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**Energy efficiency for drives and industrial heating**Power electronics from TELE provide for controlled starting. This saves energy and extends the lifecycle of drives and systems.

**Industrial processes - and particularly asynchronous motors - require a great deal of energy. Industrial heaters are also known for their appetite for power. This is not only an environmental issue, but it also places high demands on the power grid and costs a great deal of money. During the starting phase, the MS3 soft starter from TELE supplies motors with precisely the amount of power to overcome the starting torque and prevents a higher starting torque with an adjustable starting ramp. An internal current limiter also minimizes the impact load and network load peaks. In this way, both mechanical loads as well as nominal voltage dips can be reliably prevented.  
The TST01 thyristor controller from TELE provides for energy efficiency when used with industrial heaters and shortwave infrared radiators. It starts up to capacitive and inductive consumers with virtually no shock by controlling voltage and nominal current. "Power electronics from TELE not only reduce energy costs, but also enable more gentle operations. This extends the service life," explains Christian Kunst, specialist for power electronics at TELE.**

**More efficient drives in the IE3 class**Industrial production facilities still use a large number of electric motors with obsolete energy efficiency classes. They run at a constant speed, making them inefficient. As of January 2015, all motors sold in Europe with an output range of 7.5 to 375 kW must be of the IE3 energy efficiency class. All others must be replaced as their service life ends. When motors are combined with a soft starter, their energy and cost-efficiency improve even more.

**Thyristor-based soft-starters**IE3 motors offer the highest efficiency within the 80-100% rated output range. They achieve their highest efficiency through a reduction of armature resistance and higher magnetic induction, manifested by a better cos φ and lower slip. During direct starting, the motor draws about 30% higher starting current, which results in elevated impact loads in the power grid. In these cases, the MS3 soft starter from TELE is the ideal combination to increase energy efficiency. During the starting phase, the unit supplies the motor with precisely the amount of power to overcome the required starting torque. An adjustable starting ramp prevents a higher starting torque. The internal current limiter counteracts impact loads and network peaks. In this way, both mechanical loads as well as nominal voltage dips can be reliably prevented. As a result, the service life is extended.

After the starting process, which usually lasts between 0.1 and 30 seconds, the soft starter's electronics are shorted with bridging contactors and put into standby status. This maximizes energy efficiency even during continuous operation.

**More efficient industrial heaters**Even fast-reacting industrial high-output heaters and shortwave infrared radiators require a great deal of power. So when their operation is optimized, the potential for savings is high. Thyristor controllers control the electric power flow through two different thyristor ignition methods. First, as phase control for all heaters, whereby the current and power consumption is reduced; and secondly for inductive-ohmic consumers with fast-reacting heating elements such as infrared lamps, industrial heaters, or ballast heaters of PV, wind, and hydroelectric power plants. In this way, a thyristor controller starts up industrial heaters and short-wave infrared radiators with virtually no shock, using controlled voltage and nominal current. This prevents mechanical loads at the heating elements and mains voltage dips.

**Text and image material available at**[**http://www.tele-online.com/organisation/kontakt/presse**](http://www.tele-online.com/organisation/kontakt/presse) **for download.**

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# About TELE: Founded in 1963, the company makes products for a better world and specializes in high-value industrial electronics such as monitoring technology, time relays, power electronics, and grid and system protection. Known as the Smart Factory, TELE is an innovation laboratory for integrated technologies. At its Vienna location it produces technological solutions for mechanical and plant engineering, renewable energies, water & waste, and other industry sectors. TELE's organizational culture is free of traditional hierarchies, which creates the space needed for independent thinking and extraordinary ideas. In 2014, the company generated approximately 14 million euros, 10.5 million euros of which were from exports. In addition to the site in Vienna with over 90 employees, TELE Group also consists of an international network of more than 60 trade partners.