Software release document

Firmware for Product(s): MAC00-EP4 / MAC00-EP41, MIS/MIL 17/23/34/43 with EP option, SMC 66/85 with EP option.
PROFINET

Latest version:	3.40
Date:	23rd of February 2021
Build:	10252

Description:

Version 3.40 (build 10252, 23rd 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.*

! REMARK's !
- **When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !**
- **This version requires a new GSD file: "GSDML-V2.35-JVL-MAC_MIS_MOTOR-20201210.xml"**

New features:
- Changed Family and DeviceType naming in GSD and firmware. *This change requires use of new GSD file "GSDML-V2.35-JVL-MAC_MIS_MOTOR-20201210.xml" !!*
- Alternative byte order possibility to facilitate use of Kuka robot masters.
- Support for WiFi module in MIS motors.

Bug Fixes:
- Possible write of wrong registers in very rare cases when intensively using non-cyclic data solved.

Version 3.38 (build 10231, 8th of September 2020), KB:

! This version is tested and approved by Siemens testlab - ComDeC. Please check www.jvl.dk for certificate and test report.

! REMARK !
When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

New features:
- None

Improvements:
- None.

Bug Fixes:
- Fixed issue with Profinet factory reset not working correctly.

Version 3.36 (build 10221, 1ˢᵗ of July 2020), KB:

! REMARK !
When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

New features:
- None

Improvements:
- Upgraded Hilscher TCP/IP stack to version **2.5.0.2**
- Upgraded Hilscher Profinet stack to version **3.14.0.5**
    o Conform to Profinet specification version **2.35**
- *The changelogs from Hilscher are available upon request.*

Bug Fixes:
- None.

Version 3.34 (build 10219, 11ᵗʰ of May 2020), KB:

! REMARK !
When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

New features:
- Added new register 13 - Specification of delay before reset in ms, used with the commands '2', '258' and '259'. Default = 500ms.
- Added new commands for Profinet module command register.
    o **2** (0x0002) - Reset Ethernet module after delay. Default delay=500ms. Set delay in Ethernet module register 13 in ms.
    o **25** (0x0019) - Re-initialize internal communication between Ethernet module and motor controller, without reset.
    o **258** (0x0102) - Reset Ethernet module and motor controller after delay. Default delay=500ms. Set delay in Ethernet module register 13 in ms.
    o **259** (0x0103) - Reset motor controller after delay. Default delay=500ms. Set delay in Ethernet module register 13 in ms.
    o **273** (0x0111) - Save the motor registers in flash. This will also reset the motor controller, but NOT the Ethernet module, so Ethernet switch will not get disturbed, but internal communication will NOT work, before Profinet module is reset or internal communication is re-initialized with command 25.

Improvements:
- Start UDP host for Mactalk over Ethernet also if valid IP address is received after boot.

Bug Fixes:
- Fixed issue with Mactalk Register workspace pad not working with command register.

Version 3.32 (build 10197, 23ʳᵈ of December 2019), KB:

! REMARK !
When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

Bug Fixes:
- Fixed further compatibility issues with non-cyclic R/W arisen in 3.28.

Version 3.30 (build 10188, 7th of October 2019), KB:

! REMARK !
When upgrading to this version from versions of Profinet older than 3.27 it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

Bug Fixes:
- Fixed a backward compatibility issue with non-cyclic R/W arisen in 3.28.

Version 3.28 (build 10157, 28th of March 2019), KB:

! REMARK !
When upgrading to this version from older versions of Profinet it is required to set module factory defaults and then reset motor. If using Mactalk version 1.80.035 or older this has to be done manually !

New features:
- Upgraded Hilscher rcX (Real Time Operating System) to version **2.1.12.0**
- Upgraded Hilscher TCP/IP stack to version **2.4.0.6**
- Upgraded Hilscher Profinet stack to version **3.13.0.0**
    - Conform to Profinet specification version **2.34**
        - https://kb.hilscher.com/display/PNS3V5/PROFINET+IO-Device+V3.13.0.0?preview=/94824120/97436373/Z12320.pdf
- Stationname changeable from Mactalk.
- Firmware update over Ethernet implemented.
- Motor registers 256-511 now accessible via non-cyclic messages.
- Mactalk scope and eRxP works also over Ethernet.
- Motor commands through module command register, mirrored to lower range enabling use of signed32 bit in PLC. Add 0x0100 0000 to native motor command and it can be sent to the Profinet module command register.
- Factory defaults restored if protocol type has changed.
- Module I/O can be mirrored to motor for use with ePLC.
- Motor is forced in passive mode before sending 'save in flash'.
- Added homing modes 25 and 26 to homing blocking test.
- MIS motor firmware download with bootloader > 1.3.

Version 3.24 (build 547, 12th of December 2017), KB:

Using Hilscher stack versions:
- Hilscher rcX (Real Time Operating System) version **2.0.8.3**
- Hilscher TCP/IP stack version **2.1.3.0**
- Hilscher Profinet stack version **3.4.17.0**
    - Conform to Profinet specification version **2.2**

Bug Fixes:
- Redundant flash sectors for parameters should fix issue with wipe of MAC address, serial number and station name.

Version 3.23 (build 543, 21st of October 2017), KB:

Bug Fixes:
- Fixed error with set to default of device name (name of station) if IP address, default gateway or network mask was changed from Mactalk, either by serial or by Ethernet.

Version 3.22 (build 542, 7 October 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.
- Power up with blank 'Name of station' is now factory default.
- Sets flag in module register 48 if no motor communication.

bug Fixes:
- Occasional erroneous cyclic readings from MAC050-141 corrected.
- Corrections to PZD size, which led to follow errors in MIS34.
- Connect/reconnect from Mactalk TCP, made less error prone.

Detailed descriptions:
- When changing the Ethernet protocol in the module from for example EthernetIP to Profinet then factory default data is restored, overwriting existing setup.
- If using eRxP (embedded RxP in motor), it is now possible to get and set the digital inputs and outputs of the module in the eRxP program.
- Default setup of "Power up with blank 'Name of station'" is changed to checked, allowing customers to take modules from stock with no configuration and insert in a system, if the system supports auto setup.
- Bit no. 4 in module register 48 is now set if the module cannot communicate with the motor, enabling the PLC and or MacTalk to check for this error situation.

Version 3.19 (build 457, 12 March 2013), KB:

From the release notes in the .MAF files:
New features:
- PZD 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.

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.

Version 3.14 (build 365, 10 September 2012), KB:

From the release notes in the .MAF files:
New features:
- 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:
> 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 3.11 (build 341, 13 July 2012), KB:

From the release notes in the .MAF files:
New features:
- Added option of always power-up with blanked "name of station".
- 2Mbit communication with MIS34/SMC85.
- PDO like communication with MIS34/SMC85 => Much faster cycle times possibly.
- Common maf-file for MAC00-EPx and MIS34xxxxEPxxx.

Bug Fixes:
- Save "name of station" don't anymore erase IP, Subnet mask, default gateway and "type of station"

Detailed descriptions:
> Now the same maf-file goes for both the MAC motor modules – MAC00-EPx and MIS34x/SMC85 with Profinet – and is named "MAC00_MIS34-EP_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 3.06 (build 308, 10 April 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 3.05 (build299):

<u>From the release notes in the .MAF files:</u>
bug Fixes:
Module I/O placed as cyclic data do work now, IF placed as last entry in the
'Cyclic data setup'. => Now also when installed in a MAC050 - MAC141
<u>Detailed descriptions:</u>
The module digital I/O registers (register 7 and 47) was not working properly (it did
only with some rare setups). This is now fixed for all motors. BUT remember to place
them as the LAST registers in the cyclic data setup, otherwise it won't work at all.

Version 3.04 (build296):

<u>From the release notes in the .MAF files:</u>
bug Fixes:
Module I/O placed as cyclic data do work now, IF placed as last entry in the
'Cyclic data setup'

Version 3.03:

<u>From the release notes in the .MAF files:</u>
bug Fixes:
Now possibly to set IP from MacTalk

Version 3.02:

<u>From the release notes in the .MAF files:</u>
New features:
Acyclic data now supported
BF and SF LED is now working

Version 3.01:

<u>From the release notes in the .MAF files:</u>
New features:
SMC85 now supported. ***NOTE ! Requires a special firmware file !***
(Requires version 1.07 or higher of motor firmware)

Version 3.00:

<u>From the release notes in the .MAF files:</u>
New features:
MAC050-141 now fully supported.
(Requires version 9.00 or higher of motor firmware)