

New Full-Feature Soft Starters

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Eaton Corporation today announced the availability of the DS6 line of reduced-voltage, solid-state, soft-start controllers designed for customers who require reliable and efficient soft starting of three-phase motors.

“Soft starting minimizes shock to mechanical components, thereby extending the life of a system, increasing reliability, reducing downtime and lowering costs,” said Ram Tenneti, soft starters product manager, Eaton. “Reducing the shock to products on conveyors and material handling equipment reduces the costs associated with damage to handled products. Lower in-rush current causes less stress on electrical components and junctions, further maximizing system life. Additionally, a soft-starting device reduces slippage, squealing and stretching, and extends belt life two to six times that of a traditional across-the-line starter. In pumps, the DS6 can soft stop the motor, thereby alleviating what is commonly known as the water hammer effect.”

The DS6, which is available for current ranges from 40 to 180 amps, can be used to upgrade existing systems that are currently using wye-delta, autotransformers or across-the-line National Electrical Manufacturers Association (NEMA) and International Electrotechnical Commission (IEC) starters. Because of its small size, the DS6 can provide customers with the benefits of soft starting, without necessitating a change in enclosure sizes or additional assemblies.

The DS6 is designed to be wired in the three-phase line feeding the three-motor input leads as is done for typical across-the-line starting. Using silicon controlled rectifiers (SCR) to ramp the voltage to the motor, the DS6 provides smooth acceleration and deceleration of the load reducing wear on belts, gears, chains, clutches, shafts and bearings. Used often with high-friction loads, soft-stop control is often critical for applications where an abrupt stop of the load may cause system or product damage.

Once the motor is started, the internal run bypass contactor closes, resulting in the motor running directly across the line. The internal-run bypass contactor significantly reduces heat generation when compared to non-bypass starters, thereby reducing enclosure sizes and cooling requirements while maximizing the life of all the devices in the enclosure. The bypass contactor directly connects the motor line and improves system efficiency by reducing internal power losses.

The DS6 family includes a variety of additional benefits and features:

Light-Emitting Diode (LED) displays device status and provides fault indication

Variable ramp times and voltage control (torque control) settings provide unlimited starting configurations, allowing for application flexibility

Minimizes the peak in-rush current’s stress on the power system

Minimizes peak starting torque to reduce mechanical system wear and damage

24 volts of direct current control module enhance personnel and equipment safety

Multiple protective features, including over/under temperature and bypass dropout