



Application note: Extending the positioning range of the TMC222 and TMC223

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The TMC222/TMC223 can do only a distance of 32767 per move. It can easily be extended to a higher range with the following procedure.

1 Steps to extend the positioning range

1. Start a positioning move to position 32767.
2. Query the actual position in intervals. Set a new target position which is maximum ± 32767 away from the actual position.

For example, you read out position = 10000. Now, set the new target position to $10000 + 32767$, as this is still below 80000 (your software routine always writes the lower 16 bits of the results to the target position command).

Keep in mind, that the position wraps around to 0 after 65535, as the counter inside the TMC223 is a 16 bit counter. So, you compare only the lower 16 bits of your processor internal counter with the TMC223 counter.

3. Continue with 2, until you can write (the lower 16 bits) of 80000.

You can stop the motor at any time, by setting the target identical to or near to the read out position.

2 Revision history

2.1 Documentation revision

| Version | Date | Author BD=Bernhard Dwersteg | Description |
|---------|-------------|--------------------------------|---------------|
| 1 | 2013-DEC-05 | BD | First version |
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table 1: Documentation revisions