

Software History

XENAX® Xvi

75V8S/75V8/48V8

Version	Index	History
5.20	B	- Additional debug functionality added (no functional changes)
5.20	A	- Unnecessary communication to JSC motor removed at power loss on Xvi75V8S (no changes for Xvi48V8 and Xvi75V8)
5.20		- Support for Lxs80F120, Lxs200F120 and Lxs2000F120 - Forceteq Pro: Speed limitation at limit force reached improved (especially after finishing a force drive in cyclic synchronised position mode) - I2C communication improved at Xvi75V8S (reduction of I2C error at long motor cables)
5.18	A	- Improvements in cyclic synchronized position mode with intensive additional SDO communication.
5.18		- Correction table support for ROTAX® Rxhq motors with optical encoder - General controller performance improvements for ROTAX® Rxhq motors with optical encoder - Autogain setting via WebMotion for all ROTAX® Rxhq motors sets a lower gain leading to more stable controller behavior
5.16		- Support for high resolution optical Rxhq 110 and Rxhq 50 motors - Support for absolute gantry reference - General improvements for gantry reference - More accurate I2T supervision for Lxs***F120 motors
5.14	B	- Saving and loading of application and firmware files via Xvi75V8 WebMotion possible again
5.14	A	- Bug in output function assignment fixed - Minor text changes in Xvi75V8S WebMotion
5.14		- Z-Mark detection for reference drive made more robust, especially for Lxs160F60/Lxu160F60 with magnetic measuring system - Maximum current settings for Xvi75V8S increased to 20A - New SDO Objects corresponding to ASCII-Commands <ul style="list-style-type: none"> ○ 0x5003:96 (EGMSO) ○ 0x5003:97 (VMTAE) ○ 0x5010:13 (BWFP) ○ 0x5010:14 (FTPES)
5.12		- LINAX® Lxs***F120 with absolute measurement system support for Xvi75V8S - Forceteq Pro controller enhancements <ul style="list-style-type: none"> ○ Adaptive switch between force controller and position controller

		<ul style="list-style-type: none"> to minimize dependencies of these two controllers <ul style="list-style-type: none"> ○ New Forceteq Pro elastic mode for special force applications with elastic structure (standard mode is solid mode) - Gantry master/slave offset settings improved for easier commissioning of gantry systems - New ASCII-Commands <ul style="list-style-type: none"> ○ BWFP Bandwidth Forceteq Pro ○ FTPES Forceteq Pro Elastic Spring constant ○ FTM Forceteq Mode (extended with value 2 = elastic mode) ○ TMO Tell Mode of Operation - ROTAX® Rxhq measuring system filtering improved - New Error 52 "The connected Jenny Science Motor is not supported by this servo controller" - Same output functions can now be assigned to multiple outputs - Velocity estimation used in ASCII command "TV" (Tell Velocity) and safety function SLS improved - Power stage control signal generation for small target currents improved
5.10	G	<ul style="list-style-type: none"> - Data consistency check for application download at Xvi75V8 improved - Gantry master/slave offset settings now available at gantry master WebMotion - New ASCII-Command <ul style="list-style-type: none"> ○ EGMSO Enable user defined gantry master slave offset - Maximum allowed servo controller identification string length now 32 characters (ASCII-command "SID") - Command line echo can be switched off for socket server communication at Xvi48V8 and Xvi75V8S - Minor adjustments on load cell tab in WebMotion
5.10	F	<ul style="list-style-type: none"> - Increased tolerance for continuous broadcast frames - Optimized timing when setting the statusword bit which indicates success after reference drive (HORM). Prevents illegal state in a special case
5.10	E	<ul style="list-style-type: none"> - Functionality «Virtual Multiturn Absolut Encoder» at Xvi75V8S added - New ASCII-Command <ul style="list-style-type: none"> ○ VMTAE Virtual Multiturn Absolut Encoder - New Error 53 "Virtual multiturn position deviation exceeded tolerance" - I2C communication improved for master/slave configuration
5.10	D	<ul style="list-style-type: none"> - Functionality «Position Window Time» added (selectable delay of the PSR-Bit «IN_POSITION» and Statusword-Bit «Target Position Reached») - New ASCII-Command <ul style="list-style-type: none"> ○ PWT Position Window Time - New SDO Objects corresponding to ASCII-Commands <ul style="list-style-type: none"> ○ 0x6068 ○ 0x5001:42 ○ 0x5010:11 ○ 0x5010:12 - Update time of PDO objects 0x2005 (I_Force Actual) and 0x200A (Force Actual Value) reduced to 100us

		<ul style="list-style-type: none"> - Xvi75V8S and Xvi48V8 made more robust against excessive Ethernet broadcast load - Minimization of measuring system failures on LINAX® motors with optical measuring system after short power interruption at Xvi75V8S controllers
5.10	C	<ul style="list-style-type: none"> - Default value of «Emergency Deceleration» after reset command now depending on encoder resolution - Spurious error 88 in gantry systems with Xvi75V8S servo controller fixed - Controller problem with rotative motors passing overflow position $2^{31}-1$ to -2^{31} and vice versa solved
5.10	B	<ul style="list-style-type: none"> - Various improvements related to Signateq® and WebMotion - New ASCII-Commands <ul style="list-style-type: none"> o SQAC Signateq® available calibrations o SQCM Switch Signateq® calibration mode - Error number 58 messages clarified
5.10		<ul style="list-style-type: none"> - Support for ROTAX Rxhq110-50T1.5 - ROTAX Rxhq measuring system filtering improved (static position error eliminated and control settling time reduced) - New ASCII-Commands <ul style="list-style-type: none"> o TVPSM Tell Voltage Power Supply Motor - Error number 54 extended for ROTAX Rxhq measuring system failure - Error number 92 (3-phase motor output frequency exceeded 599Hz) only showed when power stage is enabled - Error number 50 (Position deviation too large) works now as well with deviation position set to 1'000'000
5.08	F	<ul style="list-style-type: none"> - Xvi75V8S with Forceteq pro: Support for Signateq firmware V2.0 with calibration type "test report", "customer calibration" and "factory calibration". - New ASCII-Commands <ul style="list-style-type: none"> o SQSNF Signateq Sensor Nominal Force o SQMRP Signateq Measurement Range Positive o SQSS Signateq Sensor Sensitivity o SQSFT Signateq Sensor Force Type o SQOM Signateq Operation Mode o SQSMT Signateq Sensor Model Type o SQSSN Signateq Sensor Serial Number o CLFO0 Clear Force Offset Reset - New value for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x0x6011: CLFO0 command - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x5010:03 – 0x5010:8 o 0x5011 o 0x5012 - New Profinet Parameters corresponding to new ASCII-Commands <ul style="list-style-type: none"> o p6001...p6010 o p6100 o p6200

		<ul style="list-style-type: none"> - Error number 58 extended for more detailed Signateq error information - Command CLFO now available as program function
5.08	E	<ul style="list-style-type: none"> - Xvi75V8S: Forceteq pro controller initialisation corrected (controller parameters now match to the connected motor again) - Xvi75V8S: SMU parameter could not be loaded or saved in WebMotion (bug was introduced in version 5.08D)
5.08	D	<ul style="list-style-type: none"> - Fixed WebMotion rarely stuck at startup on Xvi48V8
5.08	C	<ul style="list-style-type: none"> - New ASCII-Commands <ul style="list-style-type: none"> o SQFD Signateq Force Direction o LFRMS Limit Force Reached Maximum Speed o SQVER Signateq Firmware Version - New value for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x1050: AREF1 command - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x5010:09 – 0x5010:10 - New functionality “automatic force direction detection” and “speed limitation at limit force reached” implemented - New Info 34 “Automatic detection of force direction not possible in standstill” - Error 76 (Gantry Master Slave Offset deviation greater than 0.5mm) changed to Info 35 - Xvi75V8S: Communication to Signateq improved (solves sporadic error 94 at powerup with connected Signateq) - Return value of ASCII-Commands SPC and SPMAC changed from “-1” to “?”, when no SMU is mounted - Power stage now always disabled before saving safety parameters (fixes incorrect output of error 50 or error 70 after saving safety parameters) - Sporadic offline problem with Xvi75V8S and Xvi48V8 WebMotion solved - Incorrect display of low active inputs during ramp down fixed - Missing input events at low active inputs fixed - Bug in object access for Objects 0x5005:12 – 0x5005:13 fixed
5.08	B	<ul style="list-style-type: none"> - New ASCII-Commands <ul style="list-style-type: none"> o SPC Safety Parameter CRC o SPMAC Safety Parameter and MAC Address CRC - New value for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x1040: DMES command - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x5003:95 o 0x5005:12 – 0x5005:13 o 0x5010:01 – 0x5010:02 - Improved trajectory generation in cyclic synchronized mode, when only position is transmitted by PDO communication (noise reduction) - Data consistency problem of bus module object 0x607A (target position) at changing from cyclic synchronized mode to any other mode fixed - Spurious toggling of Force Calibration Valid “FCV” during active force calibration fixed

		- WebMotion Update 6.06A: display SMU Checksum
5.08	A	<ul style="list-style-type: none"> - New ASCII-Command <ul style="list-style-type: none"> o DMES drive mechanical end stop - Cyclic synchronized mode for reverse direction gantry systems improved - WebMotion motion recorder speed filter added
5.08		- Quickstart problems with mounted SMU solved
5.06	G	- THORLABS DDR25/M angle identification bugfix
5.06	F	<ul style="list-style-type: none"> - Add support Rxhq110-50T1.4 - Add support THORLABS DDR25/M - New ASCII-Command <ul style="list-style-type: none"> o AREF automatic reference drive when entering DS402 mode 6 - New error number 58 for communication interrupt with Signateq - Cyclic CAN Frame communication improved for Signateq - WebMotion access time at Xvi75V8S improved to reduce conflicts with parallel WebMotion and socket communication - Improve field adjustment with active brake for brakes with <12um backlash - Improve Anti-windup for better force regulation with Signateq.
5.06	E	<ul style="list-style-type: none"> - The correct inductance value is entered in the motor table for Lxe 550F40, 100nm / Ra50R30 and Ra 60R30. This means that the controlling option "current feed forward" is also possible with these motors. - Watchdog timer command over socket connection worked only the first time the command was sent on 75V8S and 48V8 and after that not anymore. This is now fixed. - Signateq, force measurement value acquisition every 100µs and value sampling also every 100µs leads to undesired fluctuations with value losses. A sampling value every 50µs solved this issue.
5.06	D	<ul style="list-style-type: none"> - Parameter input check for configuration over Xenax Ethernet Installer improved - Error 82 in conjunction with excessive temperature requests over bus module fixed - Minor WebMotion modifications
5.06	C	<ul style="list-style-type: none"> - New ASCII-Commands for Forceteq pro <ul style="list-style-type: none"> o CLFO Clear Force Offset o FPK Force Peak o SFF Sector Force Curve Failed o SFS Sector Force Start o SFE Sector Force End o NDF Number of Drive Force to change parameter o ADF Acceleration of selected Drive Force o SDF Speed of selected Drive Force o DDF Direction of selected Drive Force - New value for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x6010: CLFO command - Info number for "I_Force Drift Compensation Drive failed" changed from 31 to 32.

		<ul style="list-style-type: none"> - Process Status Register inconsistency for Ethernet/IP fixed - Error 98 after driving into soft limits in Ethernet/IP buffered cyclic synchronised mode fixed - Blocked switch from WebMotion to UpdateGUI for Xvi75V8S and Xvi48V8 fixed.
5.06	B	<ul style="list-style-type: none"> - Motion now blocked when SMU is unconfigured - New ASCII-Commands <ul style="list-style-type: none"> o DMBUS Deactivate Motion Blocking by Unconfigured SMU - New value for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x5030: DMBUS command - Current Feed Forward algorithm improved - Force limitation controller improved and new default bandwidth for Signateq set to 100Hz - Internal trajectory generator for cyclic synchronous position mode improved
5.06	A	<ul style="list-style-type: none"> - Signateq controller stability improvement - WebMotion Force-MotionRecorder and I/O Function Indexes management improved
5.06		<ul style="list-style-type: none"> - Signateq support for Xvi75V8S - New ASCII-Commands (Xvi75V8S only) <ul style="list-style-type: none"> o LF Limit Force o TF Tell Force o DF Drive Force o CLF Change Limit Force o FDF Force of selected Drive Force o FH Force High o FL Force Low o FTM Forceteq Mode o STBW Signateq Bandwidth o TTPS Tell Temperature Power Stage o MM Motor Manufacturer - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x2009:00 – 0x200A:00 o 0x5001:41 o 0x5002:16 o 0x5003:88 – 0x5003:94 o 0x603F:00 o 0x606C:00 o 0x60FF:00 - Bitfield for warning 46 implemented to find out, which DS402 object caused the warning 46 - Ramp down behaviour in error case in buffered cyclic synchronized mode for Ethernet/IP improved. - Spurious warning 40 after enabling power stage in cyclic synchronised position mode without reference fixed
5.04	B	<ul style="list-style-type: none"> - Problem in port number request over UDP fixed for Xvi75V8S and Xvi48V8
5.04	A	<ul style="list-style-type: none"> - Transfer of current TCP/IP setting to bootloader improved for Xvi75V8S and

		Xvi48V8
5.04		- Buffered cyclic synchronized mode for Ethernet/IP implemented
5.02	A	- Static Error in the evaluation of the actual position signal for Rotax Rxhq fixed
5.02		- New output functions for SMU feedback - Signal conditioning for Rotax Rxhq encoder improved - Spurious Error 74 after reference of some Lxs/Lxu motors fixed - Incorrect trigger at activation of capture position with input 4 at Xvi48V8 fixed
5.00		- Switch to DS402 mode 8 without reference now possible (starting a drive in mode 8 without reference is still not possible and leads to error 75) - Synchronous program start support (mode 20) - Cogging compensation test mode with enabled current feed forward improved - Default value for avoid vibration damping (AVD) changed to 1 - Spurious Error 77 after switch to mode 8 fixed - Error in input functions EE/EE1 change over ASCII-Commands or SDO Objects fixed - Support for Xvi75V8S
4.16		- Gantry jog functionality implemented - ROTAX position correction table functionality implemented (Xvi48V8 only) - Detection for communication error bus module (Error 77) improved - Limit I_Force setting ignored during cogging reference drive - Problem in controller parameter calculation for 3th party motors with very small induction values solved - Problem with ELAX reference drive when Limit I_Force is set solved - Problem with rotative motors reference drive to Z-Mark solved, if motor is already on Z-Mark position at reference drive start - Problem with force calibration for Lxc1600F60 solved
4.14	A	- Electrical angle check for ROTAX Rxvp/Rxhq implemented (error 74) - Limit I_Force setting ignored during force calibration - Z-Speed setting for ROTAX Rxvp must have values >0. If Z-Speed is set to 0 (old application), default Z-Speed is used for ROTAX Rxvp - Field adjustment current for ELAX increased to improve field adjustment with heavy loads - Problem in field adjustment with enabled current feed forward fixed - Problem with missing output functions when application loaded from Startup Key at Xvi48V8 fixed
4.14		- Avoid vibration filter functionality - Current feed forward for improved current control - AUTOGAIN function in WebMotion for ROTAX Rxhq - New ASCII-Commands <ul style="list-style-type: none"> ○ AVF Avoid Vibration Frequency ○ AVD Avoid Vibration Damping - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> ○ 0x5003:79 – 0x5003:80
4.12	C	- Output and input functions programmable over ASCII-Commands and SDO Objects

		<ul style="list-style-type: none"> - New ASCII-Commands <ul style="list-style-type: none"> o NOF Number of Output Function o TYOF Type of Output Function o NIF Number of Input Function o TYIF Type of Input Function o PAIF Parameter A of Input Function o PBIF Parameter B of Input Function o PCIF Parameter C of Input Function - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x5003:67 – 0x5003:76 o 0x5003:81 – 0x5003:87 - Problem with force calibration for Lxc272F40 solved - Problem with bus module firmware update over Ethernet Installer at Xvi48V8 solved
4.12	B	<ul style="list-style-type: none"> - Improved 3 phase Delta I2T supervision for ELAX - Optimized ROTAX Rxhq ABZ position encoder signal acquisition and controlled overflow - Adjusted “I run” values for ELAX and ROTAX Rxhq - WebMotion: Improved text feedback for Errors 65, 67 and 90 and support for ROTAX Rxhq Autogain functionality
4.12	A	<ul style="list-style-type: none"> - Problem by updating Object 0x60FE (Digital Outputs) in case of active BRK output function solved - Xvi48V8 only: Problem with ASCII-Commands via Socket connection solved
4.12		<ul style="list-style-type: none"> - Support for ROTAX Rxqh absolute encoder mode - Support for ROTAX Rxhq force calibration started by program - Round table RT-120-25H80-229440 and RT-120-37H37-314720 added to third party motor parameter table in WebMotion - Character “#66” in the ASCII protocol for uncompleted commands as well for socket interface, not only for serial interface (timeout 5s between each character) - Xvi48V8 only: TCP/IP Socket 10001 closes when network cable is disconnected or when command “ENPR” is sent over TCP/IP Socket 9999
4.10	B	<ul style="list-style-type: none"> - New procedure to ensure that after an Error 54 (Reference is lost) the PLC is able to power on again the drive without Error 75 (Reference is pending) and a new reference can be correctly executed - Improvement of DS402 status machine in order to allow the direct power on of the axis in mode of operation 0 without disabling Bit 12 of the DS402 Statusword in TwinCAT3 (Build > 4020) - WebMotion: Correction of Auto Gain Settings for ROTAX Rxhq
4.10	A	<ul style="list-style-type: none"> - Adjustment of ASCII-Command ACV (Acceleration variation) output, value of jerk scaled in $x1000inc/s^3$ to cover the whole range of possible values - Correct setting of I_FORCE_MAX_LIMIT (Bit 15 in Process Status Register) in deceleration phase of a limited force drive - Problem with controller block in the case of active BRK function solved - Improvement for ROTAX Rxhq ABZ position encoder signal acquisition

4.10		<ul style="list-style-type: none"> - Support for ROTAX Rxhq - Swing Out Reduction functionality implemented - I_Force Drift Compensation functionality implemented - New ASCII-Commands <ul style="list-style-type: none"> o SORF Swing Out Reduction Frequency o SORD Swing Out Reduction Damping o IFDCP I_Force Drift Compensation Positive o IFDCN I_Force Drift Compensation Negative o IFDCS I_Force Drift Compensation Setting o PIFDC Position I_Force Drift Compensation - New program function I_FORCE Drift Compensation Positive/Negative - New values for CANopen direct command object 0x5000 <ul style="list-style-type: none"> o Object 0x5000, value 0x4010: IFDCP command o Object 0x5000, value 0x4011: IFDCN command - New Info 27 "Swing Out Reduction parameter changes not applied yet" - New Info 31 "I_Force Drift Compensation Drive failed" - New Process Status Register Bit 26: I_FORCE_DRIFT_COMPENSATION_DRIVE_ACTIVE - New character "#27" in the ASCII protocol if command is rejected caused by ongoing I_Force Drift Compensation drive - For 3th-party rotative motors: In standstill, I_NOM is used for current limitation - For Rotax Rxhq/Rxvp, Z-Mark reference is mandatory (SPZ can't be set to 0 anymore for Rotax Rxhq/Rxvp) - Scaling factor for the use of objects 0x60B1 (velocity offset) and 0x60B2 (torque offset) with TwinCAT adjusted - Xvi48V8 only: DHCP is activated, if IP-address of XENAX is set to 0.0.0.0
4.08	E	<ul style="list-style-type: none"> - Command RESM (Reset Motor Data) supported via bus module access
4.08	D	<ul style="list-style-type: none"> - Transmission of changed indexes in master/slave configuration fixed - WebMotion: Redesign menu "setup->state controller"
4.08	C	<ul style="list-style-type: none"> - Stability/Dynamics settings implemented. Depending on the application needs, controller can be tuned for higher stability or higher dynamics - New error number 59, if connected JSC motor does not fit to the application data on the servo controller (e.g. if a new JSC motor type is connected to the servo controller) - New ASCII-Commands <ul style="list-style-type: none"> o RESM Reset Motor Data o PPSD Pole Placement Stability Dynamics - LIF (Limit I_Force) and program functions DIF (Drive I_Force) and CLIF (Change Limit I_Force) are now limited to "I run" - I2T supervision continuous at disabled power stage and does not reset at power quit anymore. - Electrical angle for LINAX Lxs800F60 optimized - Problem with controller settings over CANopen bus module resolved (bus module stuck after BWP, BWC or ML commands)
4.08	B	<ul style="list-style-type: none"> - Problem after switching back from DS402 mode of operation 8 to 1 or 6 while

		being in DS402 state "operation enabled" resolved.
4.08	A	<ul style="list-style-type: none"> - For reference drive, always "I run" is used as current limitation, independent of "Limit I_Force" setting - JOG commands now refused during ramp down after warning or error detection to prevent impact on ramp down behaviour in warning and error case
4.08		<ul style="list-style-type: none"> - Internal trajectory generator for cyclic synchronous position mode improved - New PDO objects for transmission of speed and acceleration in cyclic synchronous position mode: <ul style="list-style-type: none"> o 0x60B1 (velocity offset) o 0x60B2 (torque offset) - New PROFIdrive parameter p2000 (Bezugsgeschwindigkeit) to enable transmitted speed in PROFIdrive standard telegram 5 - Objects 0x6060 and 0x6061 now can be mapped to PDO - Problem with SDO access to PDO mapped objects at low process cycle times < 1ms resolved - Deceleration during Z-Mark search for ROTAX Rxvp changed to prevent error 67 at high Z-Mark speeds - Data consistency problem when loading old application file with WebMotion resolved (Xvi75V8 only) - Access to non-volatile memory improved (problem with application data loss at XENAX Xvi48V8 resolved) - I2C communication improved (reduction of SMU host communication error)
4.06	K	<ul style="list-style-type: none"> - Problem in application download solved - No changes for Xvi75V8
4.06	J	- Sporadic error "L" at start of firmware update corrected
4.06	I	<ul style="list-style-type: none"> - I2C communication improved (reduction of SMU host communication error) - STO and SS1 activation does not automatically quit pending errors anymore - Suppression of error 90 in case of disabled power stage at the moment the SMU function triggered. - I_Force change minimized and incorrect error 72 behaviour corrected after abort of a movement in cyclic synchronized mode.
4.06	H	- New ASCII-commands AIXD, DIXD, SIXD and TYIXD to set dynamic index values which are not stored in non-volatile memory
4.06	G	<ul style="list-style-type: none"> - Access to non-volatile memory improved (reduction of error 83) - Default position bandwidth for ROTAX Rxvp set to 100
4.06	F	<ul style="list-style-type: none"> - New character "#49" in the ASCII protocol for JSC motor commands, if no JSC motor is detected at start up - I2C communication improved for master/slave configuration
4.06	E	- Repeat force calibration will improve the force calibration result
4.06	D	<ul style="list-style-type: none"> - New ASCII-command "ACB" for telescope structure support - Improvement of internal test functions
4.06	C	- Bus module access to soft limits (CANopen object 607D) corrected
4.06	B	<ul style="list-style-type: none"> - Support for ROTAX Rxvp for XENAX Xvi75V8 hardware revision 3.0 and 2.0 - Auto Gain calculation in XENAX Xvi75V8 WebMotion corrected

4.06	A	<ul style="list-style-type: none"> - PLC output protection improved for XENAX Xvi75V8 hardware revision 2.0 - Power supply voltage measurement improved
4.06		<ul style="list-style-type: none"> - Support for ROTAX Rxvp - Enhanced bandwidth mode implemented for more robust control behaviour in resonant systems - New info 25 "Sign of life counter on bus module disabled" - New info 26 "3th-party motor not configured or DIP-switch is set to 'ROT' instead of 'LIN'" - New Warning 47 "SMU intervened by stopping ongoing drive" - New error number 91 for resettable SMU errors (errors "excessive rise of temperature", "over temperature power stage", "over current power stage" and "acceleration limit exceeded" are now resettable) - Diverse Error/Warning/Info text updated - New ASCII-Commands <ul style="list-style-type: none"> o GR Gear Ratio of rotative jenny science motors o RXZP ROTAX Rxvp Z-mark position o FFS Filter Frequency Speed o FQS Filter Quality Speed o EBMD Enhanced Bandwidth Mode Disable - ASCII-Commands renamed <ul style="list-style-type: none"> o FQF1 to FFC (Filter Frequency Current) o BWF1 to FQC (Filter Quality Current) - New SDO Objects corresponding to new ASCII-Commands <ul style="list-style-type: none"> o 0x5001:31 – 0x5001:40 o 0x5003:61 – 0x5003:66 - New program/input function "change index to actual position" - I_Force change minimized after abort of a movement in cyclic synchronized mode - Faster XENAX to bus module communication - Cyclic check of hall signals - Crash handling improved - TCP/IP Socket connection with long frames improved - Automatic output clear at program start removed - Diverse small modifications in WebMotion
4.04	D	<ul style="list-style-type: none"> - Change of indexes in master/slave configuration now available via bus module access - I2C communication improved (reduction of SMU host communication error)
4.04	C	<ul style="list-style-type: none"> - New warning 47 "SMU intervened by stopping ongoing drive", when ongoing drive was stopped because of SS2 activation or SLS Speed Hit. - Error 90 is set, if STO or SS1 function is activated with enabled power stage - Faulty set of SLS Speed Hit in relation with other safety functions as STO, SS1 and SS2 corrected - CANopen states "Ready to Switch On" and "Switched On" stay unchanged after switching off power stage by SMU or Emergency Exit function - Motors Lxc230F10-7 and Lxc135F10-7 included

4.04	B	<ul style="list-style-type: none"> - Separate Error 93 in "Encoder cable disconnected" (new: Error 99) and "Encoder plausibility failure" (Error 93)
4.04	A	<ul style="list-style-type: none"> - Writing of SMU safety parameters over WebMotion corrected - No changes for Xvi48V8 - WebMotion V5.72A: Correction minimal distance value in QuickStart
4.04		<ul style="list-style-type: none"> - Non-volatile application data storage improved (reduction of Error 86 "wrong checksum of application data") - New ASCII-commands ACI, OVRDI, POI, SCRVI, SPI, WAI and WTI to set non-volatile initial values of the motion data. Values set by the ASCII-commands AC, OVRD, PO, SCRVI, SP, WA and WT are not stored in the non-volatile memory anymore. - PLC outputs are not initialized to value 0 at program start anymore. This allows setting outputs across different programs. - New Info 24 "Parameters of index invalid"
4.02	B	<ul style="list-style-type: none"> - Error 77 suppressed during SMU self-test at powerup. - No changes for Xvi48V8
4.02	A	<ul style="list-style-type: none"> - Watchdog functionality now as well available for Xvi48V8 with socket communication - No changes for Xvi75V8
4.02		<ul style="list-style-type: none"> - I2T supervision for LINAX and ELAX motors implemented - Speed calculation in safety function SLS improved - New info 22: "Interrupted program start (by IP input function)" - New info 23: "Start position of profile not valid" - Warning 46 extended with "Invalid PDO cycle time set" (only multiple of 100us are valid) - Appearance of HTML WebMotion for Xenax Xvi48V8 within different web browsers harmonised - New option whether Ethernet settings of Xenax Xvi48V8 should be stored in startup key or not - I2C communication improved - Error history after power cycle still available - New character "#66" in the ASCII protocol for uncompleted commands over serial interface or socket interface (timeout 5s between each character). - New command "TESMH" to read out the SMU state at the time the SMU error occurred
4.00	D	<ul style="list-style-type: none"> - Output format of input events corrected
4.00	C	<ul style="list-style-type: none"> - XENAX® Xvi48V8 socket server improved for faster access via socket connection - Error description for SMU failure (Error 89) improved for display in WebMotion (SMU detail information at the time of the error occurrence is displayed instead of the current SMU detail information)
4.00		<ul style="list-style-type: none"> - Support for XENAX® Xvi48V8 - Input function PQ just on rising edge - Changing speed during reference is not possible - PSR InPosition is set even a reference is cancelled - If Mode of Operation is 8 and no valid reference is done if a LINAX/ELAX is

		<p>connected, error 75 is shown</p> <ul style="list-style-type: none"> - New rotative motors in motor database, RT-62-12H60, RT-120-24H80, RT-120-30H37 - New command "EIPB" and "RESB" for EtherNet/IP Busmodule - Reading MAC-Address from Powerlink Busmodule is possible - New command "VERL" to get the version of the bootloader - New warning 46 if cyclic data are not valid - New Error 55 if the temperature HW-Signal is activated if a ELAX or LINAX without optical measurement system is connected - New SDO Objects <ul style="list-style-type: none"> o 0x5001/26 – 0x5001/30 o 0x5003/59 – 0x5003/60 o 0x5005/06 – 0x5005/11 only by XENAX® Xvi75V8 o 0x5006/00 – 0x5006/10 only by XENAX® Xvi48V8 - Objects 0x5003 and 0x5004 can generate an error code - Gantry reference can be cancelled - Correct behaviour of soft limit-checking during reference after a Jog drive - No error 89 after firmware update
3.68	K	<ul style="list-style-type: none"> - Correction Soft limit check during Reference - Statusword Bit 10 and PSR Bit 2 is set consistent
3.68	I	<ul style="list-style-type: none"> - New Output function "WARN" for warning and "INFM" for Information - Output function "INPO" In Position is supported in Puls/Dir Mode - New command "SPAD" to disable new statusword Bit 12 behave - Statusword Bit 12 is cleared when Controlword Bit 6 is false
3.68	H	<ul style="list-style-type: none"> - Correct start position set for profile drives after switching back from CANopen mode 8 to other CANopen modes. Important for example for force calibration after switching back from CANopen mode 8 to CANopen mode 0
3.68	G	<ul style="list-style-type: none"> - Correction Error Reset over Real-time-Ethernet Bus
3.68	F	<ul style="list-style-type: none"> - Frequency analysis for resonance detection implemented - Encoder plausibility check. New error 93, if encoder signals are not plausible - 3-phase motor output frequency supervision. New error 92, if 3-phase motor output frequency exceeded 600Hz - Support for rotative motors with an encoder resolution of >2'000'000 inc/revolution - Error handling during reference commanded over real time bus module improved
3.68	E	<ul style="list-style-type: none"> - Position correction functionality implemented for linear axis (functionality not supported with communication over real time bus module)
3.68	C	<ul style="list-style-type: none"> - EtherNet/IP bus module supported
3.68	B	<ul style="list-style-type: none"> - New Force processes according documentation now as well available for Profinet bus systems (several parameters added, see documentation JSC_PROFIdrive_Parameter.pdf). - TIPP function (jog mode) now as well available for Profinet bus systems. - If changing to reference mode (object 0x6060 = 6), reference starts either if bit4 in control word (0x6040) is already set at changing to reference mode, or

		<p>at the positive slope of bit4 in control word.</p> <ul style="list-style-type: none"> - I2C communication to SMU module made more robust
3.68	A	<ul style="list-style-type: none"> - New Force processes according documentation now as well available for CanOpen, EtherCAT and Powerlink bus systems (several bus module objects added, see documentation Xvi75V8_CANOpen_Ethernet_V2.5.pdf). - Bus module Objects: Limits for 0x5003:16 and 5003:46 adapted Object 0x6037 renamed in "Limit I_Force" - Power-Stage is disabled with error 77 if the real time bus is disconnected for CanOpen, EtherCAT and Powerlink bus systems. - New ASCII-Command "WD" for watchdog functionality over serial interface - Output function "REF" in gantry systems is not set until complete reference for the master and the slave is done
3.68		<ul style="list-style-type: none"> - New Force processes according documentation - Force compensation including cogging, friction and force constant - New Error Handling, divided in Information, Warning, Error with Error Buffer and corresponding PSR-Bits (Bit 0 = Error, Bit 23 = Warning, Bit 24 = Info) Additional Errors: 97 Error: Nested Warning error 42 Warning: Remote Controller, command refused 43 Warning: Remote Controller missing 44 Warning: Remote Controller Communication failure 45 AD-Offset Detection failure - New ASCII commands: TYIX Type of Index, allows now Index definition without Webmotion - Deleted ASCII commands: CLM replaced by SM Stop Motion - Adapted ASCII commands: ED Emergency Deceleration will be adapted internally if Deceleration would take longer than 1 second. FC force calibration starts from actual position ILA and ILAS commands consistent to each other. Value range of AIX new from 2..1'000'000 - Busmodule Objects: 5001:23 returns -1 if no safety motion unit is mounted. Value before was 999 5003:46/47 implemented - PSR-Bit 15 Limit I_Force reached, cleared automatically if current is less than Limit I_Force - DS402 Statusword: Warning Bit 7 implemented - Drive commands, Input Functions and SDO Drive commands will be blocked in case of active CANopen Mode of Operation - Brake Delay selectable up to 1 Second - Ramp down in case of error in Cyclic Synchronized position mode - AD-Offset measurement improved at power-up
3.64	F	<ul style="list-style-type: none"> - Startup problem on XENAX with SMU and without busmodule solved.

3.64	E	<ul style="list-style-type: none"> - Mass Load (ML) parameter new value range 0 – 100'000'000 - During rotative reference soft limit check disabled
3.64	D	<ul style="list-style-type: none"> - Safety PSR Bits are set immediately when the function is activated. - Reference drive can be stopped by the "Halt" Bit in the CANopen Controlword. - Deviation Position and Target Window can't be set to zero over PDO. - Identification for the bus module which HW-Platform is used. - New manufacture "Mode of Operation" JS_JOG for jog drives - Power-Stage is disabled with error 77 if the real time bus is disconnected. - Application download possible without error 89 if a card identifier is specified - Anti-Windup problem with enabled notch filter solved.
3.64		<ul style="list-style-type: none"> - ELAX axis supported - If softlimit is reached the PSR bit error is not set, new the warning bit are set - New PSR bit 23 Warning - If the CANopen "Mode of Operation" is set, a drive command over ASCII (WebMotion) is not possible. - New character "#xx" in the ASCII protocol for a command which cannot be executed - Event @h is generated if the gantry reference is completely done - After detected Z-Mark the rotative motor drives back to the detected Z-Mark position. - New commands "MLC", "DMLPP", "MLPN", "MLPP", "SLPN", "SLPP" - New output functions "IFML", "IFSE", "INSE", "INFO" - Command "SM" clears any time the PSR Bit "In Motion" - If error 86 occurs application data is set to default - During reference trigger output is disabled
3.62	C	<ul style="list-style-type: none"> - Problem with big IST-Positioning by cyclic positioning solved - Error 76 can be acknowledged - Command TGMSO replaced with DGMSO - Command DGMSO and PGMSO only available on a gantry slave - Command NSUP deleted - CANopen Objekt 5001:018 shows Main and Release version
3.62	B	<ul style="list-style-type: none"> - Velocity check for safety function SLS corrected
3.62	A	<ul style="list-style-type: none"> - Phasing-in algorithm optimized
3.62		<ul style="list-style-type: none"> - Functional Safety supported by optional Safety Motion Unit (SMU) <p>Safety Functions: STO, SS1, SS2, SLS</p> <p>Safety Standards : SIL 2, Cat 3, PLd</p> <p>New Process Status Register Bits :</p> <p>STO_PRIMED_HIT BIT(16),</p> <p>SS1_PRIMED_HIT BIT(17),</p> <p>SS2_PRIMED BIT(18),</p> <p>SS2_HIT BIT(19),</p> <p>SLS_PRIMED BIT(20),</p> <p>SLS_SPEED_HIT BIT(21),</p> <p>SLS_POSITION_HIT BIT(22),</p>

		<ul style="list-style-type: none"> - Speed Override affects Jog drive instantly - New Drive IForce commands DIFP, DIFN, CLM. If IFMX is reached, error 30 is shown and PSR Bit 15 will be set. Error 50 is suppressed in this case. - I_FORCE_MAX_LIMIT on Bit 15 in process status register PSR - phasing-in algorithm force optimized - Gantry referencing with fixed master slave offset (optional)
3.60	B	Einphasung für Lxc44F08 verbessert Geschwindigkeitsüberwachung bei Gantry Mode korrigiert
3.60	A	Phase-Offset des elektrischen Winkels wird auch für den Startwinkel bei der Einphasung berücksichtigt.
3.60		<p>Gantry Synchronbetrieb auch über Busmodul Profile Position Mode möglich.</p> <p>Regelung des id-Stroms wird automatisch ein/ausgeschaltet.</p> <p>Neue Prozess-Statusregister Bits:</p> <ul style="list-style-type: none"> • BIT 5 IN_Force • BIT 6 IN_SECTOR • BIT 7 FORCE_IN_SECTOR • BIT 19 I_FORCE_MAX_LIMIT <p>Deviation Position Wertebereich neu von 1..1'000'000.</p> <p>Neue ASCII Befehle IFMX, IFPK, SIFS, SIFE, IFL, IFH, FC, FCT</p> <p>Falls der geschätzte elektrische Winkel mehr als 40° vom gerechneten abweicht, wird die Referenz mit Fehler 74 abgebrochen.</p> <p>Checksummenprüfung und neuer Fehler 79 für die Force Calibration Tabelle hinzugefügt.</p> <p>Neuer Fehler 75 falls eine Fahrt bei einem LINAX gestartet werden soll der nicht Referenziert ist.</p> <p>Neuer Fehler 72 falls über Cyclic Synchronous Position Mode eine grössere Geschwindigkeit als 9'000'000 inc/s gefahren werden soll.</p> <p>Neue Inputfunktion Speed Override „OVRD“</p> <p>Outputfunktionen werden immer gesetzt auch bei anliegendem Emergency Exit.</p>

		<p>Motion Recorder mit Position/IForceActual und Position/Regelabweichung erweitert.</p> <p>Beim Aktivieren der Events (EVT=1) wird @S9 gesendet falls ein Error ansteht.</p>
3.58	F	<p>Maximale Sollstromänderung zwischen zwei Reglerzyklen geändert. Ansonsten passiert ein Overflow, bei dem der Ist-Strom in Anschlag geht -> Fehler 70</p>
3.58	E	<p>Db-Eintrag Parameter 4 (ENC) beim Lxs160F60 optisch 100nm korrigiert</p>
3.58	D	<p>Nach 3 Sekunden durchgehend aktiver Ballastschaltung wird Fehler 62 (Ballastschaltung zu lange aktiv) gesetzt.</p> <p>Es findet eine Retriggerung des Timeouts statt, wenn die Ballastschaltung wieder deaktiviert wird.</p> <p>Die Endstufe bleibt bis zum Fehler 62 aktiv, danach wird abgeschaltet.</p> <p>Fehler 61 (Ueberspannung) wird gesetzt, wenn bei ausgeschalteter Endstufe die Motor-Zwischenkreisspannung 80V überschreitet.</p> <p>Ein bereits angezeigter Fehler 62 (Ballastfehler) wird nicht überschrieben.</p> <p>Das Gesamt-Timeout für die Referenzierung wird motorspezifisch berechnet.</p>
3.58	C	<p>Fehler 67 (Distanzfehler Z-Marken) wird angezeigt, war vorher immer Fehler 66 (Referenz)</p> <p>Gesamt Timeout für Referenzierung wird erst nach PWR gestartet. Erhöht auf 24s</p>
3.58	B	<p>Timeout für Referenzierung von 10s auf 14s vergrößert</p>
3.58	A	<p>Neuer Befehl NSUP „Noise Suppression“</p>
3.58		<p>Unterstützung für PROFINET Busmodule</p> <p>Limit reached Bit im CANopen Statusword wird gesetzt</p> <p>Voltage enabled Bit im CANopen Statusword wird bei vorhandener Motorspeisung gesetzt.</p> <p>Geräusche bei kleinen Beschleunigungen im Cyclic Sync Position Mode reduziert</p> <p>Offsetbehandlung bei Gantry korrigiert</p> <p>Gantry System ohne übergeordnete Steuerung möglich</p> <p>Neuer Fehler 72 falls ein Busmodul gesteckt ist und Synchro-Start Kommandos ausgeführt werden.</p>

		<p>Neue SDO Objekte für alle ASCI Befehle</p> <p>Schnelle Positionserfassung über Input 12 möglich</p> <p>Neue ASCI Befehle CP12 und TCPB</p> <p>Neuer ASCI Befehl TES</p> <p>Override Faktor wird remanent gespeichert</p> <p>Unterstützung für Motor Lxs 1600F60</p> <p>Einphasung von Fremdlinearmotoren ohne Hall Sensoren ist möglich</p>
3.56		<p>Anpassungen an neues WebMotion V5.00</p> <p>Kommando TDOL (Tell Data Online) ergänzt</p> <p>Kommandoliste CMDS bereinigt</p> <p>Die Startposition bei Repeat Reverse und Repeat Way ist neu db_Position damit Fehler 40 vermieden wird.</p> <p>Setup der Hardware in je einen Pre- und Post-Teil, bezogen auf das Section-Init, aufgeteilt</p> <p>Anpassung der Begrenzung für Beschleunigung, Jerk und Geschwindigkeit in set_pars()</p> <p>Wertebereich Masse Last erhöht auf 0 .. 10'000'000</p> <p>Wertebereich RPH Widerstand Phase-Phase erhöht auf 0..100'000</p> <p>Beim Aufstart nur positive Werte von CardIdentifier in Display anzeigen</p> <p>DPRAM Objekte werden beim Aufstart initialisiert.</p> <p>Neue Befehle IS (I Stop) entspricht IN, IR (I Run) entspricht IP. IN und IP bleiben erhalten</p>
3.54	A	<p>Stromlimite während Beschleunigungs- und Verzögerungsphase immer Ipeak</p> <p>ProfileStop mit Endpunkt im Zielfenster korrigiert</p>
3.54		<p>Unterstützt Xenax Hardware R3.0</p> <p>P402 Statusword Update abgesichert</p>

		<p>Homing Rotative: Nach Home-Sensor wird gewartet, bis Motor still steht. Danach Fahrt auf Z-Marke.</p> <p>I2T-Ueberwachung bei rotativen Motoren</p> <p>Neue Gantry Initialisierung, jede Achse führt eigene Referenzfahrt durch</p> <p>Allgemeine Positions-Overflow Behandlung bei $+(2^{31}-1)$ bzw. -2^{31}. Gilt für alle internen Trajektoriengeneratoren sowie Positionierung durch externe Steuerung.</p> <p>Trajektoriengeneratoren (inklusive EtherCAT) mit Fix Point Arithmetik. Numerische Probleme bei sehr hohen Positionswerten verhindert.</p> <p>DS-402 Status not ready to switch on korrigiert</p> <p>DS-402 Bei Rücksetzung von Enable Operation (Controlword Bit 3) während einer Fahrt wird InMotion Status zurückgesetzt.</p> <p>DS-402 Fehlerbit in Statusword wird auch bei Softlimiten und Endschaltern gesetzt. Error Bit in Prozess-Status Register und Statusword abgeglichen.</p> <p>DS-402 Objekt 0x607A (Target Position) in Profile Position Mode ohne Test der Softlimite. Diese wird erst beim Start der Fahrt geprüft. Relative Positionsvorgaben waren in bestimmten Fällen nicht möglich.</p> <p>DS-402 Profile Position Mode: New Setpoint während aktiver Fahrt korrigiert.</p> <p>DS-402 Statusword Bit 10 (Target reached) wird erst innerhalb des Zielfensters (DTP) gesetzt. Ebenso wurden folgende Funktionen korrigiert: Output Functions InPosition / InMotion, ServoStatus, Event @S2/@S1</p> <p>Trajektorienaufzeichnung mit Compilerswitch: Zukünftige Firmware Versionen können optional mit Trajektorienaufzeichnung kompiliert und zu Testzwecken bereitgestellt werden. Hinweis im Versions-String.</p> <p>Erkennung Busmodul beim Aufstart erhöht auf zwei Sekunden.</p> <p>Eine neue Programmzeile wird erst gestartet, wenn ein vorhergehender Index abgeschlossen ist.</p> <p>Prozess-Statusregister Bit 1 (Referenz) und Output Funktion REF werden gelöscht bei PW, PWR und Fehler 54.</p> <p>Speed Override Jog: Beim Start der Jog-Funktion wird die gesetzte Geschwindigkeit mit Speed Override übersteuert.</p>
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		<p>Funktionalität rotative DC-Motoren korrigiert.</p> <p>Wertebereich MAMO vergrößert für hohe Rotor-Massenträgheitsmomente.</p> <p>Neues Kommando RSTO (Reference Limit Stop) zur Referenzierung des Linax Motors auf eine mechanische Begrenzung mit definiertem Maximalstrom (Kraft).</p>
3.52	E	Fehler beim Ausschalten der Endstufe, wenn bereits ein Error ansteht behoben.
3.52	D	<p>Motorbremse wird immer vor dem Ausschalten der Endstufe eingeschaltet.</p> <p>Einphasung für rotative Motoren erfolgt neu in zwei Stufen.</p> <p>CPOS, SO und CO Eingangsfunktionen werden immer bearbeitet.</p> <p>PWC setzt im Pick & Place Mode die Fehler auf den Slaves zurück.</p> <p>Neues Kommando OVRD für „Override“ für Indexe und Profile.</p> <p>Anpassungen beim Single-Step Betrieb bei der Programmausführung.</p>
3.52	C	Strom und soft limit right, abhängig welcher Motor angeschlossen ist, korrekt setzen
3.52	A	Betriebsart PulsDir überarbeitet
3.52		<p>Neue Befehle FQF1, BWF1 für Filter.</p> <p>Notch Filter implementiert</p> <p>Aufruf von Trj_Init() beim Object Handler 2007.</p> <p>Sollwertfilter bei Cyclic Mode überbrückt, Filterberechnung wird nicht ausgeführt.</p> <p>Die Regelabweichung wird neu nach dem Sollwertfilter berechnet.</p> <p>Motion Recorder auch bei Cyclic Mode aktiviert.</p> <p>Neue Cyclic_Sync_Pos_Condition Methode um die Störungen bei EtherCAT Synchronisationsprobleme zu unterdrücken.</p> <p>Unterscheidung 1µm/100nm beim Speed für crd/crda.</p> <p>Setzen von Default Werten Inom und Ipeak beim reset für lineare und rotative Motoren</p>
3.50		Unterstützung für Quick-Stop implementiert.

		<p>HORM Fehler wird im P402 Statusword zurückgemeldet.</p> <p>Motorparameter für F04 angepasst.</p> <p>Verhalten des "In-Motion" Prozessstatus-Register Bits korrigiert (bei Eingabe des SM Kommandos).</p> <p>Homing von rotativen Motoren geändert, so dass wenn der Endschalter (oder die Softlimite) angesprochen hat der Motor automatisch in die andere Richtung dreht.</p> <p>Neue Motordaten übernommen; Unterstützung für Nenn- und Spitzenstrom für rot. Motoren in Datenbank implementiert.</p> <p>Problem beim Aufruf des Bootloaders behoben, wenn kein Busmodul vorhanden ist.</p> <p>Neues Kommando REF implementiert.</p> <p>Einphasung bei rotativen Motoren geändert (bewegungslos) PWRT0 = Einphasung mit Hallgeber, PWRT1 = Einphasung ohne Hallgeber bei rotativen Motoren (Methode SUPSI).</p> <p>Änderungen von tau gemäss SUPSI.</p> <p>Problem bei Gantry-HORM behoben (bei gleicher Motorenausrichtung).</p> <p>Problem mit einer Wartezeit 0 bei WT Programmbefehl korrigiert.</p> <p>Problem beim Init der Inputfunktion behoben (Low-Level aktive Eingänge benötigten zuerst einen Wechsel).</p> <p>Fehler 66 behoben bei REF wenn ccm1 aktiv.</p> <p>Firmware kann nicht mehr blockieren wenn über SDO (CanOpen) ein Regelparameter geändert wird.</p> <p>Endstufe einschalten beim CRDA Befehl geändert.</p> <p>Erfassen der Eingangsspannung geändert.</p>
3.48	K	<p>Problem mit LL- und LR-Inputfunctions behoben</p> <p>Handler für Objekt 0x6505 implementiert</p>
3.48	J	Korrekturen Einphasung bei 100nm
3.48	I	<p>HORM und HOME blockiert wenn EE oder EE1 aktiv</p> <p>Funktion p402ModeHomingCmdHandler() liefert immer RET_OK</p>
3.48	H	In HomingRotative() die Variablen db_Position_Ist und db_PosAts exklusiv auf 0 setzen um Fehler 50 zu verhindern

3.48	G	Bisherige rotative Einphasung default aktiv.
3.48	E	Einphasung rotativ von SUPSI verbessert. Überflüssige Pol-Ini Funktionen für lineare Motoren entfernt
3.48	D	I2C Devices werden in zwei Phasen gescannt, zuerst interne, danach externe Devices. Wenn eine Card-ID <= 4 eingestellt ist, wird der Bootvorgang verzögert und zwar in umgekehrter Reihenfolge der ID, d.h. ID 0 startet zuletzt (Pick & Place Startup-Problem). Taskstacks für Idle- und Soft-Limits-Task vergrößert
3.48	C	Neue Object-Handler für die Objekte 0x6064 und 0x6078 beim SDO Zugriff. Diese Handler geben nur den Wert RET_OK zurück, da diese Objekte immer im AD Interrupt beschrieben werden.
3.48	B	Bisherige Einphasung bei rotativen Motoren per default immer aktiv
3.48	A	Vorsteuerung P/D-Betriebsart ausgeschaltet Einphasung (vertikal) korrigiert Maximalstrom Einphasung bei F60 Motoren auf 6A reduziert. Motor Lxs1200F60 erfasst Startup-Key ID als Card-ID setzen, wenn die beiden IDs unterschiedlich sind
3.48		Freigabeversion erstellt
3.47		Firmwareupdate und Device-Driver für SMU implementiert Bewegungslose Einphasung rotative Motoren. Suchen des Hallüberganges und Berechnung des elektrischen Winkels integriert. Separater Stack für Busmodul-Interrupt entfernt (EtherCAT Fehler E korrigiert) Interrupthandling für AD-Interrupt vereinfacht P402 Statusword-Update bei der Einphasung wird nur noch in der P402 State-Event-Machine durchgeführt. Statusword wird sofort nachgeführt. Handling für "Variables Objekt" implementiert (benutzt Objekte 0x5003:2 und 0x5000)
3.46	A	Applikationsdownload bei eingestecktem Startup-Key korrigiert.
3.46		Freigabeversion erstellt
3.45		Einphasung mit Algorithmus von SUPSI (PolIniLinear) Timeout-Fehler (88) bei I2C Device-Initfunktionen anzeigen Kommando CRD als Programm-Funktion implementiert, damit dieses via EtherCAT aufgerufen werden kann Neues Bit im Prozess-Status Register: Bit 14 -> "Cogging Reference Drive" aktiv Wegen einer Race-Condition wird der Fehler 71 neu verzögert ausgelöst

		<p>Korrekturen von SUPSI bezüglich bewegungsloser Einphasung übernommen</p> <p>Gantry-Init Problem mit TRIO Steuerung behoben (ausgelöst via Object 0x5000)</p> <p>Gantry-Init Problem bei gleich gerichteter Motormontage behoben</p> <p>Softlimit-Fehler während Gantry-Init unterdrücken</p>
3.44	P	Master-Slave Betrieb: "EoAFSem" Semaphore wieder aktiviert, damit der Zugriff auf die End-Of-Action Funktion in jedem Fall ohne Probleme möglich ist. Fehler 82 wird verzögert gesetzt.
3.44	M	EtherCAT Anzeige „E“ bei Controlword Sequenz 6,7,31 im Homing Mode. Task Delay in HORM korrigiert.
3.44	L	<p>Neues Kommando PHDD implementiert</p> <p>Verhalten der "In-Motion" und "In-Position" Prozessstatus-Register Bits korrigiert</p> <p>Limits beim DTP Kommando angepasst</p>
3.44	K	Homing rotativ korrigiert, via EtherCAT wurde nur Z-Marke angefahren.
3.44	J	Motor Lxs320F60 ergänzt
3.44	I	EE bei EtherCAT korrigiert
3.44	H	RES Default Einstellungen angepasst: FFDY (rotativ) = 10'000, POL (rotativ) = 1, ENC (rotativ) = 0, DTP = 100, DP = 2000, SCRVS = 20, IN = 800, IP = 1800
3.44	G	<p>Fehler 86 (Wrong Application Checksum) und "E" lösen automatisch ein Reset der Firmware aus. Kontaktaufnahme mit WebMotion anschliessend wieder möglich.</p> <p>Gespiegelte Kommandos: BWC (Bandwidth Current) = WFF, BWP (Bandwidth Position) = WSF</p> <p>Motor Lxs1000F60 ergänzt</p>
3.44	F	Variablen eth_amax und eth_vmax als Konstanten definiert und Initwerte angepasst
3.44	E	HORM, Homing oder PW/PWC, welche nicht über die Objekte 0x6040 (Controlword) bzw. 0x6060 (Mode of operation) ausgelöst werden beeinflussen das Objekt 0x6041 (Statusword) nicht mehr.
3.44	D	Update des P402 Statuswords nur zulassen wenn HORM oder HO via Busmodule durchgeführt wird. "Buzzing" Problem MC464 behoben
3.44	C	Korrektur für Softlimits für rotative Motoren
3.44	B	Homing für lineare Motoren implementiert
3.44	A	Taskstack für Busmodul-Task vergrößert

3.44		Freigabeversion erstellt
3.43		Anpassungen von Port für CANOpen übernommen Neues Kommando CAB implementiert Kommando IXP in PRF umbenannt EtherCAT: Neue Objects hinzugefügt Eingangsfunktionen LL und LR ("Limit Switches") implementiert EE und EE1 Support modifiziert und verhalten an alten Regler angepasst Eingangsfunktionen SI und SIC implementiert Process-Status Register um weitere Statusinformationen erweitert Profilfunktionalität
3.42	A	Output Funktion ERR korrigiert im Puls/Richtungsbetrieb
3.42		DC-Motor implementiert Bei G, GW, JP, JN, IX und IXP wenn nötig Endstufe einschalten sofern kein Fehler Bei diesem Vorgang warten bis eine eventuelle Pol-Initialisierung abgeschlossen ist Vorbereitung zum setzen der CAN Baudrate für CANOpen Freigabeversion erstellt