOU AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY YOUR POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER CONTRARY 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>					
<small>© 2011 Eaton Corporation - All Rights Reserved.</small>							



COG dimensions without internal batteries



COG dimensions with internal batteries

Notes:

1. The COG dimensions are approximated values with Pallet and packaging including Batteries and without Batteries.
2. The COG dimensions of UPS cabinet with package are X=410mm, Y=417mm, Z=441mm including Batteries and X=410mm, Y=417mm, Z=691mm without Batteries.
3. Store the unit in dry and clean environment. Protect the unit from high humidity, rain or other direct exposure to water and also protect it from exposure to dirt and dust.
4. Optimal storing temperature for the unit without batteries is +15°C to +30°C and for batteries +20°C to +25°C.
5. Unites without batteries can be stored in -25°C to +55°C without risk of remediate damaging.
6. Storing batteries above +25°C will shorten the battery lifetime.
7. Batteries can be stored for six months without charging in temperature +20°C to +25°C, but batteries should not be stored uninstalled more than absolute necessary.
8. If batteries are stored above +25°C then batteries should be charged every four months.
9. Storing batteries longer than recommended without charging can harm the battery permanently.

Product Specifications				
UPS Rating		Shipping Dimensions WXDXH	Approx. Weight Shipping with Batteries	Approx. Weight Shipping without Batteries
KVA	KW	MM	Kg	Kg
15-20	13.5-18	900X880X1140	306.5	144.5

METRIC  EATON CORPORATION 

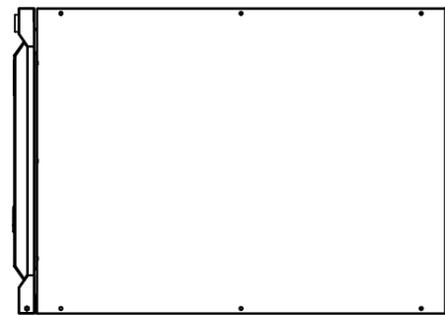
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.

DESCRIPTION: 93E 15-20KVA Packaging Dimensions

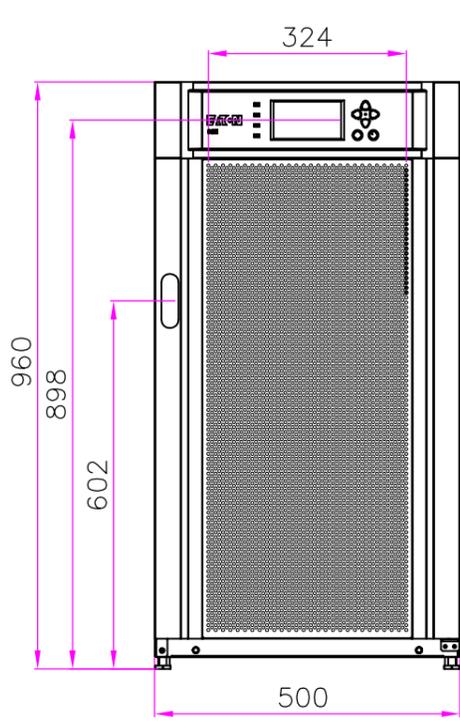
ORIGINATED: Atif Rashid	26-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2
MODIFIED:				STATE: RELEASED	SCALE: 1:8
CHECKED:		DOCUMENT TYPE: AUTOCAD DRAWING			SHEET: 1 OF 7
SAFETY:					
APPROVED:					

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY
NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION
THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, 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 THEIR POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER HARMFUL 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. © 2011 Eaton Corporation - All Rights Reserved.

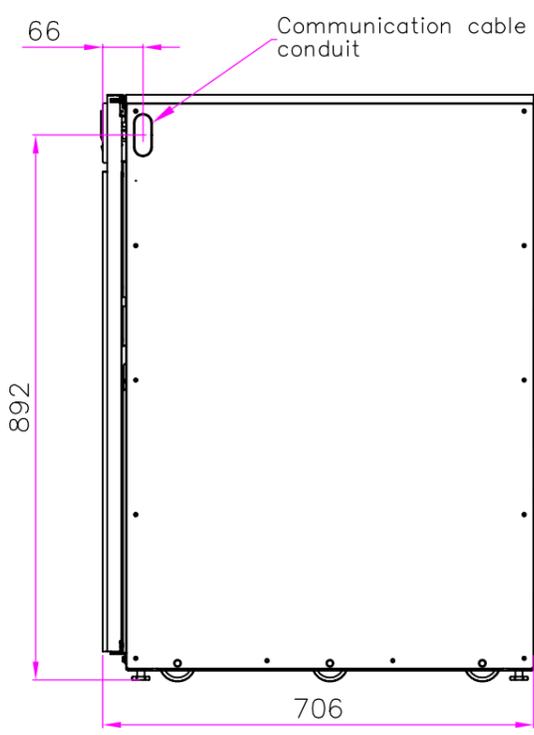
Product Specifications											
UPS Rating		Max Heat Dissipation at 100% Load	Cabinet Dimensions WXD _X H	Shipping Dimensions WXD _X H	Approx. Weight Cabinet Without Batteries	Approx. Weight Cabinet With Batteries	Approx. Weight Shipping Without Batteries	Approx. Weight Shipping With Batteries	Floor Loading Without Batteries	Floor Loading With Batteries	Cooling Air
KVA	KW	KW	MM	MM	Kg	Kg	Kg	Kg	Points/Kg	Points/Kg	L/s
15	13.5	0.84	500X706X960	900X880X1140	126	288	144.5	306.5	6/21	6/48	80
20	18	1.33	500X706X960	900X880X1140	126	288	144.5	306.5	6/21	6/48	110



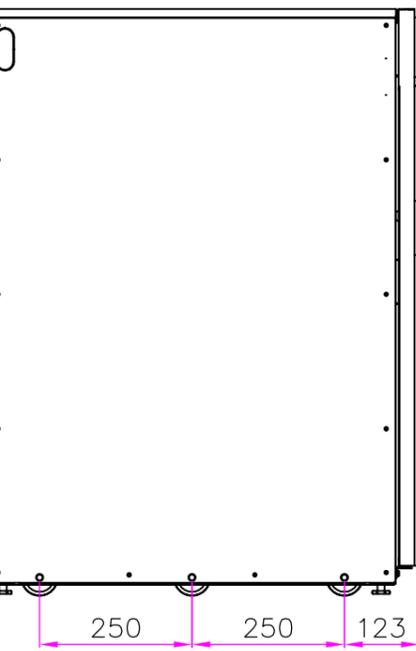
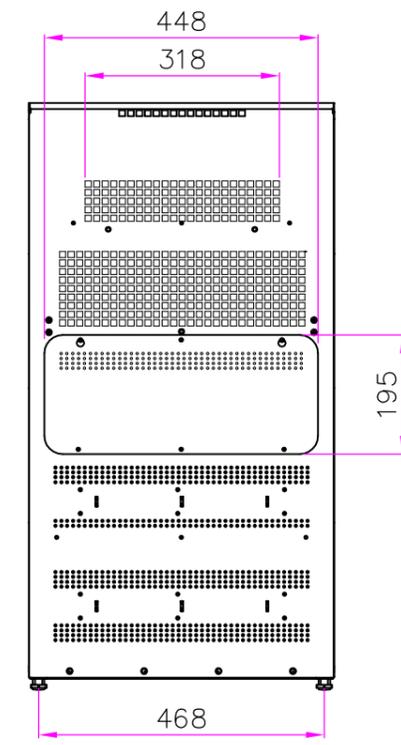
TOP VIEW



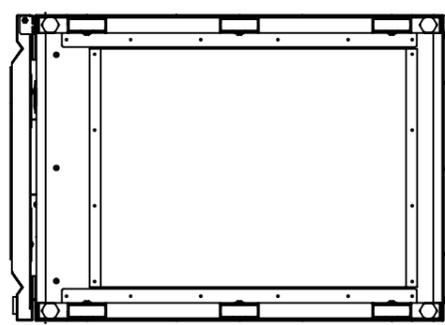
FRONT VIEW



RIGHT VIEW



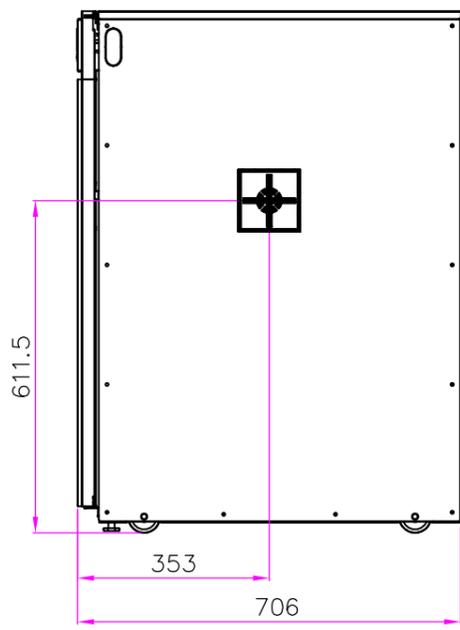
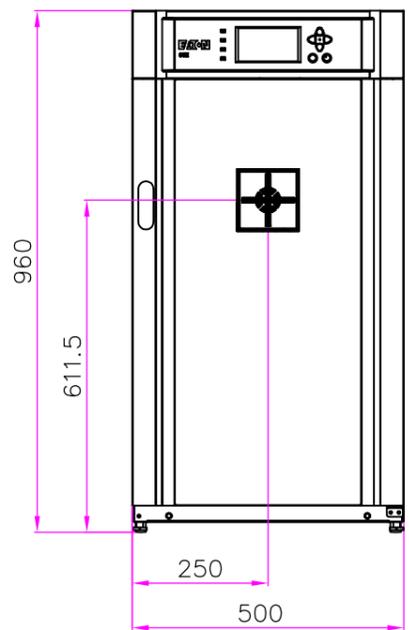
LEFT VIEW



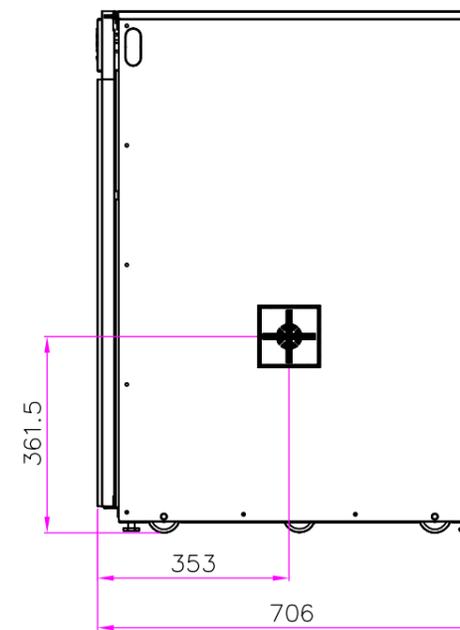
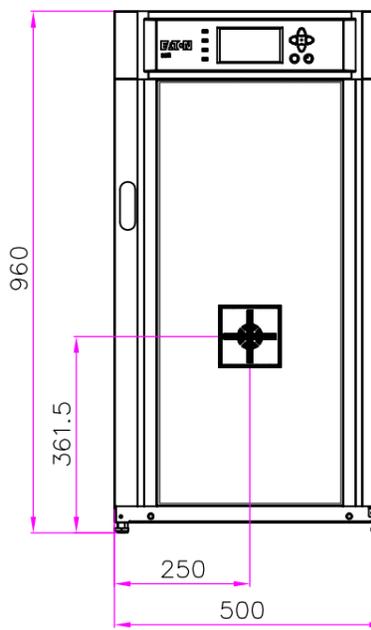
BOTTOM VIEW

- Notes:
1. The system must be installed in a temperature and humidity controlled indoor area free of conductive contaminants.
 2. Continuous ambient temperature range: 0–40°C (32–104°F); Maximum relative humidity: 95% non-condensing.
 3. The UPS can be installed in line-up-and-match or standalone configurations.
 4. Cable access plates shall be custom-modified to suit conduit sizes.

METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: 93E 15–20KVA Dimensional Drawing					
ORIGINATED: Atif Rashid	26-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2
MODIFIED:				STATE: RELEASED	SCALE: 1:8
CHECKED:		DOCUMENT TYPE: AUTOCAD DRAWING			SHEET: 2 OF 7
SAFETY:					
APPROVED:					
<small>EATON CORPORATION – CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED HEREIN, 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 HARMFUL 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. © 2011 Eaton Corporation – All Rights Reserved.</small>					



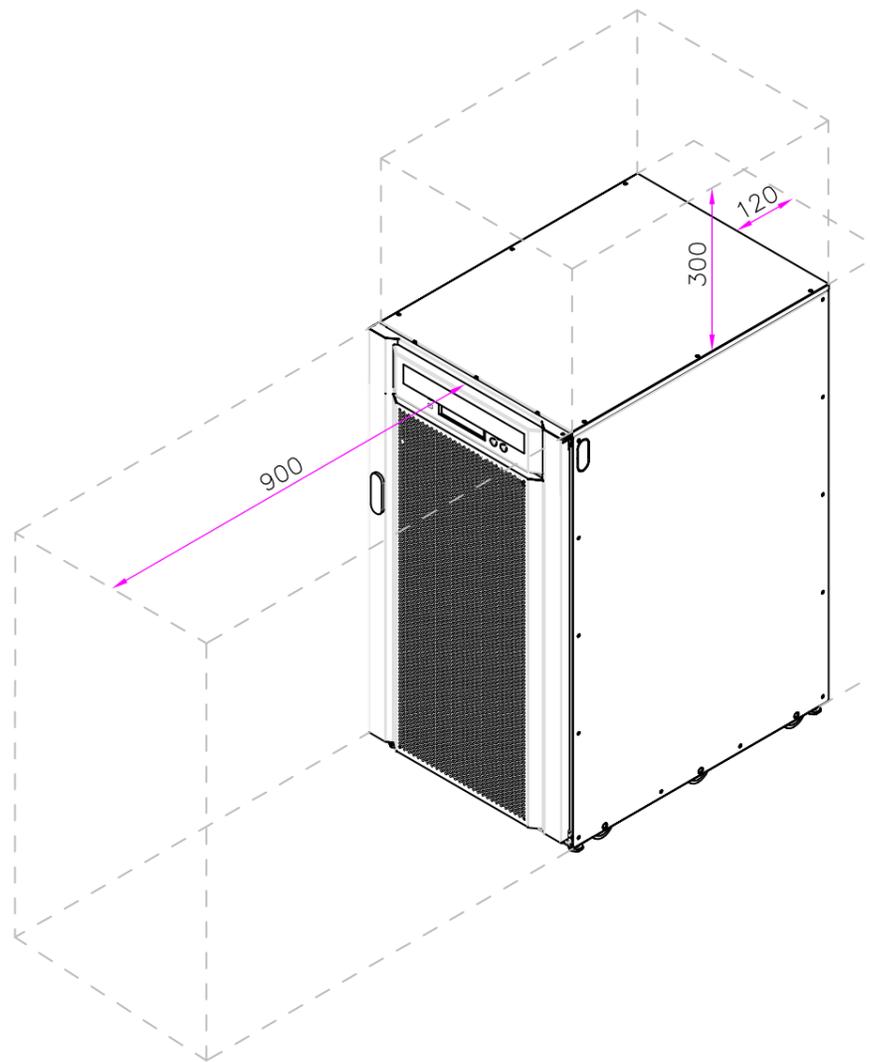
COG dimensions without internal batteries



COG dimensions with internal batteries

Notes:

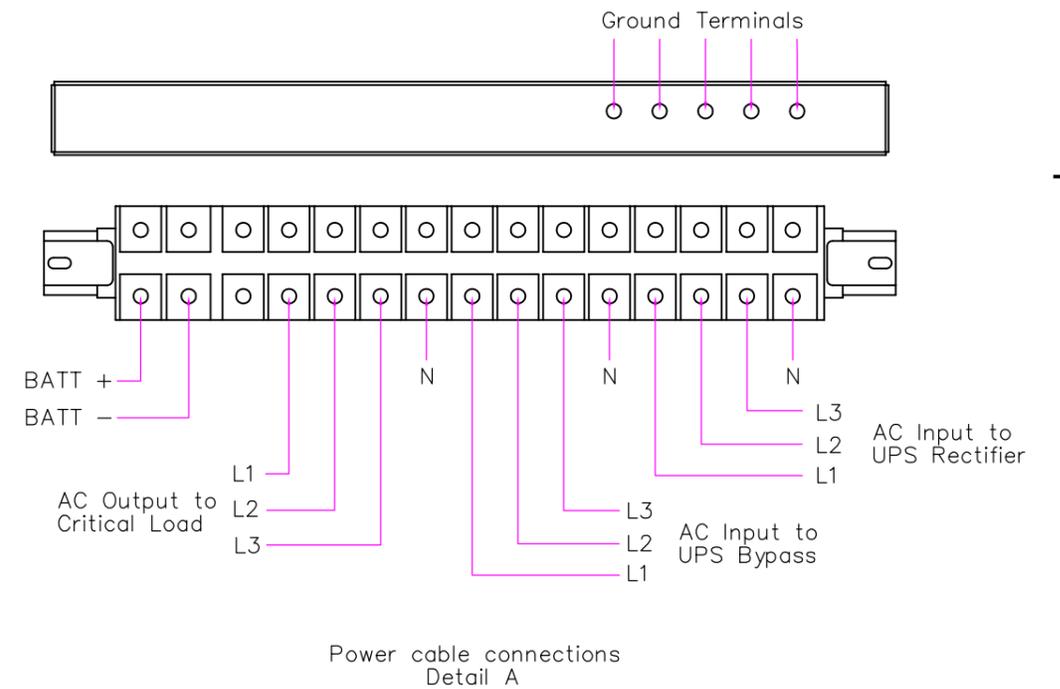
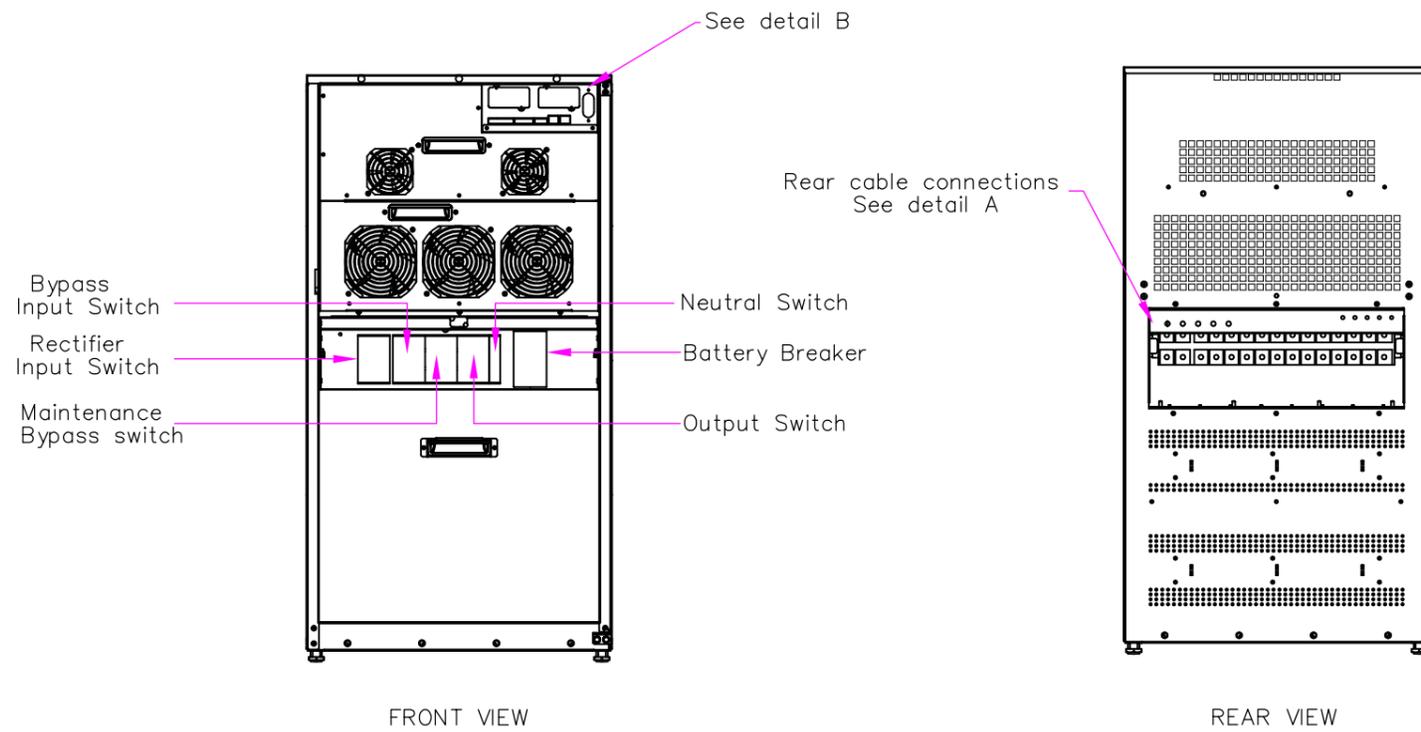
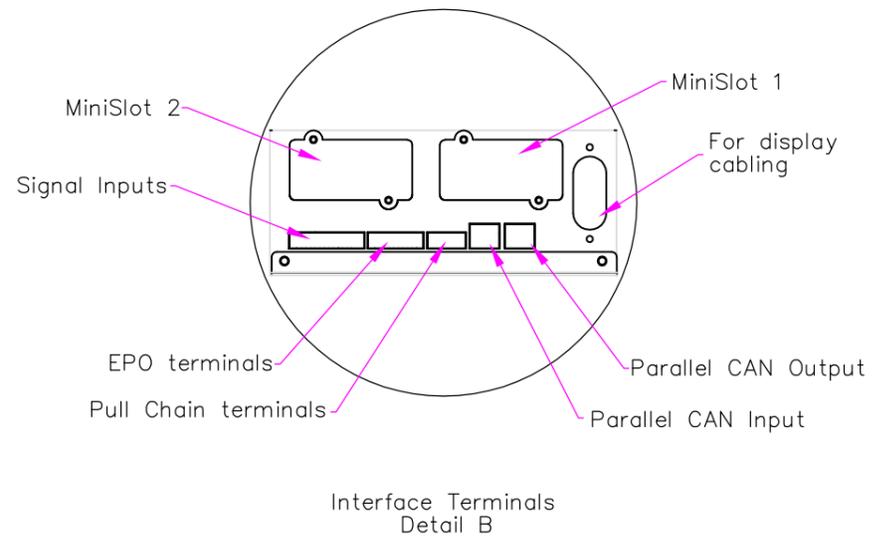
1. The COG dimensions for UPS cabinet are approximated values including internal Batteries and without Batteries.
2. The COG dimensions of UPS cabinet without package are X=250mm , Y=353mm, Z=361.5mm including Batteries and X=250mm , Y=353mm, Z=611.5mm without Batteries.
3. Minimum overhead clearance above the UPS cabinet is 300mm (12in.) for servicing space.
4. Minimum 900mm (35in.) clearance in front of the UPS cabinet is required for cooling air intake and servicing space.
5. Minimum 120mm (5in.) clearance in back of the UPS cabinet is required for cooling air exhaust and servicing space at a ambient temperature of 25–30°C. If the ambient temperature is around 35–40°C then minimum of 150mm clearance is required.



Cabinet Installation Clearances	
From Top of cabinet	300 mm
From Front of cabinet	900 mm
From Back of cabinet ⁵	120 mm

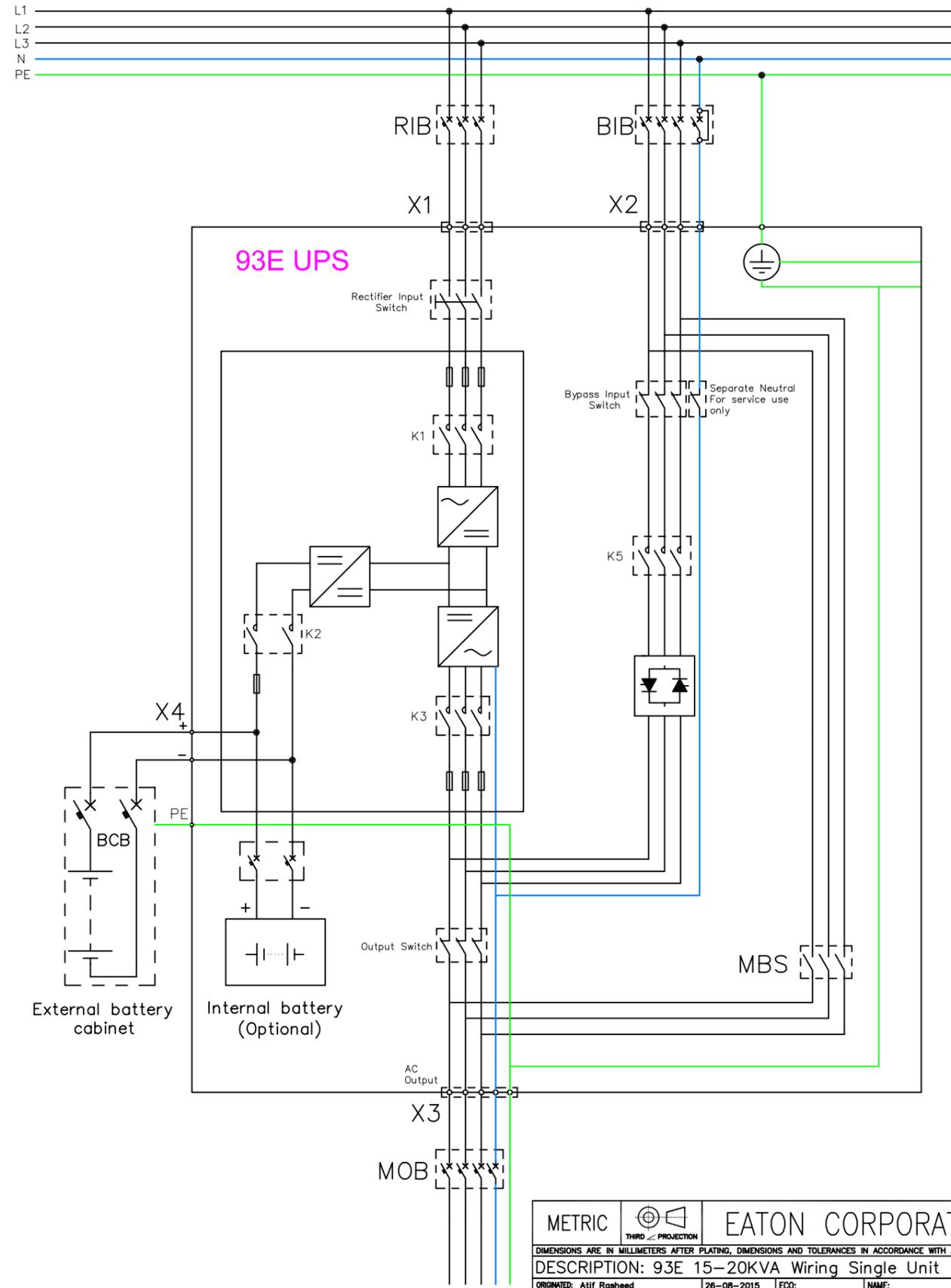
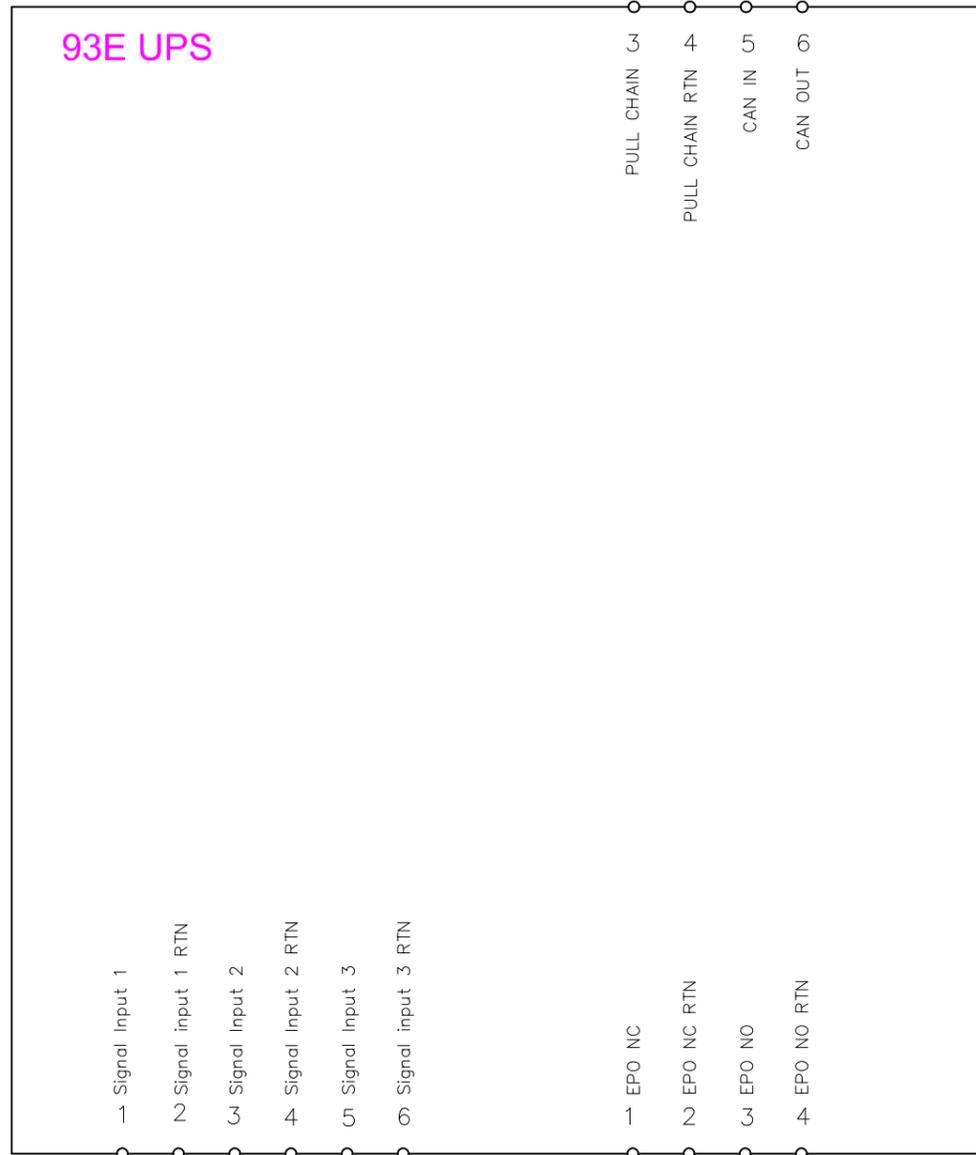
METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: 93E 15-20KVA Clearance and COG					
ORIGINATED: Atif Rashid	26-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2
MODIFIED:				STATE:	SCALE: 1:9
CHECKED:		DOCUMENT TYPE:		RELEASED	SHEET: 3 OF 7
SAFETY:					
APPROVED:					

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY
 NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION
 THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION AND IS LOANED 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 HARMFUL 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.
 © 2011 Eaton Corporation - All Rights Reserved.

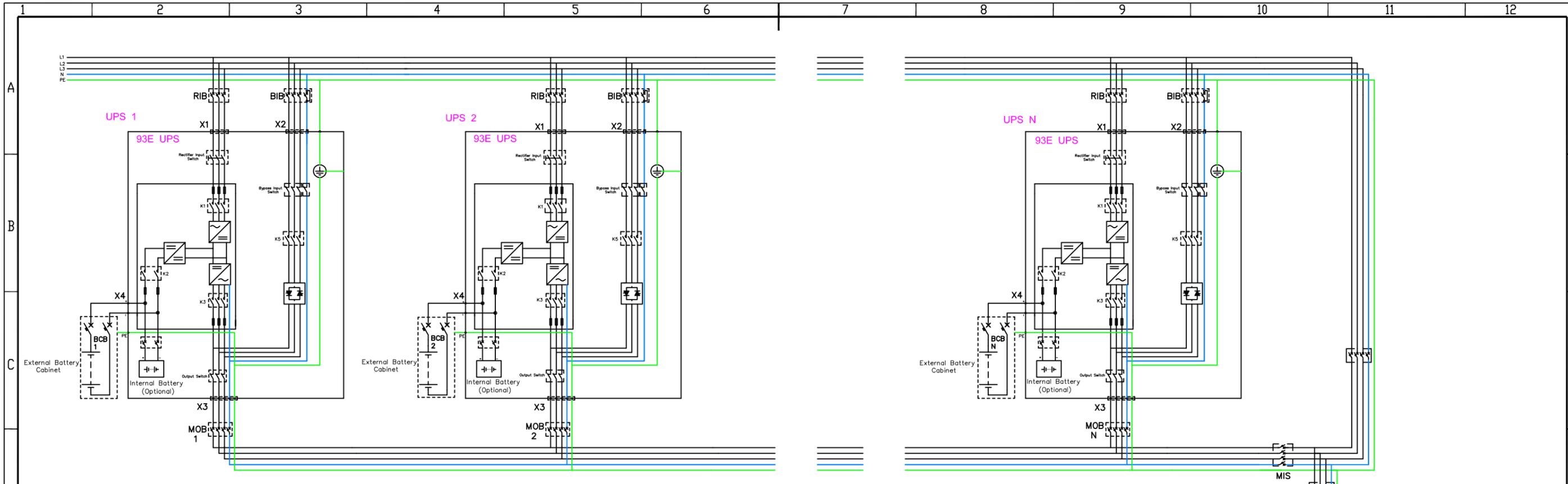


- Notes:
1. M8 size power cable terminals are used for UPS input and output (L1,L2,L3,N) connections. It requires approximately 12Nm of tightening torque.
 2. M6 size power cable terminals are used for PE connections and it requires approximately 9Nm of tightening torque.

METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION			EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.								
DESCRIPTION: 93E 15-20KVA Customer Connections								
ORIGINATED: Atif Rashid	26-08-2015	ECO:	NAME:			REVISION: 001	SIZE: A2	
MODIFIED:						STATE: RELEASED	SCALE: 1:8	
CHECKED:		DOCUMENT TYPE: AUTOCAD DRAWING					SHEET: 4 OF 7	
SAFETY:								
APPROVED:								
EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS LOANED TO YOU AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY YOUR POSSESSION OF THIS DOCUMENT, YOU HEREBY ACKNOWLEDGE AND AGREE THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER HARMFUL 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 CONTRACTS, PROVISIONS, THIS NOTICE SHALL GOVERN THE STATUS OF THIS DOCUMENT. © 2011 Eaton Corporation - All Rights Reserved.								

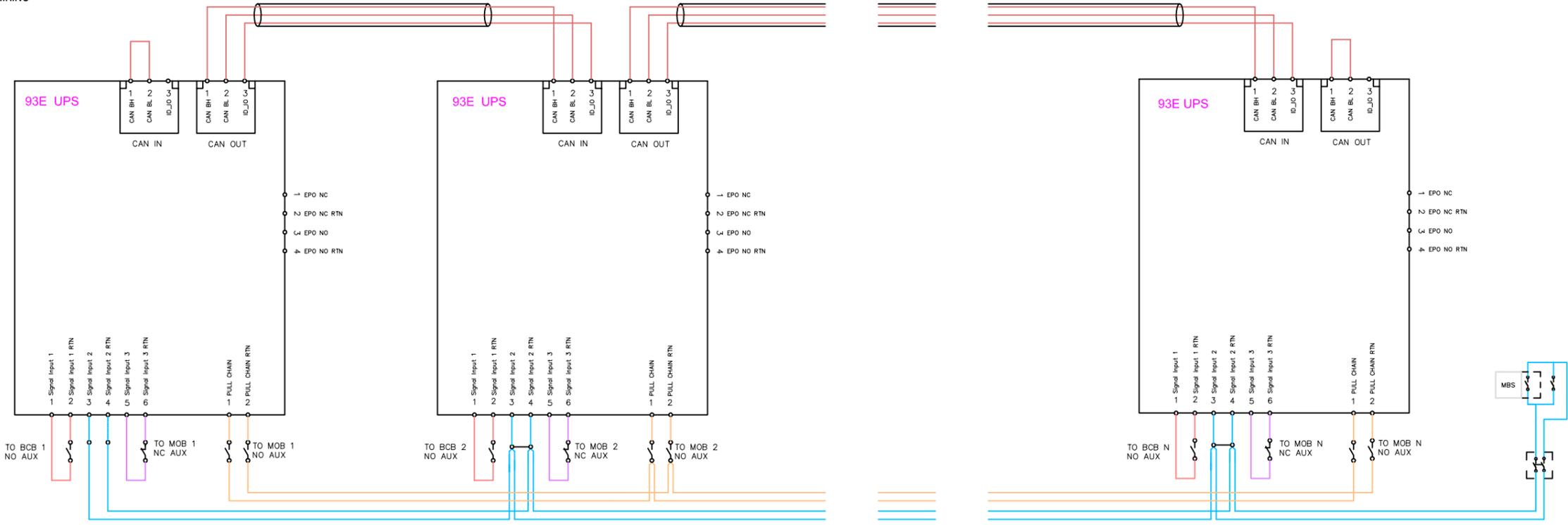


METRIC		EATON CORPORATION			
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: 93E 15-20KVA Wiring Single Unit					
ORIGINATED: Atif Rashied	26-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2
MODIFIED:				STATE: RELEASED	SCALE: 1:8
CHECKED:		DOCUMENT TYPE: AUTOCAD DRAWING			SHEET: 4 OF 7
SAFETY:					
APPROVED:					
<small>EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS MERELY ON LOAN AND SUBJECT TO RECALL BY EATON AT ANY TIME. NO PART OF THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE PRIOR WRITTEN CONSENT OF EATON. IN THE CASE OF CONFLICTING CONTRACTS, PROVISIONS, AND/OR REGULATIONS, THE PROVISIONS OF THIS DOCUMENT SHALL PREVAIL. © 2011 Eaton Corporation - All Rights Reserved.</small>					



POWER WIRING

SIGNAL WIRING



MBS STATUS (Provided by others, Installed by others)
0.75 - 2.5mm² twisted pair (if possible, else shielded)
No earth needed

PULL CHAIN (REDUNDANT ON BYP STATUS)
Provided by Eaton, Installed by Eaton

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

METRIC		EATON CORPORATION		EATON	
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: 93E 15-20KVA Wiring Parallel Units					
ORIGINATED: Atif Rasheed	26-08-2015	ECO:	NAME:	REVISION: 001	SIZE: A2
MODIFIED:				STATE:	SCALE: 1:1
CHECKED:		DOCUMENT TYPE:		RELEASED	SHEET: 6 OF 7
SAFETY:		AUTOCAD DRAWING			
APPROVED:					

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY
NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION
THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS LOANED AND SUBJECT TO RECALL BY EATON AT ANY TIME.
BY THE USE OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER OBTAINING 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.
© 2011 Eaton Corporation - All Rights Reserved.

93E 15-20KVA UPS Site Planning Data

Product Specifications																		
UPS Rating		AC Input		3P Rectifier Input Breaker (RIB)		3P+Bolted N Bypass Input Breaker (BIB)		AC Output		4P Inverter AC output Breaker MOB			Battery Breaker (BCB) (Ratings at the end of discharge, 1.67VPC) (32 Blocks)			For Single Unit Maintenance Bypass Switch (MBS)	For Parallel Units Common Maintenance Bypass Switch (MBS)	
				Nominal Current	Maximum Current	Nominal Current at 400v Input	Maximum Current at 15 % under voltage			Output Current	Inverter short circuit current		Auxiliary Switches	Rating	Battery end of discharge Current	Auxiliary Switches	Rating	Rating
KVA	KW	v	A	A	A	A	v	A	A / 0...100ms	A / 100...160ms	Qty	VDC	A	Qty	A	A	Qty	
15	13.5	400	23	34	22	25	400	22	66	37	1	500	46	1	22	22 x N	1	
20	18	400	31	34	29	33	400	29	66	37	1	500	61	1	29	29 x N	1	

Minimum recommended cable and fuse sizes									
UPS RATING KVA	Rectifier Input Cable [mm ²] (3P)	Rectifier Fuse [A]	Bypass Input Cable [mm ²] (3P+N)	Bypass Fuse [A]	UPS Output Cable [mm ²] (3P+N)	Output Fuse [A]	POS. & NEG. Line [mm ²]	Battery Fuse [A]	PE Cable [mm ²]
15	1 x 10	40	1 x 6	25	1 x 6	25	1 x 16	63	1 x 10
20	1 x 10	40	1 x 6	32	1 x 6	32	1 x 16	63	1 x 10

Notes:

1. Rectifier AC input current calculations: Nominal – 100% load without charging; Maximum – 100% load with maximum charging (Rectifier current limit).
2. Inverter AC output current calculation: At 100% rated output load.
3. The system must be installed on a level floor suitable for computer or electronic equipment.
4. All wiring and installations must be in accordance with applicable National and Local Electric Regulations.
5. AC input to UPS: (3) phases, (1) neutral, (1) ground.
AC output to load: (3) phases, (1) neutral, (1) ground.
DC input from battery to UPS: (1) positive, (1) negative, (1) ground.
6. All breakers should be adjusted according to the specified Ampere values to protect the UPS and installation.
7. For UPS installation that utilizes single feed input, The input breaker should be configured according to the rated rectifier input current.
8. Cable sizing is based on the standard IEC 60364-5-52 and IEC 60364-5-54. The sizing is for 70°C rated copper cables.
8. Specifications are subject to change.

METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.				
DESCRIPTION: 93E 15-20KVA Specifications				
ORIGINATED: Atif Rasheed	26-08-2015	ECO:	NAME:	REVISION: 001
MODIFIED:		DOCUMENT TYPE:	AUTOCAD DRAWING	SCALE: 1:1
CHECKED:		SAFETY:	RELEASED	SHEET: 7 OF 7
APPROVED:		EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION THIS DOCUMENT, INCLUDING THE DRAWING AND INFORMATION CONTAINED THEREIN, IS CONFIDENTIAL AND IS THE EXCLUSIVE PROPERTY OF EATON CORPORATION, AND IS LOANED TO YOU AND SUBJECT TO RECALL BY EATON AT ANY TIME. BY YOUR POSSESSION OF THIS DOCUMENT, THE RECIPIENT ACKNOWLEDGES AND AGREES THAT THIS DOCUMENT CANNOT BE USED IN ANY MANNER CONTRARY 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.		
© 2011 Eaton Corporation - All Rights Reserved.				