

1 2 3 4

A



B

# EXTERNAL MBS 15kW 1PH WITH BYPASS INPUT SWITCH

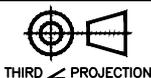
Product number: P-105000088-003

C

D

E

METRIC



## EATON CORPORATION



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

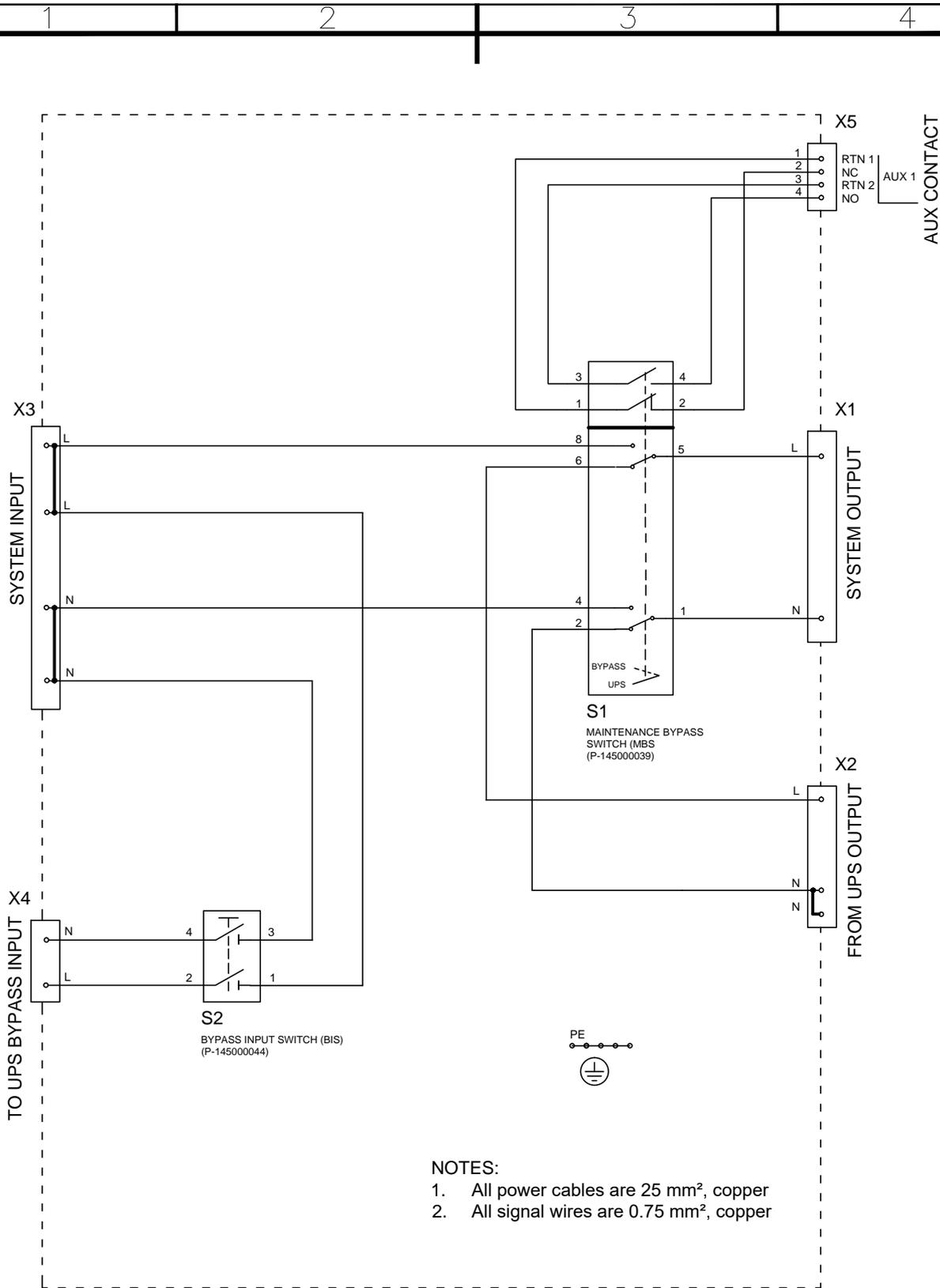
DESCRIPTION: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECD-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING		Release	1 OF 9
APPROVED:		Common sheet			

F

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
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.



**NOTES:**

1. All power cables are 25 mm<sup>2</sup>, copper
2. All signal wires are 0.75 mm<sup>2</sup>, copper

METRIC



EATON CORPORATION



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

DESCRIPTION: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING		Release	2 OF 9
APPROVED:		Switchgear diagram			

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
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.



1 2 3 4

A

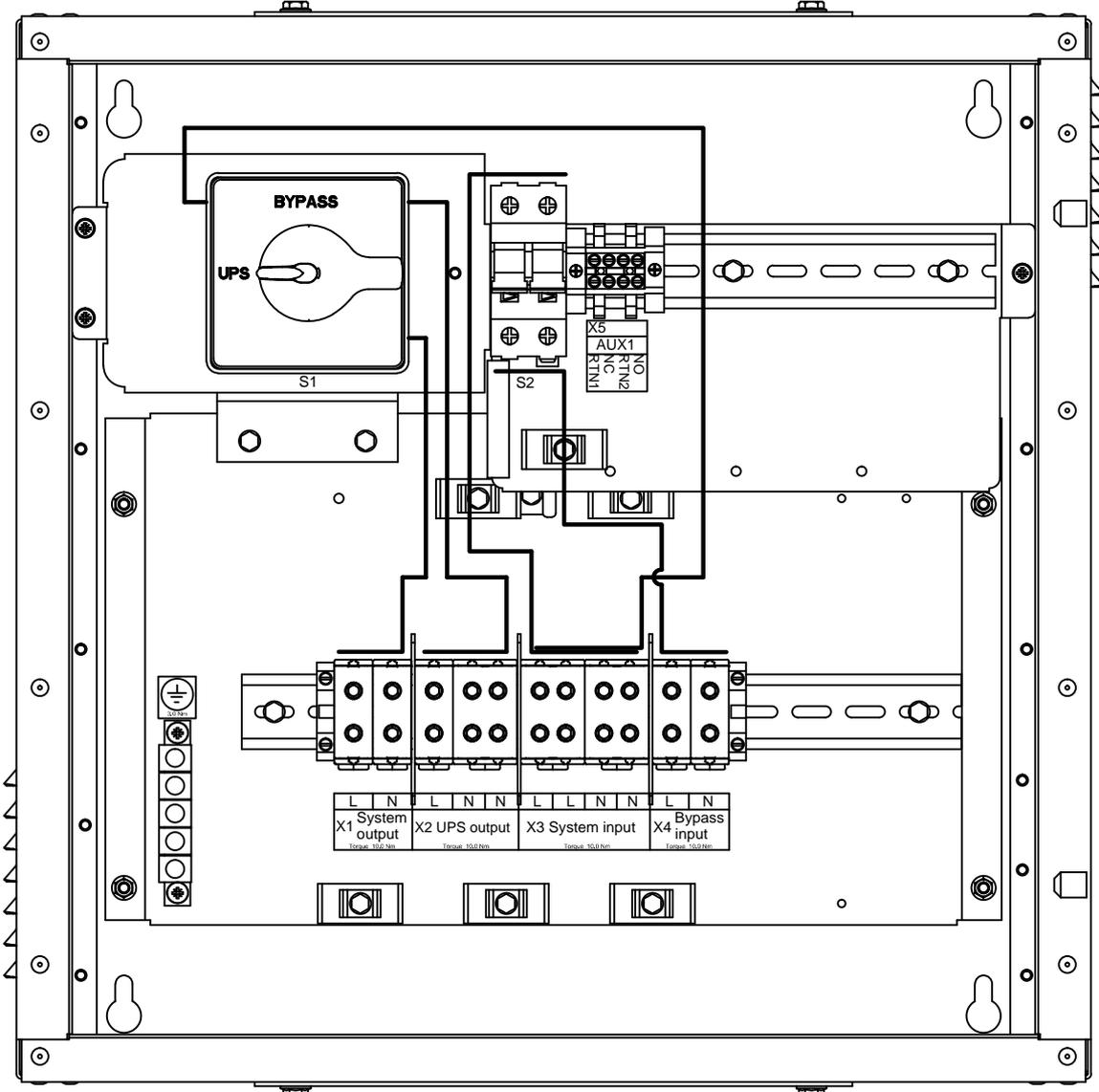
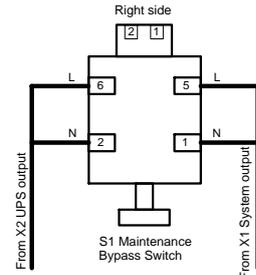
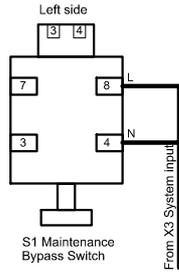
B

C

D

E

F



METRIC



EATON CORPORATION



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

DESCRIPTION: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING		Release	4 OF 9
APPROVED:		Component layout and power wiring diagram			

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
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.

1 2 3 4

A

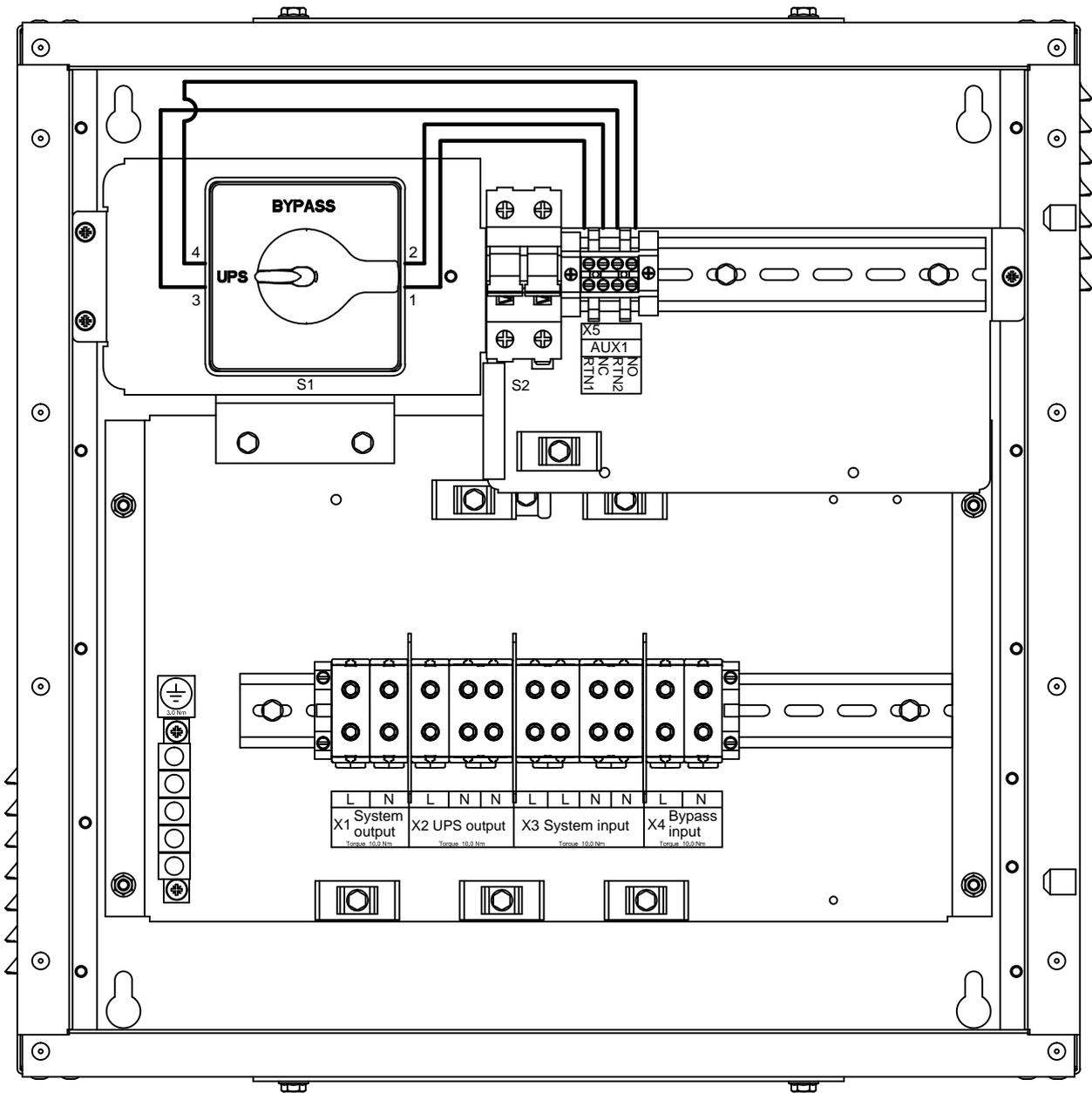
B

C

D

E

F



METRIC



EATON CORPORATION



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

DESCRIPTION: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING		Release	5 OF 9
APPROVED:		Control wiring Diagram			

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
 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.

**A TECHNICAL SPECIFICATION**  
STANDARD IEC/EN 61439-2

**TYPE PLATE, SAMPLE**

MAINS TN-S, 3W/1P+N+PE, 220/230/240VAC 1~

- |                          |          |                                     |
|--------------------------|----------|-------------------------------------|
| 1. Nominal Voltage       | $U_n$    | <u>220/230/240</u> V                |
| 2. Rated Current         | $I_{nA}$ | <u>87</u> A                         |
| 3. Nominal Frequency     | $f_n$    | <u>50/60</u> Hz                     |
| 4. Operating Temperature | T        | <u>max +40</u> °C                   |
| 5. Current capability    |          |                                     |
| Thermal                  | $I_{cc}$ | <u>10</u> kA *)                     |
| Dynamical                | $I_{pk}$ | <u>    </u> kA                      |
| 6. Power dissipation     | P        | <u>    </u> W                       |
| 7. Electrical Wiring AC  |          |                                     |
|                          | L1       | <input checked="" type="checkbox"/> |
|                          | L2       | <input type="checkbox"/>            |
|                          | L3       | <input type="checkbox"/>            |
|                          | N        | <input checked="" type="checkbox"/> |
|                          | PE       | <input checked="" type="checkbox"/> |
|                          | PEN      | <input type="checkbox"/>            |

80
58

**EATON**

EXT MBS 15kW 1PH WITH BIS

PART Nr: P-105000088-003      Rev:02

SERIAL Nr: H3954000001      1545

MAINS: TN-S      CLASS: IP21

Un: 220/230/240V      WEIGHT: 24kg

InA: 87A

fn: 50/60Hz

Icc: 10kA

IEC61439-2

Made in Finland

**B CONSTRUCTION OF SWITCHGEAR**

- |                           |                      |                                     |
|---------------------------|----------------------|-------------------------------------|
| 1. Enclosure Class        | IP <u>21</u>         | <input checked="" type="checkbox"/> |
| Outfield location         |                      | <input type="checkbox"/>            |
| Interior location         |                      | <input checked="" type="checkbox"/> |
| 2. Installation           |                      |                                     |
| Surficial                 |                      | <input checked="" type="checkbox"/> |
| Wall mounting             |                      | <input checked="" type="checkbox"/> |
| Floor mounting            |                      | <input type="checkbox"/>            |
| 3. Additional door        |                      |                                     |
| Lock-up                   |                      | <input type="checkbox"/>            |
| 4. Color                  |                      |                                     |
| Common color              | RAL7035              | <input type="checkbox"/>            |
| Custom color              | <u>Eaton dwg</u>     | <input checked="" type="checkbox"/> |
| 5. Cabling entry          | <u>164700509-001</u> |                                     |
| Top entry                 |                      | <input checked="" type="checkbox"/> |
| Bottom entry              |                      | <input checked="" type="checkbox"/> |
| Conduit flange of cable   |                      | <input checked="" type="checkbox"/> |
| 6. Material specification |                      |                                     |
| Cable material            | <u>90°C, HF IEC</u>  | <input checked="" type="checkbox"/> |
| Cable U <sub>o</sub> /U   | <u>450/750</u>       | <input checked="" type="checkbox"/> |
| Cover material            | <u>    </u>          | <input type="checkbox"/>            |
| Other demand              | <u>    </u>          | <input type="checkbox"/>            |
| 7. Handle location        | <u>Door handle</u>   |                                     |
|                           | <u>    </u>          | <input type="checkbox"/>            |

- Note !**
1. Back-up fuse required for system input 80A gG
  2. For external wiring use wire with temperature class min +90°C
  3. \_\_\_\_\_
  4. \_\_\_\_\_
  5. \_\_\_\_\_

**C CUSTOMER ELECTRICAL INFORMATION**

- |               |        |                                     |
|---------------|--------|-------------------------------------|
| 1. MAINS      | TN-C-S | <input type="checkbox"/>            |
|               | TN-S   | <input checked="" type="checkbox"/> |
|               | IT     | <input type="checkbox"/>            |
| 2. LOAD POWER | S      | <u>    </u> kVA                     |
|               | P      | <u>    </u> kW                      |
|               | p.f.   | <u>    </u>                         |

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: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO: ECO-163109	NAME: P-110000576-003	REVISION: 04	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	DOCUMENT TYPE: AUTOCAD DRAWING		STATE: Release	NOT TO SCALE
CHECKED:					SHEET: 6 OF 9
SAFETY:					
APPROVED:		General information			

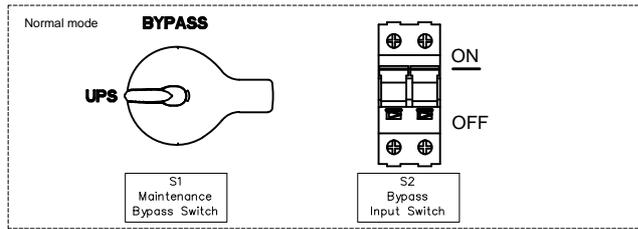
EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION

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.

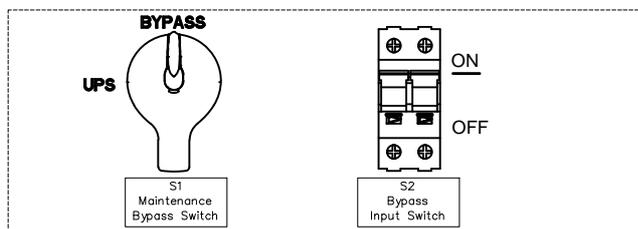
© 2011 Eaton Corporation - All Rights Reserved.

## Turn the UPS from the NORMAL MODE to the MAINTENANCE BYPASS MODE

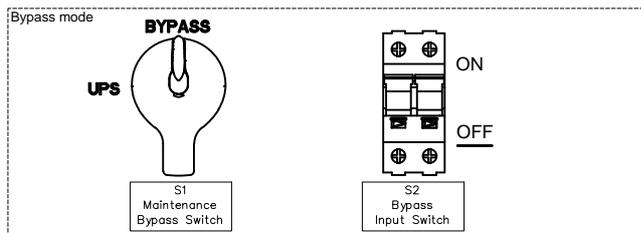
1. The start position is following:



2. Use the UPS display to turn the UPS on to the internal static bypass mode. Remember to verify the transfer before proceeding to the next step.
3. Turn the Maintenance bypass switch (S1) to the bypass position to bypass the UPS:



4. Use the UPS display to turn UPS OFF.
5. Turn off the Battery Breaker (CB1) in the UPS, if not automatically tripped.
6. Turn the UPS Rectifier Input Switch in the UPS to OFF position.
7. Turn OFF the Bypass input switch (S2) to disconnect UPS from bypass input:



8. Use the external isolator to isolate the UPS rectifier input before maintenance of the UPS, unless the UPS is supplied from a single feed.

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: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING		Release	7 OF 9
APPROVED:		Operating Instructions			

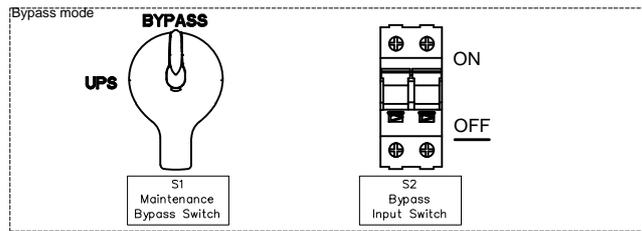
EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION

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.

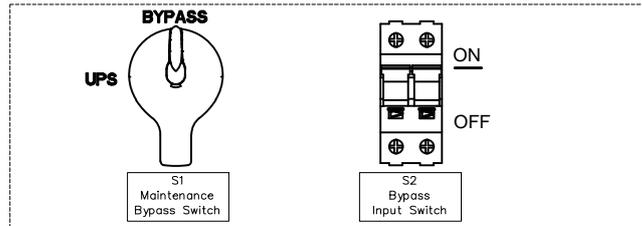
© 2011 Eaton Corporation - All Rights Reserved.

## Turn the UPS from the MAINTENANCE BYPASS to the NORMAL MODE

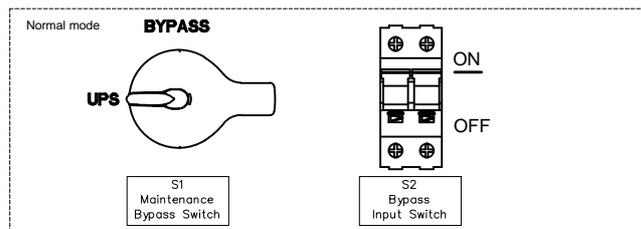
- The start position is following:



- Turn ON the Bypass Input Switch (S2) to connect the Bypass input to the UPS:



- Use the external isolator to restore rectifier feed to the UPS (unless the UPS is supplied from a single feed).
- Turn the Battery Breaker (CB1) in the UPS and the Rectifier Input Switch in the UPS to ON position.
- Use the UPS display to transfer the UPS to static bypass and give "Start Module" command to start the UPS to "ready"-state.
  - Make sure the UPS is not displaying any alarms or notices.
  - You may verify the UPS output voltage from the meters screen of the display.
- Turn the Maintenance Bypass Switch (S1) to the UPS position to switch the output to the UPS:



- Use the UPS display to transfer the UPS to normal mode (Give "Go Online" - command in the "Controls"-menu). Verify the UPS is running in "Normal"-mode, green LED is lit, status is displayed "Online" and no alarms are present.

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: EXTERNAL MBS 15kW 1PH WITH BIS

ORIGINATED: E9906410/HK	10.8.2017	ECO:	NAME:	REVISION:	SIZE: A4
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE
CHECKED:		DOCUMENT TYPE:		STATE:	SHEET:
SAFETY:		AUTOCAD DRAWING	Release	8 OF 9	
APPROVED:		Operating Instructions			

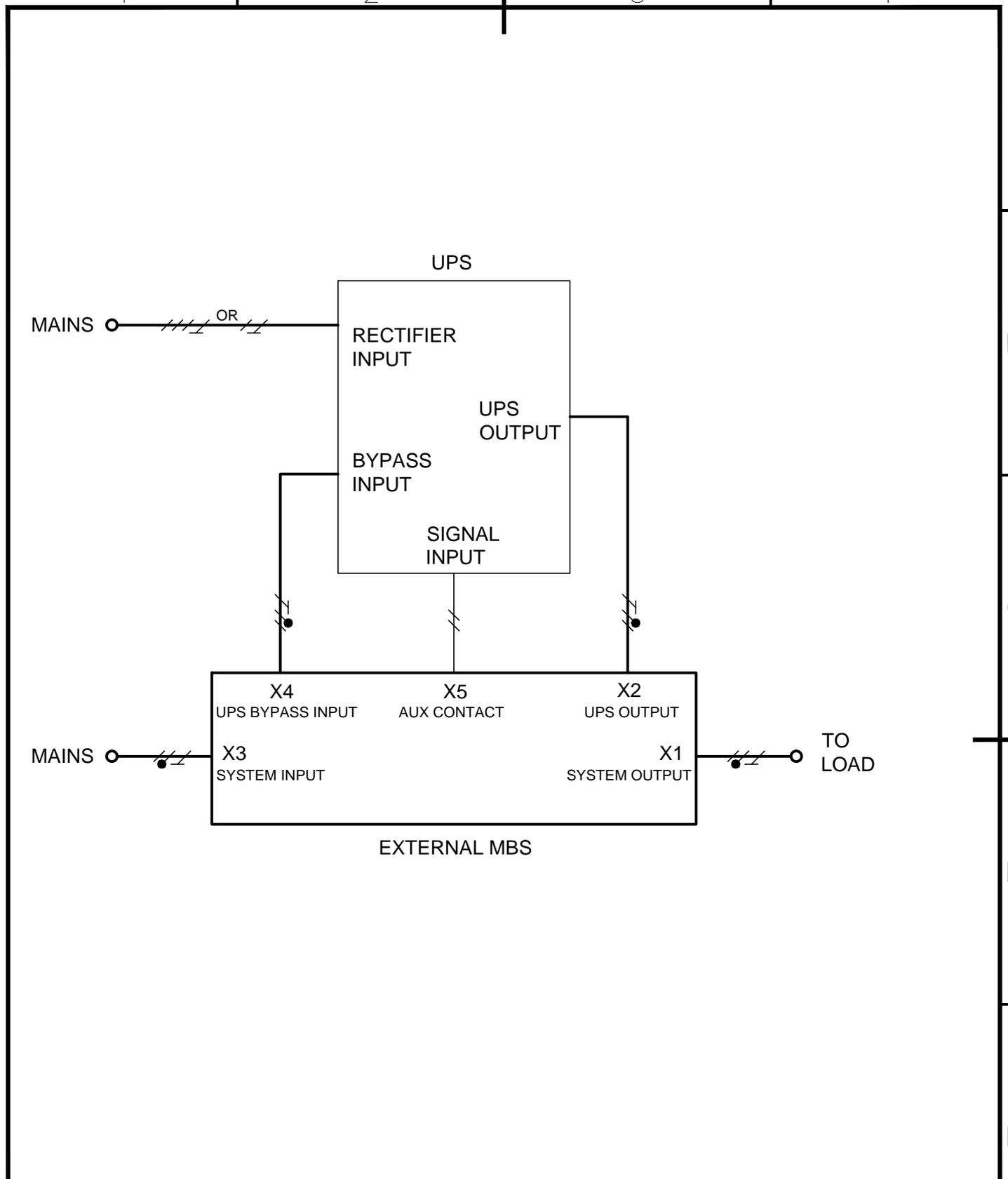
EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
NOTICE TO PERSONS RECEIVING THIS DOCUMENT AND/OR TECHNICAL INFORMATION

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.

© 2011 Eaton Corporation - All Rights Reserved.

1 2 3 4

A  
B  
C  
D  
E  
F



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: EXTERNAL MBS 15kW 1PH WITH BIS								
ORIGINATED: J. Heinonen	18.01.2018	ECO:	NAME:	REVISION:	SIZE: A4			
MODIFIED: E5900108/Jm	24.04.2019	ECO-163109	P-110000576-003	04	NOT TO SCALE			
CHECKED:		DOCUMENT TYPE:		STATE:	Release	SHEET:		
SAFETY:		AUTOCAD DRAWING				9 OF 9		
APPROVED:		System level schematic						

EATON CORPORATION - CONFIDENTIAL AND PROPRIETARY  
 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.  
 © 2011 Eaton Corporation - All Rights Reserved.