BUCHER automation

User Manual



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JX3-BN-EC

EtherCAT® Bus Node

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Translation of the german original User Manual

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1 Introduction

1.1 Information on this document

This document forms an integral part of the product and must be read and understood prior to using it. It contains important and safety-related information for the proper use of the product as intended.

Target Groups

This document is intended for specialists with appropriate qualifications.
Only competent and trained personnel are allowed to put this device into operation.
During the whole product life cycle, safe handling and operation of the device must be ensured. In the case of missing or inadequate technical knowledge or knowledge of this document any liability is excluded.

Availability of Information

Make sure this document is kept at the ready in the vicinity of the product throughout its service life.
For information on new revisions of this document, visit the download area on our website. This document is not subject to any updating service.

Start | Bucher Automation - We automate your success.

For further information refer to the following information products:

– Online help for the JetSym software
  Functions of software products with application examples
– Application-oriented manuals
  Product-independent documentation
– Version updates
  Information about changes to the software products and operating system of your device

ⓘ Info

EtherCAT®

EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

1.2 Typographical conventions

This manual uses different typographical effects to support you in finding and classifying information. Below, there is an example of a step-by-step instruction:

✓ This symbol indicates requirements which have to be met before executing the following action.

► This sign or a numbering at the beginning of a paragraph marks an action instruction that must be executed by the user. Execute the instructions one after the other.

⇨ The target after a list of instructions indicates reactions to, or results of these actions.

ⓘ Info

Further information and practical tips

In the info box you will find helpful information and practical tips about your product.

2 Safety

2.1 General Information

The product corresponds to the current state of science and technology when placed on the market.
In addition to this user manual, the laws, regulations and directives of the country of operation or the EU apply to the operation of the product. The operator is responsible for compliance with the relevant accident prevention regulations and generally recognized safety rules.

2.2 Purpose

2.2.1 Intended use

This device is a gateway module between an EtherCAT® master and JX3 IO modules. It is used to set up distributed I/O stations.

Operate the device only in accordance with the intended conditions of use and within the limits set forth in the technical specifications.
Intended use of the product includes its operation in accordance with this manual.

SELV

The operating voltage of this device is classified as Safety Extra Low Voltage and is, therefore, not subject to the EU Low Voltage Directive. The device may only be operated from a SELV source.

2.2.2 Usage other than intended

This device must not be used in technical systems which to a high degree have to be fail-safe.

2.3 Warnings used in this document

⚠ DANGER



High risk

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING



Medium risk

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION



Low risk

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE



Material damage

Indicates a situation which, if not avoided, could result in malfunctions or material damage.

3 Product description

The JX3-BN-EC is a bus node that connects JX3 IO modules with an EtherCAT® master. It is used to set up distributed I/O stations.

3.1 Design

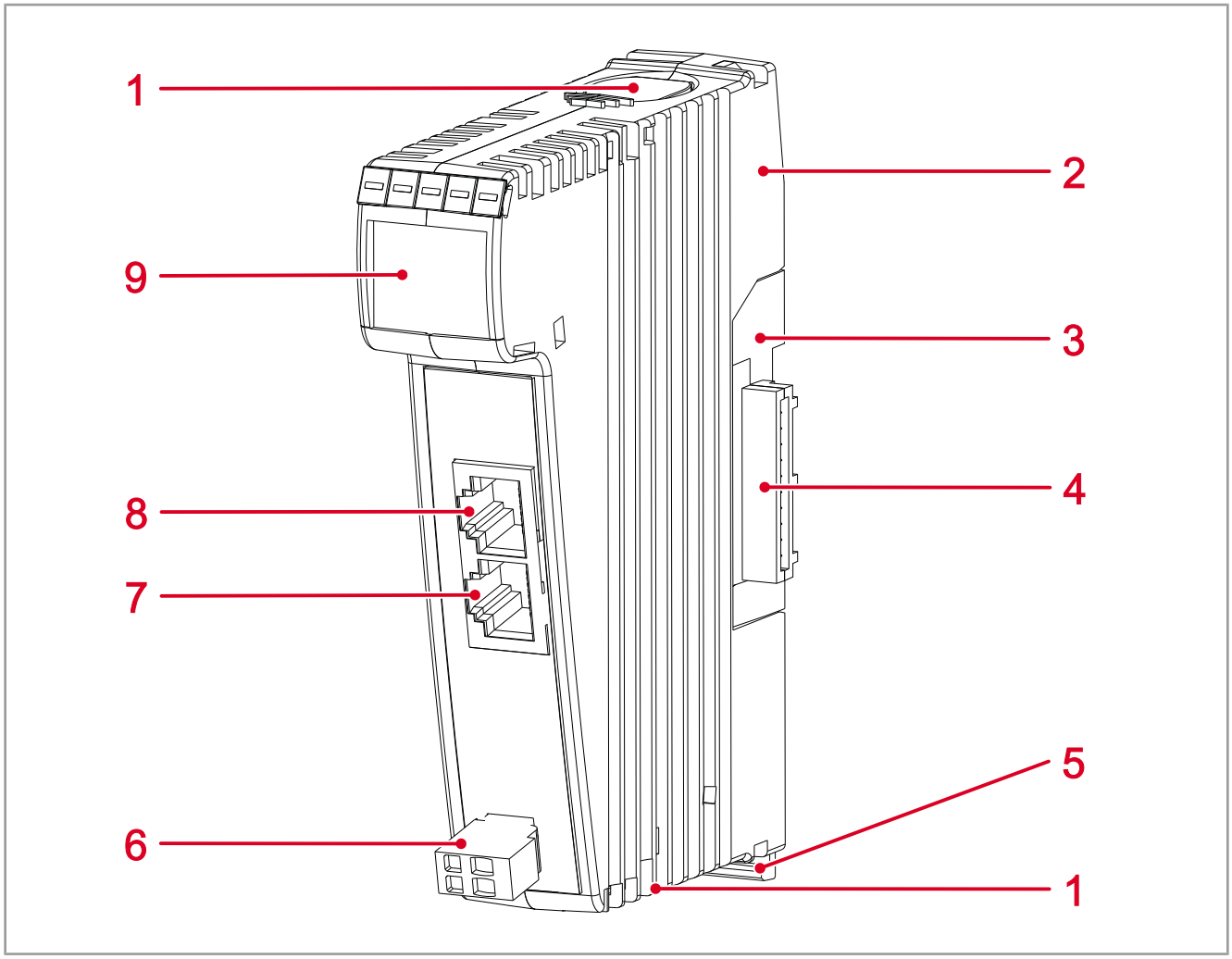


Fig. 1: Design

1	Latch
2	Housing
3	Backplane module
4	X119 connector: Interface to JX3 IO modules
5	DIN rail release latch
6	Terminal X10: Power supply
7	Port X15: EtherCAT® OUT
8	Port X14: EtherCAT® IN
9	Status indication

3.2 Features

- Automatic addressing
- CoE protocol (CAN application protocol over EtherCAT®)
- Compliant with EtherCAT® Modular Device Profile (MDP)
- Synchronous communication via Distributed Clocks (DC Sync)
- Up to 32 expansion modules can be connected
- LEDs indicate the state of communication and power supply

3.3 Status indication

Status indication LEDs indicate the communication status of the device as well as the status of the power supply.

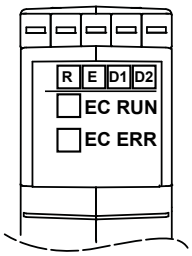


Fig. 2: Status indication

LEDs	Description
R	Logic circuit supply
E	Communication with the controller
D1	Hardware errors
D2	Operating system
EC RUN	EtherCAT® operating state
EC ERR	EtherCAT® error state

3.3.1 Diagnostics capabilities by means of status indication

Color and status of the LEDs are an excellent source of information for analyzing various states.

LED	Status	Color	Description
R	OFF	---	Error in the power supply or operating system
	ON	Green	OS is running
E	OFF	---	Normal operating condition
	ON	Red	General error
D1	ON	Red	Special states
D2	ON	Red	Boot loader is being executed
D2	Blinking, 1 Hz	Red	Operating system of the peripheral module is being updated
D2	Blinking, 4 Hz	Red	Operating system of JX3-BN-EC is being updated

LED	Status	Color	Description
EC RUN	OFF	---	The device is in INITIALIZATION state
	Blinking	Green	The device is in PREOPERATIONAL state
	Blinking once	Green	The device is in SAFEOPERATIONAL state
	ON	Green	The device is in OPERATIONAL state
	Flickering	Green	The device boots up and is in BOOTSTRAP state (loading the firmware)
EC ERR	ON	Red	Critical communication or application error
	Flashing twice (like lightning)	Red	Timeout of process data/EtherCAT® watchdog
	Flashing once (like lightning)	Red	The EtherCAT® state was changed independently by the JX3-BN-EC due to a local error.
	Blinking	Red	General configuration error
	Flickering	Red	Booting error
	OFF	---	EtherCAT® communication of the device is ready for operation

3.4 Nameplate

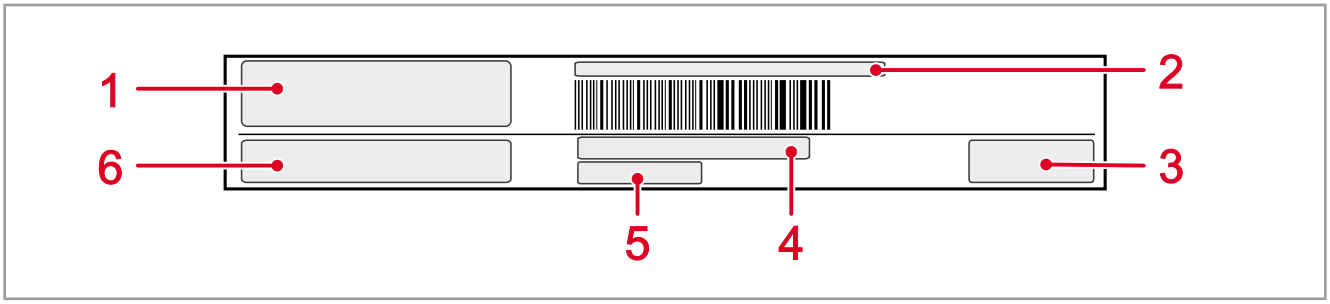


Fig. 3: Sample nameplate

1	Company logo
2	Serial number
3	Certification mark
4	Item number
5	Hardware revision
6	Item name

3.5 Scope of Delivery

Scope of delivery	Item number	Quantity
JX3-BN-EC	10001584	1
Male connector in spring-cage technology, 2-pin	60870409	1
Terminal labels	60870411	10
Installation manual	60882041	1

4 Technical Specifications

This chapter contains information on both electrical and mechanical data as well as on operating data of the JX3-BN-EC device.

4.1 Dimensions

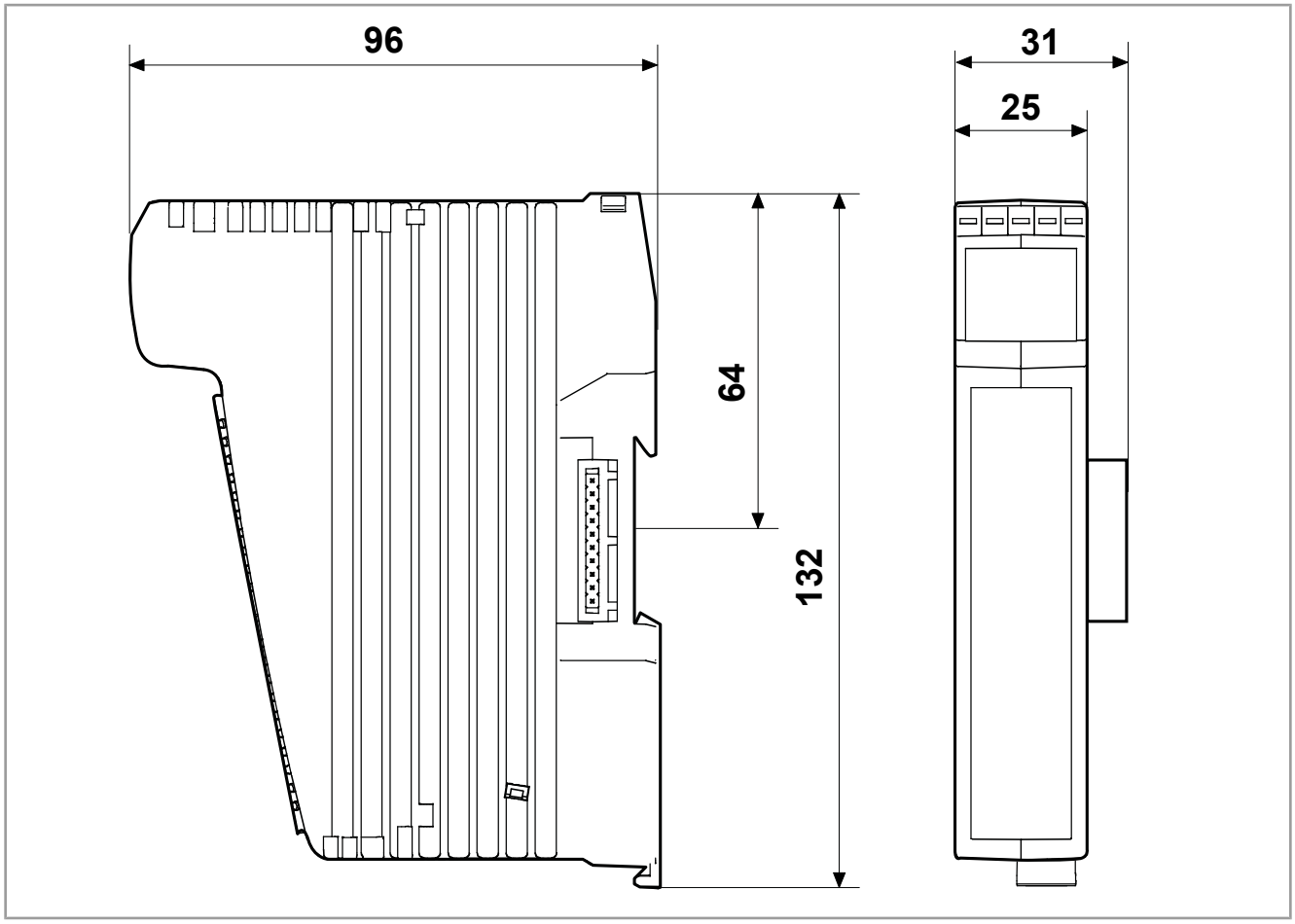


Fig. 4: Dimension in mm

4.2 Mechanical Specifications

Parameter	Description	Standards
Mounting orientation	Vertically mounted on DIN rail	
Weight	140 g	
Enclosure specifications		
Material	Plastic	
Maximum height of fall		
with shipping packaging	1 m	DIN EN 61131-2 DIN EN 60068-2-31
with product packaging	0.3 m	
Vibration resistance		
Frequency sweeps	1 octave/minute, sinusoidal	DIN EN 61131-2 DIN EN 60068-2-6
Constant amplitude	3.5 mm	5 Hz ≤ f ≤ 9 Hz
Constant acceleration	1 g	9 Hz ≤ f ≤ 150 Hz
Number and direction	10 sweeps for all 3 spatial axes	
Shock resistance		
Type of shock	Half-sine wave	DIN EN 61131-2 DIN EN 60068-2-27
Intensity and duration	15 g for 11 ms	
Number and direction	3 shocks in the directions of all 3 spatial axes	
Degree of protection		
Degree of protection	IP20	DIN EN 60529

Tab. 1: Mechanical specifications

4.3 Electrical properties

Power supply input (terminal X10)

Category	Description	
Rated voltage	DC 24 V	
Wire size range	0.2 … 1.5 mm^2	
Permissible voltage range	-15 % … + 20 %	
Input current (at rated voltage)	1 A max.	Including connected modules
Power consumption		
Bus node without connected modules	2.4 W max.	
Bus node incl. connected modules	24 W max.	

Tab. 2: Power supply input (terminal X10)

EtherCAT® interface (ports X14, X15)

Category	Description	
Type	RJ45 jack	
Number of ports	2	EtherCAT® IN and EtherCAT® OUT
Bit rate	100 Mbit/s	Cat 5e
Auto-crossover	Automatic crossover function	

Tab. 3: EtherCAT® interface (ports X14, X15)

Electrical safety

Parameter	Description	Standards
Class of protection	III	DIN EN 61131-2
Dielectric test voltage	Functional ground is internally connected to the device ground	
Protective connection	0	
Overvoltage category	II	

Tab. 4: Electrical safety

4.4 Environmental Conditions

Parameter	Description	Standards
Operating temperature	0 °C … +50 °C	DIN EN 61131-2
Storage temperature	-40 °C … +70 °C	DIN EN 60068-2-1
Humidity	10 % … 95 %, non-condensing	DIN EN 60068-2-2
Max. operating altitude	2,000 m above sea level	DIN EN 61131-2
Corrosion immunity and chemical resistance	No special protection against corrosion. Ambient air must be free from higher concentrations of acids, alkaline solutions, corrosive agents, salts, metal vapors and other corrosive or electroconductive contaminants.	
Degree of pollution – Electronics	Level 2	DIN EN 61131-2
	Usually, the pollution is non-conductive. However, temporary conductivity due to condensation may occur.	

Tab. 5: Environmental conditions

4.5 EMC Values

4.5.1 Enclosure

Emitted Interference

Parameter	Values	Standards
Frequency band	**30 MHz … 230 MHz**	DIN EN 61000-6-3 DIN EN 61131-2 DIN EN 55011
Limit value	30 dB (µV/m) at 10 m distance	
Frequency band	**230 MHz … 1,000 MHz**	
Limit value	37 dB (µV/m) at 10 m distance	
	Class B	

Tab. 6: Emitted interference

Immunity to Interference

Parameter	Values	Standards
Magnetic field with mains frequency		
Frequency	50 Hz	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-8
Magnetic field	30 A/m	
RF field, amplitude-modulated		
Frequency band	80 MHz … 2 GHz	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-3
Test field strength	10 V/m	
	AM 80 % with 1 kHz	
	Criterion A	
ESD		
Discharge through air Test peak voltage	8 kV	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-2
Discharge through air Test peak voltage	4 kV	
	Criterion A	

Tab. 7: Immunity to interference

4.5.2 DC Power Supply Inputs and Outputs

Emitted Interference

Parameter	Values	Standards
Signal and control line connections, DC voltage supply inputs and outputs		
Frequency band	0.15 … 0.5 MHz	DIN EN 61000-6-3
Limit value	40 to 30 dB	
Frequency band	0.5 … 30 MHz	
Limit value	30 dB	
	Class B	

Tab. 8: Emitted interference of the DC power supply inputs and outputs

Immunity to Interference

Parameter	Values	Standards
RF field, asymmetric, amplitude-modulated		
Frequency band	0.15 … 80 MHz	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-6
Test voltage	3 V	
	AM 80 % with 1 kHz	
Source impedance	150 Ω	
	Criterion A	
Bursts		
Test voltage	2 kV	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-4
	tr/tn 5/50 ns	
Repetition frequency	5 kHz	
	Criterion A	
Surge voltages, symmetric, line to line		
Differential-mode coupling	tr/th 1.2/50 µs	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-5
	0.5 kV	
Surge voltages, asymmetric, line to earth		
Common-mode coupling	tr/th 1.2/50 µs	DIN EN 61131-2 DIN EN 61000-6-2 DIN EN 61000-4-5
	1 kV	

Tab. 9: Immunity to interference of the DC power supply inputs and outputs

5 Mechanical Installation

This chapter describes how to install and remove the JX3-BN-EC.

NOTICE



Damaged devices

Damaged devices may cause considerable physical damage.

- ► Check the device for external damage and faulty connections.
- ► Ensure to install only fully functional devices.

5.1 Installing Device on DIN Rail

NOTICE

Functional impairment caused by unfavorable installation

- ► Install the device only in vertical position on the DIN rail (DIN EN 60715).
- ► Keep a minimum distance of 30 mm to surrounding parts.

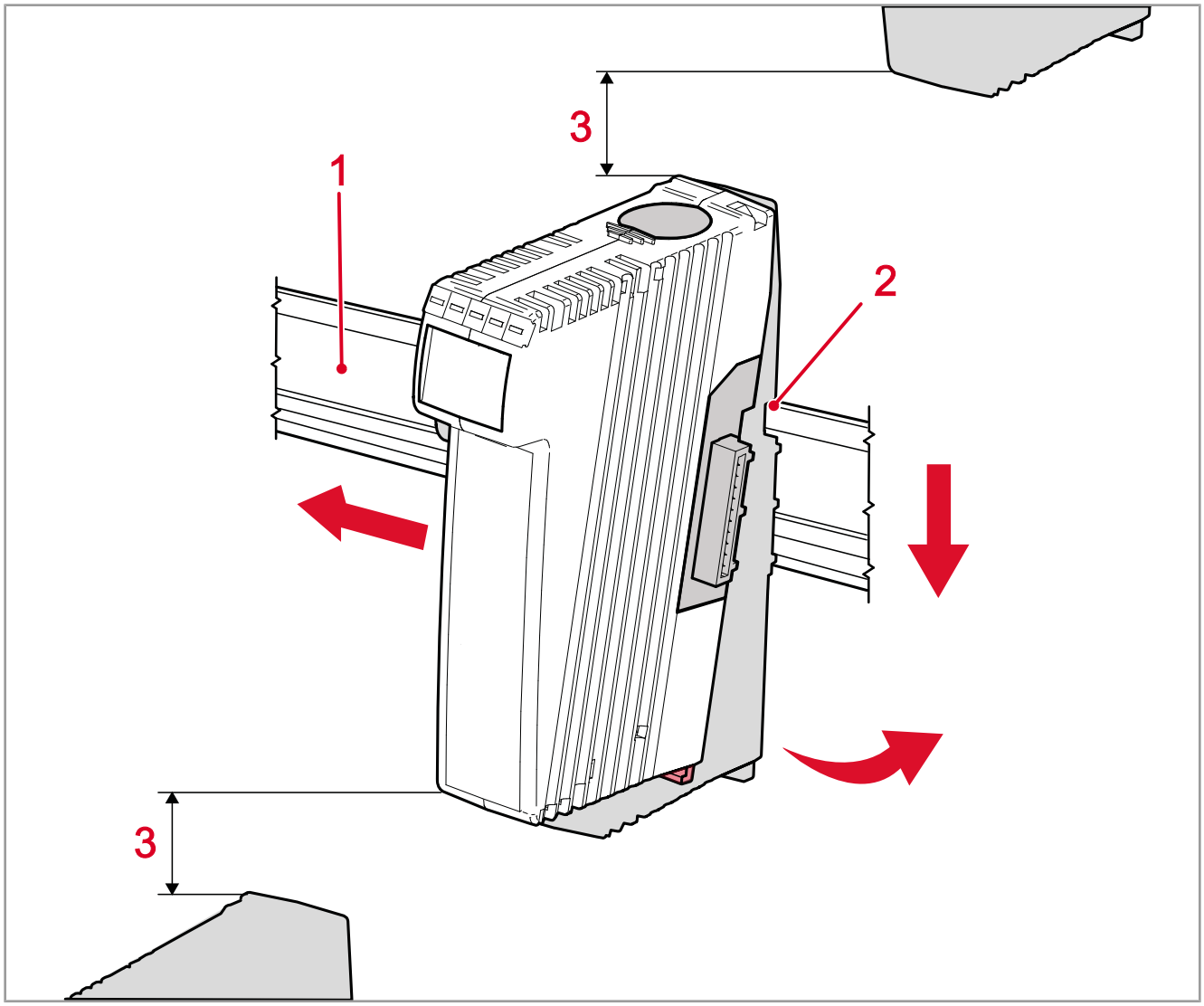


Fig. 5: Installing the device on the DIN rail

1	DIN rail
2	Upper latch
3	Minimum distance to surrounding parts (30 mm min.)

1. Disconnect the system from the power supply.
2. Place the upper latch (2) in an angled position on the DIN rail (1).
3. Snap the lower latch of the device onto the DIN rail.
4. Slide the device on the DIN rail to its intended position.

5.2 Removing Device from DIN Rail

Applying force to the release latch disengages the device from the DIN rail.

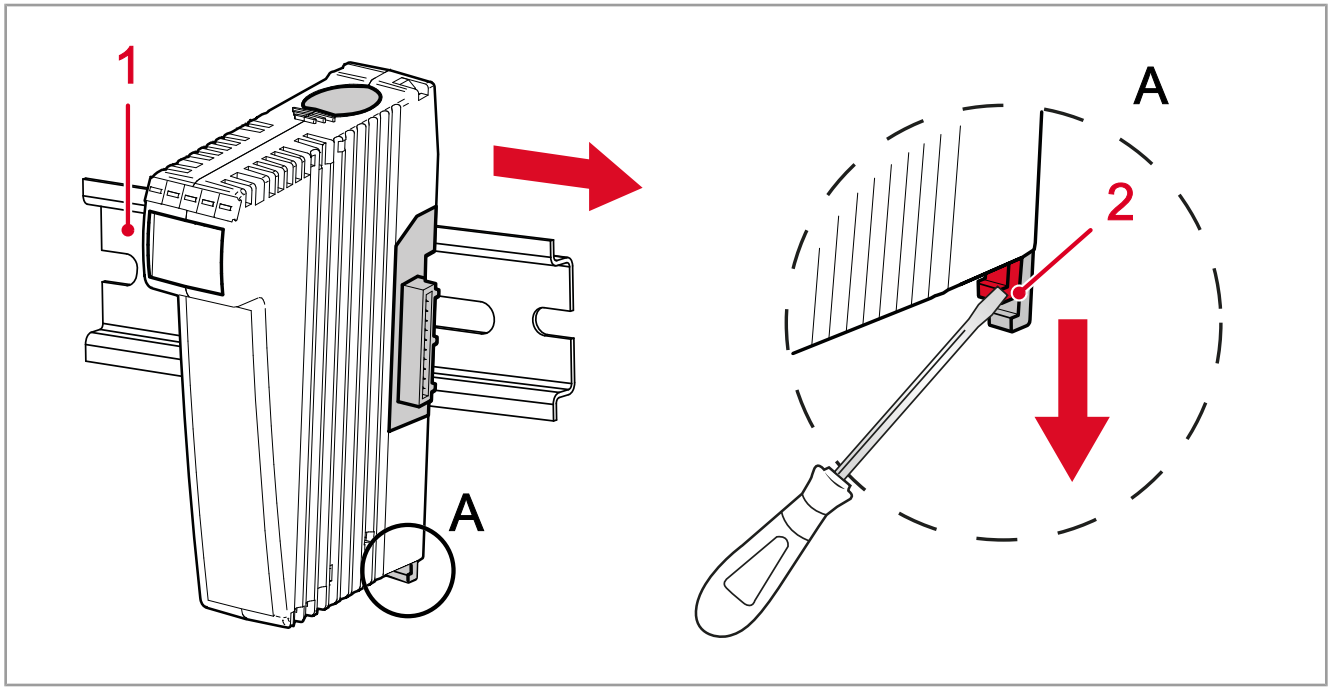


Fig. 6: Removing the device from the DIN rail

1	DIN rail
2	DIN rail release latch
A	Detail view

1. Disconnect the system from the power supply.
2. Pull the device off the overall assembly.
3. Pry the release latch (2) downwards and pull the device off the DIN rail (1).

5.3 Dismounting Enclosure from Backplane Module

Pressing down on the upper and the lower backplane latches of the device allows you to remove the enclosure from the backplane module.

NOTICE

Mechanical damage and reduced EMC noise immunity

If devices are replaced, degree of protection IP20 is not ensured. Touching the EMC clip may lead to mechanical damage to the device and reduced EMC noise immunity.

► Do not touch any electronic components once the enclosure has been removed from the backplane module.

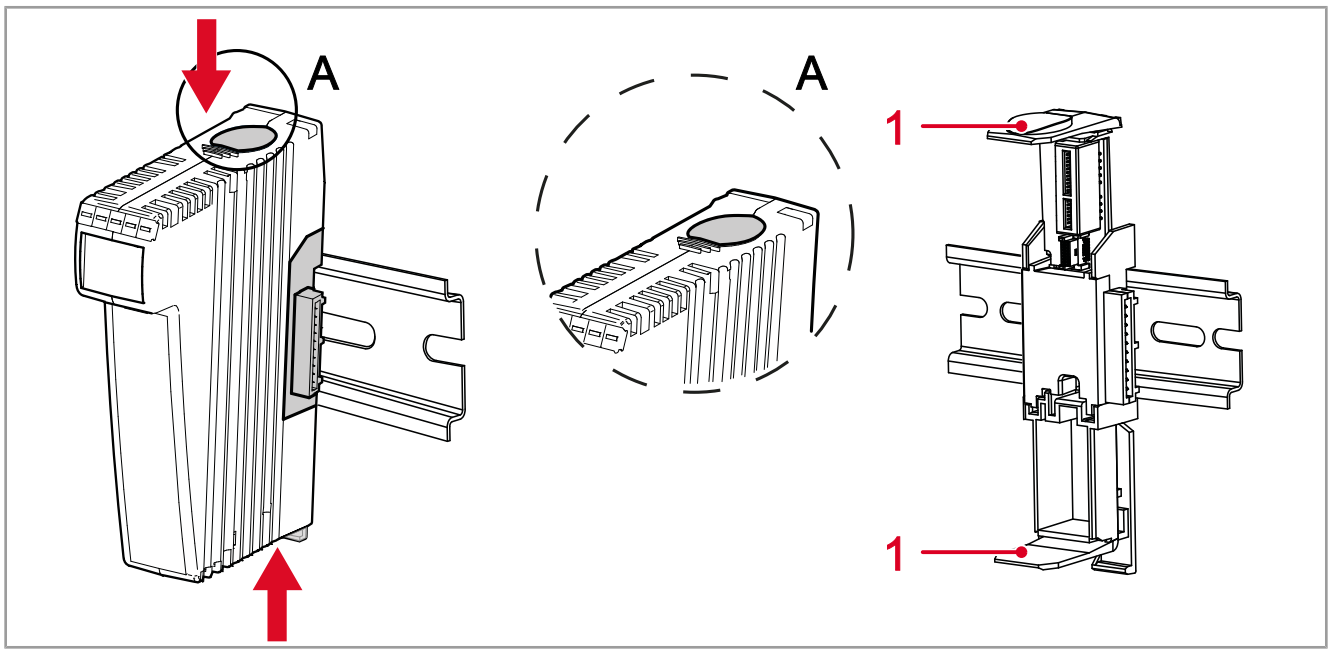


Fig. 7: Removing the enclosure from the backplane module

A	Detail view
1	Latch

1. Disconnect the system from the power supply.
2. Simultaneously, press and hold the upper and lower latches (1) of the device.
3. With the latches pressed down pull the enclosure away from DIN rail.

6 Electrical Connection

NOTICE



Damages to material or functional impairment

Improper implementation of the wiring harness may cause mechanical stress.

- ► Protect the cables from bending, twisting or chafing.
- ► Install strain reliefs for the connecting cables.

6.1 Improving EMC Noise Immunity

A system's immunity to noise is determined by its weakest component. Key factors are correct connections, lines and proper shielding. Take note of the measures described in this section.

ⓘ Info

Further Information

For further information on the noise immunity of a system, please refer to the Application Note 016 *EMC-Compatible Installation of the Electric Cabinet* available for download on our website.

DIN rail

- Attach the JX3-BN-EC device to a DIN rail to EN 60715 with the dimensions 35 x 7.5 mm.
- The DIN rail must be electrically conducting and grounded by either of the following two ways:
  - Directly
  - Via rear panel of the electric cabinet

Application Note 016

Follow the instructions given in Application Note 016 *EMC-Compatible Installation of the Electric Cabinet*.

The following instructions are excerpts from Application Note 016:

- Keep signal and power lines **separated from each other** at all times. Bucher Automation AG recommends that there be a minimum distance of 20 cm. Cables and lines should cross each other at an angle of 90°.
- Shield the following cables and lines:
  - Analog lines
  - Data lines
  - Motor cables coming from inverter drives (servo output stage, frequency converter)
  - Lines between components and interference suppressor filter, where the suppressor filter is located not immediately adjacent to the component.
- Place the shield **on both sides**.
- Keep unshielded wire ends of shielded cables as short as possible.
- Span the shield **entirely** across the isolation. For **wide-area grounding**, clamp it down tightly with an extensively earthed strain relief.

6.2 Interfaces

6.2.1 Terminal X10 - Power supply

Ports and interfaces

X10 lets you connect the following devices:

– Power supply of the bus node JX3-BN-EC

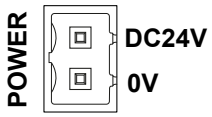
– Power supply for connected JX3 expansion modules if they are not supplied by a separate JX3-PS1 power supply module.

Info

Design

The power supply to the bus node JX3-BN-EC must be designed with a circuit of class 2 according to EN 61131.

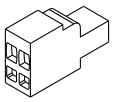
Pinning



Pin	Description
DC24V	Supply voltage
0 V	Reference potential (GND)

2-pin connector, spring-cage technology

The controller comes with a 2-pin spring-clamp connector.



Category	Description	Standards
Connector		
Designation	BU_02_E_BLZF_GE_RM3.5	
Connector technology	Spring-cage connection	
Type	2-pin, 3.5 mm pitch	
Connectible conductors		
Outer diameter of the isolation	2.90 mm max	
AWG	16 … 28	
Clamping range	0.13 … 1.5 mm²	
Stripping length	10 mm	
Specification without wire end ferrules		
Solid conductor	H05(07) V-U	
	0.2 … 1.5 mm²	
Flexible conductor	H05(07) V-K	
	0.2 … 1.5 mm²	

Category	Description	Standards
Specification with wire end ferrules		
Wire end ferrule without sleeve	0.2 … 1.5 mm²	DIN 46228/1
Wire end ferrule with sleeve	0.2 … 1.5 mm²	DIN 46228/4
Crimping tool	PZ 4, PZ 6 ROTO, PZ 6/5	DIN 46228

Tab. 10: Connector specification, 2-pin connector, spring-cage technology

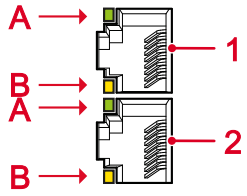
6.2.2 Ports X14, X15 - EtherCAT®

Ports and interfaces

Ports X14 and X15 connect to the following devices:

– EtherCAT® interface connecting to any device

Pinning



Position	Socket	Sig-nal	LE D	Color	Description
1	X14	IN	A	Green	Link and activity
			B	Yellow	No function
2	X15	OUT	A	Green	Link and activity
			B	Yellow	No function

ⓘ Info

Topology

The EtherCAT® master determines the topology.

You can find further information on the topology in the EtherCAT® Installation Guideline ETG.1600 of the EtherCAT® Technology Group.

6.3 Commissioning

Engineering of a JX3station

A JX3 station consists of a bus node or a controller and JX3 expansion modules connected to it.

Info

Further Information

For further information, please refer to the JX3 *System* application-oriented manual in the download area of our website.

Configuration

Commissioning the device is based on the following configuration:

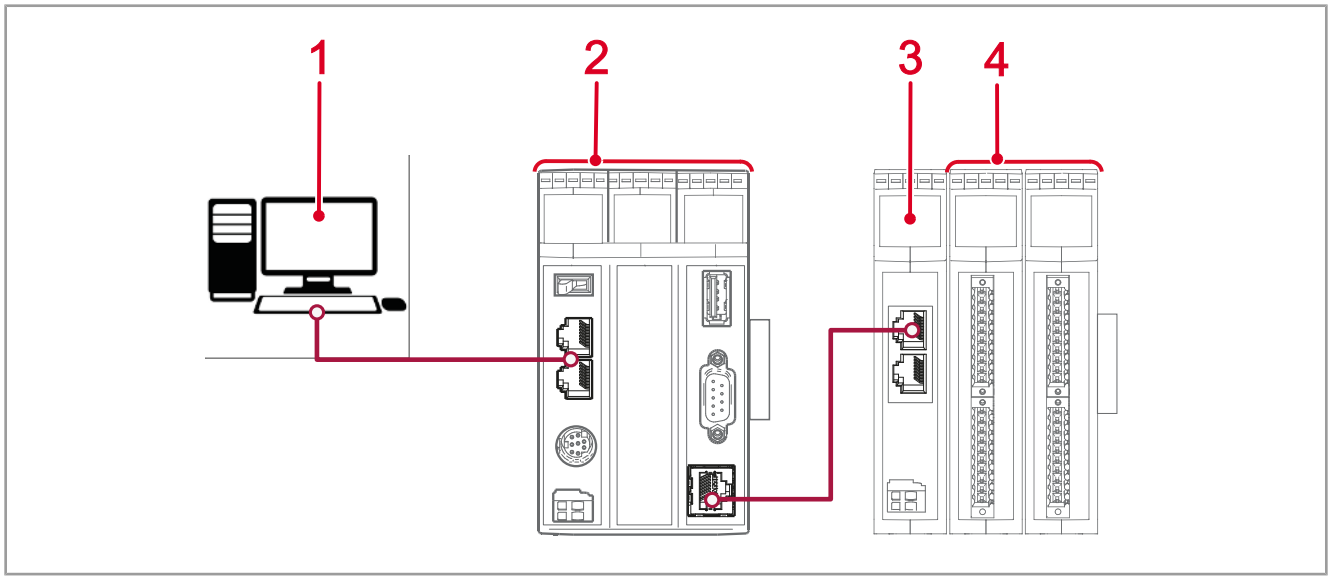


Fig. 8: Configuration

Number	Part	Description
1	PC	Programming system
2	Bucher Automation controller	Controller
3	JX3-BN-EC	Bus node
4	JX3 expansion modules	Expansion modules

Commissioning

To commission the JX3-BN-EC bus node, proceed as follows:

✓ To connect the bus node to a compatible controller, use 2 Ethernet straight-through or crossover cables of the following category:
Cat 5e at 10 ... 100 MBit/s or Cat 6 at 1,000 MBit/s

1. Make sure that the power supply of the controller and the bus node is switched off.
2. Set the IP address of the controller.
3. On the right side of the bus node snap the expansion modules into it.
4. Connect controller and PC by means of the Ethernet patch cable.
5. Connect controller and bus node by means of the Ethernet patch cable.
6. Energize the controller and the bus node.
   ⇨ Both, the controller and the bus node go through the boot process.
   ⇨ The LED R lits green once the controller and the bus node are ready for operation.
7. Launch the JetSym software tool.

⇨ Now, you can start configuring the bus node.

ⓘ Info

Further information

For more information on this subject, refer to the JetSym Online Help.

7 Identification and Configuration

7.1 Identification

This chapter describes how to identify the JX3-BN-EC:

– Determining the hardware revision
– Retrieving Electronic Data Sheet (EDS) information.
– Determining the operating system version of the device

7.1.1 Electronic Data Sheet (EDS)

Each JX3-BN-EC has an electronic data sheet EDS. The production-specific data is stored in certain indices in the object directory [▶ 34] of the JX3-BN-EC.

NOTICE



Interruption of process data communication

While the EDS is being read via the file system of the controller, no process data communication takes place and the bus node is not ready for use. This can result in a standstill of the machine.

► Do **not** read EDS information while the machine is in operation.

In contrast, EDS entries in the object dictionary can be read during operation without affecting process data communication.

EDS information

Index	Description/ Name	Type	Type of access
0x1000	Type of device	UDINT	Read Only
0x1008	Device Name	STRING (9)	Read Only
0x1009	Hardware revision	STRING (4)	Read Only
0x100A	Software version	STRING (4)	Read Only

Tab. 11: EDS information

Format of software version numbers

The JX3-BN-EC software version is identified by a 4-part number.

1 . 2 . 3 . 4

Fig. 9: Software version numbers

Digits	Description
1	Represents major or main version number
2	Represents minor or secondary version number
3	Represents branch or intermediate version number
4	Represents build version number

Tab. 12: Format of software version numbers

Released version

A released version is identified by both the branch and build values being 0.

7.2 Operating system

We are continuously striving to enhance the operating systems of our products. Enhancing means adding new features, and upgrading existing functions. Current OS files are available for download on our homepage in the downloads area of the respective product.

ⓘ Info

Further information

More information on this subject is available on our website.

Start | Bucher Automation - We automate your success.

7.2.1 Operating system update using the programming tool

With the help of the programming tool JetSym it is possible to update the operating system in a comfortable way.

Pay attention to the feedback from the status display [▶ 9] of the JX3-BN-EC while performing an operating system update.

- ✓ The latest OS file for the JX3-BN-EC has been downloaded from the Bucher Automation homepage.
- ✓ Controller and JetSym are connected.
- ✓ The JX3-BN-EC has been configured in JetSym.
- ✓ Controller and JX3-BN-EC are connected.
- ✓ The JX3-BN-EC waits in the boot loader for the operating system update or the operating system is running.

1. Make sure that the JX3-BN-EC is not switched off during the operating system update.
2. Open programming tool JetSym.
3. Navigate to the **Hardware** pane.
4. Click on the **Hardware** node and open the shortcut menu e.g. by pressing the right mouse button.
5. Select **Update OS**.

   ⇨ The dialog box **Operating system update** opens.
6. Click **Select OS File...**

   ⇨ The file selection dialog opens.

7. Select the corresponding OS file and click **Open**.

   ⇨ The OS file is displayed in the **Operating system update** dialog.

8. Click on **Update**.

   ⇨ The OS update is running.

9. Restart the bus node.

⇨ The updated operating system is launched.

8 Programming

8.1 Addressing of IO expansion modules

Each JX3 IO module has over 10,000 local module registers and, depending on the module type, a certain number of digital inputs and outputs.

These local module registers and I/Os are mapped to register numbers and I/O numbers in the controller. These numbers let you read and write process, configuration, and diagnostic data of an expansion module. These numbers can be accessed in the application program of the controller, in a setup pane of JetSym or via user interface.

The number of a controller register to which a module register has been mapped is influenced by the following parameters:

- Controller model
- Type of connection between controller and expansion module
  - Direct connection to a local controller or expansion module
  - Remote connection via Ethernet
  - Remote connection via EtherCAT®
- Position and number of expansion modules in the system
  The number of expansion modules that can be connected to a controller depends on the type of expansion modules. After 8 expansion modules max., a power supply module must be inserted.

ⓘ Info

Number of connectible expansion modules

You can calculate the exact amount of connectible expansion modules by means of the system bus configurator, JX3-sysbus_configurator_xxx_e, which is available for download on our website.

ⓘ Info

Connecting third-party hardware

You can also use the JX3-BN-EC in combination with a controller that was not developed and produced by . See also EtherCAT® object directories [▶ 33].

System overview

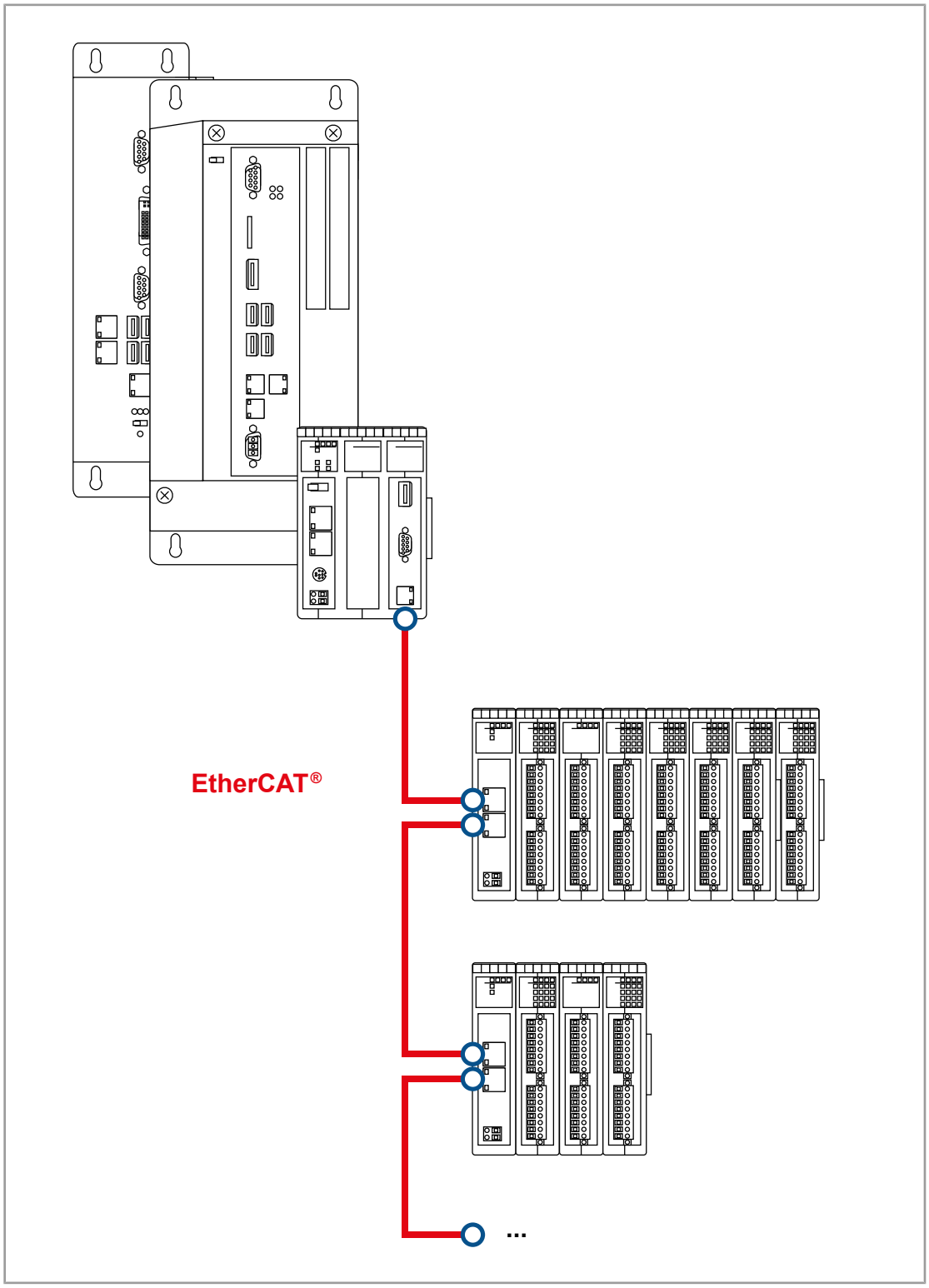


Fig. 10: System overview

1	EtherCAT® master
2	JX3-BN-EC with up to 16 JX3 IO modules
3	Up to 99 JX3-BN-EC

8.1.1 Numbering Registers and I/Os

Module registers – definition

Module registers are the data interface of the JX3 module. Use module registers to read process, configuration and diagnostics data from the JX3 module, or write such data to the JX3 module.

– The module register number within a module is unique.
– This unique register number lets you access a specific module register within the system.

Registers - Definition

There are several ways to access registers directly and indirectly:

– From an application program
– From the Setup pane of JetSym
– From a visualization application

The register number within the system is unique.

ⓘ Info

Further Information

For further information, please refer to the JX3 *System* application-oriented manual in the download area of our website.

Expansion modules connected with a controller

Our products offer a host of features accessible to the user via registers. Each register is addressed by a unique number – the register number. Each digital input and output has a unique I/O number.

Register numbering system

Register numbers consist of a prefix, the module position in the system and the module register number. If the expansion modules are connected with the controller via JX3 system bus, the prefix is 100. In this case, the module register number is always a four-digit number.

100XXZZZZ

Fig. 11: Example: Register numbers

Digits	Description	Value range
100	Prefix	
XX	Position of the module in the system	02 … 17
ZZZZ	Module register number	0000 … 9999

I/O numbering system

I/O numbers provide direct access to the inputs or outputs of the module. These I/O numbers consist of a five-digit prefix, the module position in the system and the I/O number of the module. The I/O numbers always start with the constant prefix **10000**.

10000XXZZ

Fig. 12: Example: I/O numbers

Digits	Description	Value range
10000	Prefix	
XX	Position of the module in the system	02 … 17
ZZ	Module-specific I/O number	01 … 16

Expansion modules connected to an EtherCAT® bus node

EtherCAT® bus node and controller communicate via EtherCAT® system bus. When addressing the expansion modules via EtherCAT® bus node, the EtherCAT® Node Number (ENN) becomes part of the register number. The ENN is used to identify controllers and EtherCAT® bus nodes within an EtherCAT® network. The ENN is automatically assigned by JetSym.

System overview

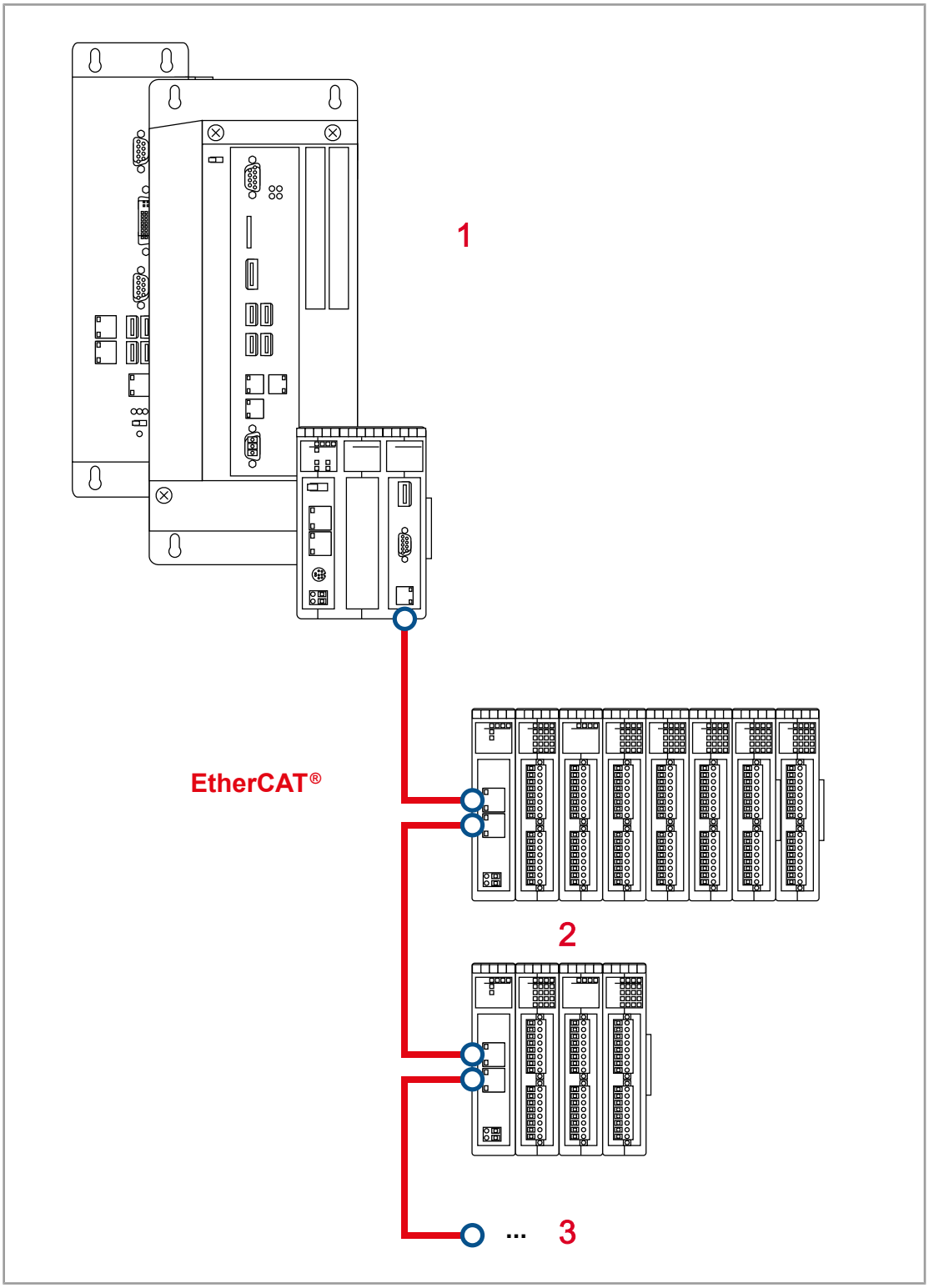


Fig. 13: System overview

1	EtherCAT® master
2	EtherCAT® bus node with up to 16 JX3 I/O modules
3	Up to 99 JX3-BN-EC

Register numbering system

The register numbers consist of a prefix, the ENN, the module position within the system and the module-specific register number.

12NNXXZZZZ

Fig. 14: Register numbers

Digits	Description	Value range
12	Prefix	
NN	Bus node ID, ENN	01 … 99
XX	Position of the module within the station	02 … 33
ZZZZ	Module register number	0000 … 9999

I/O numbering system

I/O numbers provide direct access to the inputs or outputs of the module. The I/O numbers consist of prefix 1, the ENN, prefix 2, the module position in the system and the module-specific I/O number.

12NN00XXZZ

Fig. 15: I/O numbers

Digits	Description	Value range
12	Prefix 1	
NN	Bus node ID, ENN	01 … 99
00	Prefix 2	
XX	Position of the module within the station	02 … 33
ZZ	Module-specific I/O number	01 … 16

8.2 EtherCAT® object directories

Use with third-party hardware

You can also use the JX3-BN-EC in combination with a controller that was not developed and produced by .

To establish an EtherCAT® connection between the third-party controller and the JX3-BN-EC, you need the object directory of the JX3-BN-EC and the object directories of the connected JX3 IO modules.

8.2.1 Overview

With the CoE protocol, EtherCAT® offers the same communication mechanisms as in the CANopen® standard EN 50325-4:

– Object dictionary
– PDO mapping (Process Data Objects)
– SDO (Service Data Objects)

This makes it possible to implement EtherCAT® in slaves that were previously equipped with CANopen® at manageable costs.

Object dictionary

Since the EtherCAT® slave JX3-BN-EC is based on the CoE protocol, it contains an object directory. The object directory is the interface with which the EtherCAT® master (user) can access all relevant slave parameters.

The object directory is divided into different sections. Each index section is assigned a specific meaning:

Index section	Description
0x0000 - 0x0FFF	Data Type Description
0x1000 - 0x1FFF	Communication objects
0x2000 - 0x5FFF	Manufacturer Specific
0x6000 - 0x9FFF	Profiles Specific
0xA000 - 0xFFFF	Reserved

Object

Each entry in the object directory is called an object.

An object consists of:

- an index that identifies the object as a whole;
- one or more subindexes, each of which contains elementary information.

Each subindex within each object has several attributes such as :

- Data type
- Access rights (RO = Read Only, WO = Write Only, RW = Read Write)

8.2.2 Object Dictionary JX3-BN-EC

Index	Sub-index	Description/ name	Type	Access	Base Type	Ele-ments
0x1000		**Device type**	UDINT	RO	-	-
0x1001		**Error register**	USINT	RO	-	-
0x1008		**Device name**	STRING (9)	RO	-	-
0x1009		**Hardware version**	STRING (4)	RO	-	-
0x100A		**Software version**	STRING (4)	RO	-	-
0x1018		**Identity**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	Vendor ID	UDINT	RO	-	-
	:0x02	Product code	UDINT	RO	-	-
	:0x03	Revision	UDINT	RO	-	-
	:0x04	Serial number	UDINT	RO	-	-
0x10F1		**Error Settings**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	Local Error Reaction	UDINT	RW	-	-
	:0x02	Sync Error Counter Limit	UINT	RW	-	-
0x1C00		**Sync manager type**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
		Elements	DT1C00ARR	RO	USINT	4

Index	Sub-index	Description/ name	Type	Access	Base Type	Ele-ments
0x1C12		**SyncManager 2 assignment**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
		Elements	DT1C12ARR	RO	UINT	32
0x1C13		**SyncManager 3 assignment**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
		Elements	DT1C13ARR	RO	UINT	32
0x1C32/ 0x1C33		**SM output parameter/ SM input parameter**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	Synchronization type	UINT	RW	-	-
	:0x02	Cycle Time	UDINT	RO	-	-
	:0x04	Synchronization types supported	UINT	RO	-	-
	:0x05	Minimum Cycle Time	UDINT	RO	-	-
	:0x06	Calc and Copy Time	UDINT	RO	-	-
	:0x08	Get Cycle Time	UINT	RW	-	-
	:0x09	Delay Time	UDINT	RO	-	-
	:0x0A	Sync0 Cycle Time	UDINT	RW	-	-
	:0x0B	SM-Event Missed	UINT	RO	-	-
	:0x0C	Cycle Time Too Small	UINT	RO	-	-
	:0x20	Sync Error	BOOL	RO	-	-
0xF000		**Modular device profile**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	Module Index Distance	UINT	RO	-	-
	:0x02	Maximum Number of Modules	UINT	RO	-	-
	:0x03	Available Subindexes in Config-uration objects 0x8nn0	UINT	RO	-	-
	:0x04	Available Subindexes in Config-uration objects 0x9nn0	UINT	RO	-	-
	:0x05	Module PDO Group of device	UINT	RO	-	-

Index	Sub-index	Description/ name	Type	Access	Base Type	Ele-ments
0xF010		**Module Profile List**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
		Elements	DTF010ARR	RO	UDINT	32
0xF030		**Configured Module Ident List**	DTF030	RW	-	-
	:0x00	SubIndex 000	USINT	RW	-	-
		Elements	DTF030ARR	RW	UDINT	32
0xF050		**Detected Module Ident List**	DTF050	RO	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
		Elements	DTF050ARR	RO	UDINT	32
0xF100		**Bus Coupler Status**	DTF100	RO	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	Bus State	UINT	RO	-	-
	:0x02	Error_Code	UINT	RO	-	-
	:0x03	Add_Error Info	UINT	RO	-	-
	:0x04	LED_RUN	USINT	RO	-	-
	:0x05	LED_ERROR	USINT	RO	-	-
	:0x06	LED_D1	USINT	RO	-	-
	:0x07	LED_D2	USINT	RO	-	-
0xFB00		**Register interface**	-	-	-	-
	:0x00	SubIndex 000	USINT	RO	-	-
	:0x01	RegisterNo	UDINT	RW	-	-
	:0x02	Write Access	BOOL	RW	-	-
	:0x03	Data	UDINT	RW	-	-

Tab. 13: Object dictionary JX3-BN-EC

For each connected JX3 IO module, the following entries are added with an offset of 0x10:

Index	Description/ name	Access
0x1600	RxPDO Map Module	RO
0x1A00	TxPDO Map Module	RO
0x6000	Inputs Module	RO
0x7000	Outputs Module	RW
0x8000	Parameter Module	RW
0xA000	Status Module	RO

Example

The following JX3 IO modules connect to a JX3-BN-EC:

Position	Module	Offset
1	JX3-BN-EC	
2	JX3-DIO16	0x00
3	JX3-AI4	0x10
4	JX3-MIX1	0x20
5	JX3-DIO16	0x30

At all times, the spacing between the modules is 0x10. A JX3 module not supporting this feature (e.g. the JX3-AI4 module has no outputs), will skip this index (here 0x7010).

Index	Description/ name
0x60**00**	Module inputs: JX3-DIO16
0x60**10**	Module inputs: JX3-AI4
0x60**20**	Module inputs: JX3-MIX1
0x60**30**	Module inputs: JX3-DIO16
0x70**00**	Module outputs: JX3-DIO16
0x70**20**	Module outputs: JX3-MIX1
0x70**30**	Module outputs: JX3-DIO16

8.2.3 Object Dictionary JX3-AI4

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-AI4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
0x6000		**Inputs Module: JX3-AI4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
	:0x04	AI 3	DINT	RO
	:0x05	AI 4	DINT	RO
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
0x8000		**Parameter Module: JX3-AI4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RW
	:0x02	Analog In..Command	UDINT	RW
	:0x03	Input 1.Common.Command	UDINT	RW
	:0x04	Input 1.Common.ForceVal	UDINT	RW
	:0x05	Input 1.Configuration.Config	UDINT	RW
	:0x06	Input 1.Configuration.UserUI1	UDINT	RW
	:0x07	Input 1.Configuration.UserDig1	UDINT	RW
	:0x08	Input 1.Configuration.UserUI2	UDINT	RW
	:0x09	Input 1.Configuration.UserDig2	UDINT	RW
	:0x0A	Input 1.Configuration.LimitMin	UDINT	RW
	:0x0B	Input 1.Configuration.LimitMax	UDINT	RW
	:0x0C	Input 1.Configuration.TotalMin	UDINT	RW
	:0x0D	Input 1.Configuration.TotalMax	UDINT	RW
	:0x0E	Input 1.Configuration.Average	UDINT	RW
	:0x0F	Input 2.Common.Command	UDINT	RW
	:0x10	Input 2.Common.ForceVal	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x11	Input 2.Configuration.Config	UDINT	RW
	:0x12	Input 2.Configuration.UserUI1	UDINT	RW
	:0x13	Input 2.Configuration.UserDig1	UDINT	RW
	:0x14	Input 2.Configuration.UserUI2	UDINT	RW
	:0x15	Input 2.Configuration.UserDig2	UDINT	RW
	:0x16	Input 2.Configuration.LimitMin	UDINT	RW
	:0x17	Input 2.Configuration.LimitMax	UDINT	RW
	:0x18	Input 2.Configuration.TotalMin	UDINT	RW
	:0x19	Input 2.Configuration.TotalMax	UDINT	RW
	:0x1A	Input 2.Configuration.Average	UDINT	RW
	:0x1B	Input 3.Common.Command	UDINT	RW
	:0x1C	Input 3.Common.ForceVal	UDINT	RW
	:0x1D	Input 3.Configuration.Config	UDINT	RW
	:0x1E	Input 3.Configuration.UserUI1	UDINT	RW
	:0x1F	Input 3.Configuration.UserDig1	UDINT	RW
	:0x20	Input 3.Configuration.UserUI2	UDINT	RW
	:0x21	Input 3.Configuration.UserDig2	UDINT	RW
	:0x22	Input 3.Configuration.LimitMin	UDINT	RW
	:0x23	Input 3.Configuration.LimitMax	UDINT	RW
	:0x24	Input 3.Configuration.TotalMin	UDINT	RW
	:0x25	Input 3.Configuration.TotalMax	UDINT	RW
	:0x26	Input 3.Configuration.Average	UDINT	RW
	:0x27	Input 4.Common.Command	UDINT	RW
	:0x28	Input 4.Common.ForceVal	UDINT	RW
	:0x29	Input 4.Configuration.Config	UDINT	RW
	:0x2A	Input 4.Configuration.UserUI1	UDINT	RW
	:0x2B	Input 4.Configuration.UserDig1	UDINT	RW
	:0x2C	Input 4.Configuration.UserUI2	UDINT	RW
	:0x2D	Input 4.Configuration.UserDig2	UDINT	RW
	:0x2E	Input 4.Configuration.LimitMin	UDINT	RW
	:0x2F	Input 4.Configuration.LimitMax	UDINT	RW
	:0x30	Input 4.Configuration.TotalMin	UDINT	RW
	:0x31	Input 4.Configuration.TotalMax	UDINT	RW
	:0x32	Input 4.Configuration.Average	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0xA000		**Status Module: JX3-AI4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Input 1.Common.State	UDINT	RO
	:0x02	Input 1.Common.Value Valid	BOOL	RO
	:0x03	Input 1.Common.Below Lower Limit	BOOL	RO
	:0x04	Input 1.Common.Above Upper Limit	BOOL	RO
	:0x05	Input 1.Common.Out Of Range Negative	BOOL	RO
	:0x06	Input 1.Common.Out Of Range Positive	BOOL	RO
	:0x07	Input 1.Common.Force Value Active	BOOL	RO
	:0x08	Input 2.Common.State	UDINT	RO
	:0x09	Input 2.Common.Value Valid	BOOL	RO
	:0x0A	Input 2.Common.Below Lower Limit	BOOL	RO
	:0x0B	Input 2.Common.Above Upper Limit	BOOL	RO
	:0x0C	Input 2.Common.Out Of Range Negative	BOOL	RO
	:0x0D	Input 2.Common.Out Of Range Positive	BOOL	RO
	:0x0E	Input 2.Common.Force Value Active	BOOL	RO
	:0x0F	Input 3.Common.State	UDINT	RO
	:0x10	Input 3.Common.Value Valid	BOOL	RO
	:0x11	Input 3.Common.Below Lower Limit	BOOL	RO
	:0x12	Input 3.Common.Above Upper Limit	BOOL	RO
	:0x13	Input 3.Common.Out Of Range Negative	BOOL	RO
	:0x14	Input 3.Common.Out Of Range Positive	BOOL	RO
	:0x15	Input 3.Common.Force Value Active	BOOL	RO
	:0x16	Input 4.Common.State	UDINT	RO
	:0x17	Input 4.Common.Value Valid	BOOL	RO
	:0x18	Input 4.Common.Below Lower Limit	BOOL	RO
	:0x19	Input 4.Common.Above Upper Limit	BOOL	RO
	:0x1A	Input 4.Common.Out Of Range Negative	BOOL	RO
	:0x1B	Input 4.Common.Out Of Range Positive	BOOL	RO
	:0x1C	Input 4.Common.Force Value Active	BOOL	RO
	:0x1D	Diagnostics..State	UDINT	RO
	:0x1E	Diagnostics..Error Hardware	BOOL	RO
	:0x1F	Diagnostics..Error Adjust Values	BOOL	RO
	:0x20	Diagnostics..Error AD-Converter	BOOL	RO
	:0x21	Diagnostics..Error Internal Voltage	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x22	Diagnostics..All Channels Valid	BOOL	RO
	:0x23	Diagnostics..Below Lower Limit	BOOL	RO
	:0x24	Diagnostics..Above Upper Limit	BOOL	RO
	:0x25	Diagnostics..Out Of Range Negative	BOOL	RO
	:0x26	Diagnostics..Out Of Range Positive	BOOL	RO
	:0x27	Diagnostics..Force Value Active	BOOL	RO
	:0x28	Diagnostics..Voltage Monitoring On	BOOL	RO
	:0x29	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x2A	Diagnostics..Single Sampling Active	BOOL	RO
	:0x2B	Diagnostics..OS_Version	UDINT	RO
0x1600		**RxPDO Map Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO

Tab. 14: Object Dictionary JX3-AI4

8.2.4 Object Dictionary JX3-AO4

Index	Sub-index	Description/ name	Type	Access
0x7000		**Outputs Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	AO 1	DINT	RW
	:0x02	AO 2	DINT	RW
	:0x03	AO 3	DINT	RW
0x1A00		**TxPDO Map Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
0x6000		**Inputs Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
0x8000		**Parameter Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RW
	:0x02	Analog Out..Command	UDINT	RW
	:0x03	Output 1.Common.State	UDINT	RW
	:0x04	Output 1.Common.Writing Error Values	BOOL	RW
	:0x05	Output 1.Common.Below Lower Limit	BOOL	RW
	:0x06	Output 1.Common.Above Upper Limit	BOOL	RW
	:0x07	Output 1.Common.Force Value Active	BOOL	RW
	:0x08	Output 1.Common.Command	UDINT	RW
	:0x09	Output 1.Common.ForceVal	UDINT	RW
	:0x0A	Output 1.Common.ErrVal	UDINT	RW
	:0x0B	Output 1.Configuration.Config	UDINT	RW
	:0x0C	Output 1.Configuration.UserUI1	UDINT	RW
	:0x0D	Output 1.Configuration.UserDig1	UDINT	RW
	:0x0E	Output 1.Configuration.UserUI2	UDINT	RW
	:0x0F	Output 1.Configuration.UserDig2	UDINT	RW
	:0x10	Output 1.Configuration.LimitMin	UDINT	RW
	:0x11	Output 1.Configuration.LimitMax	UDINT	RW
	:0x12	Output 1.Configuration.TotalMin	UDINT	RW
	:0x13	Output 1.Configuration.TotalMax	UDINT	RW
	:0x14	Output 1.Configuration.CutMin	UDINT	RW
	:0x15	Output 1.Configuration.CutMax	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x16	Output 2.Common.State	UDINT	RW
	:0x17	Output 2.Common.Writing Error Values	BOOL	RW
	:0x18	Output 2.Common.Below Lower Limit	BOOL	RW
	:0x19	Output 2.Common.Above Upper Limit	BOOL	RW
	:0x1A	Output 2.Common.Force Value Active	BOOL	RW
	:0x1B	Output 2.Common.	UDINT	RW
	:0x1C	Output 2.Common.ForceVal	UDINT	RW
	:0x1D	Output 2.Common.ErrVal	UDINT	RW
	:0x1E	Output 2.Configuration.Config	UDINT	RW
	:0x1F	Output 2.Configuration.UserUI1	UDINT	RW
	:0x20	Output 2.Configuration.UserDig1	UDINT	RW
	:0x21	Output 2.Configuration.UserUI2	UDINT	RW
	:0x22	Output 2.Configuration.UserDig2	UDINT	RW
	:0x23	Output 2.Configuration.LimitMin	UDINT	RW
	:0x24	Output 2.Configuration.LimitMax	UDINT	RW
	:0x25	Output 2.Configuration.TotalMin	UDINT	RW
	:0x26	Output 2.Configuration.TotalMax	UDINT	RW
	:0x27	Output 2.Configuration.CutMin	UDINT	RW
	:0x28	Output 2.Configuration.CutMax	UDINT	RW
	:0x29	Output 3.Common.State	UDINT	RW
	:0x2A	Output 3.Common.Writing Error Values	BOOL	RW
	:0x2B	Output 3.Common.Below Lower Limit	BOOL	RW
	:0x2C	Output 3.Common.Above Upper Limit	BOOL	RW
	:0x2D	Output 3.Common.Force Value Active	BOOL	RW
	:0x2E	Output 3.Common.Command	UDINT	RW
	:0x2F	Output 3.Common.ForceVal	UDINT	RW
	:0x30	Output 3.Common.ErrVal	UDINT	RW
	:0x31	Output 3.Configuration.Config	UDINT	RW
	:0x32	Output 3.Configuration.UserUI1	UDINT	RW
	:0x33	Output 3.Configuration.UserDig1	UDINT	RW
	:0x34	Output 3.Configuration.UserUI2	UDINT	RW
	:0x35	Output 3.Configuration.UserDig2	UDINT	RW
	:0x36	Output 3.Configuration.LimitMin	UDINT	RW
	:0x37	Output 3.Configuration.LimitMax	UDINT	RW
	:0x38	Output 3.Configuration.TotalMin	UDINT	RW
	:0x39	Output 3.Configuration.TotalMax	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x3A	Output 3.Configuration.CutMin	UDINT	RW
	:0x3B	Output 3.Configuration.CutMax	UDINT	RW
	:0x3C	Output 4.Common.State	UDINT	RW
	:0x3D	Output 4.Common.Writing Error Values	BOOL	RW
	:0x3E	Output 4.Common.Below Lower Limit	BOOL	RW
	:0x3F	Output 4.Common.Above Upper Limit	BOOL	RW
	:0x40	Output 4.Common.Force Value Active	BOOL	RW
	:0x41	Output 4.Common.Command	UDINT	RW
	:0x42	Output 4.Common.ForceVal	UDINT	RW
	:0x43	Output 4.Common.ErrVal	UDINT	RW
	:0x44	Output 4.Configuration.Config	UDINT	RW
	:0x45	Output 4.Configuration.UserUI1	UDINT	RW
	:0x46	Output 4.Configuration.UserDig1	UDINT	RW
	:0x47	Output 4.Configuration.UserUI2	UDINT	RW
	:0x48	Output 4.Configuration.UserDig2	UDINT	RW
	:0x49	Output 4.Configuration.LimitMin	UDINT	RW
	:0x4A	Output 4.Configuration.LimitMax	UDINT	RW
	:0x4B	Output 4.Configuration.TotalMin	UDINT	RW
	:0x4C	Output 4.Configuration.TotalMax	UDINT	RW
	:0x4D	Output 4.Configuration.CutMin	UDINT	RW
	:0x4E	Output 4.Configuration.CutMax	UDINT	RW
0xA000		**Status Module: JX3-AO4**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RO
	:0x02	Diagnostics..Error Hardware	BOOL	RO
	:0x03	Diagnostics..Error Adjust Values	BOOL	RO
	:0x04	Diagnostics..Error DA-Converter	BOOL	RO
	:0x05	Diagnostics..Error Internal Voltage	BOOL	RO
	:0x06	Diagnostics..Below Lower Limit	BOOL	RO
	:0x07	Diagnostics..Above Upper Limit	BOOL	RO
	:0x08	Diagnostics..Force Value Active	BOOL	RO
	:0x09	Diagnostics..Voltage Monitoring On	BOOL	RO
	:0x0A	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x0B	Diagnostics..OS_Version	UDINT	RO

Tab. 15: Object Dictionary JX3-AO4

8.2.5 Object Dictionary JX3-CNT

Index	Sub-index	Description/ name	Type	Access
0x1600		**RxPDO Map Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO
0x7000		**Outputs Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	DO 1	BOOL	RW
	:0x02	DO 2	BOOL	RW
	:0x03	DO 3	BOOL	RW
	:0x04	DO 4	BOOL	RW
0x1A00		**TxPDO Map Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
	:0x06	Input Mapping 5	UDINT	RO
	:0x07	Input Mapping 6	UDINT	RO
0x6000		**Inputs Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
	:0x04	DI1	BOOL	RO
	:0x05	DI2	BOOL	RO
	:0x06	DI3	BOOL	RO
	:0x07	DI4	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0x8000		**Parameter Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Modulestate..State	UDINT	RW
	:0x02	Outputs..All Outputs	UDINT	RW
	:0x03	Module..Command registers for dual-channel counter	UDINT	RW
	:0x04	Outputs..All Outputs_xxx_todo	UDINT	RW
	:0x05	Outputs..Output 1	BOOL	RW
	:0x06	Outputs..Output 2	BOOL	RW
	:0x07	Outputs..Output 3	BOOL	RW
	:0x08	Outputs..Output 4	BOOL	RW
	:0x09	Module..Pointer to process data 1	UDINT	RW
	:0x0A	Module..Pointer to process data 2	UDINT	RW
	:0x0B	multi strobe.command.Command	UDINT	RW
	:0x0C	multi strobe.command.Assignment	UDINT	RW
	:0x0D	multi strobe.command.StrobeIndex	UDINT	RW
	:0x0E	SimpleCAM..Command	UDINT	RW
	:0x0F	SimpleCAM..Assignment	UDINT	RW
	:0x10	SimpleCAM..Index Out 1	UDINT	RW
	:0x11	SimpleCAM..Start point Out 1	UDINT	RW
	:0x12	SimpleCAM..Stop point Out 1	UDINT	RW
	:0x13	SimpleCAM..Index Out 2	UDINT	RW
	:0x14	SimpleCAM..Start point Out 2	UDINT	RW
	:0x15	SimpleCAM..Stop point Out 2	UDINT	RW
	:0x16	SimpleCAM..Index Out 3	UDINT	RW
	:0x17	SimpleCAM..Start point Out 3	UDINT	RW
	:0x18	SimpleCAM..Stop point Out 3	UDINT	RW
	:0x19	SimpleCAM..Index Out 4	UDINT	RW
	:0x1A	SimpleCAM..Start point Out 4	UDINT	RW
	:0x1B	SimpleCAM..Stop point Out 4	UDINT	RW
	:0x1C	Counter A..Counter state	UDINT	RW
	:0x1D	Counter A..Gate function enabled .8	BOOL	RW
	:0x1E	Counter A..Strobe function enabled .9	BOOL	RW
	:0x1F	Counter A..Search for reference enabled .10	BOOL	RW
	:0x20	Counter A..Modulo enabled .14	BOOL	RW
	:0x21	Counter A..Modulo error .15	BOOL	RW
	:0x22	Counter A..Measurement enabled .16	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x23	Counter A..Lower limit exceeded .19	BOOL	RW
	:0x24	Counter A..Upper limit exceeded .20	BOOL	RW
	:0x25	Counter A..Strobe value received .24	BOOL	RW
	:0x26	Counter A..Counter blocked by gate function .25	BOOL	RW
	:0x27	Counter A..Counter enabled .26	BOOL	RW
	:0x28	Counter A..Reference is set .27	BOOL	RW
	:0x29	Counter A..Strobe overflow .28	BOOL	RW
	:0x2A	Counter A..Reversal of counting direction enabled .29	BOOL	RW
	:0x2B	Counter A..Commands - Dual-channel counter	UDINT	RW
	:0x2C	Counter A..Lower limit	UDINT	RW
	:0x2D	Counter A..Upper limit	UDINT	RW
	:0x2E	Counter A..Trailing pointer - lower limit	UDINT	RW
	:0x2F	Counter A..Trailing pointer - upper limit	UDINT	RW
	:0x30	Counter A..Digital filter	UDINT	RW
	:0x31	Counter A..Gate Mask	UDINT	RW
	:0x32	Counter A..Gate IN1 enabled	BOOL	RW
	:0x33	Counter A..Gate IN2 enabled	BOOL	RW
	:0x34	Counter A..Gate IN3 enabled	BOOL	RW
	:0x35	Counter A..Gate IN4 enabled	BOOL	RW
	:0x36	Counter A..GateActiveHigh	UDINT	RW
	:0x37	Counter A..Gate IN1 is high-active	BOOL	RW
	:0x38	Counter A..Gate IN2 is high-active	BOOL	RW
	:0x39	Counter A..Gate IN3 is high-active	BOOL	RW
	:0x3A	Counter A..Gate IN4 is high-active	BOOL	RW
	:0x3B	Counter A..Strobe - Rising edge	UDINT	RW
	:0x3C	Counter A..Strobe IN1 - Rising edge enabled	BOOL	RW
	:0x3D	Counter A..Strobe IN2 - Rising edge enabled	BOOL	RW
	:0x3E	Counter A..Strobe IN3 - Rising edge enabled	BOOL	RW
	:0x3F	Counter A..Strobe IN4 - Rising edge enabled	BOOL	RW
	:0x40	Counter A..Strobe - Falling edge	UDINT	RW
	:0x41	Counter A..Strobe IN1 - Falling edge enabled	BOOL	RW
	:0x42	Counter A..Strobe IN2 - Falling edge enabled	BOOL	RW
	:0x43	Counter A..Strobe IN3 - Falling edge enabled	BOOL	RW
	:0x44	Counter A..Strobe IN4 - Falling edge enabled	BOOL	RW
	:0x45	Counter A..Reference - Rising edge	UDINT	RW
	:0x46	Counter A..Reference IN1 - Rising edge enabled	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x47	Counter A..Reference IN2 - Rising edge enabled	BOOL	RW
	:0x48	Counter A..Reference IN3 - Rising edge enabled	BOOL	RW
	:0x49	Counter A..Reference IN4 - Rising edge enabled	BOOL	RW
	:0x4A	Counter A..Reference - Falling edge	UDINT	RW
	:0x4B	Counter A..Reference IN1 - Falling edge enabled	BOOL	RW
	:0x4C	Counter A..Reference IN2 - Falling edge enabled	BOOL	RW
	:0x4D	Counter A..Reference IN3 - Falling edge enabled	BOOL	RW
	:0x4E	Counter A..Reference IN4 - Falling edge enabled	BOOL	RW
	:0x4F	Counter A..Modulo - lower limit	UDINT	RW
	:0x50	Counter A..Modulo - upper limit	UDINT	RW
	:0x51	Counter A..Modulo RPM	UDINT	RW
	:0x52	Counter B..Counter state	UDINT	RW
	:0x53	Counter B..Gate function enabled .8	BOOL	RW
	:0x54	Counter B..Strobe function enabled .9	BOOL	RW
	:0x55	Counter B..Search for reference enabled .10	BOOL	RW
	:0x56	Counter B..Modulo enabled .14	BOOL	RW
	:0x57	Counter B..Modulo error .15	BOOL	RW
	:0x58	Counter B..Measurement enabled .16	BOOL	RW
	:0x59	Counter B..Lower limit exceeded .19	BOOL	RW
	:0x5A	Counter B..Upper limit exceeded .20	BOOL	RW
	:0x5B	Counter B..Strobe value received .24	BOOL	RW
	:0x5C	Counter B..Counter blocked by gate function .25	BOOL	RW
	:0x5D	Counter B..Counter enabled .26	BOOL	RW
	:0x5E	Counter B..Reference is set .27	BOOL	RW
	:0x5F	Counter B..Strobe overflow .28	BOOL	RW
	:0x60	Counter B..Reversal of counting direction enabled .29	BOOL	RW
	:0x61	Counter B..Commands - Dual-channel counter	UDINT	RW
	:0x62	Counter B..Lower limit	UDINT	RW
	:0x63	Counter B..Upper limit	UDINT	RW
	:0x64	Counter B..Trailing pointer - lower limit	UDINT	RW
	:0x65	Counter B..Trailing pointer - upper limit	UDINT	RW
	:0x66	Counter B..Digital filter	UDINT	RW
	:0x67	Counter B..Gate Mask	UDINT	RW
	:0x68	Counter B..Gate IN1 enabled	BOOL	RW
	:0x69	Counter B..Gate IN2 enabled	BOOL	RW
	:0x6A	Counter B..Gate IN3 enabled	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x6B	Counter B..Gate IN4 enabled	BOOL	RW
	:0x6C	Counter B..GateActiveHigh	UDINT	RW
	:0x6D	Counter B..Gate IN1 is high-active	BOOL	RW
	:0x6E	Counter B..Gate IN2 is high-active	BOOL	RW
	:0x6F	Counter B..Gate IN3 is high-active	BOOL	RW
	:0x70	Counter B..Gate IN4 is high-active	BOOL	RW
	:0x71	Counter B..Strobe - Rising edge	UDINT	RW
	:0x72	Counter B..Strobe IN1 - Rising edge enabled	BOOL	RW
	:0x73	Counter B..Strobe IN2 - Rising edge enabled	BOOL	RW
	:0x74	Counter B..Strobe IN3 - Rising edge enabled	BOOL	RW
	:0x75	Counter B..Strobe IN4 - Rising edge enabled	BOOL	RW
	:0x76	Counter B..Strobe - Falling edge	UDINT	RW
	:0x77	Counter B..Strobe IN1 - Falling edge enabled	BOOL	RW
	:0x78	Counter B..Strobe IN2 - Falling edge enabled	BOOL	RW
	:0x79	Counter B..Strobe IN3 - Falling edge enabled	BOOL	RW
	:0x7A	Counter B..Strobe IN4 - Falling edge enabled	BOOL	RW
	:0x7B	Counter B..Reference - Rising edge	UDINT	RW
	:0x7C	Counter B..Reference IN1 - Rising edge enabled	BOOL	RW
	:0x7D	Counter B..Reference IN2 - Rising edge enabled	BOOL	RW
	:0x7E	Counter B..Reference IN3 - Rising edge enabled	BOOL	RW
	:0x7F	Counter B..Reference IN4 - Rising edge enabled	BOOL	RW
	:0x80	Counter B..Reference - Falling edge	UDINT	RW
	:0x81	Counter B..Reference IN1 - Falling edge enabled	BOOL	RW
	:0x82	Counter B..Reference IN2 - Falling edge enabled	BOOL	RW
	:0x83	Counter B..Reference IN3 - Falling edge enabled	BOOL	RW
	:0x84	Counter B..Reference IN4 - Falling edge enabled	BOOL	RW
	:0x85	Counter B..Modulo - lower limit	UDINT	RW
	:0x86	Counter B..Modulo - upper limit	UDINT	RW
	:0x87	Counter B..Modulo RPM	UDINT	RW
	:0x88	Counter C..Counter state	UDINT	RW
	:0x89	Counter C..Gate function enabled .8	BOOL	RW
	:0x8A	Counter C..Strobe function enabled .9	BOOL	RW
	:0x8B	Counter C..Search for reference enabled .10	BOOL	RW
	:0x8C	Counter C..Modulo enabled .14	BOOL	RW
	:0x8D	Counter C..Modulo error .15	BOOL	RW
	:0x8E	Counter C..Measurement enabled .16	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x8F	Counter C..Lower limit exceeded .19	BOOL	RW
	:0x90	Counter C..Upper limit exceeded .20	BOOL	RW
	:0x91	Counter C..Strobe value received .24	BOOL	RW
	:0x92	Counter C..Counter blocked by gate function .25	BOOL	RW
	:0x93	Counter C..Counter enabled .26	BOOL	RW
	:0x94	Counter C..Reference is set .27	BOOL	RW
	:0x95	Counter C..Strobe overflow .28	BOOL	RW
	:0x96	Counter C..Reversal of counting direction enabled .29	BOOL	RW
	:0x97	Counter C..Commands - Dual-channel counter	UDINT	RW
	:0x98	Counter C..Lower limit	UDINT	RW
	:0x99	Counter C..Upper limit	UDINT	RW
	:0x9A	Counter C..Trailing pointer - lower limit	UDINT	RW
	:0x9B	Counter C..Trailing pointer - upper limit	UDINT	RW
	:0x9C	Counter C..Digital filter	UDINT	RW
	:0x9D	Counter C..Gate Mask	UDINT	RW
	:0x9E	Counter C..Gate IN1 enabled	BOOL	RW
	:0x9F	Counter C..Gate IN2 enabled	BOOL	RW
	:0xA0	Counter C..Gate IN3 enabled	BOOL	RW
	:0xA1	Counter C..Gate IN4 enabled	BOOL	RW
	:0xA2	Counter C..GateActiveHigh	UDINT	RW
	:0xA3	Counter C..Gate IN1 is high-active	BOOL	RW
	:0xA4	Counter C..Gate IN2 is high-active	BOOL	RW
	:0xA5	Counter C..Gate IN3 is high-active	BOOL	RW
	:0xA6	Counter C..Gate IN4 is high-active	BOOL	RW
	:0xA7	Counter C..Strobe - Rising edge	UDINT	RW
	:0xA8	Counter C..Strobe IN1 - Rising edge enabled	BOOL	RW
	:0xA9	Counter C..Strobe IN2 - Rising edge enabled	BOOL	RW
	:0xAA	Counter C..Strobe IN3 - Rising edge enabled	BOOL	RW
	:0xAB	Counter C..Strobe IN4 - Rising edge enabled	BOOL	RW
	:0xAC	Counter C..Strobe - Falling edge	UDINT	RW
	:0xAD	Counter C..Strobe IN1 - Falling edge enabled	BOOL	RW
	:0xAE	Counter C..Strobe IN2 - Falling edge enabled	BOOL	RW
	:0xAF	Counter C..Strobe IN3 - Falling edge enabled	BOOL	RW
	:0xB0	Counter C..Strobe IN4 - Falling edge enabled	BOOL	RW
	:0xB1	Counter C..Reference - Rising edge	UDINT	RW
	:0xB2	Counter C..Reference IN1 - Rising edge enabled	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0xB3	Counter C..Reference IN2 - Rising edge enabled	BOOL	RW
	:0xB4	Counter C..Reference IN3 - Rising edge enabled	BOOL	RW
	:0xB5	Counter C..Reference IN4 - Rising edge enabled	BOOL	RW
	:0xB6	Counter C..Reference - Falling edge	UDINT	RW
	:0xB7	Counter C..Reference IN1 - Falling edge enabled	BOOL	RW
	:0xB8	Counter C..Reference IN2 - Falling edge enabled	BOOL	RW
	:0xB9	Counter C..Reference IN3 - Falling edge enabled	BOOL	RW
	:0xBA	Counter C..Reference IN4 - Falling edge enabled	BOOL	RW
	:0xBB	Counter C..Modulo - lower limit	UDINT	RW
	:0xBC	Counter C..Modulo - upper limit	UDINT	RW
	:0xBD	Counter C..Modulo RPM	UDINT	RW
	:0xBE	dual counter 24V..Counter state	UDINT	RW
	:0xBF	dual counter 24V..Gate function enabled .8	BOOL	RW
	:0xC0	dual counter 24V..Strobe function enabled .9	BOOL	RW
	:0xC1	dual counter 24V..Search for reference enabled .10	BOOL	RW
	:0xC2	dual counter 24V..Modulo enabled .14	BOOL	RW
	:0xC3	dual counter 24V..Modulo error .15	BOOL	RW
	:0xC4	dual counter 24V..Measurement enabled .16	BOOL	RW
	:0xC5	dual counter 24V..Lower limit exceeded .19	BOOL	RW
	:0xC6	dual counter 24V..Upper limit exceeded .20	BOOL	RW
	:0xC7	dual counter 24V..Strobe value received .24	BOOL	RW
	:0xC8	dual counter 24V..Counter blocked by gate function .25	BOOL	RW
	:0xC9	dual counter 24V..Counter enabled .26	BOOL	RW
	:0xCA	dual counter 24V..Reference is set .27	BOOL	RW
	:0xCB	dual counter 24V..Strobe overflow .28	BOOL	RW
	:0xCC	dual counter 24V..Reversal of counting direction enabled .29	BOOL	RW
	:0xCD	dual counter 24V..Commands - Dual-channel counter	UDINT	RW
	:0xCE	dual counter 24V..Unscaled count value	UDINT	RW
	:0xCF	dual counter 24V..Reference offset	UDINT	RW
	:0xD0	dual counter 24V..Lower limit	UDINT	RW
	:0xD1	dual counter 24V..Upper limit	UDINT	RW
	:0xD2	dual counter 24V..Trailing pointer - lower limit	UDINT	RW
	:0xD3	dual counter 24V..Trailing pointer - upper limit	UDINT	RW
	:0xD4	dual counter 24V..Digital filter	UDINT	RW
	:0xD5	dual counter 24V..Gate Mask	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0xD6	dual counter 24V..Gate IN1 enabled	BOOL	RW
	:0xD7	dual counter 24V..Gate IN2 enabled	BOOL	RW
	:0xD8	dual counter 24V..Gate IN3 enabled	BOOL	RW
	:0xD9	dual counter 24V..Gate IN4 enabled	BOOL	RW
	:0xDA	dual counter 24V..GateActiveHigh	UDINT	RW
	:0xDB	dual counter 24V..Gate IN1 is high-active	BOOL	RW
	:0xDC	dual counter 24V..Gate IN2 is high-active	BOOL	RW
	:0xDD	dual counter 24V..Gate IN3 is high-active	BOOL	RW
	:0xDE	dual counter 24V..Gate IN4 is high-active	BOOL	RW
	:0xDF	dual counter 24V..Strobe - Rising edge	UDINT	RW
	:0xE0	dual counter 24V..Strobe IN1 - Rising edge enabled	BOOL	RW
	:0xE1	dual counter 24V..Strobe IN2 - Rising edge enabled	BOOL	RW
	:0xE2	dual counter 24V..Strobe IN3 - Rising edge enabled	BOOL	RW
	:0xE3	dual counter 24V..Strobe IN4 - Rising edge enabled	BOOL	RW
	:0xE4	dual counter 24V..Strobe - Falling edge	UDINT	RW
	:0xE5	dual counter 24V..Strobe IN1 - Falling edge enabled	BOOL	RW
	:0xE6	dual counter 24V..Strobe IN2 - Falling edge enabled	BOOL	RW
	:0xE7	dual counter 24V..Strobe IN3 - Falling edge enabled	BOOL	RW
	:0xE8	dual counter 24V..Strobe IN4 - Falling edge enabled	BOOL	RW
	:0xE9	dual counter 24V..Reference Mask	UDINT	RW
	:0xEA	dual counter 24V..Reference IN1 enabled	BOOL	RW
	:0xEB	dual counter 24V..Reference IN2 enabled	BOOL	RW
	:0xEC	dual counter 24V..Reference IN3 enabled	BOOL	RW
	:0xED	dual counter 24V..Reference IN4 enabled	BOOL	RW
	:0xEE	dual counter 24V..ReferenceActiveLow	UDINT	RW
	:0xEF	dual counter 24V..Reference IN1 is low-active	BOOL	RW
	:0xF0	dual counter 24V..Reference IN2 is low-active	BOOL	RW
	:0xF1	dual counter 24V..Reference IN3 is low-active	BOOL	RW
	:0xF2	dual counter 24V..Reference IN4 is low-active	BOOL	RW
	:0xF3	dual counter 24V..Modulo - lower limit	UDINT	RW
	:0xF4	dual counter 24V..Modulo - upper limit	UDINT	RW
	:0xF5	dual counter 24V..Modulo RPM	UDINT	RW
	:0xF6	dual counter 5V..Counter state	UDINT	RW
	:0xF7	dual counter 5V..Gate function enabled .8	BOOL	RW
	:0xF8	dual counter 5V..Strobe function enabled .9	BOOL	RW
	:0xF9	dual counter 5V..Search for reference enabled .10	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0xFA	dual counter 5V..Modulo enabled .14	BOOL	RW
	:0xFB	dual counter 5V..Modulo error .15	BOOL	RW
	:0xFC	dual counter 5V..Measurement enabled .16	BOOL	RW
	:0xFD	dual counter 5V..Lower limit exceeded .19	BOOL	RW
0x8001		**Parameter Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	dual counter 5V..Upper limit exceeded .20	BOOL	RW
	:0x02	dual counter 5V..Strobe value received .24	BOOL	RW
	:0x03	dual counter 5V..Counter blocked by gate function .25	BOOL	RW
	:0x04	dual counter 5V..Counter enabled .26	BOOL	RW
	:0x05	dual counter 5V..Reference is set .27	BOOL	RW
	:0x06	dual counter 5V..Strobe overflow .28	BOOL	RW
	:0x07	dual counter 5V..Reversal of counting direction enabled .29	BOOL	RW
	:0x08	dual counter 5V..Unscaled count value	UDINT	RW
	:0x09	dual counter 5V..Reference offset	UDINT	RW
	:0x0A	dual counter 5V..Commands - Dual-channel counter	UDINT	RW
	:0x0B	dual counter 5V..Lower limit	UDINT	RW
	:0x0C	dual counter 5V..Upper limit	UDINT	RW
	:0x0D	dual counter 5V..Trailing pointer - lower limit	UDINT	RW
	:0x0E	dual counter 5V..Trailing pointer - upper limit	UDINT	RW
	:0x0F	dual counter 5V..Digital filter	UDINT	RW
	:0x10	dual counter 5V..Gate Mask	UDINT	RW
	:0x11	dual counter 5V..Gate IN1 enabled	BOOL	RW
	:0x12	dual counter 5V..Gate IN2 enabled	BOOL	RW
	:0x13	dual counter 5V..Gate IN3 enabled	BOOL	RW
	:0x14	dual counter 5V..Gate IN4 enabled	BOOL	RW
	:0x15	dual counter 5V..GateActiveHigh	UDINT	RW
	:0x16	dual counter 5V..Gate IN1 is high-active	BOOL	RW
	:0x17	dual counter 5V..Gate IN2 is high-active	BOOL	RW
	:0x18	dual counter 5V..Gate IN3 is high-active	BOOL	RW
	:0x19	dual counter 5V..Gate IN4 is high-active	BOOL	RW
	:0x1A	dual counter 5V..Strobe - Rising edge	UDINT	RW
	:0x1B	dual counter 5V..Strobe IN1 - Rising edge enabled	BOOL	RW
	:0x1C	dual counter 5V..Strobe IN2 - Rising edge enabled	BOOL	RW
	:0x1D	dual counter 5V..Strobe IN3 - Rising edge enabled	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8001	:0x1E	dual counter 5V..Strobe IN4 - Rising edge enabled	BOOL	RW
	:0x1F	dual counter 5V..Strobe - Falling edge	UDINT	RW
	:0x20	dual counter 5V..Strobe IN1 - Falling edge enabled	BOOL	RW
	:0x21	dual counter 5V..Strobe IN2 - Falling edge enabled	BOOL	RW
	:0x22	dual counter 5V..Strobe IN3 - Falling edge enabled	BOOL	RW
	:0x23	dual counter 5V..Strobe IN4 - Falling edge enabled	BOOL	RW
	:0x24	dual counter 5V..Reference Mask	UDINT	RW
	:0x25	dual counter 5V..Reference IN1 enabled	BOOL	RW
	:0x26	dual counter 5V..Reference IN2 enabled	BOOL	RW
	:0x27	dual counter 5V..Reference IN3 enabled	BOOL	RW
	:0x28	dual counter 5V..Reference IN4 enabled	BOOL	RW
	:0x29	dual counter 5V..ReferenceActiveLow	UDINT	RW
	:0x2A	dual counter 5V..Reference IN1 is low-active	BOOL	RW
	:0x2B	dual counter 5V..Reference IN2 is low-active	BOOL	RW
	:0x2C	dual counter 5V..Reference IN3 is low-active	BOOL	RW
	:0x2D	dual counter 5V..Reference IN4 is low-active	BOOL	RW
	:0x2E	dual counter 5V..Modulo - lower limit	UDINT	RW
	:0x2F	dual counter 5V..Modulo - upper limit	UDINT	RW
	:0x30	dual counter 5V..Modulo RPM	UDINT	RW
	:0x31	SSI..SSI State	UDINT	RW
	:0x32	SSI..New value received	BOOL	RW
	:0x33	SSI..Parity check failed	BOOL	RW
	:0x34	SSI..Forcing function enabled	BOOL	RW
	:0x35	SSI..Commands - SSI	UDINT	RW
	:0x36	SSI..Offset	UDINT	RW
	:0x37	SSI..Clock frequency	UDINT	RW
	:0x38	SSI..Configuration	UDINT	RW
	:0x39	SSI..Resolution	UDINT	RW
	:0x3A	SSI..Force value	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0xA000		**Status Module: JX3-CNT**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Inputs..All Inputs	UDINT	RO
	:0x02	Module..Status registers	UDINT	RO
	:0x03	Module..Short circuit 24 V	BOOL	RO
	:0x04	Module..Short circuit 5 V	BOOL	RO
	:0x05	Module..Collective bit (Lower limit)	BOOL	RO
	:0x06	Module..Collective bit (Upper limit)	BOOL	RO
	:0x07	Module..24 V sensor supply (X61.DC24V0.5A) enabled	BOOL	RO
	:0x08	Module..5 V sensor supply (X62.10) enabled	BOOL	RO
	:0x09	Module..24 V sensor supply (X62.12) enabled	BOOL	RO
	:0x0A	Module..Synchronous data exchange	BOOL	RO
	:0x0B	Inputs..All Inputs_xxx_todo	UDINT	RO
	:0x0C	Inputs..Input 1	BOOL	RO
	:0x0D	Inputs..Input 2	BOOL	RO
	:0x0E	Inputs..Input 3	BOOL	RO
	:0x0F	Inputs..Input 4	BOOL	RO
	:0x10	Version..OS version	UDINT	RO
	:0x11	Version..FPGA version	UDINT	RO
	:0x12	Version..BL version	UDINT	RO
	:0x13	Version..FPGA version - counter features	UDINT	RO
	:0x14	multi strobe.command.State	UDINT	RO
	:0x15	multi strobe.command.Multi-strobe data max.	BOOL	RO
	:0x16	multi strobe.command.Multi-strobe enabled	BOOL	RO
	:0x17	multi strobe.command.Multi-strobe overflow	BOOL	RO
	:0x18	multi strobe.command.StrobeCount	UDINT	RO
	:0x19	multi strobe.command.StrobeData	UDINT	RO
	:0x1A	multi strobe.multistrobe data.Multi-strobe data [0]	UDINT	RO
	:0x1B	multi strobe.multistrobe data.Multi-strobe data [1]	UDINT	RO
	:0x1C	multi strobe.multistrobe data.Multi-strobe data [2]	UDINT	RO
	:0x1D	multi strobe.multistrobe data.Multi-strobe data [3]	UDINT	RO
	:0x1E	multi strobe.multistrobe data.Multi-strobe data [4]	UDINT	RO
	:0x1F	multi strobe.multistrobe data.Multi-strobe data [5]	UDINT	RO
	:0x20	multi strobe.multistrobe data.Multi-strobe data [6]	UDINT	RO
	:0x21	multi strobe.multistrobe data.Multi-strobe data [7]	UDINT	RO
	:0x22	multi strobe.multistrobe data.Multi-strobe data [8]	UDINT	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x23	multi strobe.multistrobe data.Multi-strobe data [9]	UDINT	RO
	:0x24	multi strobe.multistrobe data.Multi-strobe data [10]	UDINT	RO
	:0x25	multi strobe.multistrobe data.Multi-strobe data [11]	UDINT	RO
	:0x26	multi strobe.multistrobe data.Multi-strobe data [12]	UDINT	RO
	:0x27	multi strobe.multistrobe data.Multi-strobe data [13]	UDINT	RO
	:0x28	multi strobe.multistrobe data.Multi-strobe data [14]	UDINT	RO
	:0x29	multi strobe.multistrobe data.Multi-strobe data [15]	UDINT	RO
	:0x2A	SimpleCAM..State	UDINT	RO
	:0x2B	SimpleCAM..Out 1: 1 = valid data	BOOL	RO
	:0x2C	SimpleCAM..Out 2: 1 = valid data	BOOL	RO
	:0x2D	SimpleCAM..Out 3: 1 = valid data	BOOL	RO
	:0x2E	SimpleCAM..Out 4: 1 = valid data	BOOL	RO
	:0x2F	SimpleCAM..Bit 6 = 1 Counter-control enabled	BOOL	RO
	:0x30	SimpleCAM..Bit 7 = 1 Error occurred	BOOL	RO
	:0x31	Counter A..Period	UDINT	RO
	:0x32	Counter A..Pulse width	UDINT	RO
	:0x33	Counter B..Period	UDINT	RO
	:0x34	Counter B..Pulse width	UDINT	RO
	:0x35	Counter C..Period	UDINT	RO
	:0x36	Counter C..Pulse width	UDINT	RO
	:0x37	dual counter 24V..Strobe	UDINT	RO
	:0x38	dual counter 24V..Period	UDINT	RO
	:0x39	dual counter 5V..Strobe	UDINT	RO
	:0x3A	dual counter 5V..Period	UDINT	RO
	:0x3B	SSI..Count value	UDINT	RO

Tab. 16: Object Dictionary JX3-CNT

8.2.6 Object Dictionary JX3-DI16

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-DI16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
	:0x06	Input Mapping 5	UDINT	RO
	:0x07	Input Mapping 6	UDINT	RO
	:0x08	Input Mapping 7	UDINT	RO
	:0x09	Input Mapping 8	UDINT	RO
	:0x0A	Input Mapping 9	UDINT	RO
	:0x0B	Input Mapping 10	UDINT	RO
	:0x0C	Input Mapping 11	UDINT	RO
	:0x0D	Input Mapping 12	UDINT	RO
	:0x0E	Input Mapping 13	UDINT	RO
	:0x0F	Input Mapping 14	UDINT	RO
	:0x10	Input Mapping 15	UDINT	RO
	:0x11	Input Mapping 16	UDINT	RO
0x6000		**Inputs Module: JX3-DI16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	DI 1	BOOL	RO
	:0x03	DI 2	BOOL	RO
	:0x04	DI 3	BOOL	RO
	:0x05	DI 4	BOOL	RO
	:0x06	DI 5	BOOL	RO
	:0x07	DI 6	BOOL	RO
	:0x08	DI 7	BOOL	RO
	:0x09	DI 8	BOOL	RO
	:0x0A	DI 9	BOOL	RO
	:0x0B	DI 10	BOOL	RO
	:0x0C	DI 11	BOOL	RO
	:0x0D	DI 12	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0x6000	:0x0E	DI 13	BOOL	RO
	:0x0F	DI 14	BOOL	RO
	:0x10	DI 15	BOOL	RO
	:0x11	DI 16	BOOL	RO
0x8000		**Parameter Module: JX3-DI16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RW
	:0x02	Pulse Stretching with Digital Inputs..Enable	UDINT	RW
	:0x03	Pulse Stretching with Digital Inputs..Pulse stretching for IN 1 is active	BOOL	RW
	:0x04	Pulse Stretching with Digital Inputs..Pulse stretching for IN 2 is active	BOOL	RW
	:0x05	Pulse Stretching with Digital Inputs..Pulse stretching for IN 3 is active	BOOL	RW
	:0x06	Pulse Stretching with Digital Inputs..Pulse stretching for IN 4 is active	BOOL	RW
	:0x07	Pulse Stretching with Digital Inputs..Pulse stretching for IN 5 is active	BOOL	RW
	:0x08	Pulse Stretching with Digital Inputs..Pulse stretching for IN 6 is active	BOOL	RW
	:0x09	Pulse Stretching with Digital Inputs..Pulse stretching for IN 7 is active	BOOL	RW
	:0x0A	Pulse Stretching with Digital Inputs..Pulse stretching for IN 8 is active	BOOL	RW
	:0x0B	Pulse Stretching with Digital Inputs..Duration_1_4	UDINT	RW
	:0x0C	Pulse Stretching with Digital Inputs..Duration_5_8	UDINT	RW
	:0x0D	Digital Input Filters..Enable	UDINT	RW
	:0x0E	Digital Input Filters..Digital filter for IN 1 is active	BOOL	RW
	:0x0F	Digital Input Filters..Digital filter for IN 2 is active	BOOL	RW
	:0x10	Digital Input Filters..Digital filter for IN 3 is active	BOOL	RW
	:0x11	Digital Input Filters..Digital filter for IN 4 is active	BOOL	RW
	:0x12	Digital Input Filters..Digital filter for IN 5 is active	BOOL	RW
	:0x13	Digital Input Filters..Digital filter for IN 6 is active	BOOL	RW
	:0x14	Digital Input Filters..Digital filter for IN 7 is active	BOOL	RW
	:0x15	Digital Input Filters..Digital filter for IN 8 is active	BOOL	RW
	:0x16	Digital Input Filters..Digital filter for IN 9 is active	BOOL	RW
	:0x17	Digital Input Filters..Digital filter for IN 10 is active	BOOL	RW
	:0x18	Digital Input Filters..Digital filter for IN 11 is active	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x19	Digital Input Filters..Digital filter for IN 12 is active	BOOL	RW
	:0x1A	Digital Input Filters..Digital filter for IN 13 is active	BOOL	RW
	:0x1B	Digital Input Filters..Digital filter for IN 14 is active	BOOL	RW
	:0x1C	Digital Input Filters..Digital filter for IN 15 is active	BOOL	RW
	:0x1D	Digital Input Filters..Digital filter for IN 16 is active	BOOL	RW
	:0x1E	Digital Input Filters..Delay_1-4	UDINT	RW
	:0x1F	Digital Input Filters..Delay_5_8	UDINT	RW
	:0x20	Digital Input Filters..Delay_9_12	UDINT	RW
	:0x21	Digital Input Filters..Delay_13_16	UDINT	RW
0xA000		**Status Module: JX3-DI16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RO
	:0x02	Diagnostics..Short circuit/overload at the output driver	BOOL	RO
	:0x03	Diagnostics..Voltage at terminal X21.DC 24 V is below 16.3 V	BOOL	RO
	:0x04	Diagnostics..Voltage at terminal X32.DC 24 V is below 16.3 V	BOOL	RO
	:0x05	Diagnostics..Firmware Version	UDINT	RO

Tab. 17: Object Dictionary JX3-DI16

8.2.7 Object Dictionary JX3-DIO16

Index	Sub-index	Description/ name	Type	Access
0x1600		**RxPDO Map Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO
	:0x05	Output Mapping 5	UDINT	RO
	:0x06	Output Mapping 6	UDINT	RO
	:0x07	Output Mapping 7	UDINT	RO
	:0x08	Output Mapping 8	UDINT	RO
0x7000		**Outputs Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	DO 9	BOOL	RW
	:0x02	DO 10	BOOL	RW
	:0x03	DO 11	BOOL	RW
	:0x04	DO 12	BOOL	RW
	:0x05	DO 13	BOOL	RW
	:0x06	DO 14	BOOL	RW
	:0x07	DO 15	BOOL	RW
	:0x08	DO 16	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
	:0x06	Input Mapping 5	UDINT	RO
	:0x07	Input Mapping 6	UDINT	RO
	:0x08	Input Mapping 7	UDINT	RO
	:0x09	Input Mapping 8	UDINT	RO
	:0x0A	Input Mapping 9	UDINT	RO
	:0x0B	Input Mapping 10	UDINT	RO
	:0x0C	Input Mapping 11	UDINT	RO
	:0x0D	Input Mapping 12	UDINT	RO
	:0x0E	Input Mapping 13	UDINT	RO
	:0x0F	Input Mapping 14	UDINT	RO
	:0x10	Input Mapping 15	UDINT	RO
	:0x11	Input Mapping 16	UDINT	RO

Index	Sub-index	Description/ name	Type	Access
0x6000		**Inputs Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	DI 1	BOOL	RO
	:0x03	DI 2	BOOL	RO
	:0x04	DI 3	BOOL	RO
	:0x05	DI 4	BOOL	RO
	:0x06	DI 5	BOOL	RO
	:0x07	DI 6	BOOL	RO
	:0x08	DI 7	BOOL	RO
	:0x09	DI 8	BOOL	RO
	:0x0A	DI 9	BOOL	RO
	:0x0B	DI 10	BOOL	RO
	:0x0C	DI 11	BOOL	RO
	:0x0D	DI 12	BOOL	RO
	:0x0E	DI 13	BOOL	RO
	:0x0F	DI 14	BOOL	RO
	:0x10	DI 15	BOOL	RO
	:0x11	DI 16	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0x8000		**Parameter Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RW
	:0x02	Pulse Stretching with Digital Inputs..Enable	UDINT	RW
	:0x03	Pulse Stretching with Digital Inputs..Pulse stretching for IN 1 is active	BOOL	RW
	:0x04	Pulse Stretching with Digital Inputs..Pulse stretching for IN 2 is active	BOOL	RW
	:0x05	Pulse Stretching with Digital Inputs..Pulse stretching for IN 3 is active	BOOL	RW
	:0x06	Pulse Stretching with Digital Inputs..Pulse stretching for IN 4 is active	BOOL	RW
	:0x07	Pulse Stretching with Digital Inputs..Pulse stretching for IN 5 is active	BOOL	RW
	:0x08	Pulse Stretching with Digital Inputs..Pulse stretching for IN 6 is active	BOOL	RW
	:0x09	Pulse Stretching with Digital Inputs..Pulse stretching for IN 7 is active	BOOL	RW
	:0x0A	Pulse Stretching with Digital Inputs..Pulse stretching for IN 8 is active	BOOL	RW
	:0x0B	Pulse Stretching with Digital Inputs..Duration_1_4	UDINT	RW
	:0x0C	Pulse Stretching with Digital Inputs..Duration_5_8	UDINT	RW
	:0x0D	Digital Input Filters..Enable	UDINT	RW
	:0x0E	Digital Input Filters..Digital filter for IN 1 is active	BOOL	RW
	:0x0F	Digital Input Filters..Digital filter for IN 2 is active	BOOL	RW
	:0x10	Digital Input Filters..Digital filter for IN 3 is active	BOOL	RW
	:0x11	Digital Input Filters..Digital filter for IN 4 is active	BOOL	RW
	:0x12	Digital Input Filters..Digital filter for IN 5 is active	BOOL	RW
	:0x13	Digital Input Filters..Digital filter for IN 6 is active	BOOL	RW
	:0x14	Digital Input Filters..Digital filter for IN 7 is active	BOOL	RW
	:0x15	Digital Input Filters..Digital filter for IN 8 is active	BOOL	RW
	:0x16	Digital Input Filters..Digital filter for IN 9 is active	BOOL	RW
	:0x17	Digital Input Filters..Digital filter for IN 10 is active	BOOL	RW
	:0x18	Digital Input Filters..Digital filter for IN 11 is active	BOOL	RW
	:0x19	Digital Input Filters..Digital filter for IN 12 is active	BOOL	RW
	:0x1A	Digital Input Filters..Digital filter for IN 13 is active	BOOL	RW
	:0x1B	Digital Input Filters..Digital filter for IN 14 is active	BOOL	RW
	:0x1C	Digital Input Filters..Digital filter for IN 15 is active	BOOL	RW
	:0x1D	Digital Input Filters..Digital filter for IN 16 is active	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x1E	Digital Input Filters..Delay_1-4	UDINT	RW
	:0x1F	Digital Input Filters..Delay_5_8	UDINT	RW
	:0x20	Digital Input Filters..Delay_9_12	UDINT	RW
	:0x21	Digital Input Filters..Delay_13_16	UDINT	RW
	:0x22	Counter A..Command	UDINT	RW
	:0x23	Counter A..Counter enable	UDINT	RW
	:0x24	Counter A..Prescaler	UDINT	RW
	:0x25	Counter A..Counter target	UDINT	RW
	:0x26	Counter B..Command	UDINT	RW
	:0x27	Counter B..Counter enable	UDINT	RW
	:0x28	Counter B..Prescaler	UDINT	RW
	:0x29	Counter B..Counter target	UDINT	RW
	:0x2A	Error conditions Digital outputs..Config	UDINT	RW
	:0x2B	Error conditions Digital Outputs..Output OUT 9 is set in case of interruption	BOOL	RW
	:0x2C	Error conditions Digital Outputs..Output OUT 10 is set in case of interruption	BOOL	RW
	:0x2D	Error conditions Digital Outputs..Output OUT 11 is set in case of interruption	BOOL	RW
	:0x2E	Error conditions Digital Outputs..Output OUT 12 is set in case of interruption	BOOL	RW
	:0x2F	Error conditions Digital Outputs..Output OUT 13 is set in case of interruption	BOOL	RW
	:0x30	Error conditions Digital Outputs..Output OUT 14 is set in case of interruption	BOOL	RW
	:0x31	Error conditions Digital Outputs..Output OUT 15 is set in case of interruption	BOOL	RW
	:0x32	Error conditions Digital Outputs..Output OUT 16 is set in case of interruption	BOOL	RW
	:0x33	Pulse Width Modulation PWM..Enable	UDINT	RW
	:0x34	Pulse Width Modulation PWM..PWM for OUT 9 is active	BOOL	RW
	:0x35	Pulse Width Modulation PWM..PWM for OUT 10 is active	BOOL	RW
	:0x36	Pulse Width Modulation PWM..PWM for OUT 11 is active	BOOL	RW
	:0x37	Pulse Width Modulation PWM..PWM for OUT 12 is active	BOOL	RW
	:0x38	Pulse Width Modulation PWM..PWM for OUT 13 is active	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x39	Pulse Width Modulation PWM..PWM for OUT 14 is active	BOOL	RW
	:0x3A	Pulse Width Modulation PWM..PWM for OUT 15 is active	BOOL	RW
	:0x3B	Pulse Width Modulation PWM..PWM for OUT 16 is active	BOOL	RW
	:0x3C	Pulse Width Modulation PWM..Prescaler_9_12	UDINT	RW
	:0x3D	Pulse Width Modulation PWM..Duty_Out9	UDINT	RW
	:0x3E	Pulse Width Modulation PWM..Duty_Out10	UDINT	RW
	:0x3F	Pulse Width Modulation PWM..Duty_Out11	UDINT	RW
	:0x40	Pulse Width Modulation PWM..Duty_Out12	UDINT	RW
	:0x41	Pulse Width Modulation PWM..Prescaler_13_16	UDINT	RW
	:0x42	Pulse Width Modulation PWM..Duty_Out13	UDINT	RW
	:0x43	Pulse Width Modulation PWM..Duty_Out14	UDINT	RW
	:0x44	Pulse Width Modulation PWM..Duty_Out15	UDINT	RW
	:0x45	Pulse Width Modulation PWM..Duty_Out16	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0xA000		**Status Module: JX3-DIO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Counter A..State	UDINT	RO
	:0x02	Counter A..Overflow	BOOL	RO
	:0x03	Counter A..Counter	UDINT	RO
	:0x04	Counter B..State	UDINT	RO
	:0x05	Counter B..Overflow	BOOL	RO
	:0x06	Counter B..Counter	UDINT	RO
	:0x07	Error conditions Digital outputs..State	UDINT	RO
	:0x08	Error conditions Digital Outputs..Output OUT 9 is set in case of interruption	BOOL	RO
	:0x09	Error conditions Digital Outputs..Output OUT 10 is set in case of interruption	BOOL	RO
	:0x0A	Error conditions Digital Outputs..Output OUT 11 is set in case of interruption	BOOL	RO
	:0x0B	Error conditions Digital Outputs..Output OUT 12 is set in case of interruption	BOOL	RO
	:0x0C	Error conditions Digital Outputs..Output OUT 13 is set in case of interruption	BOOL	RO
	:0x0D	Error conditions Digital Outputs..Output OUT 14 is set in case of interruption	BOOL	RO
	:0x0E	Error conditions Digital Outputs..Output OUT 15 is set in case of interruption	BOOL	RO
	:0x0F	Error conditions Digital Outputs..Output OUT 16 is set in case of interruption	BOOL	RO
	:0x10	Diagnostics..Status	UDINT	RO
	:0x11	Diagnostics..Short circuit/overload at the output driver	BOOL	RO
	:0x12	Diagnostics..Voltage at terminal X21.DC 24 V is below 16.3 V	BOOL	RO
	:0x13	Diagnostics..Voltage at terminal X32.DC 24 V is below 16.3 V	BOOL	RO
	:0x14	Diagnostics..Version	UDINT	RO

Tab. 18: Object Dictionary JX3-DIO16

8.2.8 Object Dictionary JX3-DO16

Index	Sub-index	Description/ name	Type	Access
0x1600		**RxPDO Map Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO
	:0x05	Output Mapping 5	UDINT	RO
	:0x06	Output Mapping 6	UDINT	RO
	:0x07	Output Mapping 7	UDINT	RO
	:0x08	Output Mapping 8	UDINT	RO
	:0x09	Output Mapping 9	UDINT	RO
	:0x0A	Output Mapping 10	UDINT	RO
	:0x0B	Output Mapping 11	UDINT	RO
	:0x0C	Output Mapping 12	UDINT	RO
	:0x0D	Output Mapping 13	UDINT	RO
	:0x0E	Output Mapping 14	UDINT	RO
	:0x0F	Output Mapping 15	UDINT	RO
	:0x10	Output Mapping 16	UDINT	RO

Index	Sub-index	Description/ name	Type	Access
0x7000		**Outputs Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	DO 1	BOOL	RW
	:0x02	DO 2	BOOL	RW
	:0x03	DO 3	BOOL	RW
	:0x04	DO 4	BOOL	RW
	:0x05	DO 5	BOOL	RW
	:0x06	DO 6	BOOL	RW
	:0x07	DO 7	BOOL	RW
	:0x08	DO 8	BOOL	RW
	:0x09	DO 9	BOOL	RW
	:0x0A	DO 10	BOOL	RW
	:0x0B	DO 11	BOOL	RW
	:0x0C	DO 12	BOOL	RW
	:0x0D	DO 13	BOOL	RW
	:0x0E	DO 14	BOOL	RW
	:0x0F	DO 15	BOOL	RW
	:0x10	DO 16	BOOL	RW
0x1A00		**TxPDO Map Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
0x6000		**Inputs Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO

Index	Sub-index	Description/ name	Type	Access
0x8000		**Parameter Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RW
	:0x02	Pulse Width Modulation PWM..Enable	UDINT	RW
	:0x03	Pulse Width Modulation PWM..PWM for OUT 9 is active	BOOL	RW
	:0x04	Pulse Width Modulation PWM..PWM for OUT 10 is active	BOOL	RW
	:0x05	Pulse Width Modulation PWM..PWM for OUT 11 is active	BOOL	RW
	:0x06	Pulse Width Modulation PWM..PWM for OUT 12 is active	BOOL	RW
	:0x07	Pulse Width Modulation PWM..PWM for OUT 13 is active	BOOL	RW
	:0x08	Pulse Width Modulation PWM..PWM for OUT 14 is active	BOOL	RW
	:0x09	Pulse Width Modulation PWM..PWM for OUT 15 is active	BOOL	RW
	:0x0A	Pulse Width Modulation PWM..PWM for OUT 16 is active	BOOL	RW
	:0x0B	Pulse Width Modulation PWM..Prescaler_9_12	UDINT	RW
	:0x0C	Pulse Width Modulation PWM..Duty_Out9	UDINT	RW
	:0x0D	Pulse Width Modulation PWM..Duty_Out10	UDINT	RW
	:0x0E	Pulse Width Modulation PWM..Duty_Out11	UDINT	RW
	:0x0F	Pulse Width Modulation PWM..Duty_Out12	UDINT	RW
	:0x10	Pulse Width Modulation PWM..Prescaler_13_16	UDINT	RW
	:0x11	Pulse Width Modulation PWM..Duty_Out13	UDINT	RW
	:0x12	Pulse Width Modulation PWM..Duty_Out14	UDINT	RW
	:0x13	Pulse Width Modulation PWM..Duty_Out15	UDINT	RW
	:0x14	Pulse Width Modulation PWM..Duty_Out16	UDINT	RW
	:0x15	Error conditions Digital Outputs..Config	UDINT	RW
	:0x16	Error conditions Digital Outputs..Output OUT 1 is set in case of interruption	BOOL	RW
	:0x17	Error conditions Digital Outputs..Output OUT 2 is set in case of interruption	BOOL	RW
	:0x18	Error conditions Digital Outputs..Output OUT 3 is set in case of interruption	BOOL	RW
	:0x19	Error conditions Digital Outputs..Output OUT 4 is set in case of interruption	BOOL	RW
	:0x1A	Error conditions Digital Outputs..Output OUT 5 is set in case of interruption	BOOL	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x1B	Error conditions Digital Outputs..Output OUT 6 is set in case of interruption	BOOL	RW
	:0x1C	Error conditions Digital Outputs..Output OUT 7 is set in case of interruption	BOOL	RW
	:0x1D	Error conditions Digital Outputs..Output OUT 8 is set in case of interruption	BOOL	RW
	:0x1E	Error conditions Digital Outputs..Output OUT 9 is set in case of interruption	BOOL	RW
	:0x1F	Error conditions Digital Outputs..Output OUT 10 is set in case of interruption	BOOL	RW
	:0x20	Error conditions Digital Outputs..Output OUT 11 is set in case of interruption	BOOL	RW
	:0x21	Error conditions Digital Outputs..Output OUT 12 is set in case of interruption	BOOL	RW
	:0x22	Error conditions Digital Outputs..Output OUT 13 is set in case of interruption	BOOL	RW
	:0x23	Error conditions Digital Outputs..Output OUT 14 is set in case of interruption	BOOL	RW
	:0x24	Error conditions Digital Outputs..Output OUT 15 is set in case of interruption	BOOL	RW
	:0x25	Error conditions Digital Outputs..Output OUT 16 is set in case of interruption	BOOL	RW
0xA000		**Status Module: JX3-DO16**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Error conditions Digital Outputs..State	UDINT	RO
	:0x02	Error conditions Digital Outputs..Output OUT 1 is set in case of interruption	BOOL	RO
	:0x03	Error conditions Digital Outputs..Output OUT 2 is set in case of interruption	BOOL	RO
	:0x04	Error conditions Digital Outputs..Output OUT 3 is set in case of interruption	BOOL	RO
	:0x05	Error conditions Digital Outputs..Output OUT 4 is set in case of interruption	BOOL	RO
	:0x06	Error conditions Digital Outputs..Output OUT 5 is set in case of interruption	BOOL	RO
	:0x07	Error conditions Digital Outputs..Output OUT 6 is set in case of interruption	BOOL	RO
	:0x08	Error conditions Digital Outputs..Output OUT 7 is set in case of interruption	BOOL	RO
	:0x09	Error conditions Digital Outputs..Output OUT 8 is set in case of interruption	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x0A	Error conditions Digital Outputs..Output OUT 9 is set in case of interruption	BOOL	RO
	:0x0B	Error conditions Digital Outputs..Output OUT 10 is set in case of interruption	BOOL	RO
	:0x0C	Error conditions Digital Outputs..Output OUT 11 is set in case of interruption	BOOL	RO
	:0x0D	Error conditions Digital Outputs..Output OUT 12 is set in case of interruption	BOOL	RO
	:0x0E	Error conditions Digital Outputs..Output OUT 13 is set in case of interruption	BOOL	RO
	:0x0F	Error conditions Digital Outputs..Output OUT 14 is set in case of interruption	BOOL	RO
	:0x10	Error conditions Digital Outputs..Output OUT 15 is set in case of interruption	BOOL	RO
	:0x11	Error conditions Digital Outputs..Output OUT 16 is set in case of interruption	BOOL	RO
	:0x12	Diagnostics..State	UDINT	RO
	:0x13	Diagnostics..Short circuit/overload at the output driver	BOOL	RO
	:0x14	Diagnostics..Voltage at terminal X21.DC 24 V is below 16.3 V	BOOL	RO
	:0x15	Diagnostics..Voltage at terminal X32.DC 24 V is below 16.3 V	BOOL	RO
	:0x16	Diagnostics..Version	UDINT	RO

Tab. 19: Object Dictionary JX3-DO16

8.2.9 Object Dictionary JX3-DMS2

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-DMS2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
0x6000		**Inputs Module: JX3-DMS2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
0x8000		**Parameter Module: JX3-DMS2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Module.Moduledіagnostics.OS_Version	UDINT	RW
	:0x02	Channel 1.Common.Command	UDINT	RW
	:0x03	Channel 1.Common.ForceVal	UDINT	RW
	:0x04	Channel 1.Configuration.Average	UDINT	RW
	:0x05	Channel 1.Configuration.LimitMin	UDINT	RW
	:0x06	Channel 1.Configuration.LimitMax	UDINT	RW
	:0x07	Channel 1.Configuration.Sensor Sensitivity - replaced by 1134	UDINT	RW
	:0x08	Channel 1.Configuration.TotalMin	UDINT	RW
	:0x09	Channel 1.Configuration.TotalMax	UDINT	RW
	:0x0A	Channel 1.Configuration.1. digital value analog input	UDINT	RW
	:0x0B	Channel 1.Configuration.1. physical value (min)	UDINT	RW
	:0x0C	Channel 1.Configuration.2. digital value analog input	UDINT	RW
	:0x0D	Channel 1.Configuration.2. physical value (max)	UDINT	RW
	:0x0E	Channel 1.Configuration.Offset of the linear equation y= mx+t	UDINT	RW
	:0x0F	Channel 1.Configuration.Offset actual value (similar to a scale’s tare function)	UDINT	RW
	:0x10	Channel 1.Configuration.Sensor Sensitivity	UDINT	RW
	:0x11	Channel 2.Common.Command	UDINT	RW
	:0x12	Channel 2.Common.ForceVal	UDINT	RW
	:0x13	Channel 2.Configuration.Average	UDINT	RW
	:0x14	Channel 2.Configuration.LimitMin	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x15	Channel 2.Configuration.LimitMax	UDINT	RW
	:0x16	Channel 2.Configuration.Sensor Sensitivity - replaced by 1234	UDINT	RW
	:0x17	Channel 2.Configuration.TotalMin	UDINT	RW
	:0x18	Channel 2.Configuration.TotalMax	UDINT	RW
	:0x19	Channel 2.Configuration.1. digital value analog input	UDINT	RW
	:0x1A	Channel 2.Configuration.1. physical value (min)	UDINT	RW
	:0x1B	Channel 2.Configuration.2. digital value analog input	UDINT	RW
	:0x1C	Channel 2.Configuration.2. physical value (max)	UDINT	RW
	:0x1D	Channel 2.Configuration.Offset of the linear equation y= mx+t	UDINT	RW
	:0x1E	Channel 2.Configuration.Offset actual value (similar to a scale’s tare function)	UDINT	RW
	:0x1F	Channel 2.Configuration.Sensor Sensitivity	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0xA000		**Status Module: JX3-DMS2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RO
	:0x02	Module.Moduledіagnostics.State	UDINT	RO
	:0x03	Module.Moduledіagnostics.Valid Bit	BOOL	RO
	:0x04	Module.Moduledіagnostics.Short cut power supply sensor 1 or 2	BOOL	RO
	:0x05	Module.Moduledіagnostics.Channel1 or Channel2 measurement value below lower sw limit	BOOL	RO
	:0x06	Module.Moduledіagnostics.Channel1 or Channel2 measurement value above upper sw limit	BOOL	RO
	:0x07	Module.Moduledіagnostics.Forcing of channel 1 OR channel 2 enabled	BOOL	RO
	:0x08	Module.Moduledіagnostics.Voltage Monitor of internal voltages is activated	BOOL	RO
	:0x09	Module.Moduledіagnostics.synchronized data exchange with plc	BOOL	RO
	:0x0A	Channel 1.Diagnostics.State	UDINT	RO
	:0x0B	Channel 1.Diagnostics.Tare activated	BOOL	RO
	:0x0C	Channel 1.Diagnostics.Measurement result valid	BOOL	RO
	:0x0D	Channel 1.Diagnostics.Unipolar mode active	BOOL	RO
	:0x0E	Channel 1.Diagnostics.Ultrafastmode active	BOOL	RO
	:0x0F	Channel 1.Diagnostics.Veryfast mode active	BOOL	RO
	:0x10	Channel 1.Diagnostics.Fast mode active	BOOL	RO
	:0x11	Channel 1.Diagnostics.Slow mode active	BOOL	RO
	:0x12	Channel 1.Diagnostics.Calibration data active	BOOL	RO
	:0x13	Channel 1.Diagnostics.Forcemode active	BOOL	RO
	:0x14	Channel 1.Diagnostics.Very slow mode active	BOOL	RO
	:0x15	Channel 1.Diagnostics.Scaling active	BOOL	RO
	:0x16	Channel 1.Diagnostics.User calibration 1 done	BOOL	RO
	:0x17	Channel 1.Diagnostics.User calibration 2 done	BOOL	RO
	:0x18	Channel 1.Diagnostics.Channel 1 active	BOOL	RO
	:0x19	Channel 1.Diagnostics.Voltage down	BOOL	RO
	:0x1A	Channel 2.Diagnostics.State	UDINT	RO
	:0x1B	Channel 2.Diagnostics.Tare activated	BOOL	RO
	:0x1C	Channel 2.Diagnostics.Measurement result valid	BOOL	RO
	:0x1D	Channel 2.Diagnostics.Unipolar mode active	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x1E	Channel 2.Diagnostics.Ultrafastmode active	BOOL	RO
	:0x1F	Channel 2.Diagnostics.Veryfast mode active	BOOL	RO
	:0x20	Channel 2.Diagnostics.Fast mode active	BOOL	RO
	:0x21	Channel 2.Diagnostics.Slow mode active	BOOL	RO
	:0x22	Channel 2.Diagnostics.Calibration data active	BOOL	RO
	:0x23	Channel 2.Diagnostics.Forcemode active	BOOL	RO
	:0x24	Channel 2.Diagnostics.Very slow mode active	BOOL	RO
	:0x25	Channel 2.Diagnostics.Scaling active	BOOL	RO
	:0x26	Channel 2.Diagnostics.User calibration 1 done	BOOL	RO
	:0x27	Channel 2.Diagnostics.User calibration 2 done	BOOL	RO
	:0x28	Channel 2.Diagnostics.Channel 2 active	BOOL	RO
	:0x29	Channel 2.Diagnostics.Voltage down	BOOL	RO

Tab. 20: Object Dictionary JX3-DMS2

8.2.10 Object Dictionary JX3-MIX1

Index	Sub-index	Description/ name	Type	Access
0x1600		**RxPDO Map Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO
	:0x05	Output Mapping 5	UDINT	RO
	:0x06	Output Mapping 6	UDINT	RO
	:0x07	Output Mapping 7	UDINT	RO
	:0x08	Output Mapping 8	UDINT	RO
	:0x09	Output Mapping 9	UDINT	RO
0x7000		**Outputs Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	PDO 1	INT	RW
	:0x02	DO 1	BOOL	RW
	:0x03	DO 2	BOOL	RW
	:0x04	DO 3	BOOL	RW
	:0x05	DO 4	BOOL	RW
	:0x06	DO 5	BOOL	RW
	:0x07	DO 6	BOOL	RW
	:0x08	DO 7	BOOL	RW
	:0x09	DO 8	BOOL	RW
0x1A00		**TxPDO Map Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
	:0x06	Input Mapping 5	UDINT	RO
	:0x07	Input Mapping 6	UDINT	RO
	:0x08	Input Mapping 7	UDINT	RO
	:0x09	Input Mapping 8	UDINT	RO
	:0x0A	Input Mapping 9	UDINT	RO

Index	Sub-index	Description/ name	Type	Access
0x1A00	:0x0B	Input Mapping 10	UDINT	RO
	:0x0C	Input Mapping 11	UDINT	RO
0x6000		**Inputs Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	PDI 1	DINT	RO
	:0x03	PDI 2	DINT	RO
	:0x04	PDI 3	DINT	RO
	:0x05	DI 1	BOOL	RO
	:0x06	DI 2	BOOL	RO
	:0x07	DI 3	BOOL	RO
	:0x08	DI 4	BOOL	RO
	:0x09	DI 5	BOOL	RO
	:0x0A	DI 6	BOOL	RO
	:0x0B	DI 7	BOOL	RO
	:0x0C	DI 8	BOOL	RO
0x8000		**Parameter Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Modulestate..State	UDINT	RW
	:0x02	Outputs..All Outputs	UDINT	RW
	:0x03	Digital Outputs..All Outputs	UDINT	RW
	:0x04	Digital Outputs..Output 1	BOOL	RW
	:0x05	Digital Outputs..Output 2	BOOL	RW
	:0x06	Digital Outputs..Output 3	BOOL	RW
	:0x07	Digital Outputs..Output 4	BOOL	RW
	:0x08	Digital Outputs..Output 5	BOOL	RW
	:0x09	Digital Outputs..Output 6	BOOL	RW
	:0x0A	Digital Outputs..Output 7	BOOL	RW
	:0x0B	Digital Outputs..Output 8	BOOL	RW
	:0x0C	analog input 1..command	UDINT	RW
	:0x0D	analog input 1..analog input 1: averaging	UDINT	RW
	:0x0E	analog input 2..command	UDINT	RW
	:0x0F	analog input 2..analog input 2: averaging	UDINT	RW
	:0x10	analog input 3..command	UDINT	RW
	:0x11	analog input 3..analog input 3: averaging	UDINT	RW
	:0x12	analog out 1..output value 0 - 4095	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0x8000	:0x13	counter A..counter value	UDINT	RW
	:0x14	counter A..command register counter A	UDINT	RW
	:0x15	counter B..counter value	UDINT	RW
	:0x16	counter B..command register counter B	UDINT	RW
	:0x17	stepper motor..command	UDINT	RW
	:0x18	stepper motor..position setpoint	UDINT	RW
	:0x19	stepper motor..position actual value	UDINT	RW
	:0x1A	oscilloscope..command	UDINT	RW
	:0x1B	oscilloscope..parameter index	UDINT	RW
	:0x1C	oscilloscope..parameter	UDINT	RW
	:0x1D	oscilloscope..data index	UDINT	RW
	:0x1E	Diagnostics..command for module	UDINT	RW
0xA000		**Status Module: JX3-MIX1**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Inputs..All Inputs	UDINT	RO
	:0x02	Digital Inputs..All Inputs	UDINT	RO
	:0x03	Digital Inputs..Input 1	BOOL	RO
	:0x04	Digital Inputs..Input 2	BOOL	RO
	:0x05	Digital Inputs..Input 3	BOOL	RO
	:0x06	Digital Inputs..Input 4	BOOL	RO
	:0x07	Digital Inputs..Input 5	BOOL	RO
	:0x08	Digital Inputs..Input 6	BOOL	RO
	:0x09	Digital Inputs..Input 7	BOOL	RO
	:0x0A	Digital Inputs..Input 8	BOOL	RO
	:0x0B	analog input 1..value	UDINT	RO
	:0x0C	analog input 1..state	UDINT	RO
	:0x0D	analog input 1..error calibration values	BOOL	RO
	:0x0E	analog input 1..error analog submodule	BOOL	RO
	:0x0F	analog input 1..analog data valid	BOOL	RO
	:0x10	analog input 2..value	UDINT	RO
	:0x11	analog input 2..state	UDINT	RO
	:0x12	analog input 2..error calibration values	BOOL	RO
	:0x13	analog input 2..error analog submodule	BOOL	RO
	:0x14	analog input 2..analog data valid	BOOL	RO
	:0x15	analog input 3..value	UDINT	RO
	:0x16	analog input 3..state	UDINT	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x17	analog input 3..error calibration values	BOOL	RO
	:0x18	analog input 3..error analog submodule	BOOL	RO
	:0x19	analog input 3..analog data valid	BOOL	RO
	:0x1A	analog out 1..state	UDINT	RO
	:0x1B	analog out 1..error calibration values	BOOL	RO
	:0x1C	analog out 1..error analog submodule	BOOL	RO
	:0x1D	analog out 1..analog data valid	BOOL	RO
	:0x1E	counter A..state	UDINT	RO
	:0x1F	counter A..rising edge activated	BOOL	RO
	:0x20	counter A..falling edge activated	BOOL	RO
	:0x21	counter A..both edges activated	BOOL	RO
	:0x22	counter A..force activated	BOOL	RO
	:0x23	counter A..modulo function activated	BOOL	RO
	:0x24	counter A..gate function activated	BOOL	RO
	:0x25	counter A..strobe function activated	BOOL	RO
	:0x26	counter A..reset function activated	BOOL	RO
	:0x27	counter A..count direction positive	BOOL	RO
	:0x28	counter A..dual channel counter activated	BOOL	RO
	:0x29	counter A..gate function inhibits counting	BOOL	RO
	:0x2A	counter A..counter a activated	BOOL	RO
	:0x2B	counter B..state	UDINT	RO
	:0x2C	counter B..rising edge activated	BOOL	RO
	:0x2D	counter B..falling edge activated	BOOL	RO
	:0x2E	counter B..both edges activated	BOOL	RO
	:0x2F	counter B..force activated	BOOL	RO
	:0x30	counter B..modulo function activated	BOOL	RO
	:0x31	counter B..gate function activated	BOOL	RO
	:0x32	counter B..strobe function activated	BOOL	RO
	:0x33	counter B..reset function activated	BOOL	RO
	:0x34	counter B..count direction positive	BOOL	RO
	:0x35	counter B..dual channel counter activated	BOOL	RO
	:0x36	counter B..gate function inhibits counting	BOOL	RO
	:0x37	counter B..counter B activated	BOOL	RO
	:0x38	stepper motor..state	UDINT	RO
	:0x39	stepper motor..pos limit switch active	BOOL	RO
	:0x3A	stepper motor..neg limit switch active	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x3B	stepper motor..ref switch active	BOOL	RO
	:0x3C	stepper motor..software switch li	BOOL	RO
	:0x3D	stepper motor..hardware switch li	BOOL	RO
	:0x3E	stepper motor..stepper controller error	BOOL	RO
	:0x3F	stepper motor..reference drive error	BOOL	RO
	:0x40	stepper motor..software limit switch enabled	BOOL	RO
	:0x41	stepper motor..stop at reference	BOOL	RO
	:0x42	stepper motor..axis type modulo	BOOL	RO
	:0x43	stepper motor..positioning mode relative	BOOL	RO
	:0x44	stepper motor..endless positioning active	BOOL	RO
	:0x45	stepper motor..driving direction positive	BOOL	RO
	:0x46	stepper motor..reference valid	BOOL	RO
	:0x47	stepper motor..axarr	BOOL	RO
	:0x48	stepper motor..within dest window	BOOL	RO
	:0x49	stepper motor..stepper motor standstill	BOOL	RO
	:0x4A	stepper motor..stepper controller busy	BOOL	RO
	:0x4B	stepper motor..motor in deceleration	BOOL	RO
	:0x4C	oscilloscope..data	UDINT	RO
	:0x4D	Diagnostics..state	UDINT	RO
	:0x4E	Diagnostics..error of internal voltage ref	BOOL	RO
	:0x4F	Diagnostics..error universal I/O	BOOL	RO
	:0x50	Diagnostics..error serial interface	BOOL	RO
	:0x51	Diagnostics..error stepper motor	BOOL	RO
	:0x52	Diagnostics..error analog conversion ad/da	BOOL	RO
	:0x53	Diagnostics..stepper motor: referenced	BOOL	RO
	:0x54	Diagnostics..stepper motor: window	BOOL	RO
	:0x55	Diagnostics..stepper motor: window defined	BOOL	RO
	:0x56	Diagnostics..stepper motor: axis stopped	BOOL	RO
	:0x57	Diagnostics..stepper motor: axis busy	BOOL	RO
	:0x58	Diagnostics..stepper motor: deceleration activated	BOOL	RO
	:0x59	Diagnostics..analog I/O: data valid	BOOL	RO
	:0x5A	Diagnostics..serial interface: data received	BOOL	RO
	:0x5B	Diagnostics..synchronous data exchange	BOOL	RO
	:0x5C	Diagnostics..OS_Version	UDINT	RO

Tab. 21: Object Dictionary JX3-MIX1

8.2.11 Object Dictionary JX3-MIX2

Index	Sub-index	Description/ name	Type	Access
0x1600		**RxPDO Map Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Output Mapping 1	UDINT	RO
	:0x02	Output Mapping 2	UDINT	RO
	:0x03	Output Mapping 3	UDINT	RO
	:0x04	Output Mapping 4	UDINT	RO
	:0x05	Output Mapping 5	UDINT	RO
0x7000		**Outputs Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	PDO 1	INT	RW
	:0x02	DO 1	BOOL	RW
	:0x03	DO 2	BOOL	RW
	:0x04	DO 3	BOOL	RW
	:0x05	DO 4	BOOL	RW
0x1A00		**TxPDO Map Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
	:0x06	Input Mapping 5	UDINT	RO
	:0x07	Input Mapping 6	UDINT	RO
	:0x08	Input Mapping 7	UDINT	RO
0x6000		**Inputs Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	PDI 1	DINT	RO
	:0x03	PDI 2	DINT	RO
	:0x04	PDI 3	DINT	RO
	:0x05	DI 1	BOOL	RO
	:0x06	DI 2	BOOL	RO
	:0x07	DI 3	BOOL	RO
	:0x08	DI 4	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0x8000		**Parameter Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Module state..State	UDINT	RW
	:0x02	Outputs..All Outputs	UDINT	RW
	:0x03	Digital Outputs..All Outputs	UDINT	RW
	:0x04	Digital Outputs..Output 1	BOOL	RW
	:0x05	Digital Outputs..Output 2	BOOL	RW
	:0x06	Digital Outputs..Output 3	BOOL	RW
	:0x07	Digital Outputs..Output 4	BOOL	RW
	:0x08	analog input 1..command	UDINT	RW
	:0x09	analog input 1..analog input 1: averaging	UDINT	RW
	:0x0A	analog input 2..command	UDINT	RW
	:0x0B	analog input 2..analog input 2: averaging	UDINT	RW
	:0x0C	analog input 3..command	UDINT	RW
	:0x0D	analog input 3..analog input 3: averaging	UDINT	RW
	:0x0E	analog out 1..output value 0 - 4095	UDINT	RW
	:0x0F	counter A..counter value	UDINT	RW
	:0x10	counter A..command register counter A	UDINT	RW
	:0x11	counter B..counter value	UDINT	RW
	:0x12	counter B..command register counter B	UDINT	RW
	:0x13	serial interface..command	UDINT	RW
	:0x14	serial interface..baudrate	UDINT	RW
	:0x15	serial interface..data bits	UDINT	RW
	:0x16	serial interface..stop bits	UDINT	RW
	:0x17	serial interface..parity	UDINT	RW
	:0x18	serial interface..interface	UDINT	RW
	:0x19	serial interface..send buffer	UDINT	RW
	:0x1A	serial interface..error counter	UDINT	RW
	:0x1B	stepper motor..command	UDINT	RW
	:0x1C	stepper motor..position setpoint	UDINT	RW
	:0x1D	stepper motor..position actual value	UDINT	RW
	:0x1E	oscilloscope..command	UDINT	RW
	:0x1F	oscilloscope..parameter index	UDINT	RW
	:0x20	oscilloscope..parameter	UDINT	RW
	:0x21	oscilloscope..data index	UDINT	RW
	:0x22	Diagnostics..command for module	UDINT	RW

Index	Sub-index	Description/ name	Type	Access
0xA000		**Status Module: JX3-MIX2**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Inputs..All Inputs	UDINT	RO
	:0x02	Digital Inputs..All Inputs	UDINT	RO
	:0x03	Digital Inputs..Input 1	BOOL	RO
	:0x04	Digital Inputs..Input 2	BOOL	RO
	:0x05	Digital Inputs..Input 3	BOOL	RO
	:0x06	Digital Inputs..Input 4	BOOL	RO
	:0x07	analog input 1..value	UDINT	RO
	:0x08	analog input 1..state	UDINT	RO
	:0x09	analog input 1..error calibration values	BOOL	RO
	:0x0A	analog input 1..error analog submodule	BOOL	RO
	:0x0B	analog input 1..analog data valid	BOOL	RO
	:0x0C	analog input 2..value	UDINT	RO
	:0x0D	analog input 2..state	UDINT	RO
	:0x0E	analog input 2..error calibration values	BOOL	RO
	:0x0F	analog input 2..error analog submodule	BOOL	RO
	:0x10	analog input 2..analog data valid	BOOL	RO
	:0x11	analog input 3..value	UDINT	RO
	:0x12	analog input 3..state	UDINT	RO
	:0x13	analog input 3..error calibration values	BOOL	RO
	:0x14	analog input 3..error analog submodule	BOOL	RO
	:0x15	analog input 3..analog data valid	BOOL	RO
	:0x16	analog out 1..state	UDINT	RO
	:0x17	analog out 1..error calibration values	BOOL	RO
	:0x18	analog out 1..error analog submodule	BOOL	RO
	:0x19	analog out 1..analog data valid	BOOL	RO
	:0x1A	counter A..state	UDINT	RO
	:0x1B	counter A..rising edge activated	BOOL	RO
	:0x1C	counter A..falling edge activated	BOOL	RO
	:0x1D	counter A..both edges activated	BOOL	RO
	:0x1E	counter A..force activated	BOOL	RO
	:0x1F	counter A..modulo function activated	BOOL	RO
	:0x20	counter A..gate function activated	BOOL	RO
	:0x21	counter A..strobe function activated	BOOL	RO
	:0x22	counter A..reset function activated	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x23	counter A..count direction positive	BOOL	RO
	:0x24	counter A..dual channel counter activated	BOOL	RO
	:0x25	counter A..gate function inhibits counting	BOOL	RO
	:0x26	counter A..counter a activated	BOOL	RO
	:0x27	counter B..state	UDINT	RO
	:0x28	counter B..rising edge activated	BOOL	RO
	:0x29	counter B..falling edge activated	BOOL	RO
	:0x2A	counter B..both edges activated	BOOL	RO
	:0x2B	counter B..force activated	BOOL	RO
	:0x2C	counter B..modulo function activated	BOOL	RO
	:0x2D	counter B..gate function activated	BOOL	RO
	:0x2E	counter B..strobe function activated	BOOL	RO
	:0x2F	counter B..reset function activated	BOOL	RO
	:0x30	counter B..count direction positive	BOOL	RO
	:0x31	counter B..dual channel counter activated	BOOL	RO
	:0x32	counter B..gate function inhibits counting	BOOL	RO
	:0x33	counter B..counter B activated	BOOL	RO
	:0x34	serial interface..state	UDINT	RO
	:0x35	serial interface..error serial interface	BOOL	RO
	:0x36	serial interface..buffer overflow send buffer	BOOL	RO
	:0x37	serial interface..buffer overflow receive buffer	BOOL	RO
	:0x38	serial interface..parity error	BOOL	RO
	:0x39	serial interface..frame error	BOOL	RO
	:0x3A	serial interface..data received	BOOL	RO
	:0x3B	serial interface..send buffer filling level	UDINT	RO
	:0x3C	serial interface..receive buffer show	UDINT	RO
	:0x3D	serial interface..receive buffer level	UDINT	RO
	:0x3E	stepper motor..state	UDINT	RO
	:0x3F	stepper motor..pos limit switch active	BOOL	RO
	:0x40	stepper motor..neg limit switch active	BOOL	RO
	:0x41	stepper motor..ref switch active	BOOL	RO
	:0x42	stepper motor..software switch li	BOOL	RO
	:0x43	stepper motor..hardware switch li	BOOL	RO
	:0x44	stepper motor..stepper controller error	BOOL	RO
	:0x45	stepper motor..reference drive error	BOOL	RO
	:0x46	stepper motor..software limit switch enabled	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x47	stepper motor..stop at reference	BOOL	RO
	:0x48	stepper motor..axis type modulo	BOOL	RO
	:0x49	stepper motor..positioning mode relative	BOOL	RO
	:0x4A	stepper motor..endless positioning active	BOOL	RO
	:0x4B	stepper motor..driving direction positive	BOOL	RO
	:0x4C	stepper motor..reference valid	BOOL	RO
	:0x4D	stepper motor..axarr	BOOL	RO
	:0x4E	stepper motor..within dest window	BOOL	RO
	:0x4F	stepper motor..stepper motor standstill	BOOL	RO
	:0x50	stepper motor..stepper controller busy	BOOL	RO
	:0x51	stepper motor..motor in deceleration	BOOL	RO
	:0x52	oscilloscope..data	UDINT	RO
	:0x53	Diagnostics..state	UDINT	RO
	:0x54	Diagnostics..error of internal voltage ref	BOOL	RO
	:0x55	Diagnostics..error universal I/O	BOOL	RO
	:0x56	Diagnostics..error serial interface	BOOL	RO
	:0x57	Diagnostics..error stepper motor	BOOL	RO
	:0x58	Diagnostics..error analog conversion ad/da	BOOL	RO
	:0x59	Diagnostics..stepper motor: referenced	BOOL	RO
	:0x5A	Diagnostics..stepper motor: window	BOOL	RO
	:0x5B	Diagnostics..stepper motor: window defined	BOOL	RO
	:0x5C	Diagnostics..stepper motor: axis stopped	BOOL	RO
	:0x5D	Diagnostics..stepper motor: axis busy	BOOL	RO
	:0x5E	Diagnostics..stepper motor: deceleration activated	BOOL	RO
	:0x5F	Diagnostics..analog I/O: data valid	BOOL	RO
	:0x60	Diagnostics..serial interface: data received	BOOL	RO
	:0x61	Diagnostics..synchronous data exchange	BOOL	RO
	:0x62	Diagnostics..OS_Version	UDINT	RO

Tab. 22: Object Dictionary JX3-MIX2

8.2.12 Object Dictionary JX3-THI2-RTD

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-THI2-RTD**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
0x6000		**Inputs Module: JX3-THI2-RTD**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
0x8000		**Parameter Module: JX3-THI2-RTD**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RW
	:0x02	Channel 1.Common.Command	UDINT	RW
	:0x03	Channel 1.Common.ForceVal	UDINT	RW
	:0x04	Channel 1.Configuration.Average	UDINT	RW
	:0x05	Channel 1.Configuration.LimitMin	UDINT	RW
	:0x06	Channel 1.Configuration.LimitMax	UDINT	RW
	:0x07	Channel 1.Configuration.TotalMin	UDINT	RW
	:0x08	Channel 1.Configuration.TotalMax	UDINT	RW
	:0x09	Channel 2.Common.Command	UDINT	RW
	:0x0A	Channel 2.Common.ForceVal	UDINT	RW
	:0x0B	Channel 2.Configuration.Average	UDINT	RW
	:0x0C	Channel 2.Configuration.LimitMin	UDINT	RW
	:0x0D	Channel 2.Configuration.LimitMax	UDINT	RW
	:0x0E	Channel 2.Configuration.TotalMin	UDINT	RW
	:0x0F	Channel 2.Configuration.TotalMax	UDINT	RW
0xA000		**Status Module: JX3-THI2-RTD**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Channel 1.Common.State	UDINT	RO
	:0x02	Channel 1.Common.Value in Fahrenheit	BOOL	RO
	:0x03	Channel 1.Common.2-wire measuring active	BOOL	RO
	:0x04	Channel 1.Common.3-wire measuring active	BOOL	RO
	:0x05	Channel 1.Common.4-wire measuring active	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x06	Channel 1.Common.10 ms Conversion active (0=100ms)	BOOL	RO
	:0x07	Channel 1.Common.Value Valid	BOOL	RO
	:0x08	Channel 1.Common.Channel is calibrated	BOOL	RO
	:0x09	Channel 1.Common.Forceval is shown	BOOL	RO
	:0x0A	Channel 1.Common.PT100 active (0=PT1000)	BOOL	RO
	:0x0B	Channel 1.Common.Temperature active (0= Resistance)	BOOL	RO
	:0x0C	Channel 1.Common.Calibration active	BOOL	RO
	:0x0D	Channel 1.Common.Potentiometer-mode active	BOOL	RO
	:0x0E	Channel 1.Common.Channel 1 active	BOOL	RO
	:0x0F	Channel 1.Common.Start Reset (synchronous)	BOOL	RO
	:0x10	Channel 1.Common.Cable Break	BOOL	RO
	:0x11	Channel 1.Common.Short-Circuit	BOOL	RO
	:0x12	Channel 1.Common.Deficient temperature	BOOL	RO
	:0x13	Channel 1.Common.Excess temperature	BOOL	RO
	:0x14	Channel 2.Common.State	UDINT	RO
	:0x15	Channel 2.Common.Value in Fahrenheit	BOOL	RO
	:0x16	Channel 2.Common.2-wire measuring active	BOOL	RO
	:0x17	Channel 2.Common.3-wire measuring active	BOOL	RO
	:0x18	Channel 2.Common.4-wire measuring active	BOOL	RO
	:0x19	Channel 2.Common.10 ms Conversion active (0=100ms)	BOOL	RO
	:0x1A	Channel 2.Common.Value Valid	BOOL	RO
	:0x1B	Channel 2.Common.Channel is calibrated	BOOL	RO
	:0x1C	Channel 2.Common.Forceval is shown	BOOL	RO
	:0x1D	Channel 2.Common.PT100 active (0=PT1000)	BOOL	RO
	:0x1E	Channel 2.Common.Temperature active (0=Resistance)	BOOL	RO
	:0x1F	Channel 2.Common.Calibration active	BOOL	RO
	:0x20	Channel 2.Common.Potentiometer-mode active	BOOL	RO
	:0x21	Channel 2.Common.Channel 2 active	BOOL	RO
	:0x22	Channel 2.Common.Start Reset (synchronous)	BOOL	RO
	:0x23	Channel 2.Common.Cable Break	BOOL	RO
	:0x24	Channel 2.Common.Short-Circuit	BOOL	RO
	:0x25	Channel 2.Common.Deficient temperature	BOOL	RO
	:0x26	Channel 2.Common.Excess temperature	BOOL	RO
	:0x27	Diagnostics..State	UDINT	RO
	:0x28	Diagnostics..Error Adjust Values	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x29	Diagnostics..All Channels Valid	BOOL	RO
	:0x2A	Diagnostics..Cable Break	BOOL	RO
	:0x2B	Diagnostics..Short-Circuit	BOOL	RO
	:0x2C	Diagnostics..Below Lower Limit	BOOL	RO
	:0x2D	Diagnostics..Above Upper Limit	BOOL	RO
	:0x2E	Diagnostics..One value measured	BOOL	RO
	:0x2F	Diagnostics..Force Value Active	BOOL	RO
	:0x30	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x31	Diagnostics..OS_Version	UDINT	RO

Tab. 23: Object Dictionary JX3-THI2-RTD

8.2.13 Object Dictionary JX3-THI2-RTD-EI

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-THI2-RTD-EI**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
0x6000		**Inputs Module: JX3-THI2-RTD-EI**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
0x8000		**Parameter Module: JX3-THI2-RTD-EI**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RW
	:0x02	Channel 1.Common.Command	UDINT	RW
	:0x03	Channel 1.Common.ForceVal	UDINT	RW
	:0x04	Channel 1.Configuration.Average	UDINT	RW
	:0x05	Channel 1.Configuration.LimitMin	UDINT	RW
	:0x06	Channel 1.Configuration.LimitMax	UDINT	RW
	:0x07	Channel 1.Configuration.TotalMin	UDINT	RW
	:0x08	Channel 1.Configuration.TotalMax	UDINT	RW
	:0x09	Channel 2.Common.Command	UDINT	RW
	:0x0A	Channel 2.Common.ForceVal	UDINT	RW
	:0x0B	Channel 2.Configuration.Average	UDINT	RW
	:0x0C	Channel 2.Configuration.LimitMin	UDINT	RW
	:0x0D	Channel 2.Configuration.LimitMax	UDINT	RW
	:0x0E	Channel 2.Configuration.TotalMin	UDINT	RW
	:0x0F	Channel 2.Configuration.TotalMax	UDINT	RW
0xA000		**Status Module: JX3-THI2-RTD-EI**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Channel 1.Common.State	UDINT	RO
	:0x02	Channel 1.Common.Value in Fahrenheit	BOOL	RO
	:0x03	Channel 1.Common.2-wire measuring active	BOOL	RO
	:0x04	Channel 1.Common.3-wire measuring active	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x05	Channel 1.Common.4-wire measuring active	BOOL	RO
	:0x06	Channel 1.Common.10 ms Conversion active (0=100ms)	BOOL	RO
	:0x07	Channel 1.Common.Value Valid	BOOL	RO
	:0x08	Channel 1.Common.Channel is calibrated	BOOL	RO
	:0x09	Channel 1.Common.Forceval is shown	BOOL	RO
	:0x0A	Channel 1.Common.PT100 active (0=PT1000)	BOOL	RO
	:0x0B	Channel 1.Common.Temperature active (0= Resistance)	BOOL	RO
	:0x0C	Channel 1.Common.Calibration active	BOOL	RO
	:0x0D	Channel 1.Common.Potentiometer-mode active	BOOL	RO
	:0x0E	Channel 1.Common.Channel 1 active	BOOL	RO
	:0x0F	Channel 1.Common.Start Reset (synchronous)	BOOL	RO
	:0x10	Channel 1.Common.Cable Break	BOOL	RO
	:0x11	Channel 1.Common.Short-Circuit	BOOL	RO
	:0x12	Channel 1.Common.Deficient temperature	BOOL	RO
	:0x13	Channel 1.Common.Excess temperature	BOOL	RO
	:0x14	Channel 2.Common.State	UDINT	RO
	:0x15	Channel 2.Common.Value in Fahrenheit	BOOL	RO
	:0x16	Channel 2.Common.2-wire measuring active	BOOL	RO
	:0x17	Channel 2.Common.3-wire measuring active	BOOL	RO
	:0x18	Channel 2.Common.4-wire measuring active	BOOL	RO
	:0x19	Channel 2.Common.10 ms Conversion active (0=100ms)	BOOL	RO
	:0x1A	Channel 2.Common.Value Valid	BOOL	RO
	:0x1B	Channel 2.Common.Channel is calibrated	BOOL	RO
	:0x1C	Channel 2.Common.Forceval is shown	BOOL	RO
	:0x1D	Channel 2.Common.PT100 active (0=PT1000)	BOOL	RO
	:0x1E	Channel 2.Common.Temperature active (0= Resistance)	BOOL	RO
	:0x1F	Channel 2.Common.Calibration active	BOOL	RO
	:0x20	Channel 2.Common.Potentiometer-mode active	BOOL	RO
	:0x21	Channel 2.Common.Channel 2 active	BOOL	RO
	:0x22	Channel 2.Common.Start Reset (synchronous)	BOOL	RO
	:0x23	Channel 2.Common.Cable Break	BOOL	RO
	:0x24	Channel 2.Common.Short-Circuit	BOOL	RO
	:0x25	Channel 2.Common.Deficient temperature	BOOL	RO
	:0x26	Channel 2.Common.Excess temperature	BOOL	RO
	:0x27	Diagnostics..State	UDINT	RO
	:0x28	Diagnostics..Error Adjust Values	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x29	Diagnostics..All Channels Valid	BOOL	RO
	:0x2A	Diagnostics..Cable Break	BOOL	RO
	:0x2B	Diagnostics..Short-Circuit	BOOL	RO
	:0x2C	Diagnostics..Below Lower Limit	BOOL	RO
	:0x2D	Diagnostics..Above Upper Limit	BOOL	RO
	:0x2E	Diagnostics..One value measured	BOOL	RO
	:0x2F	Diagnostics..Force Value Active	BOOL	RO
	:0x30	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x31	Diagnostics..OS_Version	UDINT	RO

Tab. 24: JX3-THI2-RTD-EI object directory

8.2.14 Object Dictionary JX3-THI2-TC

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-THI2-TC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
0x6000		**Inputs Module: JX3-THI2-TC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
0x8000		**Parameter Module: JX3-THI2-TC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RW
	:0x02	Channel 1.Common.Command	UDINT	RW
	:0x03	Channel 1.Common.ForceVal	UDINT	RW
	:0x04	Channel 1.Configuration.Average	UDINT	RW
	:0x05	Channel 1.Configuration.Config	UDINT	RW
	:0x06	Channel 1.Configuration.LimitMin	UDINT	RW
	:0x07	Channel 1.Configuration.LimitMax	UDINT	RW
	:0x08	Channel 1.Configuration.TotalMin	UDINT	RW
	:0x09	Channel 1.Configuration.TotalMax	UDINT	RW
	:0x0A	Channel 2.Common.Command	UDINT	RW
	:0x0B	Channel 2.Common.ForceVal	UDINT	RW
	:0x0C	Channel 2.Configuration.Average	UDINT	RW
	:0x0D	Channel 2.Configuration.Config	UDINT	RW
	:0x0E	Channel 2.Configuration.LimitMin	UDINT	RW
	:0x0F	Channel 2.Configuration.LimitMax	UDINT	RW
	:0x10	Channel 2.Configuration.TotalMin	UDINT	RW
	:0x11	Channel 2.Configuration.TotalMax	UDINT	RW
0xA000		**Status Module: JX3-THI2-TC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Channel 1.Common.State	UDINT	RO
	:0x02	Channel 1.Common.Value in Fahrenheit	BOOL	RO
	:0x03	Channel 1.Common.Ice point compensation	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x04	Channel 1.Common.10ms Conversion active (0=100ms)	BOOL	RO
	:0x05	Channel 1.Common.Value Valid	BOOL	RO
	:0x06	Channel 1.Common.Channel is calibrated	BOOL	RO
	:0x07	Channel 1.Common.Forcing enabled	BOOL	RO
	:0x08	Channel 1.Common.show temperature of thermocouple (0= show temperature of icepoint)	BOOL	RO
	:0x09	Channel 1.Common.temperature is shown (0=Voltage of thermocouple)	BOOL	RO
	:0x0A	Channel 1.Common.Calibration active	BOOL	RO
	:0x0B	Channel 1.Common.Channel 1 active	BOOL	RO
	:0x0C	Channel 1.Common.Start Reset (synchronous)	BOOL	RO
	:0x0D	Channel 2.Common.State	UDINT	RO
	:0x0E	Channel 2.Common.Value in Fahrenheit	BOOL	RO
	:0x0F	Channel 2.Common.Ice point compensation	BOOL	RO
	:0x10	Channel 2.Common.10ms Conversion active (0=100ms)	BOOL	RO
	:0x11	Channel 2.Common.Value Valid	BOOL	RO
	:0x12	Channel 2.Common.Channel is calibrated	BOOL	RO
	:0x13	Channel 2.Common.Forcing enabled	BOOL	RO
	:0x14	Channel 2.Common.show temperature of thermocouple (0= show temperature of icepoint)	BOOL	RO
	:0x15	Channel 2.Common.temperature is shown (0=Voltage of thermocouple)	BOOL	RO
	:0x16	Channel 2.Common.Calibration active	BOOL	RO
	:0x17	Channel 2.Common.Channel 2 active	BOOL	RO
	:0x18	Channel 2.Common.Start Reset (synchronous)	BOOL	RO
	:0x19	Diagnostics..State	UDINT	RO
	:0x1A	Diagnostics..Error Adjust Values	BOOL	RO
	:0x1B	Diagnostics..All Channels Valid	BOOL	RO
	:0x1C	Diagnostics..Cable Break	BOOL	RO
	:0x1D	Diagnostics..Short-Circuit	BOOL	RO
	:0x1E	Diagnostics..Below Lower Limit	BOOL	RO
	:0x1F	Diagnostics..Above Upper Limit	BOOL	RO
	:0x20	Diagnostics..Force Value Active	BOOL	RO
	:0x21	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x22	Diagnostics..OS_Version	UDINT	RO

Tab. 25: Object Dictionary JX3-THI2-TC

8.2.15 JX3-THI2-TC-EIC object directory

Index	Sub-index	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-THI2-TC-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
0x6000		**Module inputs: JX3-THI2-TC-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
0x8000		**Parameter Module: JX3-THI2-TC-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..State	UDINT	RW
	:0x02	Channel 1.Common.Command	UDINT	RW
	:0x03	Channel 1.Common.ForceVal	UDINT	RW
	:0x04	Channel 1.Configuration.Average	UDINT	RW
	:0x05	Channel 1.Configuration.Config	UDINT	RW
	:0x06	Channel 1.Configuration.LimitMin	UDINT	RW
	:0x07	Channel 1.Configuration.LimitMax	UDINT	RW
	:0x08	Channel 1.Configuration.TotalMin	UDINT	RW
	:0x09	Channel 1.Configuration.TotalMax	UDINT	RW
	:0x0A	Channel 2.Common.Command	UDINT	RW
	:0x0B	Channel 2.Common.ForceVal	UDINT	RW
	:0x0C	Channel 2.Configuration.Average	UDINT	RW
	:0x0D	Channel 2.Configuration.Config	UDINT	RW
	:0x0E	Channel 2.Configuration.LimitMin	UDINT	RW
	:0x0F	Channel 2.Configuration.LimitMax	UDINT	RW
	:0x10	Channel 2.Configuration.TotalMin	UDINT	RW
	:0x11	Channel 2.Configuration.TotalMax	UDINT	RW
0xA000		**Status Module: JX3-THI2-TC-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Channel 1.Common.State	UDINT	RO
	:0x02	Channel 1.Common.Value in Fahrenheit	BOOL	RO

Index	Sub-index	Description/ name	Type	Access
0xA000	:0x03	Channel 1.Common.Ice point compensation	BOOL	RO
	:0x04	Channel 1.Common.10ms Conversion active (0=100ms)	BOOL	RO
	:0x05	Channel 1.Common.Value Valid	BOOL	RO
	:0x06	Channel 1.Common.Channel is calibrated	BOOL	RO
	:0x07	Channel 1.Common.Forcing enabled	BOOL	RO
	:0x08	Channel 1.Common.show temperature of thermocouple (0= show temperature of icepoint)	BOOL	RO
	:0x09	Channel 1.Common.temperature is shown (0=Voltage of thermocouple)	BOOL	RO
	:0x0A	Channel 1.Common.Calibration active	BOOL	RO
	:0x0B	Channel 1.Common.Channel 1 active	BOOL	RO
	:0x0C	Channel 1.Common.Start Reset (synchronous)	BOOL	RO
	:0x0D	Channel 2.Common.State	UDINT	RO
	:0x0E	Channel 2.Common.Value in Fahrenheit	BOOL	RO
	:0x0F	Channel 2.Common.Ice point compensation	BOOL	RO
	:0x10	Channel 2.Common.10ms Conversion active (0=100ms)	BOOL	RO
	:0x11	Channel 2.Common.Value Valid	BOOL	RO
	:0x12	Channel 2.Common.Channel is calibrated	BOOL	RO
	:0x13	Channel 2.Common.Forcing enabled	BOOL	RO
	:0x14	Channel 2.Common.show temperature of thermocouple (0= show temperature of icepoint)	BOOL	RO
	:0x15	Channel 2.Common.temperature is shown (0=Voltage of thermocouple)	BOOL	RO
	:0x16	Channel 2.Common.Calibration active	BOOL	RO
	:0x17	Channel 2.Common.Channel 2 active	BOOL	RO
	:0x18	Channel 2.Common.Start Reset (synchronous)	BOOL	RO
	:0x19	Diagnostics..State	UDINT	RO
	:0x1A	Diagnostics..Error Adjust Values	BOOL	RO
	:0x1B	Diagnostics..All Channels Valid	BOOL	RO
	:0x1C	Diagnostics..Cable Break	BOOL	RO
	:0x1D	Diagnostics..Short-Circuit	BOOL	RO
	:0x1E	Diagnostics..Below Lower Limit	BOOL	RO
	:0x1F	Diagnostics..Above Upper Limit	BOOL	RO
	:0x20	Diagnostics..Force Value Active	BOOL	RO
	:0x21	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x22	Diagnostics..OS_Version	UDINT	RO

Tab. 26: JX3-THI2-TC-EIC object directory

8.2.16 JX3-AI4-EIC object directory

Index	Subindex	Description/ name	Type	Access
0x1A00		**TxPDO Map Module: JX3-AI4-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	UDINT	RO
	:0x02	Input Mapping 1	UDINT	RO
	:0x03	Input Mapping 2	UDINT	RO
	:0x04	Input Mapping 3	UDINT	RO
	:0x05	Input Mapping 4	UDINT	RO
0x6000		**Module inputs: JX3-AI4-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	State	DINT	RO
	:0x02	AI 1	DINT	RO
	:0x03	AI 2	DINT	RO
	:0x04	AI 3	DINT	RO
	:0x05	AI 4	DINT	RO
0x8000		**Parameter Module: JX3-AI4-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Diagnostics..Status	UDINT	RW
	:0x02	Analog In..Command	UDINT	RW
	:0x03	Input 1.Common.Command	UDINT	RW
	:0x04	Input 1.Common.ForceVal	UDINT	RW
	:0x05	Input 1.Configuration.Config	UDINT	RW
	:0x06	Input 1.Configuration.UserUI1	UDINT	RW
	:0x07	Input 1.Configuration.UserDig1	UDINT	RW
	:0x08	Input 1.Configuration.UserUI2	UDINT	RW
	:0x09	Input 1.Configuration.UserDig2	UDINT	RW
	:0x0A	Input 1.Configuration.LimitMin	UDINT	RW
	:0x0B	Input 1.Configuration.LimitMax	UDINT	RW
	:0x0C	Input 1.Configuration.TotalMin	UDINT	RW
	:0x0D	Input 1.Configuration.TotalMax	UDINT	RW
	:0x0E	Input 1.Configuration.Average	UDINT	RW
	:0x0F	Input 2.Common.Command	UDINT	RW
	:0x10	Input 2.Common.ForceVal	UDINT	RW
	:0x11	Input 2.Configuration.Config	UDINT	RW
	:0x12	Input 2.Configuration.UserUI1	UDINT	RW

Index	Subindex	Description/ name	Type	Access
0x8000	:0x13	Input 2.Configuration.UserDig1	UDINT	RW
	:0x14	Input 2.Configuration.UserUI2	UDINT	RW
	:0x15	Input 2.Configuration.UserDig2	UDINT	RW
	:0x16	Input 2.Configuration.LimitMin	UDINT	RW
	:0x17	Input 2.Configuration.LimitMax	UDINT	RW
	:0x18	Input 2.Configuration.TotalMin	UDINT	RW
	:0x19	Input 2.Configuration.TotalMax	UDINT	RW
	:0x1A	Input 2.Configuration.Average	UDINT	RW
	:0x1B	Input 3.Common.Command	UDINT	RW
	:0x1C	Input 3.Common.ForceVal	UDINT	RW
	:0x1D	Input 3.Configuration.Config	UDINT	RW
	:0x1E	Input 3.Configuration.UserUI1	UDINT	RW
	:0x1F	Input 3.Configuration.UserDig1	UDINT	RW
	:0x20	Input 3.Configuration.UserUI2	UDINT	RW
	:0x21	Input 3.Configuration.UserDig2	UDINT	RW
	:0x22	Input 3.Configuration.LimitMin	UDINT	RW
	:0x23	Input 3.Configuration.LimitMax	UDINT	RW
	:0x24	Input 3.Configuration.TotalMin	UDINT	RW
	:0x25	Input 3.Configuration.TotalMax	UDINT	RW
	:0x26	Input 3.Configuration.Average	UDINT	RW
	:0x27	Input 4.Common.	UDINT	RW
	:0x28	Input 4.Common.ForceVal	UDINT	RW
	:0x29	Input 4.Configuration.Config	UDINT	RW
	:0x2A	Input 4.Configuration.UserUI1	UDINT	RW
	:0x2B	Input 4.Configuration.UserDig1	UDINT	RW
	:0x2C	Input 4.Configuration.UserUI2	UDINT	RW
	:0x2D	Input 4.Configuration.UserDig2	UDINT	RW
	:0x2E	Input 4.Configuration.LimitMin	UDINT	RW
	:0x2F	Input 4.Configuration.LimitMax	UDINT	RW
	:0x30	Input 4.Configuration.TotalMin	UDINT	RW
	:0x31	Input 4.Configuration.TotalMax	UDINT	RW
	:0x32	Input 4.Configuration.Average	UDINT	RW
0xA000		**Status Module: JX3-AI4-EIC**		
	:0x00	SubIndex 000	USINT	RO
	:0x01	Input 1.Common.State	UDINT	RO
	:0x02	Input 1.Common.Value Valid	BOOL	RO

Index	Subindex	Description/ name	Type	Access
0xA000	:0x03	Input 1.Common.Below Lower Limit	BOOL	RO
	:0x04	Input 1.Common.Above Upper Limit	BOOL	RO
	:0x05	Input 1.Common.Out Of Range Negative	BOOL	RO
	:0x06	Input 1.Common.Out Of Range Positive	BOOL	RO
	:0x07	Input 1.Common.Force Value Active	BOOL	RO
	:0x08	Input 2.Common.State	UDINT	RO
	:0x09	Input 2.Common.Value Valid	BOOL	RO
	:0x0A	Input 2.Common.Below Lower Limit	BOOL	RO
	:0x0B	Input 2.Common.Above Upper Limit	BOOL	RO
	:0x0C	Input 2.Common.Out Of Range Negative	BOOL	RO
	:0x0D	Input 2.Common.Out Of Range Positive	BOOL	RO
	:0x0E	Input 2.Common.Force Value Active	BOOL	RO
	:0x0F	Input 3.Common.State	UDINT	RO
	:0x10	Input 3.Common.Value Valid	BOOL	RO
	:0x11	Input 3.Common.Below Lower Limit	BOOL	RO
	:0x12	Input 3.Common.Above Upper Limit	BOOL	RO
	:0x13	Input 3.Common.Out Of Range Negative	BOOL	RO
	:0x14	Input 3.Common.Out Of Range Positive	BOOL	RO
	:0x15	Input 3.Common.Force Value Active	BOOL	RO
	:0x16	Input 4.Common.State	UDINT	RO
	:0x17	Input 4.Common.Value Valid	BOOL	RO
	:0x18	Input 4.Common.Below Lower Limit	BOOL	RO
	:0x19	Input 4.Common.Above Upper Limit	BOOL	RO
	:0x1A	Input 4.Common.Out Of Range Negative	BOOL	RO
	:0x1B	Input 4.Common.Out Of Range Positive	BOOL	RO
	:0x1C	Input 4.Common.Force Value Active	BOOL	RO
	:0x1D	Diagnostics..State	UDINT	RO
	:0x1E	Diagnostics..Error Hardware	BOOL	RO
	:0x1F	Diagnostics..Error Adjust Values	BOOL	RO
	:0x20	Diagnostics..Error AD-Converter	BOOL	RO
	:0x21	Diagnostics..Error Internal Voltage	BOOL	RO
	:0x22	Diagnostics..All Channels Valid	BOOL	RO
	:0x23	Diagnostics..Below Lower Limit	BOOL	RO
	:0x24	Diagnostics..Above Upper Limit	BOOL	RO
	:0x25	Diagnostics..Out Of Range Negative	BOOL	RO
	:0x26	Diagnostics..Out Of Range Positive	BOOL	RO

Index	Subindex	Description/ name	Type	Access
0xA000	:0x27	Diagnostics..Force Value Active	BOOL	RO
	:0x28	Diagnostics..Voltage Monitoring On	BOOL	RO
	:0x29	Diagnostics..Synchronous Data Exchange	BOOL	RO
	:0x2A	Diagnostics..Single Sampling Active	BOOL	RO
	:0x2B	Diagnostics..OS_Version	UDINT	RO

Tab. 27: JX3-AI4-EIC object directory

9 Errata

This chapter contains an overview of errata that are known in connection with the JX3-BN-EC.

9.1 Access to FLOAT values

Access to FLOAT values

Error	It is not possible to access FLOAT values (floating-point numbers) of JX3 IO modules via registers and SDOs. There are no limitations for accessing FLOAT values via PDOs or via the module registers 0000 ... 0009.
Effect	At present, this error occurs only with the device's internal oscilloscope feature when recording temperature values in module register 9744 (type: FLOAT) of the JX3-THI2-RTD(-EI) and JX3-THI2-TC(-EI/EIC) modules. When accessing this register via the application program or the JetSym oscilloscope (internal mode), the system returns incorrect values. Currently, there are no other known issues, given that JX3 IO modules do not use any other FLOAT values.
Workaround	As temperature readings are made with a periodicity of 10 ms max, an alternative recording method is as follows: – Direct access to temperature data from within the controller's application program via PDOs or module registers. – Use the JetSym oscilloscope live mode instead of the internal mode.

10 Maintenance

This device is maintenance free. Therefore, for the operation of the device, no inspection or maintenance is required.

10.1 Repairs

Defective components could cause dangerous malfunctions and could compromise safety.
Only the manufacturer is allowed to repair the device.
It is forbidden to open the device.

Modifications to the device

Modifications and alterations to the device and its functions are not allowed. In the case of modifications to the device, any liability is excluded.

The original parts are specifically designed for the device. Parts and equipment from other manufacturers must, therefore, not be used.

Any liability for any damages resulting from the use of non-original parts and equipment is excluded.

10.2 Storage and Shipment

Storage

When storing the device observe the environmental conditions given in chapter “Technical specifications”.

Shipment and packaging

The device contains electrostatically sensitive components which can be damaged if not handled properly. Damages to the device may impair its reliability.

To protect the device from impact or shock, it must be shipped in its original packaging, or in an appropriate protective ESD packaging.
In case of damaged packaging inspect the device for any visible damage, and inform your freight forwarder and the Bucher Automation AG of the damage caused during shipment. If the device is damaged or has been dropped, it is strictly forbidden to use it.

10.3 Return and Disposal

Disposal options

Return your Bucher Automation AG product to us for proper disposal. Visit our website for detailed information and to download the required Returns form.

Meaning of WEEE icon



Fig. 16: WEEE icon – crossed out trash can

The product is waste electronic equipment and must be disposed of by a certified waste management facility. Do not dispose of the product with normal household waste. Applicable local environmental directives and regulations must be complied with.

Batteries

Prior to disposing of waste electronics, remove any batteries where this is possible in a safe and non-destructive way. Dispose of batteries properly.

Personal data

It is the responsibility of the customers to delete any personal data stored on waste electric and electronic equipment prior to disposal.

11 Service

11.1 Technical support

In case of questions, suggestions, or issues, please contact our experts from Technical Support. You may reach out by phone or through the contact form on our homepage:

Technical Support | Bucher Automation - We automate your success.

Or email us:

support@bucherautomation.com

Please supply the following information when contacting Technical Support:

– Hardware revision and serial number
  The hardware revision and serial number is printed on the nameplate of the product.
– OS version
  To determine the operating system version, use the functions of the development environment.

12 Spare parts and accessories

NOTICE



Inadequate accessories might cause damage to the product

Parts and equipment from other manufacturers might impede the function of the device and cause damage to the product.

► Only use accessories recommended by Bucher Automation AG.

12.1 Spare Parts

Component	Item number
Terminal labels	60870411
Male connector in spring-cage technology, 2-pin	60870409

Tab. 28: Spare parts

12.2 Accessories

ⓘ Info

Ordering Accessories

The accessories are not part of the scope of delivery.

Suitable accessories can be obtained from Bucher Automation AG.

Component	Item number
Screwdriver	60871712
End clamp for DIN rail	60863970

Tab. 29: Accessories

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