Product Change Notification

TRINAMIC Motion Control GmbH & Co. KG
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PCN-2013-12-27

December 27, 2013

Dear Valued TRINAMIC Customer,

Due to an end-of-life statement from one of our suppliers of components (MOSFETs) we would like to inform you of a hardware change of the following modules:

TMCM-1141
PD42-1-1141
PD42-2-1141
PD42-3-1141

New modules are already delivered with the hardware changes listed in detail below. Previous versions are still available upon request.
If you have any questions, please contact your sales partner.

Hardware changes

From PCB version V12 to PCB version V13 the following hardware changes have been applied:

- Stepper motor driver MOSFETs: The MOSFETs of the driver stage have been replaced. The new MOSFETs offer less heat dissipation than the previous / currently used ones. Apart from that the performance and settings including driver output current (incl. scaling) and output waveform are essentially the same. Nevertheless, with the new V13 hardware extended motor current settings up-to 2A RMS are supported, also. Switching between these two ranges is possible using TMCL axis parameter 179. The factory default value for this parameter is '1' (SAP 179, 0, 1) for motor currents up-to 1.1A RMS. Setting this parameter to zero will enable the second current range. Setting the max. motor current scaling factor to 232 (TMCL command SAP 6, 0, 232) will then increase motor driver output current to 2A RMS during movements. *Please note: changing motor current will happen immediately – therefore it is recommended to first set the current scaling value (SAP 6, 0, 232 resp. SAP 7, 0, 232) and then switch the range (SAP 179, 0, 0). Settings above 232 up-to 255 are not recommended as they might violate component specifications.*
- RS485 transceiver: the RS485 transceiver has been replaced with the SN65HVD1781 transceiver offering better fault protection (up-to 70V fault protection) and supporting higher communication speeds (up-to 1Mbit/s).

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- General purpose outputs OUT0 / OUT1: the driver circuit of the open-drain output MOSFETs has been modified in order to ensure glitch-free power-up. That is, output MOSFETs will not turn briefly on while processor still in reset / processor outputs not initialized.
- External S/D input. The circuit for the external STEP / DIR input has been optimized for higher step frequencies. Step frequencies above 1MHz are supported under optimum conditions.
- The new PCB version is TMCM-1141_V13

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Compatibilty

Notes on hardware compatibility:

- The new version V1.3 is regarded as fully compatible with the previous version V1.2. Nevertheless, the performance has been improved with regard to heat dissipation (less), higher motor current settings up-to 2A RMS (as an option), RS485 communication speed (higher - up-to 1Mbit/s with V1.3 compared to 115200bit/s with V1.2) and RS485 bus fault-protection / robustness.

Notes on firmware compatibility:

- The new hardware version V1.3 is regarded as fully firmware compatible with previous version V1.2.

Product qualification report is available upon request.

This improvement is classified as a minor change.

Products Affected

Article Name	Affected Article Numbers	NEW Article Numbers
TMCM-1141-TMCL	10-0184	10-0252
PD42-1-1141-TMCL	30-0189	30-0252
PD42-2-1141-TMCL	30-0190	30-0253
PD42-3-1141-TMCL	30-0191	30-0254

Timing

Effective date for hardware release	**2013-12-27**