

RFA741-x

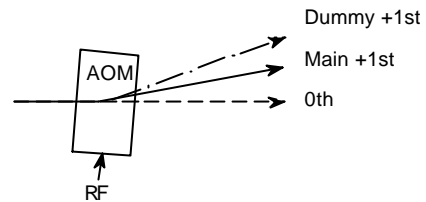
RF Driver/Amplifier



0510

The RFA741-x is a combined dual frequency oscillator and power amplifier suitable for driving Isomet High Power Acousto-optic modulators such as the AOM745-x series. The prime frequency of 40MHz provides the active "ON" laser output beam. The dummy frequency of 50.67MHz is applied in the "OFF" condition and is used to provide a constant thermal load to the AOM. Two inputs directly control the RF output; Gate and Freq Select. Protection includes an internal over temperature sensor, and a 'TranZorb' over voltage diode on the DC supply input. An external interlock (or enable) input is provided. The amplifier includes an integral water-cooled heatsink. Available options (-x) are listed below

The RFA741 operates from a +24V supply.
 LED's indicate when the RF outputs are 'live'.
 The maximum RF output power for each frequency is set by one of two methods.
 a) Manual adjustment using front panel potentiometers
 b) Remote adjustment via a buffered I²C compatible serial interface.

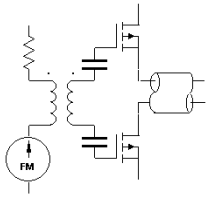


SPECIFICATION

Power Output	:	> 180 Watts Max. CW
Load Impedance	:	50Ω
Harmonic Distortion	:	>20dB below fundamental
Mismatch Tolerance	:	The Driver will not oscillate
Center Frequency	:	40 MHz(main), 50.7MHz (dummy)
Frequency stability	:	± 0.003%
Frequency accuracy	:	± 0.003%
Beam Control, Digital	:	TTL compatible (> 2.7V, Main RF Freq = ON)
RF ON to OFF Ratio	:	40dB below full power
Output Switching Speed	:	< 0.25μs Rise/Fall, 0 to 150 Watts
Interlock	:	Open OFF, closed ON, Sink 20mA at 15V
Power Supply	:	+24V, 0.25% regulation, <18A
Temperature Range	:	0° to 60°C, Thermal Shutdown Interlock
RF Output	:	TNC Connector
Interlock enable	:	Binder 719, 3-pin (connect to AO)
Control signals -		15 pin 'D' type Male
RF Gate, Digital	:	IN +sig pn8, -rtn pn15
Beam Select (Modulation Control)	:	IN +sig pn7, -rtn pn14
Serial interface Data IO	:	IN +sig pn6, -rtn pn13 (I ² C compatible)
Serial interface Clock	:	IN +sig pn5, -rtn pn13 (I ² C compatible)
RF monitor, opto-open collector	:	OUT +sig pn3, -sig pn10 (low = OK)
Interlock monitor, opto-open collector	:	OUT +sig pn2, -sig pn10 (low = OK)
Remote/Manual Power Adjust Select-0	:	IN +sig pn1, -rtn pn9
Power Input	:	Feed through filter solder tag

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Quality Assured.
In-house: RF & Digital design
Software Development
OEM manufacture



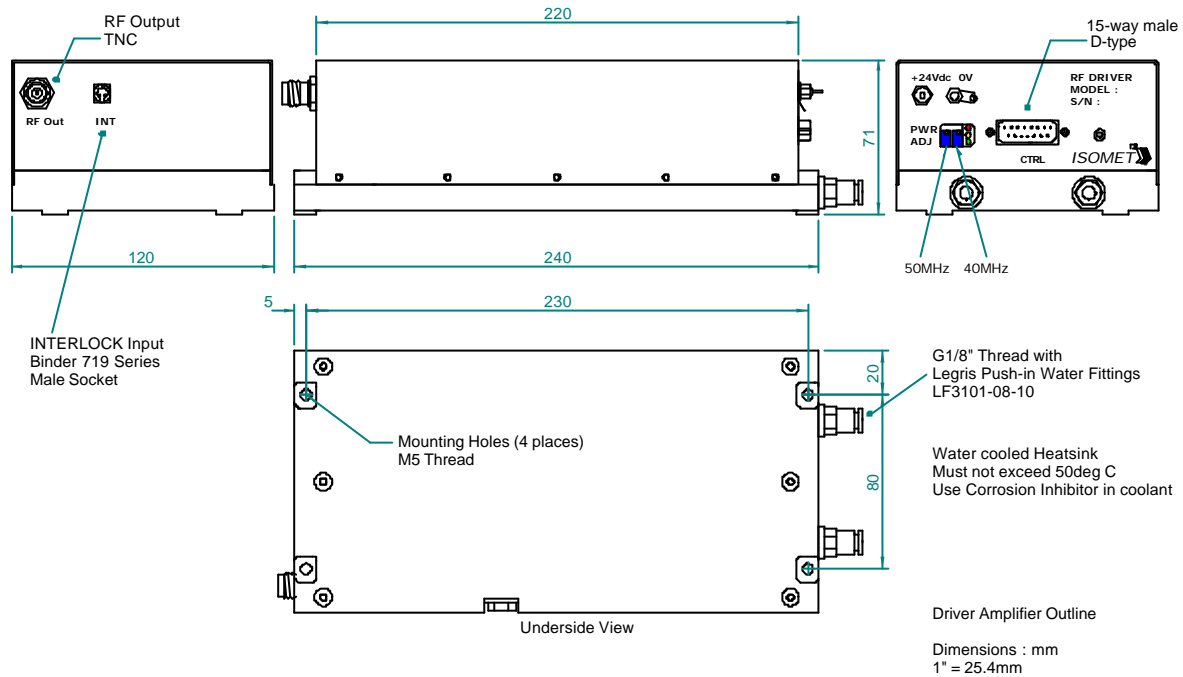
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OUTLINE DRAWING



Options -x, multiple combinations possible:

- V : 0-5V analog modulation range
- L : RF gate input not necessary
- D : digital modulation, fast input
- BR : Brass water cooled heatsink

Refer application note AN0901 regarding Coolant Specification

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