

Version 3.1.2.0

24 August 2026

The following models MAC404, MAC604, MAC804, MAC1004, MAC1404, MAC802, MAC1202, MAC1403 will be referred to as Gen. 3

Important:

- It is recommended to upgrade to the latest MacTalk version before this release
- This firmware covers the Gen. 3 models only

New functionality:

- New FREE mode (mode 27): Changing from an active mode into free mode allows the motor to coast fully, and not go through a controlled deceleration.
- Brake variants draw noticeably less control supply power while the motor is in an active mode: the brake is released at full power and then held at a reduced level, cutting the control supply consumption by roughly 40%.

The hold level is configurable in register 236, bits 29-31 (default 62.5% of full power, applied 2 seconds after release), and the brake PWM runs at 1 kHz

- Module errors are now reported in ERR_STAT bit 29, coherently with the cyclic process data

Bugs fixed:

- Modbus error counters (registers 240 and 241) counted up continuously when other traffic was present on the bus
- Motor performed a relative move when resuming from passive to active with SYNCPOSAUTO = 0
- Improved gate timing and current filtering on the DC-supplied Gen. 3 models
- Various minor fixes and improvements

Network module - this is a release targeting EtherCAT, Ethernet/IP, and PROFINet for Gen. 3 motors only.

App version 1.08.00.02 BETA

Stack Version:

- EtherCAT: 5.05.00.00
- EtherNet/IP: 5.05.00.00
- PROFINet: 5.07.00.01

The EtherCAT support in this version is a beta. EtherNet/IP and PROFINet are production releases and are not affected by it.

@fix

- Object 0x60C5 Max acceleration was ignored in CSP, CSV, CST, PP and PV
- Object 0x6080 Max motor speed was ignored in CSV, PP and PV

- Some values could disagree between CoE online and MacTalk until the axis was operated
- An initialization issue could clobber settings such as In Position Time when the axis was operated

Ver 3.01.01.00

18 May 2026

New functionality:

- Support for MAC604
- Support for MAC804
- Added option for full 32-bit positioning range (register 246, bit 9)
- Configurable brake engage and release times via registers 287 and 288 (max 1000ms)
- Long-term persistent eventlog logging errors and diagnostic events (requires latest MacTalk version and only on Gen. 3 motors)

Bugs fixed:

- Fix velocity command overflow at very large position differences
- Fix brake issue causing position loss due to delayed brake activation
- Fixed issue with index homing fast method
- Various minor fixes and improvements

Network module - this is a release targeting EtherCAT, Ethernet/IP, and PROFINet for Gen. 3 motors only.

App version 1.07.00

Stack Version:

- EtherCAT: 5.05.00.00
- EtherNet/IP: 5.05.00.00
- PROFINet: 5.07.00.01

@features

- Firmware update via ethernet supported
- EtherCAT DSP301 supported (DSP402 is planned)
- PROFIdrive improve diagnostic messages via PLC
- PROFIdrive available as pre-release feature, we encourage testing and sending feedback through our support team.

PROFIdrive conformance testing is scheduled for later in the year.

- PROFIdrive IRT (sync) is coming in next release
- MacTalk TCP: Now support scoping (requires latest MacTalk version)

@fix

- Eliminate possible intermittent internal communication error
- Homing over cyclic interface when start mode is non-zero issue
- PROFIdrive wrong scaling for ST2 and ST3 issue
- PROFINet read register issue

- EthernetIP default byte order issue
- Motor command via cyclic interface issue
- Improve the default cyclic PDO
- Various minor fixes and improvements

@limitations

- after upgrading to this version downgrading to versions below 1.6.x is not supported

Ver 3.00.04.00

- Skipped

Ver 3.00.03.00

22 January 2026

- EC Sync error fix for internal SPI communication issue

Ver 3.00.02.00

24 November 2025

- Fix encoder issue on MACxxxG3 motors.

Ver 3.00.01.00

17. November 2025

network module:

App version 1.04.02

Stack Version:

- EtherCAT: 5.05.00.00
- EtherNet/IP: 5.04.00.06
- PROFINet: 5.07.00.01

@fix

- Missing error messages issue
- "Reset Motor" issue

Ver 3.00.00.00

29. October 2025

- Official support for MAC generation 3 motors with builtin network module.
- Support for MAC1004
- Support for MAC404
- Support for MAC802
- Support for MAC1202
- Support for MAC1403
- Support for MAC1404
- Introduce motor eventlog on MAC generation 3.
- Optimize MAC320L current controller.

- Fix B42 module digital output voltage issue
- Improve motorload calculation to allow for higher loads at low velocities.
- Fix coil mode issue.
- improve 24V control voltage measurmeent stability.

network module:

App version 1.04.00

Stack Version:

- EtherCAT: 5.05.00.00
- EtherNet/IP: 5.04.00.06
- PROFINet: 5.07.00.01

@fix

- EtherCAT Object 0x2012/13. Object size fixed to correct size
- EtherNet/IP, fixed several objects in relation to Conformance test.
- Issue in cyclic use of homing and command register is now fixed.

@issues

- PROFINet not operational.

Ver 2.27.05.00

11. June 2025

- Fix MAC320L current limitation.
- Improve MAC320L dynamics
- fix inverted error pin on module issue

Ver 2.27.04.00

9. April 2025

- Fix position mode high resolution issue
- Fix absolute encoder invert rotation in position backup mode issue
- Change startup behavior with homing enabled.
Motor will now enter start mode unless homing on powerup is enabled
- Fix MAC800classic incremental encoder position wrap issue
- Fix Ethercat/Sercos Freerunning mode issue.

Ver 2.27.03.00

6. February 2025

- Fix STO overload issue

Ver 2.27.02.00

29 January 2025

- Changed behaviour of O2. Signal inverted also when user controlled.
- Fixed Encoder startup issue when using invert direction
- Fixed minor CVI issue on MAC83-MAC320
- User selectable brake signal on OUT1
- Invert in-position O1 signal, also when O1 is user defined
- implemented STO trigger delay to allow for runtime sto cable testing
- Fixed Modbus TCP unit scaling connection issue
- Fixed Modbus TCP read velocity reg 8 issue
- Added Warning register functionality
- Improved MAC300G performance.
- Fix Regenerative overload calculation bug in 1.0ms sampling mode.
- Increase limit for allowed torque during mechanical homing.

Ver 2.27.01.00

13. November 2024

Bug fixes:

- Fix long term operation stability issue
- Fix Encoder startup when using invert direction issue
- Fix CVI on MiniMac issue

Ver 2.27.00.00

4. September 2024

New functionality:

- Support for MAC083F
- Support for MAC141F
- Support MAC320P
- MiniMac add CVI/P+ operation so motor controller can stay alive on only CVI voltage
- non-RM4: add option for setting save position backup in flash when voltage at 18V instead of 15V

Improvements:

- MiniMac supply voltage reading no longer in Reg 21, only in UBUS reg 198
- RM4 STO detect voltage adjusted to 17V
- Implemented commands for on-the-fly baudrate change

bugs fixed:

- MiniMac: improve position save stability
- absolute encoder motors: Fix mechanical endstop homing w. index pulse invert rotation direction issue.
- Minimac remove incorrect encoder initialization error
- Minimac w. absolute encoders: Fix incorrect position when rotating during boot error.
- Fix factory default cmd 0x100 issue

Ver 2.26.21

7. June 2024

- implement turntable actual position wrap compensation

Ver 2.26.20

29. February 2024

All Motors:

- Improved signal handling for absolute encoders

- adjusted regenerative load estimation
- Improved current control stability for MAC3000G-RM46

Ver 2.26.19

9. February 2024

All Motors:

- Fix incorrect hardware version value displayed in reg 205 for motors with hardware version ≥ 2.0
- reduce signal noise in measured temperature
- Fix motor overheating issue for MAC800->1200 with HW version ≥ 2.0

Ver 2.26.18

18. January 2024

All Motors:

- Fix EtherCat operation mode issue
- Fix Ethernet module Unit scaling issue

Ver 2.26.17

19. December 2023

MAC1200

- Fix false overcurrent error issue
- Fix unit scaling with ethernet module issue

Ver 2.26.16

6. December 2023

All motors:

- Fix invert direction issue on abs encoder
- Fix abs encoder startup and noise issues
- Fix quad-to-pulse-dir conversion issue on external encoder
- improved noise filtering on external encoder input

Ver 2.26.15

30. October 2023

All Motors:

- Fix regenerative load limit issue

MAC320:

- Fix motor error in active mode issue

ver 2.26.14

18. October 2023

MAC1000, MAC3000G

- Add functionality for factory configured torque limits

Ver 2.26.13

29. August 2023

All motors:

- Fix ethernet module restart issue
- Improved ethernet/motor communication
- Fixed ethernet save-in-flash issue

Mac400:

- Improved internal powerdump handling
- Torque updated in passive mode.

MAC402

- Improved high torque stability
- Improved passive mode handling

Ver 2.26.10

29 Mar 2023

MAC140F/320 only

- Ethernet SPI issue fixed

Ver 2.26.09

22 Feb 2023

MAC14xF only:

- Fix encoder calibration issue

Ver 2.26.07

8 Dec 2022

All motors:

- Fixed invert rotation issue

Ver 2.26.06

21 Nov 2022

All motors:

- Allowed for readout of encoder type in reg 283
- Fixed position save to flash issue

MAC400, MAC402, MAC1500, MAC3000, MAC3000G, MAC4500:

- Fixed problem with absolute encoder and inverted direction flag
- Increased noise tolerance on ethernet sync
- Fixed support for 32 bit absolute encoder position
- Fixed absolute encoder issues at high temperatures

Ver 2.26.04

11 Nov 2022

MAC141x-F only:

- Fixed turntable issue when saving parameters to FLASH.
- Added special command 0x105C to perform factory reset on motor
- Fixed absolute position startup drift error
- increased noise tolerance on ethernet sync

Ver 2.26.02

MAC400, MAC402, MAC1500, MAC3000, MAC3000G, MAC4500:

- fixed problem with ePLC program not starting automatically
- fixed problem with incorrect initial encoder position for incremental encoders

MAC400

- adjusted regenerative load cool down time.

MAC140F

- add support for automatic current calibration.

Ver 2.26.1

7. Sep 2022

MAC400, MAC402, MAC1500, MAC3000, MAC3000G, MAC4500:

- Support for new RM46 control core.
- Improved motor performance for products using RM46 control core.

MAC140F:

- Fixed problem with register 35 not configuring crossfield.

Ver 2.25.05

16 May 2022

All motors:

Prevent outside sources from setting active mode until STO is completely cleared

Fixed High resolution position mode

MAC1500 and MAC3000G:

Efficiency of internal power dump improved (only for 1ms sample time)

MAC3000G:

Powerdump threshold voltage reduced.

MAC400:

Optimized I2T.

Ver 2.25.2**4 Feb 2022**

Fixed EtherCat issue for all MAC motors

Ver 2.25.0**11 Jan 2022**

MAC140F:

- Initial release

MAC400 / MAC400G / MAC402 / MAC1500 / MAC3000 / MAC3000G / MAC4500 :

- Fixed problem with encoder direction when using gear out on absolute encoder motors

Ver 2.24**04 June 2021**

Fixes :

- I2T scaling updated to prevent overflow (MAC402)
- Fixed issues with analogue torque mode

Ver 2.23**14 Jan 2021 AD**

Improvements:

- Added commands 100 and 101 for factory testing.
- Handling of CRC-errors from Absolute encoders improved.
- Support for brake burn-in activation via command.

Fixes:

- Startup issue with abs.encoder flash backup fixed.

V2.23 is more robust against electrical noise, so if you experience false overspeed errors, we recommend that you update from v2.22 to v2.23.
