Release Notes MISxx/SMC66/SMC85 Firmware v6.08.01

Published 2022-05-12

What's New

- Register Scaling. Enables scaling of registers when reading and writing motor registers. This enables a plc to use units that represent the mechanical application to control the motor, e.g., mm or degrees.

- Closed loop support for SSI encoders

Improvements

- Improved motor current control algorithm in closed loop. Larger motor types will especially benefit from this at higher RPMs.

- Turntable feature allows for abort profile with P_IST = 0 in CW and CCW mode (Enabled with Register 123 bit 19)

Bugfixes

- (Ethercat) Allow profile acceleration in profile position mode

- CSP open loop Autocorrection is supported again

Compatibility

Firmware version 6.08.01 is compatible with newer hardware versions of MISxx/SMC66 /SMC85 with MAX10 FPGAs and Lattice ECP5 FPGAs.

The firmware is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v6.06.00

Published 2022-02-16

Bugfixes

- Problems with enabling the motor when using EtherCAT and Codesys PLCs.

Compatibility

Firmware version 6.6.0 is compatible with newer hardware versions of MISxx/SMC66 /SMC85 with MAX10 FPGAs and Lattice ECP5 FPGAs.

The firmware is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v6.04.00

Published 2022-02-16

Bugfixes

- Register 46 (absolute encoder position) was not updated correctly for motors with H2 encoders and was incompatible with version 4.14 and prior.

- Value of actual position after powerup was set incorrectly when "Absolute Singleturn Encoder" option was selected (Only for motors with H2 encoders).

Compatibility

Firmware version 6.4.0 is compatible with any hardware version of MISxx/SMC66 /SMC85.

The firmware is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v6.02.00

Published 2021-12-22

Improvements

- The new way STO errors are set, introduced in v6.0.0 is rolled back. If the motor is configured to set an error when STO is off, an error will be generated when in active mode. In passive mode no error will be generated unless the user tries to change to an active mode.

Bugfixes

- It was not possible to save software position limits in flash
- STO A and B signals were labelled incorrectly for motors with SMC66 hardware version 1.5.

Compatibility

Firmware version 6.2.0 is compatible with any hardware version of MISxx/SMC66 /SMC85.

The firmware is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v6.00.00

Published 2021-12-02

What's New

- Support for new hardware with Lattice FPGA. This is the first official release that supports newer hardware (SMC66 controllers version 1.5 and SMC85 controllers with hardware version 2.0). Older hardware can use this version as well.

- New extended version register implemented (register 250).

Improvements

- Requested position requests are ignored when motor is in gear-mode.

- If the motor is configured to set an error when STO is off, it is no longer possible to clear the STO error before reasserting the STO signal. Previously the STO error could be cleared in passive mode.

Bugfixes

- It was possible to set the standby current to 6A even if the max rated motor current is 4A. Now the limit is the minimum of 6A and the max rated current.

- Fixed bug related to homing in CSP mode. When homing, the ethernet module did not release control of the positioning to the motor, causing wrong velocity under certain conditions.

Compatibility

Firmware version 6.0.0 is compatible with any hardware version of MISxx/SMC66 /SMC85. It is the only firmware, so far, that is compatible with MIS17x/MIS23x/SMC66 hardware version 1.5 and MIS34x/MIS43x/SMC85 hardware version 2.0.

The firmware is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v5.04

Published 2020-06-30

What's New

- Support for CanOpen DSP402
- CAN J1939 Memory request and Memory write support
- DMX512 support on RS485 and RS422 channels.
- Modbus support on RS485 and RS422 channels.
- Modbus PDO registers
- Stall detection for external encoder for non-closed loop applications
- Gearing of external encoder input.
- Support for IO-Link (with external hardware using the Modbus channel).

Improvements

- Programmable behavior on modbus timeout
- Programmable frame delay for modbus slave
- Sync and positioning with external encoders on closed loop applications
- Bus voltage error limit has been lowered to 98 V.
- Handling of bus voltage errors has been changed to minimize risk of destroying the motor in case of overvoltage. The motor goes to passive mode when limit is reached.

Bugfixes

- Setup of RS422-transceiver was accidentally made incompatible older firmware versions in version 5.02. In the new version, setup is again compatible with older firmware.
- Turntable setup is now only activated when saving to flash. When using Sercos it is required to preconfigure the turntable size and save to flash.
- Timing issues in FPGA causing wrong acceleration FPGA is now compiled using Quartus 20.1
- Implemented write-protection for registers that are meant to be read-only.
- Fixed issue with singleturn encoder and multiturn encoder losing sync when using position mode and max-velocity zero.
- Disabled CSP autocorrection
- Prevent mode-switch in case of STO triggered or an error is set.
- Brake is kept active in case of an STO error.

Compatibility

Firmware version 5.04 is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware.

Release Notes MISxx/SMC66/SMC85 Firmware v5.02

Published 2020-08-12

What's New

- Support for the PA0260 SSI-encoder board. The new version allows you to connect our PA2060 SSI-encoder board to a MIS-motor or an SMC66/SMC85 to use for positioning
- Support for the extended SSI protocol used by IC-Haus encoder chips
- Support for auto-correction for SSI-encoders using the extended SSI protocol. When enabled, the motor will auto-correct its position upon reaching the target position in position mode. The motor uses the latest SSI-reading to do this.
- New special command 499: Disable closed-loop current control, but do not disable closed-loop positioning.

Improvements

- Improved linearization of H2 encoder (New calibration is not necessarily required when upgrading from firmware version 4.14).
- Improved procedure for calculating start-up position when using H4 encoders. The startup position is now a combination of the absolute multi-turn position (with lower resolution) and the higher resolution single-turn encoder position.
- Improved SSI clock stability.

Bugfixes

- Incorrect start-up position for H2/H4. The position was shifting when power-cycling.
- Bug in closed-loop block and H2 linearization handling, resulting in poorer performance.

- Risk of single-turn encoder error during startup. Register 178 was added to give a better picture of the reason for the ST encoder error, if it occurs.

- Wrong handling of position setpoint when using turntable-mode in combination with ethernet-ip.

- Motor was sometimes stuck in an invalid state after a reset / load default operation. A power-cycle was required.

- Temperature sensor was giving wrong readings for negative temperatures.

- Incorrect hardware revision detection under very specific circumstances.

Compatibility

Firmware version 5.02 is compatible with the latest version of Ethernet module protocols, and the latest version of the absolute multi-turn encoder firmware. If SSI encoder setup / PA0260 setup is required, it is necessary to update to the latest version of MacTalk.