

# Modular Fire Pulse Generator

A Dimatix Printhead  
Support Product



Modular Fire Pulse Generator

## Features:

- Provides up to 8 separate channels of fire pulse outputs
- Each output channel can drive up to 1024 jets
- Programmable fire pulse amplitude, from 40 to 112 V
- Programmable fire pulse rise and fall times, from 1.2 to 4 microseconds
- Fire pulse frequency up to 35 kHz
- Same serial control protocol as the Apollo II HDEM
- Compact design

*The Dimatix Modular Fire Pulse Generator is an 8-channel, high-voltage DC pulse generator suitable for use with all Dimatix printheads and jetting assemblies.*

The Modular Fire Pulse Generator is an 8-channel, high voltage DC pulse generator that provides the fire pulses needed to actuate piezoelectric elements in Dimatix printheads and jetting assemblies.

The MFPG controller drives up to 8-channels via separate power amplifier cards. Each power amplifier card is a separate fire pulse generator capable of driving 1024 jets, depending on the drive voltage and other usage parameters. The power amplifier card can produce fire pulse amplitudes up to 112 volts at firing frequencies up to 35 kHz. The fire pulse amplitude for each channel can be independently adjusted, while the fire pulse timing for all channels is driven by a common pixel clock.

Power distribution, serial data programming, signals display line, housekeeping and fire pulse outputs are routed through the logic board. Control and status communication is via a serial COM port using the identical protocol to the Head Drive Electronics Module (HDEM) used in the Apollo II Printheads Support Kit.

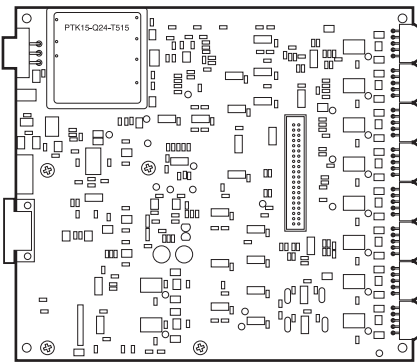
The MFPG controller is a compact, low cost and powerful fire pulse generator module that is easily integrated into a system. The powerful amplifier drives a fire pulse with no discernable signal degradation to a printhead or jetting assembly up to 10 meters or 35 feet away.



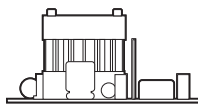
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Parameter	MFPG
Maximum fire pulse frequency	35 kHz
Trapezoidal fire pulse	Programmable amplitude, width, rise/fall times
Power input	12 volts dc, 3 amps/120 volts dc, 2 amps
Communication	RS-232 (RS-485) serial communication (Same protocol as Apollo II HDEM)
Outputs	8 channels via separate amplifier cards
Load	20 watts/channel
Cable distances	
– Logic board to amplifier	Up to 1.5 meters [5 ft.]
– Amplifier to printhead	Up to 2 meters [6.5 ft.] (Twisted pair, 18 awg) Up to 10 meters [35 ft.] (Coax cable)
Max fire pulse amplitude	112 Vdc for 20 Watt
Programmable fire pulse amplitudes	from 40 to 112 V
Programmable fire pulse rise and fall times	from 1.2 to 4 microseconds

## Physical Dimensions

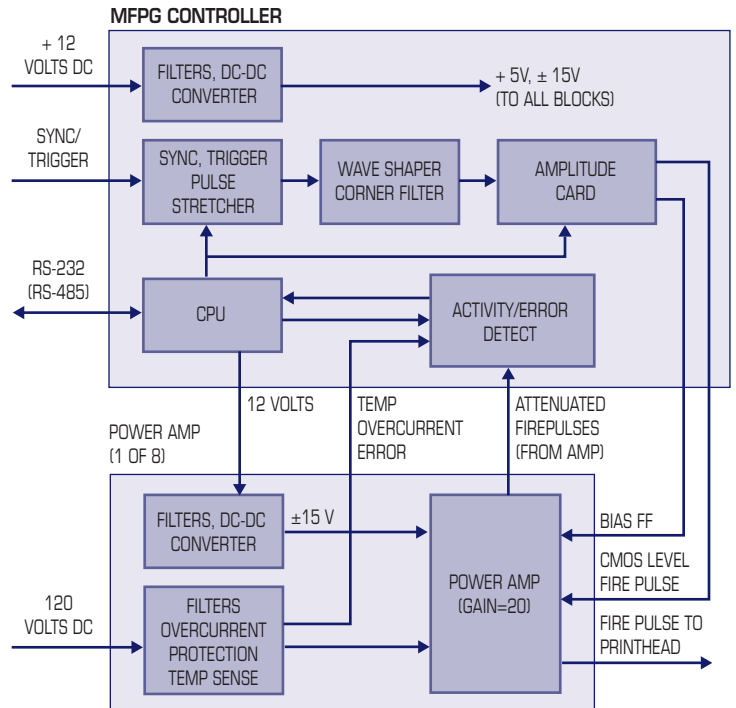


**MFPG Controller**  
 Dimensions:  
 Width 203 mm [8 in.]  
 Length 178 mm [7 in.]  
 Depth 45 mm [1.75 in.]  
 Approximate Weight:  
 0.36 kg [12.7 oz]



**Power Amplifier**  
 Dimensions:  
 Width 102 mm [4 in.]  
 Length 102 mm [4 in.]  
 Depth 64 mm [2.5 in.]  
 Approximate Weight:  
 0.22 kg [7.7 oz]

## Functional Diagram



Product data presented above are for guideline purposes only. For design and engineering work using this product, please contact Dimatix Technical Support for the appropriate Product Manual containing full Product Specifications.



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