

# Selecting a Power Supply

The loading on the DC power supply for a Senergy motor roller or PGD depends upon the Motor Performance Profile selected. Each of the profiles available has an associated rated current that the motor will draw at rated torque and maximum speed. Each Motor Type also has an associated allowed current draw that is available for a period of time upon the initial starting of the motor. These current values and starting times are shown in the following chart:

**Motor Performance Profile**

Operation	Eco	Eco+	Boost	Boost-8
Maximum Load at Rated Torque and Speed	2.5A	4.1A	3.5A	3.5A
Maximum Load During Starting Period	3.0A	4.1A	5.0A	8.0A
Duration of Starting Period	5.0 sec	N/A	1.5 sec	3.0 sec



- Not all Senergy Motor Controllers (Standard and Networked) provide each of the Motor Performance Profiles
- Current values shown are **Maximum when motor is fully loaded to its rated torque**. Current draw on the power supply will be **less if rated torque is not required**
- Note that for 2 zone Networked controllers the above current values are **Per Motor Port** and need to be **multiplied by 2** for total load of the controller

## Power Supply Unit Selection Criteria

- Select Switching Power Supplies with 10% or less ripple ratio
- Select Power Supplies capable of 125% or better excess output capacity for brief time periods
- Power Supplies with adjustable voltage feature are useful in order to increase voltage to compensate for voltage drops due to wiring length

## Application Recommendations

- Typically the recommended range of Senergy motors per 20A DC power circuit is 8 to 12 depending on operation. For networked controllers utilizing ZPA control with singulation release, the higher end of the range is acceptable. For applications where Boost profiles and/or heavier load weights often needing to start from a stopped state should have fewer motors per 20A circuit.
- The 8 to 12 motors per 20A circuit is a recommendation **based solely upon typical roller conveyor** applications. Any other application will require analysis of the torque requirements and duty cycle of the motors in order to properly size the DC power supply unit(s) needed.



- Always follow established specifications and local codes for wire sizing and installation practices
- Minimum of 2.1 mm<sup>2</sup> (14 AWG) wire size for 20A DC Power circuit is recommended
- When using multiple power supply units, be sure to connect all DC common terminals together and then to earth ground
- An under-sized DC power supply for Senergy motor controller(s) will result in unexpected performance and can lead to controller damage