

Power factor correction

Thyristor module with expanded operating voltage range

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TDK Corporation presents the new EPCOS TSM-LC-N690 thyristor module for power factor correction (PFC) with an expanded operating voltage range up to 690 V AC. The module performs two-phase switching of the capacitors, so that a neutral conductor is not needed. Depending on the operating voltage, the new module is designed for a reactive power of 40 kvar to 75 kvar and can switch currents of up to 60 A.

The module continuously monitors voltage, phase and its own temperature, and is thus very reliable. Like all EPCOS thyristor modules, the TSM-LC-N690 operates silently and is wear- and maintenance-free with a short switching time of only 5 ms. The module also helps to increase the operating life of the capacitors by switching at the zero crossing of the current. In addition, dangerous overcurrents are avoided and the grid is not exposed to transients. The thyristor module can be triggered by EPCOS dynamic power factor controllers, PLCs or directly from the process.

The EPCOS TSM-LC-N690 thyristor module with the ordering code B44066T3050E690 is suited for dynamic PFC applications with presses, welding machines, elevators, cranes and wind turbines, for example.

Glossary

- Reactive power: This always occurs when the phase angle between current and voltage is shifted. It is caused by inductive loads such as electric motors and transformers and has no use, but is unavoidably generated by power plants.
- Power factor correction: Reactive power can be almost completely compensated by switching PFC capacitors. PFC reduces energy costs and relieves the load on the environment.

Main applications

- PFC applications with presses, welding machines, elevators, cranes and wind turbines

Main features and benefits

- Expanded operating voltage range of up to 690 V AC
- High reactive power of up to 75 kvar
- Silent and smooth switching with no wear and maintenance-free thanks to thyristors
- Switching time of only 5 ms
- Switches at the zero crossing of the current, increasing the operating life of the capacitors
- Self-monitoring

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2014, TDK posted total sales of USD 9.6 billion and employed about 83,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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Further information on the products can be found under www.epcos.com/thyristor_modules.
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