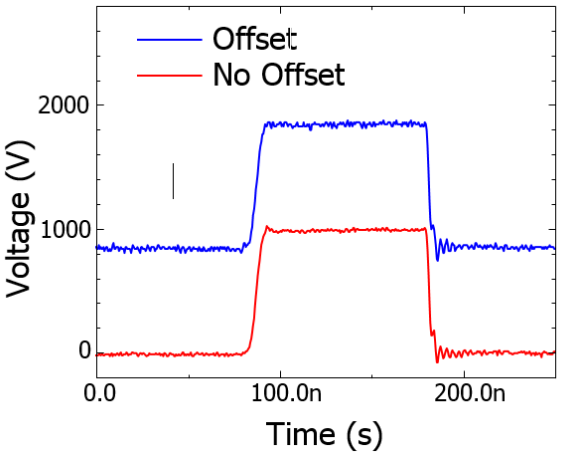
GM-MCP3

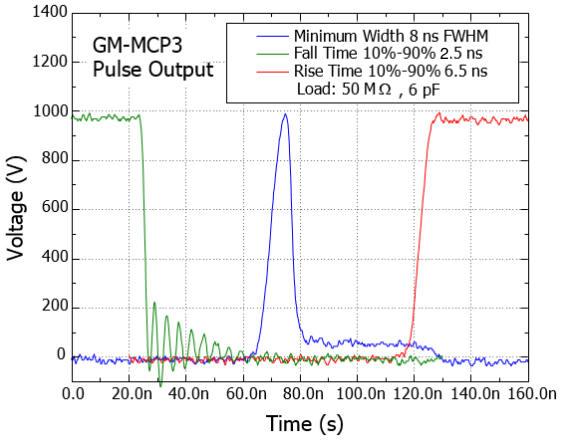
1kHz 10ns 1000V Gating Module

The GM-MCP3 module is a +12V d.c. powered 1000V pulse amplifier for periodic operation of MCP devices by biasing the MCP on and off for specific lengths of time.
This unit requires an external +12V/300mA power supply, a +5V TTL input trigger pulse and an external high voltage power supply for the bias input, ±9kV max.
The GM-MCP3 is designed to gate Micro-Channel Plate devices. The output pulse is directly related to the input pulse but will be delayed and there is a small pulse width loss across the GM-MCP3 of between 2 to 5ns.



Operating Characteristics

The gate module is intended to connect directly to the device being gated by a short length of wire.
The MCP may be biased to a voltage of ±9kV and the output pulse of the GM-MCP3 will be +1000V with respect to the bias input and thus turn the detector on.
The gate pulse drive required is 5V TTL into the GM-MCP3 high impedance input.
The propagation delay across the GM-MCP3 is approximately 80ns, this is specific to each unit and if precise figures are required the unit must be measured.



GM-MCP3 Pulse Characteristics		
	Minimum	Maximum
Output Pulse	10ns	RC Limited
Pulse Width Loss	2ns	5ns
Propagation Delay	70ns	90ns
O/P Pulse Rise-time	4ns	8ns
O/P Pulse Fall-time	2ns	6ns
Off Voltage	0V +Bias Input	
On Voltage	1000V +Bias Input	

The GM-MCP3 is fitted with a Positive Bias inhibit circuit which will disable the output pulse if the high voltage bias input exceeds a pre-set level. An LED will illuminate if the trip has activated and disabled the Gate Pulse Output.
To set the trip level, apply the maximum bias voltage then adjust the trimpot until the LED illuminates.
This inhibit only works for positive bias inputs.

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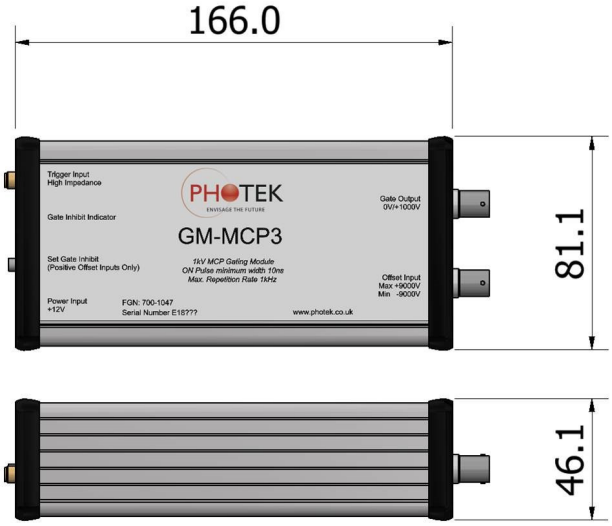
PRODUCT NO:-
700-1047

GM-MCP3 Connectors		
SMB Socket	Center	+12V
	Screen	0V
SMA Socket	Center	TTL Pulse
	Screen	0V
SHV Socket 1	Center	Offset I/P
	Screen	0V
SHV Socket 2	Center	HT Pulse
	Screen	0V



Items Supplied

1 x 700-1047 - GM-MCP3 Gating Module.
1 x ED558 – SHV to SHV Cable – 65mm.
1 x ED588 – BNC to SMA Trigger Cable – 2m.
1 x UMGM-MCP3 – GM-MCP3 User Manual.
1 x B4025 - Universal a.c. to 12Vd.c. Power Supply. **see note*
1 x B3000 or B3001 or B3002 - UK/US/EU IEC Power Lead. **see note*

**Note: - B4025 and IEC Power Lead are not supplied if the unit is to be used with any mains powered Photek unit. An appropriate power cable will be supplied to connect the GM-MCP3 to the mains powered unit*

Electrical Specifications - Inputs	
Supply Voltage	+12V D.C. ±5%
Supply Current - Typical (Operating Frequency = 1kHz)	<100mA (300mA Turn On Surge)
Input Drive Pulse	5V TTL
Input Impedance	High Impedance
High Voltage Bias Input maximum	±9kV
Mechanical Specifications	
Length	166mm
Length (Incl. Connectors)	191mm
Width	81.1mm
Height	46.1mm
Weight	~420g

Electrical Specifications - Outputs	
Negative O/P Voltage Max.	0V (±Bias I/P)
Positive O/P Voltage Max.	+1000V (±Bias I/P)
Output Pulse Min.	10ns FWHM
Minimum MCP Load	10MΩ
Maximum Capacitive Load	300pF
Jitter (Input to Output)	<250ps RMS
Operating Frequency max.	1kHz
Operating Frequency min.	DC (off)
Inhibit Hysteresis	≈150V
Operating Temperature Range	
Temperature Minimum	0°C
Temperature Maximum	70°C