

[Our Motor](#)
[TMCL Software Manual](#)
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Power Supply Output Cables

Brown/Blue	Ground
Green/Yellow	12VDC (25VDC?)

Velocity Calculation

$$v_{pps} = \frac{16 \cdot 10^6 \cdot v_{int}}{2^{pulse_div} \cdot 2048 \cdot 32} \quad (\text{from Trinamix Docs})$$

$v_{int} \equiv$ velocity in TMCL code (-2047 to 2047)
 $v_{pps} \equiv$ Microsteps per second

We should choose pulse_div such that a max value of $v_{int}(2047)$ provides the motor's max output speed desired (in microsteps per second)

$$v_{pps} = \frac{v_{rpm} n f_{\mu}}{60}$$

$v_{rpm} \equiv$ revolutions per minute (1340 = max needed. 2500 = max capable by motor)
 $n \equiv$ full steps per revolution (200 for our motor)
 f_{μ} microsteps per full step ($f = 2^i \mid i \in \mathbb{Z}, 0 \leq i \leq 8$)

Note: pulse_div must be an integer between 0 and 8, inclusive.

Using MATLAB (getTMCLValues.m):

$$\begin{aligned}
 f &= 64 \\
 pulseDiv &= 0 \\
 v_{rpm,max} &= 2342.6056 \text{ RPM}
 \end{aligned}$$

Required current with both motors and driver:
8.7+- 0.5 Amps