



NEOS TECHNOLOGIES

A Gooch & Housego Company

**OPERATING MANUAL
VOLTAGE CONTROLLED OSCILLATOR**

MODEL NUMBER:

21XXX-YYY-ZASVCO

DOCUMENT NUMBER: 51A18410

This Operating Manual is for use with Variable Frequency AOM Drivers with model numbers:

XXX = The Lower frequency of between 27 and 200 MHz

YYY = The Higher frequency of between 27 and 200 MHz

Z = 1 or 2 Watts output power **A** = Analog Modulation

S = Rack Mountable System Box

Voltage Controlled Oscillator

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SECTION I

INSPECTION

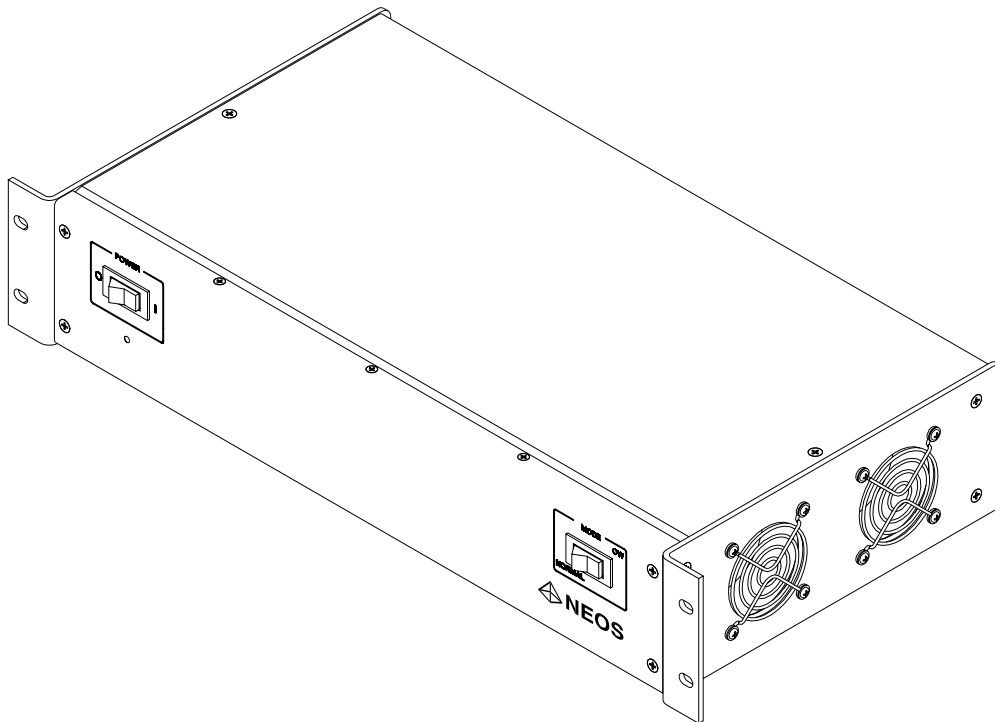
Examine the shipping carton for damage. If the shipping carton or packing material is damaged it should be kept for the carrier's inspection. Check the contents of the shipment for completeness, mechanical damage, and then test the equipment electronically. Operating procedures are contained in Section VI. Notify the carrier and NEOS Technologies. If the contents are incomplete, or the equipment does not pass the electrical testing please notify NEOS Technologies.

If there is any problem with the use of this equipment, or if the equipment fails to function as expected contact NEOS Technologies, do not try to trouble shoot or repair this equipment. Consult with a NEOS service engineer. If the equipment needs repair or replacement, contact NEOS Technologies, Inc for a Return Authorization Number.

SECTION II GENERAL DESCRIPTION

The 21XXX-YYY-ZASVCO is a Voltage Controlled Oscillator in a rack mountable system box. It is designed to supply an RF output of up to 2 Watts of RF energy into an Acousto-Optic Beam Deflector or a 50 Ohm load. The system requires 100 to 240 Volts AC power input, an analog modulation voltage (0 to 1 VDC), and a frequency control voltage (2 to 15 VDC typical) for operation (See the driver ATR for exact data for frequency vs. control voltage).

21XXX-YYY-ZASVCO



53D1702

SECTION III. SPECIFICATION

SPECIFICATION

PARAMETER

Output Frequency:	XXX to YYY MHz Where XXX to YYY typically is less than an Octave bandwidth, with frequencies from 35 to 200 MHz .
Spurious Levels:	-45 dBc Maximum
Harmonic Distortion:	-15 dBc Maximum
Frequency Control Voltage:	2 to 15 Volts Typical
Analog Input:	± 1 Volt into 50 Ohms, 0 Volts = minimum RF output 1 Volt = maximum RF output
Extinction Ratio:	30 dB Minimum
RF Rise / Fall Time	20 ns Typically, 30 ns Maximum P_{RF} : 10 to 90 %
RF Output Power:	Z Watts - 1 TO 2 Watts Nominal - Adjustable Factory set for optimum performance when paired with a NEOS AO Device.
Output Power Flatness:	1.5 dB Maximum
Output Impedance:	50 Ohms Nominal
Power Input:	90 to 240 VAC @ 50 / 60 Hz Fused @ 1.5 Amps

MAXIMUM RATINGS:

Supply Voltage:	264 VAC
Power Output:	No DC Feedback Allowed
Case Temperature:	+ 45 ⁰ C

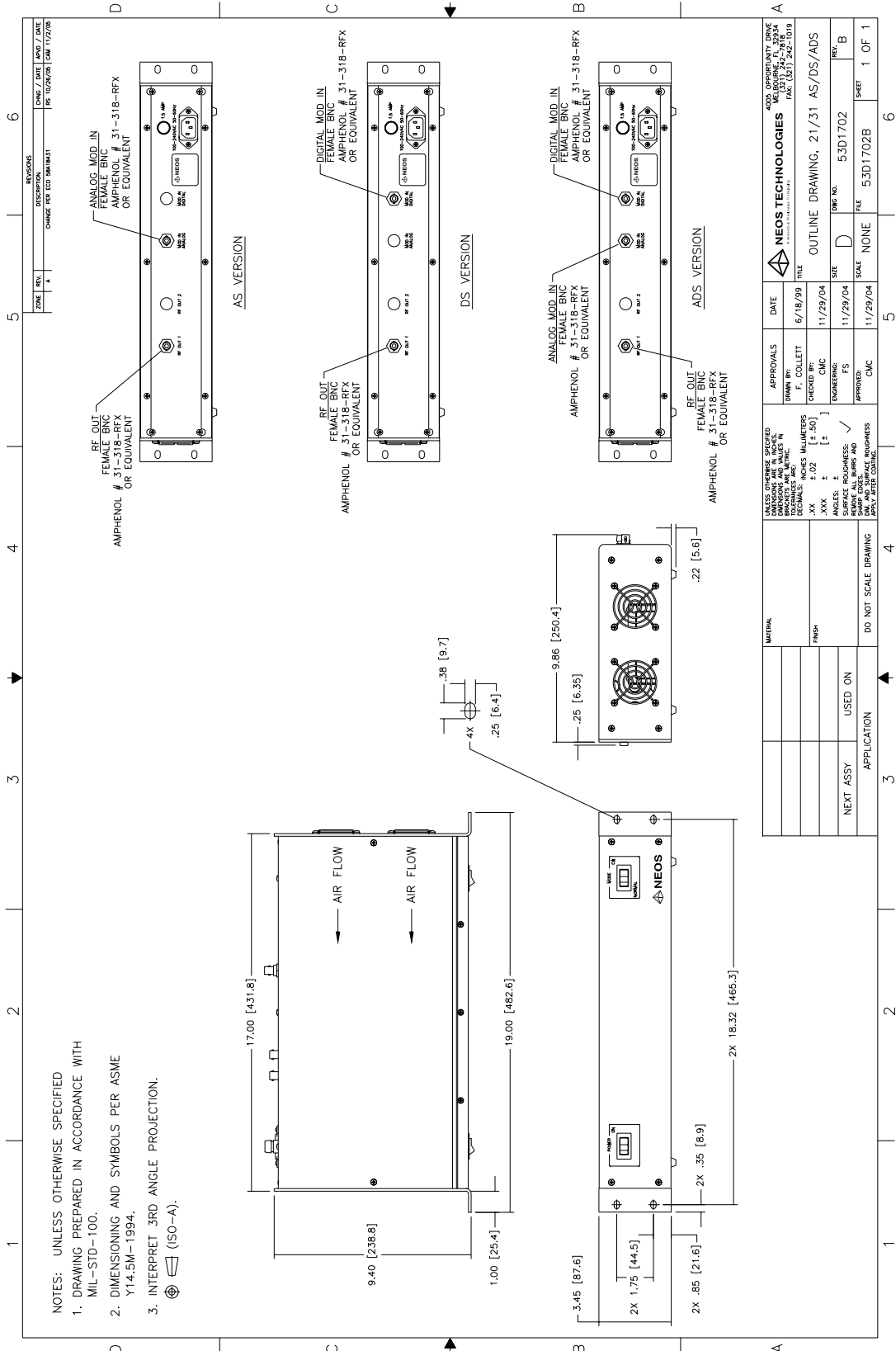
CONNECTORS & MECHANICAL:

RF Output Connector:	BNC Female
Modulation Input Connector:	BNC Female
Frequency Control Connection:	BNC Female
Power Supply Connections:	3 pin IEC panel mount EMI Filtered.

RELATED DOCUMENTS:

Outline Drawing:	53D1702
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SECTION IV OUTLINE DRAWING



- NOTES: UNLESS OTHERWISE SPECIFIED
1. DRAWING PREPARED IN ACCORDANCE WITH MIL-STD-100.
2. DIMENSIONING AND SYMBOLS PER ASME Y14.5M-1994.
3. INTERPRET 3RD ANGLE PROJECTION.

REV.	DATE	BY	CHK'D	APP'D	DESCRIPTION
1	11/29/04	CMC	CMC	CMC	CHANGE FOR ESD 814341

NEOS TECHNOLOGIES		4005 OPPORTUNITY DRIVE MILFORD, CT 06460 (860) 242-7884 FAX (860) 242-1018	
DATE	6/18/99	APPROVALS	DATE
DESIGNED BY	F. COLLETT	DRN NO.	5301702
CHECKED BY	CMC	FILE	5301702B
ENGINEERING	FS	SCALE	NONE
APPROVED	CMC	SHEET	1 OF 1
MATERIAL		TITLE	
FINISH		OUTLINE DRAWING, 21/31 AS/DS/ADS	
USED ON		SIZE	
APPLICATION		SCALE	
DO NOT SCALE DRAWING		REV.	
		B	

SECTION VI OPERATING PROCEDURES

TESTING:

Connect the "RF out" to a 50 Ohm load capable of dissipating 2 Watts.

Connect a VCO control Voltage to the "CONTROL VOLTAGE" (SMB connector). See the driver ATR for voltage vs. frequency data.

Connect a 0-1 DC Voltage for amplitude control to the "MOD IN" (BNC connector) (1VDC = full on). DO NOT EXCEED 1VDC.

Turn on the Power Switch.

With the "Mode" switch in the "NORMAL" position, and with 1 Volt applied to the "MOD IN" input, adjust the control voltage to the low, center, and high frequency as required to test the driver. See the driver ATR for Voltage vs. frequency data. Or, if a sweep generator is available, sweep the control voltage from the low to high voltage as listed on the ATR. Measure each of the parameters as listed on the driver ATR.

With 1 Volt on the "MOD IN", adjust, if necessary, the driver output power level control (white one turn pot on pc board inside the driver box) for the power required for maximum diffraction efficiency of the AO devices or to a power which does not exceed the maximum allowed for the AO devices.

Do not exceed the maximum allowed for the AO devices or damage will occur. If damage results due to overpowering the AO device, the warranty will be void.

OPERATION:

Attach the AO device to the RF output with a 50 Ohm cable.

Follow the instructions in the AOBD device manual to align and adjust the devices as required in the laser beam of your optical system.

Apply the necessary signals to the frequency and amplitude control as desired.