

RFA4116-2

RF Driver/Amplifier



0510

The RFA4116-2 is a combined multi-frequency oscillator and power amplifier suitable for driving the Isomet High Power Acousto-optic Modulator/Deflector AOM650-9. This driver features digital modulation for the On:Off control of the RF amplitude and digital inputs to select one of four carrier frequencies. The drive frequency can be rapidly switched between 40, and 60MHz for dual spot applications. Protection includes an internal over temperature switch, and a 'TranZorb' over voltage diode on the DC supply input. An external interlock (or RF enable) input is provided.

The RFA4116-2 will operate from a +24V to +28Vdc supply. LED's indicate the status of the thermal interlocks, DC supply on and RF power live. The maximum RF output power for each frequency can be adjusted independently by means of (manual) pre-set potentiometers or remotely using non-volatile 100 step "up-down" digital potentiometers (DP).

All digital pot inputs are opto-isolated and compatible with open collector 24V controllers
The amplifier includes an integral water-cooled heatsink.

SPECIFICATION

Power Output (Total)	:	> 170 Watts Max. CW (28V supply) > 140 Watts Max. CW (24V supply)
Load Impedance	:	50Ω
RF Outputs	:	BNC (2 off)
Harmonic Distortion	:	>20dB below fundamental
Mismatch Tolerance	:	The Driver will not oscillate
Center Frequency	:	40 MHz / 60 MHz
Frequency Select	:	TTL compatible, 2-bit decode
Frequency stability	:	± 0.003%
Frequency accuracy	:	± 0.005%
Modulation Control Voltage	:	TTL Compatible (> 2.7V, RF O/P=on)
RF ON to OFF Ratio	:	40dB below full power
Output Switching Speed	:	< 0.25μs Rise/Fall, 0 to 50 Watts
Interlock	:	Open OFF, closed ON, Sink 20mA at 12V
Power Supply	:	+24V to +28Vdc, 0.25% regulation, < 12A
Power Input	:	Feed through filter solder tag
Temperature Range	:	0° to 60°C, Thermal Shutdown Interlock
<u>Control signals</u> -		<u>25 pin 'D' type Male</u>
Frequency Select logic, Bit1	:	+sig pn13, -rtn pn25 (TTL/CMOS)
Frequency Select logic, Bit2	:	+sig pn12, -rtn pn24 (TTL/CMOS)
Modulation Control (Reserved)	:	+sig pn11, -rtn pn23 (TTL/CMOS)
Isolated OPTO Supply input	:	+sig pn10, -rtn pn22
DP write enable	:	+24V dc pn9
DP / Manual Pot Select	:	+sig pn8, -rtn pn21
DP increment/decrement clock	:	+sig pn7, -rtn pn20 (Open=Manual, Closed=DP)
DP UP/DOWN control	:	+sig pn6, -rtn pn19
DP Adjust Select, Bit1	:	+sig pn5, -rtn pn18 (Open=Decrease, Closed=Increase)
DP Adjust Select, Bit2	:	+sig pn4, -rtn pn17
Interlock monitor, CMOS open drain	:	+sig pn3, -rtn pn16
Interlock enable (connect to AO)	:	+sig pn2, -rtn pn15 (Closed= OK)
	:	+sig pn1, -rtn pn14 (Closed = on)

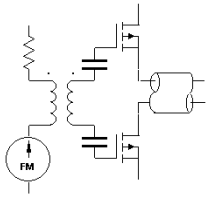
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Quality Assured.
In-house: RF & Digital design
Software Development
OEM manufacture



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Logic table

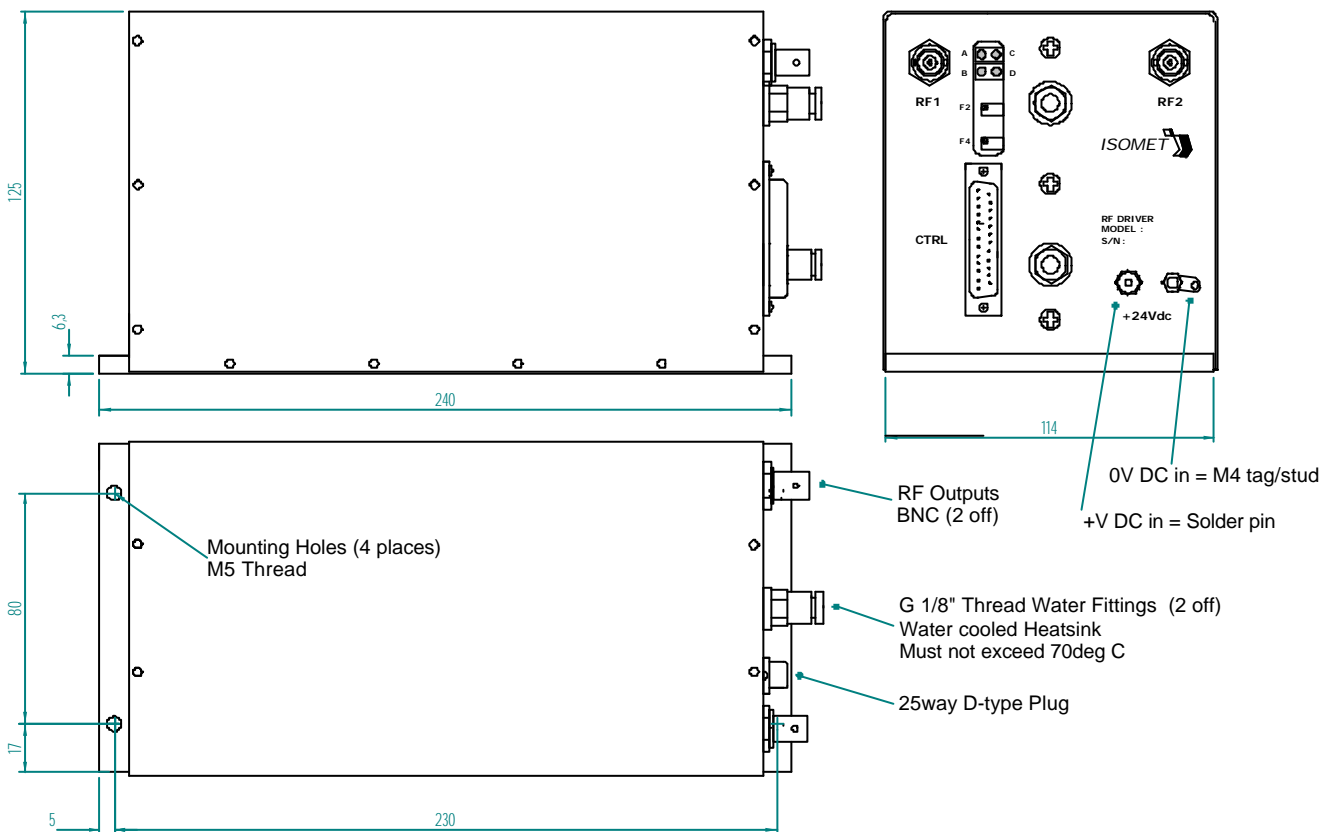
Decoding applies to both digital pot (DP) programming and the output frequency selection.

Frequency MHz	Bit2	Bit1
40.0	0	0
N/A	0	1
N/A	1	1
60.0	1	0

OUTLINE DRAWING

RF Amplifier Outline

Dimensions : mm
1" = 25.4mm



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