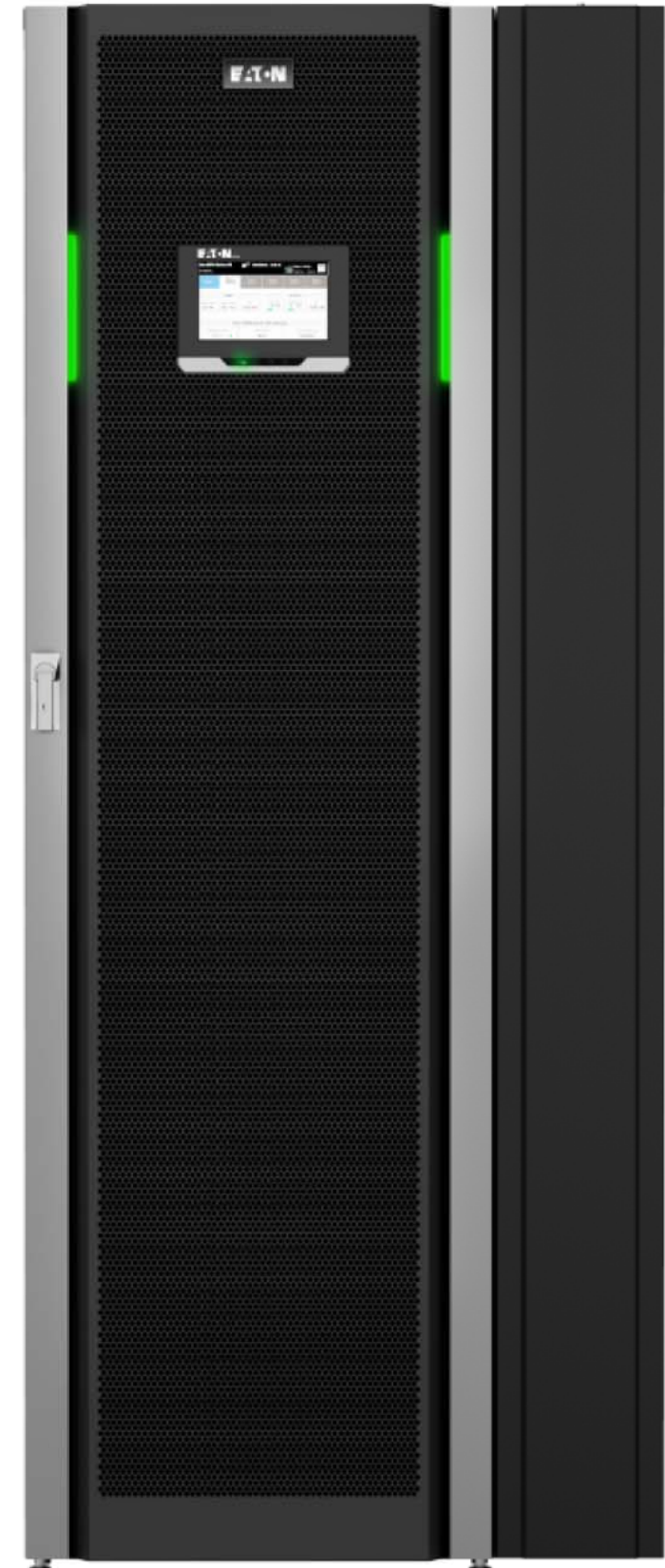




Powering Business Worldwide

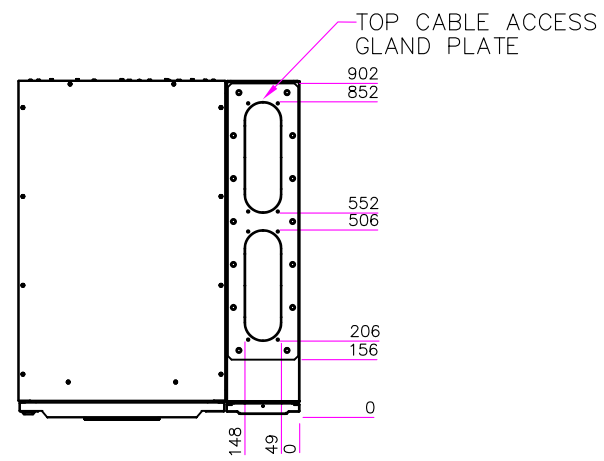
SITE PLANNING DATA Eaton 93PM 160-250 kVA

Page 1	Dimensional Drawings
Page 2	Customer Connections
Page 3	Customer Connections Detail View
Page 4	Top Air Exhaust Kit Dimensions
Page 5	SIAC MBS Dimensional Drawings
Page 6	SIAC MBS Connections with 3 Switches
Page 7	SIAC MBS Connections with 4 Switches
Page 8	Electrical Wiring of Single Unit
Page 9	Electrical Wiring with SIAC MBS
Page 10	Electrical & Signal Wiring of Parallel Units
Page 11	Product Specifications

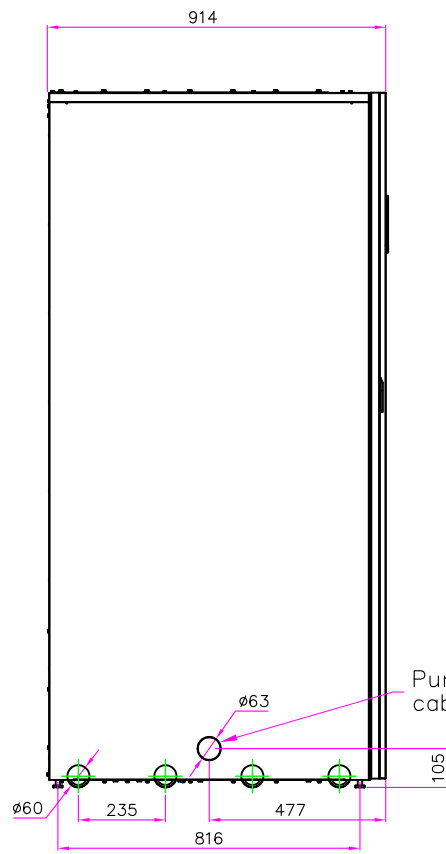


METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION			
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.							
DESCRIPTION: Eaton 93PM 160-250 kVA							
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2		
CHECKED: Meron Gemeda	18.04.2018	DOCUMENT TYPE: AUTOCAD DRAWING	P-110000457	STATE: RELEASED	SCALE: N/A		
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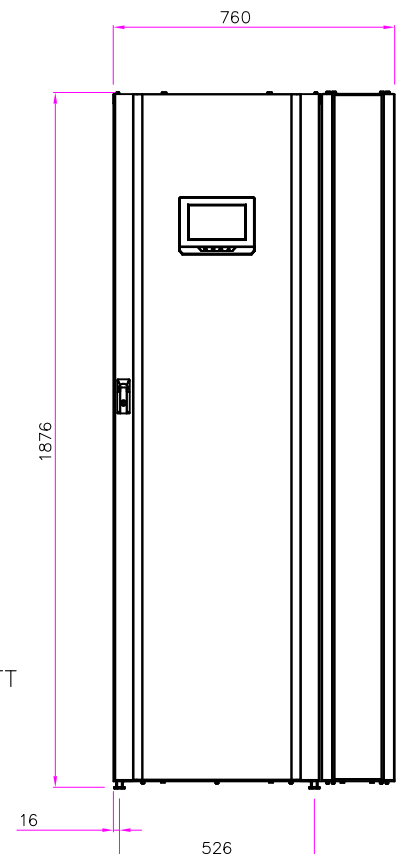
Product Specifications								
UPS Rating		Max Heat Dissipation at 100% Load	Cabinet Dimensions WXD _X H	Shipping Dimensions WXD _X H	Approx. Weight ⁶ Installed	Approx. Weight ⁶ Shipping	Floor Landing	Cooling Air
kVA	kW	kW	mm	mm	kg	kg	kg/m ²	l/s
160	160	5,7	760X914X1876	900X1135X2035	535	590	1050	668
180	162	6,3	760X914X1876	900X1135X2035	535	590	1050	668
200	200	7,5	760X914X1876	900X1135X2035	535	590	1050	668
250	225	8,7	760X914X1876	900X1135X2035	535	590	1050	668



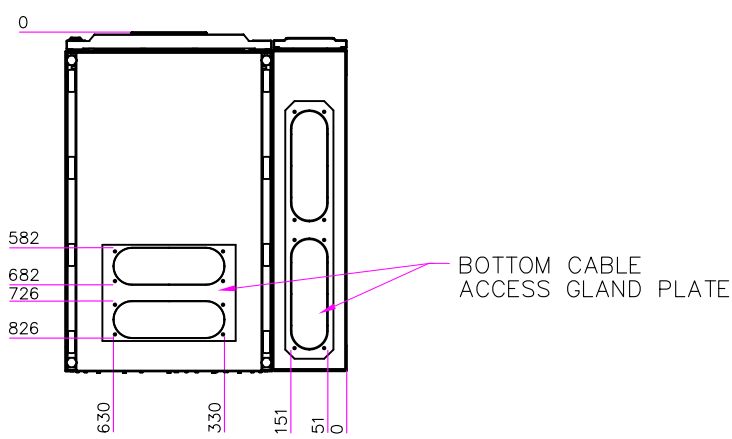
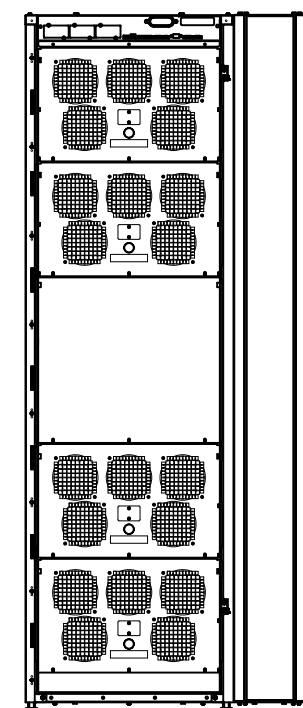
TOP VIEW



LEFT VIEW



FRONT VIEW (DOOR REMOVED)



BOTTOM VIEW

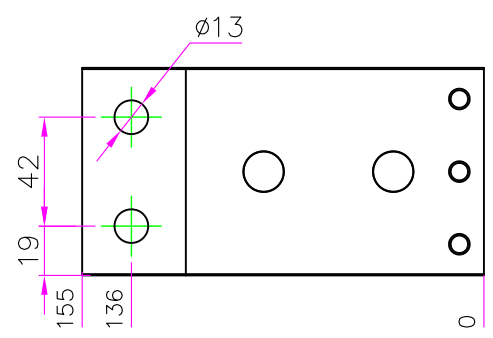
Notes:

- The system must be installed in a temperature and humidity controlled indoor area free of conductive contaminants.
- Continuous ambient temperature range for 93PM unity output pf models: 5–40°C. Maximum relative humidity: 95% non-condensing.
- Continuous ambient temperature range, 93PM 0.9 output pf models, 5–35°C. Maximum relative humidity: 95% non-condensing.
- Minimum overhead clearance for ventilation above the UPS cabinet is 500mm.
- Minimum 900mm clearance in front of the UPS cabinet is required for cooling air intake and servicing space.
- Minimum 300mm of clearance required in the back of the UPS cabinet for normal system. If using top air exhaust kit with the unit then no clearance required from the back.
- When using side integrated MBS cabinet (SIAC-MBS), add 65kg to the total weight and if using Top air exhaust kit add 28kg to the total weight.
- When using side integrated MBS cabinet (SIAC-MBS), add 409mm to the total width and if using top air exhaust kit add 200mm to the total depth. For top cable access kit add 100mm to the total width.
- Cablings may require more space.

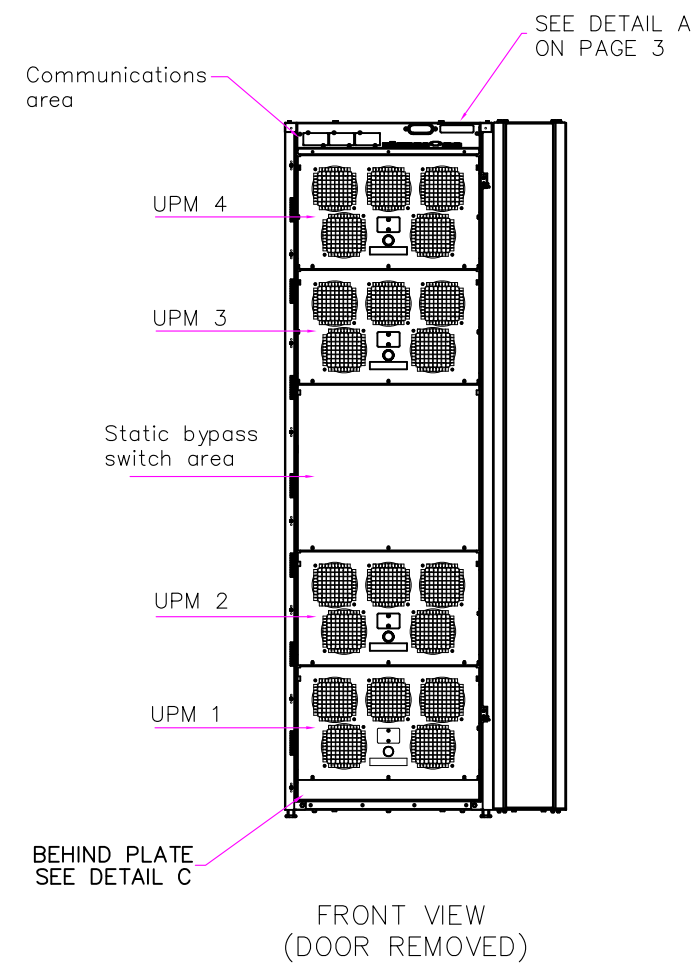
Cabinet Installation Clearances	
From Top of cabinet	500 mm
From Front of cabinet	900 mm
From Back of cabinet ⁵	300 mm

METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		EATON	
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DESCRIPTION: Eaton 93PM 160–250 kVA Dimensional Drawing					
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2
CHECKED: Meron Gerneda	18.04.2018	DOCUMENT TYPE:	P-110000457	STATE: RELEASED	SCALE: 1:14
SAFETY:		AUTOCAD DRAWING			SHEET: 1 OF 11
APPROVED:					
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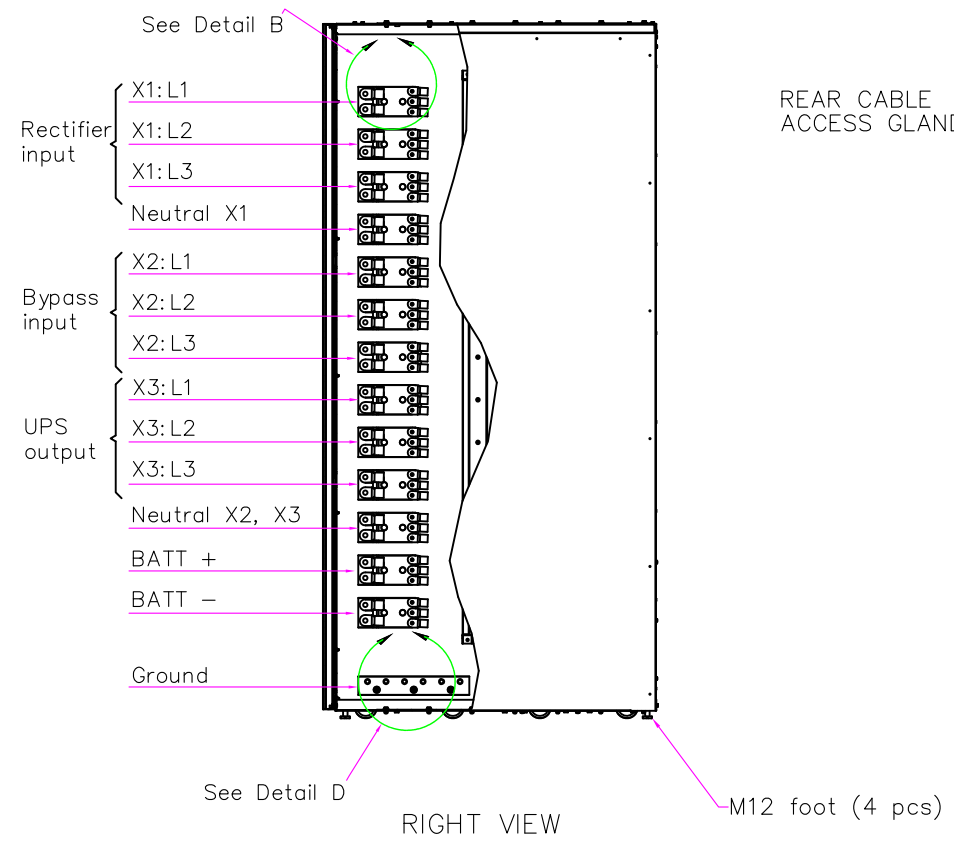
USB host Signal
 Det A
 Sec



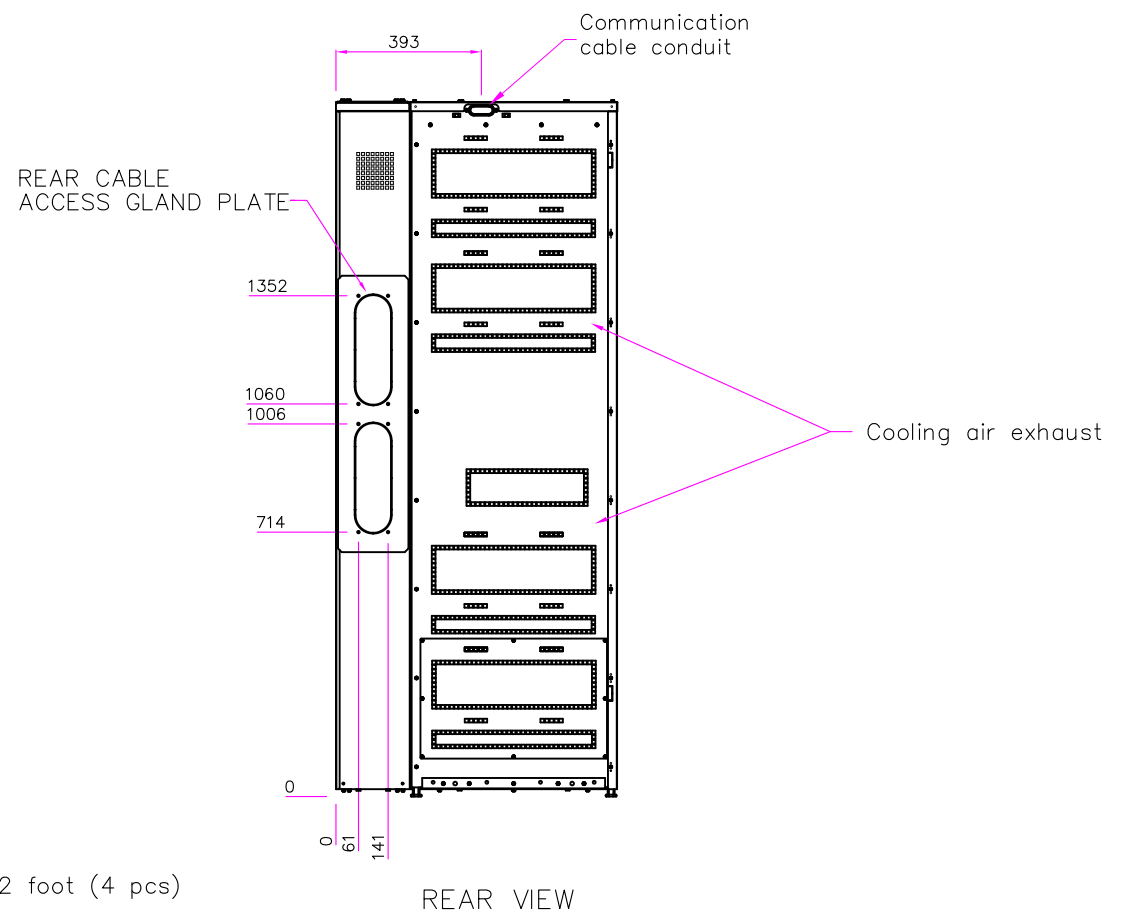
DETAIL B
 SCALE 7:1



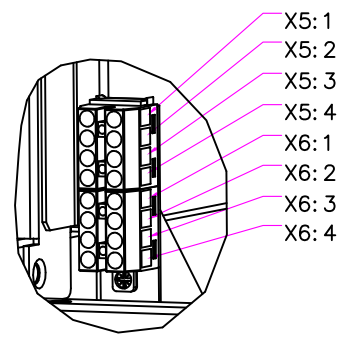
FRONT VIEW
 (DOOR REMOVED)



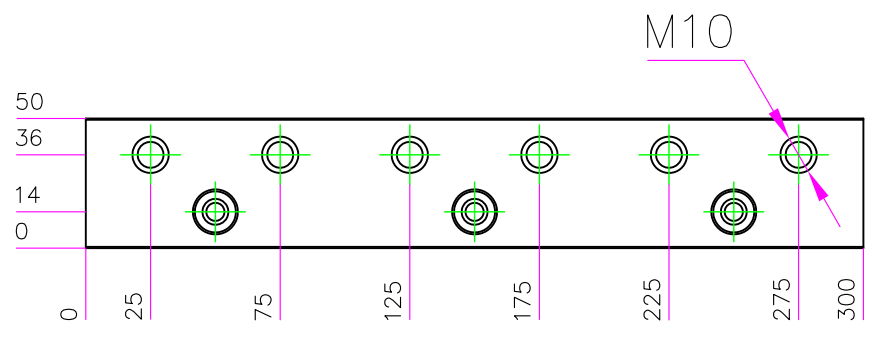
RIGHT VIEW



REAR VIEW



DETAIL C
 BATTERY BREAKER
 SIGNAL CONNECTIONS



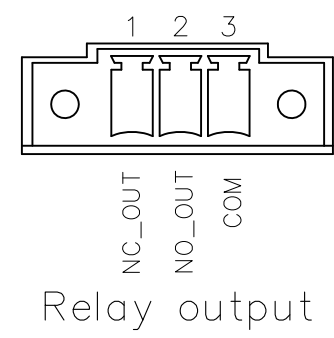
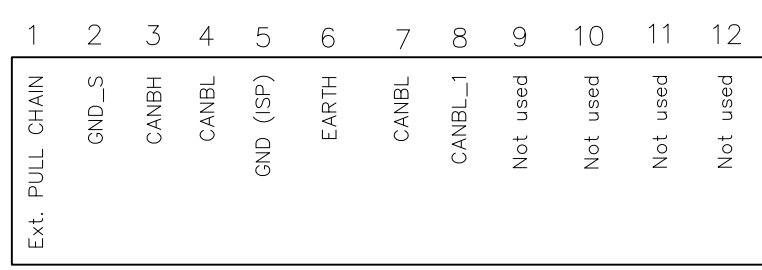
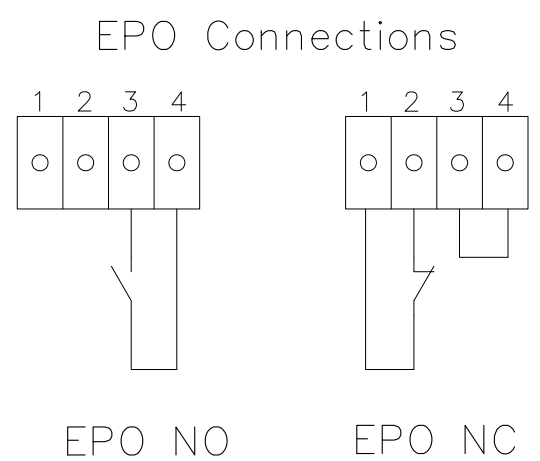
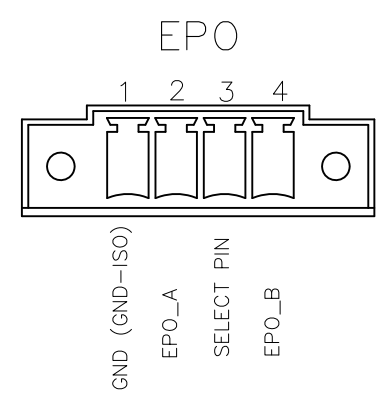
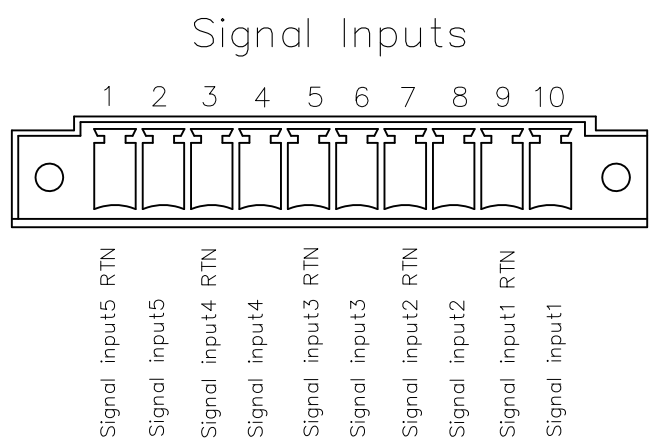
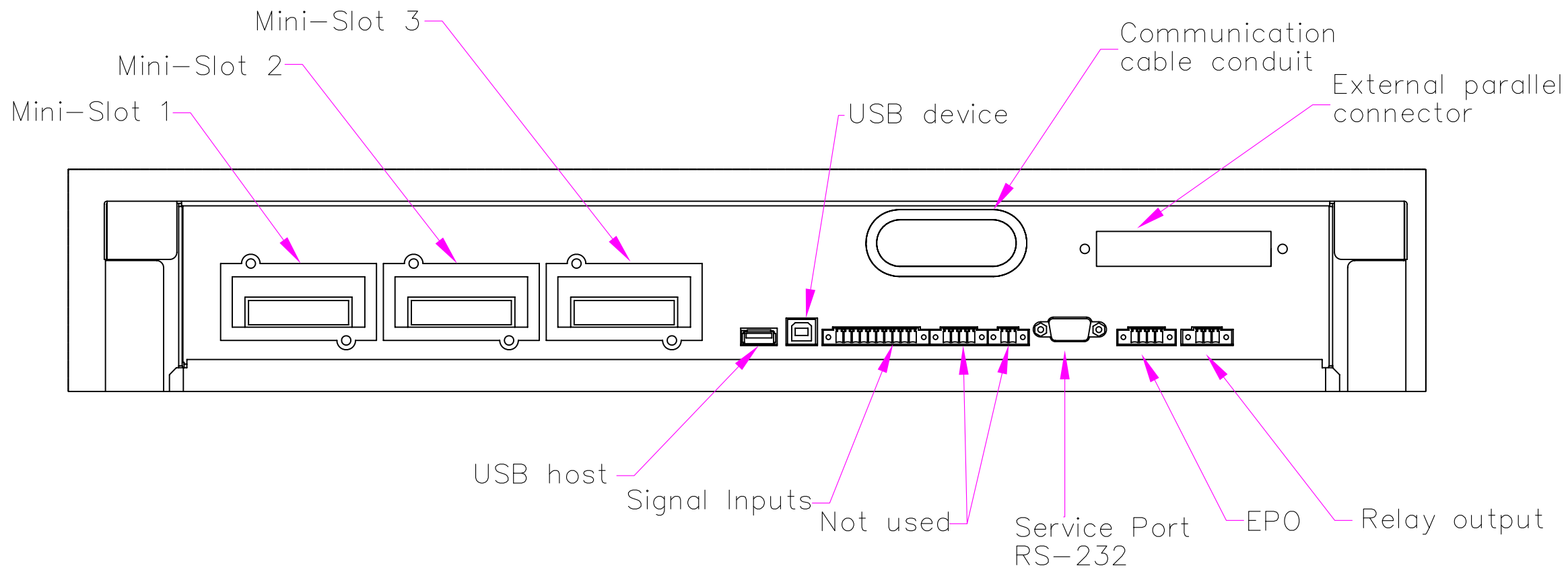
DETAIL D
 SCALE 7:1

Notes:

1. The bus bars are Tin coated and suitable for both Cu and Al connections.
2. M12 size power cable bolts are used for UPS input and output (L1,L2,L3,N) connections. It requires approximately 80Nm of tightening torque.
3. M10 size power cable bolts are used for PE connections and it requires approximately 47Nm of tightening torque.

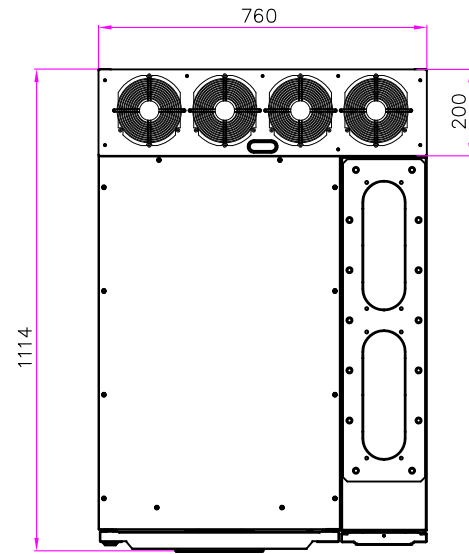
METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION			EATON	
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DESCRIPTION: Eaton 93PM 160-250 kVA Customer Connections								
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2			
CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE: AUTOCAD DRAWING	P-110000457		SCALE: 1:14			
SAFETY:		APPROVED:		STATE: RELEASED	SHEET: 2 OF 11			
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COMMUNICATION AREA (DETAIL A)

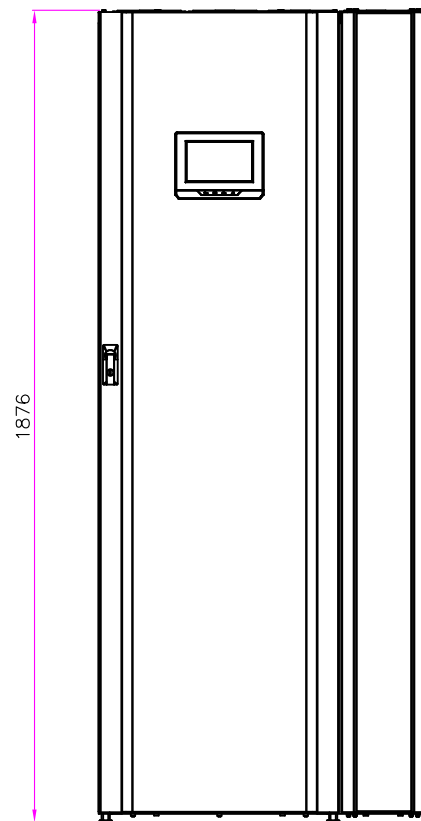


METRIC		EATON CORPORATION			
DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: Eaton 93PM 160-250 kVA Customer Connections Detail View					
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2
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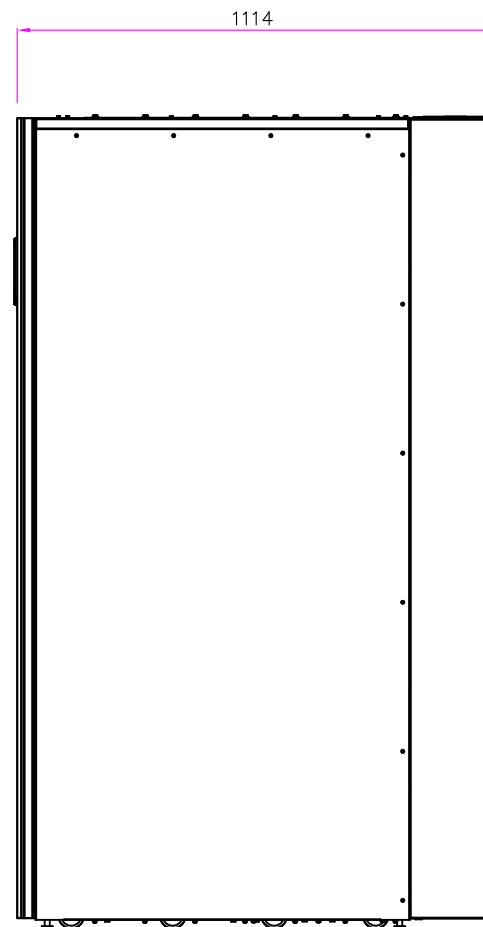
OPTIONAL TOP AIR EXHAUST KIT (FACTORY INSTALLED)



TOP VIEW



FRONT VIEW



RIGHT VIEW

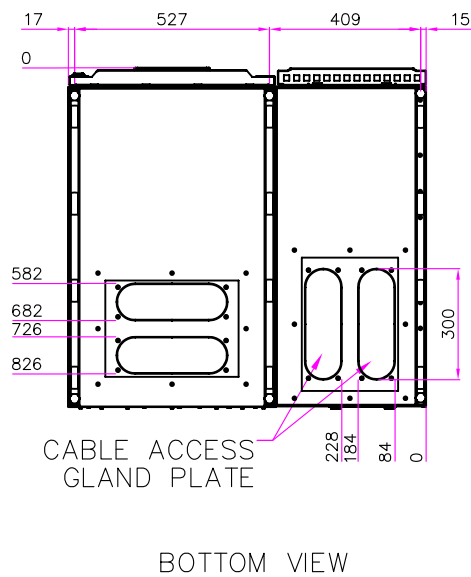
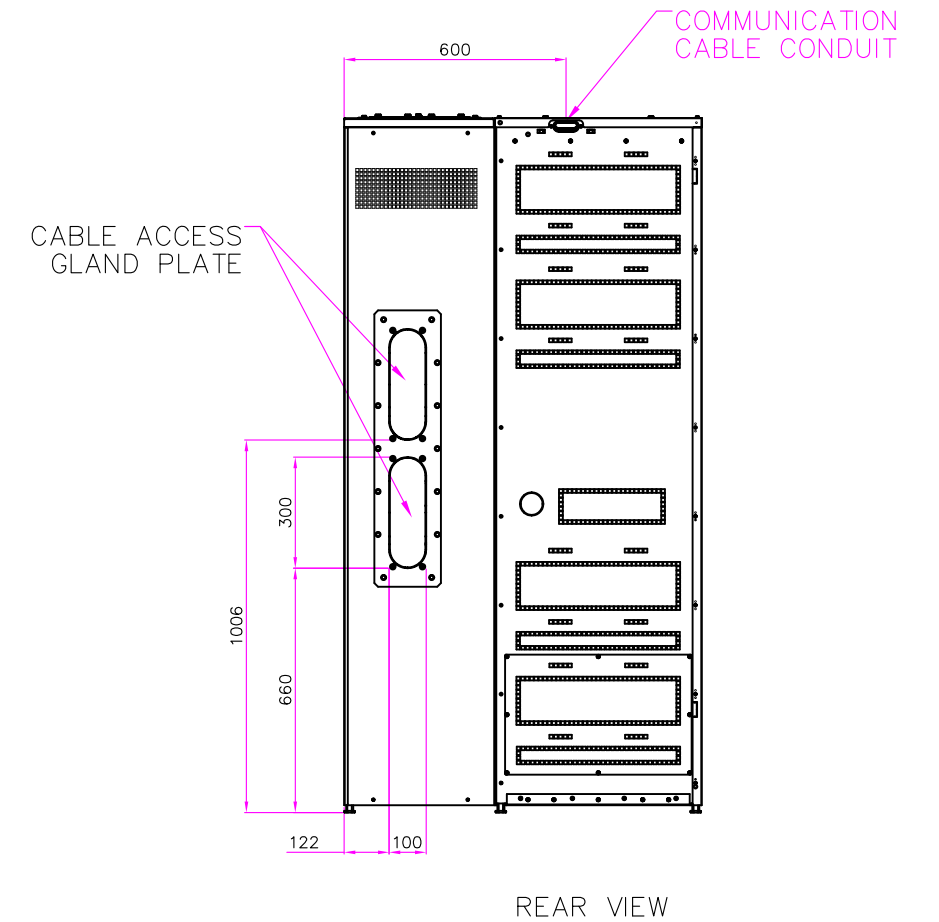
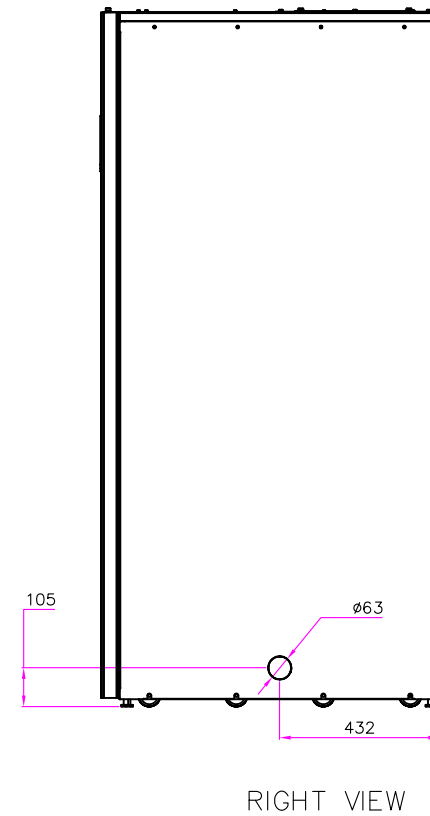
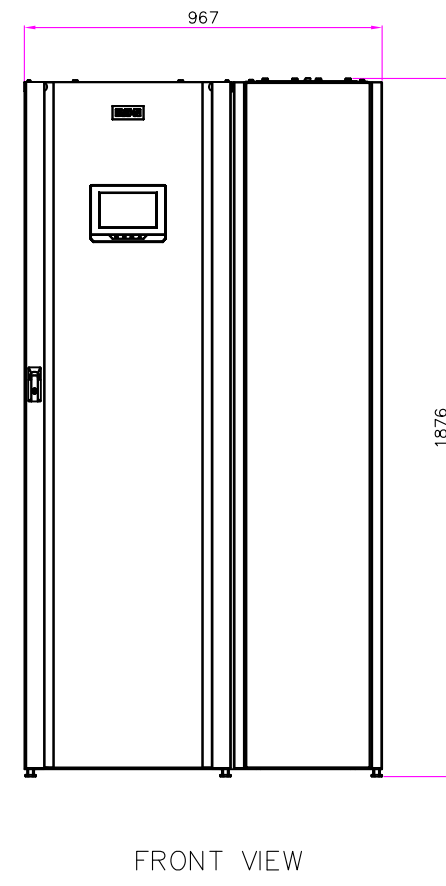
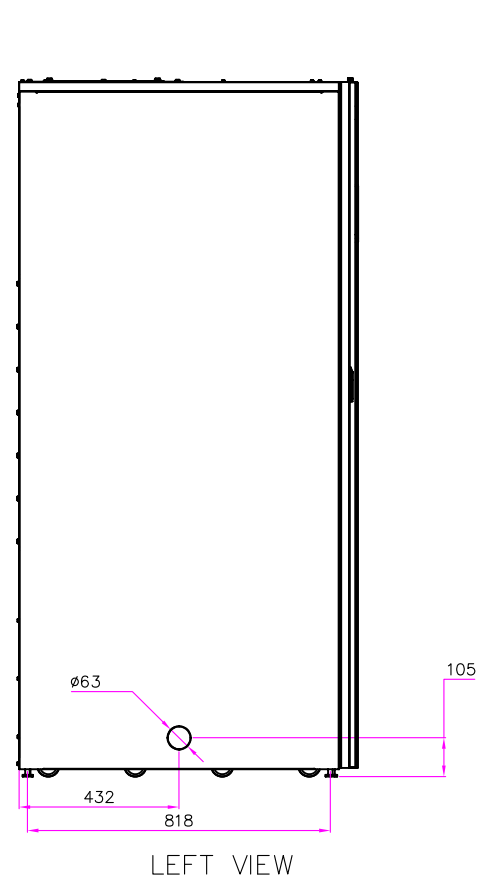
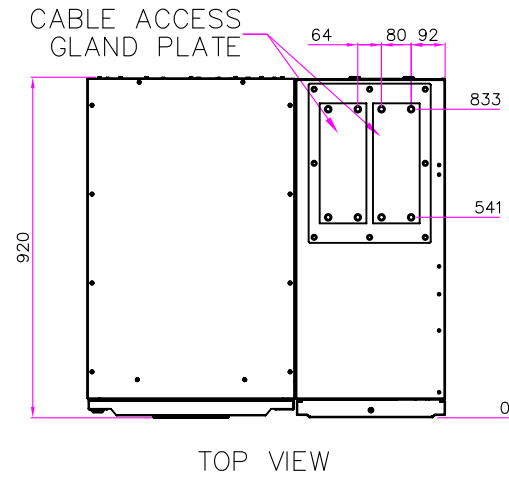
Notes:

1. Minimum 300mm (12in.) of clearance required in the back of the UPS cabinet for normal system. If using top air exhaust kit with the unit then no clearance required from the back.
2. Minimum 500mm (20in.) of clearance required from the top of cabinet.

METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION		EATON	
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DESCRIPTION: Eaton 93PM 160-250 kVA Top Air Exhaust Kit Dimensions							
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CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE:	P-110000457	STATE: RELEASED	SCALE: 1:12		
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EATON 93PM WITH SIAC MBS FACTORY INSTALLED OPTION

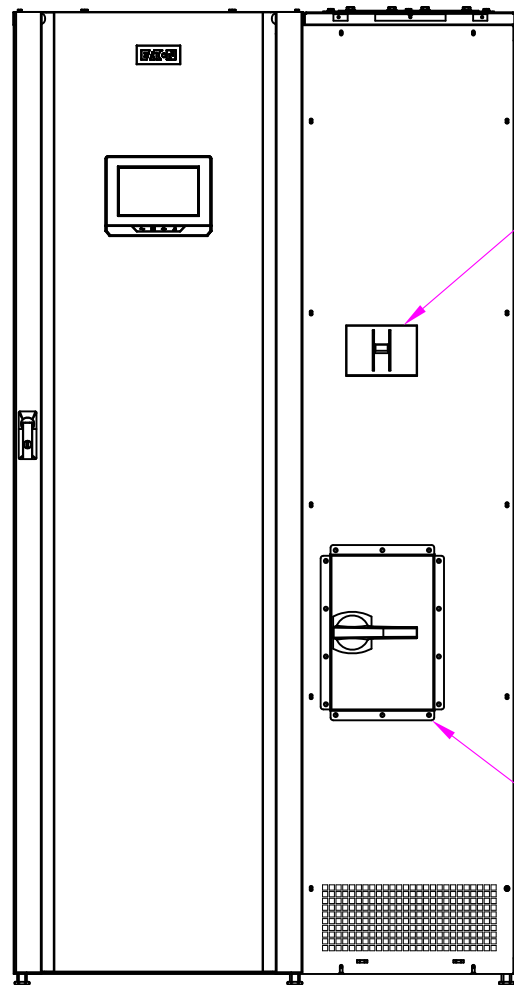


Notes:
1. The total installed weight of ups cabinet when using with SIAC MBS is 600Kg.
*Compatible with Eaton 93PM 160-200 kVA models.

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: Eaton 93PM 160-250 kVA SIAC MBS Dimensional Drawing							
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2		
CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE: AUTOCAD DRAWING	P-110000457		SCALE: 1:14		
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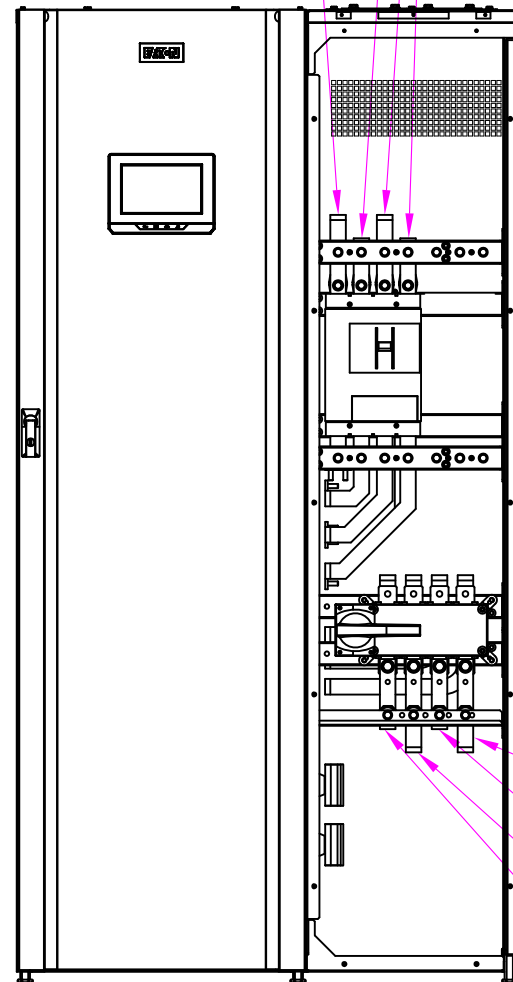
SIAC MBS WITH 3 SWITCHES



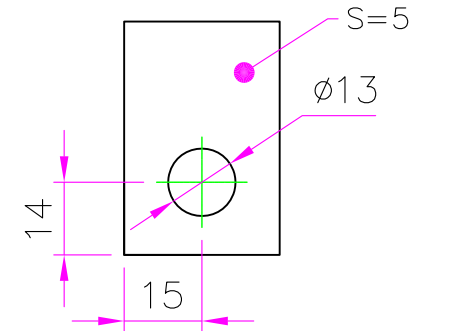
FRONT VIEW
(MBS DOOR REMOVED)

UPS
INPUT BREAKER

MAINTENANCE
BYPASS SWITCH
MIS+MBP



FRONT VIEW
(CUSTOMER CONNECTIONS)



INPUT,OUTPUT CONNECTIONS DETAIL
SCALE 10:1



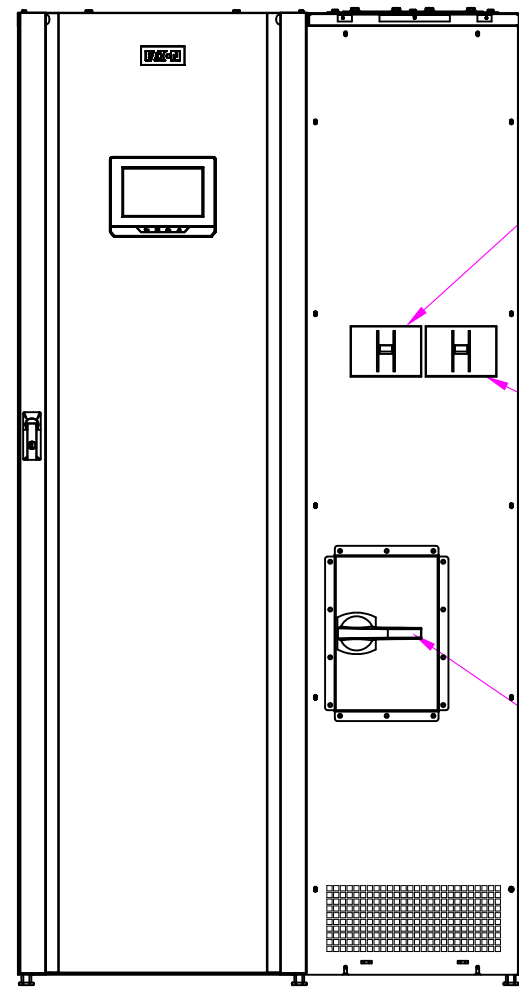
RIGHT VIEW
(BATT AND GROUND CONNECTIONS)

Notes:

1. The bus bars are Tin coated and suitable for both Cu and Al connections.
 2. S shows the thickness of input , output bus bar connections as shown in the detail view.
- *Compatible with Eaton 93PM 160–200 kVA models.

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.							
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ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2		
CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE: AUTOCAD DRAWING	P-110000457		SCALE: 1:10		
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SIAC MBS WITH 4 SWITCHES

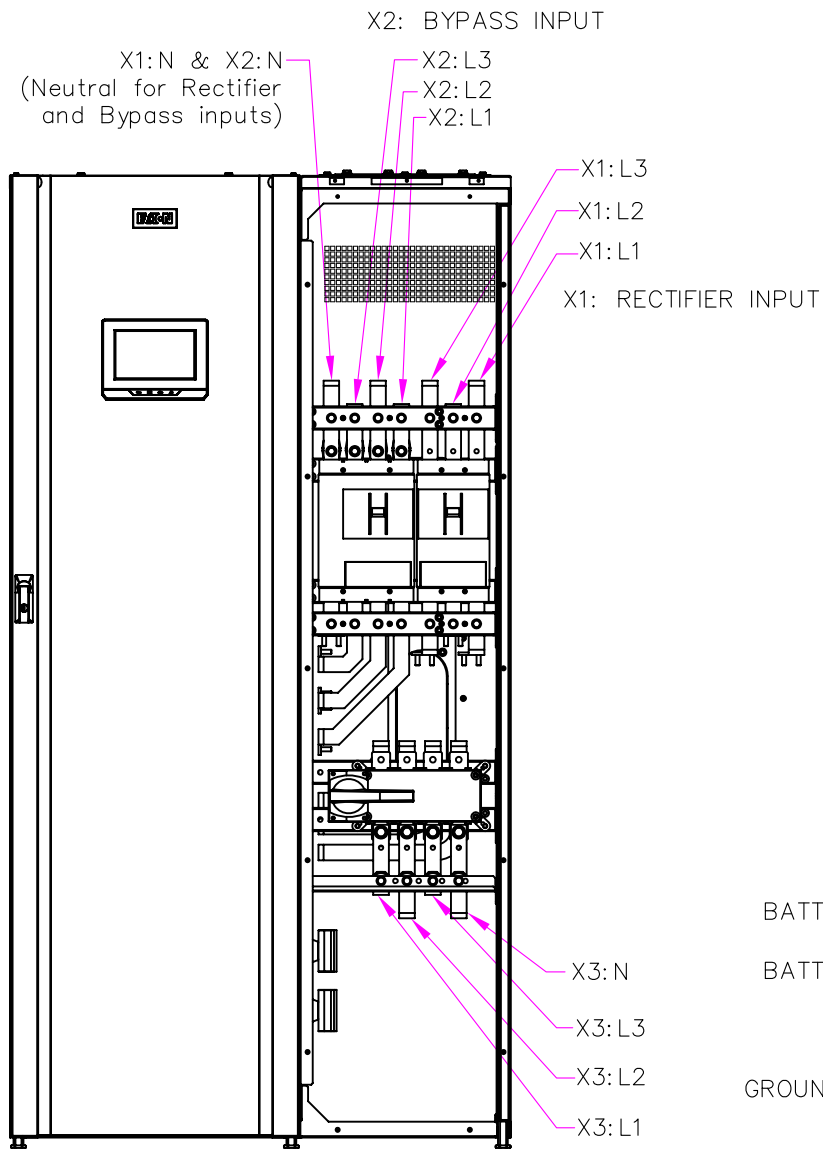


FRONT VIEW
(MBS DOOR REMOVED)

BYPASS
INPUT BREAKER

RECTIFIER
INPUT BREAKER

MAINTENANCE
BYPASS SWITCH
(MIS+MBP)



FRONT VIEW
(CUSTOMER CONNECTIONS)

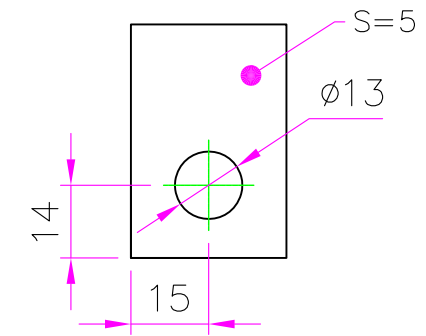
X2: BYPASS INPUT

X1:N & X2:N
(Neutral for Rectifier
and Bypass inputs)

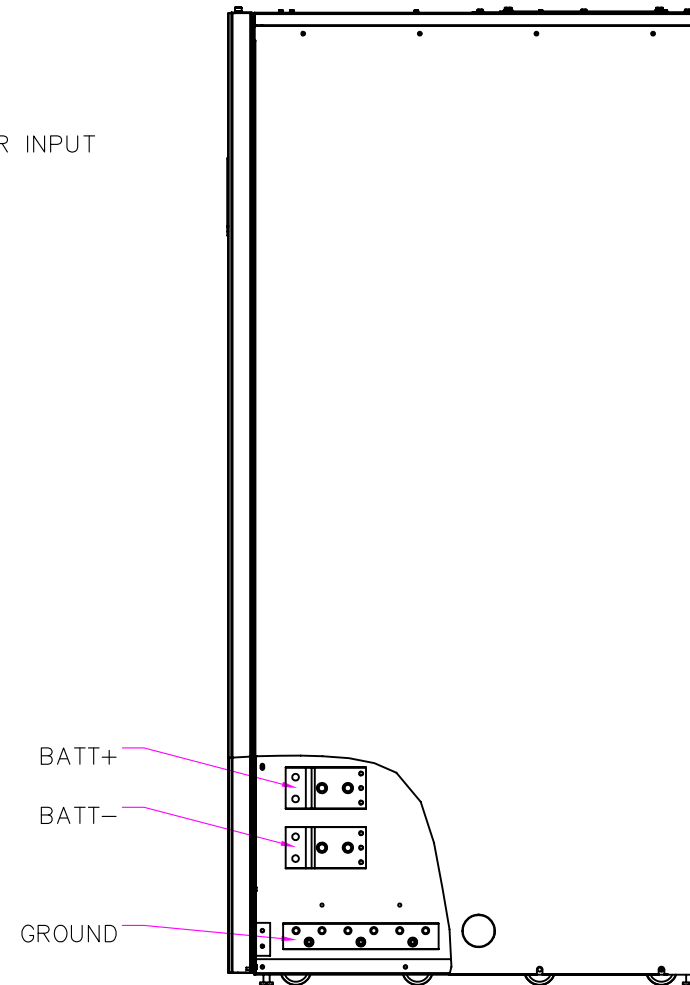
X2:L3
X2:L2
X2:L1

X1:L3
X1:L2
X1:L1
X1: RECTIFIER INPUT

X3: N
X3: L3
X3: L2
X3: L1
X3: UPS OUTPUT



INPUT,OUTPUT CONNECTIONS DETAIL
SCALE 10:1



RIGHT VIEW
(BATT AND GROUND CONNECTIONS)

BATT+

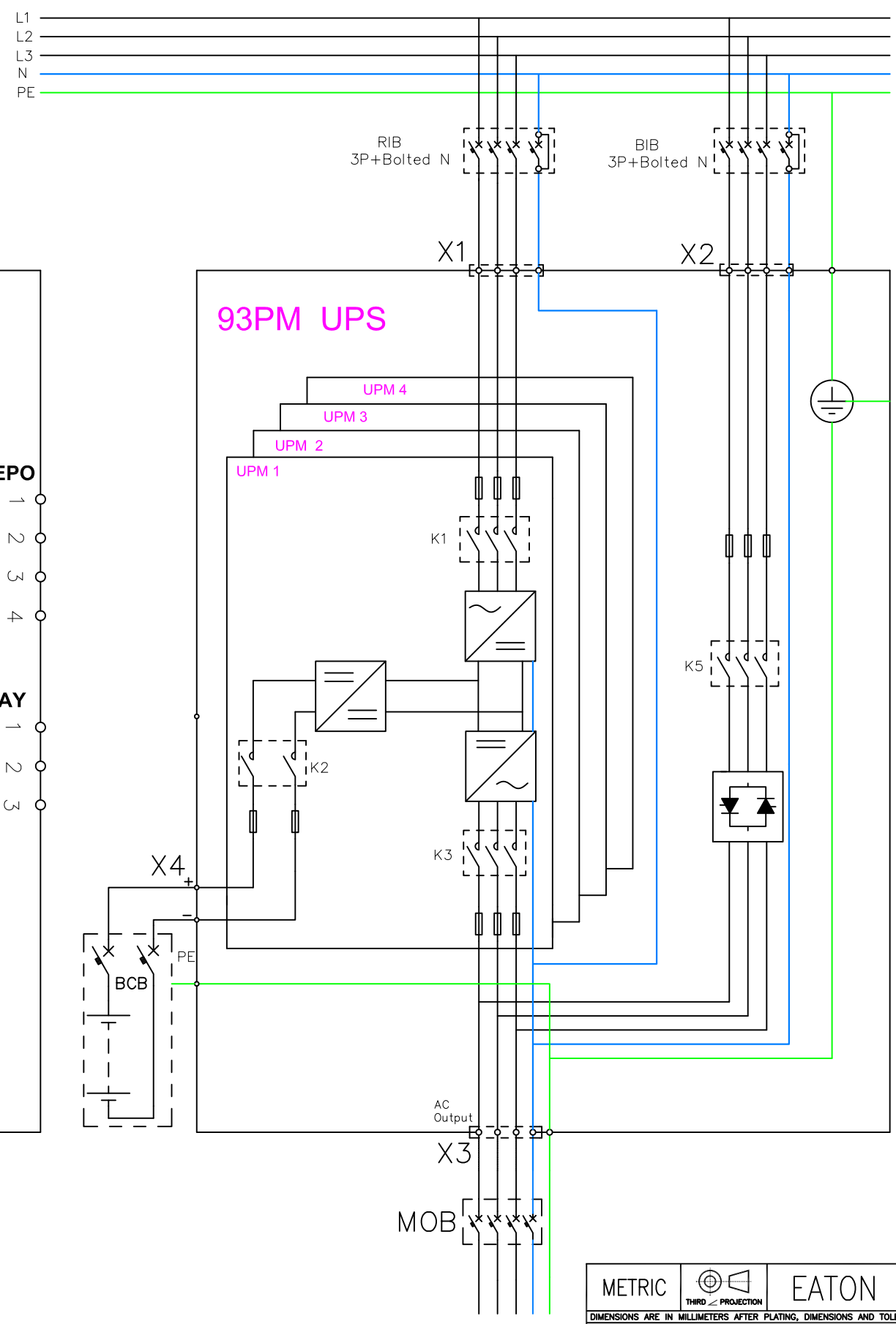
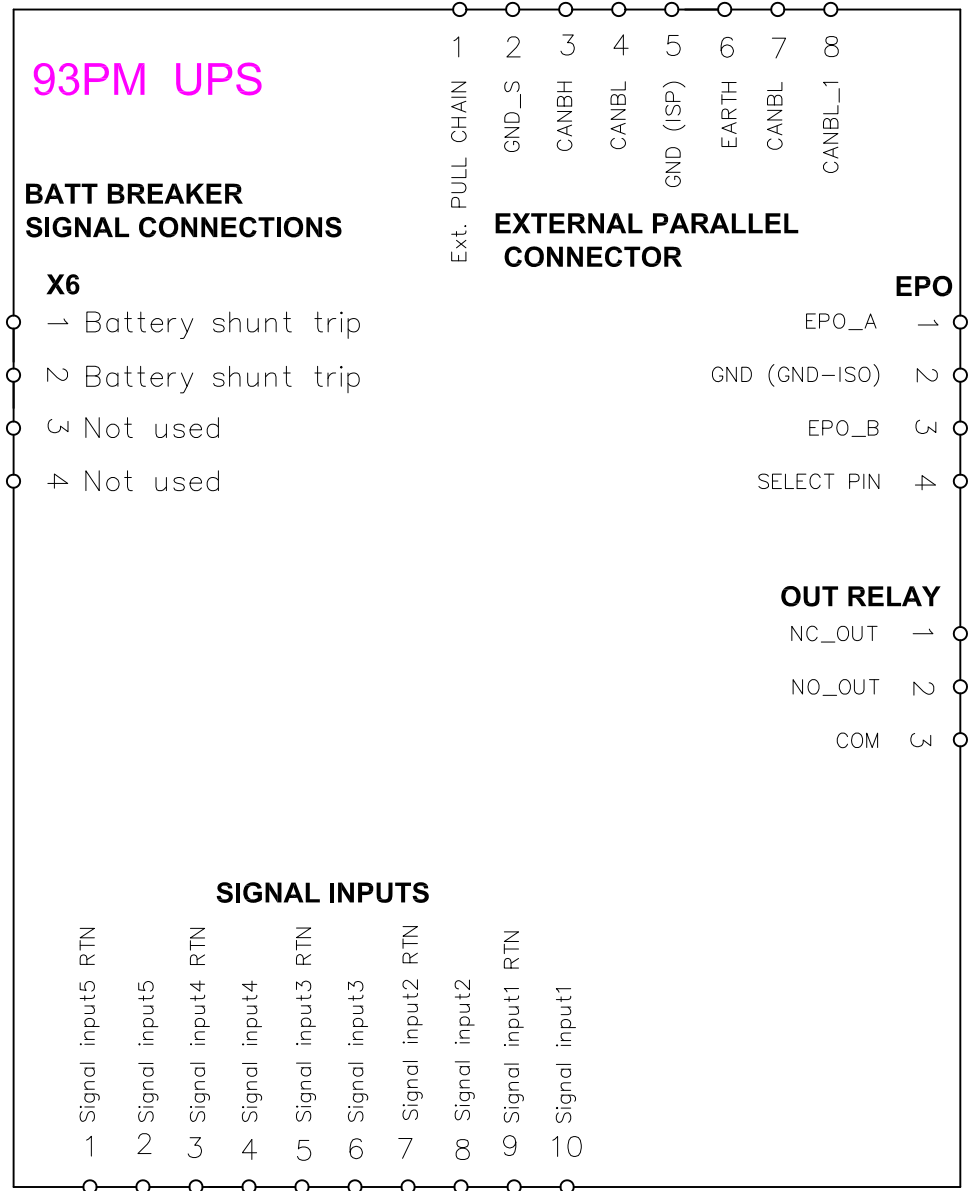
BATT-

GROUND

Notes:

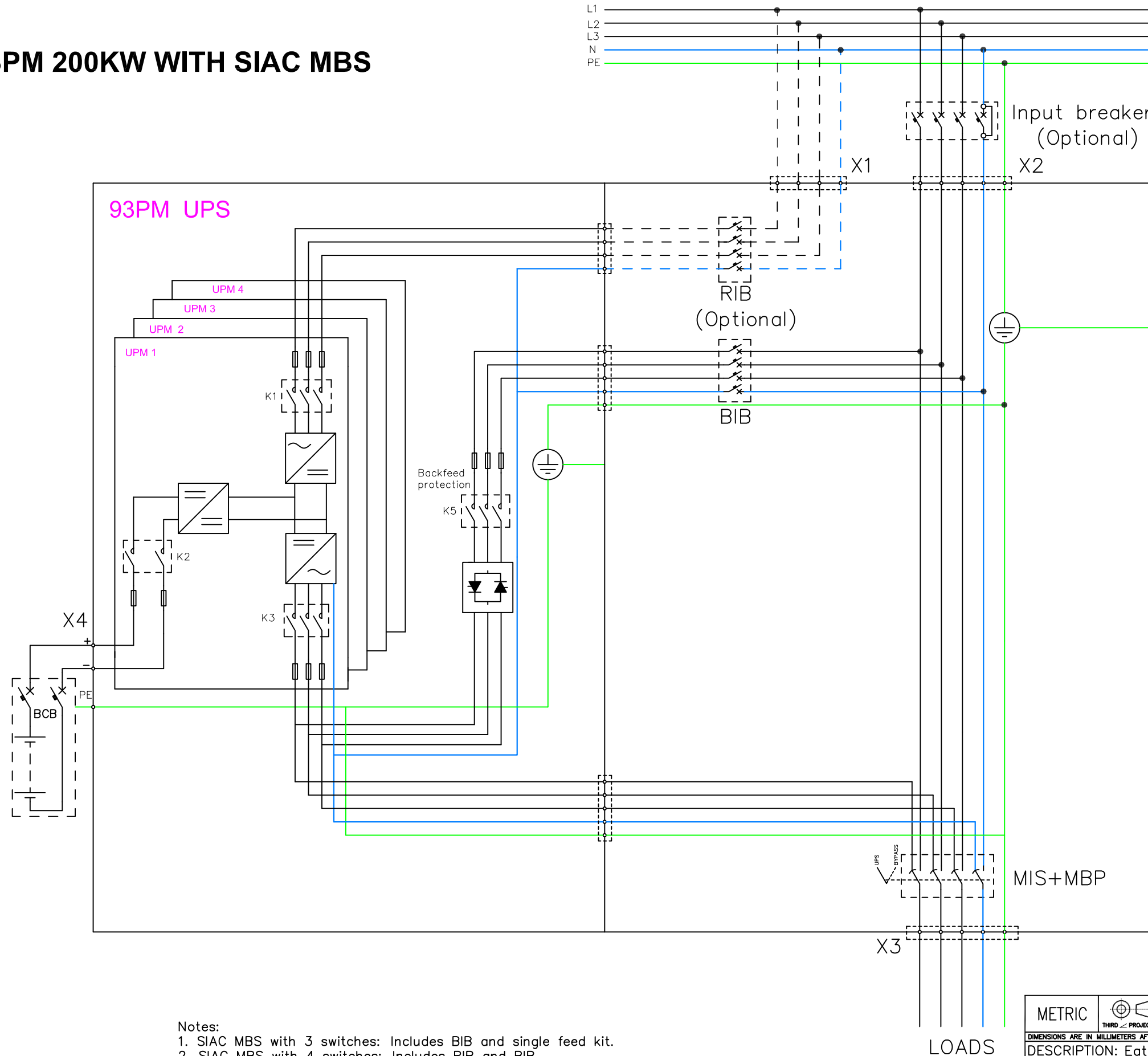
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- *Compatible with Eaton 93PM 160-200 kVA models.

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CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE: AUTOCAD DRAWING	P-110000457		SCALE: 1:10			
SAFETY:		RELEASED	7 OF 11					
APPROVED:								
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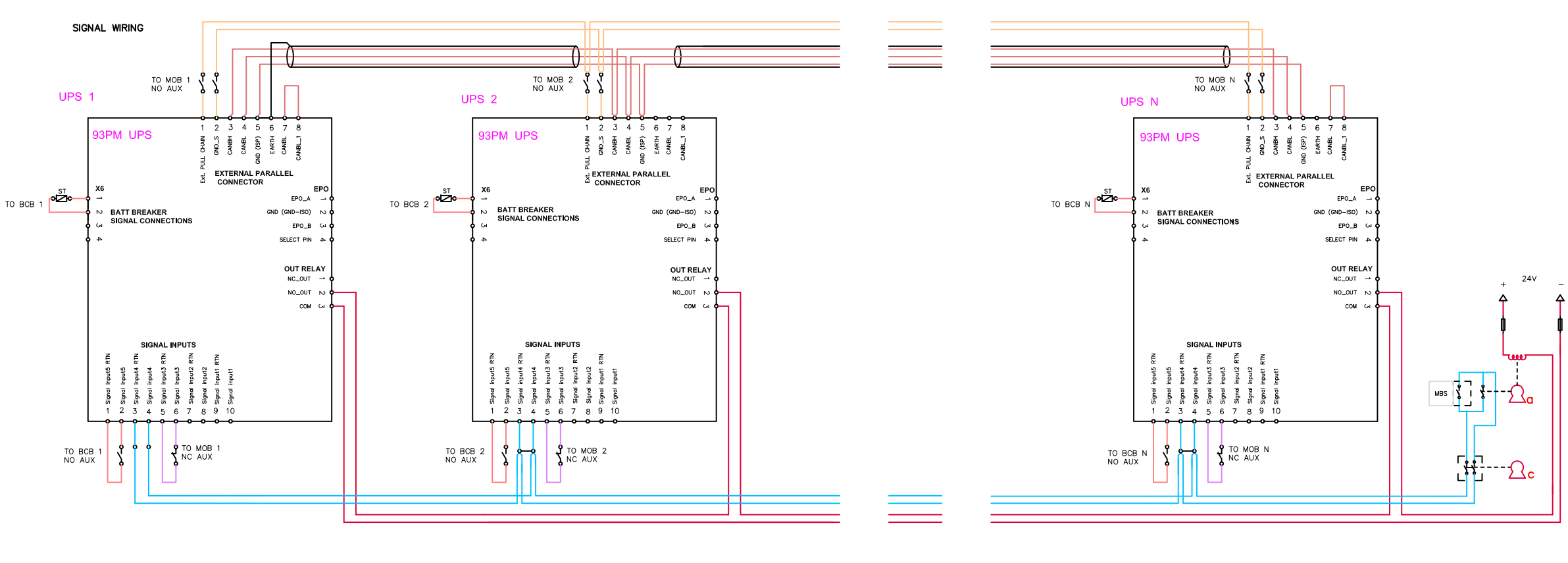
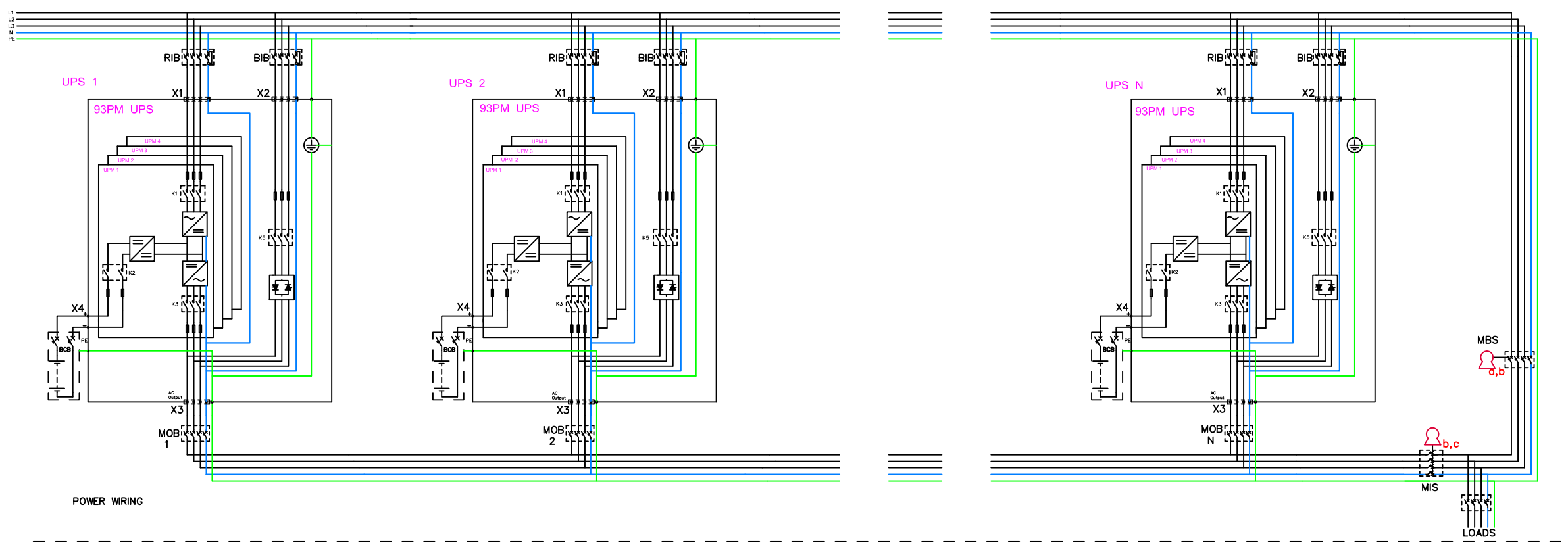
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DIMENSIONS ARE IN MILLIMETERS AFTER PLATING, DIMENSIONS AND TOLERANCES IN ACCORDANCE WITH ASME Y14.5M-1994. SEE NOTES FOR TOLERANCES.					
DESCRIPTION: Eaton 93PM 160-250 kVA Wiring Single Unit					
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2
CHECKED: Atif Rasheed	21.08.2017	DOCUMENT TYPE:	P-110000457	STATE: RELEASED	SCALE: 1:20
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93PM 200KW WITH SIAC MBS



- Notes:
1. SIAC MBS with 3 switches: Includes BIB and single feed kit.
 2. SIAC MBS with 4 switches: Includes RIB and BIB.

METRIC		EATON CORPORATION		EATON	
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DESCRIPTION: Eaton 93PM 160-250 kVA Electrical Wiring With SIAC MBS					
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2
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- MBS STATUS (Provided by others, Installed by others)
Twisted pair (if possible, else shielded)
No earth needed
 - MOB STATUS (Provided by others, Installed by others)
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)
Provided by others, Installed by others
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

METRIC		EATON CORPORATION		EATON	
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DESCRIPTION: Eaton 93PM 160-250 kVA Wiring Parallel Units					
ORIGINATED: Atif Rasheed	03.08.2015	ECO:	NAME:	REVISION: 003	SIZE: A2
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Eaton 93PM 160-250 kVA UPS Site Planning Data

Product Specifications																			
UPS Rating		AC Input		3P+Bolted N Rectifier Input Breaker (RIB)		3P+Bolted N Bypass Input Breaker (BIB)		4P Inverter AC output Breaker MOB			Battery Breaker (BCB) (Ratings at 36 blocks string length)						For Parallel Units Common Maintenance Bypass Switch (MBS)		
				Nominal Current	Maximum Current	Nominal Current at 400v Input	Integrated Bypass Fuse				AC Output	Output Current	Inverter Short Circuit Current	Auxiliary Switches	Rating	Separate Battery Configuration (UPM Battery)		Common Battery Configuration (UPS Battery)	
kVA	kW	V	A	A	A	Type	V	A	A / 400ms	Qty	VDC	Rated current (A) per UPM	Maximum current (A) per UPM	Rated current (A)	Maximum current (A)	VDC	Qty	A	Qty
160	160	400	225	304	232	Bussmann 900A 170M4419	400	232	670	2	500	111	141	355	507	24	1	231 x N	1
180	162	400	280	302	261	Bussmann 900A 170M4419	400	261	670	2	500	N/A	N/A	359	410	24	1	261 x N	1
200	200	400	315	380	290	Bussmann 900A 170M4419	400	290	670	2	500	11	141	443	563	24	1	290 x N	1
250	225	400	386	420	362	Bussmann 900A 170M4419	400	362	670	2	500	N/A	N/A	499	570	24	1	362 x N	1

Notes:

1. Rectifier AC input current calculations: Nominal, 100% load with full charging;
2. Maximum AC input calculations: Rectifier current limit.
3. Inverter AC output current calculation: Nominal, 100% rated load.
4. The system must be installed on a level floor suitable for computer or electronic equipment.
5. All wiring and installations must be in accordance with applicable National and Local Electric Regulations.
6. 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.
7. All breakers should be adjusted according to the specified Ampere values to protect the UPS and installation.
8. For UPS installation that utilizes single feed input, the input breaker should be configured according to the rated rectifier input current..
9. Specifications are subject to change.

METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		
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