



## JXM-IO-E30

Version update from V2.28.0.00 to V2.29.0.00

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Changes to 2.29.0.00

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# 1 Changes to 2.29.0.00

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**Overview**  
**Version 2.29.0.00**

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
PDO: Fixed unexpected behaviour when mapping >64 single bits.			✓
PDO: JXM-IO-EX30: Changing INHIBIT_TIME + EVENT_TIME now has effect.			✓
0x2108...0x210B: TIMEOUT_TIME now allows values up to U32_MAX.			✓
Fixed warnings from static code analysis.			✓

## 2 Changes to 2.28.0.00

### Overview

#### Version 2.28.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Extended from 14 to 28 hw filters. (JXM-IO-EX30 now supports Heartbeat-monitoring.)		✓	
CAN now successfully initializes while CAN-Bus has errors.			✓
0x2100...0x2119 : DS401 : TPDO1 : I_DIGITAL : shows correct values again			✓
0x2108...0x210B : TIMEOUT_TIME, GATE_TIME and RESOLUTION no longer writable while interface INACTIVE is assigned.			✓
0x2108...0x210B : SENSOR_SUPPLY : is now supported by interface ENC_PNP.			✓
0x210C...0x210F : CC_UNLOCK : when measurements deviate >30mA (SET) OR <=30mA (RESET) after 10s.			✓
0x210C...0x2119 : OPEN_CIRCUIT_DETECTION : Default 1 -> 0			✓
0x210C...0x2119 : OVER_CURRENT : will now be set and sent after OVERCURRENT_TIME has been exceeded.			✓
0x210C...0x2119 : O_DIGITAL : Now 0 after changing NMT state : OP -> PreOp -> OP			✓
0x4556 : sub1 : Crc no longer 0 after CONFIG load and reset. (0x1011 sub1 <-- 0x64616F6C)			✓
0x1009 : read resulted in STX-Program blocking on control.			✓

### 3 Changes to 2.27.0.00

#### Overview Version 2.27.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Assigning values with incorrect data type will now be rejected by the OS. This change affects all objects.	✓		
SDO abort codes have been revised			✓
0x2000 : sub0 returns last subindex sub103			✓
0x4556 : sub3 (Baud rate) data type changed from u16 to u8			✓
0x2100...0x2107 : sub63 (MIN_DEVIATION) auf 10 erhöht.	✓		
0x210C...0x2119 : sub65 (OPEN_CIRCUIT_DETECTION) data type changed from u8 to u16			✓
0x2108...0x210B : sub59, sub62, sub68 (TIMEOUT_TIME, RESOLUTION & GATE_TIME) now send SDO abort DATATRANSFERSTORESTAT on forbidden access. (f.ex. when configured as digital input)	✓		
0x210C...0x2115 : sub30, sub31 (O_DIGITAL, O_DUTY_CYCLE) now send SDO abort DATATRANSFERSTORESTAT on forbidden access. (f.ex. when configured as PWM output)	✓		
0x210C...0x210F : sub32 (O_HCURRENT) now send SDO abort DATATRANSFERSTORESTAT on forbidden access. (f.ex. when configured as digital input)	✓		
0x210C...0x210F : I_DUTY_CYCLE removed, since it's not supported by hardware.			✓
0x1010...0x1011 : SAVE/LOAD now returns 1 on default.	✓		
0x6411...0x6412 : sub indexes 1...10 may not be set during PreOP. The returned code 0x00000001 was no valid SDO abort code.			✓
Heartbeat monitoring behaviour was improved (Timing, error handling...)	✓		
Removed objects: 0x100B, 0x1002, 0x1029, 0x1201, 0x1202, 0x1203	✓		
0x2108...0x210B : rotary encoder : I_DIRECTION will now reach 0 (stopped) after the full TIMEOUT_TIME has passed.			✓

## 4 Changes to 2.23.0.00

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### Overview

#### Version 2.23.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Fix: Supply voltage fluctuations could indicate repeated partial resets. As a result the I2C bus malfunctioned, which also affected EEPROM communication. Error pattern: The node is reacting normally, but the LED matrix won't light up.			✓



## 5 Changes to 2.22.0.00

### Overview Version 2.22.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Fix: A downgrade to OS versions lesser than 2.17.0.00 is now possible again.			✓
Fix: JXM-IO-EX30: LED-Matrix: Status LEDs of AI ports, when configured as AI_VOLTAGE, now are switched on correctly.			✓
Fix: JXM-IO-EX30: LED-Matrix: Status LEDs of AI ports, when configured as AI_CURRENT, now are reset after an OVERCURRENT event.			✓
Fix: JXM-IO-EX30: DS401: Reading of sub indexes of object 0x6411, is now successful.			✓
Fix: JXM-IO-EX30: DS401: When customizing the default configuration of RPDO1, writing O_DIGITAL in the target output is now successful.			✓
Fix: JXM-IO-EX30: DS401: According to default configuration, TPDO1 now transmits I_DIGITAL values of DI ports.			✓
New: JXM-IO-EX30: DS401: PDOs now are automatically active when going OPERATIONAL.	✓		
Fix: PDO Subindex 2 now returns the configured transmit type CANOPEN_ASYNPDO (0xFE).			✓

## 6 Changes to 2.20.0.00

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### Overview

#### Version 2.20.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
The LED matrix now also works on a JXM-IO-EX30.			✓
JXM-IO-EX30 extended by DS401 functionality.		✓	
Fix: TPDO now send 0 when calibration and scaling lead to negative values.			✓

## 7 Changes to 2.17.0.00

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### Overview

#### Version 2.17.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
The green LED now also works on a JXM-IO-EX30.			✓

## 8 Changes to 2.16.0.00

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**Overview Version**  
**2.16.0.00**

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Fix direction of I_COUNTER and I_DIRECTION when digital inputs are configured as rotary encoder and RESOLUTION is set to 2.			✓
Fix I_PERIODIC_TIME previously was updated after GATE_TIME. Now the calculations triggered, when a flank is counted during frequency measuring.			✓
Fix the maximum value of DITHER_FREQUENCY to 8000.			✓
Fix the update time of TPDO4. Before, when four TPDO were configured, TPDO4 experienced delays up to 2s.			✓

## 9 Changes to 2.15.0.00

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### Overview

#### Version 2.15.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
Fix broken OS update when Node-ID is changed by Config pin and or system parameter.			✓
Fix CAN settings if corrupted in EEPROM.			✓
Fix minimal accepted value of GATE_TIME from 1000ms to 10ms.			✓

## 10 Changes to 2.13.0.00

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### Overview

#### Version 2.13.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
The Node-ID of variants JXM-IO-EX30 and JXM-IO-EW30 does no longer depend on whether VBAT_PWR is connected.			✓

## 11 Changes to 2.12.0.00

### Overview

#### Version 2.12.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
IDX 0x2108...0x210B: fix immediate emergency message when configuring DI as frequency input. Now emergency timeout message will only be sent after the timeout_time has been exceeded. Also, change maximum timeout_time from 1000ms to 2^16ms.			✓
IDX 0x2108...0x210B: Use of AB track sensor. (requires the combination of two ports using one Interface)  New subindexes: I_DIRECTION (22), ENC_PNP (26) and RESOLUTION (68). Uses subindexes: I_COUNTER (17) and TIMEOUT_TIME (59).  Subindex 26: Interface. Subindex 17: Input value tick count (overflow at 0 -1 and UINT32_MAX +1). Subindex 22: Input value direction (0=stop, 1=forward, 2=backward). Subindex 68: Parameter resolution in ppr (0=1/4, 1=1/2, 2=full) Subindex 59: Parameter period after which the direction signals stop.	✓		
IDX 1016: Heartbeat monitoring may trigger switch to NMT_STOPPED when timeout occurred.  Subindex 0 number of monitorable Node-IDs. (RO) Subindex 1...4 set the Node-ID to be monitored as well as the timeout time.	✓		
The Node-ID of variants JXM-IO-EX30 and JXM-IO-EW30 does no longer depend on whether or not VBAT_PWR is connected.			✓





## 12 Changes to 2.11.0.00

### Overview Version 2.11.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
IDX 0x210C...0x2119: Additional feature. When set to HSxD, the functionality can be read back in I_DIGITAL.		✓	
IDX 0x210C...0x2119: change default of OPENCIRCUIT_DETECTION from 2=PERMANENT to 1=STARTUP. Open circuit will now only be detected during startup.	✓		
IDX 0x210C...0x2115: Fixed PWM frequency from minimal 100Hz to minimal 5 Hz.			✓
IDX 0x2100...0x2107: fix faulty check when voltage EMCY-messages are re/set.			✓
IDX all: added internal Watchdog to reboot system in case main thread execution is halted/blocked.	✓		
Fixed bug in TPDOs where the configured INHIBIT_TIME for certain values was additional 10ms longer.			✓
IDX 0x2000, SubIDX 10 to 12: Added 100mV Hysteresis. When SPWR is monitored by TPDO this prevents the TPDO from constantly triggering.	✓		
Pdated CAN driver	✓		



## 13 Changes to 2.09.0.00

**Overview**  
**Version 2.09.0.00**

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
IDX 0x210C...0x2119: A bug when resetting set points of outputs is now fixed. When changing to state OPERATIONAL, set points are now reset to 0 in all cases.			✓
IDX 0x210C...0x2119: MIN_CURRENT (SubIndex 64, uint16, r/w) and OpenLoadDetection (automatically executed at system start) can now be turned off. This is controlled via the new SubIndex 65, OPENCIRCUIT_DETECTION. OPENCIRCUIT_DETECTION accepts the values 0=all off, 1=OpenLoadDetection is executed once during startup, 2=OpenLoadDetection and MIN_CURRENT are both active.	✓	✓	

## 14 Changes to 2.07.0.00

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### Overview

#### Version 2.07.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
IDX 0x210C...0x2119: Set point values for Output ports (SubIndexe 30, 31 und 32, uint8, uint16 und uint16, r/w) now can only be set in state OPERATIONAL. In PreOPERATIONAL and when entering state OPERATIONAL set point values will be set to 0 always. This way, when entering state OPERATIONAL, sudden, uncontrolled actions of connected actors are prevented.	✓		

## 15 Changes to 2.06.0.00

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### Overview

#### Version 2.06.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
IDX 0x210C...0x2119: Output ports provide a cable break detection (SubIndex 64, uint16, r/w). Minimal current on default is 200mA for HS3CC and HS3C, else it's 500mA. When falling below the minimal current, an EMCY-message for the respective port is sent. Also the port state will read OPEN_CIRCUIT. Only available in state OPERATIONAL.	✓		
IDX 0x2000: Reduction of bus load, when diag indices 1 and/or 12 are being included in an TPDO.		✓	

## 16 Changes to 2.04.0.00

### Overview Version 2.04.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
If an output is configured to DI_NPN or DI_PNP, a pull up resistor is switched on or off for the corresponding group. Now this only depends on the latest configured interface.			✓
IDX 0x1010: Changes of the HeartbeatTime will now be saved.		✓	
IDX 0x6000: Display of digital values was broken in revision 2.03.0.00. This has been fixed.			✓
IDX 0x4556: When saving unchanged system parameter, the CRC was altered. This has been fixed.			✓
CanOpen stack: has been enhanced. The DLC of PDOs now no more exceeds the number of bytes mapped.		✓	
IDX 0x210C...0x210F: If Setpoint O_HCURRENT was set to 0, the output didn't reach 0A. Instead the output stayed within the tolerance level. This has been fixed.			✓
Output ports are now only active in state OPERATIONAL.	✓		
Analogue input values now have noise cancelling. The default value is 1, meaning, no noise cancellation. You can configure this in subindex 63.	✓		

# 17 Changes to 2.03.0.00

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**Overview**  
**Version 2.03.0.00**

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
fixed: only on hardware revision 01.00 devices: current regulation function on PWMi_H3 was not functional. This software version does not affect devices with hardware revision 02.00 or above			✓

## 18 Changes to 2.02.0.00

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### Overview

#### Version 2.02.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
fixed: interrupting OS update resulted in an unusable device, that could only be repaired by the manufacturer.			✓



## 19 Changes to 2.00.0.00

### Overview Version 2.00.0.00

The following table gives an overview of newly added or enhanced features and fixed software bugs:

Description	New	Enhanced	Fixed
implemented: AI_x analog input may be used as digital input by assigning interface type DI_PNP	✓		
implemented: Save / restore of configuration data using IDX 0x1010 / 0x1011	✓		
implemented: DI_P_1 useable as additional NPN input by assigning interface type DI_PNP (requires HW Rev. 02.00) Interface type FI_NPN may now be assigned too	✓		
implemented: reading of VBAT_ECU using diag object 0x2000/13 fixed: Node-ID now is calculated based on VBAT_ECU instead of VBAT_PWR (requires HW Rev. 02.00)	✓		✓
implemented: bitwise PDO mapping	✓		
fixed: Firmware updates may now be done using other baud rates than 250Kbit			✓
fixed: erroneous activation of PWMi_HS_3 after reset in firmware as well as in bootloader			✓
fixed: reading of status of SENSOR_SUPPLY was not implemented for outputs configured as digital inputs (DI_PNP)			✓
implemented: changed to newer version of CanOpenStack, improves over all stability	✓		
implemented: configurable Base/Node-ID in IDX 0x4556 ( System parameter )	✓		
improved speed of current control by changes in default values			✓
implemented: P parameter of current control now independent of battery voltage	✓		
fixed: freeze (buffer overflow) due to high load of PDO-TX			✓
fixed: reading of SPWR_3 voltage returned SPWR_2 voltage in diag object ( IDX 0x02000 )			✓
fixed: parameter FILTER_DEEP didn't work for all outputs of DO_H3 and PWM_H7			✓
implemented: generation of errors OVERCURRENT and OVERVOLTAGE in analog inputs AI			✓
implemented: full functionality in regard of operating manual Version 1.20.2 ( issued 2018-10-09 )			
fixed: diag objects may now be mapped and transmitted via PDO			✓

Jetter AG  
Graeterstrasse 2  
71642 Ludwigsburg | Germany

Phone +49 7141 2550-0  
Fax +49 7141 2550-425  
[info@jetter.de](mailto:info@jetter.de)  
[www.jetter.de](http://www.jetter.de)

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