

## Software release document

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**Firmware for Product(s):** MAC00-EIx, MIS 17/23/34/43 with EI option, SMC 66/85 with EI option.

### EthernetIP

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**Latest version:** 3.40  
**Date:** 23<sup>rd</sup> of February 2021  
**Build:** 10253

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### Description:

**Version 3.40 (build 10253, 23<sup>rd</sup> of February 2021), KB:**  
*Requires at least version 2.11 of MAC400+ firmware*  
*Requires at least version 4.02.0073 of MIS firmware*  
*Requires at least version 1.90.016 of Mactalk, to use all features.*

### **New features:**

- Support WiFi module in MIS motors.
- Added new commands for delayed reset.

### **Bug Fixes:**

- Prevented explicit reads under heavy load from overwriting explicit writes which could cause writes to wrong motor registers in very rare cases.

**Version 3.36 (build 10201, 17<sup>th</sup> of January 2020), KB:**

***Requires at least version 2.11 of MAC400+ firmware***

***Requires at least version 4.02.0073 of MIS firmware***

***Requires at least version 1.90.010 of Mactalk, to use all features.***

***New features:***

- Mactalk 8 channel scope works also over Ethernet with Mactalk version 1.80.038 and newer. The scope function when connected to Mactalk over Ethernet has only worked partly and only with certain combinations of firmwares and Mactalk versions. From now on all new firmwares and Mactalk versions support all features of the scope.
- MIS motor firmware update with bootloader version > 1.3. Now the EthernetIP module supports firmware update over Ethernet of MIS motors with this new version of bootloader.
- Block/unblock cyclic PLC data from Mactalk possible. Use this feature for testing motor from Mactalk even though PLC cyclic data is running.
- Support for new RM4 CPU type in MAC motors. This is a CPU type which will be used in future generations of MAC motors probably available later in 2020.

***Bug Fixes:***

- Possible to issue cmd's via Mactalk Register Workspace pad.
- New EIP stack version with corrected startup functionality. The EthernetIP stack is upgraded from version 2.12.0.5 to version 2.14.0.0 which includes:
  - EIP core stack upgrade from version 2.3.0.5 to version 2.5.0.0
  - rcX stack upgrade from version 2.1.11.10 to version 2.1.11.11
  - TCPIP stack upgrade from version 2.4.0.2 to version 2.6.0.0
  - PTP stack upgrade from version 1.3.0.1 to version 1.4.0.0
  - ***Detailed release notes from these stack upgrades are available upon request.***

**Version 3.34 (build 1449, 17. August 2017), KB:**

***Requires at least version 2.11 of MAC400+ firmware***

***Requires at least version 4.02.0073 of MIS firmware***

***Requires at least version 1.70.027 of Mactalk, to use all features.***

***New features:***

- Firmware updates from Mactalk when connected with Ethernet now works. For MIS motors it requires minimum firmware version 4.02.0073 before this is available.
- Motor registers 256-511 now accessible via explicit messages.
- Mactalk scope and eRxP works also over Ethernet.
- Shows new IP in Mactalk when changed by DHCP.
- Motor commands through module command register, mirrored to lower range enabling use of signed32 bit in PLC.

***Bug Fixes:***

- New EIP stack version with corrected gateway functionality.
- Don't ruin MAC address and serial number if removing power during flash save.

## **Version 3.27 (build 1028, 18 November 2013), KB:**

From the release notes in the .MAF files:

New features:

- Factory defaults restored if protocol type has changed.
- Module I/O can be mirrored to motor for use with eRxP.
- DLR now supported.
- DHCP now supported
- Explicit R/W of module registers possible with class 0x65.
- Motor is forced in passive mode before sending 'save in flash'.
- 8 register implicit data, now has to be enabled and flashed.
- EthernetIP and TCP/IP stack updated.
- Added bootup LED test.

Bug Fixes:

- Occasional erroneous cyclic readings from MAC050-141 corrected.

Detailed descriptions:

- In order not to get erroneous configurations, factory defaults is now restored if changing the protocol type. For instance from EtherCAT to EthernetIP. An update of the same protocol type is not influenced.
- Module digital I/O can be mirrored to motor for use in embedded RxP. Enable mirror of outputs by setting bit 8 in module register 6. Enable mirror of inputs by setting bit 9 in module register 6.
- Device Level Ring (DLR) now supported. Allows the motors to be connected in a redundant ring, and if supported and enabled in the PLC, make the network able to withstand a cable break.
- Dynamic Host Configuration Protocol (DHCP) supported. Allows automatic configuration of the IP address. Needs to be enabled in Mactalk, or manually by setting bit 10 in module register 6.
- Now possible to explicit get and set module registers. This is done with class 0x65, attribute=1, instance=module register, service=0xE/0x10 for reading/writing.
- To avoid some misunderstandings, the motor is now forced in passive mode before redirecting the 'Save in flash' command to the motor.

To pass the conformance test at ODVA, some minor changes have been made to the firmware, including:

- If using more than 5 registers implicit data then it has to be enabled beforehand. That can be done either in Mactalk, or by manually setting bit number 6 in module register 6, and then save in flash and reboot.
- The EthernetIP stack and the TCP/IP stack updated to newest version from Hilscher.
- Added test of the MOD and NET led's at power-up.

### **Version 3.24 (build 464, 2 April 2013), KB:**

From the release notes in the .MAF files:

Bug Fixes:

- Connection to AB PLC again possible.

### **Version 3.23 (build 459, 13 March 2013), KB:**

From the release notes in the .MAF files:

New features:

- Implicit data changed from 5 registers in each direction to 8.
- MacTalk communication via Ethernet possible.
- Writes to the module command register (general command) is made one-shot, when accessing cyclic.
- If having mode register in both cyclic read and cyclic write, the homing modes (12,13 and 14) are made one-shot. Meaning that even though it's transmitted cyclic from the PLC it is not overwritten in the motor. Recommended use: Transmit the homing mode until the read mode from the motor changes, then change to wanted mode.
- Possible to disable Ethernet error handling.

Bug Fixes:

- Setup of Ethernet error handling, now functioning.
- Corrected function of module register 48.

Detailed descriptions:

- The cyclic data exchange is upgraded from 5 x 32bit registers to 8 x 32bit registers in both directions. This requires the error/status register (35) to be in the cyclic read list, otherwise the module will append it, and thereby overruling the user assignment.
- If also upgrading MacTalk to at least version 1.50.49, then it is possible for MacTalk to use the Ethernet channel for communication (by UDP). It is only the firmware upgrade function that can't be done via Ethernet. So if firmware upgrade is requested it is still necessary to connect a standard serial line (RS232/RS485).
- In order to use the module command register, when having it placed in the cyclic write list. It is made "one-shot" meaning that every time the command is changed it is executed only once. That means to execute the same command again the command register has to be changed back to zero and then it's possible to issue a new one.
- This release solves the problem there has been with homing if only cyclic messaging is used. If the motor mode register is placed in both the read and write registers, the module checks for homing commands (12,13 and 14), and if homing is requested from the Ethernet side, further cyclic write to motor is disabled until requested mode is changed. This way it is possibly for the PLC to test the actual mode, and when it changes to none homing mode the homing is ended and requested mode can be changed.

### **Version 3.10 (build 338, 11 July 2012), KB:**

From the release notes in the .MAF files:

New features:

- 2Mbit communication with MIS34/SMC85.
- PDO like communication with MIS34/SMC85 => Much faster cycle times possibly.
- Common maf-file for MAC00-EIx and MIS34xxxxEIxxx.

Detailed descriptions:

Now the same maf-file goes for both the MAC motor modules – MAC00-EIx and MIS34x/SMC85 with EthernetIP – and is named "MAC00\_MIS34-EI\_x\_xx".

In SMC85/MIS34x the internal communication is improved a lot. Both in terms of actual communication speed and in terms of efficient communication. The attainable cycle time is now nearly the same as for MAC400-3000 (~500µs).

### **Version 3.03 (build 330, 14 June 2012), KB:**

From the release notes in the .MAF files:

Bug Fixes:

Power LED enters known state after re-applying P+.

Detailed descriptions:

If P+ is removed while retaining CV the power LED flashes, but when re-applying P+ the power LED entered an unknown state. Now it always enters the normal state with the LED lid.

### **Version 3.00:**

New features:

MAC050-141 now fully supported.

(Requires version 9.00 or higher of motor firmware)