

# PULSE COMMUTATOR BLOCK

## PULSED POWER

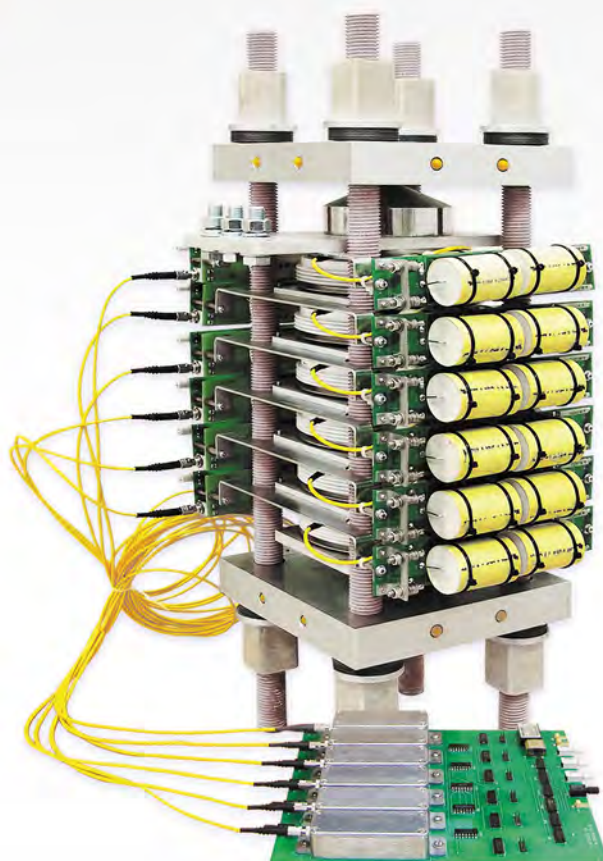
### BK6TLI-100000-12,0-N

#### KEY FEATURES

- ◆ High voltage light triggered thyristor switch with laser control system, protection and status monitoring circuits

#### TYPICAL APPLICATIONS

- ◆ Pulse power switches for capacitive energy storage
- ◆ TOKAMAK, lasers, accelerators
- ◆ Replacement of thyratrons and ignitrons



#### BASIC CHARACTERISTICS

Nominal direct off-state and reverse voltage, $V_{D(D)}, V_{R(D)}$	12 kV
Repetitive peak on-state current, $I_{TRM}$	100 kA
Current pulse duration (half-wave), $t_p$	700 $\mu$ s
Critical rate of rise of on-state current, $(di_T/dt)_{crit}$	500 A/ $\mu$ s
Critical rate of rise of off-state voltage, $(dv_D/dt)_{crit}$	1000 V/ $\mu$ s
$i^2t$ value	$2,3 \times 10^6$ A <sup>2</sup> s
Isolation test voltage, $V_{isol}$ , $f = 50$ Hz	28 kV
Maximum pulse repetition rate	1 pulse/10 minute



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## DRIVER CHARACTERISTICS

Supply voltage	24±5% V
Supply current	150 mA
Quantity of output optical channels	6
Output light wave length	980±10 nm
Output light pulse power (for each driver channel )	200±50 mW
Output light pulse duration	10±1 µs
Pulse width of input signal	100 µs
Delay time between ramps of input trigger signal and output optical signal, no more than	50 µs
Fiber optic cable	QQWF 205/230 digital aperture 0.22
Optical interface	ST
Trigger signal:	
- <i>Optical:</i>	
• fiber optic cable	HFBR
• receiver	SFH551/1-1V
• recommended external transmitter (or)	SFH756V
- <i>Electrical (twisted pair):</i>	
• trigger signal level	24 V
• maximum input control current	100 mA
Driver supply voltage monitoring and driver operation mode monitoring	Optical transmitter SFH756V

## OPERATION CONDITIONS

Ambient temperature:	
- maximum allowed	+ 40 °C
- minimum allowed	+ 5 °C
Storage temperature:	
- maximum allowed	+ 60 °C
- minimum allowed	- 30 °C
Humidity	≤ 95%
Cooling	Natural air
Operation position	vertical or horizontal

## MECHANICAL CHARACTERISTICS

LTT mounting force	95±5 kN
Weight	65 kg

## ROUTINE TEST

- ◆ *Visual and dimensional inspection*
- ◆ *LTT mounting force inspection*
- ◆ *Light power control of driver (25 °C)*
- ◆ *Voltage test between power terminals at 12 kVdc for 10 s (25 °C)*
- ◆ *10 discharges with 10 kVdc charge voltage – 100 kA peak current, tp = 700 µs (25 °C)*



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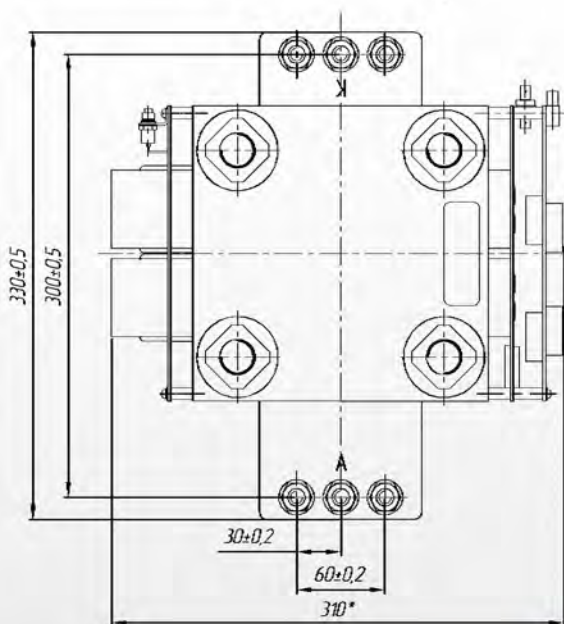
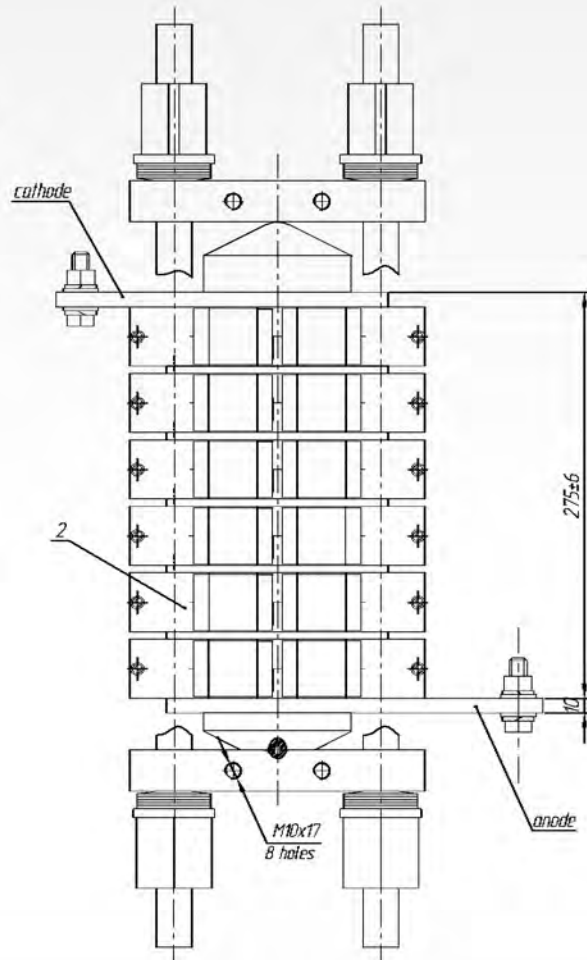
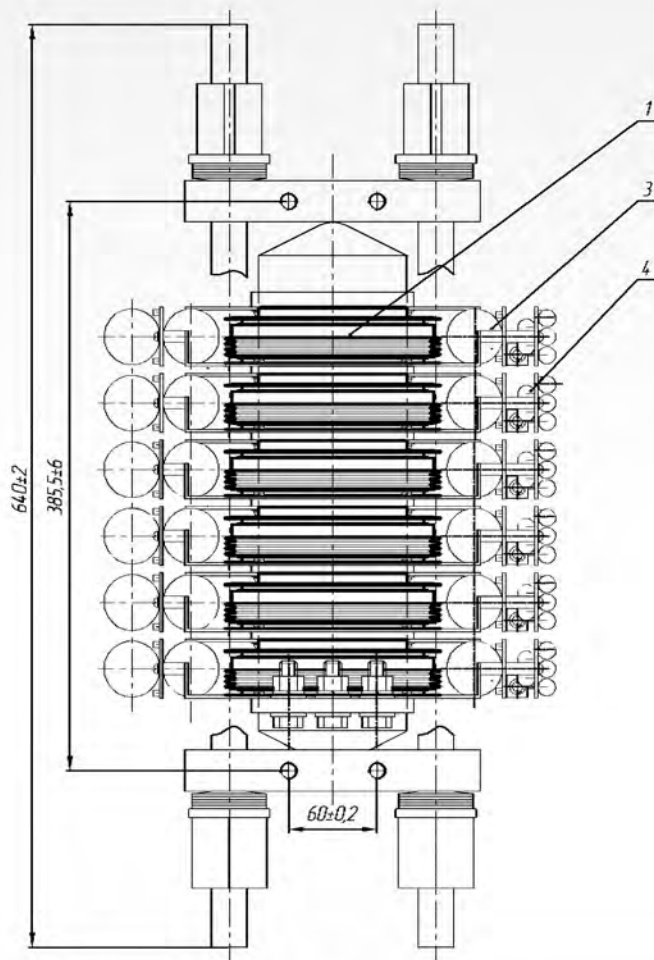
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## OUTLINES AND MOUNTING DIMENSIONS LTT POWER STACK



- 1 LTT TLI 193-2500-42
- 2 RC circuits board
- 3 Synchronization board of LTT triggering
- 4 LTT status monitoring board

A - anode  
K - cathode



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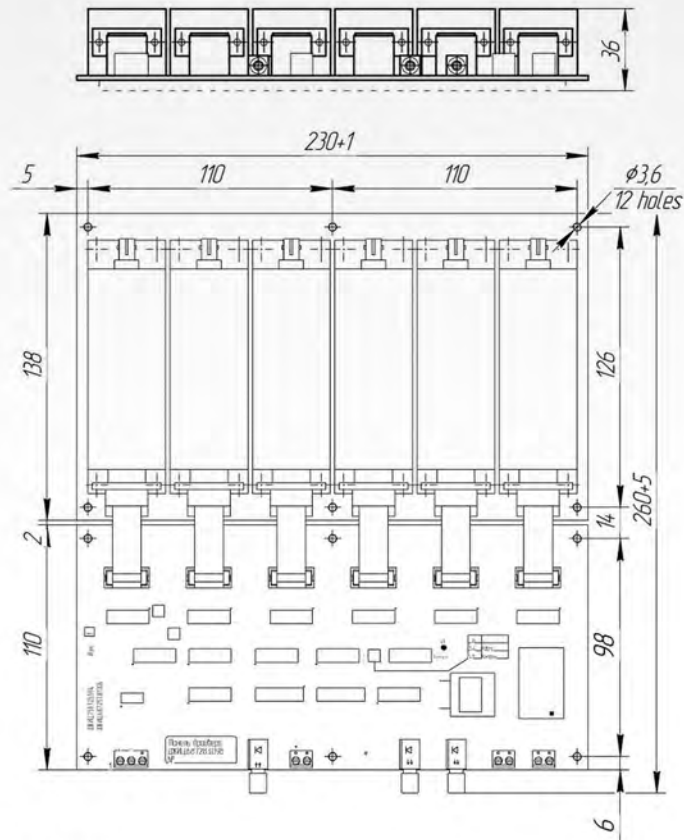
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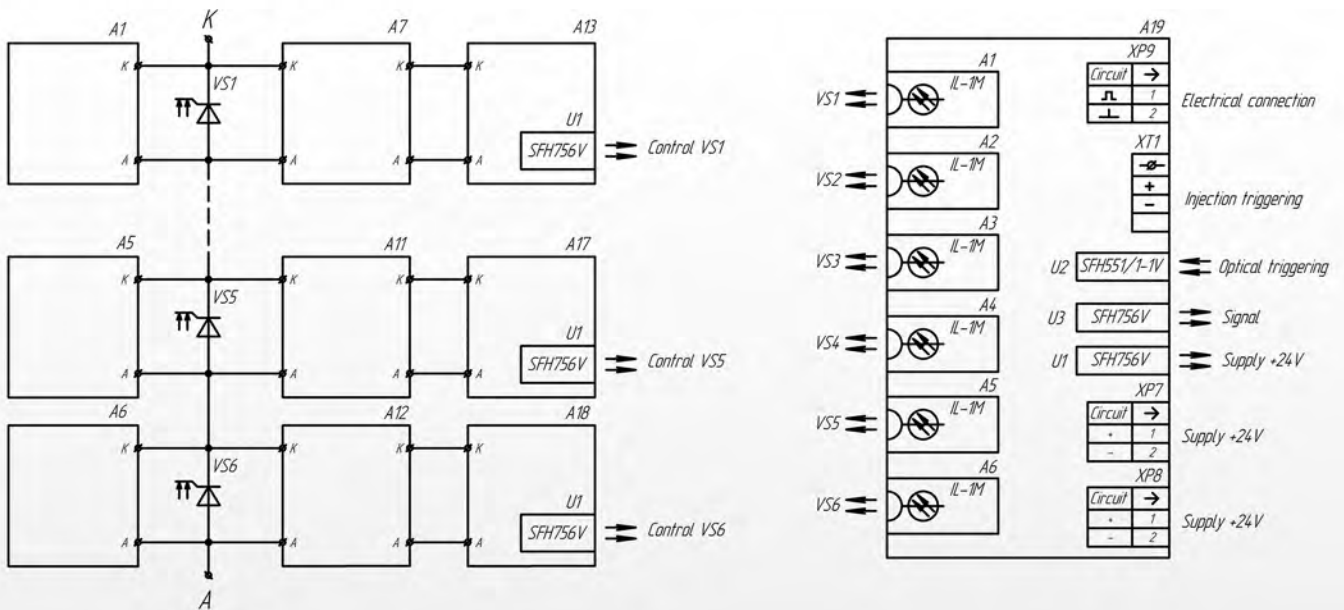
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## OUTLINES AND MOUNTING DIMENSIONS LTT DRIVER



## CONNECTION DIAGRAM



A - anode  
K - cathode



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