

Pumping Solutions

ABB Low Voltage Softstarters



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 the 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
- Inrush current & Voltage drops

Power and productivity
for a better world™



ABB has the Solution

| Common Pumping Problems | ABB Solution |
|--|---|
| <p>Water hammer</p> <p>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 Torque control (pump control) in PST(B)</p> |
| <p>Pump Running Dry</p> <p>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) under load feature, when activated, It will either stop the or signal a warning that the pump is running dry.</p> |
| <p>Jammed Pump at Start</p> <p>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 function. 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.</p> |
| <p>Inrush current / Voltage Drops</p> <p>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>Activate the current function. inrush current will be reduced (limited) increasing very smoothly during the start up. To ensure the motor does not exceed a maximum starting set current, use the integrated current limit function.</p> |

ABB Softstarter families



Compact Range PSR
1.5-55 KW @ 415 V

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



Efficient Range PSE
7.5-200 KW @ 415 V

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



Advanced Range PST(B)
15-560 KW @ 415 V

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



Complete Panel Solution
1.5-560 KW @ 415 V

- Complete solution for all applications
- Factory Test ed
- Ready to use
- Type- 2 Co-ordination

For more information about ABB's softstarter products an accessories, consult our Softstarter catalog, available for ordering or download from our literature library at:
www.abb.com/lowvoltage

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