Compact design, high functionality for soft starting applications

With a focus on small size and ease of installation, Eaton's DS6 line of reduced voltage solid-state soft start controllers is designed to meet your needs for reliable and efficient soft starting. Designed to control the acceleration and deceleration of three-phase motors, the DS6 Series is available for current ranges from 40 to 180 amps.

Why choose soft starting?

Because soft starting minimizes shock to mechanical components, the life of your system is extended, increasing reliability and lowering costs. Less shock to products on conveyors and material handling equipment also reduces the costs associated with damage to handled products. Lower inrush current causes less stress on electrical components and junctions further maximizing system life. The use of a soft starting device reduces slippage, squealing and stretching – leading to an extended belt life of 2-6 times that of a traditional across the- line starter. An extended life means reduced downtime and lower maintenance costs.

Small size makes upgrading easy

The smallest soft start controller in its performance class, the DS6 is the perfect option for upgrading existing systems that may currently be using wye-delta, autotransformers, or across-the-line NEMA and IEC starters. Now you can get the benefits of soft starting without having to change enclosure sizes or add additional assemblies—saving you time and money.

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Operation

The DS6 is designed to be wired in the three phase line feeding the three motor input leads as is done for normal across-the-line starting. It uses Silicon Controlled Rectifiers (SCRs) to ramp the voltage to the motor, providing smooth acceleration and deceleration of the load. After 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 the heat generated as compared to non-bypass starters, thereby reducing enclosure sizes and cooling requirements and maximizing the life of all the devices in the enclosure. The simple addition of an overload relay, Eaton's XTOB, C306 or C396 types, gives the DS6 soft start controller overload protection, while limited control wiring makes installation quick and easy.

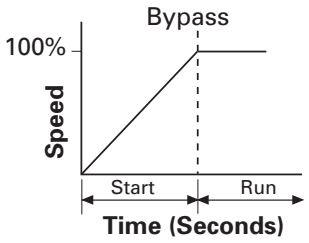
Voltage Ramp Start

This start method provides a voltage ramp to the motor, resulting in a constant torque increase. This most commonly used form of soft start mode allows you to set the initial voltage value and the duration of the ramp to full voltage conditions.

Bypass contactor(s) close after ramp time has elapsed.

- Adjustable initial voltage 30–92% of full voltage
- Adjustable ramp time 1–30 seconds

Start Ramp

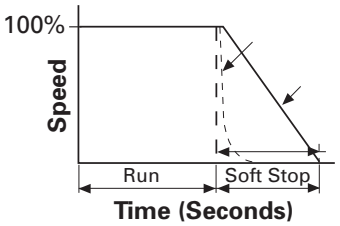


Soft Stop

Allows for a controlled stopping of load. Used when a stop-time that is greater than the coast-to-stop time is desired. Often used with high friction loads where a sudden stop may cause system or product damage. Setting the soft stop time to a value of 0 turns off this feature.

- Soft stop time = 0–30 seconds

Stop Ramp



Features and Benefits

- Smallest soft start controller in its performance class
- Run bypass mode greatly reduces the internal heating created by the power dissipation across the SCRs
- LED displays device status and provides fault indication
- Variable ramp times and voltage control (torque control) settings provide unlimited starting configurations, allowing for maximum application flexibility
- Soft stop control suits applications where an abrupt stop of the load is not acceptable.
- Soft acceleration and deceleration reduces wear on belts, gears, chains, clutches, shafts and bearings.
- Minimizes the peak inrush current's stress on the power system
- Minimizes peak starting torque to diminish mechanical system wear and damage
- 24 Vdc control module enhances personnel and equipment safety

Adding an overload relay provides the needed overload protection.

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