

7. CONTACTING API / WEINSCHEL:

In the event of a malfunction, contact API / Weinschel. An apparent malfunction of an instrument or component may be diagnosed over the phone by first contacting the Customer Service Department at API / Weinschel. DO NOT send the instrument or component back to the factory without prior authorization. When it is necessary to return an item, state the symptoms, catalog and type number of the instrument or component, and date of original purchase. Also write the Company name and your name and phone number on a card and tape the card to the item returned. Page provides further information regarding preparation of a unit for reshipment. Contact API / Weinschel Customer Service Department as follows:

Via mail: API / Weinschel, Inc. 5305
Spectrum Drive Frederick,
MD 21703-7362 U.S.A.

Via Telefax: 301-846-9116

Via Phone: Call TOLL FREE 800-638-2048
Toll call # 301-846-9222

Via Website: www.weinschel.apitech.com

Via e-mail: weinschel-sales@apitech.com

8. API / WEINSCHEL WARRANTY:

PRODUCTS - API / Weinschel warrants each product it manufactures to be free from defects in material and workmanship under normal use and service anywhere in the world. API / Weinschel's only obligation under this Warranty is to repair or replace, at its plant, any product or part thereof that is returned with transportation charges prepaid to API / Weinschel by the original purchaser within ONE YEAR from the date of shipment.

The foregoing Warranty does not apply in API / Weinschel's sole opinion to products that have been subject to improper or inadequate maintenance, unauthorized modifications, misuse, or operation outside the environmental specifications for the product.

SOFTWARE PRODUCTS- API / Weinschel software products are supplied without representation or Warranty of any kind. API / Weinschel, therefore, assume no responsibility and will not accept liability (consequential or otherwise) arising from the use of program materials, disk, or tape.

The Warranty period is controlled by the Warranty document furnished with each product and begins on the date of shipment. All Warranty returns must be authorized by API / Weinschel prior to their return.

API / Weinschel's Quality System Certified to:

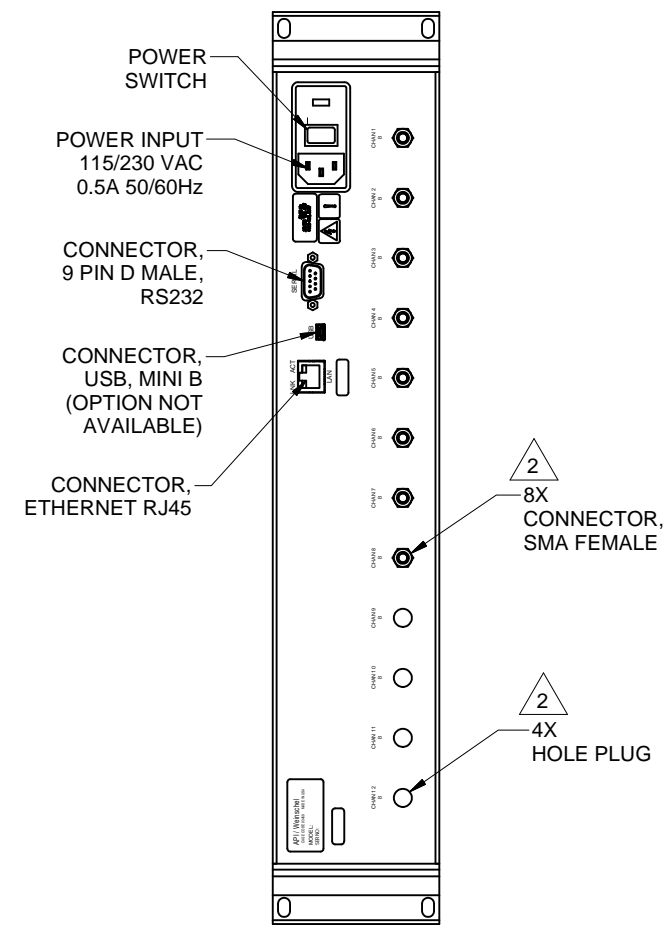
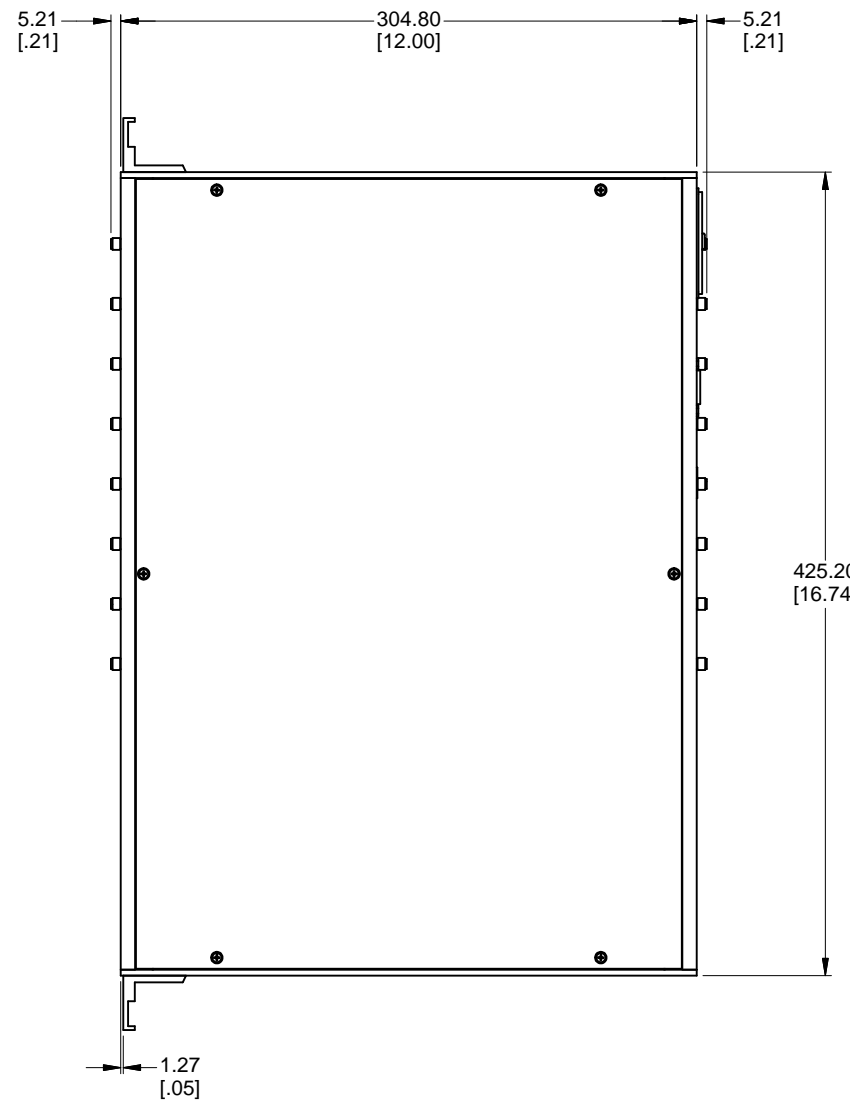
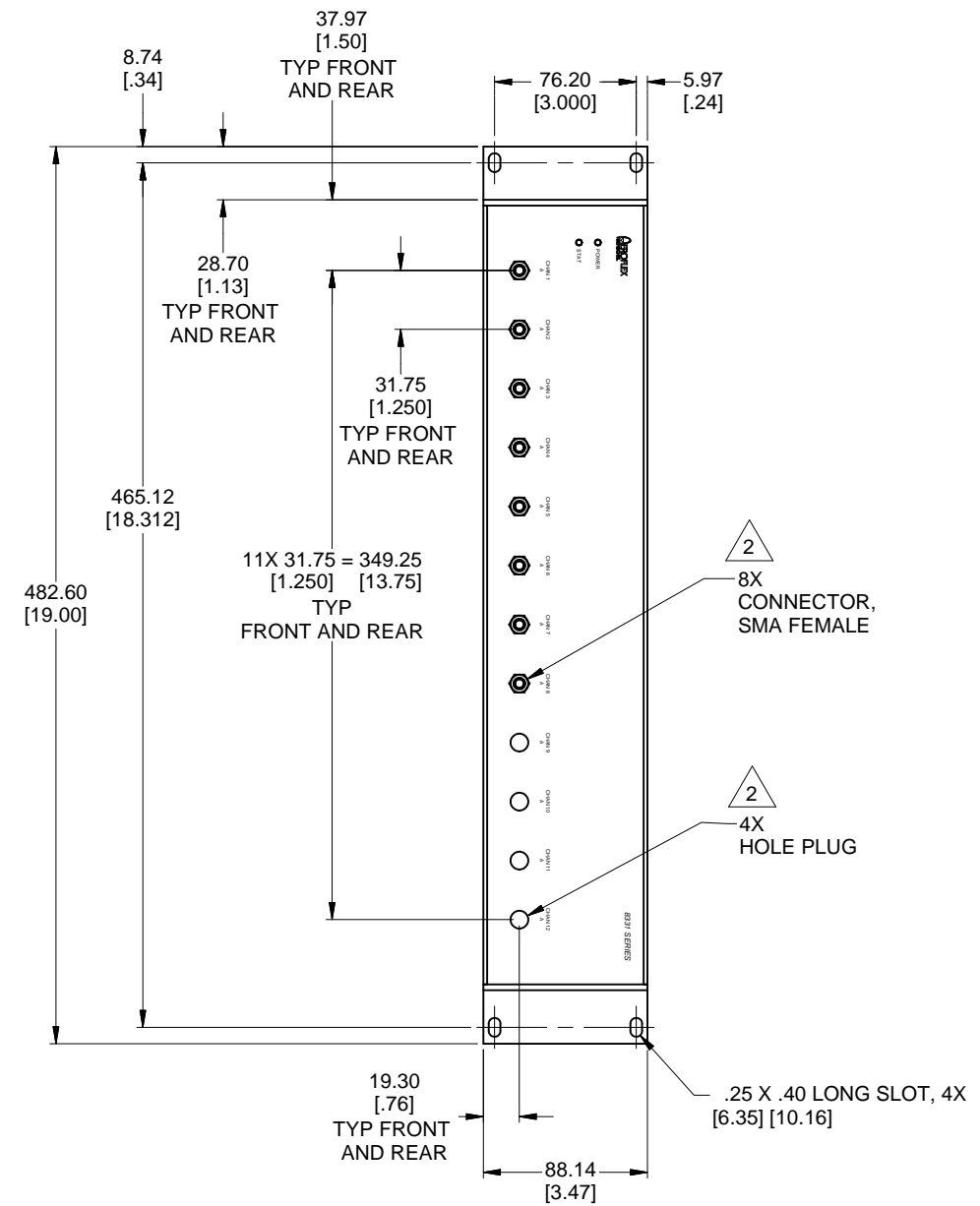


Certificate No. 289j



REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A	ERN 12-174	OCT 12	R. SINNO

- NOTES:
1. ALL DIMENSIONS GIVEN IN MM [INCHES].
 2. CONNECTORS AND HOLE PLUGS INSTALLED AS REQUIRED AND DETERMINED BY NUMBER OF CHANNELS IN UNIT. 8 CHANNEL UNIT SHOWN.
 3. ALL MATERIALS & PROCESSES ARE TO BE IN COMPLIANCE WITH THE EUROPEAN DIRECTIVE RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS). (REF: A/W 080-638)
 4. SEE A/W DWG 089-4418 FOR ATTENUATOR RF SPECIFICATIONS.



PROPRIETARY NOTICE
 THIS DOCUMENT IS COMMERCIAL CONFIDENTIAL AND THE INFORMATION CONTAINED THEREIN MAY NOT BE DISSEMINATED, NOR IS REPRODUCTION PERMITTED EXCEPT BY WRITTEN AUTHORIZATION.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES		CONTRACT NO.		APPROVALS		DATE	
=1/64 .XX ± .01 ± 1/2' .XXX ± .005		193-8300-X-X 8331-XX-XX-TS		R. SHOCK		10/5/2012	
MATERIAL		FINISH		A. HOPKINS		10/8/2012	
NEXT ASSY		USED ON		R. SINNO		10/8/2012	
APPLICATION		DO NOT SCALE DRAWING		ISSUED			
				API / Weinschel		ICD, ATTEN UNIT, SMA THRU MECH SPEC, MODEL 8331 SERIES	
SIZE D		FSCM NO. 93459		DWG NO. 089-4412		REV A	
				SCALE 1/2		SHEET 1 of 1	

INTERFACE CONTROL DRAWING

APPENDIX A

CARE AND HANDLING OF MICROWAVE COAXIAL CABLE ASSEMBLIES

A-1 CARE AND HANDLING OF ASSEMBLIES.

To ensure accurate measurements and optimal performance of Weinschel products, the microwave coaxial cable assemblies used in system and test setups must be properly used and maintained. Proper connections, routine inspection of all cables, and cleaning of the connectors are extremely important procedures which can prolong the longevity and accuracy of equipment.

A-2 CABLE INSPECTION.

Routinely check external cables for signs of cracked insulation, dents, twists, flattening, signs of jacket abrasion, or other signs of abuse. Wrinkles in the jacket indicate that the minimum bend radius has been exceeded. Most often, this occurs near the marker tubes and connectors.

Also inspect the connector interfaces for the following:

- Bent pins (male).
- Bent or missing tines (female).
- Worn or chipped plating.
- Damaged or displaced dielectric inserts.
- Thread damage.
- Folded or mushroomed outer interface rims.
- Mushroomed pin shoulders (male) or tine ends (female).
- Score lines on pins and outer interface rims visible to the unaided eye.
- Recessed or protruding pins.

It is advisable to clean the connectors prior to inspection to make subtle damage more apparent. If any of the above is noted, replace the assembly before its further use results in equipment damage. Also inspect the mating connectors for similar damage.

Inspect the connector interface for signs of debris. Debris may be in the form of:

- Plating chips or other metal particles.
- Dust or dirt.
- Oily films.
- Other miscellaneous foreign particles.

If signs of debris are present, clean the connector interface as directed in Paragraph A-6.

A-3 MAKING INITIAL CONNECTIONS.

Exercise caution when mating cables. Poor connections lead to poor system performance. They can also damage not only the cable assembly, but more significantly, front or rear panel connectors on the equipment itself which may be more difficult to repair.

A-3.1 ALIGNING CONNECTORS. Align the center lines of two connectors before actual mating. Male retaining nuts contain a small amount of necessary play which may make it possible to mate the threads without the pins being properly aligned. Pin misalignment can damage pins and dielectric inserts.

A-3.2 MATING CONNECTORS. Gently mate the connectors by hand, taking care not to force the coupling nut at the slightest resistance. It is often possible to feel whether or not the pins are mated. If the coupling nut is difficult to turn, either the pins are not mated, the coupling nut is cross-threaded, or one of the connectors has been damaged by excess torque.

Never hold a male connector coupling nut stationary while screwing a female connector into it. This rotation can erode the plating and damage both the outer interface rim as well as the pin. If the pins become locked, serious damage can result to both the equipment and the cable assembly.

A-4 ENSURING PROPER CONNECTOR TORQUE.

A-4.1 OVERTORQUING. Once connectors have been properly mated, apply only the proper amount of torque. Overtorquing damages both connectors involved. Also, a connector which has been damaged by overtorquing, in turn, damages every connector to which it is subsequently mated. It usually leads to poor system performance as well. Overtorque can cause:

- Bent pins.
- Recessed or protruding pins.
- Recessed or protruding dielectrics.
- Chipped plating.
- Damaged coupling threads.
- Coupling nut retaining ring damage.
- Mushroomed outer interface shells.
- Mushroomed pin shoulders.

A-4.2 HEX-NUT TYPES. To mate a connector of the hex-nut type, always use a torque wrench set to the correct torque value. Tighten the connector slowly until the wrench snaps. Tightening too quickly can cause the wrench to exceed its set limit. Do not snap the wrench more than once as this also causes overtorque.

A-4.3 KNURLED NUTS. Tighten connectors with knurled nuts by hand. If this does not provide sufficient tightness use a hex-nut connector and torque wrench instead. Never use pliers to tighten a connector. Table A-1 recommends torque specifications for the various types of connectors.

Table A-1. Recommended Torque Values

Connector	Recommended Torque
GPC-7 (7mm) w/hex nut	14 in/lbs ± 1 in/lbs
Type N w/hex nut	14 in/lbs ± 1 in/lbs
SMA, 2.92mm, 3.5mm 2.4mm, WPM, WPM-3 WPM-4	7.5 in/lbs ± 0.5 in/lbs
Type N & TNC (knurled)	Hand-tight
BNC (knurled)	Hand-tight

A-5 PROPER CABLE HANDLING.

Never exceed the minimum bend radius specified for a cable. Guard against tight bends at the end of connector strain relief tubing, or at the ends of marker tubing where they may be less noticeable. Although cable bend may seem slight, the actual radius of the bend at the point of angular departure may be far smaller than the acceptable radius.

Never pinch, crush or drop objects on cable assemblies. Also, do not drag a cable over sharp edges as this will pinch it and cause it to exceed the minimum bend radius.

Never use a cable assembly to pull a piece of equipment. Cables and connectors are not designed to support or move equipment.

A-5.1 SECURING CABLES. Use toothed, rubber-lined "P-clamps" to hold cables in place. If it is necessary to use tie-wraps, use the widest possible wrap and the lowest setting on the gun to ensure the minimum pressure on the cable.

A-5.2 STORING CABLES.When storing cables, minimize cable "set" by coiling them in large diameters (1 or 2 feet). Unroll the cable properly when it is ready to be used; do not pull the loops out hastily. Similarly, re-roll them when storing them away again.

A-6 CLEANING CONNECTOR INTERFACES.

Use the following guidelines in cleaning connector interfaces:

- a. Do not use chlorinated solvents including common tap water. These solvents are extremely penetrating and sometimes ruin otherwise good devices and assemblies.
- b. Moisten a cotton swab with isopropyl alcohol. Roll the swab on a paper towel to remove excess.
- c. Use the moistened cotton swab to wipe away debris. Do not try to dissolve the debris by overwetting the swab.
- d. Repeat the cleaning process using additional swabs as necessary. If metallic particles are embedded in the dielectric, use an eyeglass and a sharp pick in an attempt to dislodge them. Swab again.
- e. When satisfied that the interfaces are clean, blow them dry with dry compressed air, or preferably dry nitrogen (pressurized spray cans work well). Do not use breath.
- f. Clean the mating connectors. These may be the source of the debris.

Model 8331 Series (IM-600) Revision Record

REVISION	DATE	DESCRIPTION	APPLICABLE SERIAL NUMBERS
---	10-24-12	ERN 12-XXX: Preliminary Issue	All Units