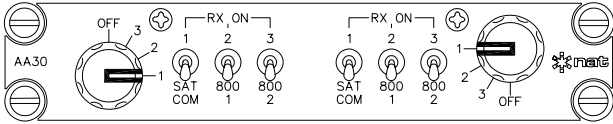
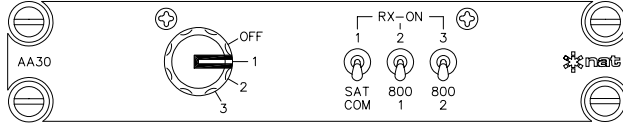
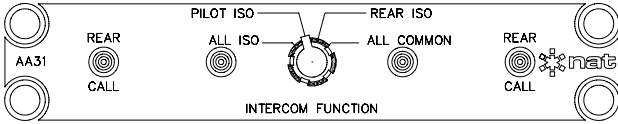
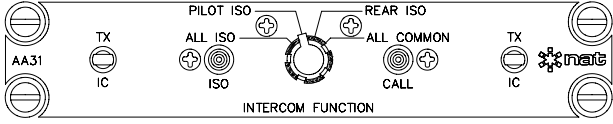
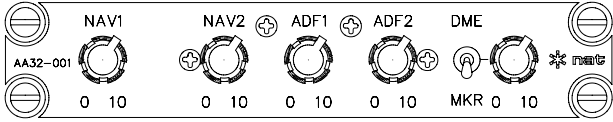
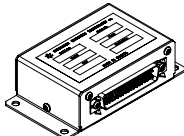
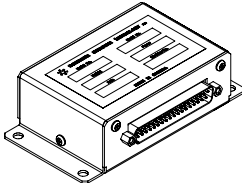
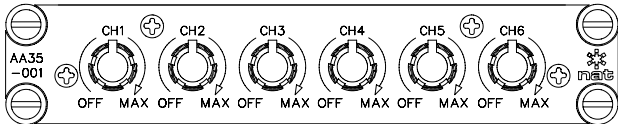

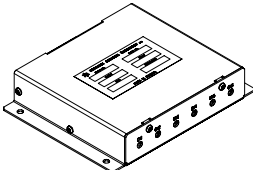
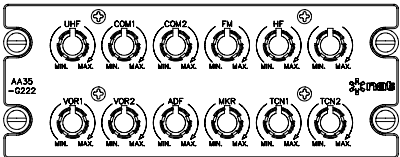


AA3X Accessories / Interfaces

These AA3X series of accessories and interfaces compliment and expand the capability of the audio system. They can provide special interfaces, expand inputs or outputs, shift power levels, add local ICS loops, and, enhance the customization of many audio installations. This series has also been used to build special adapters and accessories for applications outside of the audio system. The units shown provide an example of some of the versions that have been created. Contact NAT to discuss your specific requirements.

MODEL	DESCRIPTION
AA30-019 Expansion Switch Unit  <p>(Refer to Outline Drawing No. 6-1)</p>	Dual channel transceiver control expansion unit. 3 rcvr inputs / channel. 3 transmit keylines / channel. Panel lighting 28 VDC (normal). Weight: 1.0 lb / 0.45 kg Install Kit: (Contact factory)
AA30-020 Expansion Switch Unit  <p>(Refer to Outline Drawing No. 6-1)</p>	Single channel transceiver control expansion unit. 3 rcvr inputs / channel. 3 transmit keylines / channel. Panel lighting 28 VDC (normal). Weight: 1.0 lb / 0.45 kg Install Kit: (Contact factory)
AA31-001/002 ICS Mode Controller  <p>(Refer to Outline Drawing No. 6-2)</p>	Mode controller for organizing multiple ICS circuits. Visual LED annunciation of mode status. External annunciation - 100 mA max @ 14/28 VDC. Any ISO mode activates Amber Status LED. ALL Common activates Green Status LED. Two rear CALL annunciators with separate inputs. Modes: ALL ISO, REAR ISO, PILOT ISO, ALL COMMON. 28 VDC backlighting. AA31-002 provide active grounds for external annunciation. Weight: 0.5 lb / 0.225 kg Power: 0.2 A / 28 VDC Install Kit: AA31-IKC (Crimp)
AA31-401 ICS Mode Controller  <p>(Refer to Outline Drawing No. 6-2)</p>	Mode controller for organizing multiple ICS circuits. Similar to AA31-002 with ICS and XMIT keylines for pilot and co-pilot. Weight: 0.5 lb / 0.225 kg Power: 0.2 A / 28 VDC Install Kit: AA31-IKC (Crimp)
AA32-001 Expansion Panel Unit for AA96  <p>(Refer to Outline Drawing No. 6-1)</p>	NAV (2), ADF (2), DME/MKR level controls. Panel lighting 28 VDC (normal). Weight: 0.66 lb / 0.30 kg Install Kit: Contact factory

AA3X Accessories / Interfaces

MODEL		DESCRIPTION
AA33-100	Frequency Divider 	4 times frequency divider to add rotor speed data to analog CVR. Weight: 0.34 lb / 0.155 kg Power: 28 VDC
	(Refer to Outline Drawing No. 6-5)	Install Kit: AA33-100-IKC (Crimp)
AA34-300	Universal Radio Interface 	Mobile/FM radio interface; Floating key lines. RX & Sidetone amplifier; Floating audio lines in and out. Mic amplifier with adjustable output; Selectable functions and levels. Weight: 0.63 lb / 0.32 kg Power: 0.15 A / 28 VDC TSO-C50c Compliance: (Applicable to units Serial #20,001 and above) RTCA D0-170, Class II, DO-160C Env. Cat. C1-BA [BMN]XXXXXXABABATAXXX (AA34-300 and -301 Only)
	(Refer to Outline Drawing No. 6-5)	Install Kit: AA34-IKC (Crimp)
AA35-001	Audio Mixer Panel 	Dzus mount audio mixer panel. Six channel summing amplifier. Provides six in/six out, or six in/one out. 2.5 Vrms or 7 Vrms input level. Output 7.7 Vrms or 100 mW/600 ohm Max. Panel Lighting 28 VDC (normal). Weight: 1.0 lb / 0.45 kg Power: 0.5 A / 28 VDC
	(Refer to Outline Drawing No. 6-6)	Install Kit: AA35-IKC-1 (Crimp)
AA35-007	Audio Mixer Panel 	Two channel summing amp with Independent left/right level output control. Panel Lighting 28 VDC (normal). Weight: 0.78 lb / 0.35 kg Power: 0.5 A / 28 VDC
	(Refer to Outline Drawing No. 6-6)	Install Kit: AA35-IKC-1 (Crimp)
AA35-100/400	Audio Mixer Panel 	Remote mount audio mixer / summing amplifier; 2.5 Vrms or 7 Vrms input level; Output 7.7 Vrms or 100 mW/600 ohm Max. AA35-100 Six in/six out, or six in/one out. Weight: 1.0 lb / 0.45 kg Power: 0.5 A / 28 VDC AA35-400 Remote mount audio mixer/summing amplifier for TAWS applications Three in/one out, or three in/three out. Weight: 0.8 lb / 0.37 kg Power: 0.5 A / 28 VDC
	(Refer to Outline Drawing No. 6-7)	Install Kit: AA35-IKC-1 (Crimp)
AA35-G222	Custom Audio Mixer Panel 	Dzus mount audio mixer panel. 12 channel summing amplifier. 2 sets of six in/six out, or six in/one out. 2.5 Vrms or 7 Vrms input level. Output 7.7 Vrms or 100 mW/600 ohm Max. Panel Lighting 28 VDC (normal). Weight: 2.1 lb / 0.95 kg Power: 0.5 A / 28 VDC
	(Refer to Outline Drawing No. 6-8)	Install Kit: 2 x AA35-IKC-1 (Crimp)

Section 6

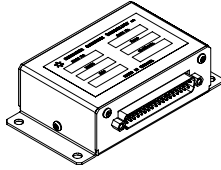
AA3X Accessories / Interfaces

MODEL

DESCRIPTION

AA36-001

NAT ICS Tie line Adaptor



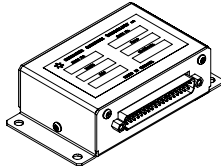
ICS Tie line buffer/amplifier to adapt Tie line to radio/aux input.
 Input 0.7 V @ 1 kHz.
 Output 1 mW/0.4 Vrms @ 150 ohm.
 Output 2 mW/1.2 Vrms @ 600 ohm.
 Weight: 0.69 lb / 0.32 kg
 Power: 0.2 A / 28 VDC

(Refer to Outline Drawing No. 6-5)

Install Kit: AA36-IKC (Crimp)

AA36-002

NAT - TEAM ICS Tie Line Adaptor



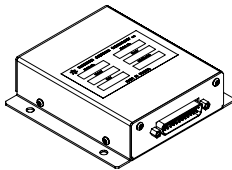
ICS Tie line interface to non-bi-directional intercom systems.
 Input 0.5 Vrms @ 4200 ohms.
 Output 500 mVrms @ 5 kohm.
 Weight: 0.41 lb / 0.19 kg
 Power: 0.11 A / 28 VDC

(Refer to Outline Drawing No. 6-5)

Install Kit: AA36-IKC (Crimp)

AA36-100

Universal Tie Line Adapter



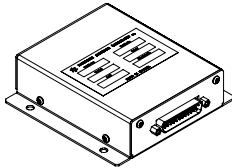
Digital technology allows integration of NAT audio system into aircraft with other existing systems.
 Input/Output dB systems 400 mVrms into 430 ohms
 Gemelli 400 mVrms into 150 ohms
 Telephonics 400 mVrms into 150 ohms
 Andrea 2.8 mVrms into 600 ohms
 Honeywell 7.7 mVrms into 600 ohms
 Weight: 1.0 lb / 450 kg
 Power: .3 A / 28 VDC

(Refer to Outline Drawing No. 6-9)

Install Kit: AA37-IKC (Crimp)

AA37-001/002

ICS Call/Alert System



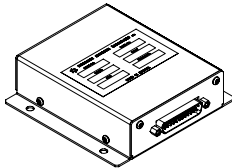
Dual channel, 2 level alerting unit.
 Audible output tones for ICS call or Alerting.
 Floating outputs, 150-600 ohm loads.
 2 ground seeking triggers.
AA37-002 1 voltage, 1 ground seeking trigger.
 Weight: 0.5 lb / 0.23 kg
 Power: 0.2 A / 28 VDC

(Refer to Outline Drawing No. 6-9)

Install Kit: AA37-IKC (Crimp)

AA37-212

Alerting System



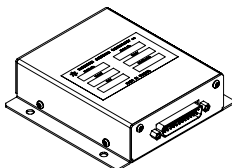
Dual channel, 3 level alerting.
 Floating outputs, 150 - 600 ohm loads.
 Ground seeking triggers.
 Weight: 0.69 lb / 0.32 kg
 Power: 0.2 A / 28 VDC

(Refer to Outline Drawing No. 6-9)

Install Kit: AA37-IKC (Crimp)

AA37-301

Alerting System

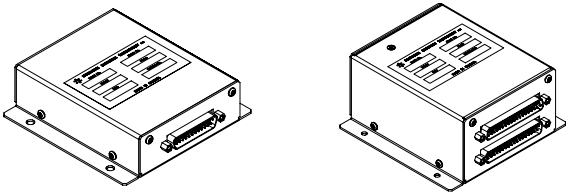
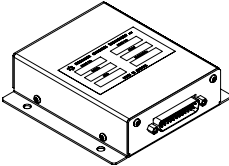
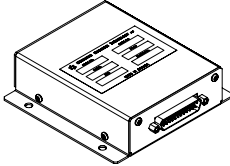
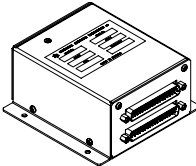
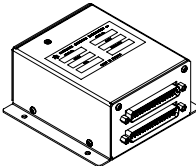


3 level alerting with multiple trigger types.
 Ground seeking hard, temporary and voltage comparator triggers.
 Adjustable trigger points 0-12 VDC.
 Floating outputs, 150 - 600 ohm loads.
 Weight: 1.15 lb / 0.52 kg
 Power: 0.2 A / 28 VDC

(Refer to Outline Drawing No. 6-9)

Install Kit: AA37-IKC (Crimp)

AA3X Accessories / Interfaces

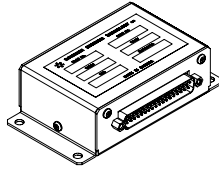
MODEL		DESCRIPTION
AA38-300/301	Local ICS Loop	<p>8 mic inputs - 250 mV / 150 ohms. 1 ICS Tie line input - 1.6k (NAT) or 250 ohm (Andrea). 1 Aux input - 940 ohms. 8 headset outputs 100 mW / 600 ohm. Balanced output for high common mode noise rejection. Weight: 0.55 lb / 0.25 kg Power: 0.66 A / 28 VDC TSO-C50c Compliance: (Applicable to AA38-300 units Serial #3000 and above) RTCA DO-170. Class 1a DO-160C Env. Cat. B4-CA[BMN]XXXXXXXXZBABBTZXXX Note: AA38-301 Local ICS loop functionally identical to the AA38-300 provides intercom for 16 users, 2 ICS tie lines, 2 aux inputs and weighs .96 lbs. (0.43 kg)</p>
		<p>(Refer to Outline Drawing No. 6-9)</p> <p>Install Kit: AA38-IKC (Crimp)</p>
AA38-402	Microwave Downlink/ENG Mic Interface	<p>Up to 8 microphone inputs. 600 ohm balanced line output. TV microwave level out (+4 dBm). Low noise floor (-65 dBm typ.). Used to combine airborne talent to a common audio bus for downlink transmission. Weight: 0.69 lb / 0.32 kg Power: 0.25 A / 28 VDC</p>
		<p>(Refer to Outline Drawing No. 6-9)</p> <p>Install Kit: AA38-IKC (Crimp)</p>
AA38-501/601	Local ICS Loop	<p>4 mic inputs - 0.250 mV / 5 ohms. 1 ICS Tie line input - 1.6 k ohm (NAT) or 250 ohm (Andrea). 1 Aux input - 1 k ohm. 4 headset outputs 100 mW / 8 or 600 ohm. Balanced output for high common noise rejection. LIVE or PTT operation. AA38-601 - same as -501 series for HI Z systems. Weight: 0.55 lb / 0.25 kg Power: 0.45 A / 28 VDC</p>
		<p>(Refer to Outline Drawing No. 6-11)</p> <p>Install Kit: AA35-IKC-1 (Crimp)</p>
AA38-502/602	Local ICS Loop	<p>8 mic inputs - 0.250 mV / 5 ohms. 2 ICS Tie line input - 1.6 k ohm (NAT) or 250 ohm (Andrea). 2 Aux input - 1 k ohm. 8 headset outputs 100 mW / 8 or 600 ohm. Balanced output for high common mode noise rejection. LIVE or PTT operation. AA38-602 - same as -502 series for HI Z systems. Weight: 0.63 lb / 0.32 kg Power: 0.45 A / 28 VDC</p>
		<p>(Refer to Outline Drawing No. 6-12)</p> <p>Install Kit: 2 x AA35-IKC-1 (Crimp)</p>
AA38-503/603/703	Local ICS Loop	<p>4 mic inputs - 0.250 mV / 5 ohms. 1 ICS Tie line input - 1.6 k ohm (NAT) or 250 ohm (Andrea). 1 Aux input - 1 k ohm. 4 headset outputs 100 mW / 8 or 600 ohm. Balanced output for high common noise rejection. LIVE or PTT operation. Individual TX PTT for each user with ascending priority. AA38-603 - same as -503 series for HI Z systems. AA38-703 - same as -503 series with master IC volume. Weight: 0.55 lb / 0.25 kg Power: 0.45 A / 28 VDC</p>
		<p>(Refer to Outline Drawing No. 6-12)</p> <p>Install Kit: 2x AA35-IKC-1 (Crimp)</p>

Section 6

AA3X Accessories / Interfaces

MODEL	DESCRIPTION
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AA39-087	Dynamic to Civil Mic Adaptor
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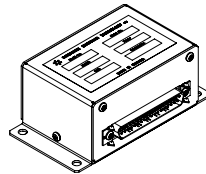


1 mic input - 5 ohms / 0.250 mV.
 1 mic output - 0.25 V into 150 ohms.
 Powered by mic connection.
 Weight: 0.25 lb / 0.11 kg

(Refer to Outline Drawing No. 6-5)

Install Kit: AA39-IKC (Crimp)

AA39-187/287	Dynamic to Civil Headset Adaptor
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1 mic input - 5 ohms / 0.250 mV.
 1 phones input - 600 ohm / 7.7 V.
 1 mic output - 0.25 V into 150 ohms.
 1 phones output - 0.9 V into 8 ohms.
 Powered by mic connection.
AA39-287 provides adaptation for two headsets.
 Weight: 0.35 lb / 0.16 kg

(Refer to Outline Drawing No. 6-14)

Install Kit: AA35-IKC-1 (Crimp)

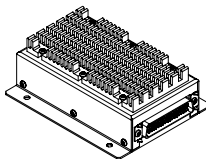
Lamp Dimmers / Switches / Legend Lights



The LD12 light dimmer provides lamp dimming and test functions for lamps and annunciators independent from the aircraft's existing dimming system.

The LL08 and PB08 can be used with the RS08/RS12 family of remote switches for annunciation and switching applications. These illuminated switches and annunciators are used to provide the visual reference for a complete system. An extensive legend set is included for general Nav and GPS installations. The sealed gold switch section is rated for over 1,000,000 operations.

MODEL	DESCRIPTION
LD12-001/002	Annunciator Lamp Dimmer



12 circuits of lamp dimming and test functions.
 Direct interface to RS08 switching networks.
 Lamps 1 & 2 floating, 3 - 12 short circuit protected.
 Fully adjustable or preset Dim/Bright/Test.
 Weight: 0.44 lb / 0.20 kg
 Power: 2.0 A / 28 VDC
LD12-002 used with LED annunciators.

(Refer to Outline Drawing No. 6-15)

Install Kit: LD12-IKC (Crimp)

LL08-001	Legend Light
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2 section legend light.
 Amber/Red segments with changeable legend and lamps (28 VDC lamps supplied).
 Supplied with assorted legends.
 Assorted color segments available, see page 6-7.
 Weight: 0.02 lb / 0.01 kg
 Power: 0.08 A / 28 VDC

(Refer to Outline Drawing No. 6-16)

Install Kit: N/A

Lamp Dimmers / Switches / Legend Lights

MODEL		DESCRIPTION
PB01-003/005	Lighted Pushbutton Switch	2 section Blue/Green lighted pushbutton switch. Amber/Green segments with changeable legends and lamps (28 VDC lamps supplied). Momentary Action (push on), 2 pole. Supplied with assorted legends. PB01-005 Amber/Green Segments. Weight: 0.03 lb / 0.015 kg Power: 0.08 A / 28 VDC
		Install Kit: N/A
(Refer to Outline Drawing No. 6-17)		

PB08-001	Lighted Pushbutton Switch	2 section lighted pushbutton switch. Blue/Green segments with changeable legends and lamps (28 VDC lamps supplied). Alternate Action (push on/push off). 2 pole, individual lamps. Assorted color segments available, see below. Weight: 0.03 lb / 0.015 kg Power: 0.08 A / 28 VDC
		Install Kit: N/A
(Refer to Outline Drawing No. 6-17)		

Segment Colors

LL08:

-001 Amber/Red -002 Amber/Amber
 -003 Blue/Green -004 Green/Green
 -005 Amber/Green -006 Clear/Clear
 -007 Red/Red -008 Amber/Blue

PB08:

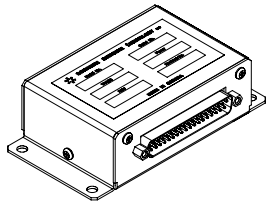
-001 Blue/Green -002 Green/Green
 -003 Green/Clear -005 Green/Amber
 -006 Clear/Clear -007 Amber/Amber

Remote Data Transfer Switches

The RS08/12/16/24 family of remote switches allow large numbers of data or audio lines to be transferred with a single ground logic level. 14 VDC or 28 VDC operation is supported and the RS08 series features automatic ILS reversion logic. The RS08/12/24 series are Transport Canada Type Approved for installation in IFR and restricted aircraft.

The RS16 series offers the ability to provide switching functions with either voltage or ground keying up to 35,000'. The RS16 features independent ILS reversion logic switch and each 4 pole relay supports a status annunciator for fault monitoring. Dry nitrogen filled, gold contact sealed relays provide dry circuit to 0.5 A switching range.

The RS128 and RS192 Remote Switch Arrays are made from multiples of the RS16 modular cards and provide users with a platform for more complex installations.

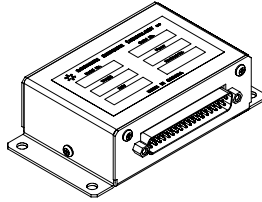
MODEL		DESCRIPTION
RS08-001/350/500 GPS/Data Transfer Switch		GPS/Loran/Audio transfer switch. Interlock and lamp dimmer (2 step). 6 poles data transfer/2 poles lamp transfer. Automatic ILS reversion circuit. 14 VDC or 28 VDC operation. RS08-001 certified to 25,000'. RS08-350 certified to 35,000'. RS08-500 certified to 50,000'. Weight: 0.38 lb / 0.17 kg Power: 0.1 A / 28 VDC Approval: TC Appliance Type Certificate AP-11
		Install Kit: RS08-IKC (Crimp) supplied
(Refer to Outline Drawing No. 6-18)		

Remote Data Transfer Switches

MODEL

DESCRIPTION

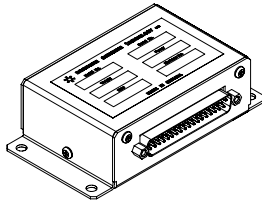
RS12-020/030/350 GPS/Data Transfer Switch



GPS/Loran/Audio transfer switch.
 Provides 12 poles of switching.
 Selectable as one group, or 3 sets of 4 poles.
 14 VDC or 28 VDC operation.
 Gold contacts, sealed 50g relays.
 Flag load resistors and Flag Bias generator.
RS12-030 same as -020 with voltage keying, 28 VDC only.
RS12-350 same as -020, qualified to 35,000'.
 Weight: 0.44 lb / 0.20 kg
 Power: 0.1 A / 28 VDC
Approval: TC Appliance Type Certificate AP-46
 Install Kit: RS12-IKC (Crimp)

(Refer to Outline Drawing No. 6-18)

RS16-001 GPS/Loran Transfer Switch

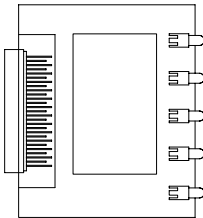


16P2T Data switch.
 Supports both ground and voltage keying.
 Can be configured as 4 ea. 4P2T.
 ILS reversion logic circuit.
 Activity annunciator (green) for trouble shooting.
 Weight: 0.46 lb / 0.21 kg
 Power: 0.1 A / 28 VDC

(Refer to Outline Drawing No. 6-19)

Install Kit: RS16-IKC (Crimp)

RS16-101/102 Modular Switch Card

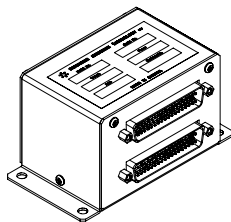


Modular 16P2T Data switch card for
 RS128/RS192 Remote Switch Array.
 Ground and voltage keying.
 ILS reversion logic circuit.
-101 green LED circuit annunciation.
-102 red LED circuit annunciation.
 Weight: 0.22 lb / 0.1 kg
 Power: 0.1 A / 28 VDC

(Outline Drawing N/A)

Install Kit: RS16-IKC (Crimp)

RS24-020/350 Universal Transfer Switch

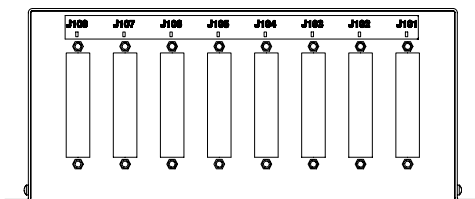


Contains 2 independent RS12-020 switches.
-350 qualified to 35,000'.
 24 pole/2 throw operation, or 6 groups of 4.
 Weight: .57 lb / .26 kg
 Power: 0.2 A / 28 VDC
Approval: TC Appliance Type Certificate AP-46

(Refer to Outline Drawing No. 6-20)

Install Kit: 2 x RS12-IKC (Crimp)

RS128-000/RS192-001 Remote Switch Array Chassis



RS128 up to 8 RS16-101/102 cards.
 RS192 up to 12 RS16-101/102 cards.
 Each 4P2T relay network can work independently or be
 configured in groups.
 Weight: (RS128) 0.9 lb / 0.41 kg
 (RS192) 1.4 lb / 0.64 kg
 Power: 28 VDC

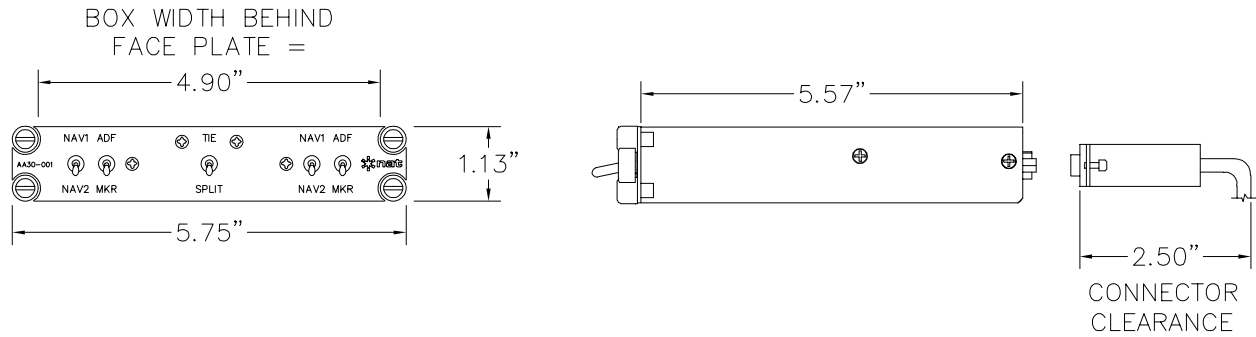
(Refer to Outline Drawing No. 6-21, 6-22)

Install Kit: RS16-IKC (Crimp)

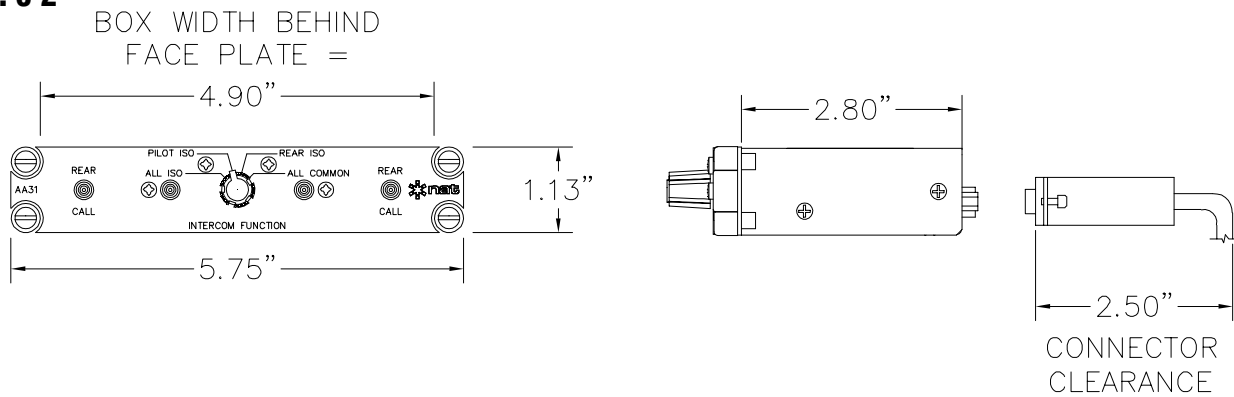
Note: 1 install kit required for each RS-16-101/102 type card
 installed in the RS128/192.

Outline Drawings - Accessories

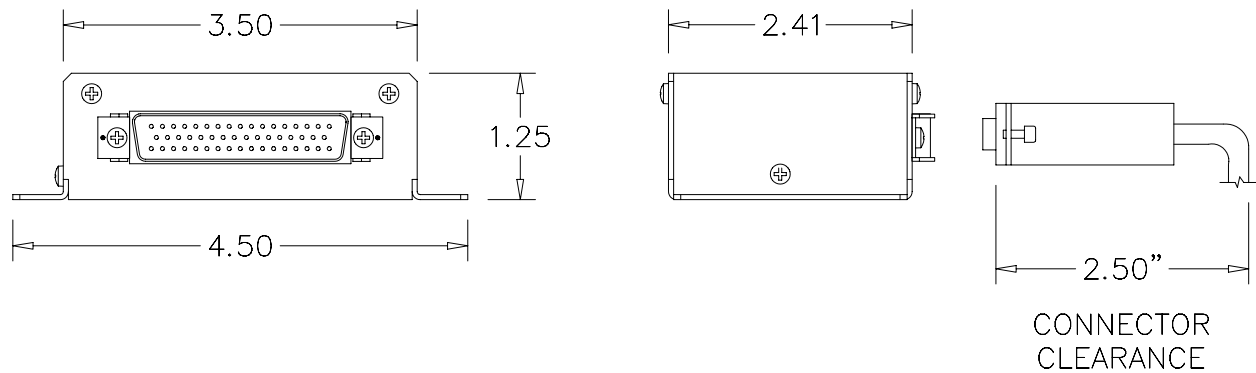
No. 6-1



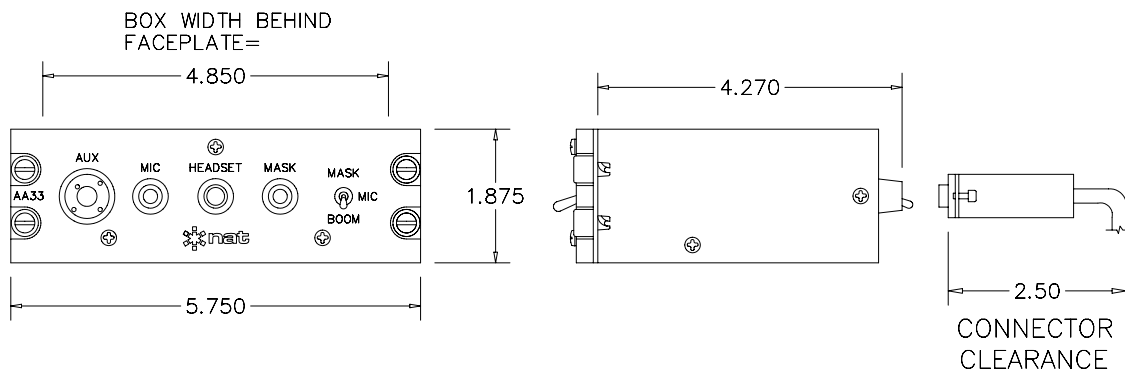
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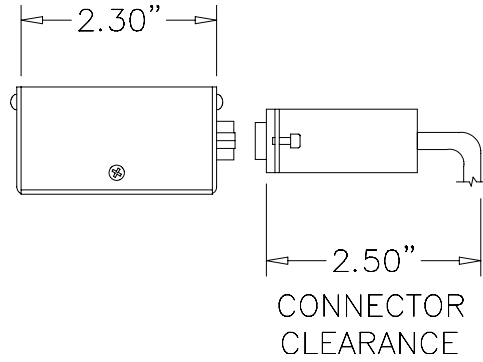
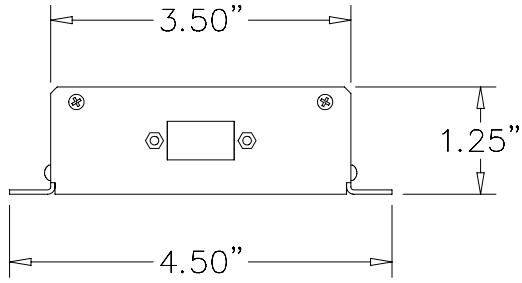


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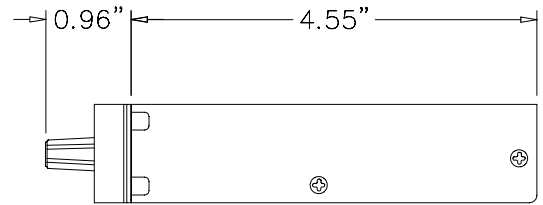
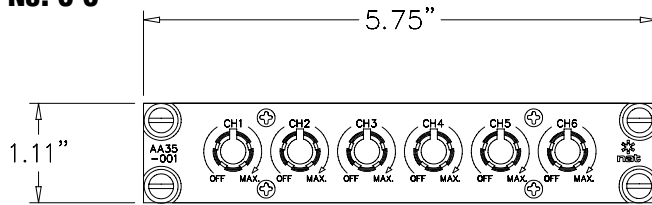


Outline Drawings - Accessories

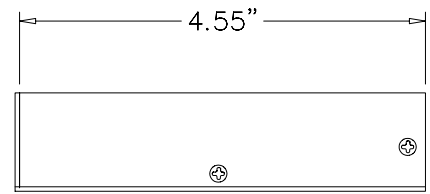
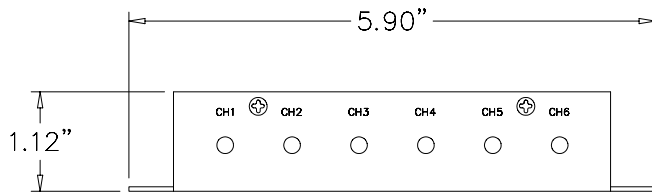
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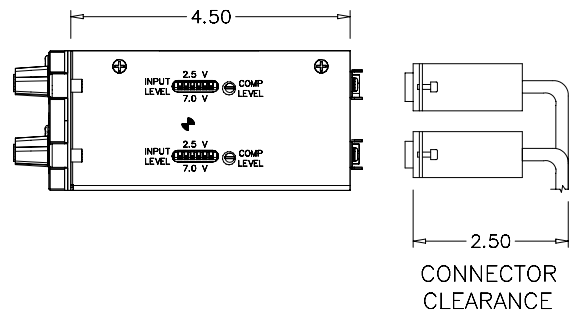
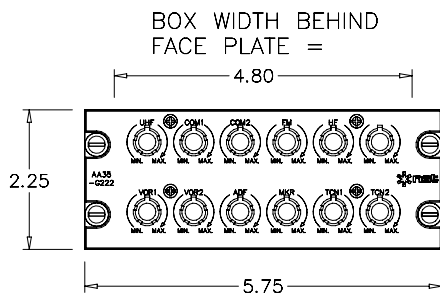
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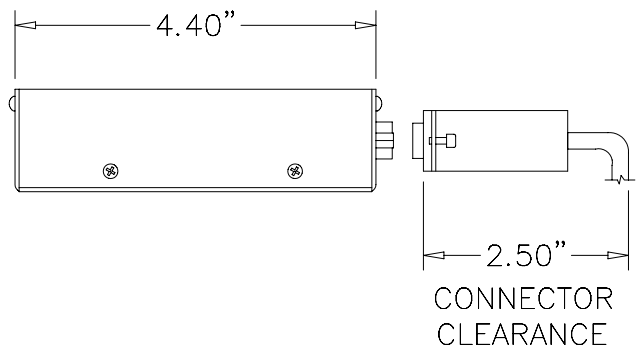
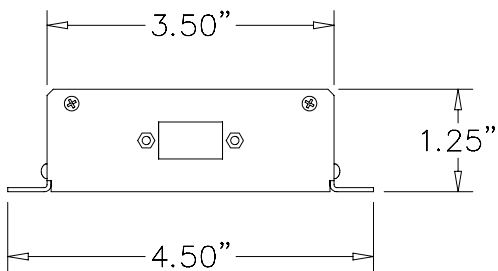
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No. 6-8

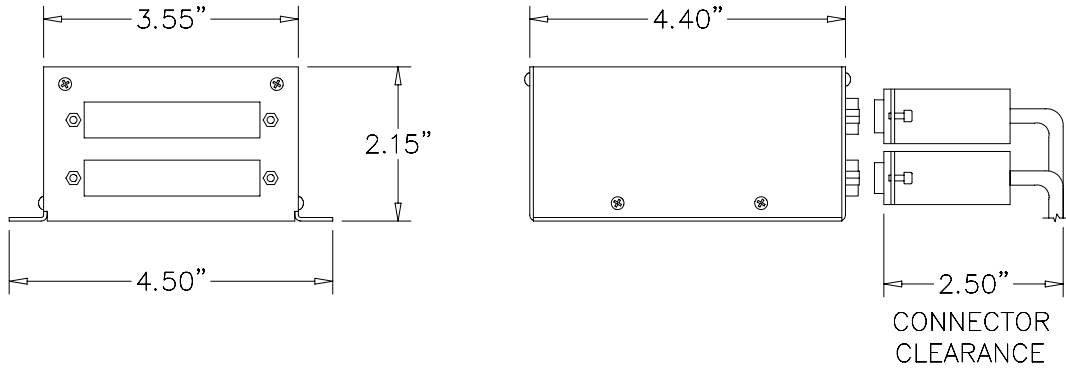


No. 6-9

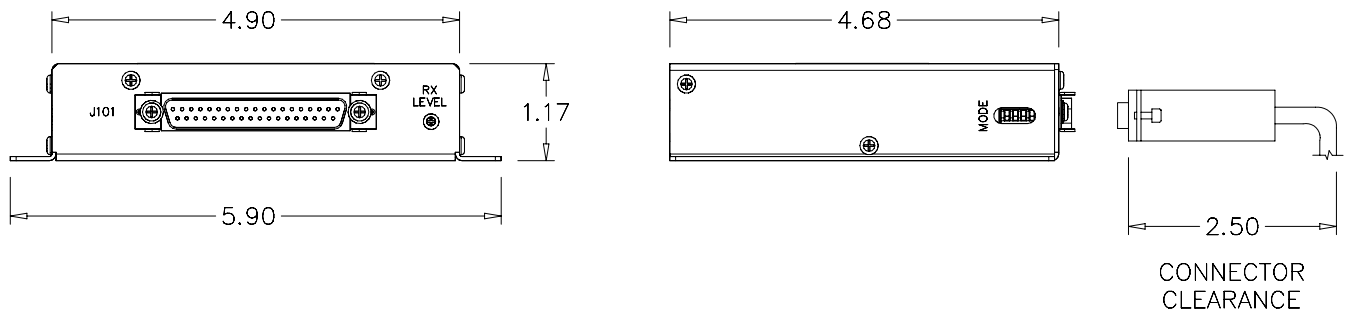


Outline Drawings - Accessories

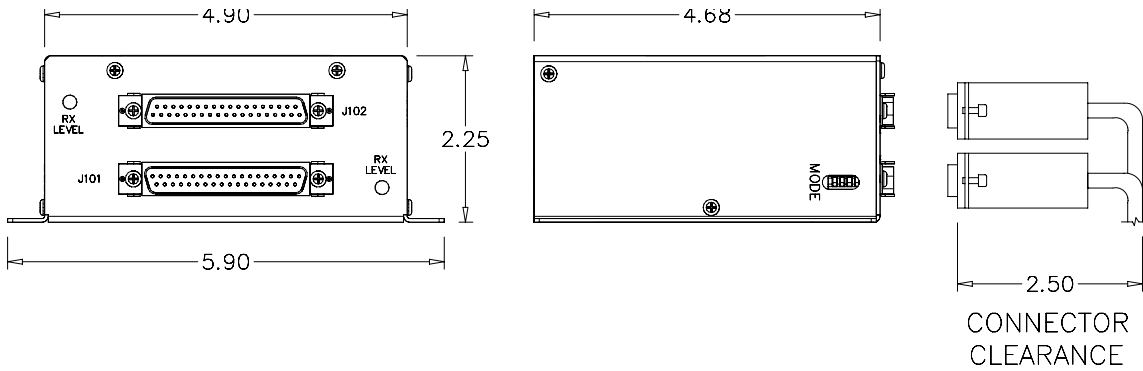
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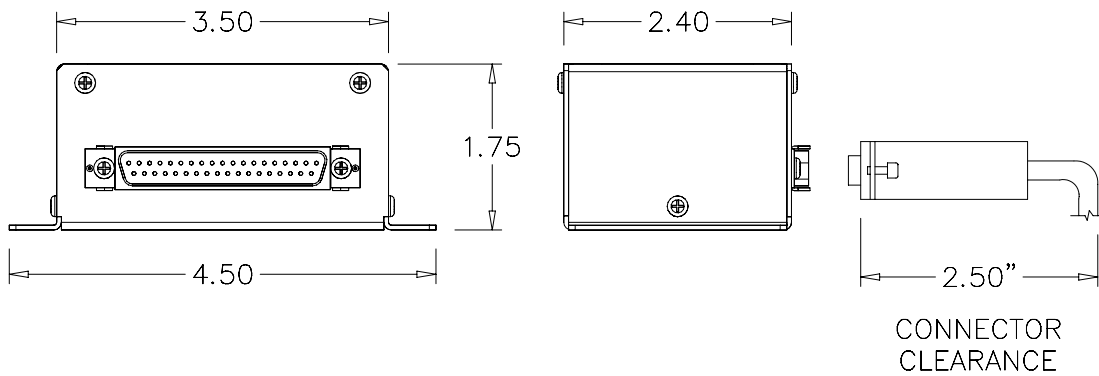
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No. 6-12



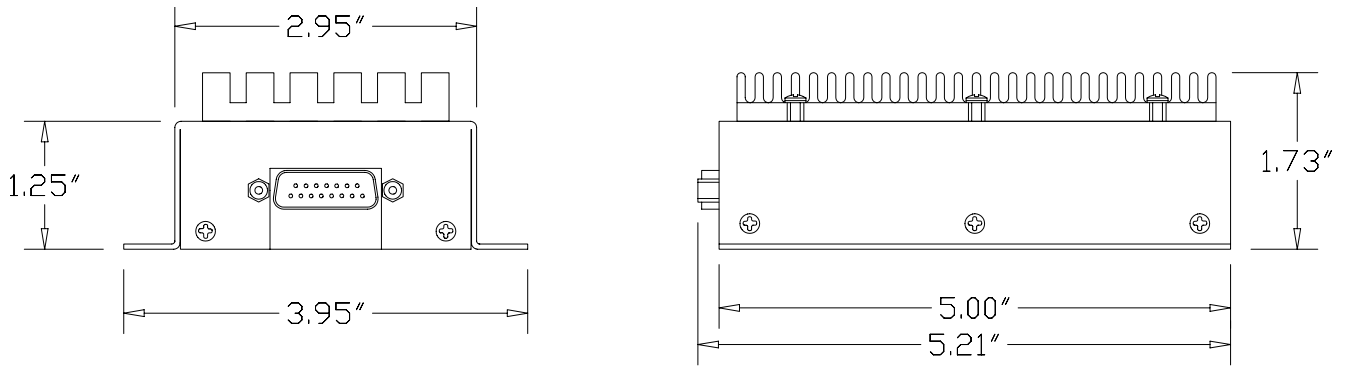
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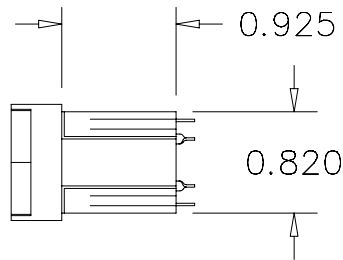
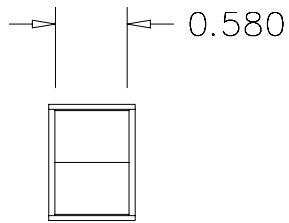
Outline Drawings - Accessories

No. 6-15



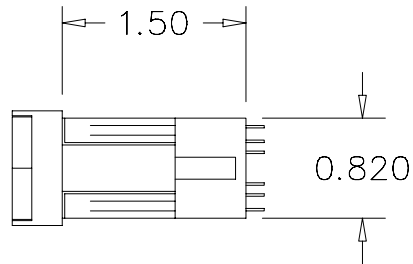
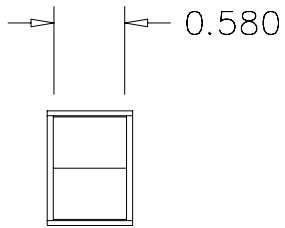
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WIDTH BEHIND
FACE PLATE

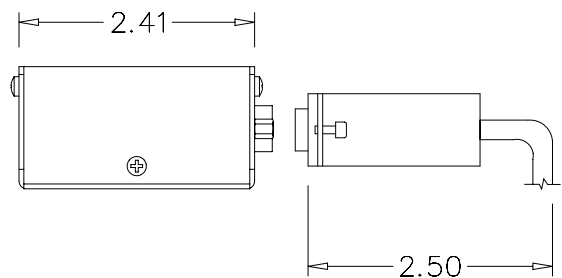
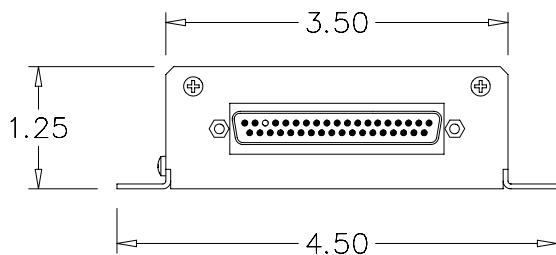


No. 6-17

WIDTH BEHIND
FACE PLATE



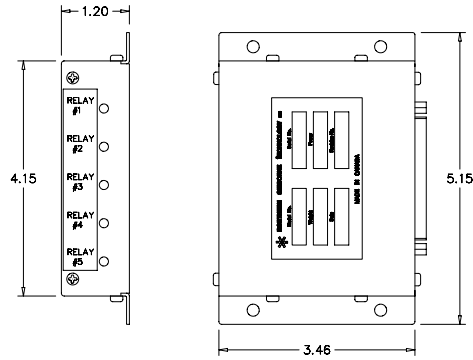
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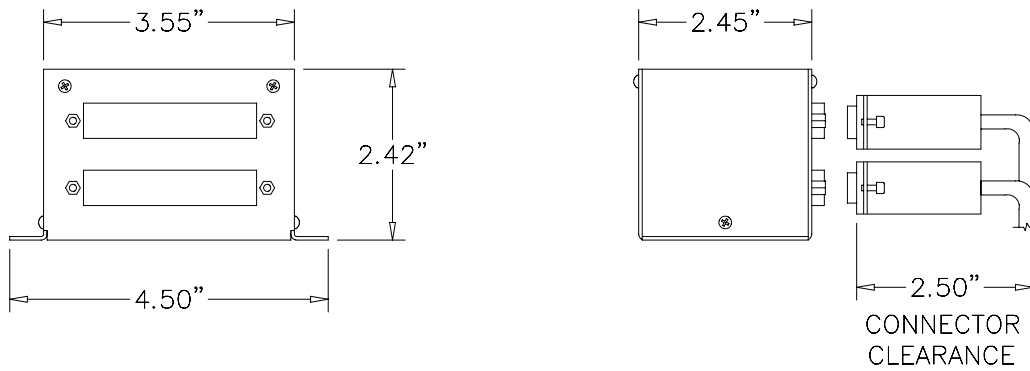
CONNECTOR
CLEARANCE

Outline Drawings - Accessories

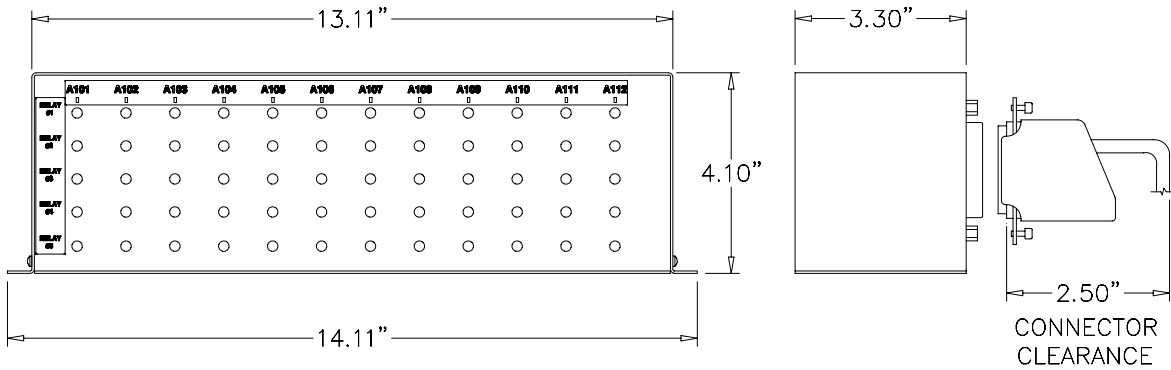
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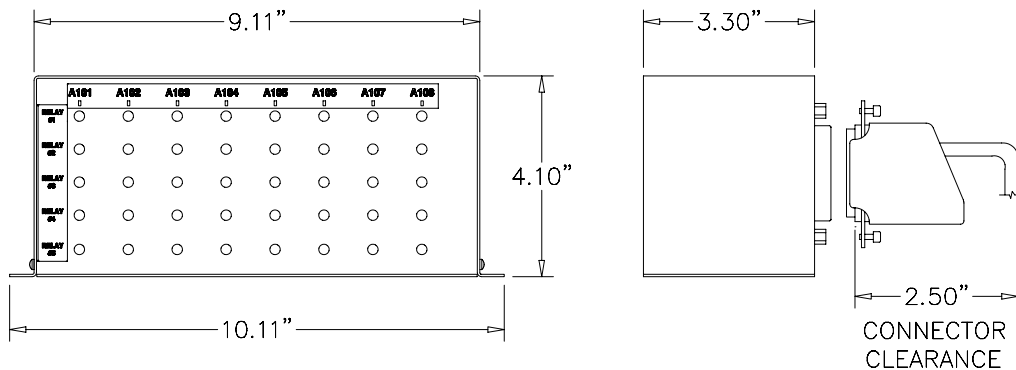
No. 6-20



No. 6-22



No. 6-21



Section 6