

LEYSOP LTD

manufacturers and suppliers of electro-optic components

8kV maximum output voltage ideal for KD*P and BBO

Maximum repetition rate to 100Hz with internal supply

Flexible operation suited to Q-switching, pulse picking and pulse slicing

Internal / external trigger

Low jitter



Pockels Cell Driver

Electro-Optic Q-switches and modulators are voltage driven devices and for typical devices high voltages are required. This is especially true of the longitudinal field KD*P and the transverse field BBO Pockels cells, both of which require typically between 4kV and 8kV depending on operating wavelength.

This driver has been designed to offer the greatest flexibility for all Pockels cell applications requiring such high voltages. Q-switching is the simplest mode of operation and the switch to ground driver is ideally suited. A special feature of this driver is that it provides a capacitively coupled 50 ohm termination port. When using a two terminal Pockels

cell connected between these ports, the high voltage supply charges both ends of the cell to the same voltage. There is thus no electric field across the cell until the output port is rapidly discharged and the full supply voltage is applied across the cell. Unlike other simple switch to ground units where the high voltage is always present on the cell this greatly reduces the lifetime shortening effects of electro-migration.

The return port is also used to terminate the high voltage step when the device is used with a four terminal Pockels cell to produce a symmetrical leading and falling edged gate (see overleaf for description of operating modes). In this mode the maximum voltage is halved.

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PRODUCT SPECIFICATIONS

Output Pulse	Voltage Range	1 - 8 kV
Maximum Output current		200 A
	Electrical Faltime	< 3 ns
	Recovery Time	100 μ s exponential
External Trigger Input	Amplitude	-3 V to +3 V
	Polarity of leading Edge	Positive or Negative
	Input Impedance	50 ohm
	Output impedance	50 ohm
	Maximum on time at maximum current	200 ns
	Maximum Repetition Rate	100 Hz
	Minimum Pulse Width	10 ns
Internal Delay	Minimum Delay	40 ns
Sync Output	Amplitude	> 3 V into 50 ohms
	jitter wrt High Voltage Pulse	100 ps
Internal Rate Generator	Repetition Rate	0.1 Hz - 100 Hz
Load	AC Impedance	50 ohms nominal
(designed to give minimum reflectivity when used to terminate 50 ohm coaxial cable)		
Cabinet	Volume (W x D x H)	330 X 330 X 100 mm
	Weight	4 kg
Environmental Temperature	Range	0°C - 40°C
Supply	Mains Voltage @ 50 or 60 Hz	120 or 240 V \pm 10%
	Power	50 W
Enable Input	Removal of a short circuit will prevent operation	

APPLICATIONS

Q-SWITCHING	Q-Switching Opening Time	< 3 ns
PULSE SLICING	Optical Switching Time	< 3 ns
PULSE PICKING USING 4 -TERMINAL EO MODULATOR	Cable length (50 ohm, 100 pF/m)	2 m - 4 m
	Cable Delay	5 ns / m
	Pulse Width	10 ns -20 ns
	Optical Risetime	< 3 ns
	Optical Faltime	< 3 ns

Note: The HVP generator can be supplied giving a output pulse of fixed length between 10 - 100 ns set.
Specifications for guidance only, subject to modification without notice.

