Release Notes 2.27.03.00

Ver 2.27.03
6. February 2025

 - Fix STO overload issue

Ver 2.27.02
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
13. November 2024

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

Ver 2.27.0
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 - MAC14xF only
22 Feb 2023

MAC14xF:
 - 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 - MAC14xF
11 Nov 2022

 - 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

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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.enoder 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 v.2.23.

Ver 2.22
24 Mar 2020 AD

New features:
- Support for MAC3000-Gx motor series.

- Support for reading the full product key as a string,
  like MAC3000-G2-FAAL-A025.
- Support for 64 times higher resolution of velocity and
  acceleration setpoints. Results in better than 0.01 RPM.
  NOTE: This also allows a larger working range in
  Position mode. Please ask JVL for full documentation.
  (HiRes Vel/Acc will not work in Gear mode or dispenser mode)
- New system to dynamically adjust the Load Factor depending
  on actual velocity to avoid oscillations with mainly belt drives.
- Added option of 10 and 20 kHz PWM switching to motors
  with default 5 kHz switching frequency, to reduce audible noise.
  Note motors will be much warmer, and CANNOT deliver rated power
  without overheating when this feature is enabled.
- Added option for Silent Mode, that softens the current
  regulation at the cost of (potentially much) lower dynamic
  response and efficiency. For use in sensitive audio environments.
  Not supported on MAC800 and standard MAC400.

Improvements:
- Support MAC4500-Gx motors.
- Better handling of return energy for the MAC402 motor.
- Shows Build number and FPGA version in Reg253, 254.
- Re-introduced time to re-calibrate current measurements
  offsets when switching from passive mode to active modes.
- Supports two differnet sample points for Ethernet SYNC operation
  to support more types of PLC Ethernet masters.
- Increased the amount of energy the internal brake resistor
  can receive (MAC1500, MAC3000, MAC3000G, MAC4500 only).
- Improved handling of sporadic encoder noise in velocity
  measurement.

Fixes:
- Using heavy communications, mainly over Ethernet, with
  Scope data no longer causes jumps in motor movements.
- MacTalk,Modbus RS485 communications on MAC00-B42 modules fixed.
- Supports faster read/write of on-the-fly scaling parameters.
- Better timeout monitoring of ePLC serial communications.
- The system can now start up after reset with an Ethernet
  module also when on-the-fly scaling for Modbus is enabled.
- Now supports all baud rates 9600 through 1.000.000 using RS485
  on MAC00-B41/B42 also with MAC800/MAC1000/MAC1200.
- Fixed an extra turn when using Rotary Table mode.
- Fixed a rare problem (seen in-house only) with startup of
  the ePLC program.
- Edge detection on digital inputs in the ePLC program now
  optimized to work with latest hardware.

Ver 2.20 and Ver 2.19
3 Jan 2020 and 14 Dec 2019 AD

These releases were recallled due to long startup time
and false UIT errors.

NOTE: Beginning from release v2.19, these releasenotes
will have the same text for all motor types. Previously each
motor type described changes only relevant for its model.