

Cool Under Pressure Pumping Solutions

ABB Low Voltage Softstarters

**Fast
Facts**



40% of all motor applications are for pumping

Water is among the strongest elements in nature. In pumping applications, the surges resulting from full voltage starts and stops cause substantial wear and tear to motors and systems. These surges result in motor bearing failure, coupling damage, broken belts, burst pipes, and damaged valves.

ABB's line of low voltage softstarters are engineered specifically to address the common problems experienced in pumping applications. No reason to purchase add-on modules—our patented Torque Control[®] algorithm comes standard.



Common pumping problems

- Water hammer
- Pumps running dry
- Jammed pump at start
- Voltage drops

Power and productivity
for a better world™



ABB has the solution

Common Pumping Problems	ABB Solution
<p>Water hammer Water hammer appears when stopping the water flow too fast. The valve closes rapidly, causing pressure waves in the pipe system. This reduces the life of pipes, valves and gaskets.</p>	<p>Use the PST(B) with activated Torque Control® during the stop sequence. This will provide controlled reduction of the motor speed and the water flow, making it possible for the reverse valve to close softly. This results in a very smooth stop minimizing the pressure waves and water hammer. Activate the PST(B).</p>
<p>Pump Running Dry In several applications there is a potential risk of running the motor without pumping water. Running dry can in many cases destroy or damage the pump, as the water is necessary to reduce heat and friction, saving the pump's seals.</p>	<p>Activate the PST(B) Underload Protection feature. When activated, it will either stop the pump or signal a warning that the pump is running dry.</p>
<p>Jammed Pump at Start In waste water systems, it is very common that waste is blocking the motor at startup. Even if these pumps are designed to cut the waste, it still needs to have the power to get started.</p>	<p>Activate the PST(B) Kick Start and/or Locked Rotor Protection functions. The Kick Start will give you an extra boost (energy to the motor) during the first few moments of the start. Both the voltage level and the duration time can be set to match any need. The Locked Rotor Protection will initiate extra fast tripping if the pump is jammed, improving the protection of the motor. Activate the PST(B)</p>
<p>Voltage Drops On smaller pump stations, the feeding electrical network can be very weak. Using traditional starting methods, the current during start can be very high, causing the voltage to drop below recommended levels. The voltage drops might affect other systems causing malfunctions.</p>	<p>Current Limiting function. softstarter inrush current will be reduced, increasing very smoothly during the start up. To ensure the motor does not exceed a maximum starting current, use the integrated current limit function.</p>

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ABB Softstarter families



Compact Range PSR
2-75 HP @ 480 V

- Fast, easy installation & setup
- Integrated bypass
- Easy adjustments
- Fieldbus connectable



Flexible Range PSS
10-200 HP @ 480 V

- Fast, easy installation & setup
- Operate with or without bypass
- Current limit option
- Fault LED & relay output



Advanced Range PST
20-900 HP @ 480 V

- Easy to program digital display
- Integrated bypass (300 HP and up)
- Electronic overload protection
- Torque Control®
- Fieldbus communications



For more information about ABB's softstarter products and accessories, consult our Softstarter catalog, available for ordering or download from our literature library at:

www.abb.us/lowvoltage

PSR, PSS, PST & Extreme Duty
Softstarters catalog
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