

# Laser Synchronization Modules

## SY4000 SYNCHRONIZATION MODULE AND PULSE DELAY GENERATOR



SY4000 Synchronization module and pulse delay generator encased

### FEATURES

- ▶ Compact design
- ▶ OEM (single board) and encased options
- ▶ 8 independent output channels
- ▶ Ultra-stable internal clock 0.2 ppm (optional)
- ▶ Precise delay control in range 2 ns to 150 ms
- ▶ 25 ps timing resolution
- ▶ Hi-accuracy synchronization to external pulse train
- ▶ DAC output
- ▶ Both 50  $\Omega$  and differential outputs present
- ▶ Measurement of
  - Optical clock frequency
  - Triggering frequency
  - Delay
- ▶ Frequency divider
- ▶ Frequency divider for photodetectors

Pulse synchronization module with delay generator is designed to create up to 8 delayed output pulse sequences precisely synchronized to internal or external clock. Photo detector or electrical signal can be used as input source to be synchronized with. Generator gives possibility to create different sequences like delayed triggering, or any delayed precisely timed series. Particularly, Ekspla recommend using SY4000 to create sets of pulses to control PCD-UHR series pockels cell drivers with one, two or 4 triggering inputs.

### ENCASED VERSION

Preserves all specifications as SY4000 in additionally communication ports RS232, USB, LAN, WLAN are added. Powering from mains 90...264 V, 50–60 Hz or 12 V DC. Power consumption less than 15 W. Ideal solution for your lab and/or evaluation before switching to OEM version.



## SPECIFICATIONS

Model	SY4000
<b>PULSE GENERATION</b>	
Channel modes	Single shot, burst, normal, duty cycle, frequency divider
Delay range	0 to 150 ns
Negative delay	-150 ns
Pulsewidth	2 ns to 150 ns
Resolution	25 ps
Accuracy	25 ps + 0.000001 × delay
Time base	100 MHz, 0.2 ppm
Jitter	< 30 ps
Burst mode	1 to 65535
<b>EXTERNAL TRIGGER</b>	
Rate	DC to 20 MHz
Threshold	1.3 V
Input level	LVTTL, TTL
Slope	rising
Jitter	< 100 ps RMS
Delay	< 13 ns; < 70 ns
<b>INTERNAL GENERATOR</b>	
Mode	Duty cycle
Rate	50 ns to 100 sec
Resolution	10 ns; 300 ps
Accuracy	5 ns + 0.000001 × period
Jitter	100 ps RMS
Burst	0 ... 65535
<b>OUTPUTS</b>	
Output level	2.5 V, 4 V
Impedance	50 Ω
Slew rate	1.5 V/ns
<b>COMMUNICATIONS</b>	
Communications	CAN
<b>OPERATING REQUIREMENTS</b>	
Power requirements	12 V DC, 500 mA
<b>DIMENSIONS (not including connectors)</b>	
OEM board (W × D × H)	100 × 77 × 20 mm
Encased version (W × D × H)	105 × 86 × 85 mm