

## MotionLinx-Ai and MotionLinx-IO firmware revision changes

### 3.2 to 3.3

Release date 19.04.2022

#### 1. Note

- The Atmel devices have different FW than the ones with MK52 chip. While we will keep both FWs as close together as possible and they should have identical functions, they are in two different binary files.
- For the currently produced modules with the Atmel chip, the name of the upgrade file remains as it has been up until now - "MotionLinx\_xx\_yy".
- For the modules with the MK52 chip, the name is "MotionLinx\_Legacy\_xx\_yy".
- The upgrade process for a system with mixed devices is to select all modules, upgrade with the FW for Atmel chips. All modules with MK52 will reject this FW. Then again select all and upgrade with the FW for the MK52 chips. The Atmel chipped modules will reject this one.
- The ESI/EEPROM file is the same for both.

#### 2. Bugfixes

- Once every 5000-10000 start commands, the motor would not run after it has stopped with some kind of error during the deceleration ramp. FB150

### 3.1 to 3.2

Release date 18.03.2022

#### 1. Improvements

- Added support for S70 Atmel microcontroller.

### 2.6 to 3.1

Release date 19.01.2022

#### 1. Improvements

- Because of significant lead times of the Freescale microcontroller, a hardware revision of the MotionLinx family devices was created with Atmel microcontrollers. Atmel devices will have hardware revision of 20 or higher. The FW revision was changed to 3.1 to address and mark these changes.
- Added tire function
- Various motor behaviour enhancements

## 2.5 to 2.6

Release date Unreleased officially

### 1. Bug fixes

- Various bugfixes for the issue seen where the module will reset 400ms after power up. FB94-FB100

## 2.4 to 2.5

Release date Unreleased officially

### 1. Bug fixes

- If the Complementary control mode is OFF, there was an issue with stopping the motor above 26V. FB90
- Object 0x4000:0D(Reserved1) is now protected against bad value writes. The range for the hidden object is not 26000 – 30000 (26V to 30V). Any value outside this range results in the module using the value of 30000. FB89

## 2.3 to 2.4

Release date Unreleased officially

### 1. Bug fixes

- After a long motor run, without a reset of the encoder position, the least significant bits of the encode begin to drop out, due to a floating point variable overflow. FB88

## 2.1 to 2.3

Release date Unreleased officially

### 1. Note:

- Revision 2.2 has been skipped for compatibility reasons for the other EtherCAT devices.

### 2. Improvements:

- All Rx/Tx designations are substituted for the Output/Input notation.

### 3. Bugfixes

- Fixed a bug preventing Omron EtherCAT PLCs with FW of 1.40+ to connect to the MotionLinx devices. **FB35**

## 2.0 to 2.1

Release date Unreleased officially

### 1. Improvements:

- All PDOs can be enabled or disabled.
- All PDO objects can be edited
- PDO count has been increased to 6 RPDOs and 6 TPDOs
- Added objects for alignment

- A backup of the module can now be extracted

## 2. Bug fixes

- FB21 – Bugfix from the standard Ethernet devices. Once every several million ON-OFF commands, the motor will not stop.
- FB22 – FB33 - General fixes in the slave functionality of the device. Eliminated the slower start of the slave motor, the master will stop if the slave has an error, etc.
- FB34 – Improvements to the processing of mixed servo and Run-Stop commands.

## 1.9 to 2.0

Release date : 16.05.2019

### 1. Improvements:

- Added a default value for FW P2 (0x4000:0D) of 27000 (equal to 27V).

### 2. Bug fixes

- Fixed an issue with P1, when two motors were used in one tube.

## 1.8 to 1.9

Release date : Unreleased officially

### 1. Improvements:

- Writing in object 0x4000:0D will now adjust the second overvoltage protection (P2) activation limit. The base unit is millivolt. Example –writing 29000 will result in P2 activation limit of 29V.
- Writing in object 0x4000:0E will now allow for permanent activation of the first overvoltage protection(P1). Any non-0 value will activate the protection all the time.

## 1.7 to 1.8

Release date 20.11.2018

### 1. Improvements:

- Red indication of motor LED when motor is disconnected can be disabled with added functionality in MDRCtrlLeft and MDRCtrlRight fields.
- Add possibility to change the motor direction when one motor is slaved to the other.
- During motor brake change while the motor is running, there was small “hickup” effect. (cosmetic improvement)
- Servo brake will now take current position as home position when activated.
- Added proper support for speed code 8 rollers.

### 2. Bug fixes

- When the speed is changed very fast (<10ms), there were problems calculating ramps.

## 1.6 to 1.7

Release date 06.11.2017

## 1. Bug fixes

- Fixed problem with writing subobject 4000:01 in MotionLinx-IO.

### 1.5 to 1.6

Release date 23.10.2017

## 1. Improvements:

- StartUpConfiguration (SDO object 0x4000) struct for MotionLinx-Ai and MotionLinx-IO is not taken only between PreOp and SaveOp transition. It can be written always when there is communication with the master.

## 2. Bug fixes

- Length of transmit PDO object 0x1A01 is fixed.

### 1.4 to 1.5

Release date 26.04.2017

## 1. Bug fixes

- Problem with servo positioning fixed.

### 1.3 to 1.4

Release date 08.02.2017

## 1. Improvements:

- The new complex object ServiceReadObjects is created for MotionLinx-Ai and it is available to read from SDO.
- SensorDebounce, LeftMotorSlave, RightMotorSlave added in StartUpConfiguration struct for MotionLinx-Ai. SensorDebounce has default value of 20ms.
- SensorDebounce added in StartUpConfiguration struct for MotionLinx-IO. SensorDebounce has default value of 20ms.
- ECAT error LED implemented.
- WritePin2Output, ClearMotorError added to MotionLinx-Ai PDOs. SystemDiagnostic added to both MotionLinx-Ai and MotionLinx-IO PDOs.

### 1.2 to 1.3

Release date 11.11.2016

## 1. Improvements:

- Unused features (EoE, DC) are disabled from EtherCAT stack and ESI file.

## 2. Bug fixes

- SubIndexes 15 to 20 of MotorInfo objects 0x4100 and 0x4101 are now properly read through SDO.

## 1.1 to 1.2

Release date 28.10.2016

### 1. Improvements:

- (MotionLinx-Ai) Added Objects for reading the Motor and Module temperature. Readable only via SDOs.
- (MotionLinx-Ai) Added Objects for reading the Max speed of the attached MDR. Readable only via SDOs.
- (MotionLinx-Ai) Writing 0 in the Speed setting for the MDRs will prompt the module to use its configured(default) speed.
- The name filter for the firmware was expanded to include customer firmware names.
- The alignment object for ConveyLinx-IO was used for both the RPDO and TPDO. This was working fine with Beckhoff's PLC, but Omron PLCs had issue with the object being in both PDOs. Now the PDOs have different alignment objects.

### 2. Bug fixes

- (MotionLinx-Ai) The MDRs are now shut off if the state of the module is anything but OP. Writing via SDOs also cannot start the MDRs if the module is not in OP.
- (MotionLinx-Ai) Writing a value in that MDR Speed object that correspond to between zero( but non-zero) and 10% of max speed will cause the MDR to run at 10% of max speed.
- The ERROR Led now correctly reflects the Error state of the ESC.