# 6 Common Setting Parameters Available On Most Of The Softstarters

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## Softstarter parameters

This technical article includes a short description of six common setting parameters **available on most of the softstarters**. Other settings may be available depending on the type of softstarter and manufacturer.

**The setting can be done either by adjusting potentiometers, changing dip switches, using a key pad, a computer or similar and**

6 Common Setting Parameters Available On Most Of The Softstarters (photo credit: ABB)

1. Start ramp
2. Stop ramp
3. Initial voltage
4. Current limit
5. Step down voltage
6. Adjustable rated motor

## 1. Start ramp

Start ramp is the time from were the softstarter start its ramp (initial voltage) until full voltage is reached. The ramp time should not be too long, as this will only result in unnecessary heating of the motor and a risk of the

overload relay to trip.

> *If the motor is unloaded* the start time for the motor will probably become shorter than the set ramp time, and if the motor is **heavily loaded**, the start time will probably become longer.

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## 2. Stop ramp

Stop ramp is used **when a soft stopping of the motor is required**, for example a pump or a conveyor belt. The stop ramp is the time from full voltage until stop voltage (initial voltage) is reached.

If the ramp time is set to zero **the stop will be like a direct stop**.



Figure 1 – Diagram showing start ramp, stop ramp and initial voltage
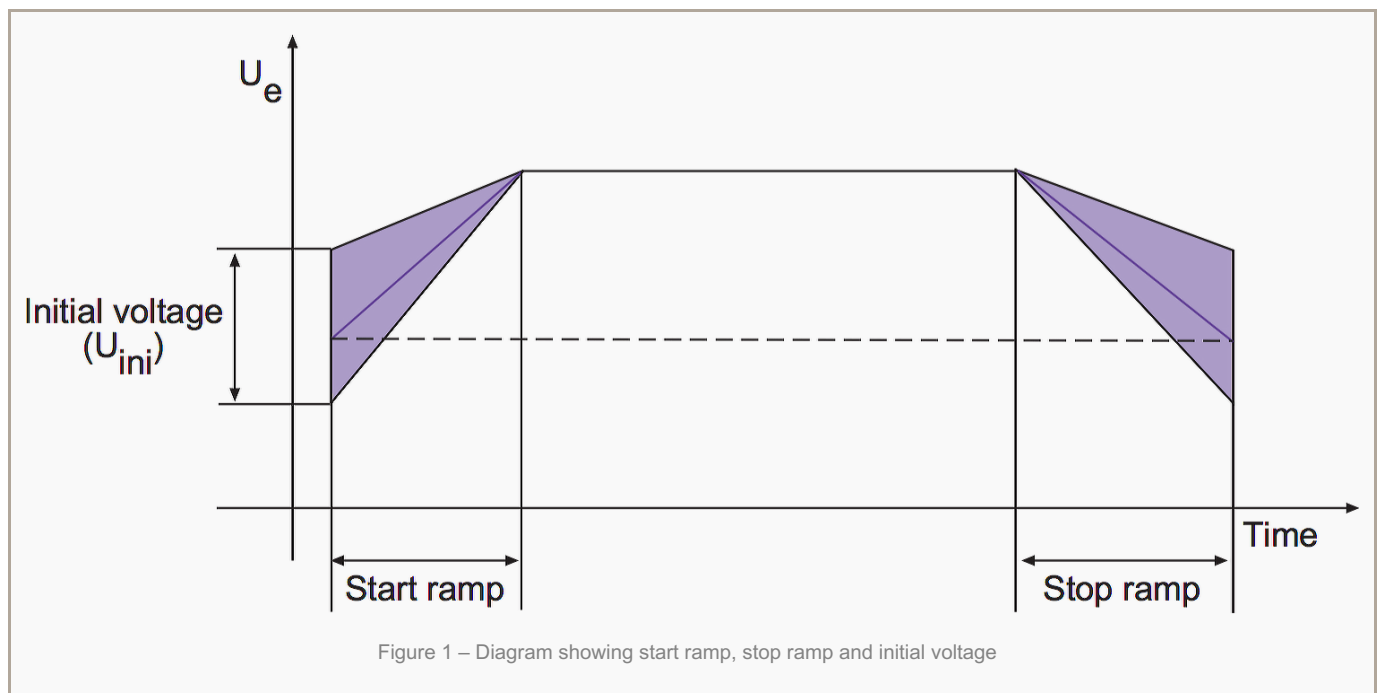
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## 3. Initial voltage

Sometimes named pedestrian voltage or torque, this is the point **from where the softstarter starts or stops its ramps**. The torque of the motor will drop with the square of the voltage and if the voltage is set too low, for example 20 %, the starting torque will become **$0.2^2 = 0.04 = 4$ %** only, and the motor will not start from the very beginning.

Therefore it is very important **to find a level that is just high enough to make the motor take off directly** to avoid unnecessary heating.

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## 4. Current limit

Current limit can be used **in applications where a limited starting current is required**, or at a heavy-duty start

when it is difficult to achieve a perfect start with the setting of the initial voltage and the start ramp only.

> **When the current limit is reached, the softstarter will temporarily stop increasing the voltage** until the current drops below the set limit, and then continues ramping up to full voltage.

Note that **this feature is not available on all softstarters**!

## 5. Step down voltage

**Step down voltage gives a special type of stop ramp.** It is possible to adjust the voltage to drop to a level where the speed of the motor starts to reduce immediately at the stop command.

For low loaded motors the speed will not reduce until a very low voltage is reached, but using the step down voltage function can eliminate this phenomenon **and is especially useful for stopping pumps**!

## 6. Adjustable rated motor

Adjustable rated motor current makes it possible **to set the motor rated current** on the softstarter for the used motor. This setting may affect other values as well, such as the trip level of the electronic overload relay, the level of the current limit function and so on.

Figure 2 – Current limit function in softstarter use
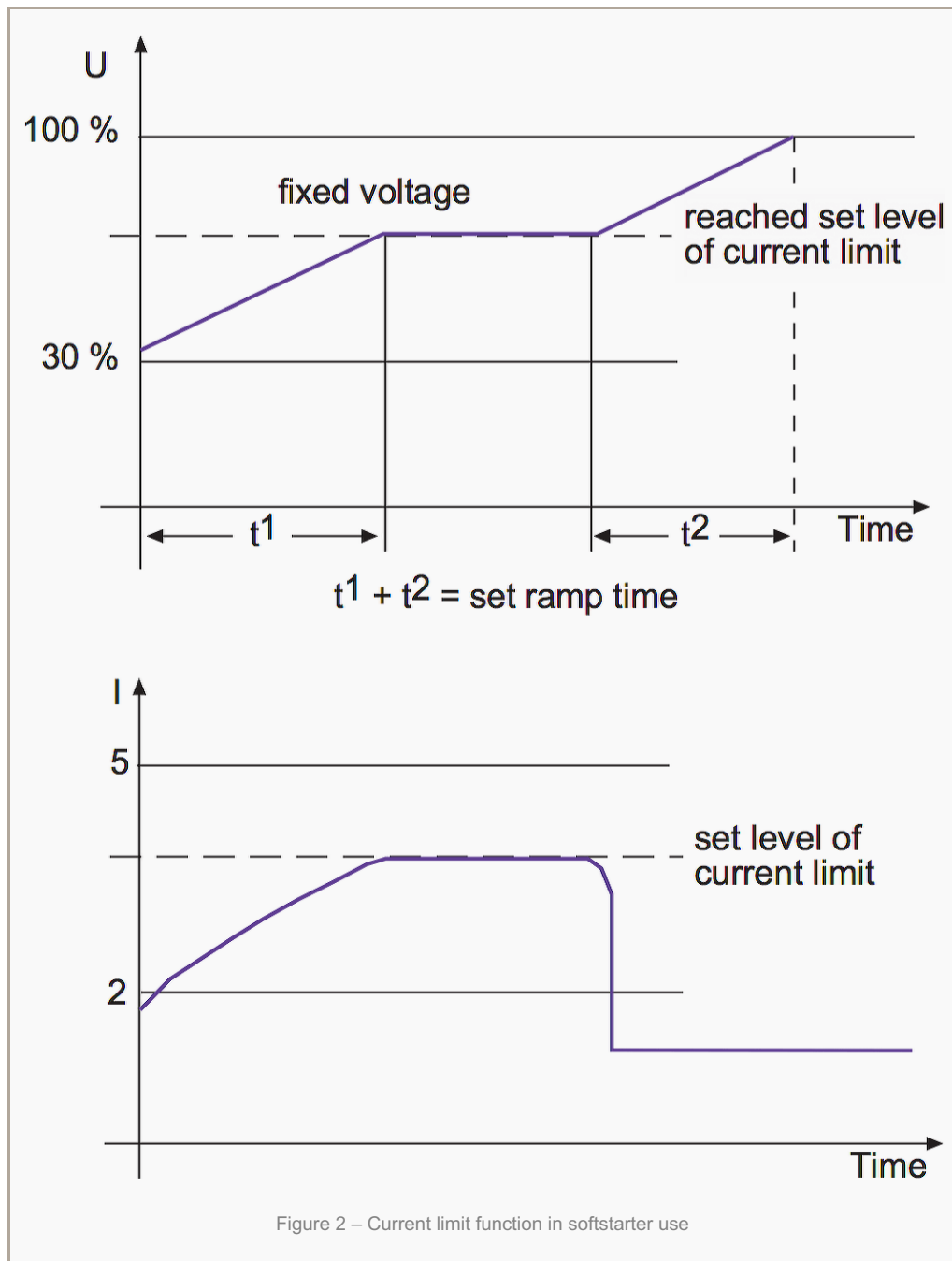
## How to set up your PSTX softstarter in 30 seconds

## How to do setting for 1speed softstarter PSE model

*Reference // Softstarter Handbook by ABB*



Figure 3 – Curve showing the step down voltage function of a softstarter