

# 30 ps Pulse Module S-30ps

Advanced TLP/HMM/HBM Solutions

## 1 Features

- 30 ps rise time pulse module for advanced VF-TLP and CC-TLP application at 500 ps pulse width
- Wide voltage range:  
1 V to 1 kV pulse output voltage into 50  $\Omega$

## 2 Description

The S-30ps is a stand-alone pulse module for advanced VF-TLP application. It can be operated with HPPI pulse generators TLP-3010C/4010C/8010AC/12010AC/16010A or the stand-alone high voltage power supply unit HV-CU10-A.

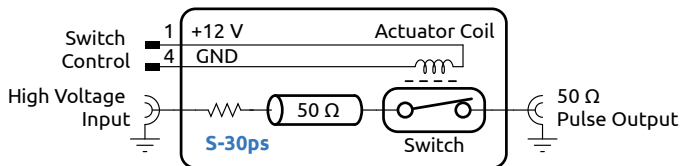


Figure 1: S-30ps block diagram

Fig. 1 shows the block diagram of the S-30ps. The pulse unit has the following terminals:

**Switch Control:** to be activated using 12 V/65 mA. The connector is a Binder, 712 series, 5-pin model 09 0416 00 05.

**High Voltage Input:** to be used to connect the charge line voltage. The connector is a JYEBAO 10KV-8501-000 coaxial connector.

**50  $\Omega$  Pulse Output:** to be connected to the device under test. The connector is a standard SMA coaxial connector.

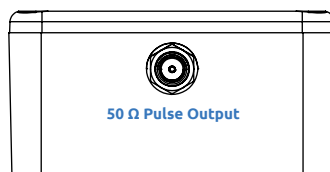
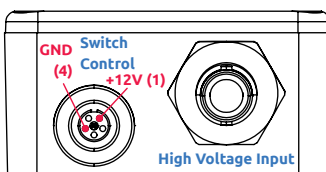
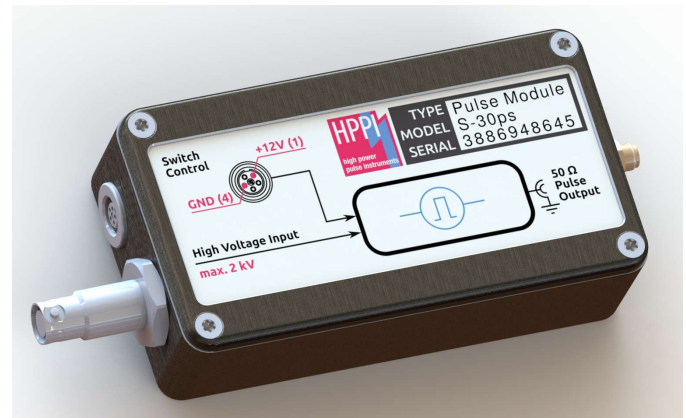


Figure 2: Control inputs      Figure 3: 50  $\Omega$  pulse output

The pulse module is controlled automatically by the HPPI tester software suite.



## 3 Electrical Characteristics

Nominal output impedance	50 $\Omega$
Output pulse rise time <sup>1)</sup>	30 ps
Output pulse width	500 ps
Pulse output voltage (min.)	$\pm 1$ V
Pulse output voltage (max.)	$\pm 800$ V
High voltage input (max.)	$\pm 2$ kV
Actuator coil resistance	185 $\Omega$
Actuator coil voltage	12 V
Actuator coil current	65 mA

<sup>1)</sup> increasing rise time at maximum pulse voltage

The following data have been measured using a Keysight UXR0334A, MY59120115, 11.50.00601 oscilloscope.

Fig. 4 shows the measured pulse output voltages up to 1 kV. The preferred range of voltage to be used is up to 800 V. Fig. 6 presents a zoomed view of the rise time.

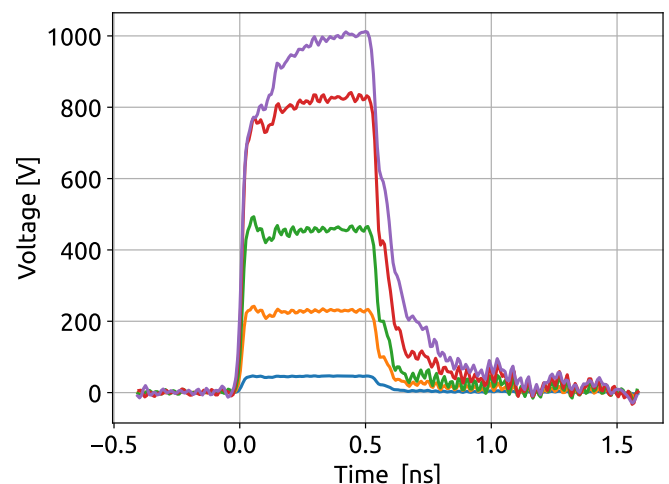


Figure 4: Measured high pulse output voltage into 50  $\Omega$

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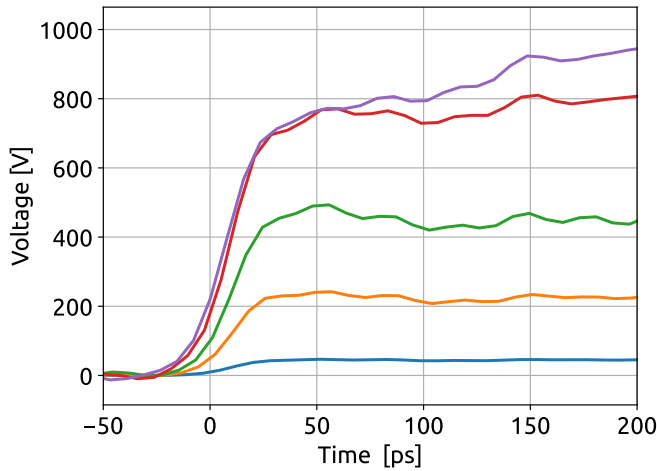


Figure 5: Measured high pulse output voltage into 50 Ω (zoom view)

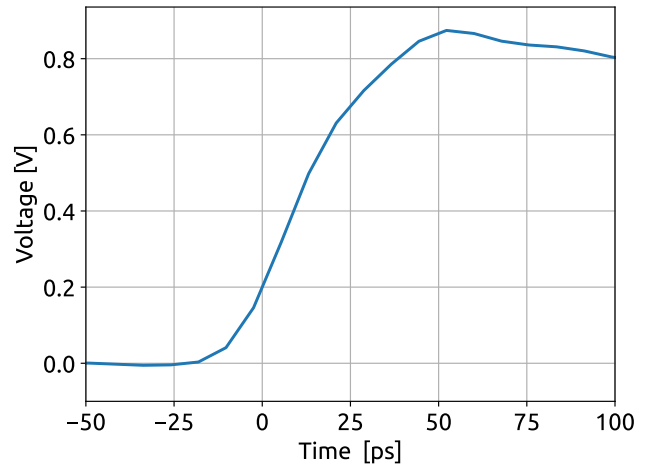


Figure 7: Measured low pulse output voltage into 50 Ω (zoom view)

Fig. 6 and Fig. 7 show the performance in the sub-1 V region.

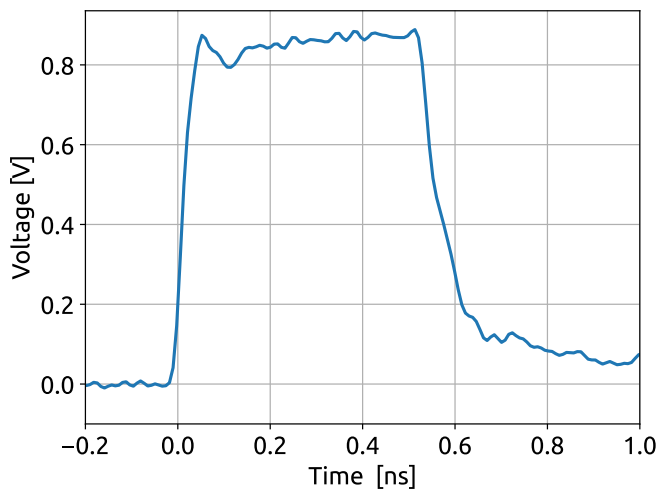


Figure 6: Measured low pulse output voltage into 50 Ω

## 4 Application Note

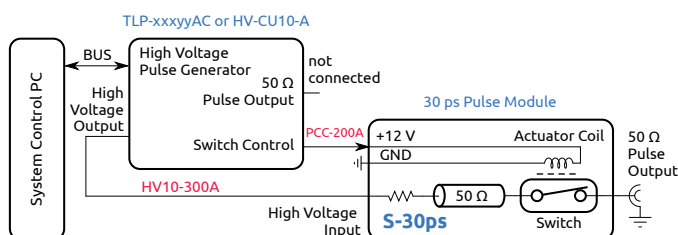


Figure 8: S-30ps typical minimal setup

The S-30ps pulse module should be located as close as possible to the device under test (DUT). The cable from the pulse output to DUT should be as short as possible to avoid pulse distortions. To interconnect the pulse module with the base units TLP-3010C/4010C/8010AC/12010AC/16010A or the stand-alone high voltage power supply unit HV-CU10-A, the control cable PCC-200A and the high voltage cable HV10-300A are required.

## 5 Ordering Information

Pos.	Description	Part No.
01	30 ps Pulse Module	S-30ps
02	Control Cable	PCC-200A
03	High Voltage Cable	HV10-300A

## General

The product data contained in this data-sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Our products are solely intended to be commercially used internally and should not be sold to consumers. This data-sheet is describing the specifications of our products for which a warranty is being granted by HPPI GmbH. Any such warranty is granted exclusively pursuant to the terms and conditions of the respective supply agreement. There will be no guarantee of any kind for the product and its specifications. For further information on technology, specific applications of our product, delivery terms, conditions and prices please contact HPPI:

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