

# OP-T

## Digital Light-controlled Ignition Device



OP-T digital light-controlled ignition device applies to the ignition control of simultaneous trigger in HV tests. Synchronous ignition device is composed of "digital synchronous ignition box optical controller" and "digital light-controlled synchronous ignition boxes." Light-controller receives the narrow pulse width ignition signal and converts it into a light trigger signal, and then sends the signal to ignition box through digital fiber-optic transmission without delay. It instantaneous triggers ignition boxes and makes synchronous high-voltage ignition pulse, to throughout HV ignition sphere gap.

### Features

This product is the application of advanced optical transmission and optical signal trigger technology, to ensure the ignition transient and the reliability of the system. All circuit topologies are scientific design of electromagnetic compatibility, so that the entire system has a strong anti-interference and anti-over-voltage capability.

In the power supply circuits, power electronics PWM technology and negative feedback loop design are used to make the 12V DC battery power through - D - A - D -times voltage process. The maximum can be 12kV DC high-voltage. The features are stable high voltage output and low power loss. Also it still can output enough high voltage to ensure a reliable ball-gap discharge when battery voltage from 12V rated voltage to less than 9V, a substantial extension of the battery power after charging.

### Digital Synchronous Ignition Box Optical Controller

- Light Controller receives narrow pulse ignition signal, and then convert it into light trigger signal. The minimum affected pulse width is 20 microseconds.
- A remote-control port is designed. By controlling the AC220V power input in remote-control port, it can control the function switch of light controller.

### Technical Parameters

Power Supply:	DC12V or AC220V (±15%)
Power Loss:	<1W
Input Signal Voltage Range:	100V<U, Peak Value<2000V
Input Signal Pulse Width:	>20μs
Digital Fiber Type and Ports:	Multi-mode, ST, 50/125μm glass fiber
Simulated Fiber and Ports:	BNC-Light emitting diodes
Signal Delay:	<50μs
Mechanical Code:	42T*300*2U

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### Digital Light-controlled Synchronous Ignition Box

- Receive the light trigger signal from light controller, and convert it into narrow pulse electrical signals, to trigger HV circuit and produce HV synchronous ignition pulse.
- Use PWM (pulse width modulation) control and times voltage circuits to convert the battery voltage DC12V into 12KV DC high voltage.
- Use feedback loop circuit to ensure a stable high-voltage and power saving of the system, with total power consumption less than 5W.
- EMC design. This device includes digital circuits, power electronic circuits, high-voltage circuits, and high-voltage ignition circuit. Scientific electromagnetic compatibility design ensures reliability and stability of a system.

### Technical Parameters

Power Supply: DC12V

Power Loss: <5W

DC High Voltage Output:  $10\text{kV} < U < 12\text{kV}$

Digital Fiber Type and Ports: Multi-mode, ST, 50/125 $\mu\text{m}$

Simulated Fiber and Ports: BNC-photo transistor

Insulating Level: DC 20kV

Signal Delay: <50 $\mu\text{s}$

Mechanical Code: 84T\*420\*6U

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