



**ANODYNE
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Please note the transition to convert product manuals and supporting documentation is an ongoing process and is being addressed on an 'as needed' basis.

All references to NAT product part numbers (and associated images) are equivalent to AEM product part numbers.

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AA21-401 Remote Cabin PA System SM34 Installation and Operation Manual Supplement

This supplement contains installation and operation information that is unique to the AA21-401 Remote Mount Cabin PA system. Installation and operation information common to the AA21-400 base unit can be found in the **SM34** Installation and Operation Manual.

Prepared By:  Tony Pearson Designer Nov 10, 2016	Checked By:  Loen Clement Designer Nov 17, 2016	 Tom Betzelt Product Support Manager Nov 17, 2016	Approved By:  Todd Blackstock R&D Manager Nov 25/16
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Section 1.0 Description

The AA21-401 Remote Mount Cabin PA system is designed to provide centralized control for an aircraft's internal and external PA systems. The unit is a remote mounted box designed to interface to external user controls. All power, audio and keylines are interfaced to existing aircraft audio systems through a second external connector.

1.1 Performance/Function

The AA21-401 provides an internal PA and/or drive circuitry for external PA system(s) installed in an aircraft. The integrated 20 W speaker driver circuit is designed to drive one 8 Ohm speaker arrangement for internal paging. The AA21 also provides a low-level audio signal output to drive remote mounted power amplifiers. It may be configured to drive either the PA110/220 series amplifiers, or the PA250/700 series amplifiers. The AA21 provides wail and yelp siren audio on the low level output when selected via the external user controls.

A '+3 dB' function allows the output level of the system to be varied by 3 dB. When the input control line is grounded, the output is reduced by approximately 3 dB. Removing the ground returns the system to full output.

Thermal protection is designed into the intermediate and final stage amplifiers to protect the unit during very hot or extended high power operating conditions.

Current protection is provided using one fuse on the +28 Vdc power input and a second fuse on the switched power output.

Connections are provided to interface four front panel switches allowing selection of the various operational modes of the AA21; POWER (Power On/Off), INT/EXT (Internal SPKR on/External PA on), YELP/OFF/WAIL (Yelp siren on/Siren off/Wail siren on), RADIO/PA (radio [receive] input enabled/PA Mic input enabled). Interface to a front panel potentiometer is included, to provide volume level control of the selected output. The interface can also drive an annunciator to provide Power On indication.



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1.2 Electrical Specifications

The AA21-401 is identical to the AA21-400, with the following exceptions:

Remote Control Connector

Input Signals

+28 VDC Switched	
External Speaker Select	Active low, 5 mA max
Internal Speaker Select	Active low, 10 mA max
PA Select	Active low, 5 mA max
Radio Select	Active low, 5 mA max
Rx Disable	Active low, 5 mA max
Wail Select (On)	Active low, 5 mA max
Yelp Select (On)	Active low, 5 mA max
Wail Siren Select (Return)	Active low, 5 mA max
Yelp Siren Select (Return)	Active low, 5 mA max
Pot Wiper	0 to 10 kOhm \pm 10% (referenced to Pot Lo)

Output signals

+28VDC Power	3 Amps maximum current.
Pot Hi	10 kOhm \pm 10% (referenced to Pot Lo)
Pot Lo	

1.3 Physical Specifications

Height	1.15" (29.2 mm) max
Depth	7.32" (185.9 mm) max
Width	5.05" (128.2 mm) max
Weight	1.31 lbs. max
Mounting	Bulkhead mount with four 10-32 screws
Material/Finish	
Chassis/cover	5052-H32 brushed aluminium with chromate conversion finish.
Heat sinks	De-burred 6061-T6 aluminium with chromate conversion, mounted along each side of unit.
Connectors	Male filtered 25 pin D-subminiature with Positronics V5 locking tabs. Female filtered 25 pin D-subminiature with Positronics V5 locking tabs.
Install Kits	One D25SV-IKC and one D25PV-IKC (See section 2.1 below.)



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1.4 Environmental Specifications

The AA21-401 is identical to the AA21-400, with the following exception:

Altitude	55,000 ft.
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Section 2.0 Installation

For installation information and drawings, see SM34 Section 2. Select the appropriate revision of the drawing for the serial number of the unit. The drawings specific to this derivative are listed below and can be found at the end of this supplement.

The AA21-401 is a remote mount unit, intended for installation in an enclosed avionics bay. The note to installers in SM34 Section 2.3.1 does not apply to the AA21-401.

2.1 Accessories Required But Not Supplied

Installation kits p/n D25SV-IKC and D25PV-IKC are required to complete the installation. The kits consist of the following:

Part #:D25SV-IKC

Quantity	Description	Part No.
1	D-min 25 Socket housing	20-21-025
25	MS Crimp Socket	20-26-901
1	25 pin JVL Hood/Locklever	20-29-250

Part #: D25PV-IKC

Quantity	Description	Part No.
1	D-min 25 Pin Housing	20-11-025
25	MS Crimp Pin	20-26-891
1	25 Pin JVL Hood/Locklever	20-29-250



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2.2 Installation Drawings

Select the appropriate revision of the drawing for the serial number of the unit under consideration. The drawings specific to this derivative are listed below, and can be found at the end of this supplement.

DOCUMENT	REV.	DESCRIPTION	TYPE	SERIAL NO.
AA21-401-403-0	1.02	Remote Mount Cabin PA System	Interconnect	1337 and up
AA21-401-405-0	1.01	Cabin PA System Remote Amp	Connector Map	1337 and up
AA21-401-922-0	1.20	Remote Mount Cabin PA System	Mech. Installation	066274 and up
AA21-401-922-0	1.00	Remote Mount Cabin PA System	Mech. Installation	1337 to 066273

Section 3.0 Operation

For operation information, see **SM34** Section 3.

The available features will depend upon the remote panel interfacing with this unit.

End of Supplement

REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	DOCCR02739 - ADDED NOTE 10.	FEB 5/09	TAT
1.02	ECO1054 - UPDATED TO AEM TITLEBLOCK.	OCT 14/16	LAC

AA21-401 INSTALLATION NOTES




NOTES:

1. ALL WIRES SHOULD BE 22 AWG UNLESS OTHERWISE SPECIFIED. ALL UNSHIELDED WIRE SHALL BE SELECTED IN ACCORDANCE WITH AC43.13-1B CHANGE 1, PARAGRAPHS 11-76 THROUGH 11-78. WIRE TYPES SHOULD BE TO MIL-W-22759 AS SPECIFIED IN AC43.13-1B CHANGE 1, PARAGRAPHS 11-85, 11-86 AND LISTED IN TABLE 11-11. ALL SHIELDED WIRE/CABLE SHOULD BE IN ACCORDANCE WITH MIL-C-27500.

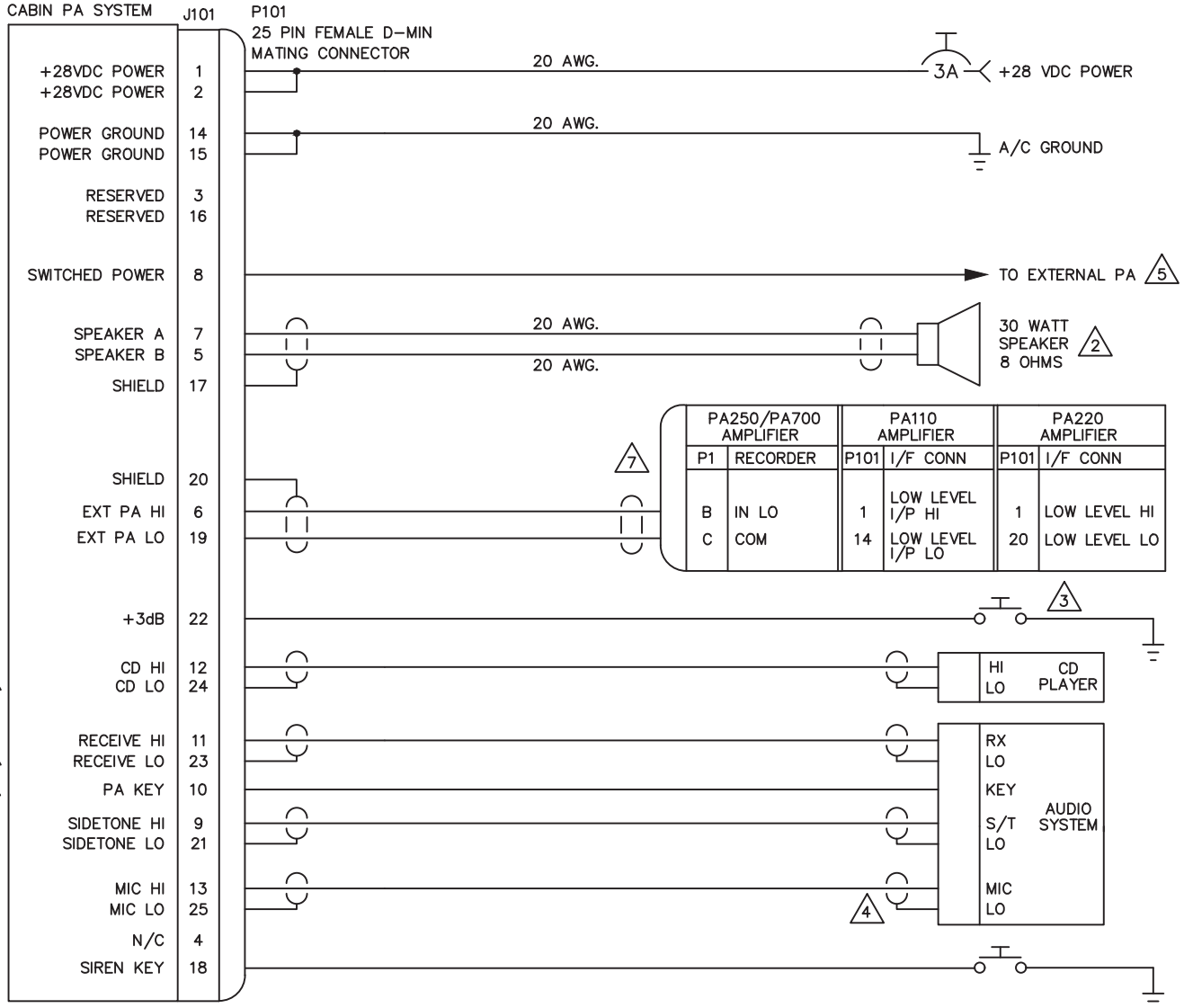
- △2 EQUIVALENT SERIES/PARALLEL SPEAKER MAY BE USED.
- △3 GROUND TO REDUCE OUTPUT BY 3dB.
- △4 MIC LO MUST BE GROUNDED AT AUDIO PANEL.
- △5 +28 VDC @ 400mA MAX.
- △6 JUMPER CONFIGURED. ONLY RECEIVE OR CD MAY BE USED AT ONE TIME.
- △7 REFER TO AA21 INSTALLATION AND OPERATION MANUAL FOR CORRESPONDING AA21 JUMPER SETTINGS.
- △8 FROM AIRCRAFT LIGHTING BUS.
- △9 THIS DRAWING SHOWS A TYPICAL CONTROL CONFIGURATION. CONTROL CONFIGURATION CAN BE CHANGED/MODIFIED TO SUITE A SPECIFIC USER APPLICATION.
- △10 WHEN CONNECTED TO AN AUDIO SYSTEM WITHOUT A PA KEY OUTPUT, CONNECT PIN 10 TO GROUND. WHEN CONNECTED TO AN AUDIO SYSTEM WITH A PA KEY OUTPUT, CONNECT AS SHOWN




DEFINITIONS:

- N/C: NO CONNECTION. THE PIN IS NOT CONNECTED TO ANYTHING INTERNALLY, AND THEREFORE SHALL HAVE NO CONNECTION EXTERNALLY.
- N/C SPARE: NO CONNECTION INTERNALLY, BUT A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.
- RESERVED: MAY BE CONNECTED AND USED IN THE FUTURE. THE CIRCUITRY MAY BE PRESENT OR ADDED TO ACTIVATE THE FUNCTION. THE PIN MAY BE USED FOR TEST PURPOSES. THERE IS NO EXTERNAL CONNECTION.
- RESERVED SPARE: RESERVED, BUT INSTRUCTIONS SHALL BE FOLLOWED TO ACTIVATE THE CIRCUITRY. A SPARE WIRE SHALL BE INSTALLED IN THE WIRE HARNESS.

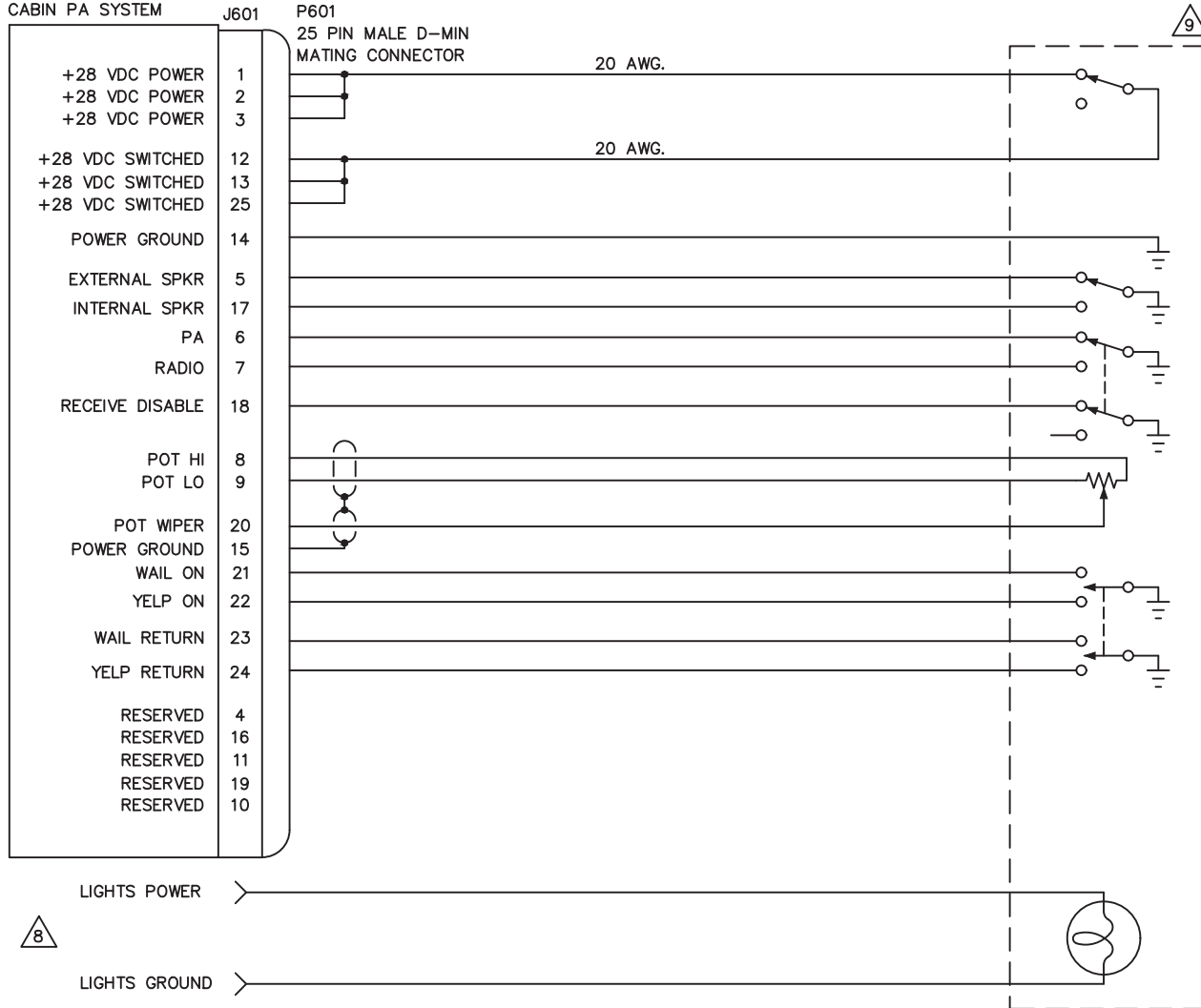
DRAWN		NAME	DATE	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES [MM] TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"	 ANODYNE ELECTRONICS MANUFACTURING CORP.	KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM				
CHECKED			Oct 26, 2016			TITLE: REMOTE MOUNT CABIN PA SYSTEM INTERCONNECT	PAPER SIZE: A	CAGE CODE L9015	PART No.: AA21-401	REVISION 1.02
APPROVED			Oct 27/16							
CONFIDENTIAL AND PROPRIETARY THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.				MATERIAL: N/A						
				FINISH: N/A						




AA21-401
REMOTE MOUNT
CABIN PA SYSTEM



NAME		DATE		UNLESS OTHERWISE SPECIFIED:		 ANODYNE ELECTRONICS MANUFACTURING CORP.		KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM	
DRAWN	MWS	APR 07/03		DIMENSIONS ARE IN INCHES [MM] TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"					
CHECKED		21-Oct-16				TITLE: <h2 style="text-align: center;">REMOTE MOUNT CABIN PA SYSTEM INTERCONNECT</h2>			
APPROVED		Oct 27/16							
CONFIDENTIAL AND PROPRIETARY THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.				MATERIAL:		N/A		PAPER SIZE: A	
				FINISH:		N/A		CAGE CODE: L9015	
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								REVISION: 1.02	
								SHEET: 2 of 3	

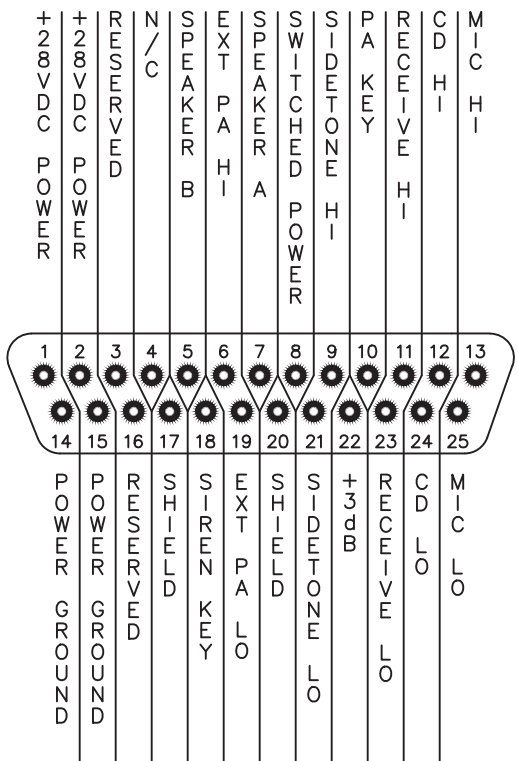
AA21-401
 REMOTE MOUNT
 CABIN PA SYSTEM



NAME			DATE			UNLESS OTHERWISE SPECIFIED:			 ANODYNE ELECTRONICS MANUFACTURING CORP. KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM		
DRAWN			MWS			APR 07/03					
CHECKED						21-Oct-16			TOLERANCES:		
APPROVED						Oct 27/16			FRACTIONAL _____ ±0.0625"		
CONFIDENTIAL AND PROPRIETARY THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.						MATERIAL:			N/A		
						FINISH:			N/A		
PAPER SIZE:			CAGE CODE			PART No.:			REVISION		
A			L9015			AA21-401			1.02		
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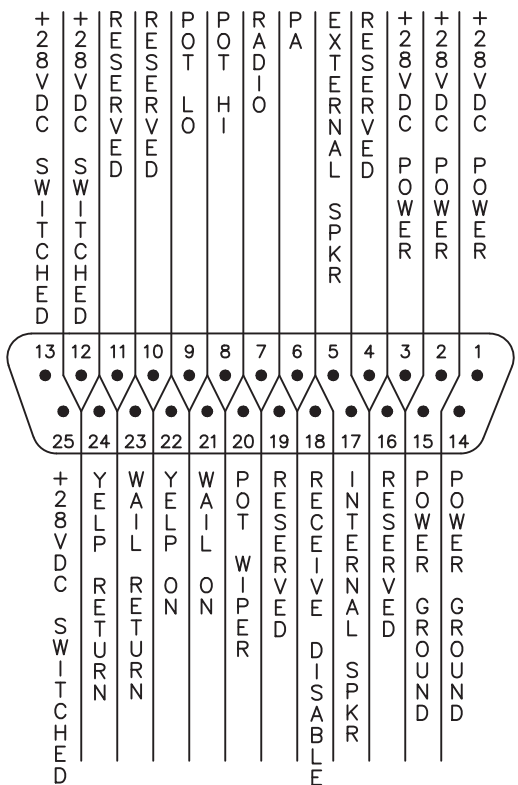
REVISIONS			
REV	DESCRIPTION	DATE	BY
1.01	ECO1054 - UPDATED TO AEM TITLEBLOCK.	OCT 14/16	LAC

P101
25 PIN FEMALE D-MIN
MATING CONNECTOR



VIEW IS FROM REAR OF AIRFRAME CONNECTOR

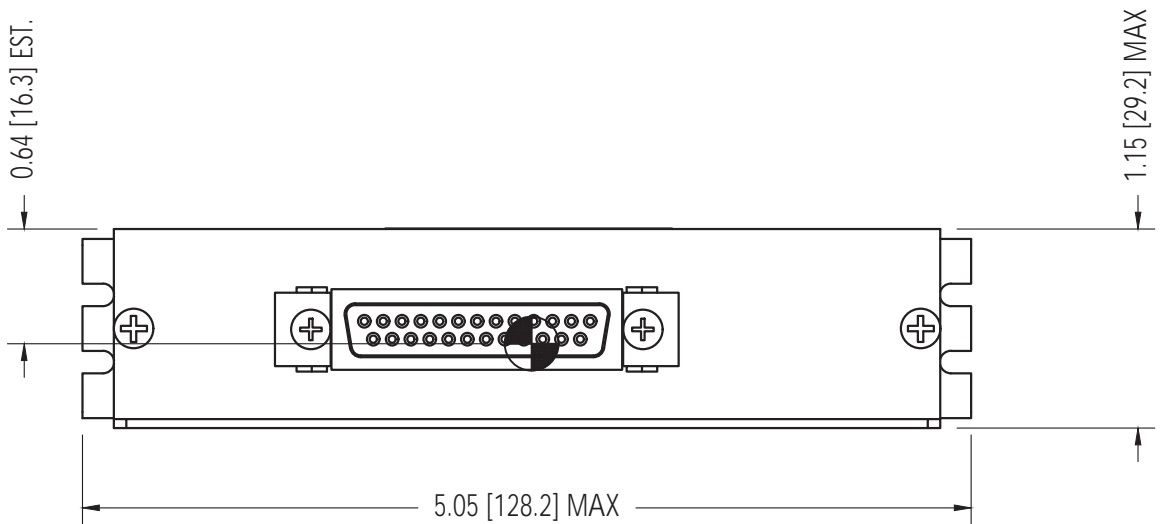
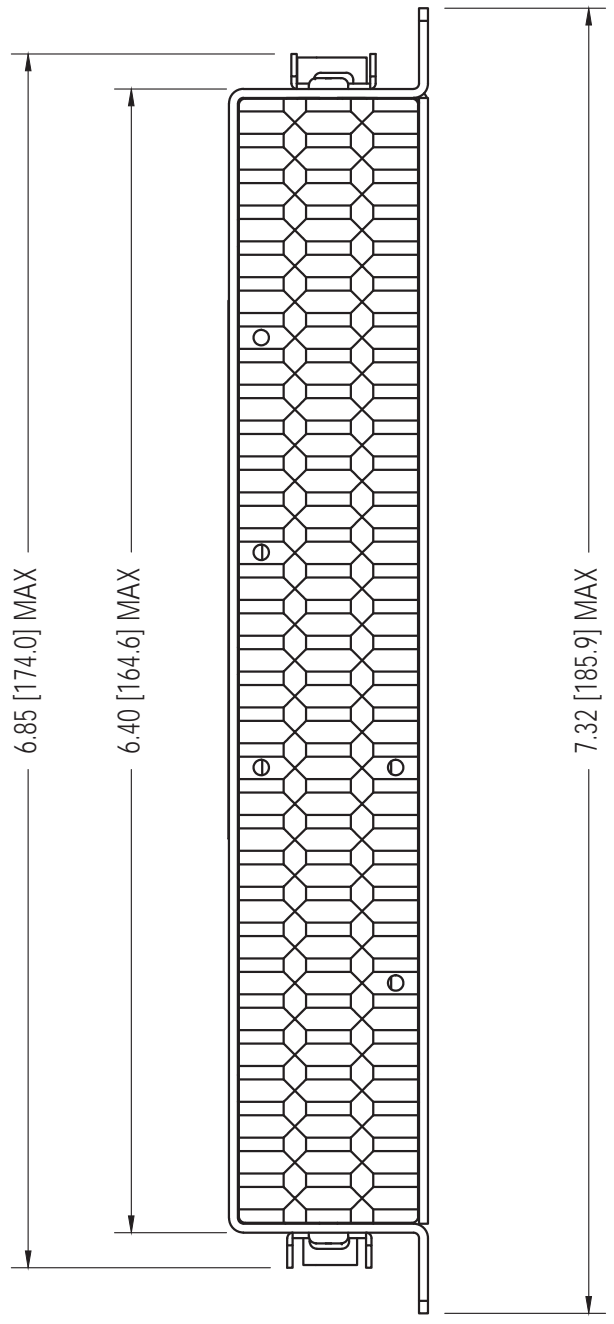
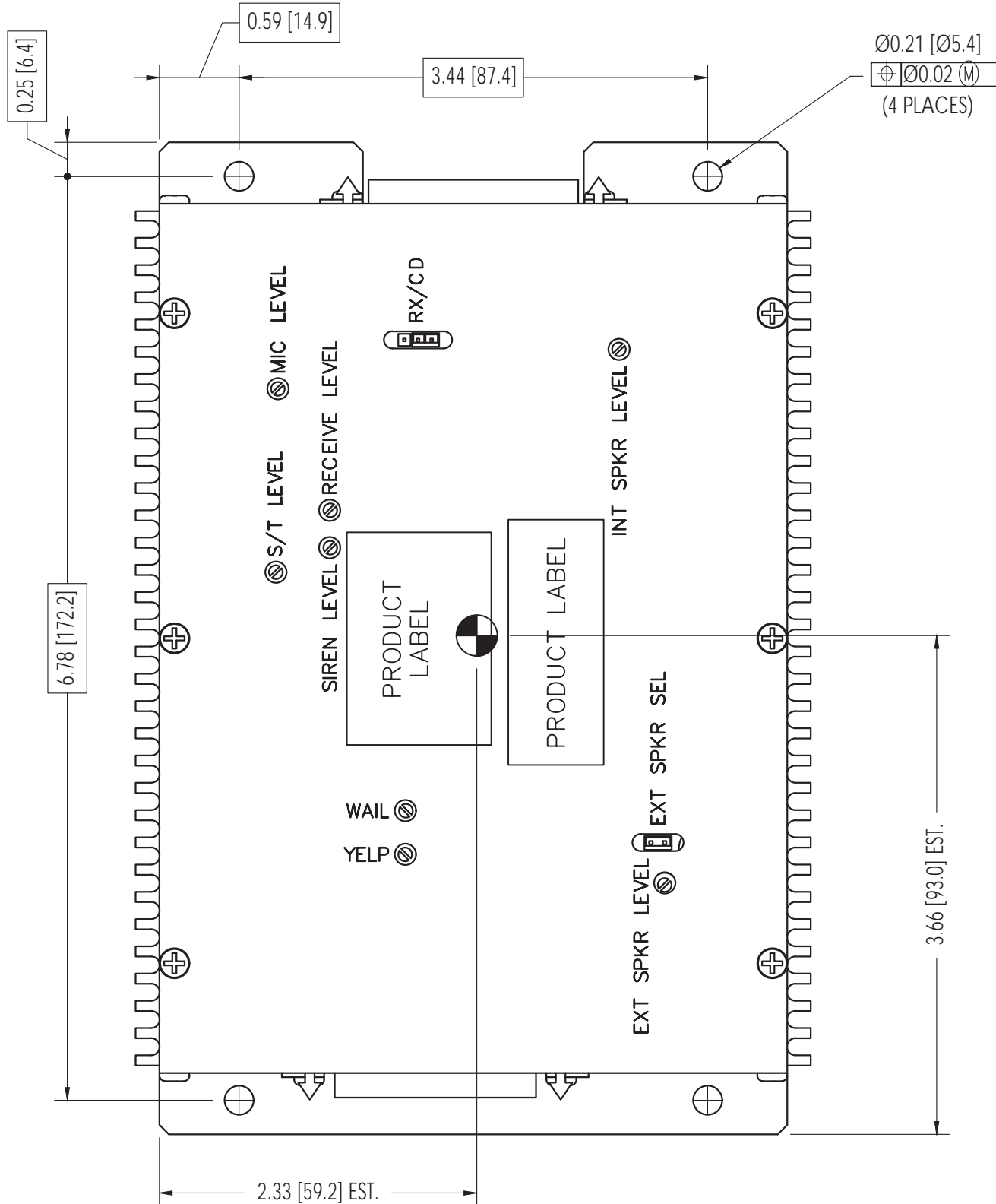
P601
25 PIN MALE D-MIN
MATING CONNECTOR




VIEW IS FROM REAR OF AIRFRAME CONNECTOR




DRAWN	MWS	MAR 21/03	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES [MM] TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"		KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM
CHECKED		Oct 26, 2016	MATERIAL: N/A		TITLE: REMOTE MOUNT CABIN PA SYSTEM CONNECTOR MAP
APPROVED		Oct 27/16	FINISH: N/A	PAPER SIZE: A	CAGE CODE: L9015
CONFIDENTIAL AND PROPRIETARY THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.				PART No.:	AA21-401
				REVISION	1.01

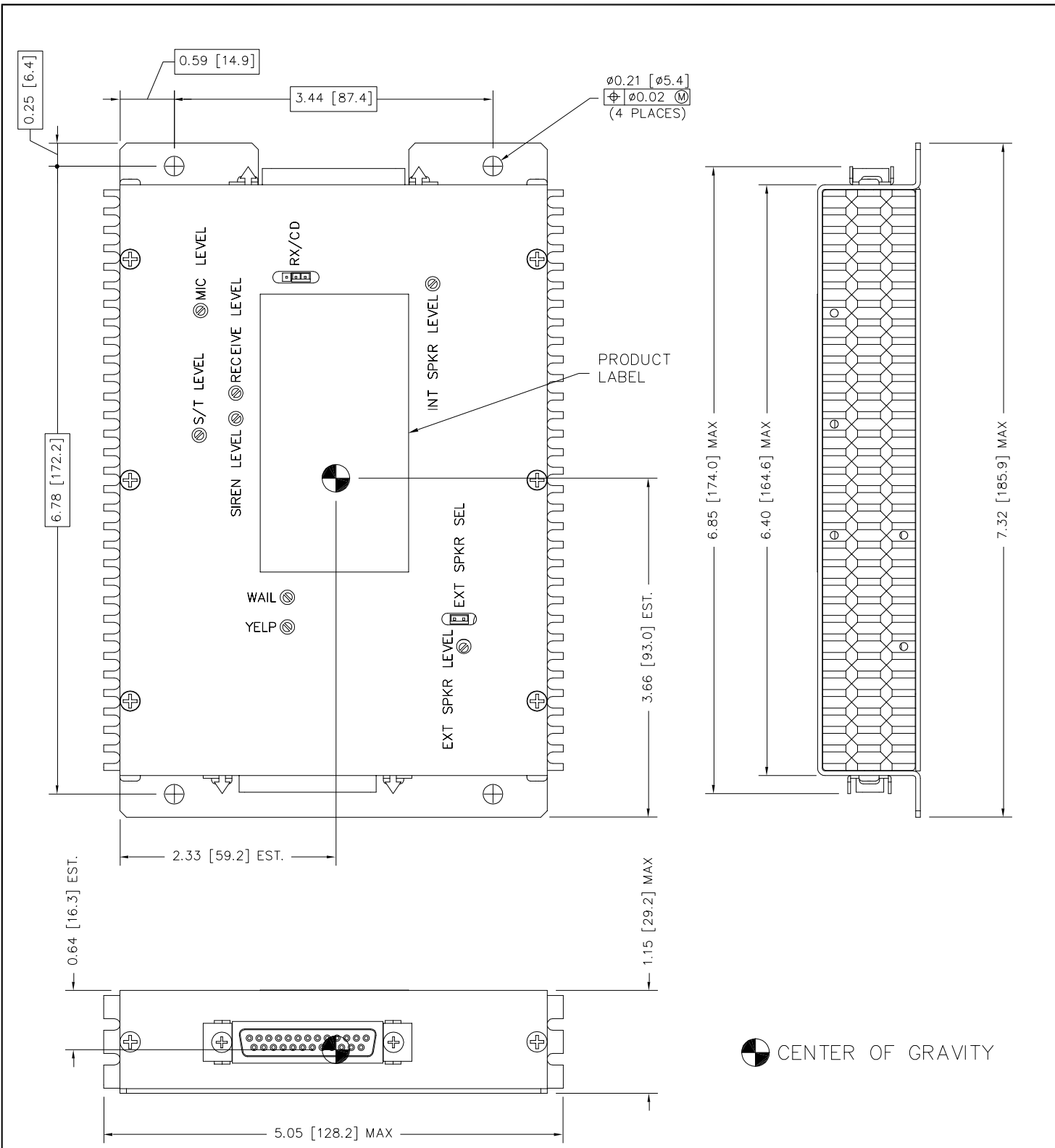
REVISIONS			
REV	DESCRIPTION	DATE	BY
1.10	SEE PREVIOUS REV FOR DETAILS.	MAY 30/12	KPM
1.20	EC01054 - UPDATED TO AEM FORMAT.	OCT 20/16	LAC



 CENTER OF GRAVITY

- NOTES:
- DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M-1994.
 - WEIGHT 1.30 lbs. (0.59 kg.)
+ 0.10 lbs. (0.045 kg.) MAX
- 0.25 lbs. (0.113 kg.) MIN

DRAWN	MWS	APR 09/03	UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES [MM] TOLERANCES: FRACTIONAL _____ ±0.0625" ANGULAR _____ ±0.5° TWO DECIMAL PLACE _____ ±0.010" THREE DECIMAL PLACE _____ ±0.005"	 ANODYNE ELECTRONICS MANUFACTURING CORP.	KELOWNA BC CANADA (250)-763-1088 WWW.AEM-CORP.COM			
CHECKED		21-Oct-16			MATERIAL: N/A FINISH: N/A	TITLE: REMOTE MOUNT CABIN PA SYSTEM MECHANICAL INSTALLATION		
APPROVED		Oct 21/16				PAPER SIZE: B CAGE CODE: L9015 PART No.: AA21-401 REVISION: 1.20		
CONFIDENTIAL AND PROPRIETARY THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ANODYNE ELECTRONICS MANUFACTURING. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ANODYNE ELECTRONICS MANUFACTURING IS PROHIBITED.				SCALE: 1:1	DO NOT SCALE DRAWING	DRAWING No.: 922-0	SHEET: 1 of 1	



NOTES:
 1. DIMENSIONING AND TOLERANCING
 IN ACCORDANCE WITH ASME Y14.5M-1994

CONFIDENTIAL AND PROPRIETARY TO NAT LTD.

DIMENSIONS ARE INCHES [mm] THIRD ANGLE PROJECTION	DESIGNED	ST	NORTHERN AIRBORNE TECHNOLOGY LTD.				
	DRAWN	MWS					
MASS: 1.31 lbs. (0.60 Kg) MAX	DATE	APR 09/03	TITLE REMOTE MOUNT CABIN PA SYSTEM				
	CHECKED						
MATERIAL:	APPROVED		SIZE	CAGE CODE	PART NO.	REV.	SHEET
FINISH:	FILE	922-0100.DWG	A	3AB01	AA21-401	1.00	1/1
CHROMATE CONVERSION			DWG. TYPE		DWG. NO.		AA21\401\922-0