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**WORK INSTRUCTIONS FOR
TRANSMITTER BOX ASSEMBLY
ASY-03-01008**

History

REV. No.	CHANGES	DATE	ORIGINATOR
A	Manufacturing Release	10/29/2009	M. Audette
B	Update Content and Format	1/7/2010	C. Ahrens



TRANSMITTER BOX ASSEMBLY

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1 Purpose

This procedure details the steps required to assemble a complete TX box.

2 Scope

The document applies to all Manufacturing and Engineering personnel required to assemble this Assembly.

3 Related documents

Document	Description
ASY-03-01008-02	TX / IDU ASSY (IDU not in this configuration)
ASY-03-01008-00	TX Box ASSY
MTG-04-01006	Mounting iSpace, TX Box, Quick Adapter
MTG-08-01071	Transmitter Box, Tray
WHA-02-01001-01	Transmitter BOX Power Harness
ATP-0039-004	Ground Cable

4 Acronyms and Definitions

Term	Definition
TX	Transmitter
PoE	Power over Ethernet
WHA	Wiring Harness Assembly







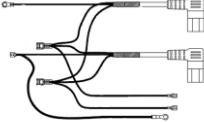







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5 Materials and Equipment

You will need the following components and Sub-Assemblies. Refer to the BOM for the complete listing.






 <p>Figure 5.0.01 iSpace Tray Box M-A-06-01011</p>	 <p>Figure 5.0.02 Back End Cover M-H-02-01019</p>	 <p>Figure 5.0.03 PoE Holder with set screws M-B-01-01014</p>
 <p>Figure 5.0.04 PoE Mounting Cover M-A-06-01011</p>	 <p>Figure 5.0.05 Tx Power Harness WHA-02-01001-01</p>	 <p>Figure 5.0.6 Tx Ground Strap WHA-02-01001-01</p>
 <p>Figure 5.0.7 Right angled Support Bracket M-C-04-01008</p>	 <p>Figure 5.0.8 PoE 48v Supply TR9CX1000LCP-Y(R)</p>	 <p>Figure 5.0.9 TX 12v Supply TR9CE3350CCP-Y</p>
 <p>Figure 5.0.10 AC Plug Interpower 8301511</p>	 <p>Figure 5.0.11 Rubber Grommet Heyco 2119</p>	 <p>Figure 5.0.12 AC Power Switch with Fuse 10A, 250 VDC, F/B 83511420-R1</p>



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 <p>Figure 5.0.13 PoE Switch Phonix 105TX-N_TRON POE</p>	 <p>Figure 5.0.14 TX Quick Release Plate M-C-04-01008</p>	 <p>Figure 5.0.15 12" Lanyard loop and end tab 890062R</p>
 <p>Figure 5.0.16 TX Universal Box M-D-01-01027</p>	 <p>Figure 5.0.17 Loctite Low Strength Blue #242</p>	

6 Procedure

First start a new “Tag of Serviceability” form for the Transmitter Box Assembly. Record serial numbers from picked components on the form and keep form with this unit and its components at all times.

6.1 TX Box Electrical Tray Assy

1. Make sure that you have the following Sub-Assemblies completed:
 - a. ELE-02-01002 Ground Cable
 - b. ELE-02-01001-01 Transmitter Box Power Cable
2. Complete Transmitter Box Wire Harness as per drawing WHA-02-01001-01.



Figure 1

Note: Check the label on the back of each Power Supply for correct voltage and ensure it is equipped with the correct connector.

3. Assemble as per drawing ASY-03-01008-00 revision D or higher.



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6.2 Front Panel of the Electrical Welded Tray

1. If there is paint around the $\frac{5}{16}$ " grounding stud located on the side of the Electrical Welded Tray (M-H-01-01008), it needs to be removed.
2. Use dermal grinding tool to sand off paint to about $\frac{3}{8}$ " diameter around the $\frac{5}{16}$ " grounding stud if required.



Figure 2

3. Install the PoE Cover Plate (M-A-06-01011) on PoE Switch (10STX-PoE) (remove and discard four (4) black sheet metal screws from the front of PoE Switch and mount cover plate with four (4) Stainless Steel sheet metal screws (01735181).
4. Slide PoE switch sub-assembly through Front Panel of the Electrical Welded Tray (M-H-01-01008) and secure cover plate using two (2) 9209SA182 and two (2) 9420SA220).
5. Slide AC Power Plug through Front Panel of the Electrical Welded Tray and secure using two (2) M2510010A20000 and two (2) 9420SA220.
6. Install the Rubber Grommet in the Front Panel of the Electrical Welded Tray.
7. Slide AC Power Switch through Front Panel of the Electrical Welded Tray and secure using two (2) M2510010A20000 and two (2) 9420SA220.



Figure 3

Note: Use Blue Loctite (medium strength) on all bolts (except Nylon)



TRANSMITTER BOX ASSEMBLY

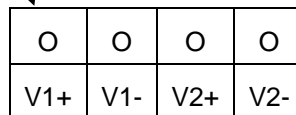
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6.3 Inside of the Electrical Welded Tray

1. Position the TX Power Supply (TR9CE3350CCP-Y) in Electrical Welded Tray (M-H-01-01008) - thread TX Power Connector and 24" of output cable through rubber grommet and neatly tie wrap the remainder inside the Electrical Welded Tray Front Panel.
2. Cut the connector off leaving approx 10 ½ "of output cable from the PoE Power Supply (TR9CX10000LCP-Y(R)).
3. Separate the TX output cable then strip and tin both ends.
4. Plug in PoE power supply via IEC cable to wall outlet - using a multimeter determine the polarity and put a strip of red tape around the positive lead.
5. Position the PoE power supply (TR9CX10000LCP-Y(R)) in Electrical Welded Tray.
6. Connect TX output cable to the PoE terminal block located on the top of the PoE Switch V1 (+) V1 (-).

Red Stripped wire (+)



7. Install the Transmitter Box Power Harness (WHA-02-01001-01) drawing and using small tie wraps tidy up the wire harness and O/P power cables.
8. Position the two (2) Power supplies so that the IEC AC Plugs are flush with the rear of the Electrical Welded Tray cover.

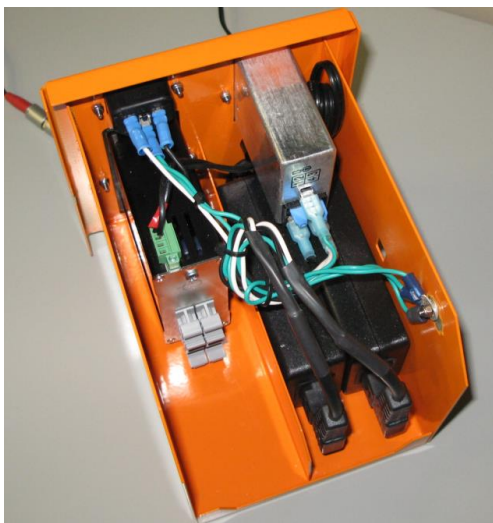


Figure 4



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- Secure all 3 grounds together on the 5/16" grounding stud with McMaster Carr (9071SA007) nylon #6-32, SS, hex nut.



Figure 5

- Position the PoE Retaining Bar (M-B-01-01014) and secure the two (2) Power Supplies in the Electrical Welded Tray. When tightening thumb screws do not apply too much force as they are made of nylon.



Figure 6

Note: Run Nylon thumb screws through a 1/4 - 20 UNC die and run a 1/4 - 20 NC tap through the PoE Retaining Bar to clear threads and remove burrs.



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6.4 TX Universal Box

1. Install two (2) stainless steel thumb screws (AJ-1010) in mounting holes in side of the TX Universal Box (M-D-01-01027).
2. Install two (2) handles (P9-096-40-08N-1S-3) using four (4) screws (96006A613) and Loctite.



Figure 7

3. Install two (2) SS Captive Panel Screws (RAF-10S2) and secure using two (2) Spring Washers (RAF-1090) through the TX Quick Release Mount Plate (M-A-04-01016).

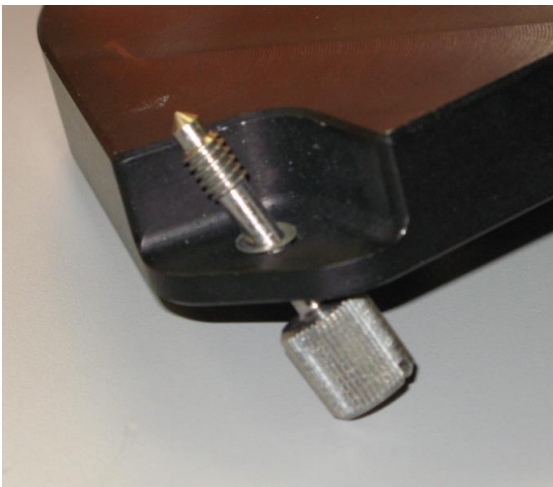


Figure 8



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4. To assemble the 12" Safety Lanyard (890062R) – slide a Captive Thumb Screw (RAF-1044) with Washer (P-E-01-01105) though the tab end of the Lanyard and secure it with a Spring Washer (RAF-1090).
5. Connect the loop end of the Safety Lanyard to the TX Quick Release Mount Plate and using McMaster Carr (92949A537) cap screw, McMaster Carr (90770A029) washer and a McMaster Carr (91145A162) Shoulder Washer.

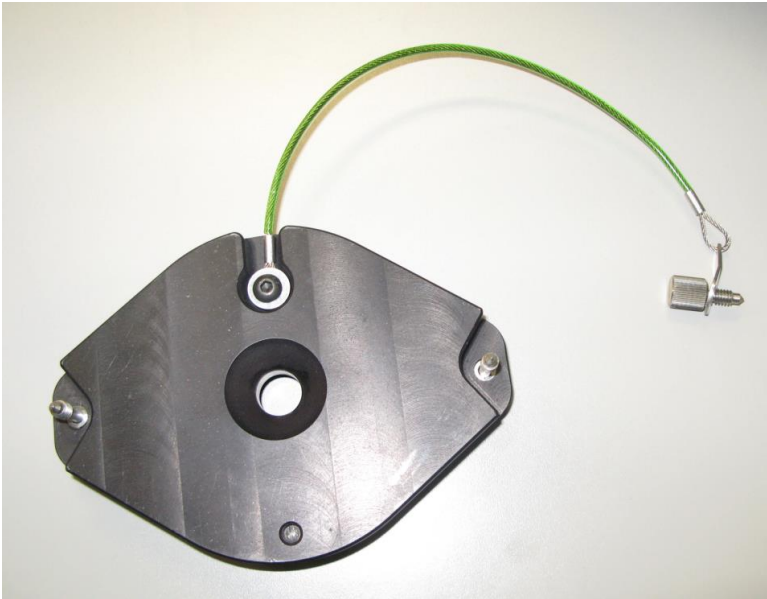


Figure 9

6. Install Dowel Pin (1126751) in TX Quick Release Mount Plate using an Arbour Press leaving 1/8 "exposed.

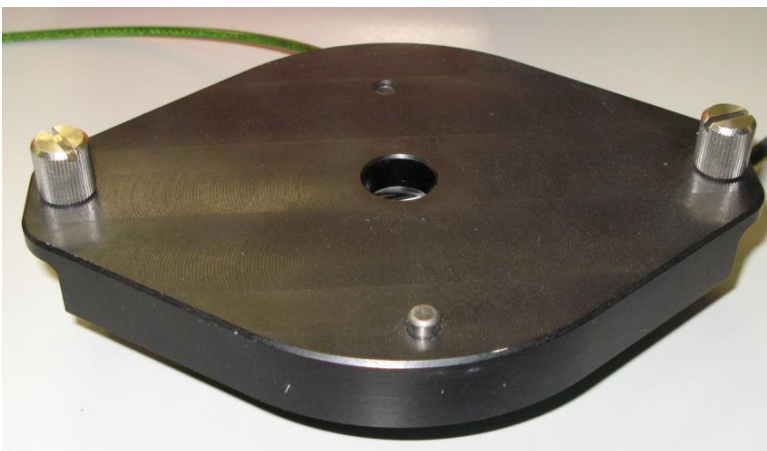


Figure 10



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7. Install and secure the TX Quick Release Mount Plate using its stainless steel thumb screws, orient as shown in Figure 11.
8. Using captive thumb screw; secure the Safety Lanyard to the TX Universal Box.

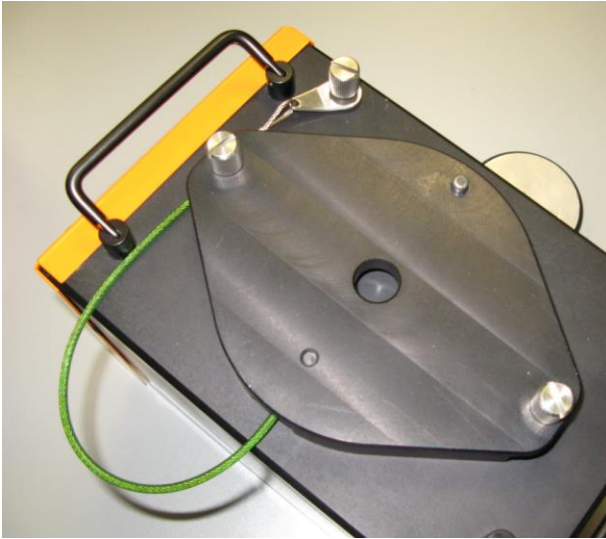


Figure 11

9. Install the Tooling Angle Support Bracket (M-C-04-01008) using three (3) (92196A537) SS Cap screws and Loctite.



Figure 12



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10. Install the $\frac{5}{8}$ " Thread Adapter (M-D-01-01028) using four (4) $\frac{7}{16}$ " SS SHCS (92196A536) cap screws and Locktite on the bottom of the TX Universal Box.
11. Install the 3 $\frac{1}{2}$ " Internal Thread Ring (MWS-866-2) using four (4) $\frac{1}{2}$ " SS SHCS (92196A537) cap screws and Locktite to the bottom of the TX Universal Box.



Figure 13

12. This is how the TX Universal Box should look like when completed.

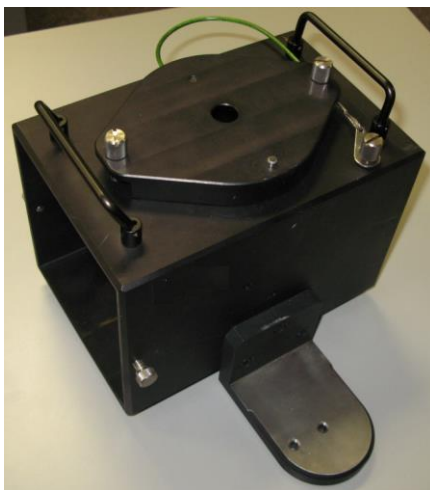


Figure 14



Figure 15



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6.5 Final Assembly

1. Slide the assembled Electrical Welded Tray into the TX Universal Box – align and tighten the front thumb screws (AJ-1019).



Figure 16

2. Locate and secure Back End Cover to the TX Universal Box using two (2) SS thumb screws (AJ-1019).

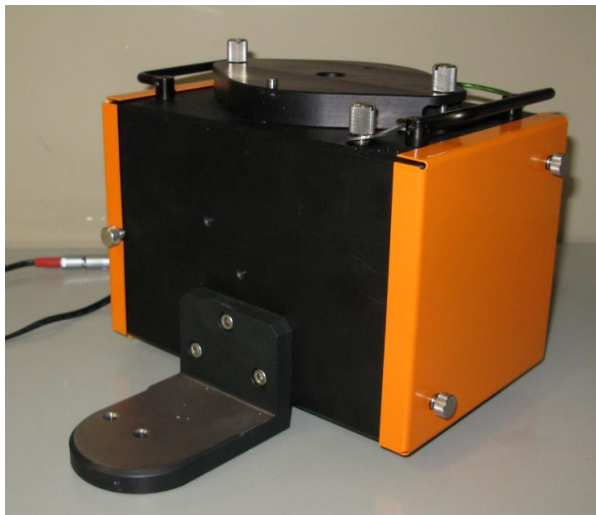


Figure 17



TRANSMITTER BOX ASSEMBLY

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7 TESTING

1. Power up Tx box and check PoE Switch Indicator LEDs and **record final result on Serviceability Tag.**
 - a. V1 LED – Green
 - b. V2 LED – Red
 - c. PoE Indicator LEDs will illuminate for 2 sec then turn off.
2. Verify with a volt meter you have 120VAC at the AC Plug and **record final result on Serviceability Tag.**

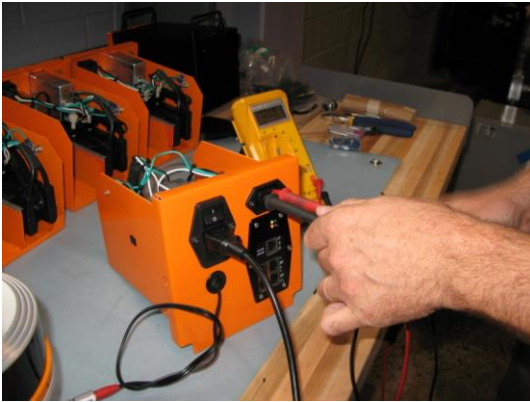


Figure 14

3. Verify each PoE port on the switch is functioning and allows data to be transmitted **Record final result on Serviceability Tag**
4. Verify ground by measuring 120VAC between the HOT side of AC Plug and ground. **Record final result on Serviceability Tag.**



Figure 16



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5. Connect a Transmitter and verify that it starts spinning. **Record final result on Serviceability Tag.**

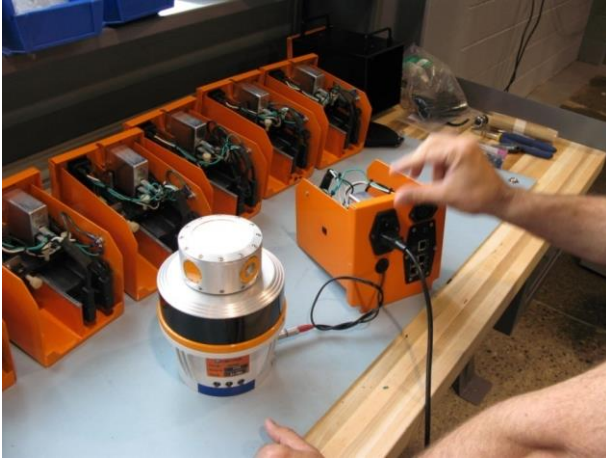


Figure 17

6. From the Serial Log of the Work Instruction, select the next serial # and record the associated information.
7. Print a serial Number label and place on the side as shown.



Figure 14

8. Visually inspect of exterior appearance (end Cover fit, scratches, marks, labels etc) and **record results on Serviceability Tag.**



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8 Troubleshooting

1. Tx Unit will not Power up
 - a. Make sure unit is connected to live 120 VAC power source.
 - b. Check fuse in AC Switch with multimeter.
 - c. Disconnect from power source and slide tray out of unit – Check power supply plugs.
 - d. Check the cable against the wiring diagram (WHA-02-01001-01) using a multimeter.

9 Maintenance & Repair

1. How to replace Fuse in AC Switch?
 - a. Disconnect Tx box from power source.
 - b. Using small screw driver remove fuse cover from AC Power Switch.
 - c. Remove and replace blown fuse with fuse with 10A, 250 VDC, F/B
 - d. Replace cover



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APPENDIX A

Tag Serviceability Form



TRANSMITTER BOX ASSEMBLY

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Tag Serviceability Form

Part # ASY-03-01045 Rev: _____

Serial #: _____

Manufacturing Components

Model

PoE Switch

Serial No: _____

AC Power Switch

Serial No: _____

PoE 48v Power Supply

Serial No: _____

TX 12v Power Supply

Serial No: _____

Test	Description	Pass / Fail	
Step 7.1	At Power up PoE Switch LEDs illuminate for 2 sec then turn off.	<input type="checkbox"/>	<input type="checkbox"/>
Step 7.2	120 VAC at AC Power Plug when powered up.	<input type="checkbox"/>	<input type="checkbox"/>
Step 7.3	All ports are functioning and transmitting data when powered up.	<input type="checkbox"/>	<input type="checkbox"/>
Step 7.4	Ground Test.	<input type="checkbox"/>	<input type="checkbox"/>
Step 7.5	Transmitter Power up.	<input type="checkbox"/>	<input type="checkbox"/>
Step 7.8	Visual inspection of Exterior appearance (end cover, tray fit, marks, labels...).	<input type="checkbox"/>	<input type="checkbox"/>

Sign off: _____

Date: _____
(MM/DD/YYYY)



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APPENDIX B

Drawing Package



TRANSMITTER BOX ASSEMBLY

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List of Drawings

Document	Rev	Description
ASY-03-01008-00	Latest	TX Unit with Tripod Mount
M-A-04-01016	Latest	TX Quick Release Plate
M-A-06-01011	Latest	PoE Mounting Cover
M-B-01-01014	Latest	Retaining Bar with set screws
M-C-04-01008	Latest	Support Bracket
M-D-01-01027	Latest	Universal Box
M-D-01-01028	Latest	$\frac{5}{8}$ " Thread Adapter
M-D-02-01019	Latest	Back End Cover
M-H-01-01008	Latest	iSpace Tray Box
WHA-02-01001-01	Latest	Transmitter Box Wire Harness

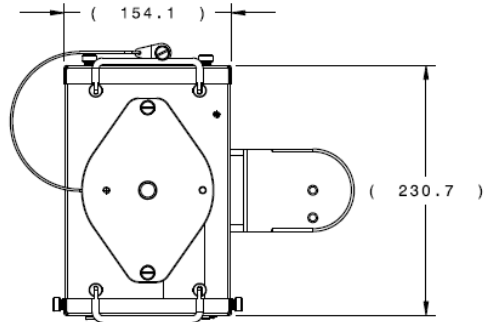


TRANSMITTER BOX ASSEMBLY

ASY-03-01008

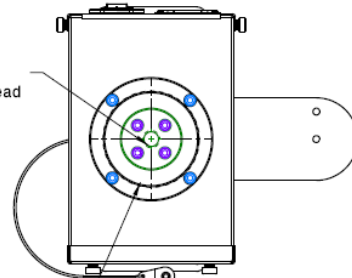
Revision: B

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
A	iSpace Option- Release for Manufacture	dfraser	9/02/08	mbehr	09/09/08
B	ECN# E00078, BOM Update Rev of Sub-Assy.	dfraser	9/17/08	mbehr	9/18/08
C	ECN# E00086, BOM UPDATE, ADDED PWR & E-NET WIRE HARNESS (ITEM 3)	dfraser	9/26/08	mbehr	9/28/08
D	ECN# E00087 - UPDATED ITEM 2 (WITH LANYARD)	gfraser	10/01/08	mbehr	10/07/08
E	ECN# E00165, ADDED I.D.U. BRACKET, REMOVED SUB-ASSY REQUIREMENTS FOR COMBINED BOM. ENTIRE DRAWING UPDATED.	dfraser	04/16/09	mbehr	04/24/09
F	ECN# E00226, PWR-ETHERNET CABLE MOVED TO HIGHER LEVEL.	dfraser	10/19/09	mbehr	10/20/09



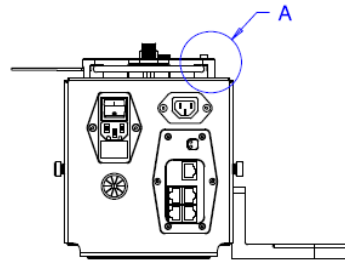
Top View
Scale: 1:4

5/8" - 11UNC
Internal Thread

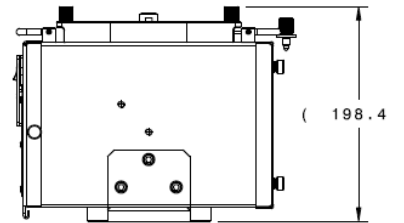


3 1/2" - 8UNC
Internal Thread

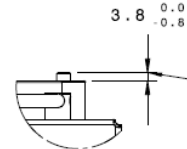
Bottom View
Scale: 1:4



Front View
Scale: 1:4

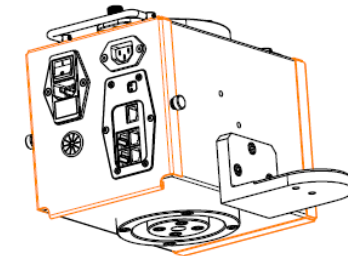


Side View
Scale: 1:4



Detail A
Scale: 1:2

REQUIRED PIN HEIGHT.



Isometric view
Scale: 1:4

NOTES;

1. Install items 101 & 103 with semi-permanent thread locking adhesive.
2. Max torque for items 101 & 103, 72lb-in.
3. Item 3 not shown, Power & Ethernet Cable Harness.
4. Press fit item 104 into item 203 to achieve required pin height.

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
INTERPRET DIMENSIONS AND TOLERANCES
FOR KIBO YAMAGUCHI
TOLERANCES APPLY AS SHOWN BELOW

IMPERIAL	METRIC
X ±.175	X ±.1
XX ±.025	XX ±.02
XXX ±.015	XXX ±.025
XXXX ±.005	XXXX ±.015
XXXXX ±.0005	XXXXX ±.005
ANGLE ± 1°	ANGLE ±.1°

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Assembly, Metrology, iSPACE Universal Box -
Config-00 Tx & Box with Tripod Mount Rings

FINISH
N/A



1:1

7.802kg

ASY-03-01008-00
SHEET 1 OF 2



TRANSMITTER BOX ASSEMBLY

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Revision: B

Isometric view
Scale: 1:5

Detail C
Scale: 1:2

Detail D
Scale: 1:2

Exploded Isometric view[2]
Scale: 1:3

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
A	iSpace Option- Release for Manufacture	dfraser	9/02/08	mbehr	09/09/08
B	ECN# E00078, BOM Update Rev of Sub-Assy.	dfraser	9/17/08	mbehr	9/18/08
C	ECN# E00086, BOM UPDATE, ADDED PWR & E-NET WIRE HARNESS (ITEM 3)	dfraser	9/26/08	mbehr	9/28/08
D	ECN# E00087 - UPDATED ITEM 2 (WITH LANYARD)	gfraser	10/01/08	mbehr	10/07/08
E	ECN# E00185, ADDED I.D.U. BRACKET, REMOVED SUB-ASSY REQUIREMENTS FOR COMBINED BOM. ENTIRE DRAWING UPDATED.	dfraser	04/16/09	mbehr	04/24/09
F	ECN# E00226, PWR-ETHERNET CABLE MOVED TO HIGHER LEVEL.	dfraser	10/19/09	mbehr	10/20/09

2X Thumb Screws Mount Tx Plate to Box.

2X (107)

2X (111)

2X (113)

(112) X4

(106) X2

(104)

(203)

(105)

(114)

(204)

(201)

(102)

(101) X4

(103) X3

(202)

(113) X2

(205)

(103) X4

Thumb Screw mounts lanyard to Box.

(119)

(127)

(120)

(125)

(127)

(126)

(208)

(124)

(118)

(122)

(121)

(206)

(117)

(207)

(123)

(6)

(4)

Isometric view
Scale: 1:4

NOTES;

1. Install items 101 & 103 with semi-permanent thread locking adhesive.
2. Max torque for items 101 & 103, 72lb-in.
3. Item 3 not shown, Power & Ethernet Cable Harness.
4. Press fit item 104 into item 203 to achieve required pin height.

UNLESS OTHERWISE SPECIFIED		METS CAN MAINTAINED DATA		METRO CANADA INC.	
DO NOT SCALE DIMENSIONS		CHANGES SHALL BE INCORPORATED		50 NOTTINGHAM RD. UNITS 807	
INTERPRET DIMENSIONS AND TOLERANCES		ELECTRONICALLY BY THE DESIGN ACTIVITY		WATERLOO, ON, N2V 2B8	
SEE HOME TRAINING		TOLERANCES APPLY AS SHOWN BELOW		TEL: (519) 884-3735	
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		METRO CANADA INC.			
		PART NO: 10039			
		DESIGNED BY: dfraser		REV. DATE: 09/02/2008	
		CHECKED BY: mbehr		REV. DATE: 09/09/2008	
FINISH: N/A		THIRD ANGLE PROJECTION		ASSEMBLY: Metrology, iSPACE Universal Box - Config-00 Tx & Box with Tripod Mount Rings	
				PART NO: B	
				REV. DATE: ASY-03-01008-00	
				SCALE: 1:1	
				WEIGHT: 7.802kg	
				SHEET 2 OF 2	

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TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
A	Release for Manufacture	gfraser	8/14/2008	mbehr	8/22/2008
B	E00087	gfraser	10/2/2008	mbehr	10/7/2008

Top view
Scale: 1:2

Top Isometric view
Scale: 1:2

Front view
Scale: 1:2

Section view A-A
Scale: 1:2

Bottom Isometric view
Scale: 1:2

Bottom view
Scale: 1:2

ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	1	.75 X 4.80 X 6.70" PLATE	ALUM

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
INTERPRET DIMENSIONS AND TOLERANCES
FOR SIZE FROM SHIP

IMPERIAL		METRIC	
X	±1/16	X	±1
XX	±1/32	XX	±0.5
XXX	±1/64	XXX	±0.25
XXXX	±1/128	XXXX	±0.125
XXXXX	±1/256	XXXXX	±0.0625
ANGLE	±1°	ANGLE	±1°

DATA MAINTAINED DATA
CHANGES SHALL BE INCORPORATED
ELECTRONICALLY BY THE DESIGN ACTIVITY

PROPRIETARY
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ANY FORM, WITHOUT THE WRITTEN PERMISSION OF
METRIX CANADA INC.

10039

gfraser (DTS) 8/14/2008

mbehr (DTS) 8/22/2008

FINISH: Black Anodize

THIRD ANGLE PROJECTION

METRIX CANADA INC.
60 NORTH AND RD, SUITE 017
WATERLOO, ON N2V 2B8
TEL: (519) 884-5155
FAX: (519) 882-8460
www.metrix.com

Plate, Adaptor - Tx quick
release mount

M-A-04-01016

1:1 1.5001b SHEET 1 OF 1

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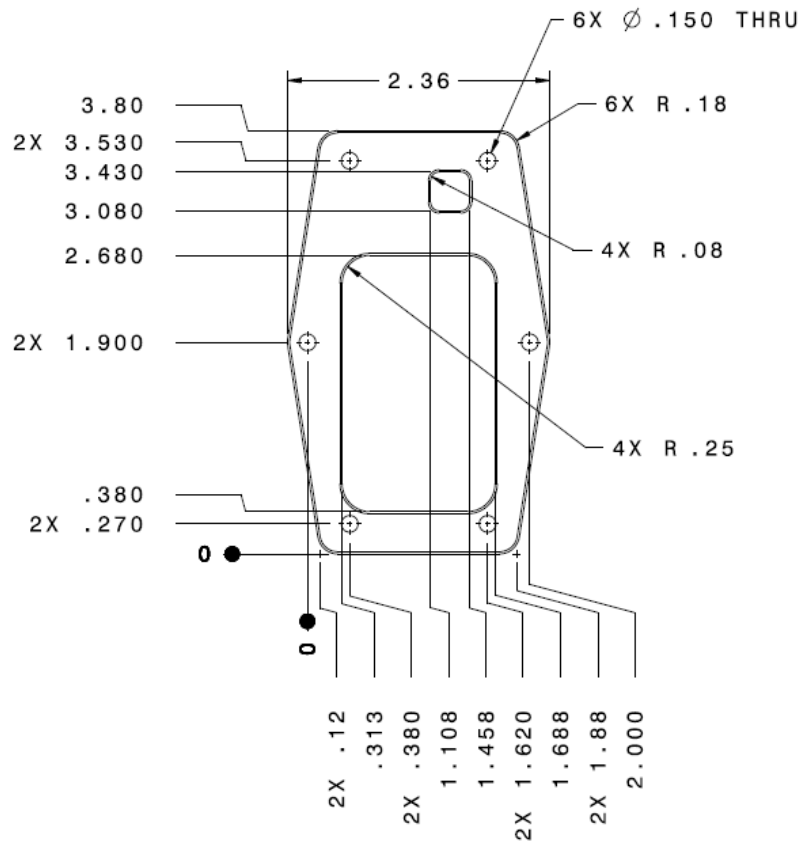


TRANSMITTER BOX ASSEMBLY

ASY-03-01008

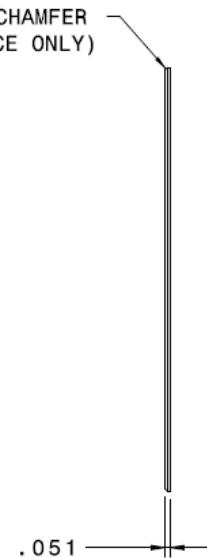
Revision: B

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
A	Release for Manufacture	gfraser	8/18/2008	mbehr	8/22/2008

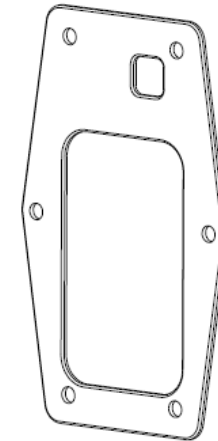


Front view
Scale: 1:1

3X .02 X 45° CHAMFER
(ON FRONT FACE ONLY)



Right view
Scale: 1:1



Isometric view
Scale: 1:1

ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	1	.051 X 2.24 X 4.50"	ALUM

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
INTERPRET DIMENSIONS AND TOLERANCES
FOR ASSEMBLY

IMPERIAL	METRIC
X ±.125	X ± 3
XX ±.030	XX ± 0.5
XXX ±.010	XXX ± 0.25
XXXX ±.005	XXXX ± 0.125
XXXXX ±.0025	
ANGLE ± 1°	ANGLE ± 1°

DATA MAINTAINED DATA
CHANGES SHALL BE INCORPORATED
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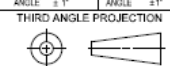
10039
gfraser 8/18/2008
mbehr 8/22/2008



METRIS CANADA INC.
50 WICKERLAND TRL UNIT 5 07
WATERLOO, ON N2V 2B8
TEL: (519) 854-2219
FAX: (519) 866-0440
WWW.METRIS.COM

Plate, Face - POE
mounting

FINISH
Black Anodize



REV	DESCRIPTION	DATE	BY	CHK
B	M-A-06-01011			A

1:1 0.0201b SHEET 1 OF 1

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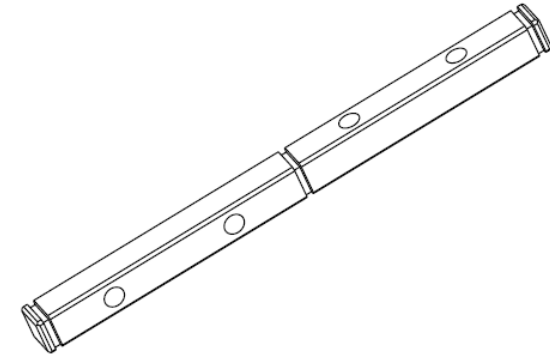
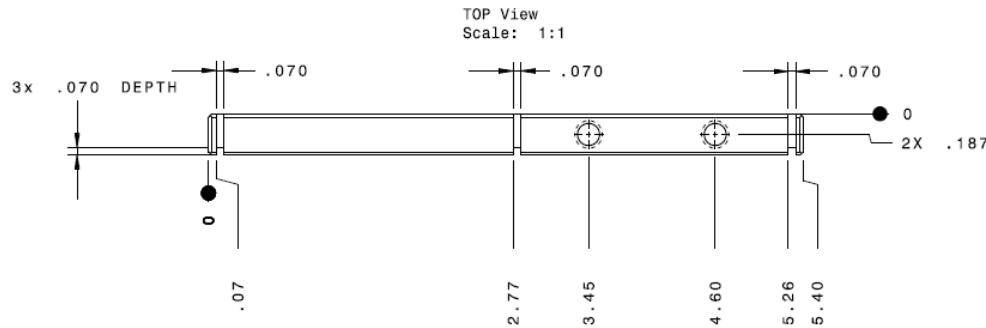


TRANSMITTER BOX ASSEMBLY

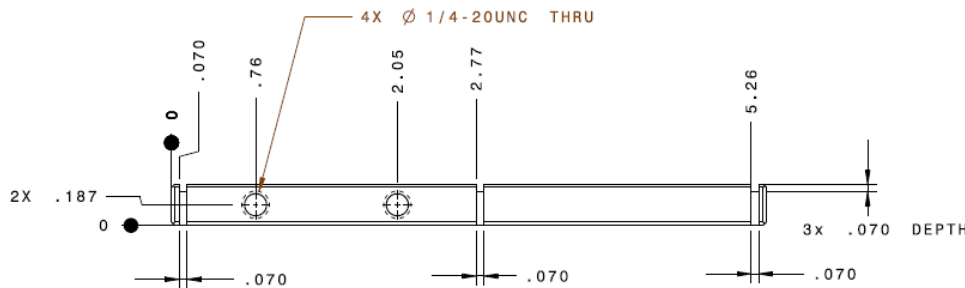
ASY-03-01008

Revision: B

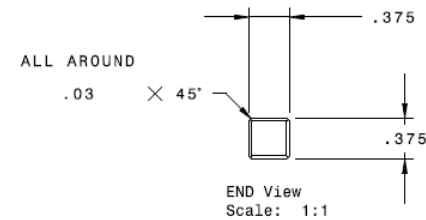
REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
P0	RELEASE FOR QUOTE	DFRASER	7/10/08	ksherk	07/14/08
A	RELEASE FOR MANUFACTURE	DFRASER	7/17/08	ksherk	07/21/08



Isometric view
Scale: 1:1



FRONT View
Scale: 1:1



END View
Scale: 1:1

NOTES

- Groove Slots on Two Faces Only.
- Chamfer All Around 0.03"x45deg, Except in Groove Slots.
- Debur All Sharp Edges.
- Clean Oil and Debris From Surfaces.

ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	1	3/8" X 3/8" X 5 1/2"	6061-T6

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
INTERPRET DIMENSIONS AND TOLERANCES
PER ASME Y14.5M-94
TOLERANCES APPLY AS SHOWN BELOW

IMPERIAL	METRIC
X ±1/16	X ±1
XX ±1/32	XX ±0.5
XXX ±1/64	XXX ±0.25
XXXX ±1/128	XXXX ±0.125
XXXXX ±.0005	XXXXX ±0.05
ANGLE ±1°	ANGLE ±1°

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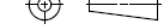
METRIS CANADA INC.
METRIS CANADA INC.
60 NORTHLAND RD. SUITE 617
WATERLOO, ON N2V 2B8
TEL: (519) 884-3376
FAX: (519) 884-9490
www.metriscan.com

10039
DFRASER 7/10/08
ksherk 7/14/08

iSpace Tx Box Power & POE
Retaining Bar w/Set Screws

FINISH
BLACK ANODIZE

THIRD ANGLE PROJECTION



B M-B-01-01014 A

1:1 0.1821b SHEET 1 OF 1

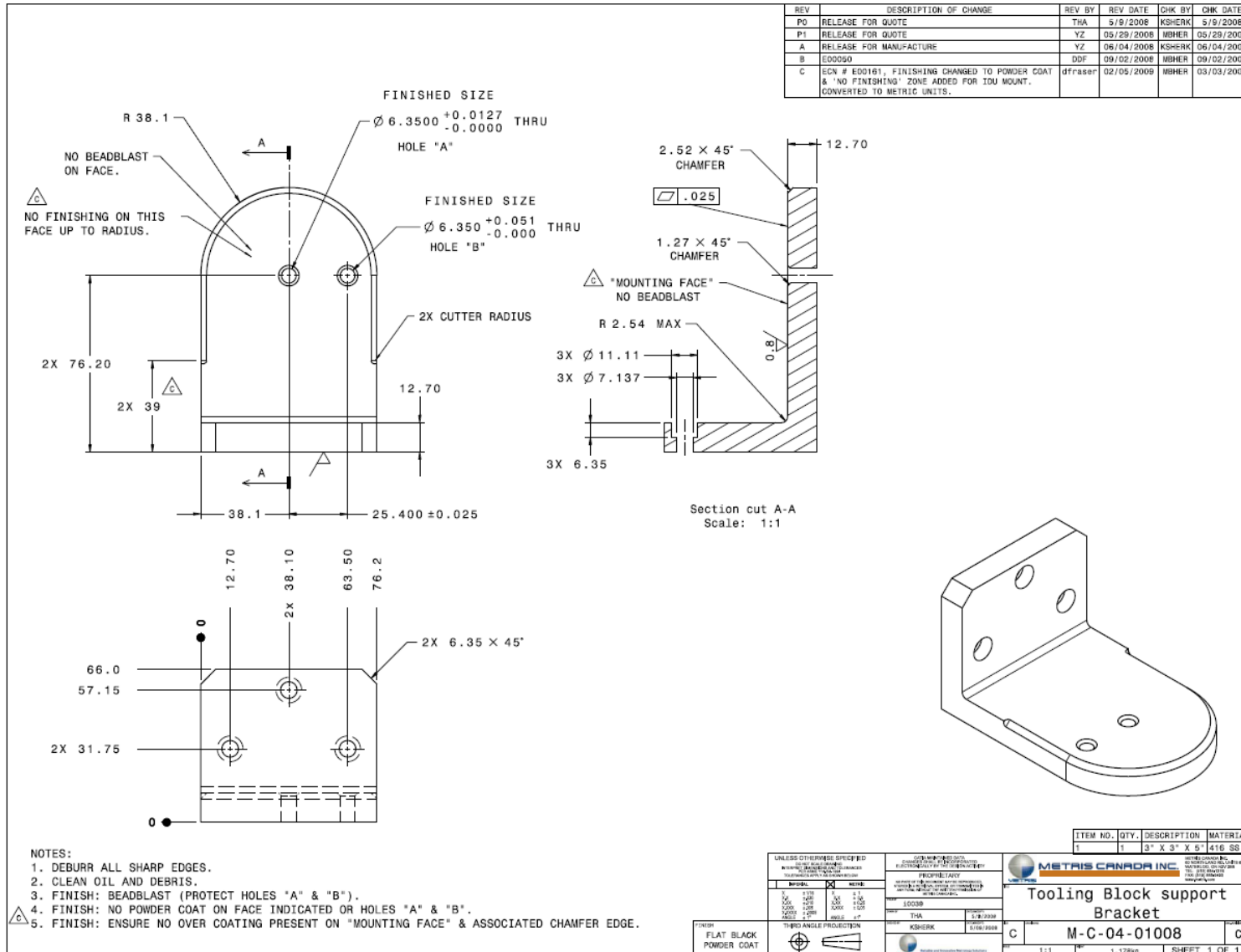
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TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B



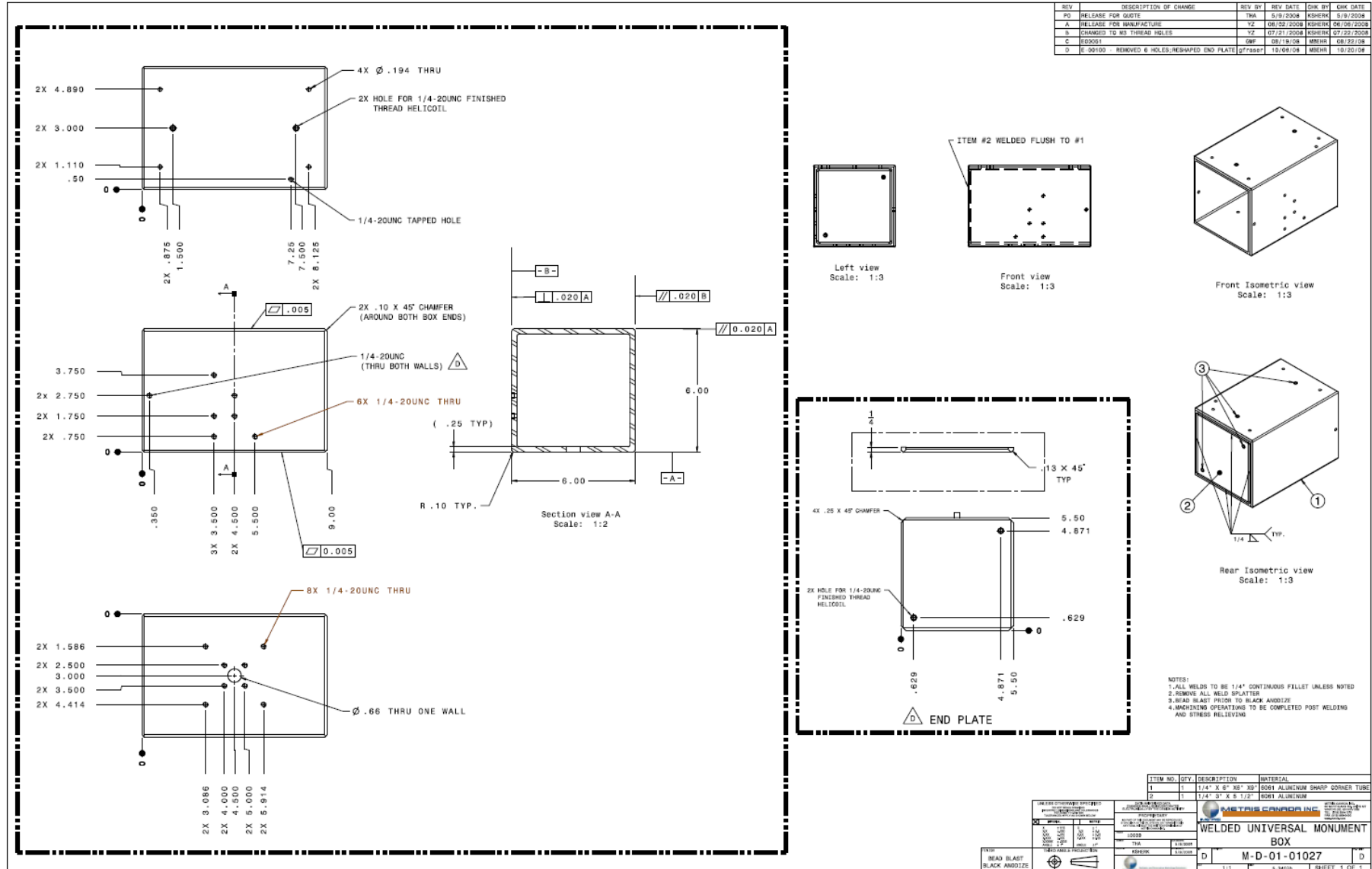
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TRANSMITTER BOX ASSEMBLY

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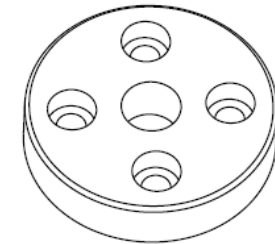
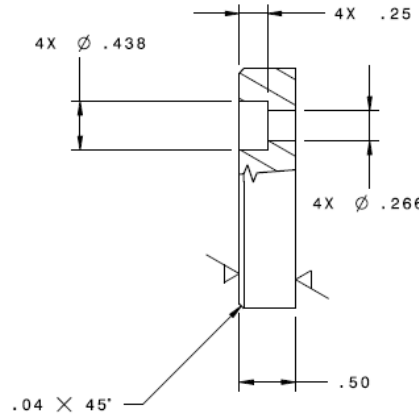
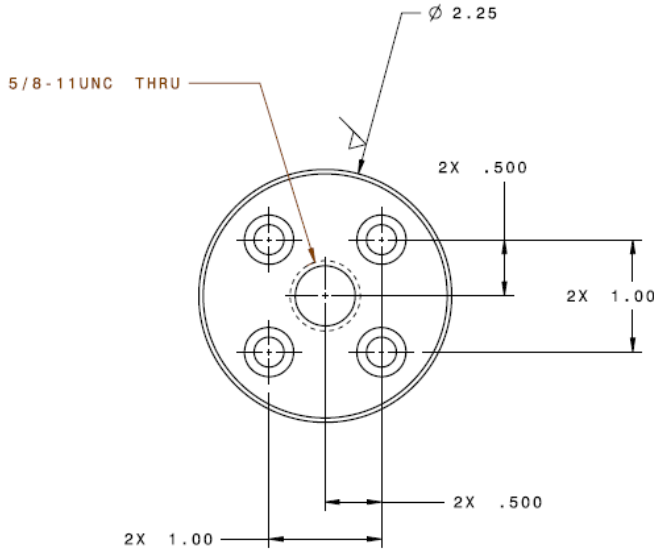


TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
P0	RELEASE FOR QUOTE	THA	5/9/2008	KSHERK	5/9/2008
A	RELEASE FOR MANUFACTURE	YZ	06/04/2008	KSHERK	06/04/2008
B	ECN# E00100, PLATE THICKENED TO 1/2" UTILIZE COMMON HARDWARE. RESIZED DRAWING FOR 'B' ANSI.	dfraser	10/08/2008	MBEHR	10/20/08



Isometric view
Scale: 1:1

- NOTES:
1. DEBURR ALL SHARP EDGES
2. CLEAN OIL AND DEBRIS

ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	1	Ø2-1/2" X 1/2"	300 Series SS

UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DRAWING
INTERPRET DIMENSIONS AND TOLERANCES
PER ASME Y14.5M-1994
TOLERANCES APPLY AS SHOWN BELOW

INTEGRAL	METRIC
X ±.125	X ±.1
XX ±.030	XX ±.02
XXX ±.010	XXX ±.005
XXXX ±.005	XXXX ±.0025
XXXXX ±.0025	XXXXX ±.00125
ANGLE ±.1°	ANGLE ±.1°

CAD-MANAGED DATA
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METRIX CANADA INC.

10039
THA
5/9/2008

KSHERK
5/9/2008

1:1
0.4231b



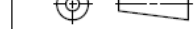
METRIX CANADA INC.

METRIX CANADA INC.
80 NICKELAND RD. UNIT 817
WATERLOO, ON N2V 2Z8
TEL: (519) 884-1378
FAX: (519) 884-4848
www.metrix.com

5/8" THREAD ADAPTER

FINISH
NONE

THIRD ANGLE PROJECTION



REV

1:1

REV

0.4231b

REV

SHEET 1 OF 1

REV

B

REV

M-D-01-01028

REV

B

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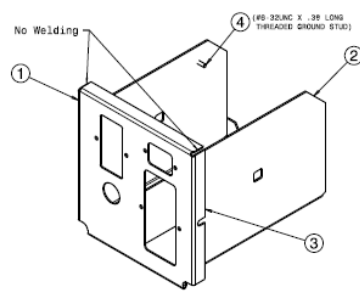


TRANSMITTER BOX ASSEMBLY

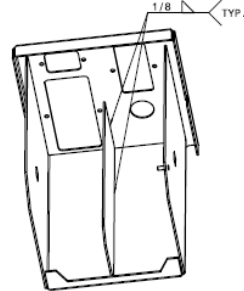
ASY-03-01008

Revision: B

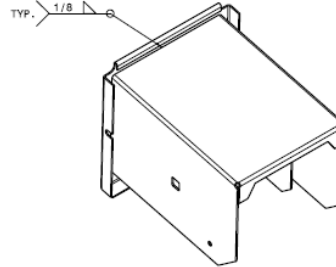
REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
PD	RELEASE FOR QUOTE	TNA	5/9/2008	tsheph	5/8/2008
P1	RELEASE FOR QUOTE	OPRASH	07/10/08	tsheph	7/13/08
A	RELEASE FOR MANUFACTURE	OPRASH	07/17/08	tsheph	07/21/08
B	ED0502	DMF	08/19/08	MUSR	08/22/08
C	ED0100-REMOVED TOP SLGT. MOVES NEW EDGE UP	gfraser	10/08/08	MUSR	10/20/08



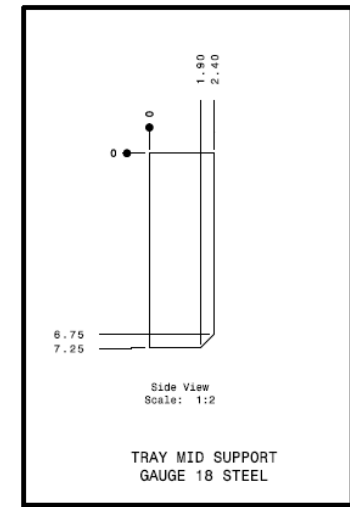
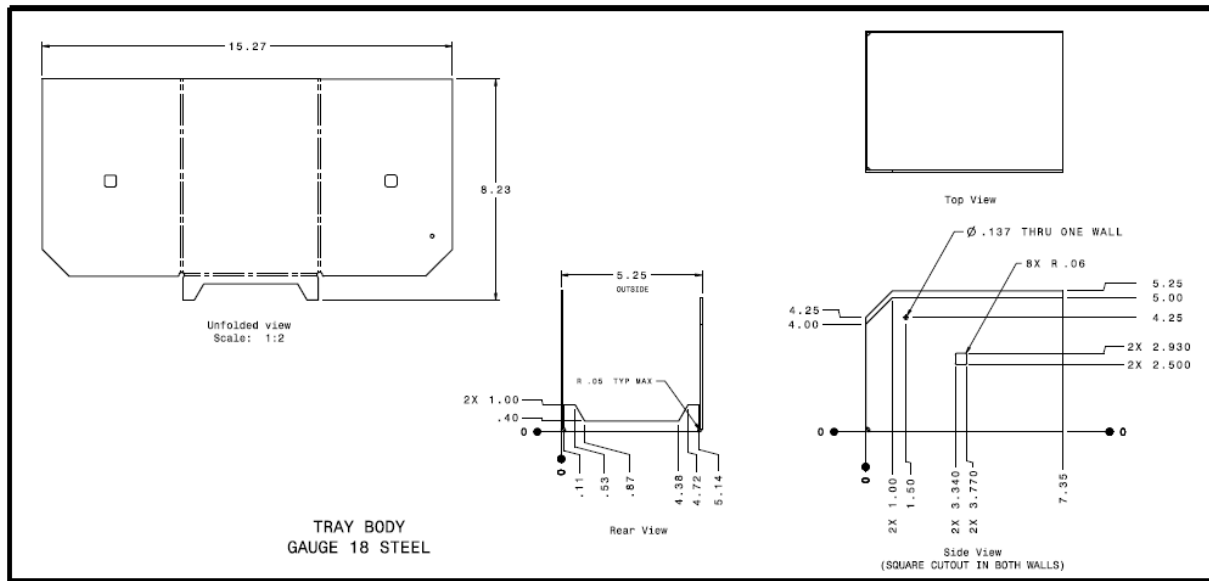
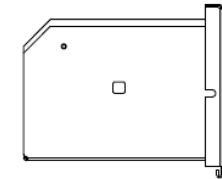
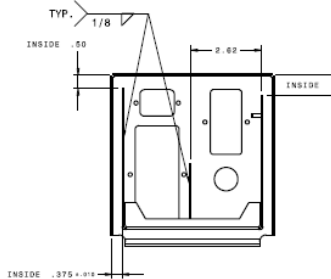
Front Isometric view
Scale: 1:2



Back Isometric view
Scale: 1:2



Bottom Isometric view
Scale: 1:2



- NOTES:
1. ALL WELDS TO BE 1/8" CONTINUOUS FILLET UNLESS NOTED
 2. REMOVE ALL WELD SPATTER
 3. DEBURR ALL SHARP EDGES
 4. CLEAN OIL AND DEBRIS
 5. PAINT PROCESS: POWDER COAT
 6. COLOR: DRAB (CODE: RAL 2011/PANTONE 144C)
 7. PRESS FIT #8-32 X .39 LONG GROUND STUD (P1W INSERT P1W P1W-832-6 OR EQUIVALENT) INTO Ø.137 HOLE
 7. MARK GROUND STUD THREADS PRIOR TO PAINTING

ITEM NO.	QTY.	NAME	DESCRIPTION	MATERIAL
1	1	FRONT COVER	8.31 X 7.48	GAUGE 18 STEEL
2	1	BODY	8.23 X 15.27	GAUGE 18 STEEL
3	1	MID SUPPORT	4.30 X 7.25	GAUGE 18 STEEL

ISPACE Electrical Tray Box Welded
 M-H-01-01008
 D 1:1 2-10116 SHEET 1 OF 2

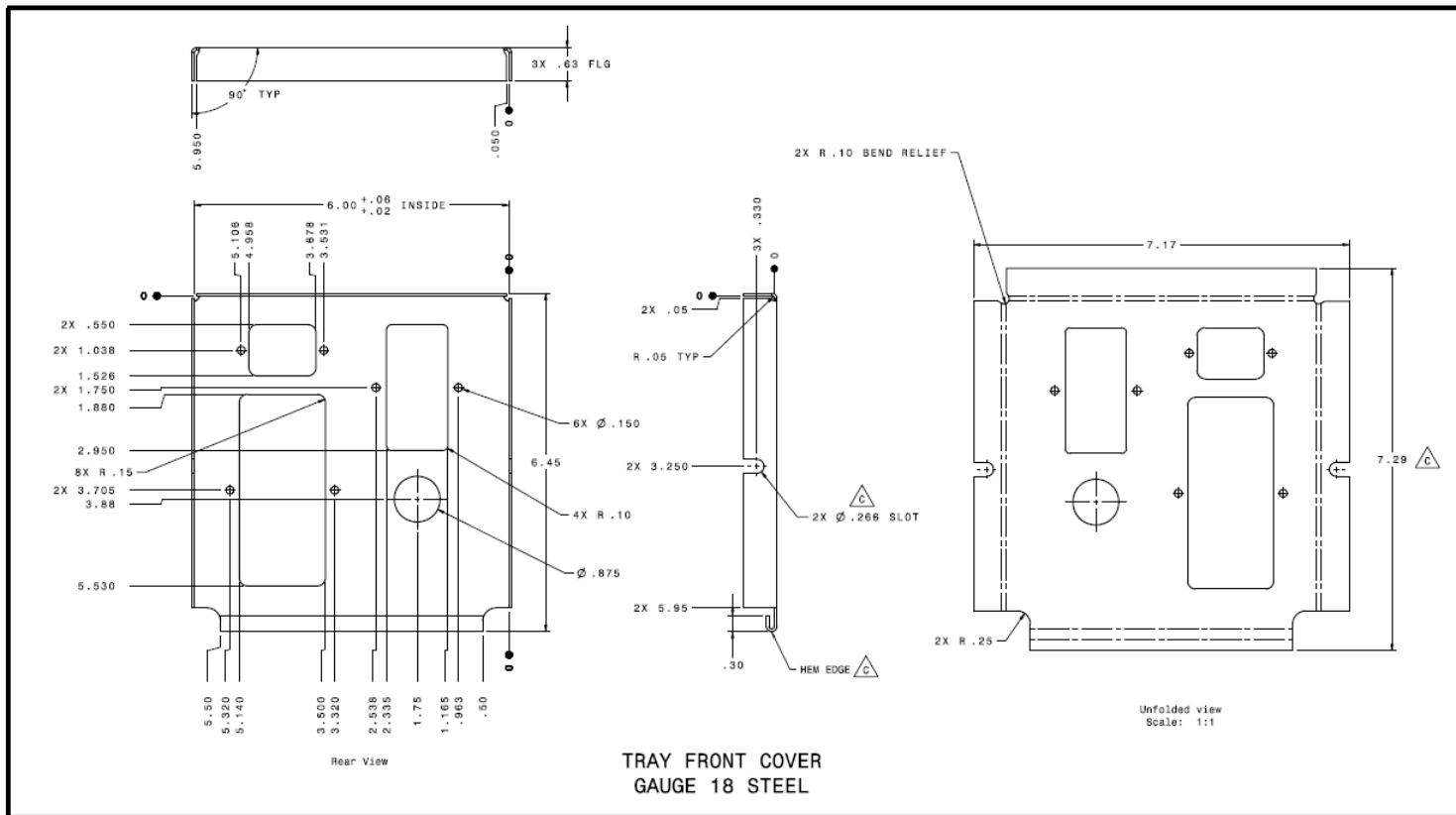


TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

REV	DESCRIPTION OF CHANGE	REV BY	REV DATE	CHK BY	CHK DATE
PD	RELEASE FOR QUOTE	THA	5/9/2008	KSH/K	5/9/2008
PT	RELEASE FOR QUOTE	CHABR	07/10/08	KSH/K	7/13/08
A	RELEASE FOR MANUFACTURE	CHABR	07/17/08	KSH/K	07/21/08
B	ISSUED	DMF	08/19/08	MSS/B	08/22/08
C	EDD100-REMOVED TOP SLOT, MOVED NEW EDGE UP	DFRANK	10/08/08	MSS/B	10/20/08



ITEM NO.	QTY.	NAME	DESCRIPTION	MATERIAL
1	1	FRONT COVER	7.25" X 7.45"	GALV 18 STEEL
2	1	BODY	8.25" X 15.27"	GALV 18 STEEL
3	1	MID SUPPORT	4.30" X 7.25"	GALV 18 STEEL

METRIX CANADA INC.
 10088
 71A
 iSPACE Electrical Tray
 Box Welded
 M-H-01-01008
 1/1 2-10-08 SHEET 2 OF 2

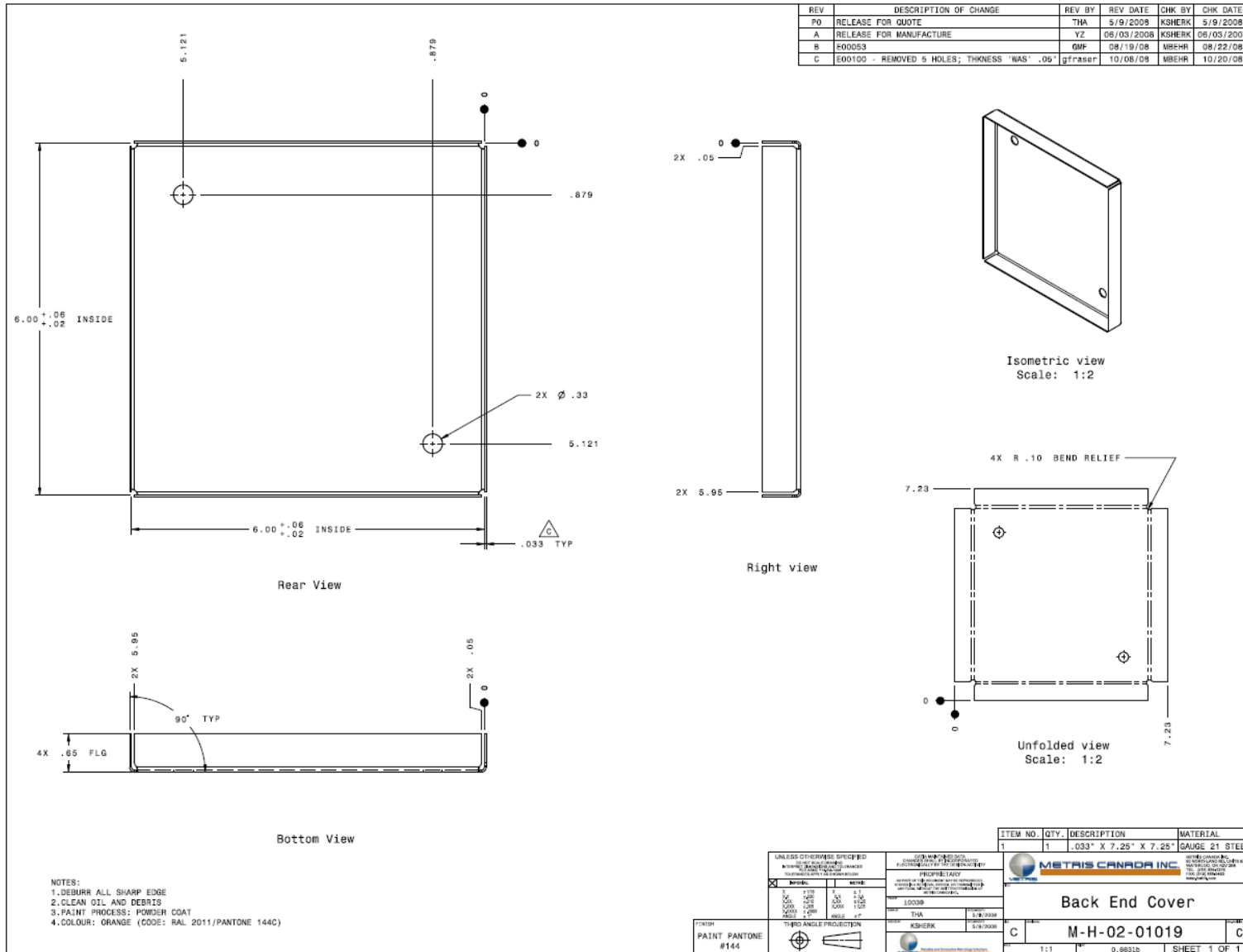
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TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B



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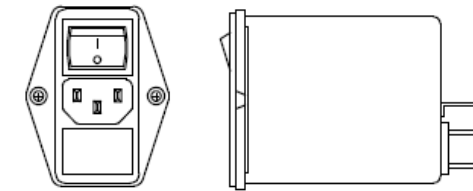
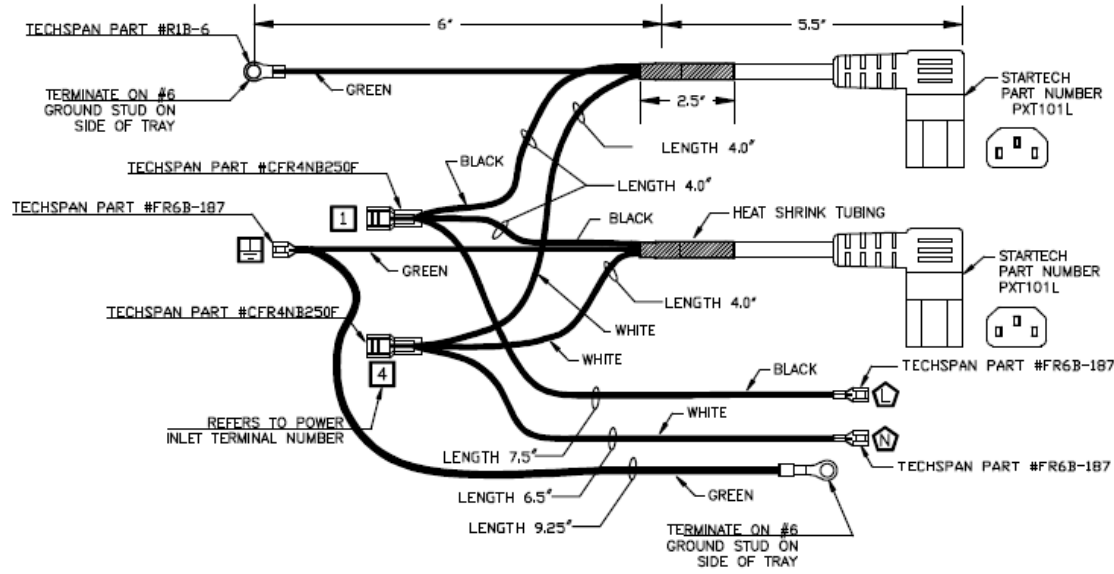
TRANSMITTER BOX ASSEMBLY

ASY-03-01008

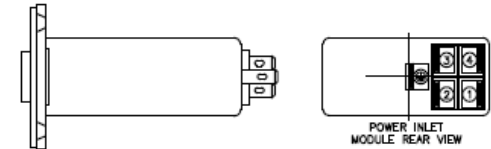
Revision: B

REV	DATE	DESCRIPTION OF CHANGES IN THIS REVISION
A	12/10/08	RELEASE FOR MANUFACTURE

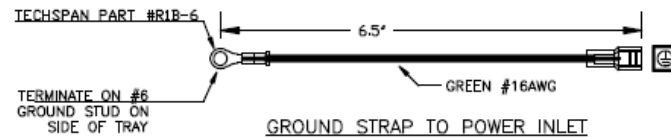
TRANSMITTER BOX POWER HARNESS



Power Inlet Module



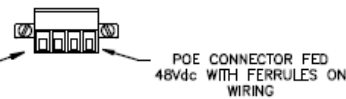
POWER INLET MODULE REAR VIEW



GROUND STRAP TO POWER INLET

NOTES:

- POWER OUTLET TERMINAL DESIGNATION
- POWER INLET TERMINAL DESIGNATION
- USE FERRULES ON WIRES FEEDING 48Vdc TO POE



POE CONNECTOR FED 48Vdc WITH FERRULES ON WIRING

PROJECT: 10039 ISPACE DRAWN BY: BG CHECKED BY: [blank] APPROVED BY: [blank]		DATE: 12/10/08 DATE: 12/10/08 DATE: 12/10/08		METRIS CANADA INC. 60 Northland Dr. WATERLOO, ON, N2V 2P8 TEL: (519) 884-3376 FAX: (519) 884-3400	
TITLE: PWR WIRING HARNESS FOR TX BOX			DRAWING NUMBER: WHA-02-01001-01		
SHEET: DFL				TOTAL SHEETS: 1	



TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

APPENDIX C

Bill of Materials (BOM)



TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

Mechanical BOM

Document	Rev	Description
ASY-03-01008-00	Latest	ASY-03-01008-00 Tx Box base_RevF_BOM
ASY-03-01008-00	Latest	ASY-03-01008-00 Tx Box base_RevF_Mas-90_BOM
ELE-02-01001-01	Latest	TRANSMITTER BOX, PWR CABLE_revA_Mas-90_BOM
ELE-02-01002	Latest	TRANSMITTER BOX, GRD CABLE_revA_Mas-90_BOM



TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

Assembly Number:		ASY-03-01008-00		Revision		Date		
Description:		Assembly, Metrology, iSPACE Universal Box - Config-00 Tx & Box with Tripod Mount Rings		Current:	F	19-Oct-09		
				Previous:	E	16-Apr-09		
Assemblies and Weldments								
Item Number	Quantity	Part Number	Description	CAD Rev	Type	Date	ITAR	Reference
3	1	ELE-01-01002	Electrical Schematic, Power net Harness for Tx Box	A	Assembly	26-Sep-08		W/HA
5	1	ELE-02-01002	W/HA, Ground cable	A	Part	16-Apr-09		W/HA-02-01001-01 drawing
4	1	ELE-02-01001-01	Transmitter Box, Tx & POE Power Cable	A	Part	16-Apr-09		W/HA-02-01001-01 drawing
Purchased Parts								
Item Number	Quantity	Part Number	Description	CAD Rev	Type	Date	ITAR	Reference
101	4	P-E-01-01077	McMaster Carr, 92196A536, SHCS 1/4-20 UNC x 7/16", SS	A	Part	16-Apr-09		Bought
102	1	P-E-01-01042	Brunson, MWS 866-2, 3 1/2" - 8UNC, Ring Adaptor Internal Threaded	A	Part	16-Apr-09		Bought
103	7	SCC0404	McMaster Carr, 92196A537, SHCS 1/4-20 UNC x 1/2", SS	A	Part	16-Apr-09		Bought
104	1	1126751	Fastenal, 1126751, Dowel pin, .25 dia x .75 lg - steel	A	Part	16-Apr-09		Bought
105	1	73879	Fastenal, 73879, 5/8-11UNC x 1" L F.HCS	A	Part	16-Apr-09		Bought
106	2	P-E-01-01097	REID SUPPLY, RAF-1052, 1/4-20 CAPTIVE PANEL SCREW	A	Part	16-Apr-09		Bought
107	3	P-E-01-01098	REID SUPPLY, RAF-1090, SPRING WASHER	A	Part	16-Apr-09		Bought
108	1	SBC0404S	McMasterCarr, 92949A537, BHCS, 1/4-20UNC X .50" L, SS	A	Part	16-Apr-09		Bought
109	1	P-E-01-01103	McMaster Carr, 31145A162, shoulder washer	A	Part	16-Apr-09		Bought
110	1	P-E-01-01106	McMaster Carr, 90770A023, washer	A	Part	16-Apr-09		Bought
111	2	P-E-08-01006	Southco, Folding Handle, P9-096-40-08N-15-3, Black Anodized	A	Assembly	16-Apr-09		Bought
112	4	P-E-01-01041	McMaster Carr, 36006A613, #8-32UNC x 0.375IN SHCS, SS Black-Oxide	A	Part	16-Apr-09		Bought
113	4	AJ-1019	REID SUPPLY, AJ-1019, 1/4-20 thumb screw, SS	A	Part	16-Apr-09		Bought
114	1	P-E-01-01104	JERGENS, 890062R, 12" Lanyard, Loop & Round Tab Ends, Green coated, SS	A	Part	16-Apr-09		Bought
115	1	P-E-01-01100	REID SUPPLY, RAF-1044, CAPTIVE THUMBSCREW	A	Part	16-Apr-09		Bought
116	1	P-E-01-01105	FASTENAL, 71238, BELLEVILLE WASHER	A	Part	16-Apr-09		Bought
117	1	P-G-01-01001	Electrical Metris, TR9CE3350CCP-Y, Power Supply - Tx Transformer	A	Part	16-Apr-09		Bought
118	1	P-G-04-01003	Interpower Corp, 8351H20-R1, Power Receptacle, Five Function Single Fus	A	Part	16-Apr-09		Bought
119	4	P-E-01-01072	FASTENAL, XM2510010A20000, M3 X 10mm csk screw - S/S	A	Part	16-Apr-09		Bought
120	1	P-G-06-01003	Heyco 2119 wire grommet bushing, #2IDEFAU0622281566	A	Part	16-Apr-09		Bought
121	1	P-H-04-01002	Phoenix Contact Switch Box, 105TX - N, TRON POE Switch Box	A	Part	16-Apr-09		Bought
122	2	P-E-01-01037	Hardware, Miscellaneous, McMASTER CARR, # 90462A670, THUMB SCREW 1.4	A	Part	16-Apr-09		Bought
123	1	P-G-04-01002	SPI Electronic Co Ltd, TR9CX1000LCP-Y(R), POE Switch Power Supply Trans	A	Part	16-Apr-09		Bought
124	1	P-G-04-01005	Interpower Corp, 8301511, power plug	A	Part	16-Apr-09		Bought
125	2	SBM0301S	McMasterCarr, 92095A182, Metric 18-8 SS BHCS M3 Size, 10 mm Length, 5 m	A	Part	16-Apr-09		Bought
126	4	P-E-01-01071	Fastenal, 0173518, #4 SHEET METAL SCREW x .50 lg - S/S	A	Part	16-Apr-09		Bought
127	6	NNM03S	McMaster Carr, 94205A220, M3 Lock nut, SS	A	Part	16-Apr-09		Bought
128	1	90715A007	McMaster Carr, 90715A007, NylonLocknut 6-32 x 5/16" W, SS	A	Part	16-Apr-09		Bought
Manufactured Parts								
Item Number	Quantity	Part Number	Description	CAD Rev	Type	Date	ITAR	Reference
201	1	M-D-01-01028	Block, Mounting, 5/8" Thread Adapter	B	Part	16-Apr-09		Made
202	1	M-C-04-01008	Bracket, Adapter, iSPACE Tooling Block Angle Plate	C	Part	16-Apr-09		Made
203	1	M-A-04-01016	Plate, Adaptor - Transmitter quick release mount	B	Part	16-Apr-09		Made
204	1	M-D-01-01027	Block, Mounting, iSpace Metrology Mounting Box Welded	D	Assembly	16-Apr-09		Made
205	1	M-H-02-01019	Box, Cover, Metrology End Cover Box	C	Part	16-Apr-09		Made
206	1	M-H-01-01008	iSPACE Electrical Tray Welded Assy	C	Assembly	16-Apr-09		Made
207	1	M-B-01-01014	Bar, Mounting, iSpace Tx Box Power & POE Retaining Bar w/Set Screws	A	Part	16-Apr-09		Made
208	1	M-A-06-01011	Plate, Face - POE mounting	A	Part	16-Apr-09		Made
Miscellaneous Parts								
Item Number	Quantity	Part Number	Description	CAD Rev	Type	Date	ITAR	Reference
301		Deleted				16-Apr-09		

The information contained herein is proprietary to Nikon Metrology Canada Inc. and is used solely for the purpose for which it is supplied. It shall not be disclosed in whole or in part, to any other party, without the express permission in writing by Nikon Metrology Canada Inc.



TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

SINGLE-LEVEL BILL OF MATERIALS REPORT											NIKON METROLOGY CANADA, INC.										
											WITHOUT PHANTOM BLOW THROUGH										
BILL	REVISION	TYPE	U/M	DESCRIPTION																	
ASY-03-01008-00	F		STANDARD	EACH	TRANSMITTER w/TRIPOD MOUNT RIN																
	LAST USED: 07/15/10																				
	DRAWING: ASY-03-01008-00		REV: F																		
COMPONENT	REV	TYP	QTY/BILL	U/M	DESCRIPTION							ADD DATE	ECN	DEL DATE	ECN	FIND#	STEP				
ELE-02-01001-01	*	STD	1.000	EACH	TRANSMITTER BOX, PWR CABLE													004			
92196A536			4.000	EACH	18-8 Stainless Steel Socket He													101			
MWS 866-2			1.000	EACH	Mounting Ring (female threaded													102			
92196A537			7.000	EACH	SHCS 1/4"-20UNC, 1/2"L, SS													103			
1126751			1.000	EACH	1/4 X 3/4 Dowel Pin													104			
73979			1.000	EACH	5/8-11 x 1" Flat Head 18-8 S/S													105			
RAF-1052			2.000	EACH	CAPTIVE SCREW, 1.25 LG													106			
RAF-1090			3.000	EACH	SPRING WASHER, 1/4" THUMBSCREW													107			
92949A537			1.000	EACH	BHCS, 1/4-20UNC X .50" L, SS													108			
91145A162			1.000	EACH	SHOULDER WASHER													109			
9077A029			1.000	EACH	.25 DIA WASHER													110			
99-096-40-08N15			2.000	EACH	Handle Surface Mount, Southco													111			
96006A613			4.000	EACH	SHCS, #8-32, 3/8"L, SS													112			
AL-1019			4.000	EACH	1/4-20 Tbd, 3/8 Lg., Washer F													113			
990062R			1.000	EACH	12" lanyard - loo and round en													114			
RAF-1044			1.000	EACH	CAPTIVE SCREW, .63 LG													115			
71238			1.000	EACH	BELLEVILLE WASHER													116			
TR9CE3350CCP-Y			1.000	EACH	Power Supply, Transmitter													117			
83511420			1.000	EACH	Power inlet module with fuse a													118			
NM2510010A 20000			4.000	EACH	3mm-0.5 x 10 FL Ph Mach Screw													119			
2119			1.000	M	Wire Grommet Bushing (Heyco)													120			
105TX-POE			1.000	EACH	N-Tron, Endspan POW Switch (48													121			
90462A670			2.000	EACH	1/4-20 UNC x 1.0, Thumb Screw													122			
TR9CX1000LCP-Y			1.000	EACH	Desktop PS IP-90-264VAC OP: 48													123			
8301511			1.000	EACH	Power Plug													124			
92095A182			2.000	EACH	3MM x 10MM Socket Cap Screws													125			
0173518			4.000	EACH	#4X1/2 PAN HEAD PHILLIPS SHEET													126			
94205A220			6.000	EACH	LOCK-NUT, M3x0.5mm, SS													127			
90715A007			1.000	EA	Nylon Locknut 6-32 x 5/16" W, 1													128			
M.D-01-01028			1.000	EACH	5/8" Thread Adaptor													201			
M.C-04-01008			1.000	EACH	Tooling Block Support													202			
M.A-04-01016			1.000	EACH	Plate Adapter, Tx Box, Quick Re													203			
M.D-01-01027			1.000	EACH	Welded Universal Mount Box													204			
M.H-02-01019			1.000	EACH	TxBox Back End Cover													205			
M.H-01-01008			1.000	EACH	Electrical Tray Box, Welded													206			
M.B-01-01014			1.000	EACH	Tx Box Power & POE Retaining B													207			

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 Application Date: 11/25/2010

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TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

NIKON METROLOGY CANADA, INC.										
SINGLE-LEVEL BILL OF MATERIALS REPORT										
WITHOUT PHANTOM BLOW THROUGH										
BILL	REVISION		TYPE		U/M	DESCRIPTION				
ASY-03-01008-00	F		STANDARD		EACH	TRANSMITTER w/TRIPOD MOUNT RIN				
COMPONENT	REV	TYP	QTY/BILL	U/M	DESCRIPTION	ADD DATE	ECN	DEL DATE	ECN	HND# STEP
M-A-06-01011			1.000	EACH	Face Plate, POE Mounting, iSpa					208

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TRANSMITTER BOX ASSEMBLY

ASY-03-01008

Revision: B

SINGLE-LEVEL BILL OF MATERIALS REPORT											NIKON METROLOGY CANADA, INC.	
											<i>WITHOUT PHANTOM BLOW THROUGH</i>	
BILL	REVISION		TYPE		U/M	DESCRIPTION						
ELE-02-01001-01	A (CURRENT)		STANDARD		EACH	TRANSMITTER BOX, PWR CABLE						
LAST USED: 11/16/10			REV: A			MAX LOT SIZE:		0				
DRAWING: ELE-02-01001-01												
COMPONENT	REV	TYP	QTY/BILL	U/M	DESCRIPTION	ADD DATE	ECN	DEL DATE	ECN	FIND#	STEP	
R4B-10			2.000	EACH	RING TERMINAL, VINYL INSULATED						101	
PXT101L			2.000	EACH	6ft NEMA 5-15 to C13 Right Ang						102	
CFR4NB-250F			2.000	EACH	DISCONNECT, COPPER INSULATED						103	
J714337			3.000	EACH	16-14 awg VINYL INSLTD BUTTEDS						104	
J705403			0.500	FT	1/4" x 100 ft. Black Thin Wall						105	
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TRANSMITTER BOX ASSEMBLY

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SINGLE-LEVEL BILL OF MATERIALS REPORT											NIKON METROLOGY CANADA, INC.	
											WITHOUT PHANTOM BLOW THROUGH	
BILL	REVISION		TYPE	U/M	DESCRIPTION							
ELE-02-01002	A (CURRENT)		STANDARD	EACH	<u>TRANSMITTER BOX, GROUND CABLE</u>							
LAST USED:		DRAWING: ELE-02-01002		REV: A		MAX LOT SIZE:		0				
COMPONENT	REV	TYP	QTY/BILL	U/M	DESCRIPTION	ADD DATE	ECN	DEL DATE	ECN	FIND#	STEP	
R4B-10			1.000	EACH	RING TERMINAL, VINYL INSULATED						101	
CFR4NB-250F			1.000	EACH	DISCONNECT, COPPER INSULATED						102	
9614021			0.500	FT	14AWG, TEW, green, 1-con, stra						103	

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TRANSMITTER BOX ASSEMBLY

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APPENDIX D

Serial Number Log

