

PPS-TH91  
Solid-state pulsed  
power switch



*Solid-state high voltage, high current switch  
for pulsed power applications*

# Extreme high switch on capabilities of up to 20 kA / $\mu$ s

## Properties

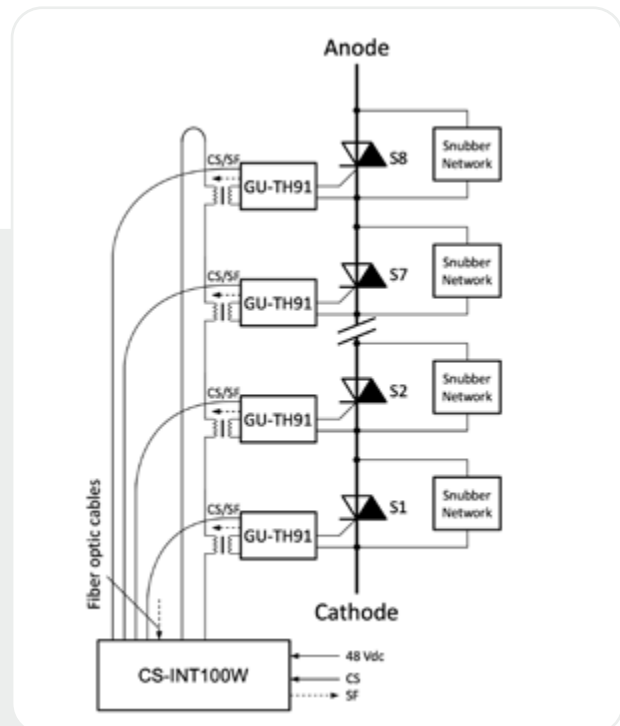
- DC charge voltage up to 30kV
- Pulse current up to 50kA
- High pulse repetition rate
- Current rise rate up to 30kA/ $\mu$ s
- Reverse conducting with monolithic integrated free wheel diode
- Reverse blocking version available on request
- Immune to vibration compared to thyatron
- Any mounting position possible comparing to thyatron
- Convection, forced air or liquid cooling
- Liquid cooling for high rep. rate applications
- Convection, forced air cooling on request
- Ready to use with integrated power supply, monitor and driving system

## General applications

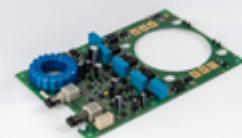
- Environmental systems (De-NOx/SOx electrofilters)
- Thyatron replacement
- Material desintegration
- Food sterilization
- Magnetic forming
- Medical systems
- Security systems
- Beam accelerators
- Seismic research

## The maintenance-free thyatron replacement

- Version:** AA-10375-002  
**Order code:** PPS-TH91-2-26L4599  
**Description:** PPS with AZ-91 element, 2-level
- Version:** AA-10375-010  
**Order code:** PPS-TH91-10-26L4599  
**Description:** PPS with AZ-91 element, 10-level

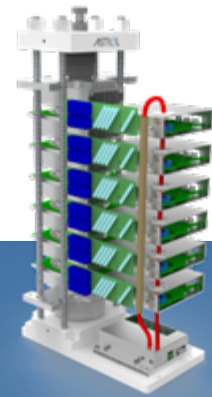


Gate Unit GU-TH91  
With Power Semiconductor Device

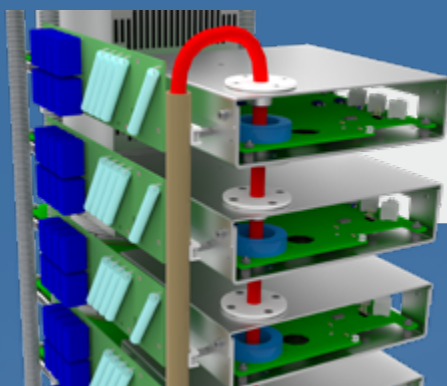


# Technical Specifications

Technical specification of 20 kV switch AA-10375-008

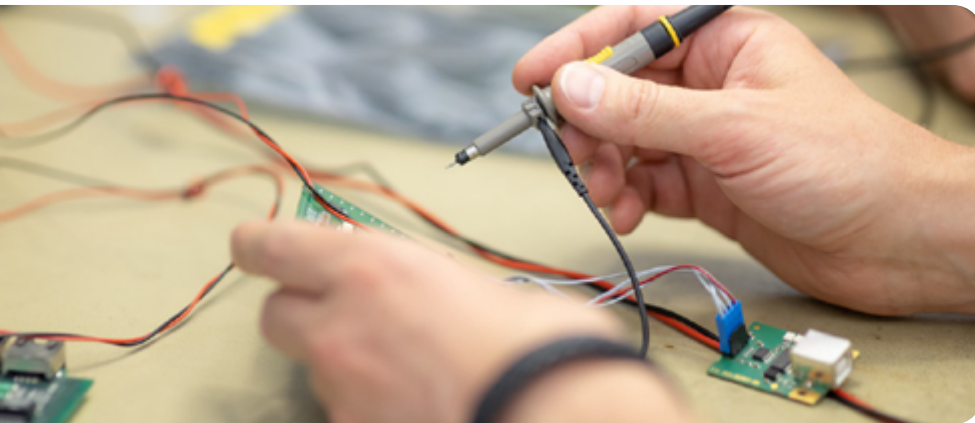


Parameter	Symbol	Remark	Min.	Typ.	Max.	Unit
Operating voltage	V	Working voltage for 100 FIT	-	-	25	kVDC
Pulse current	I	Single pulse (10 $\mu$ s)	-	-	50	kA
Current rise rate	di/dt	-	-	-	30	kA/ $\mu$ s
Leakage current	I <sub>Leak</sub>	-	-	-	10	mA
Number of levels	n	-	-	8	-	pcs
Cooling system	-	Water cooled	-	-	50	l/min.
Operating temperature	-	-	5	-	60	°C
Storage temperature	-	-	-25	-	85	°C
Logic power supply	V <sub>Logic</sub>	-	48	48	72	VDC



Example of a 20 kV, 13 kA, 300Hz, 10 kA/ $\mu$ s Switch Assembly

# About Astrol



## Technology leader in pulsed power switches and solid-state circuit breakers

Astrol is a Switzerland based innovator and manufacturer of state-of-the-art power control and switching solutions. We design and produce electronic parts for technical high demanding industries such as medical, energy distribution and pulsed power applications since 1996. In our 25-year history we have developed from a designer of custom-built electronics to a technology leader in pulsed power switches and solid-state circuit breakers with a wide range of products and a world-wide customer base consisting of operating companies and research institutes.

Our main focus lies on power switching in the medium voltage range, from optimized gate drive units to fully integrated solutions of up to 100kV. Our products are designed, manufactured and tested in our production location and high voltage test laboratory in Othmarsingen and therefore are able to withstand harsh environments, extended temperatures and have a long lifetime.

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