



North American Wall Mount and Pole Mount Charge Spots *DRAFT* Installation Manual

v4.0 Rev 22Dec2010

Mike Lindheim

12/22/2010

Better Place, Inc. Confidential

Charge Spot Installation

Read manual



Warning

Read the installation instructions before you connect the system to its power source

Comply with Local and National Electrical Codes



Warning

Installation of the equipment must comply with local and national electrical codes.

Product Disposal



Warning

Ultimate disposal of this product should be handled according to all national laws and regulations

Charge Spot Installation

FCC rules

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

This device may not cause harmful interference, and

this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Better Place Labs Israel Ltd.) could void the user's authority to operate the equipment.

Charge Spot Installation

OVERVIEW

The purpose of this slide deck is to familiarize you with the components and installation process for the installation of Better Place wall mount (WM) charge spot units (CSU)

This slide deck was originally created for the installation of the wall mount (WM) charge spot (CSU) for Israeli and European markets. In order to comply with NEC and other local codes we have changed some of the components and assemblies.

The major change is the junction box and interface that the CSU will mount to. We have designed a box that will be used both in a NEMA 1 (indoor) and NEMA 3R (outdoor) location.

In addition we have included a pole and box assembly that will be used for locations where the CSU will be fed from the ground and no wall is available for mounting.

In the following slides you will see pictures and drawings of both the wall mount box and the pole/box combination.

Some of the parts and descriptions in this presentation are for the European installation, but it should be clear which components replace those for the North American market.

Charge Spot Installation

NORTH AMERICAN WALL MOUNT BRACKET BOX and COVER

REV. RECORD

REV.	DESCRIPTION	DATE	APPROVED
01	INITIAL RELEASE	11/06/10	JAMES W. ELLIS

NOTES UNLESS OTHERWISE SPECIFIED

- INTERPRET DRAWING PER ANSI Y14.5 DRAWING STANDARDS
- MATERIAL: .SEE BOM
- INSTALL ITEM #5 TO DIN RAIL INSIDE OF ENCLOSURE 3 PLACES
- ASSEMBLY ITEM #4 HAND TIGHT AS SHOWN 4 PLACES
- ASSEMBLY ITEM #1 TO ITEM #2 USING ITEM #3

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
5	AT850	TERMINAL BLOCK DIN RAIL 20.5MM (AMPHENOL PCD)		3
4	SCR-SCHMSX1.6SST	SOCKET HEAD CAP SCREW MS X 1.6MM STAINLESS STEEL	STAINLESS STEEL	4
3	90288A542	MACHINE SCREW, TAMPER PROOF 1/4-20 X 1" STAINLESS (MCMASTER CARR)	STAINLESS STEEL	4
2	900-0723-01	VERTICAL CURB MOUNT ELECTRICAL BOX	STEEL	1
1	900-0720-01	ELECTRICAL BOX COVER/MOUNT	STEEL	1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
 FRACTIONS DECIMALS ANGLES
 1 .XXL .00 ±.1
 .XXXL .005

THIRD ANGLE PROJECTION

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CAD GENERATED DRAWING. DO NOT MANUALLY UPDATE.

APPROVAL	DATE
DESIGN: JAMES W. ELLIS	11/06/10
CHECKED: JIM FORHER	11/06/10
APP'D: [Signature]	
ENG. DRG.	
QUAL. DRG.	

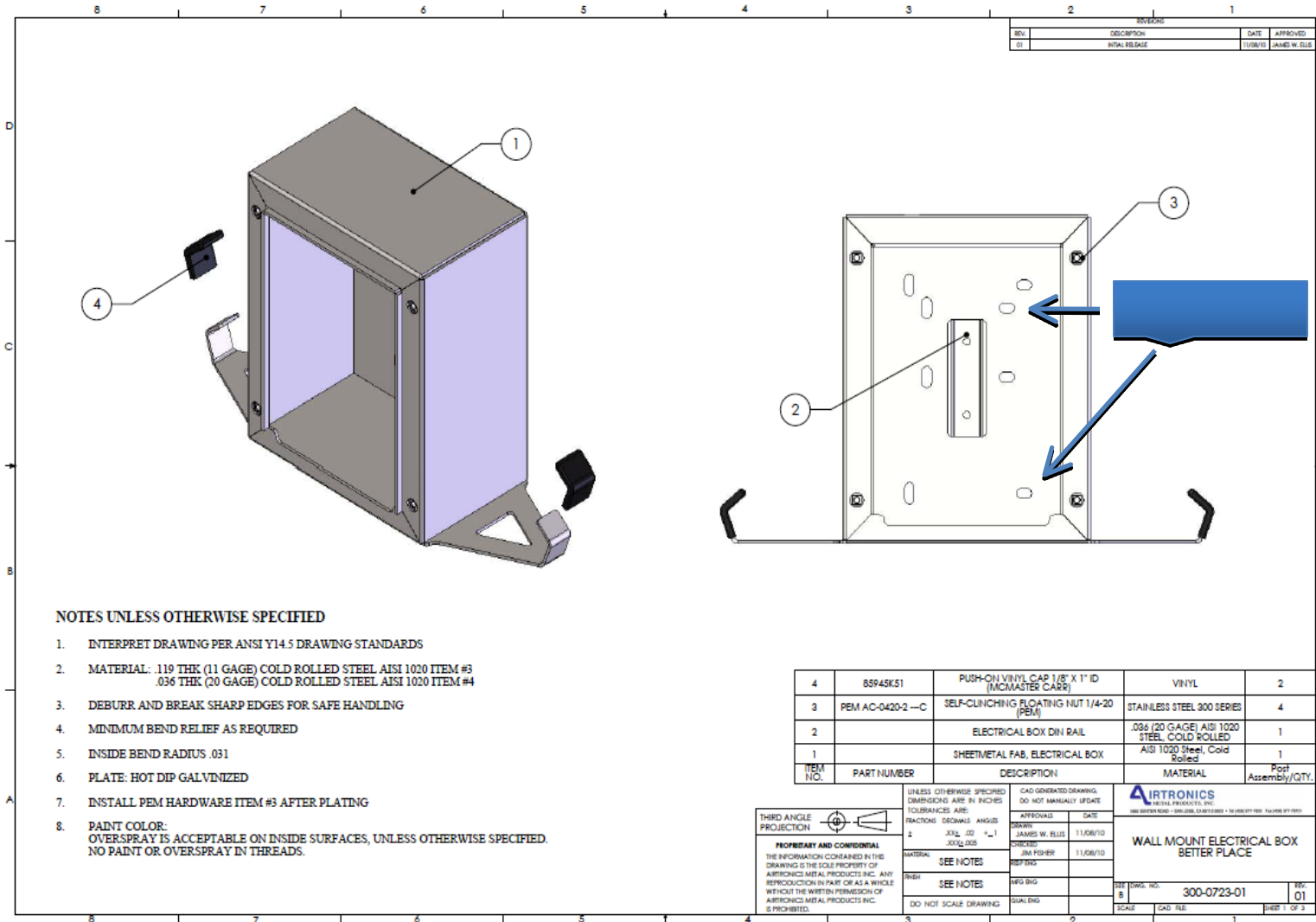
AIRTRONICS
 METAL PRODUCTS, INC.
 1860 BEECHER ROAD • 100-200, CO. #112330 • 10 WILSON RD. FAIRBURY, NY 12145

**WALL MOUNT ASSEMBLY
 BETTER PLACE**

SIZE (DWG. NO.): 200193
 SHEET: B OF 1
 SCALE: CAD FILE
 SHEET 1 OF 1

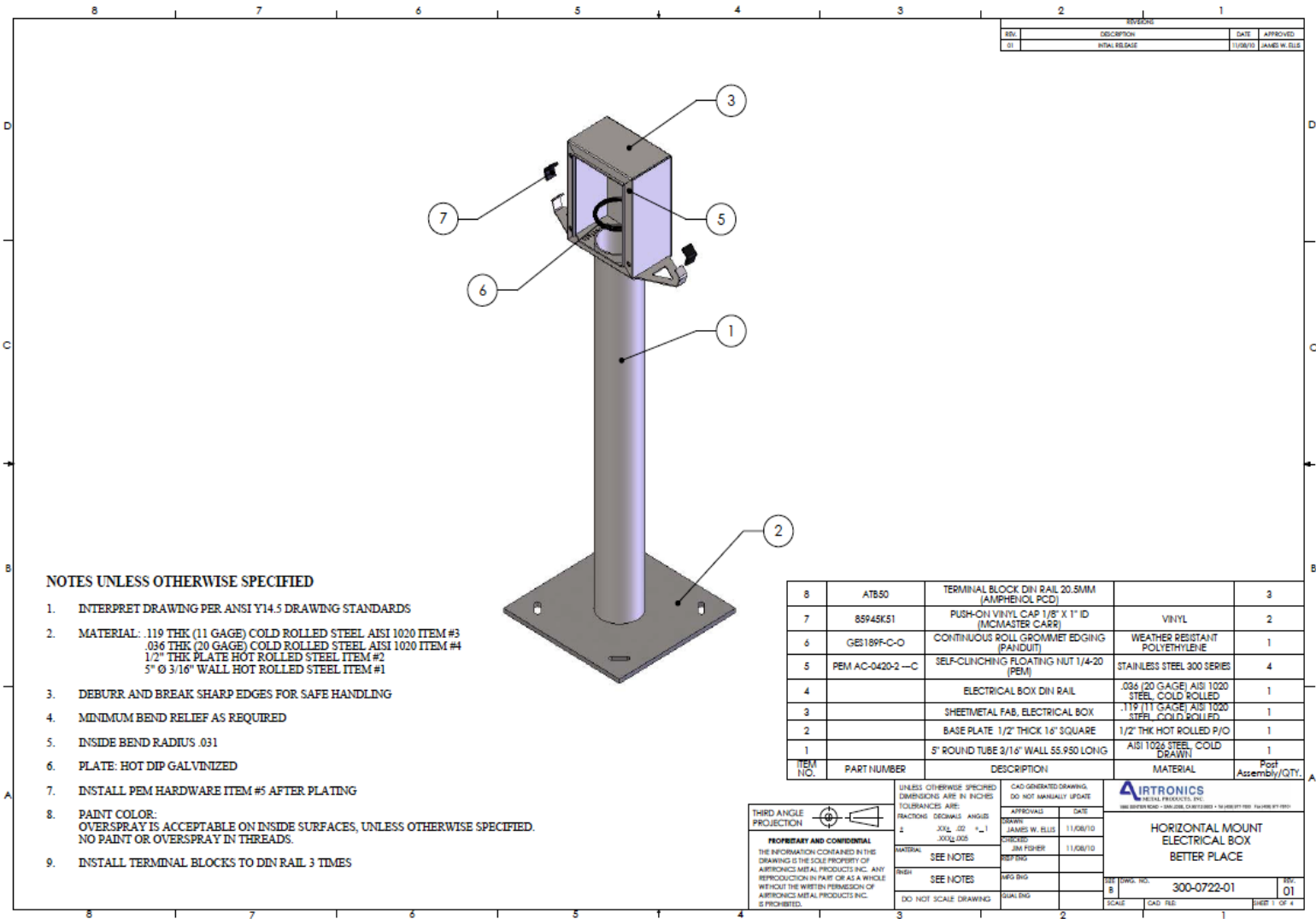
Charge Spot Installation

NORTH AMERICAN WALL MOUNT BRACKET BOX



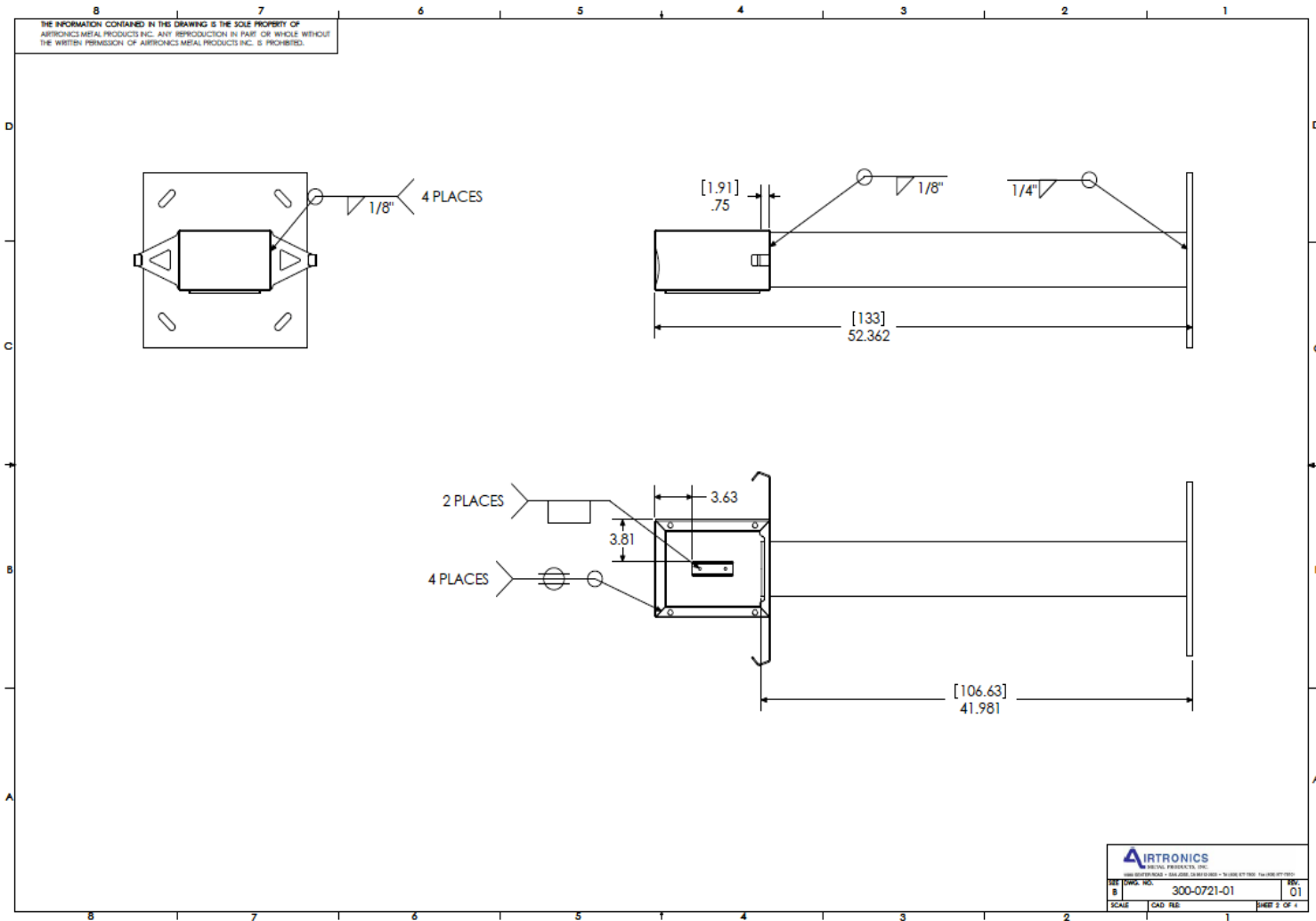
Charge Spot Installation

NORTH AMERICAN POLE/BOX (horizontal mount)



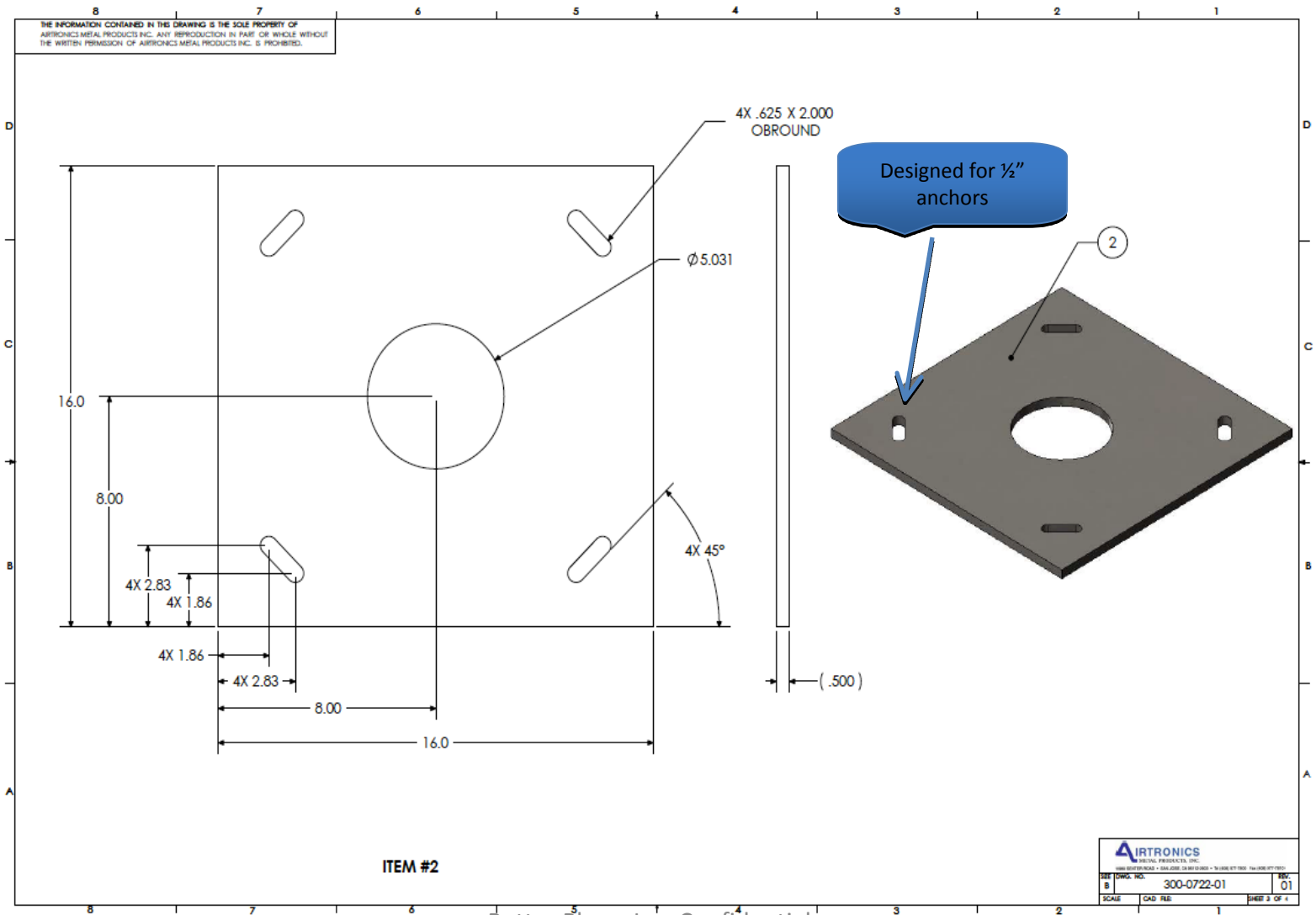
Charge Spot Installation

NORTH AMERICAN POLE/BOX (horizontal mount)



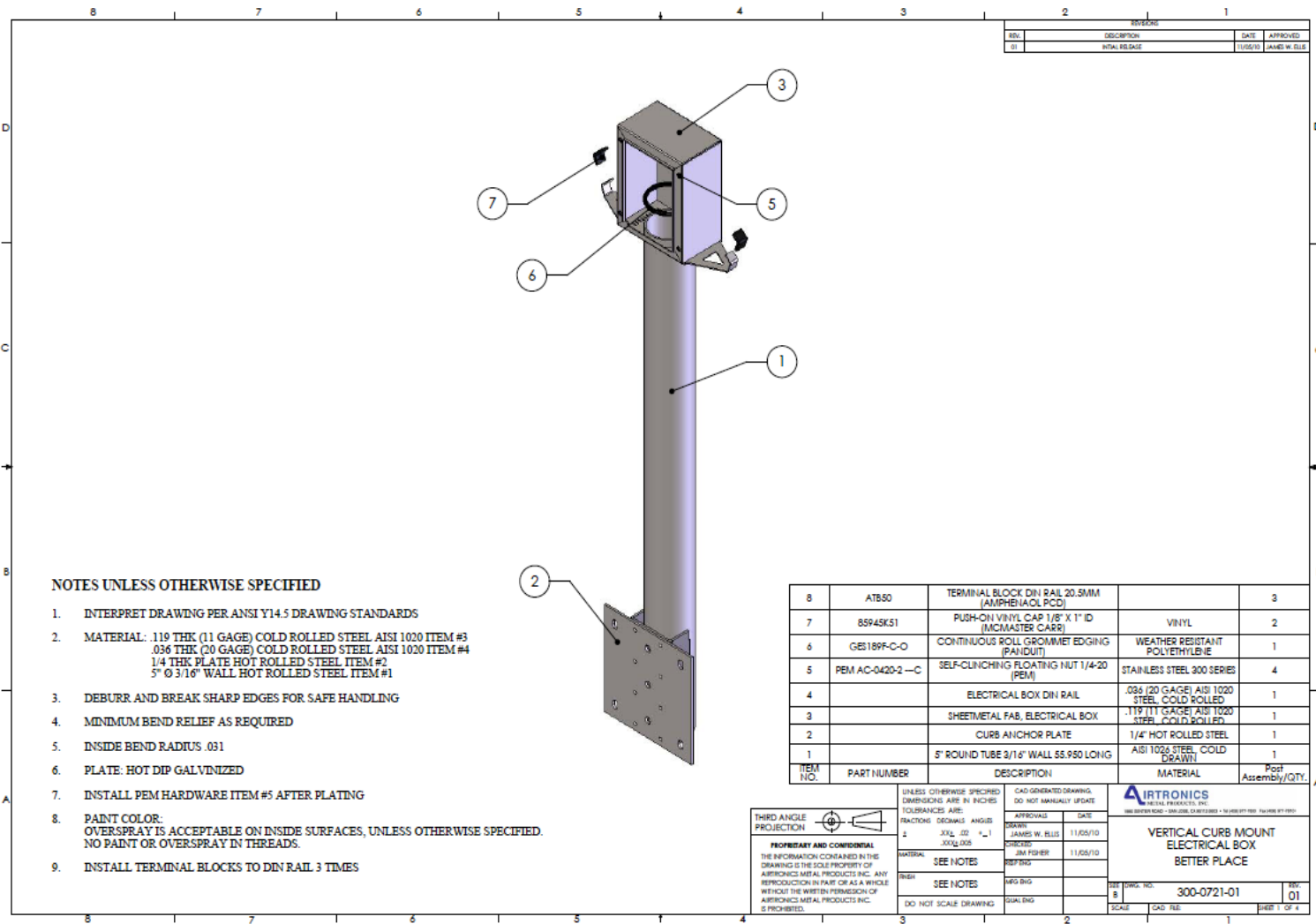
Charge Spot Installation

NORTH AMERICAN POLE/BOX (horizontal mount)



Charge Spot Installation

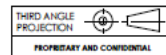
NORTH AMERICAN POLE/BOX (vertical mount) – This assembly is for mounting on the face of a curb or stub wall.



NOTES UNLESS OTHERWISE SPECIFIED

1. INTERPRET DRAWING PER ANSI Y14.5 DRAWING STANDARDS
2. MATERIAL: .119 THK (11 GAGE) COLD ROLLED STEEL AISI 1020 ITEM #3
.036 THK (20 GAGE) COLD ROLLED STEEL AISI 1020 ITEM #4
1/4 THK PLATE HOT ROLLED STEEL ITEM #2
5" Ø 3/16" WALL HOT ROLLED STEEL ITEM #1
3. DEBURR AND BREAK SHARP EDGES FOR SAFE HANDLING
4. MINIMUM BEND RELIEF AS REQUIRED
5. INSIDE BEND RADIUS .031
6. PLATE: HOT DIP GALVANIZED
7. INSTALL PEM HARDWARE ITEM #5 AFTER PLATING
8. PAINT COLOR:
OVERSPRAY IS ACCEPTABLE ON INSIDE SURFACES, UNLESS OTHERWISE SPECIFIED.
NO PAINT OR OVERSPRAY IN THREADS.
9. INSTALL TERMINAL BLOCKS TO DIN RAIL 3 TIMES

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	Post Assembly/Qty.
8	AT850	TERMINAL BLOCK DIN RAIL 20.5MM (AMPHENOL PCD)		3
7	8594SK51	PUSH-ON VINYL CAP 1/8" X 1" ID (MCMASTER CARR)	VINYL	2
6	GES189F-C-O	CONTINUOUS ROLL GROMMET EDGING (PAINT)	WEATHER RESISTANT POLYETHYLENE	1
5	PEM AC-0420-2 -C	SELF-CLINCHING FLOATING NUT 1/4-20 (PEM)	STAINLESS STEEL 300 SERIES	4
4		ELECTRICAL BOX DIN RAIL	.036 (20 GAGE) AISI 1020 STEEL COLD ROLLED	1
3		SHEETMETAL FAB, ELECTRICAL BOX	.119 (11 GAGE) AISI 1020 STEEL COLD ROLLED	1
2		CURB ANCHOR PLATE	1/4" HOT ROLLED STEEL	1
1		5" ROUND TUBE 3/16" WALL SS.950 LONG	AISI 1026 STEEL COLD DRAWN	1



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TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
2 XXX .00 ±.1
XXX.000

CAD GENERATED DRAWING
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APPROVALS: DATE
DRAWN: JAMES W. BLISS 11/05/10
CHECKED: JIM FISHER 11/05/10
MATERIAL: SEE NOTES
FINISH: SEE NOTES
DO NOT SCALE DRAWING

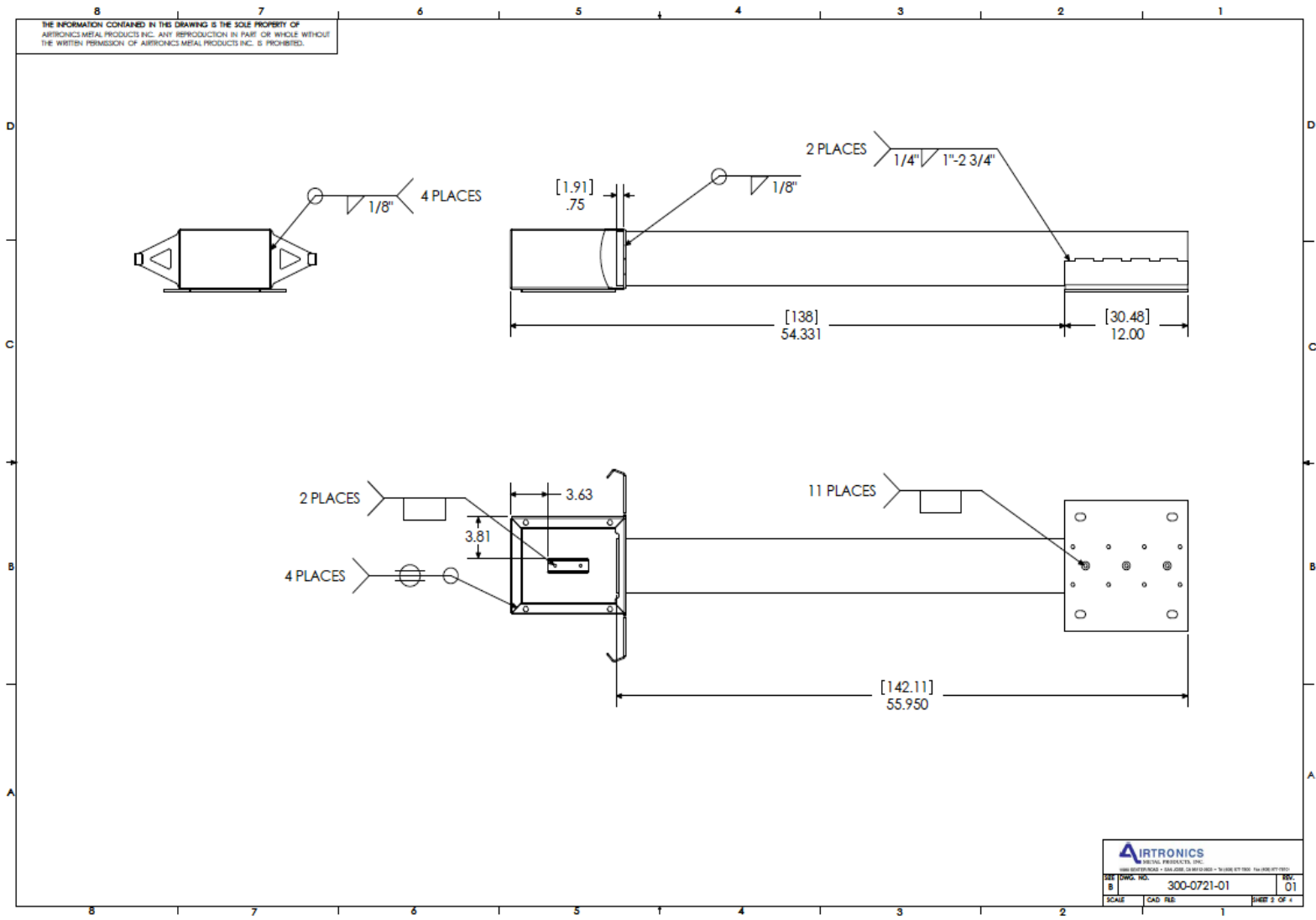
AIRTRONICS
METAL PRODUCTS, INC.
1000 BETTER PLACE DRIVE, SUITE 100, BETTER PLACE, MO 64609-1700 FAX 417-871-1900

VERTICAL CURB MOUNT ELECTRICAL BOX
BETTER PLACE

REV: 01
DATE: 11/05/10
SCALE: 300-0721-01
SHEET 1 OF 4

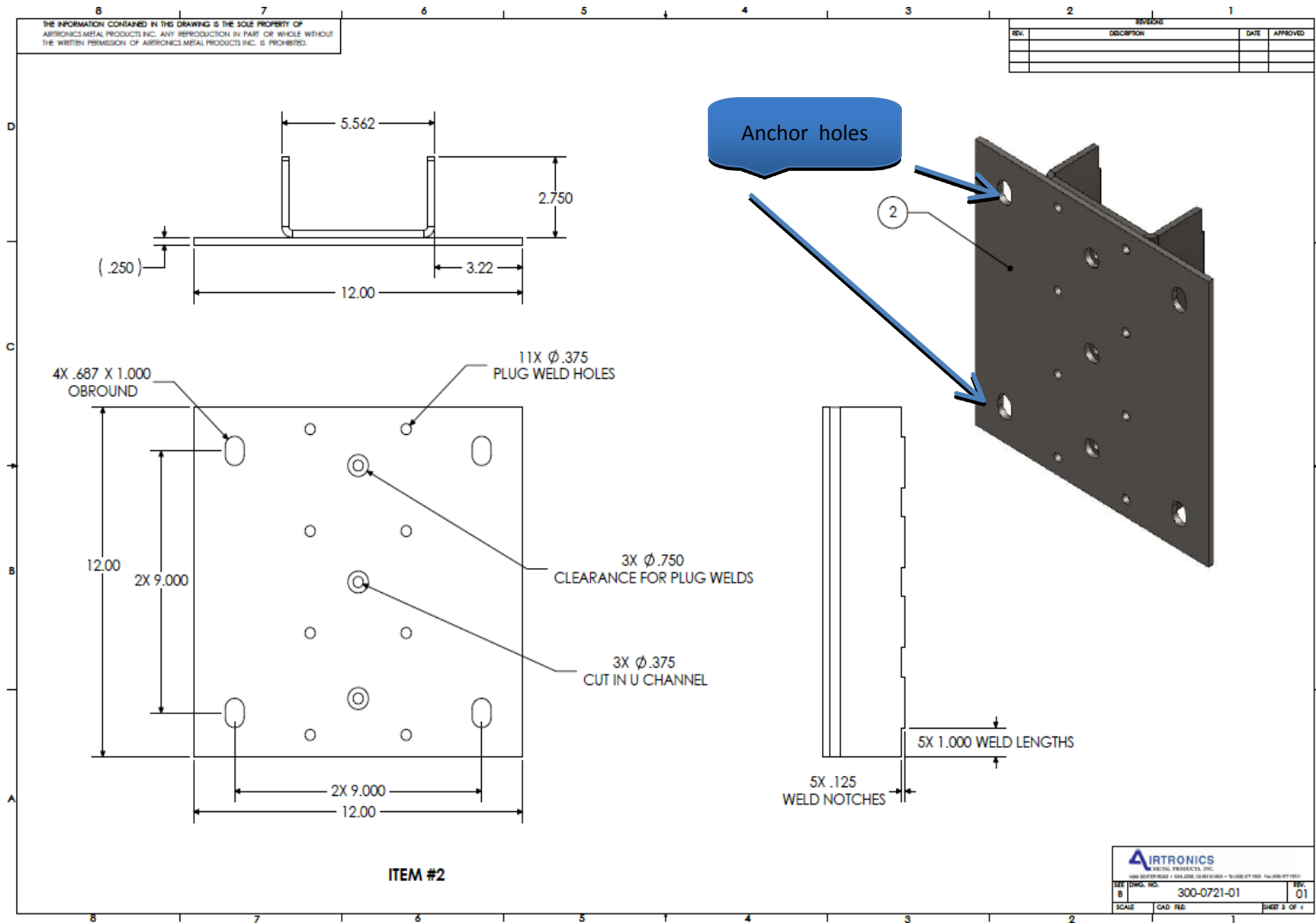
Charge Spot Installation

NORTH AMERICAN POLE/BOX (vertical mount)



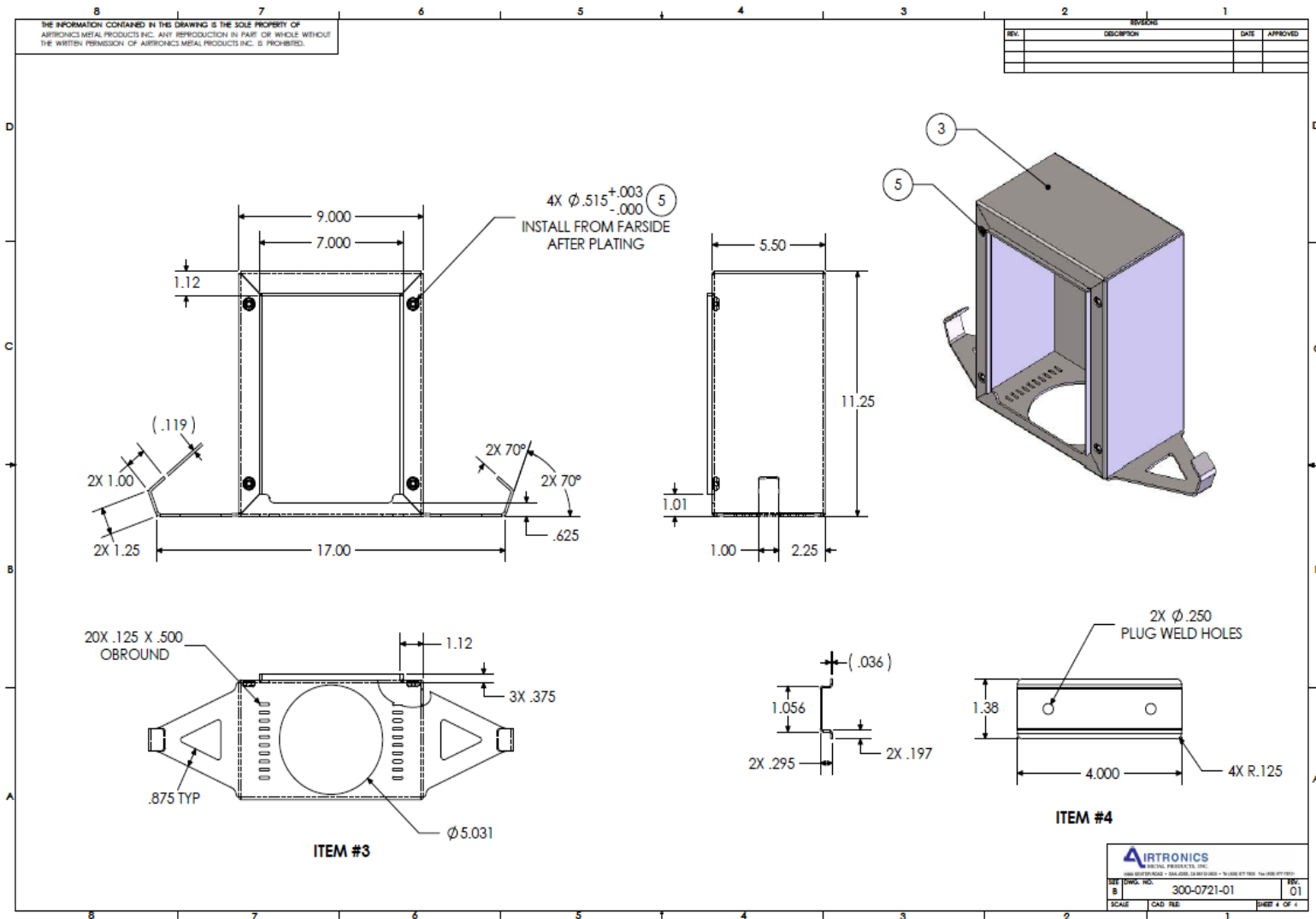
Charge Spot Installation

NORTH AMERICAN POLE/BOX (vertical mount)




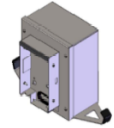







Charge Spot Installation

NORTH AMERICAN POLE/BOX (vertical mount)







Charge Spot Installation

BOM – Supplied parts

#	Image	Part No.	Description	Quantity	
1.		03-0048-510	Dummy cover	1	
2.		TBD	NA Wall box and bracket	1	
3.		510-0009-02	Fast connector Water cover	1	
4.		340-0001-01	Fast connector	1	
5.		430-0040-01	BN 15857 M5 X 8 Torx	2	
6.		440-0006-01	M6 Hexagon Nut ISO 4032	2	
7.		450-0013-01	M6 Washer ISO 7089	2	
8.		450-0010-01	A6 Spring washer DIN 128	2	
9.		361-0025-01	short ground cable	1	
10.		430-0041-01	BN 15857 M5 X 16 Torx	4	
11.		380-0001-01	Cable Lug	1	

BOM – unsupplied parts

#	Image	Part No.	Description	Quantity	
12.			M8 /65mm Sleeve anchor (Jumbo)	4	
13.			Zip Tie	2~3	
14.			Threaded M8 rods (for bending walls)	4	
15.			Hammerset Anchor M8	4	

WM Installation warnings



Installation Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment



Installation and Replacement Warning

When installing or replacing the unit, the ground connection must always be made first and disconnected last

Charge Spot Installation

Installation tools needed

M10 Wrench _____



T25 Torx _____



Small flat head screwdriver _____



Mid size Cross head screwdriver (fillips head) _____



Small level _____



P-Touch Printer (model - PT-1400) _____



P-Touch Cassette (TZS135 ½") _____



Hammer drill (for walls) and M8 wall (masonry) drill bit _____



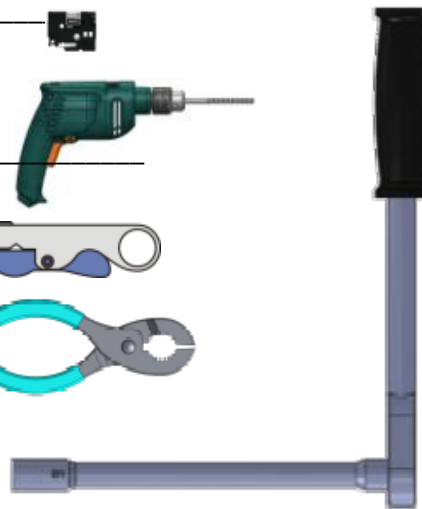
Cable Stripper _____



Pliers _____



Sprocket set (ratchet)
handle, extension
M10 socket _____



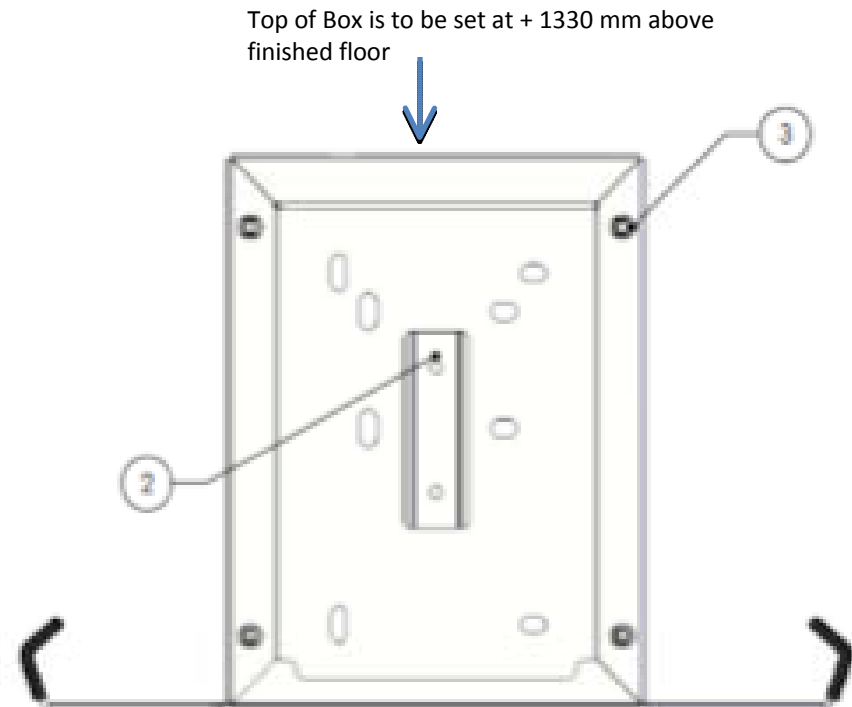
WM Installation

Interface Connection Document

This figure shows all holes locations (default & alternative), both for threaded rods and sleeve anchors.

The alternative holes should be used only in case of encountering any difficulty in installing to the default holes.

1. If using Threaded rods :
Drill all holes using a 10mm concrete drill bit
2. If using Sleeve anchor :
Drill all holes using an 8mm concrete drill bit



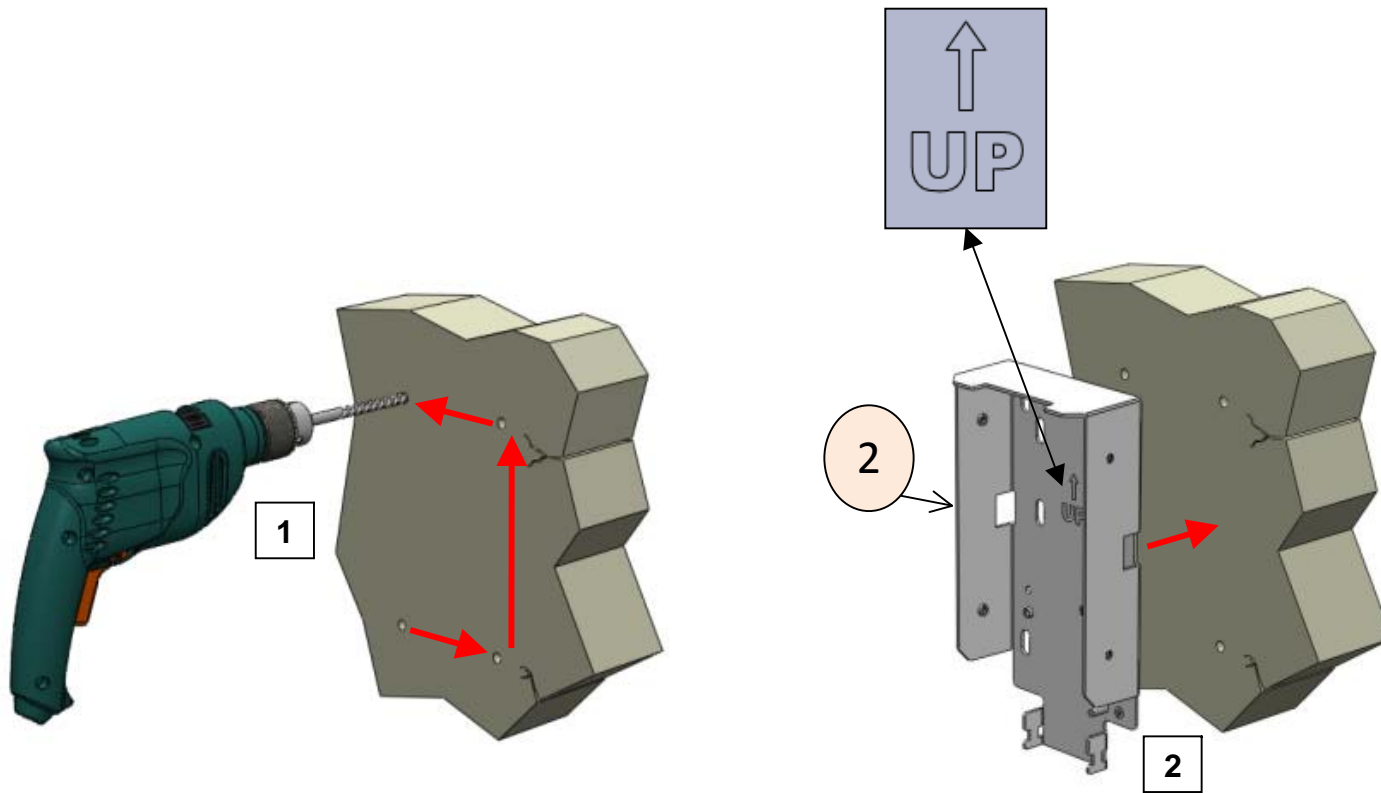
WM Installation

WM Infrastructure Adapter

Use the following tools:



1. Drill M8 holes according to markings
2. Place the wall bracket (2) in its "up" position and align the holes



WM Installation

WM Infrastructure Adapter

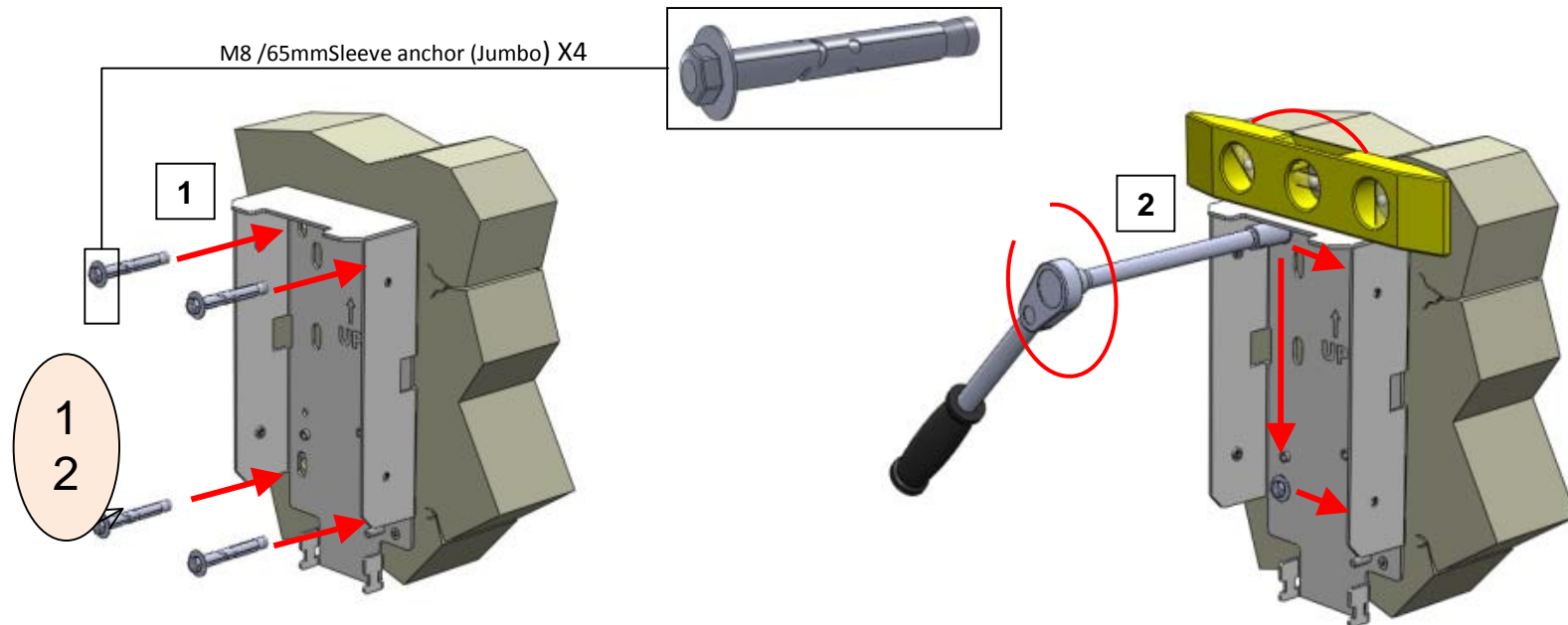
Use the following tools:



Torque - 15 [Kgf*cm]

1. Once aligned press the 4 x sleeve anchors (12) into the wall
2. Level the bracket and tighten the anchors until they are flushed

***If installing on circular or bended wall please refer to next page



Mount the bracket to the right position and press the 4 sleeve anchors into the wall.

Level the bracket and screw the anchors clockwise until they are seated flush.

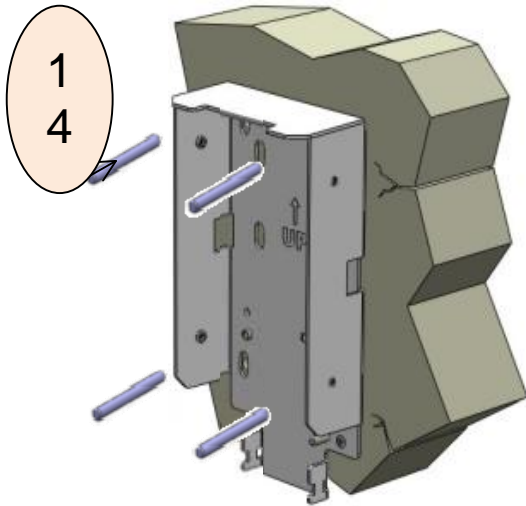
WM Installation

WM Infrastructure Adapter

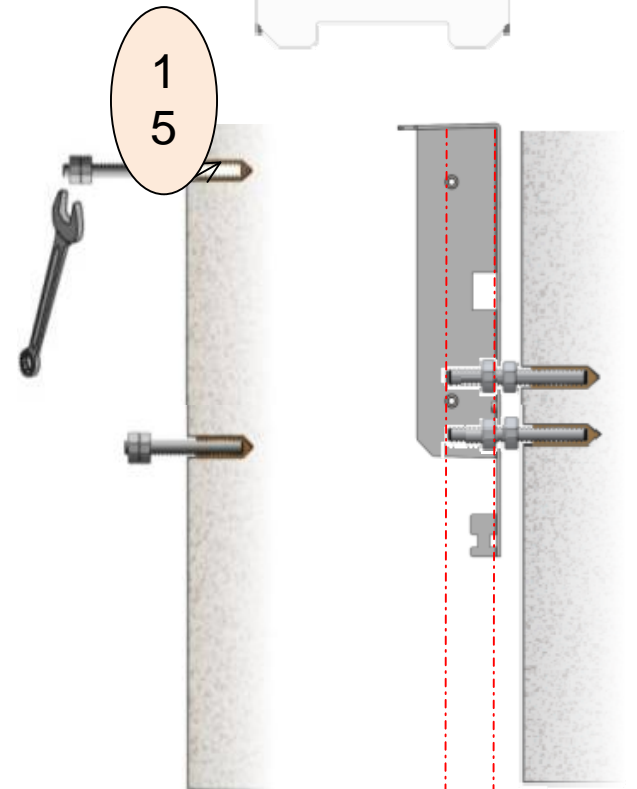
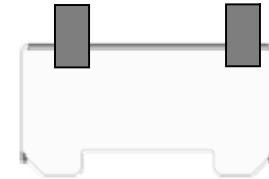
***For Cases involving Bended/Circular walls there is a need for M8 threaded rods, anchors, nuts and washers

***These rods with the use of a leveling nut behind the bracket will enable installation

Maximum length inside the Bracket of Rod: 30 mm
Minimum length inside the Bracket of Rod: 10 mm



Bended/Circular wall
(Top View)



Max 30mm , Min 10mm

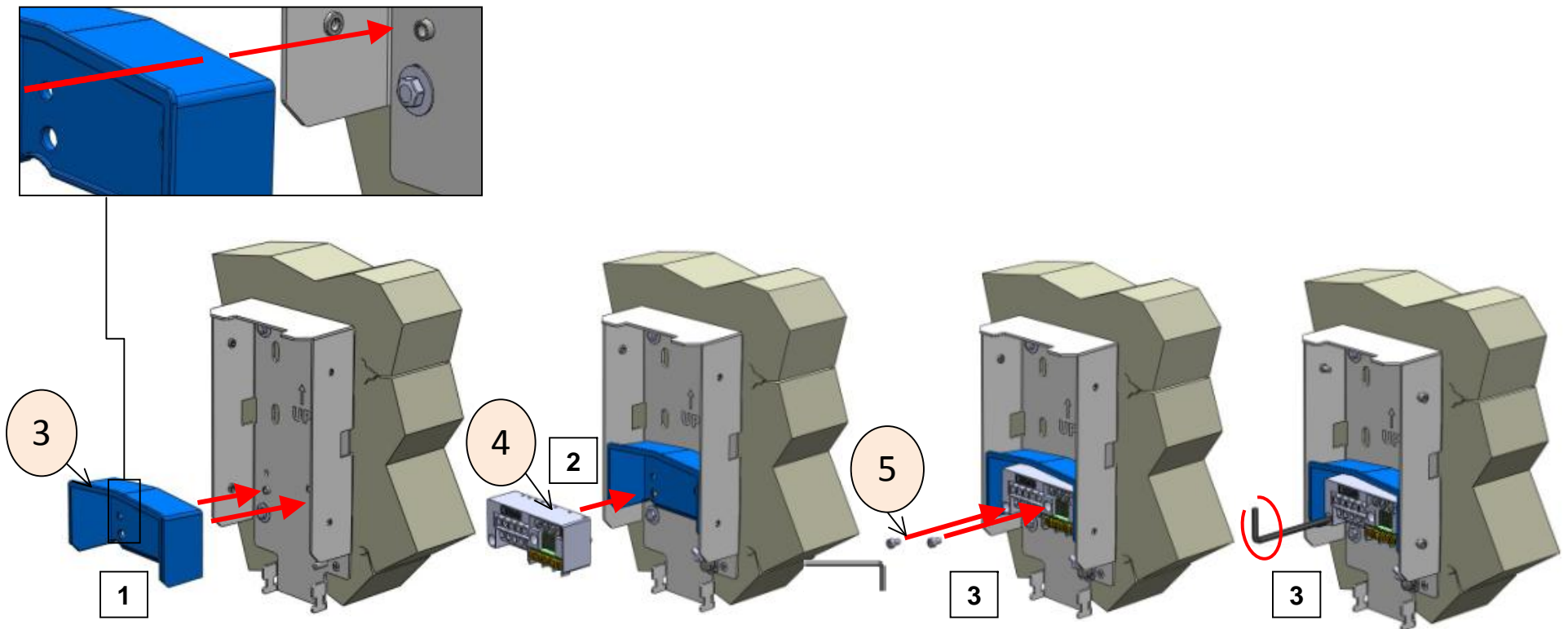
WM Installation

WM Infrastructure Adapter

Use the following tools:


Torque - 10 [Kgf*cm]

1. Place plastic water cover (3) in wall bracket (2) according to placing bosses
2. Assemble the fast connector (4) into the placed water cover (3)
3. Insert and tighten the 2 socket head screws (5) through the fast connector (4)



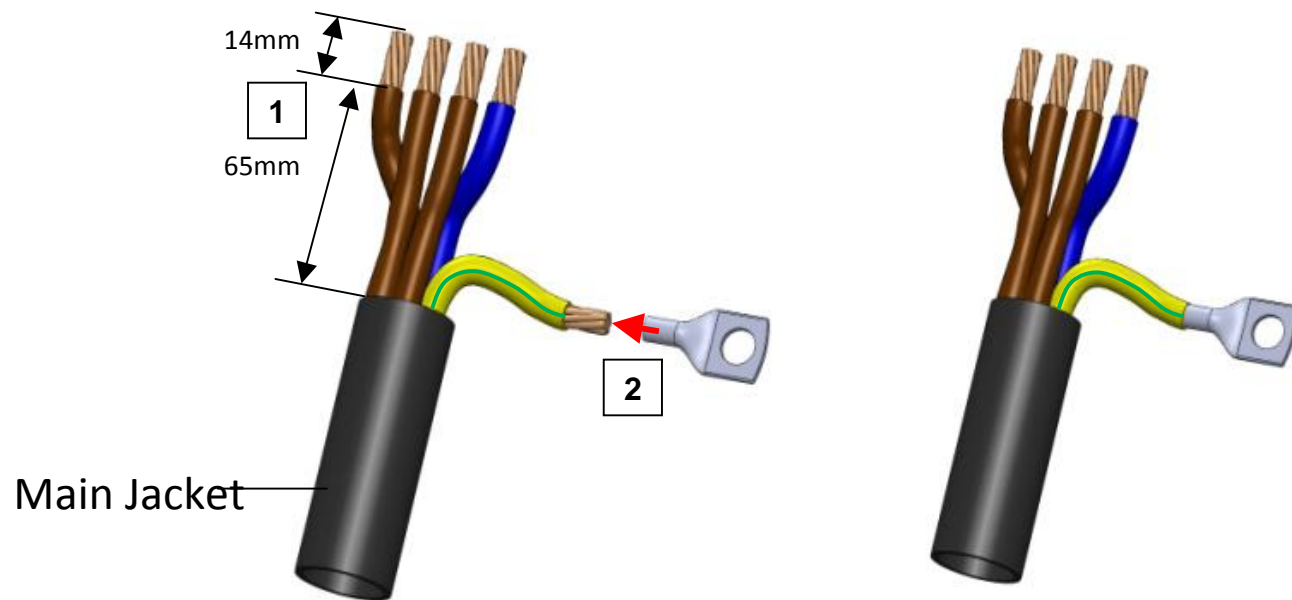
WM Installation

WM Infrastructure Adapter

Use the following tools: 

Torque - 10 [Kgf*cm]

1. Strip outer jacket of main jacket ~ 65mm and expose 14mm of the power and GND wires
2. Attach cable lug (11) to GND wire



WM Installation

WM Infrastructure Adapter

Use the following tools:



Torque - 10 [Kgf*cm]

Grounded Equipment Warning

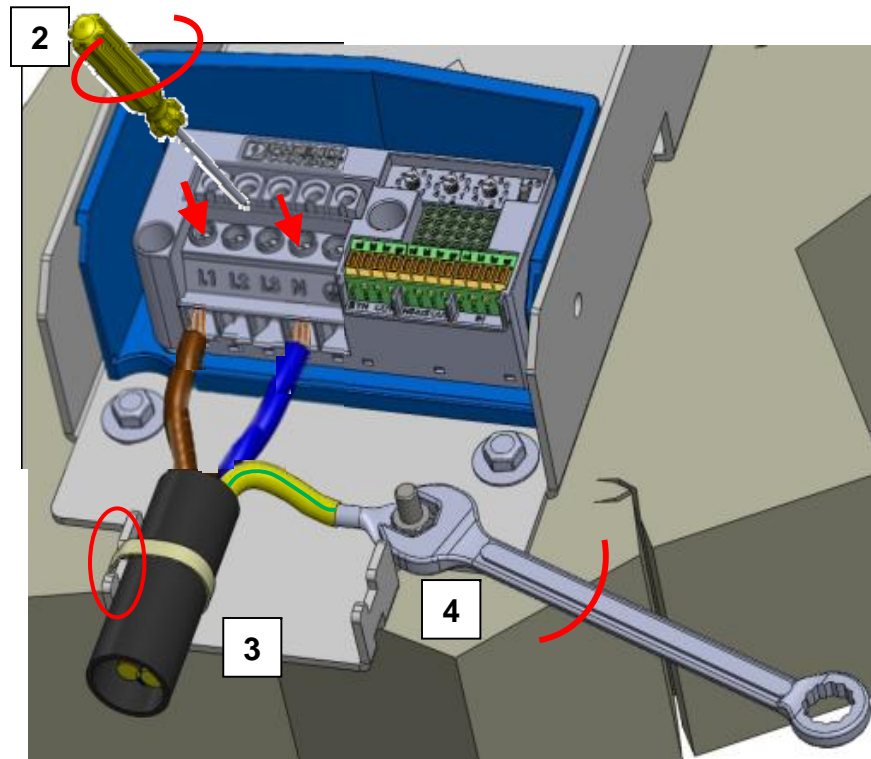
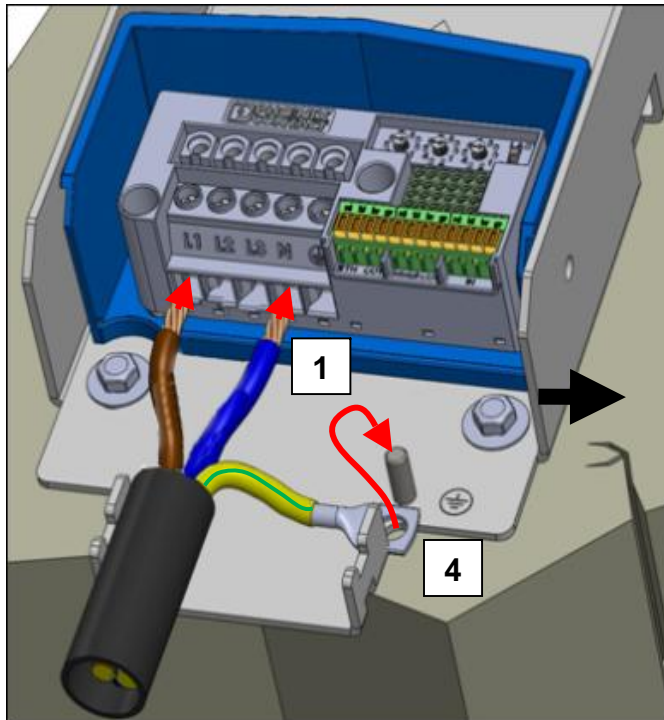


Warning

This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.

***Note: In the North American market a single phase infrastructure should be performed as below:

1. Insert the power cable to fast connector in accordance to the markings – L1 and L2 (this was designed for 220 volt circuits in Europe where there is a line and neutral for the 220 volt circuit. In the NA market we will use L1 and L2 for our 208 – 240 volt circuits.
2. Tighten the fast connector screws locking the power cables in place
3. Tighten the main cable using a zip tie
4. Place the GND wire with cable lug on the GND stud as seen below and tighten M6 washer (7), spring washer (8) and nut (6) (Refer to page 16 for detailed view)



WM Installation

WM Infrastructure Adapter

Use the following tools:

Torque - 10 [Kg*cm]



Grounded Equipment Warning

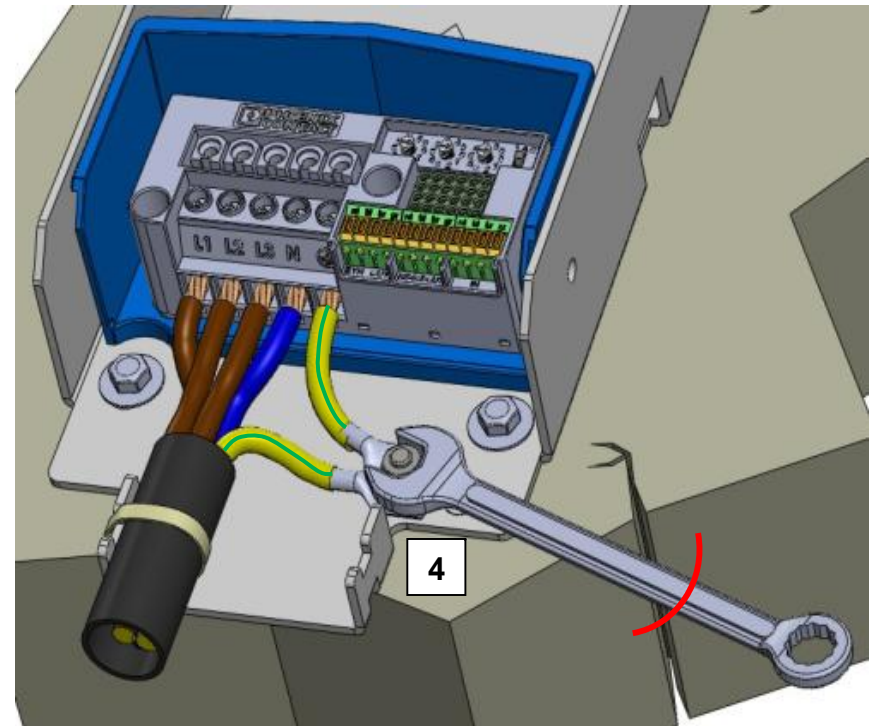
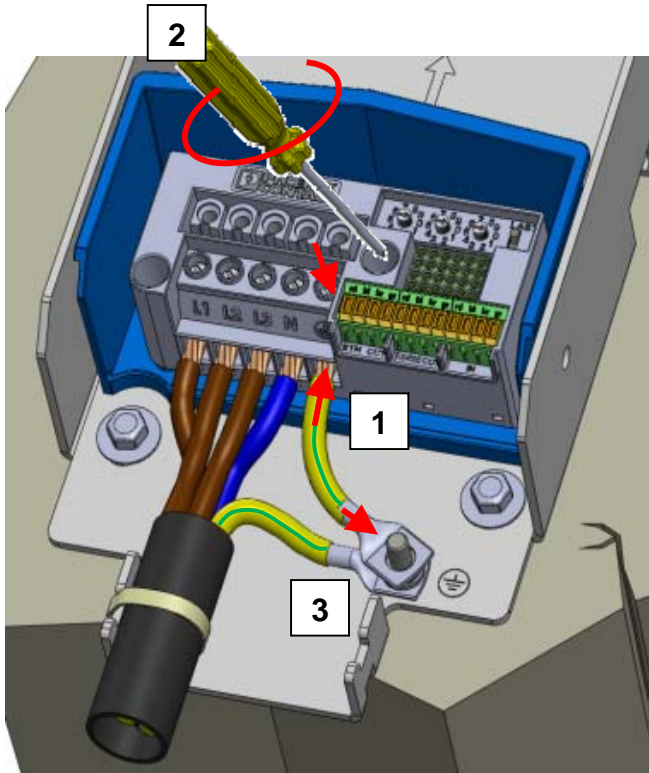


Warning

This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.

1. Using the supplied short ground cable (9) insert the ferruled side to its fast connector slot
2. Tighten the fast connector GND slot screws locking cable in place
3. Thread the cable lug of the other side of supplied short ground cable (9) on top of GND stud
4. Tighten on top of GND cable lug an M6 washer (7), spring washer (8) and nut (6) – (a much detailed explanation is presented on next page)

NOTE – WE WILL USE A SINGLE PHASE CIRCUIT ONLY IN THE NORTH AMERICAN MARKET



WM Installation

WM Infrastructure Adapter

Use the following tools:



Torque - 10 [Kgf*cm]

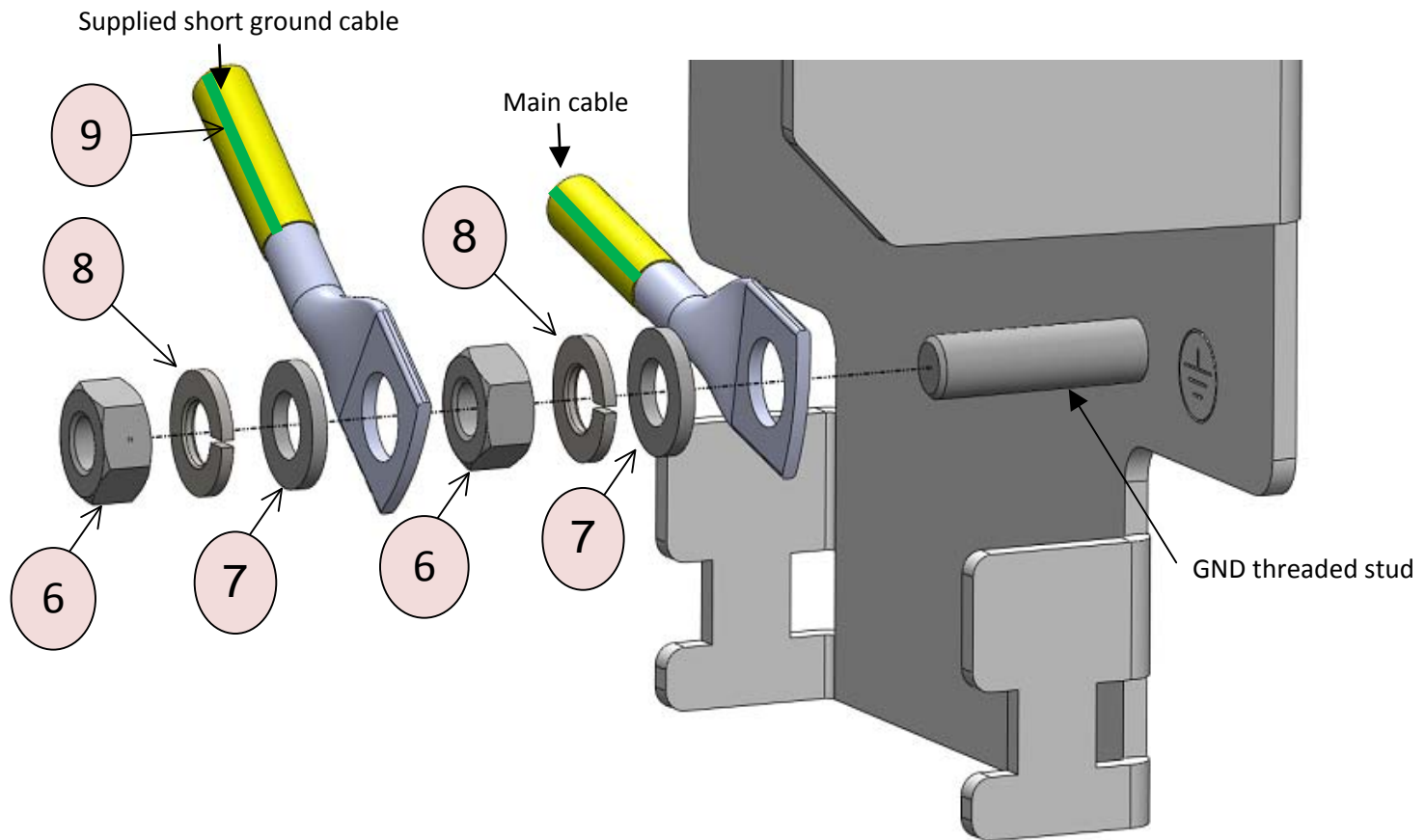
Grounded Equipment Warning



Warning

This equipment is intended to be grounded. Ensure that the host is connected to earth ground during normal use.

1. GND assembly order explained in detail



WM Installation

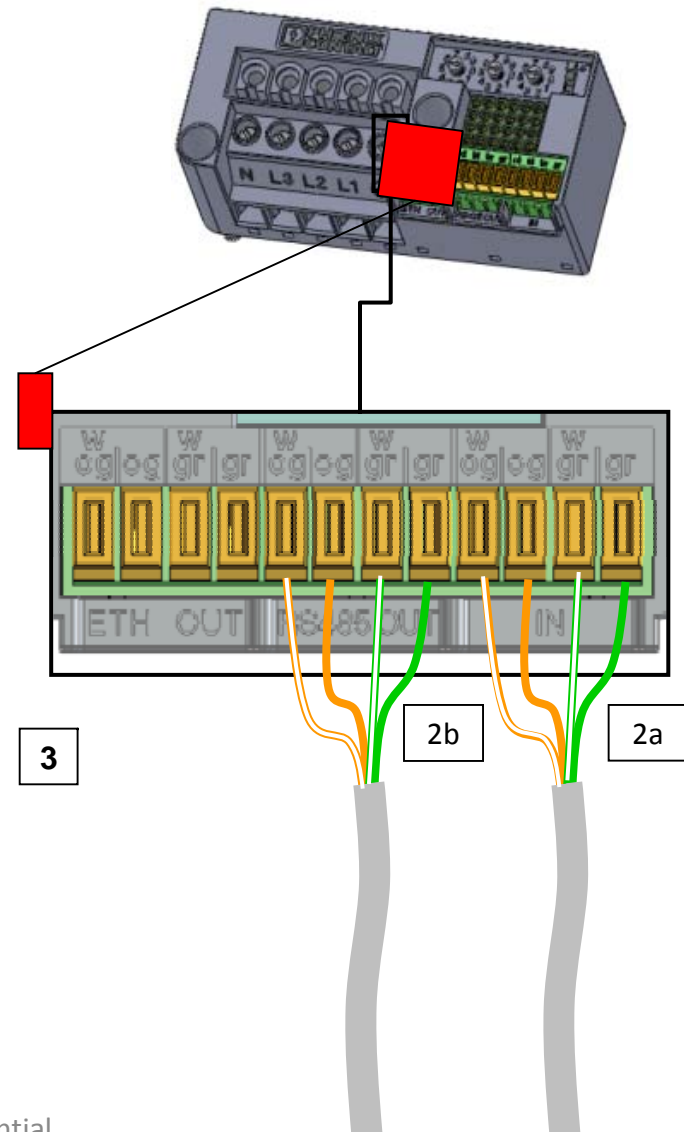
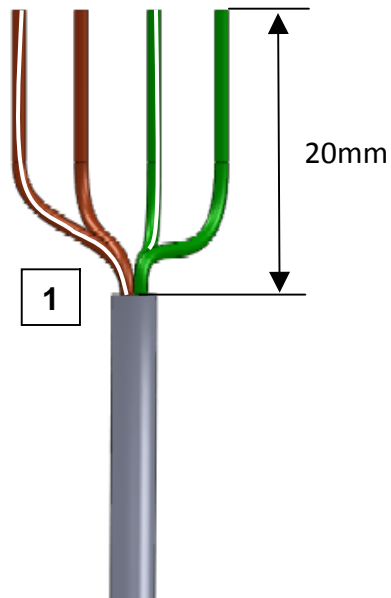
WM Infrastructure Adapter

Fast connector and cables connections:

*** If CS is equipped with GSM there is no need to connect communication wires

1. Expose the communication cable as seen below (only first outer jacket)- conductor insulation must not be stripped (the connector is Krone based)
2. Route the "IN" slots and "RS485 OUT" slots of the fast connector (Wire colors are marked on Fast connector):
 - a. Routing in the "IN" slots is either from previous CS in chain or from LCC if the CS installed is the 1st CS in the chain
 - b. Routing in the "RS485 OUT" slots is the line that is continuing to the next chained CS. If CS is last in chain "RS485 OUT" should not be connected
3. Do not route any wiring into the "ETH OUT" slots

Wiring Notes:
Communication wire : AWG24 STD Cat5e wires
(4 twisted pairs, only 2 are in use)
Og = Orange - GND
Gr = Green - RS485 A (Data +)
W Og = White Orange - GND
W Gr = White Green – RS485 B (Data +)



WM Installation

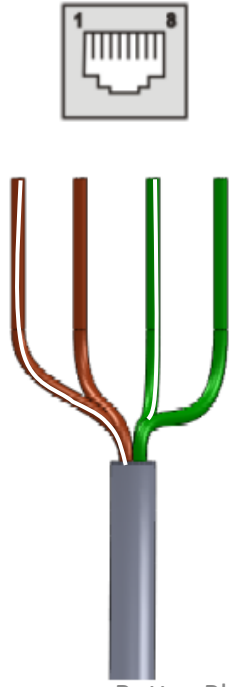
WM Infrastructure Adapter

LCC communication wiring:

1. LCC wiring – only pins 2,3,4 are in use

Wiring Notes:
 Communication wire : AWG24 STD Cat5e wires
 (4 twisted pairs, only 2 are in use)
 Og = Orange - GND
 Gr = Green - RS485 A (Data +)
 W Og = White Orange - GND
 W Gr = White Green – RS485 B (Data +)

PIN	RS-485	COLO
1	---	R ---
2	Data+	Green
3	GND	Orange
4	Data-	White Green
5	---	---
6	---	---
7	---	---
8	---	---

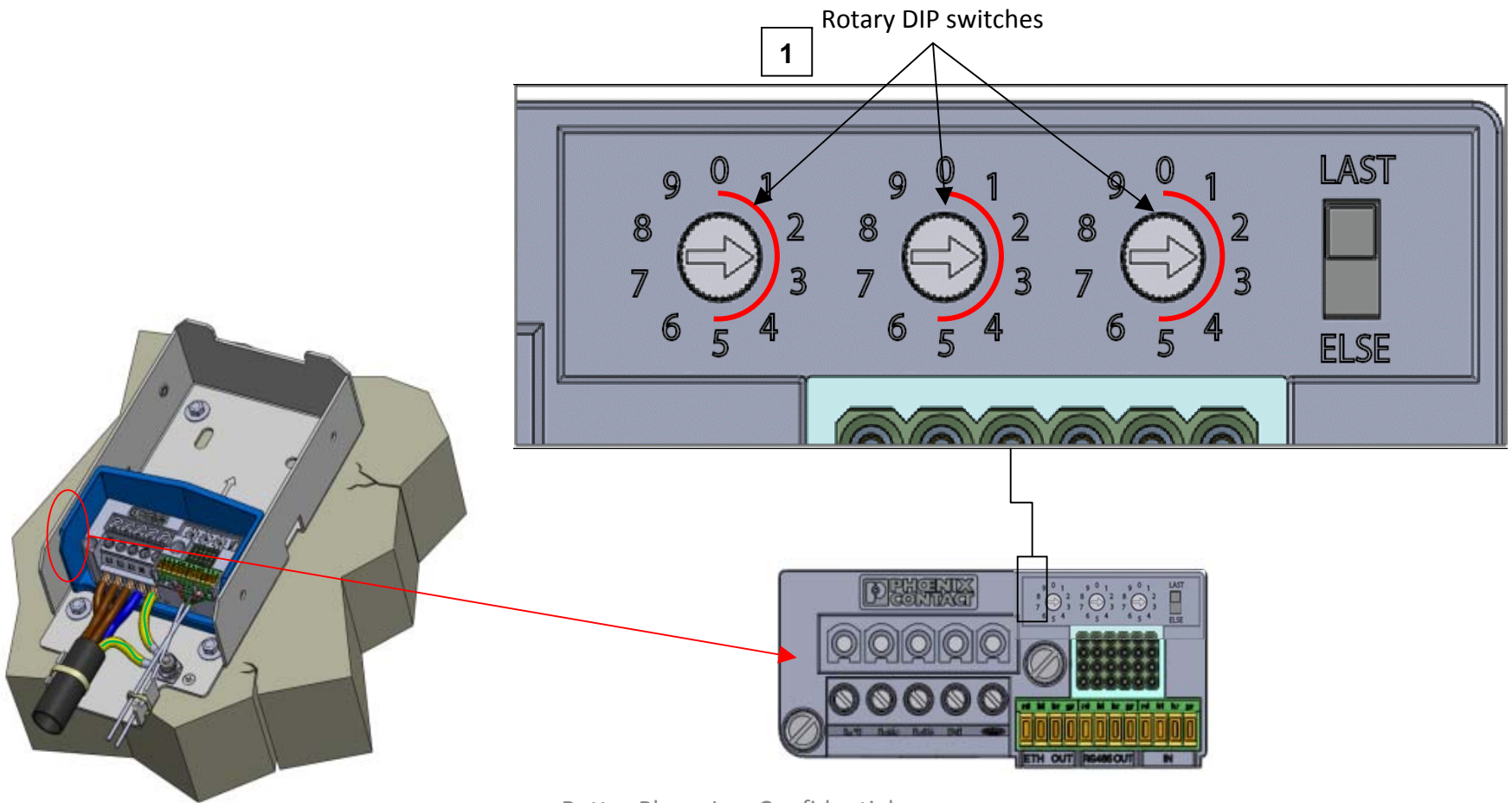


WM Installation

WM Infrastructure Adapter

GID dials:

1. The rotary dials need to be set in accordance to installed CS GID last 3 digits (disregarding the outlet number)



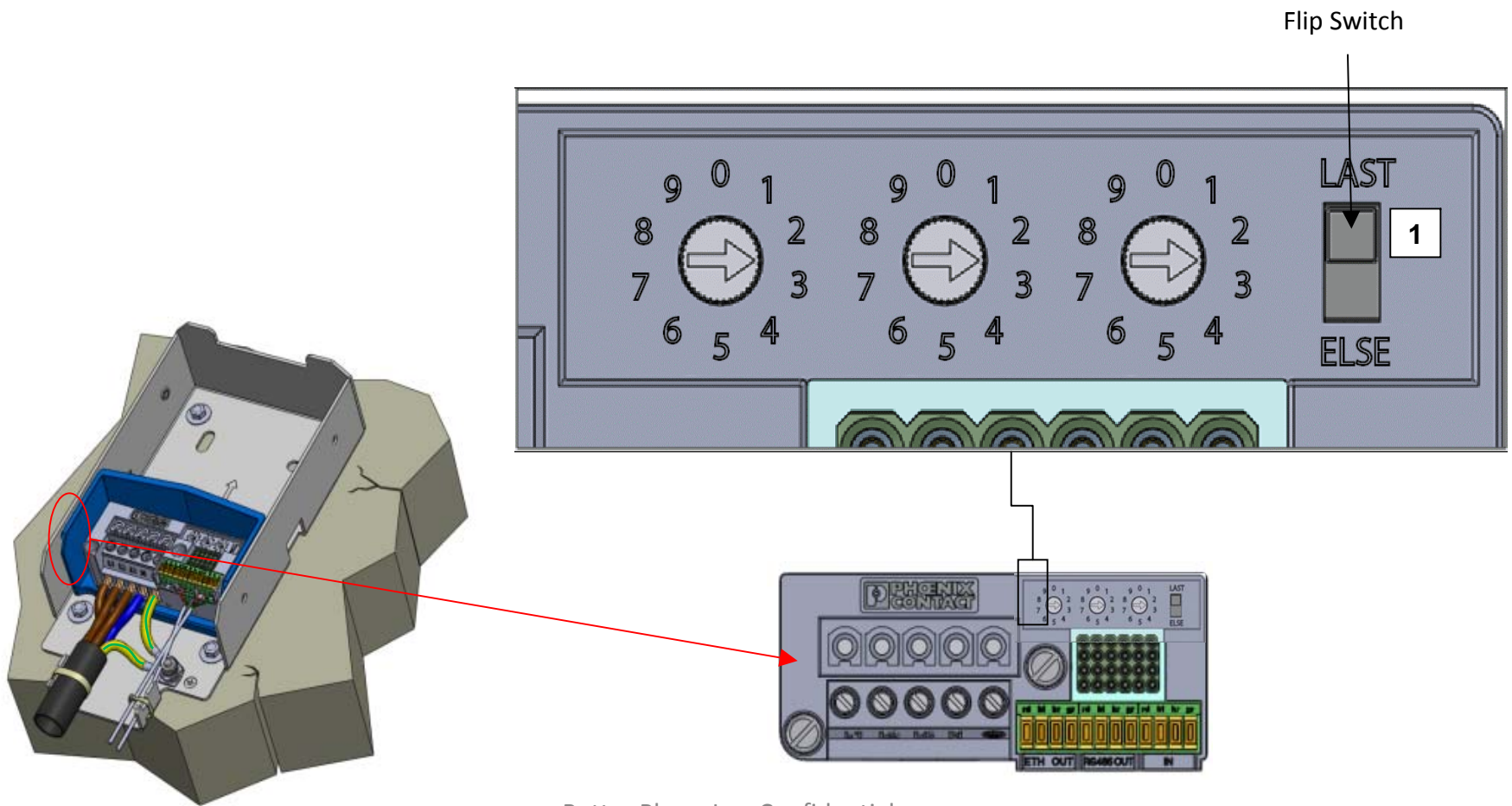
WM Installation

WM Infrastructure Adapter

GID Flip Switch:

***Flip Switch controls the embedded RS485 termination resistor

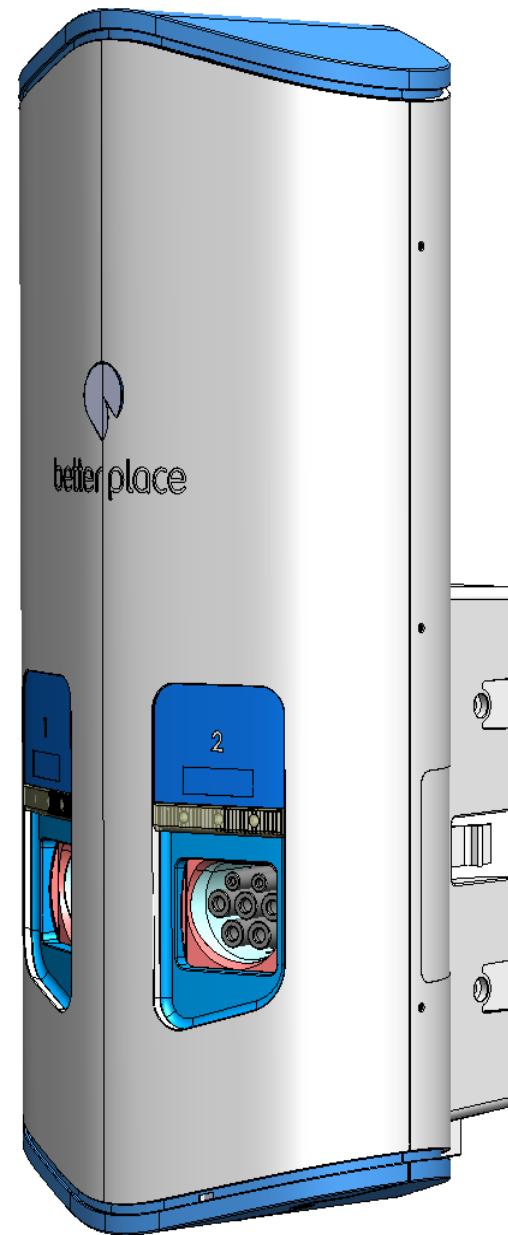
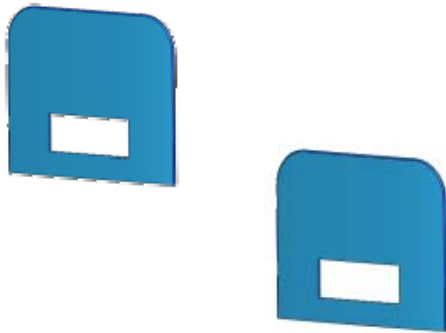
1. Flip switch should be set to "ELSE" unless the CS installed is the last in the chain (farthest in the chain from the LCC) and in that case the switch should be set to "LAST"



WM Installation

WM CS

1. WM CS should be taken out of the box and its two labels.



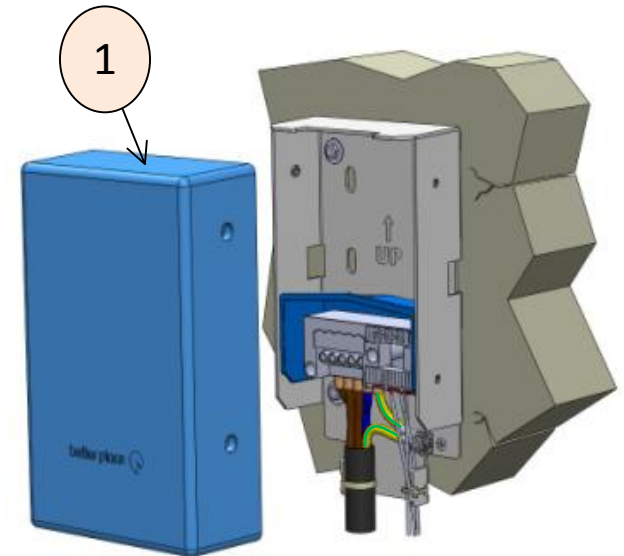
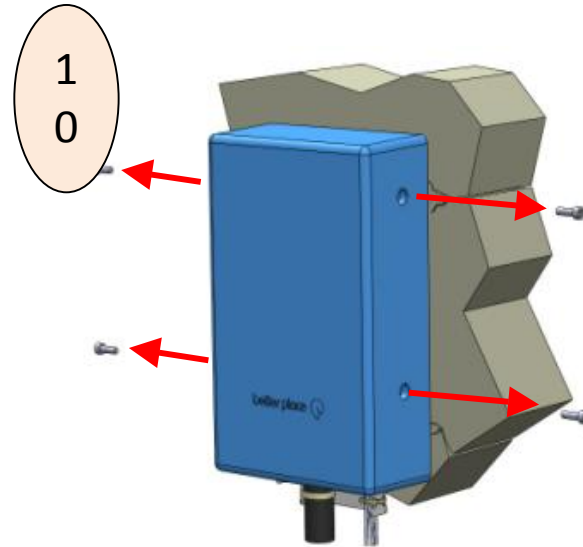
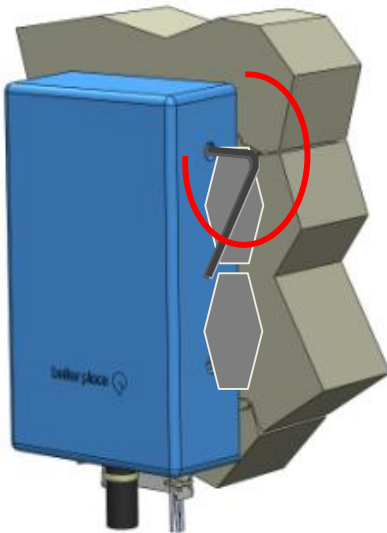
WM Installation

WM CS

Use the following tools:

Torque - 10 [Kgf*cm]

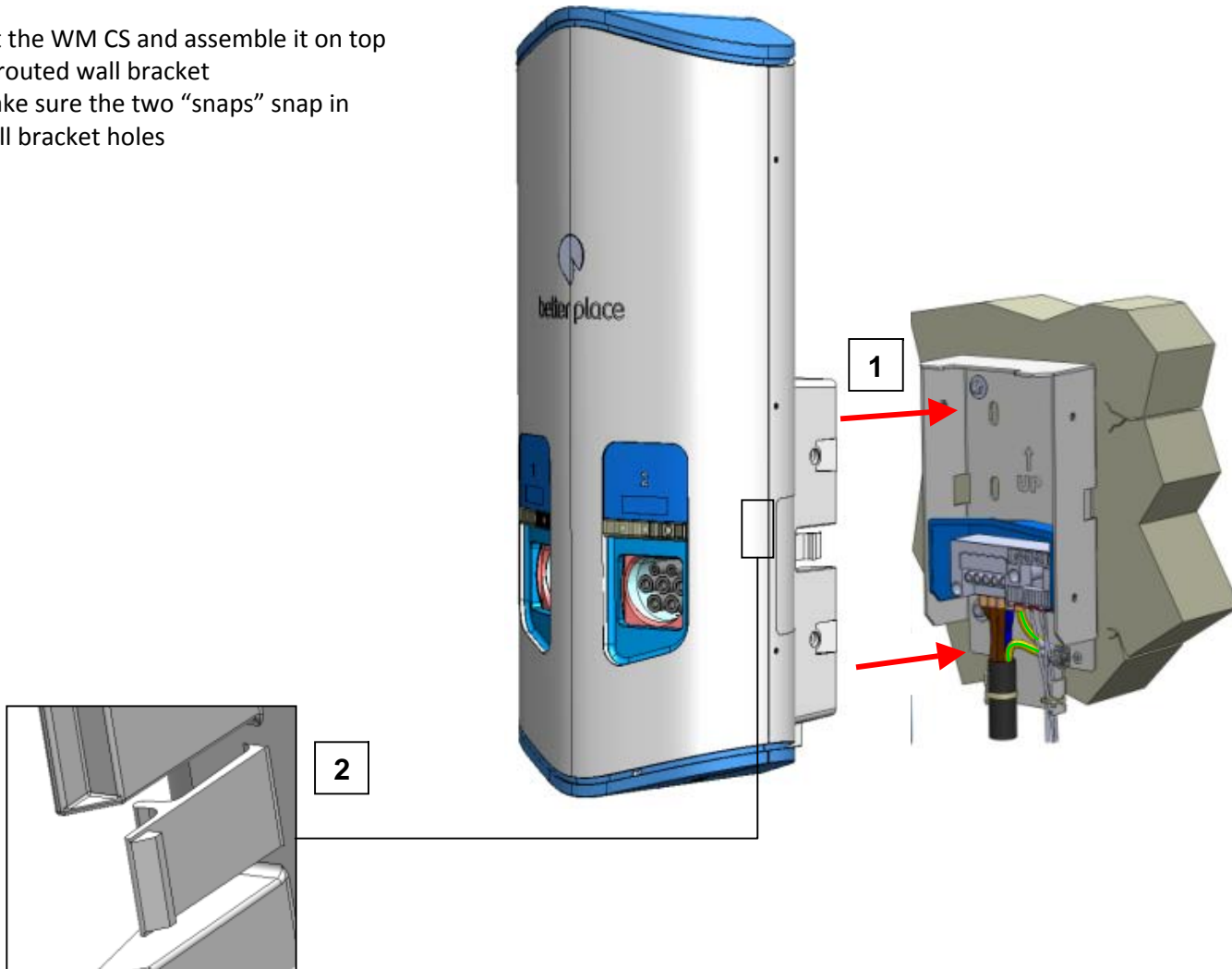
1. Untighten the screws
2. Remove the 4 torx M5 screws (10)
3. Remove Dummy Cover (1)



WM Installation

WM CS

1. Lift the WM CS and assemble it on top of routed wall bracket
2. Make sure the two "snaps" snap in wall bracket holes



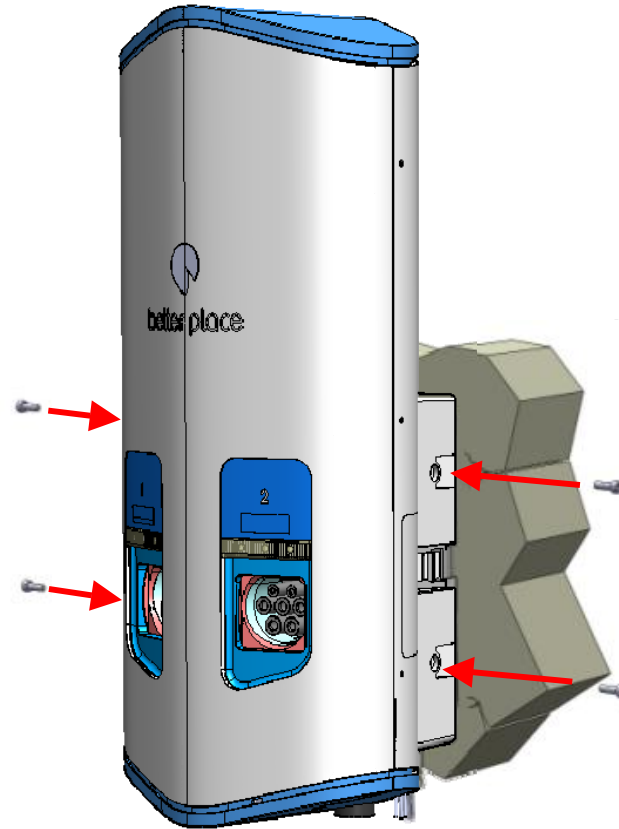
WM Installation

WM CS

Use the following tools:

Torque - 10 [Kgf*cm]

1. Fasten the WM CS to wall bracket using 4 torx M5 screws (10)



WM Installation

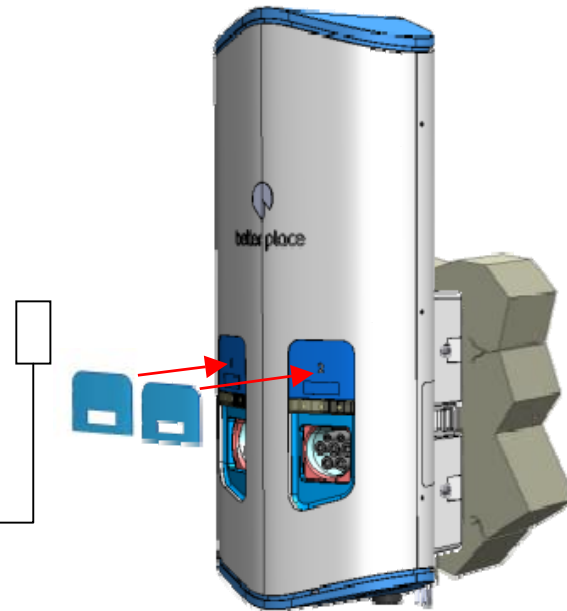
WM CS Label identification

1. Using the P-Touch Printer , print according to GID the number identification of each socket
2. Remove adhesive cover of P-touch sticker and attach sticker into indented cavity in Top cap (Each cavity is marked 1 or 2 according to socket)
3. Remove adhesive cover of PM label and attach to Top cover appropriate groove (make sure the p-touch number is clear and visible through the label)
4. Labels are placed according to socket number on front shell:

Left Socket
(Socket 1)
"Hand Left"



Right Socket
(Socket 2)
"Hand Right"

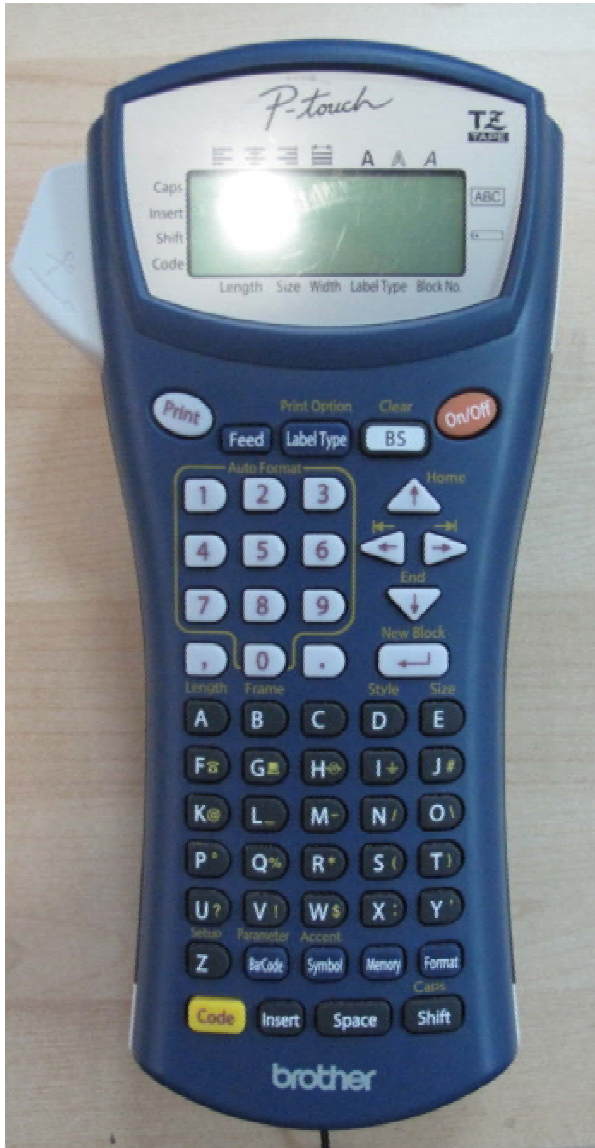


Note: Detailed P-Touch printing instructions are found in next 3 pages.



WM Installation

P-Touch Instruction



1. Power on the device



2. Define Label Type:

- Press
- Press or until "NORMAL" is displayed
- Press

3. Define text size:

- Press
- Press or until "GLB SIZE" is displayed
- Press or until character size is 3mm
- Press

4. Define BOLD style for text:

- Press
- Press or until "GLB STYL" is displayed
- Press or until style is stated "NORMAL"
- Press

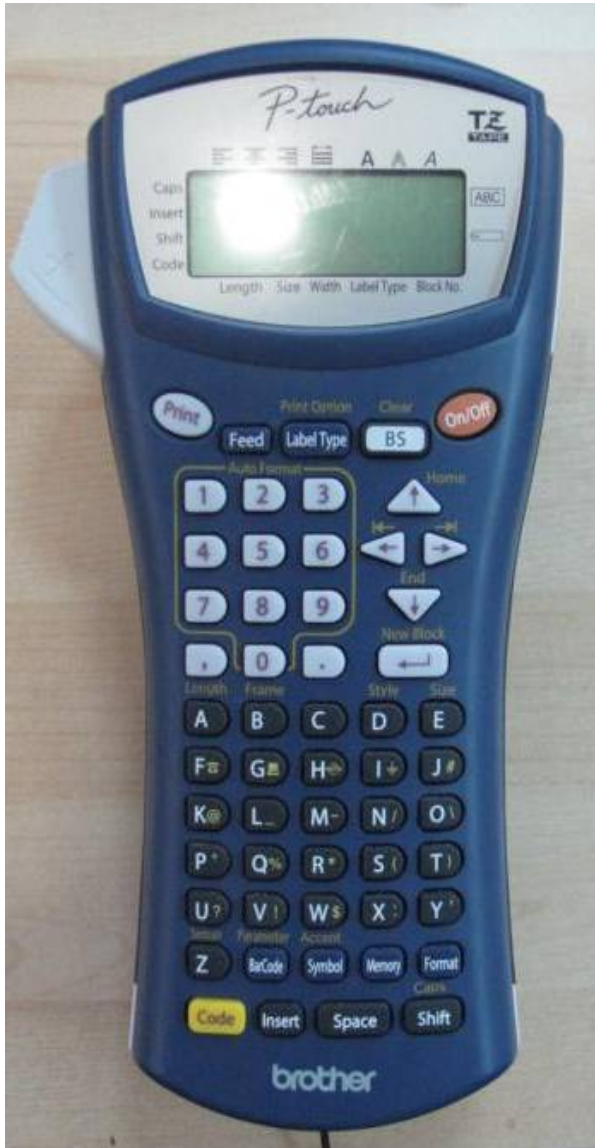
5. Define LENGTH of Label:

- Press
- Press
- Press or until "LENGTH" is displayed
- Press or until length is 36mm
- Press







***Pay mind that in early models a length of 42mm will be needed if recess is bigger than 36mm than the 42mm will be needed

WM Installation






P-Touch Instruction










6. Define Margin parameter:

- a. Press 
- b. Press 
- c. Press  until "MARGIN" is displayed
- d. Press  or  until size is 2mm
- e. Press 

7. Define text size:

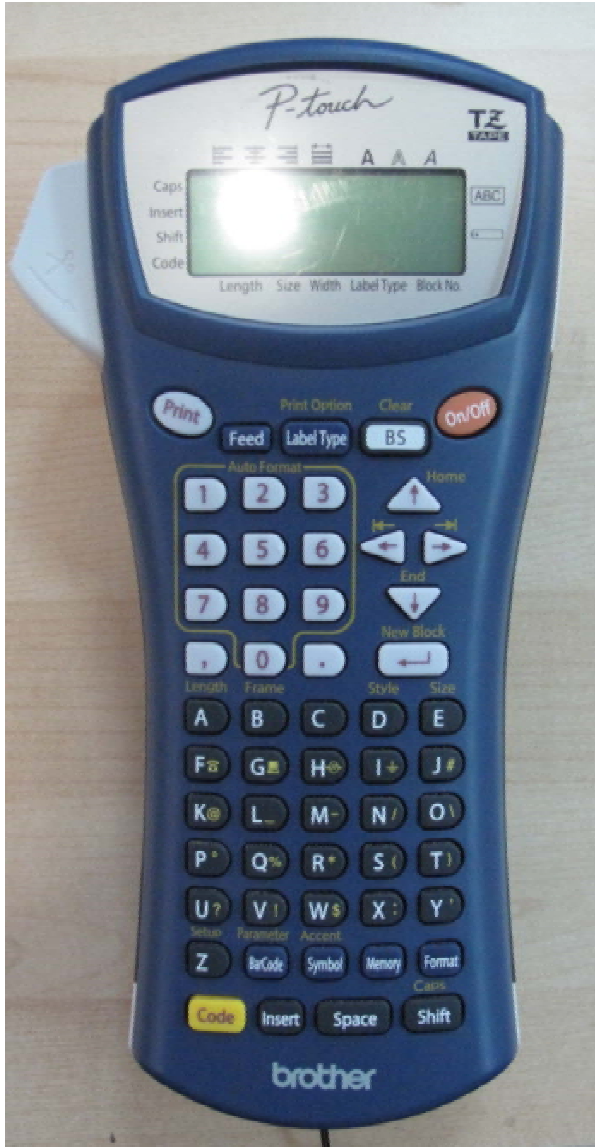
- a. Press 
- b. Press  until "ALIGN" is displayed
- c. Press  or  until "CENTER" is displayed
- d. Press 

8. Saving format to memory:








- a. Press 
- b. Press  or  until "STORE" is displayed
- c. Press 
- d. Press  or  until file number "3" where it will be stored
- e. Press 

WM Installation

P-Touch Instruction

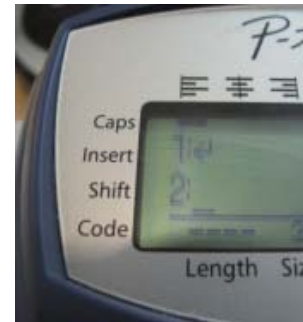



9. Recalling Saved format:

- a. Press 
- b. Press  or  until "RECALL" is displayed
- c. Press 
- d. Press  or  until the file number saved is displayed
- e. Press 

10. Entering the GID ID:

- a. Press  This will go down one line (line 2)



- b. Enter number according to GID (see format below - A)
- c. Press  and follow instructions on screen

A. GID FORMAT:

1	2	3	4	5	6	7	8	9	10	11
			.	1			.			
	site		separator	1	panel (1-7)	circuit (1-6)	separator	CS (1-12)		outlet (1-2)

WM Installation

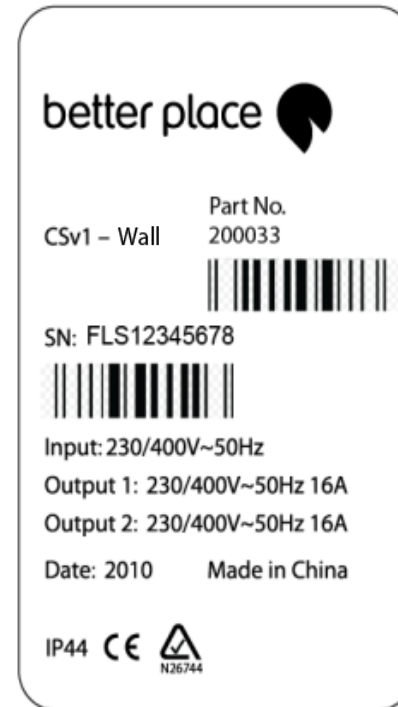
WM CS Label identification

APPENIX A

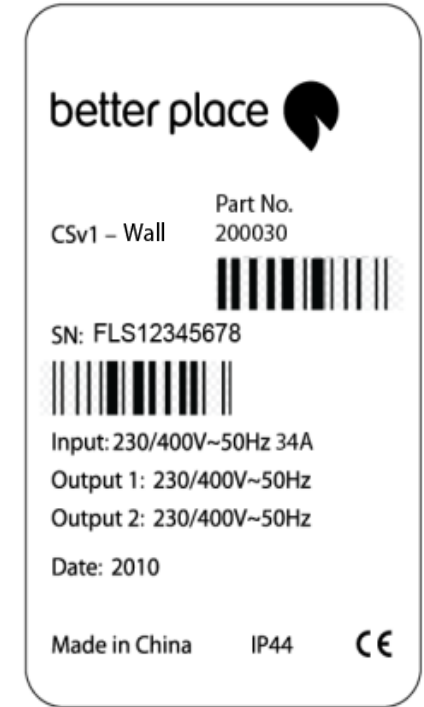
1. Technical Label is found on the right side (when facing CS) of WM CS – Barcodes are placed as seen.



Furone



Israel

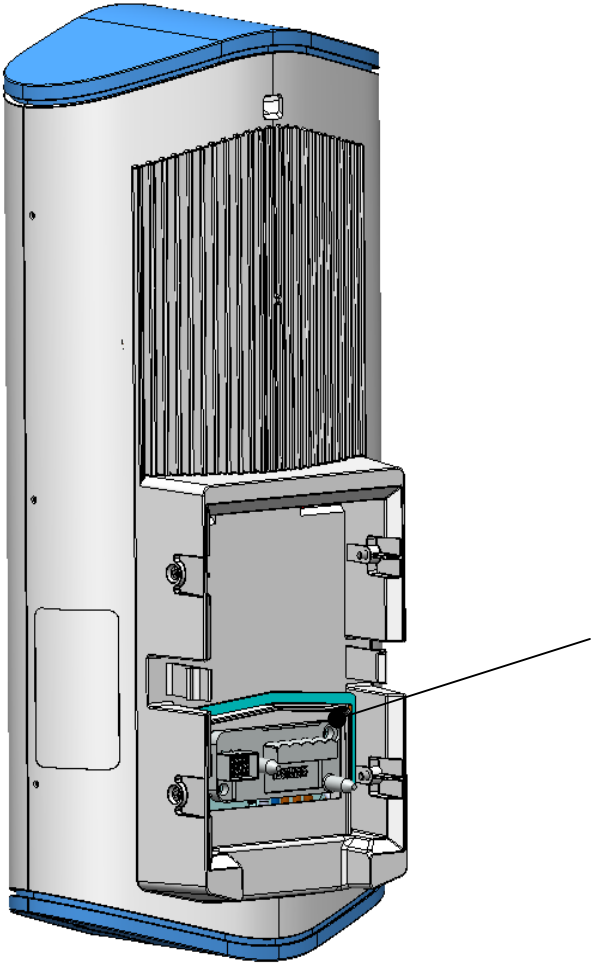


WM Installation

WM CS Label identification

APPENIX B

- 1. Fast connector barcodes are found on Fast connector in assembled WM CS.



WM Installation

WM CS Label identification

APPENIX C

1. The placement of additional labels/stickers should be placed in specified area ONLY , see below:

