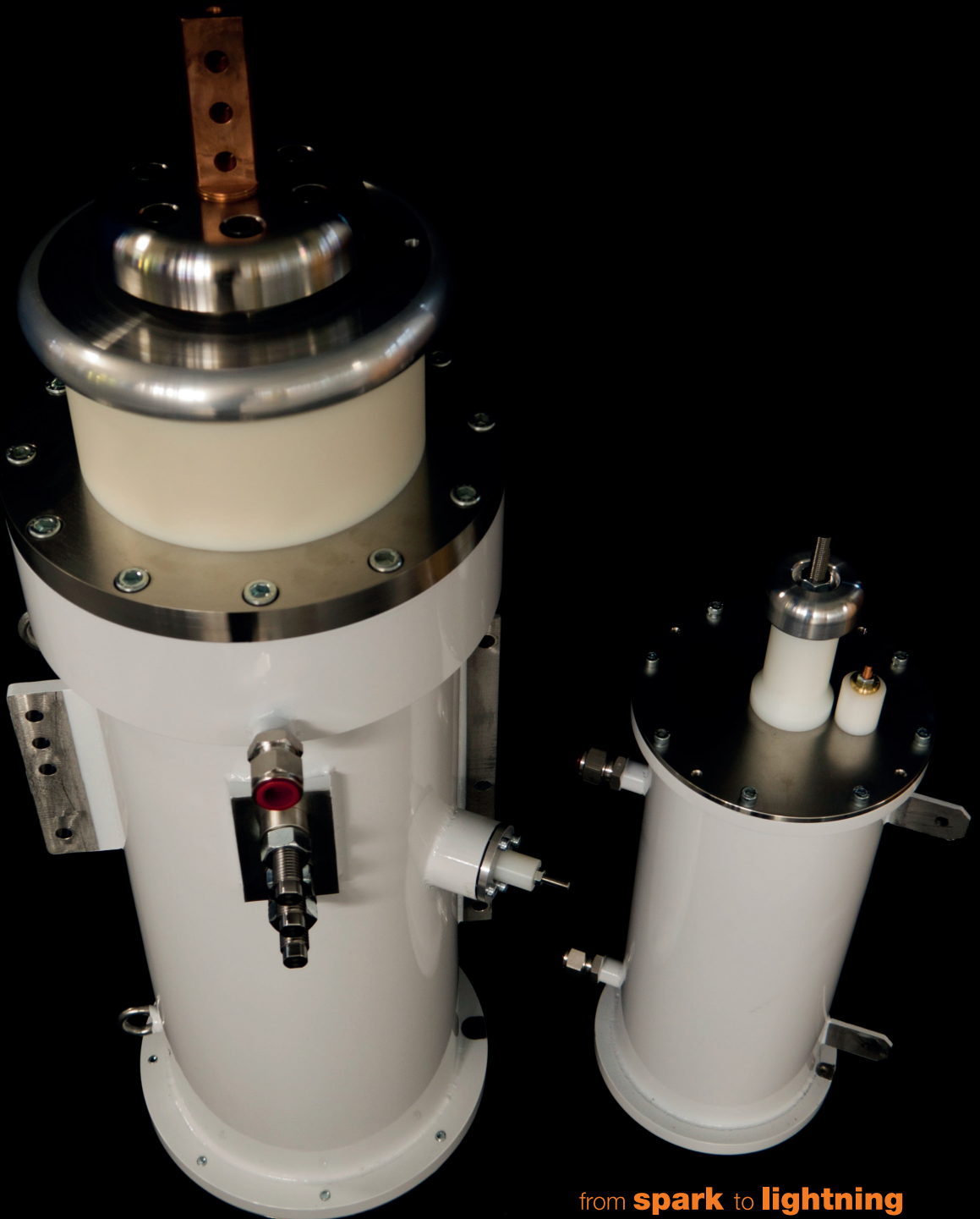

ITOPP
ALCEN

ITOPP, Leader in Pulsed Power Systems

Spark Gap Switches



from **spark** to **lightning**

ITOPP responds to customer needs with modifications or complete designs:

Our knowledge and know-how are made available to customers having specific needs that ITOPP can meet by adapting pre-existing technologies and techniques or by creating a complete design taking into account the required performance standards.

ITOPP can also supply and develop high voltage/high-current solid-switching systems.

Contact us for more information.

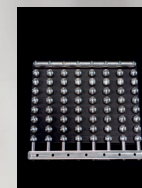
ITOPP, develops components and instrumentation for pulsed power systems, including a range of spark gap gas switches, customized to meet customer needs.

Multi gap multi channel Switches (Linear Transformer Driver, high-current pulsers...)



Operates under pressurized air immersed in oil (LTD)

| | |
|-----------------------|---------------------|
| Operating voltage | up to ± 100 kV |
| Current | 10 to 25 kA |
| Pulse duration (FWHM) | up to ~ 100 ns |

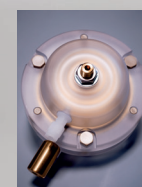


Operates at atmospheric pressure (thin foil insulation)

| | |
|-----------------------|---------------------------|
| Operating voltage | up to $+100$ or -100 kV |
| Current | ~ 320 kA |
| Pulse duration (FWHM) | ~ 2.8 μ s |

- Operates with dry air;
- Easy triggering and low jitter thanks to multi-gap design;
- Low inductance and resistance;
- Long service life, low material erosion due to current distribution;
- Suitable for high-speed or high-current drivers.

Three-electrode triggered spark gap (i.e. Marx generators, plasma guns drivers)

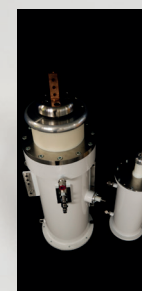


Three-electrode gas spark gap, air or oil insulated

| | |
|-------------------|-----------------------------|
| Operating voltage | ± 10 kV to ± 100 kV |
| Current | a few kA to 130 kA |
| Pulse duration | in the microsecond range |

- Wide voltage and current operating range;
- Long service life;
- Environmentally friendly: dry air operation, no hazardous materials.

High coulombs switches for energy banks (i.e. Laser Mégajoule)



| | |
|------------------------------------|--------------------|
| Operating voltage | up to 24 kV |
| Current | 25 or 250 kA |
| Pulse duration (FWHM) | ~ 250 μ s |
| Charge transferred | 4 to 70 C |
| Lifetime (w/o maintenance) | $> 20\,000$ shots |
| Trigger embedded with f.o. command | |