



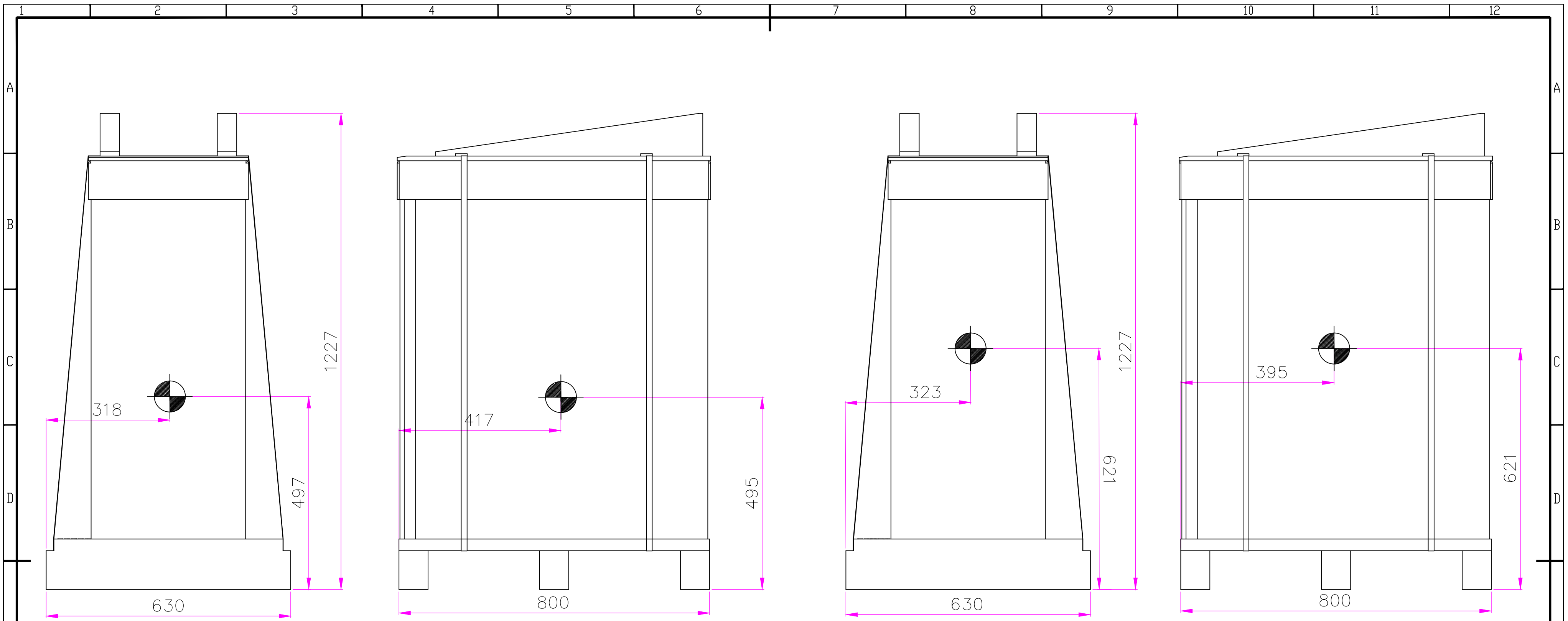
Powering Business Worldwide



### SITE PLANNING DATA Eaton 91PS 8-10 kW

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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 91PS 8-10 kW				
ORIGINATED: MERON GEMEDA	04.05.2018	ECO:	NAME:	REVISION: 01
MODIFIED:			P-110000656	SCALE: N/A
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COG(Center of Gravity) dimensions with internal batteries

COG(Center Of Gravity) dimensions without 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=318 mm, Y=417 mm, Z=495 mm including batteries and X=323 mm, Y=395 mm, Z=621 mm without batteries.
3. Store the unit in a 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. Units without batteries can be stored in -25°C to +55°C without risk of immediate damage.
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.

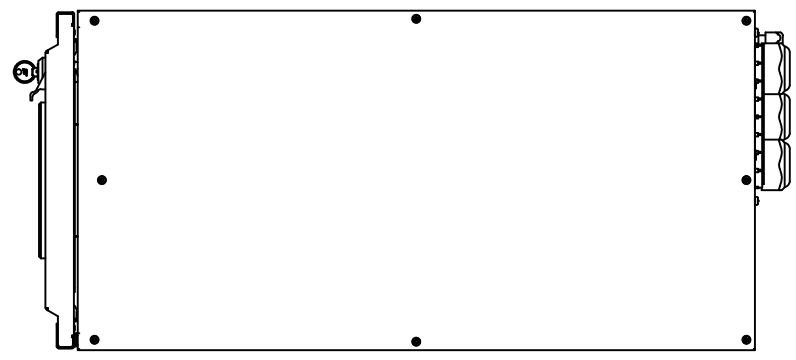
Product Specifications				
UPS Rating		Shipping Dimensions W x D x H	Approx. Weight Shipping with Batteries	Approx. Weight Shipping without Batteries
kVA	kW	mm	kg	kg
8-10	8-10	630 x 800 x 1230	188	98

METRIC		EATON CORPORATION		
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DESCRIPTION: Eaton 91PS 8-10 kW Packaging Dimensions				
ORIGINATED: MEORN GEMEDA	04.05.2018	ECO:	NAME:	REVISION: 01
MODIFIED:		DOCUMENT TYPE:	P-110000656	SCALE: 1:8
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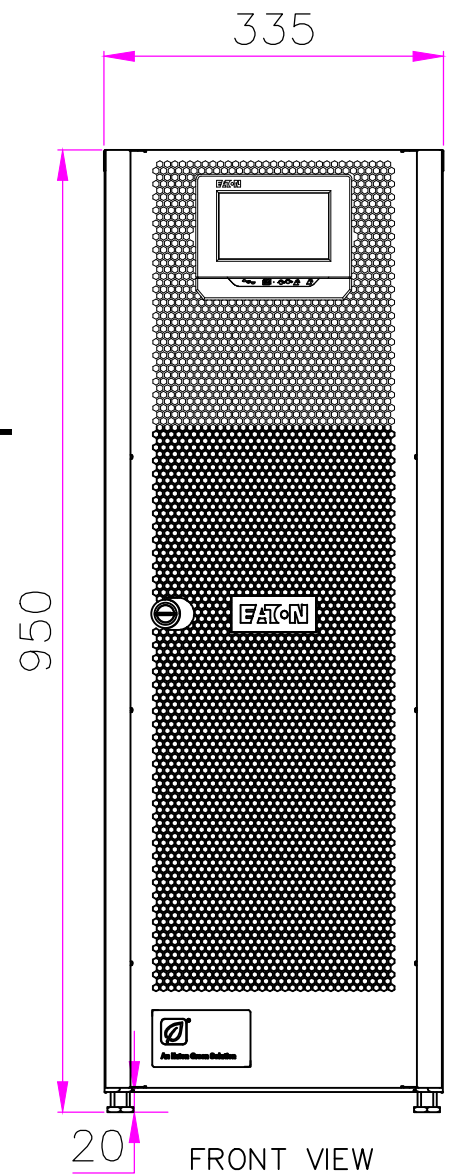


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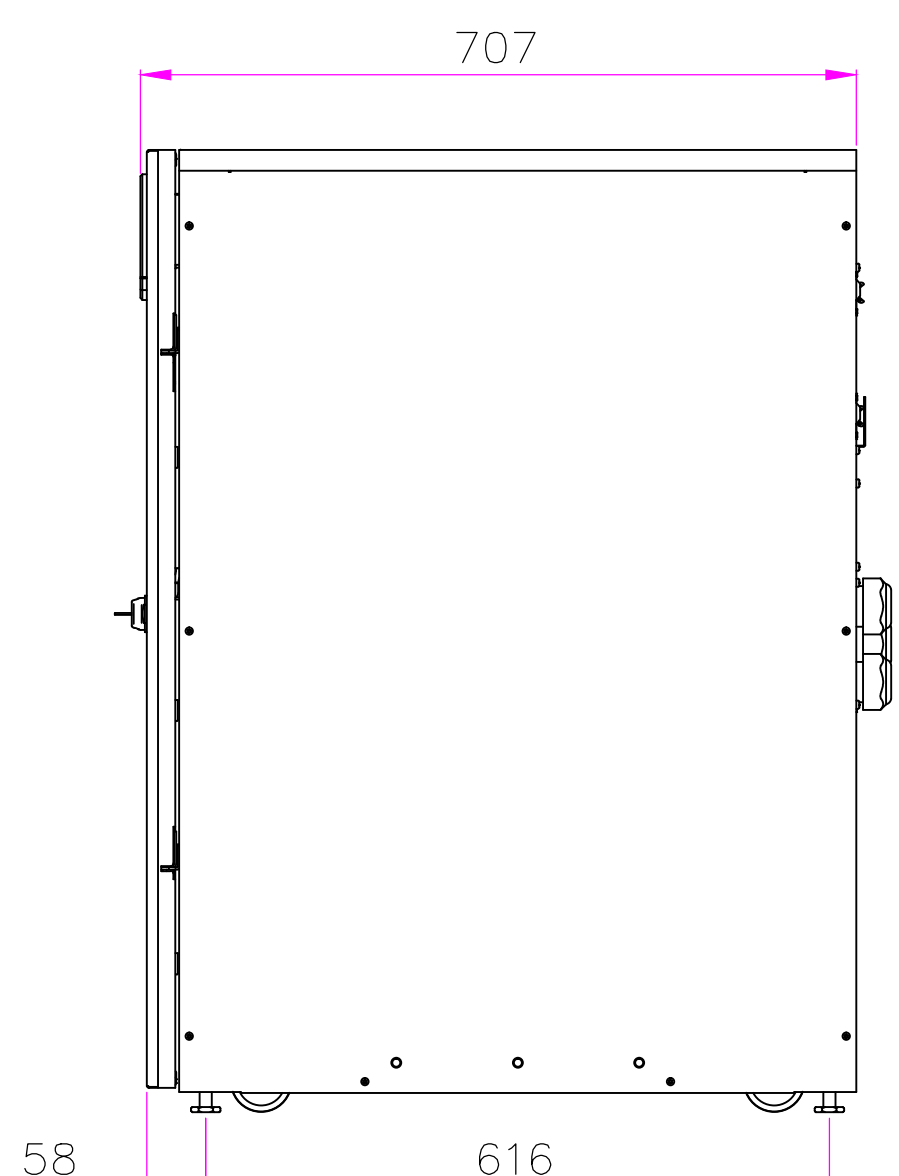
Product Specifications										
UPS Rating		Max Heat Dissipation at 100% Load	Cabinet Dimensions W x D x H	Shipping Dimensions W x D x H	Approx. Weight Cabinet With Batteries	Approx. Weight Cabinet without Batteries	Approx. Weight Shipping with Batteries	Approx. Weight Shipping without Batteries	Floor Landing	Cooling air
kVA	kW	W	mm	mm	kg	kg	kg	kg	kg/m <sup>2</sup>	l/s
8	8	368	335 x 750 x 950	630 x 800 x 1230	163	73	188	98	700	30
10	10	460	335 x 750 x 950	630 x 800 x 1230	163	73	188	98	700	30



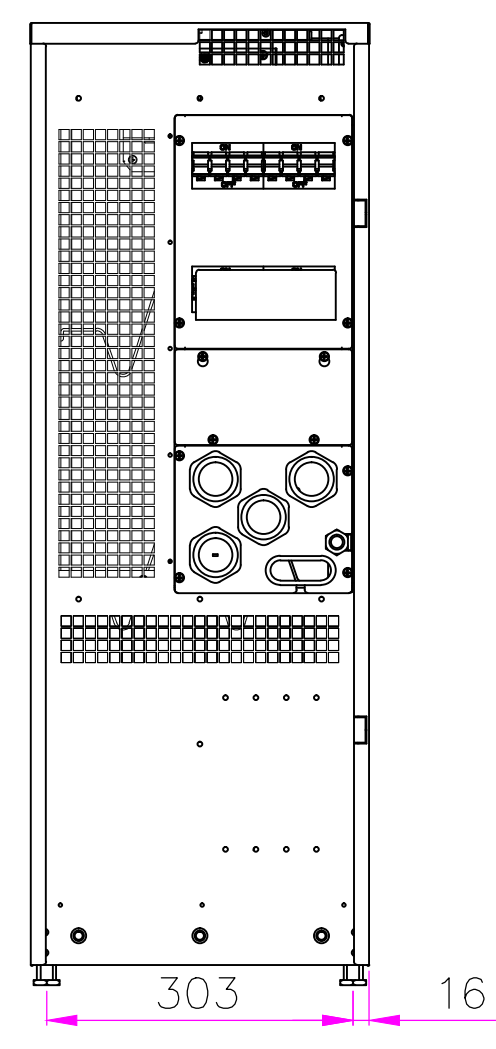
TOP VIEW



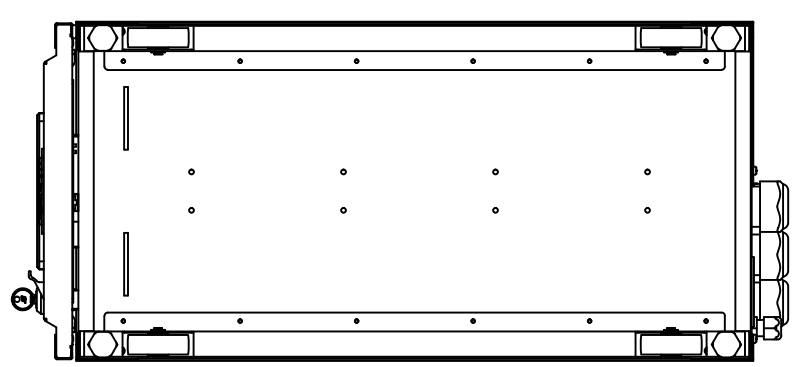
FRONT VIEW



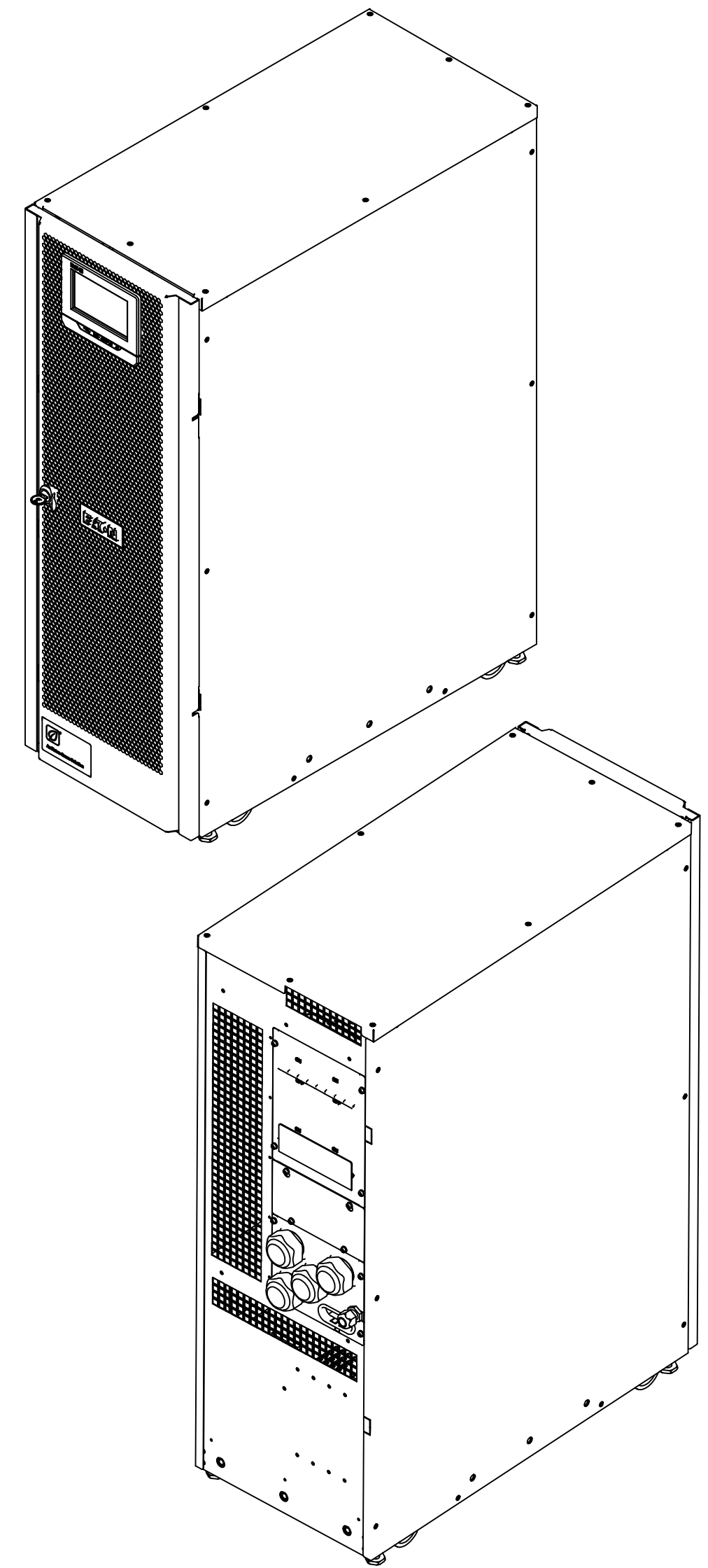
RIGHT VIEW



REAR VIEW



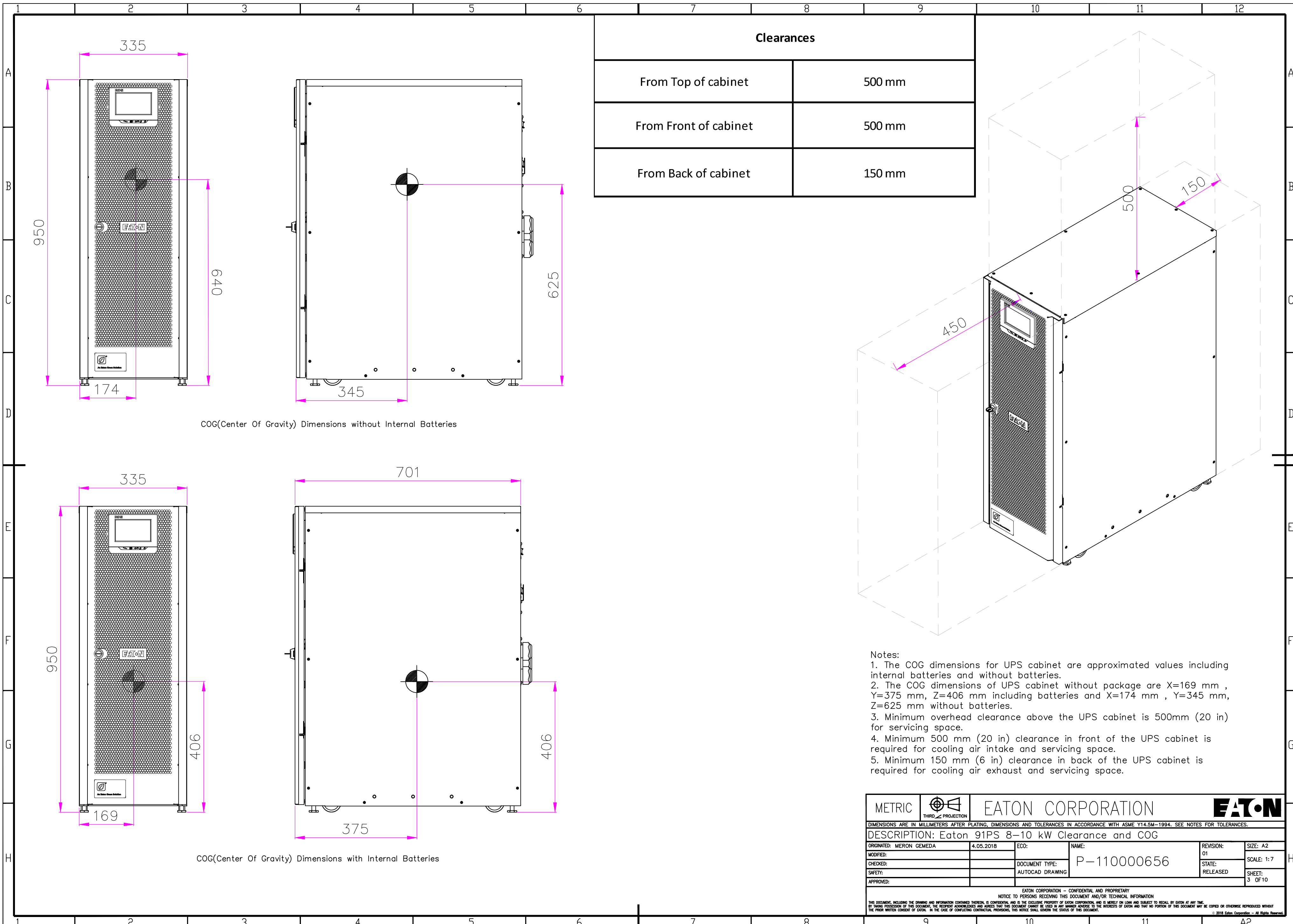
BOTTOM VIEW



- 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 (32–104F); Maximum relative humidity: 95% non-condensing.
  3. The UPS can be installed in line-up-and-match or standalone configurations.
  4. The rear cable entries through the removable access gland plate are standard. Access plates shall be custom-modified to suit conduit sizes.
  5. Ensure the necessary minimum air flow rate of 1,5 m<sup>3</sup>/h for internal batteries to avoid explosive gas mixture that can be created if the hydrogen concentration exceeds 4% by volume in air.
  6. For larger batteries, the ventilation air flow must be recalculated.

METRIC		THIRD ANGLE PROJECTION		EATON CORPORATION			
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DESCRIPTION: Eaton 91PS 8-10 kW Dimensional Drawing							
ORIGINATED: MERON GEMEDA	04.05.2018	ECO:	NAME:	REVISION: 01	SIZE: A2	SCALE: 1:7	
MODIFIED:				STATE: RELEASED	SHEET: 2 OF 10		
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1 2 3 4 5 6 7 8 9 10 11 12 A2



COG(Center Of Gravity) Dimensions without Internal Batteries

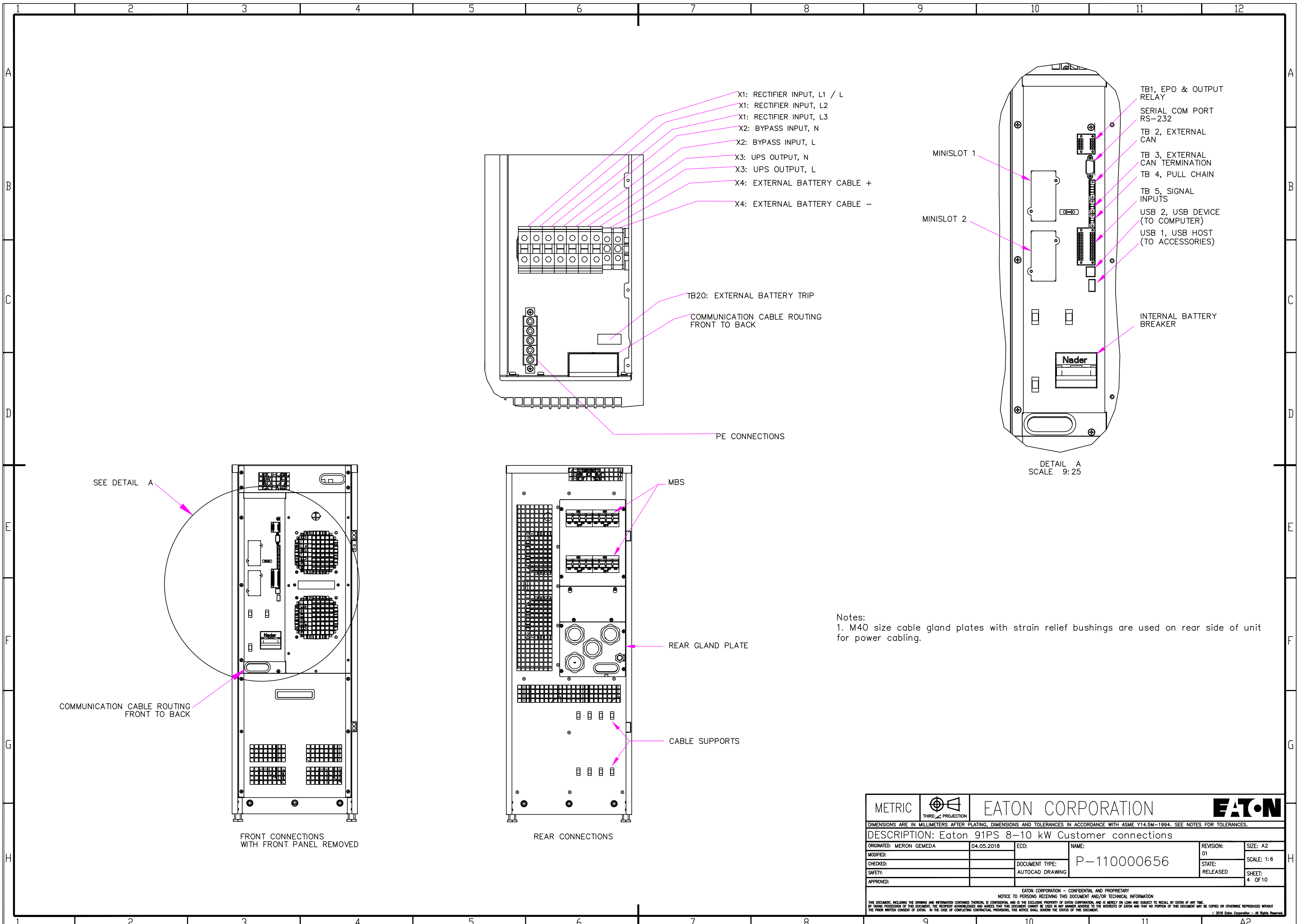
COG(Center Of Gravity) Dimensions with Internal Batteries

Clearances	
From Top of cabinet	500 mm
From Front of cabinet	500 mm
From Back of cabinet	150 mm

- Notes:
- The COG dimensions for UPS cabinet are approximated values including internal batteries and without batteries.
  - The COG dimensions of UPS cabinet without package are X=169 mm , Y=375 mm , Z=406 mm including batteries and X=174 mm , Y=345 mm , Z=625 mm without batteries.
  - Minimum overhead clearance above the UPS cabinet is 500mm (20 in) for servicing space.
  - Minimum 500 mm (20 in) clearance in front of the UPS cabinet is required for cooling air intake and servicing space.
  - Minimum 150 mm (6 in) clearance in back of the UPS cabinet is required for cooling air exhaust and servicing space.

METRIC	THIRD ANGLE PROJECTION	EATON CORPORATION		
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DESCRIPTION: Eaton 91PS 8-10 kW Clearance and COG				
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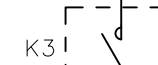
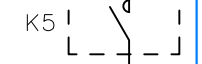
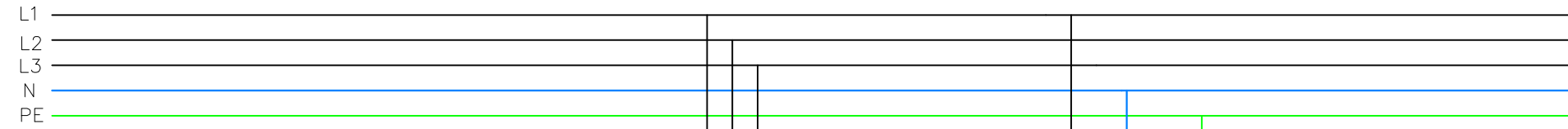


Notes:  
 1. M40 size cable gland plates with strain relief bushings are used on rear side of unit for power cabling.

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DESCRIPTION: Eaton 91PS 8-10 kW Customer connections							
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# 3:1 CONFIGURATION

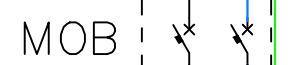
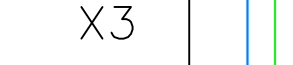


91PS UPS

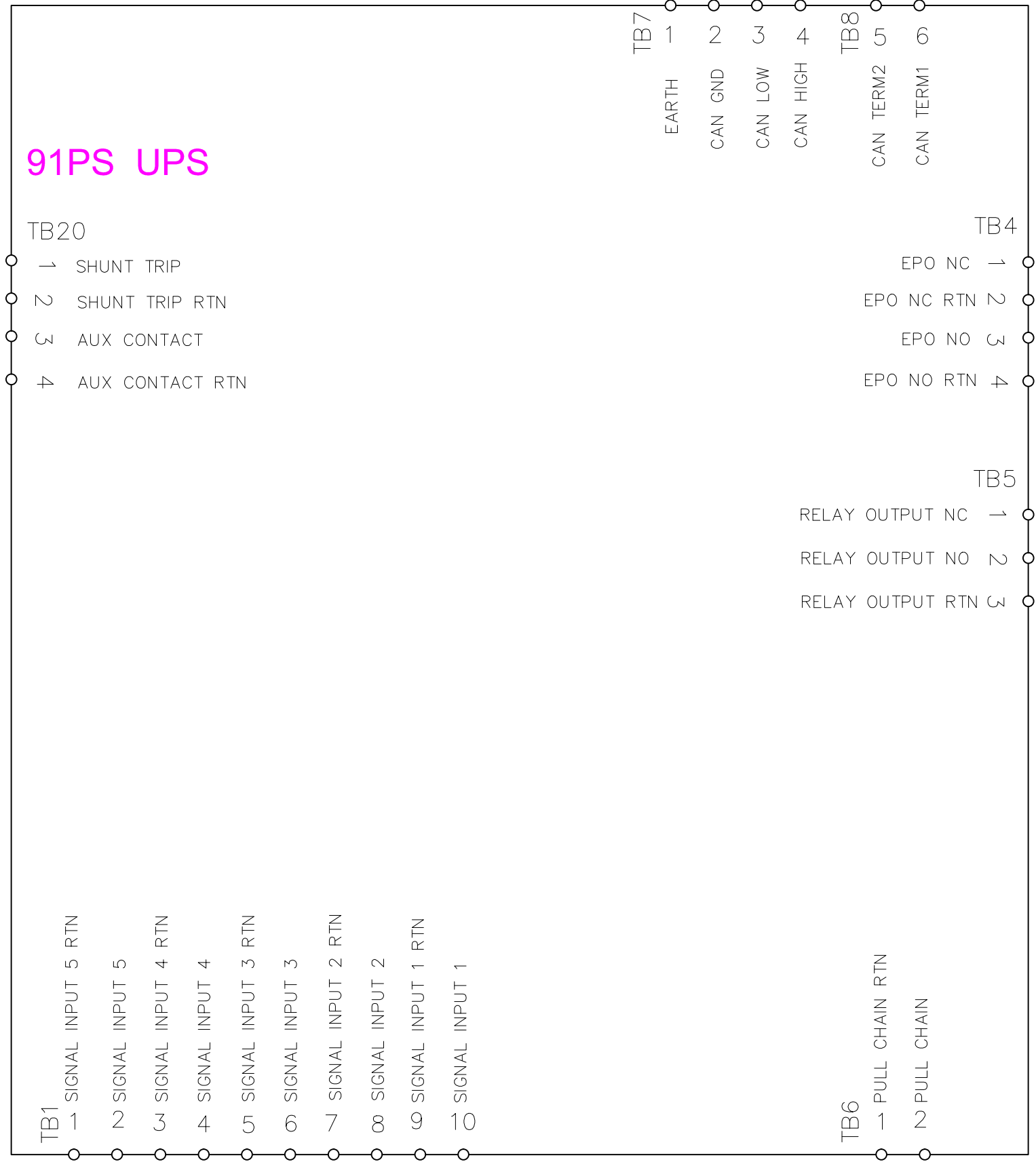
Internal Battery (Optional)

Maintenance Bypass Switch

AC Output



LOADS



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: Eaton 91PS 8-10 kW Wiring a single unit(3:1) with MBS					
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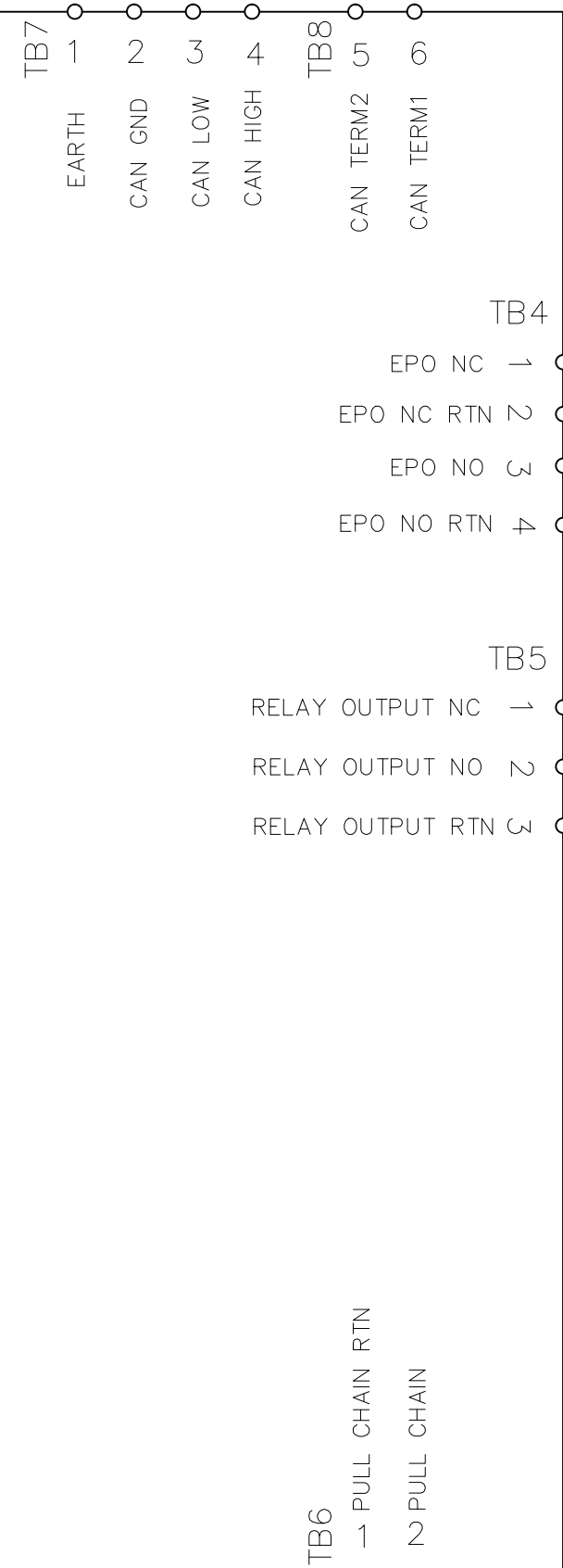
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# 1:1 CONFIGURATION

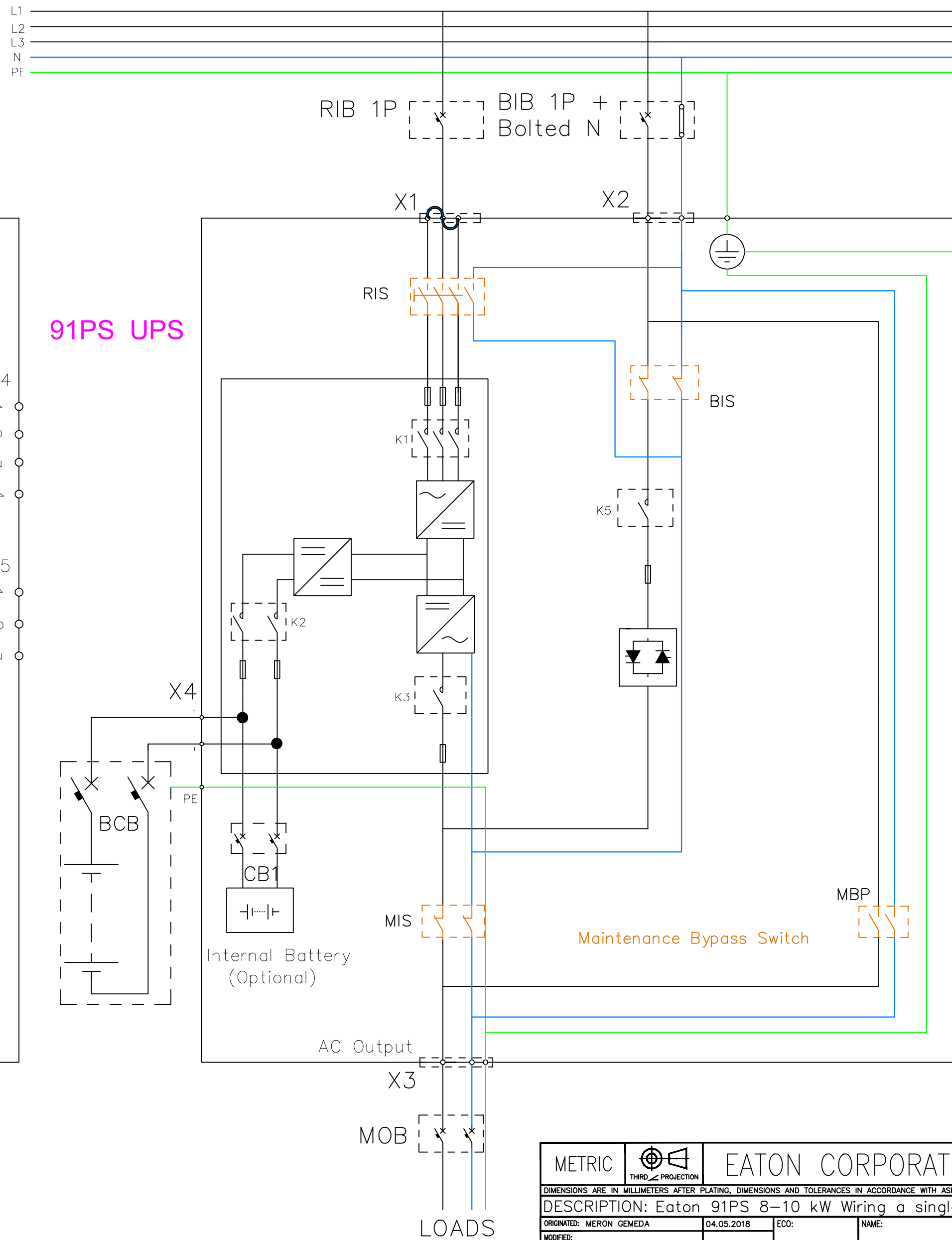
## 91PS UPS

- TB20
- SHUNT TRIP
  - ↺ SHUNT TRIP RTN
  - ↻ AUX CONTACT
  - ↻ AUX CONTACT RTN

- TB1
- 1 SIGNAL INPUT 5 RTN
  - 2 SIGNAL INPUT 5
  - 3 SIGNAL INPUT 4 RTN
  - 4 SIGNAL INPUT 4
  - 5 SIGNAL INPUT 3 RTN
  - 6 SIGNAL INPUT 3
  - 7 SIGNAL INPUT 2 RTN
  - 8 SIGNAL INPUT 2
  - 9 SIGNAL INPUT 1 RTN
  - 10 SIGNAL INPUT 1



## 91PS UPS

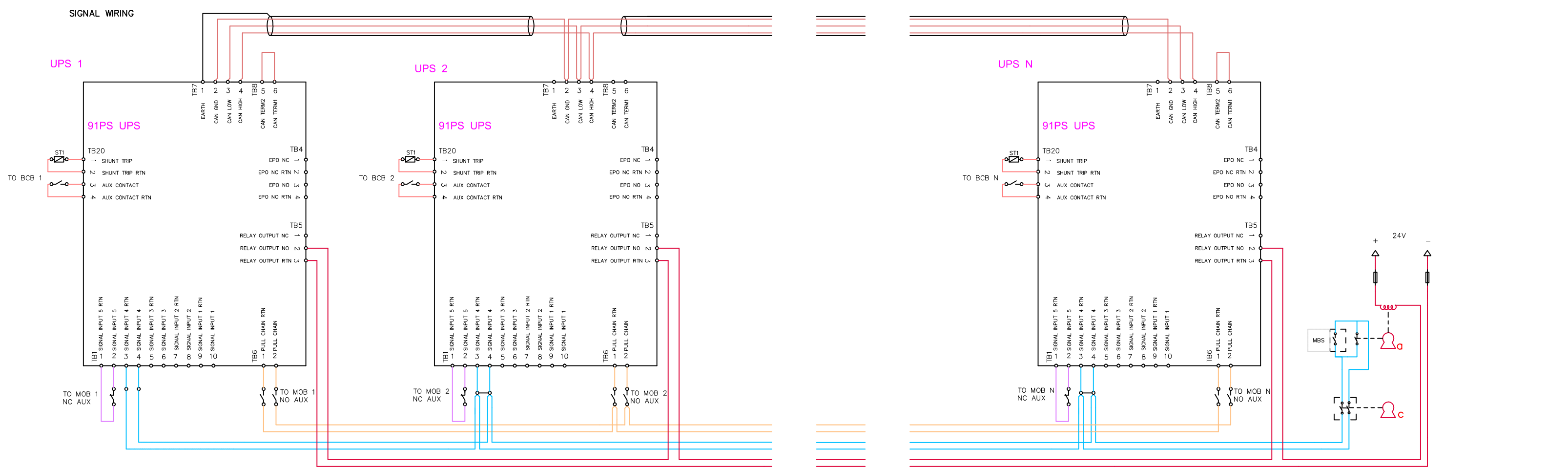
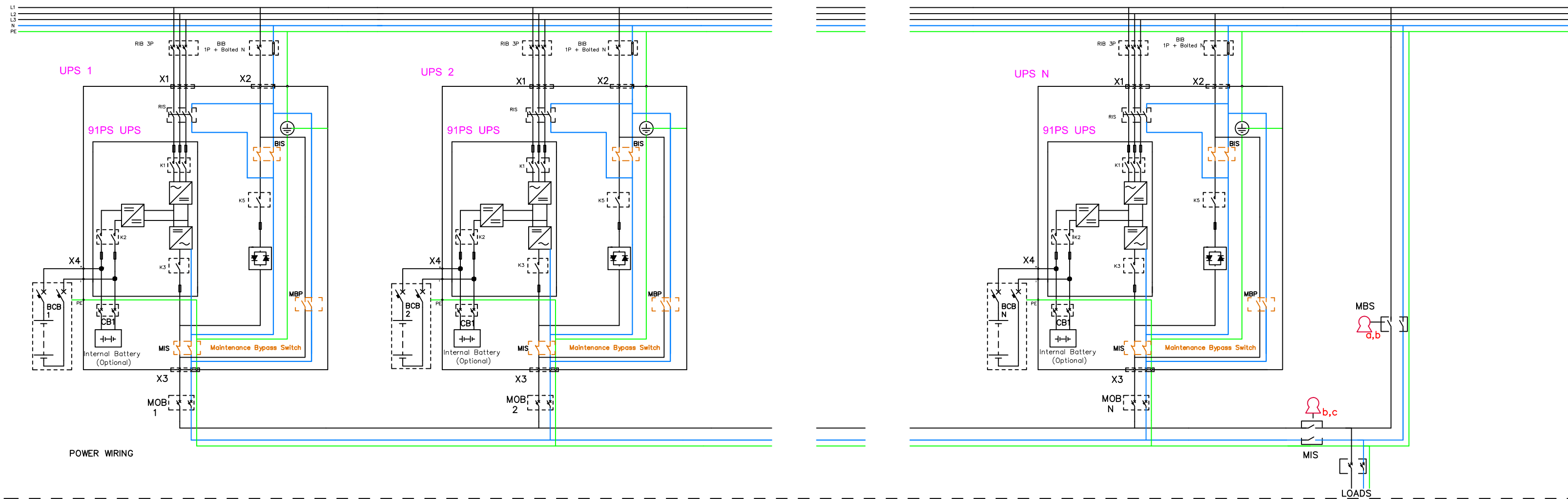


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DESCRIPTION: Eaton 91PS 8-10 kW Wiring a single unit(1:1) with MBS							
ORIGINATED: MERON GEMEDA	04.05.2018	ECC:	NAME:	REVISION: 01	SIZE: A2		
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# 3:1 CONFIGURATION



- Notes:
- The single unit internal MBS functionality shall not be used when the units are in parallel. Use the external MBS for the system instead.

**MBS STATUS** (Provided by others, Installed by others)  
0.75 - 2.5mm<sup>2</sup> 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 - 2.5mm<sup>2</sup> twisted pair (if possible, else shielded)  
No earth needed

**ON BYPASS STATUS** (NO INVERTORS ONLINE)  
1.5 - 2.5mm<sup>2</sup>, provided by others, Installed by others

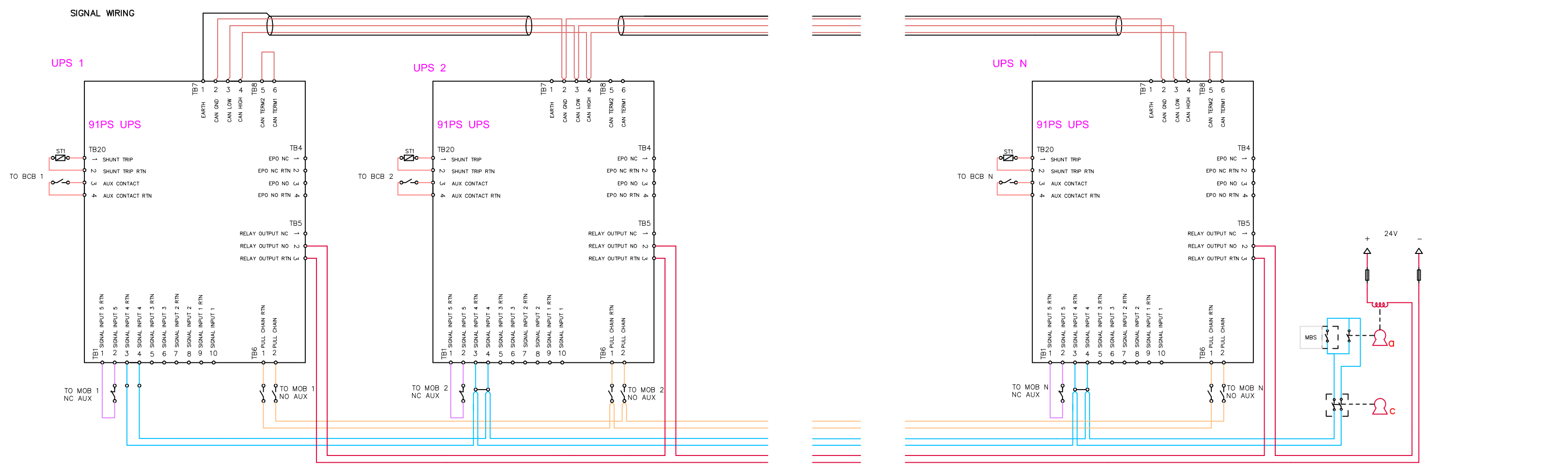
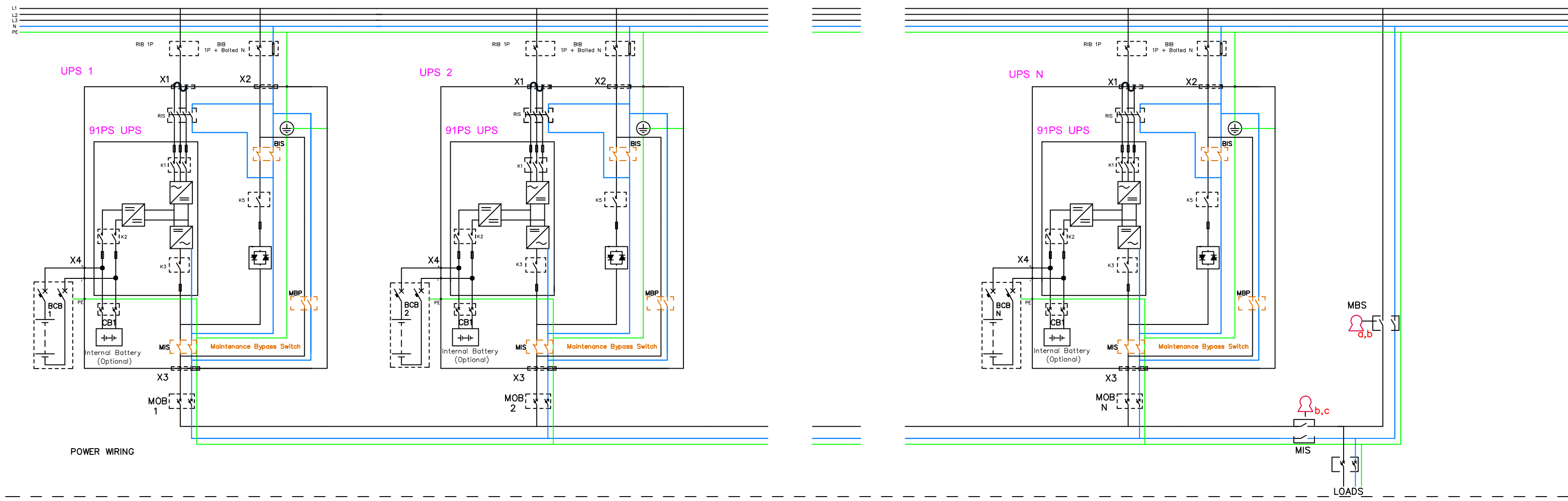
**PCAN** (DUAL AS OPTION)  
Provided by Eaton, Installed by Eaton

- Mechanical bypass interlocking sequence
- 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 it's dedicated keyhole to release "force bypass" command to allow UPS system testing

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: Eaton 91PS 8-10 kW Wiring Parallel Units (3:1)					
ORIGINATED: MERON GEMEDA	04.05.2018	ECCO:	NAME:	REVISION: 01	SIZE: A2
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# 1:1 CONFIGURATION



- Notes:
- The single unit internal MBS functionality shall not be used when the units are in parallel. Use the external MBS for the system instead.

- MBS STATUS (Provided by others, Installed by others)  
0.75 - 2.5mm<sup>2</sup> 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 - 2.5mm<sup>2</sup> twisted pair (if possible, else shielded)  
No earth needed
- ON BYPASS STATUS (NO INVERTORS ONLINE)  
1.5 - 2.5mm<sup>2</sup>, provided by others, Installed by others
- PCAN (DUAL AS OPTION)  
Provided by Eaton, Installed by Eaton

- Mechanical bypass interlocking sequence
- 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 it's dedicated keyhole to release "force bypass" command to allow UPS system testing

METRIC		EATON CORPORATION			
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DESCRIPTION: Eaton 91PS 8-10 kW Wiring Parallel Units (1:1)					
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## Eaton 91PS 8-10 kW (3:1) UPS Site Planning Data

Product Specifications																				
UPS Rating		Rectifier AC Input	3P Rectifier Input Breaker (RIB)		Bypass AC Input	1P+Bolted N Bypass Input Breaker (BIB)			AC Output	2P Inverter AC output Breaker MOB			Battery Breaker (BCB) (Ratings at the end of discharge, 1.67 V/cell)				For Single Unit Maintenance Bypass Switch (MBS)	For Parallel Units Common Maintenance Bypass Switch (MBS)		
			Nominal Current	Maximum Current		Nominal Current at 230 V Input	Maximum Current at 15% under voltage	Integrated Bypass Fuse		Output Current	Inverter Short Circuit Current	Auxiliary Switches	Rating	Separate Battery Configuration (UPM Bttery)	Common Battery Configuration (UPS Battery)	Trip Device (Shunt Trip)	Auxiliary Switches	Rating	Rating	Auxiliary Switches
kVA	kW	V	A	A	V	A	A	Type	V	A	A / 300 ms	Qty	VDC	A	A	VDC	Qty	A	A	Qty
8	8	400	12	14	230	35	41	3 x 80ET (parallel)	230	36	156	2	500	NA	32	24	1	36	36 x N	1
10	10	400	15	18	230	43	51	3 x 80ET (parallel)	230	45	156	2	500	NA	32	24	1	45	45 x N	1

Minimum recommended cable and fuse sizes								
UPS RATING kW	Rectifier cable [mm <sup>2</sup> ]	Rectifier Fuse [A]	Bypass, output cable [mm <sup>2</sup> ]	Bypass Fuse [A]	PE Cable [mm <sup>2</sup> ]	POS. & NEG. Line [mm <sup>2</sup> ]	Battery Fuse [A]	EXT BATT PE Cable [mm <sup>2</sup> ]
8	2,5	16	10	50	10	10	32	10
10	4	20	16	63	16	10	32	10

Maximum conductor cross section	
Rectifier/Bypass/Output	EXT. Battery
Solid/stranded wire: 50 mm <sup>2</sup> Stranded wire with ferrule: 35 mm <sup>2</sup>	Solid/stranded wire: 25 mm <sup>2</sup> Stranded wire with ferrule: 16 mm <sup>2</sup>

**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. Rectifier AC input to UPS: (3) phases and (1) ground.  
Bypass AC input to UPS: (1) phase, (1) neutral, (1) ground.  
AC output to load: (1) phase, (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. 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.

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## Eaton 91PS 8-10 kW (1:1) UPS Site Planning Data

Product Specifications																				
UPS Rating		Rectifier AC Input	1P Rectifier Input Breaker (RIB)		Bypass AC Input	1P+Bolted N Bypass Input Breaker (BIB)			AC Output	2P Inverter AC output Breaker MOB			Battery Breaker (BCB) (Ratings at the end of discharge, 1.67 V/cell)				For Single Unit Maintenance Bypass Switch (MBS)	For Parallel Units Common Maintenance Bypass Switch (MBS)		
			Nominal Current	Maximum Current		Nominal Current at 230 V Input	Maximum Current at 15% under voltage	Integrated Bypass Fuse		Output Current	Inverter Short Circuit Current	Auxiliary Switches	Rating	Separate Battery Configuration (UPM Bttery)	Common Battery Configuration (UPS Battery)	Trip Device (Shunt Trip)	Auxiliary Switches	Rating	Rating	Auxiliary Switches
kVA	kW	V	A	A	V	A	A	Type	V	A	A / 300 ms	Qty	VDC	A	A	VDC	Qty	A	A	Qty
8	8	230	37	44	230	35	41	3 x 80ET (parallel)	230	36	109	2	500	NA	32	24	1	36	36 x N	1
10	10	230	46	55	230	43	51	3 x 80ET (parallel)	230	45	109	2	500	NA	32	24	1	45	45 x N	1

Minimum recommended cable and fuse sizes								
UPS RATING kW	Rectifier cable [mm <sup>2</sup> ]	Rectifier Fuse [A]	Bypass, output cable [mm <sup>2</sup> ]	Bypass Fuse [A]	PE Cable [mm <sup>2</sup> ]	POS. & NEG. Line [mm <sup>2</sup> ]	Battery Fuse [A]	EXT BATT PE Cable [mm <sup>2</sup> ]
8	10	50	10	50	10	10	32	10
10	16	63	16	63	16	10	32	10

Maximum conductor cross section	
Rectifier/Bypass/Output	EXT. Battery
Solid/stranded wire: 50 mm <sup>2</sup> Stranded wire with ferrule: 35 mm <sup>2</sup>	Solid/stranded wire: 25 mm <sup>2</sup> Stranded wire with ferrule: 16 mm <sup>2</sup>

**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. Rectifier AC input to UPS: (1) phase and (1) ground.  
Bypass AC input to UPS: (1) phase, (1) neutral, (1) ground.  
AC output to load: (1) phase, (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.
9. Specifications are subject to change.

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