Accessories

DeviceNet™

E94AYCDN

Servo Drives 9400

Communication Manual EN

13451097

Lenze

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1 About this documentation

This documentation only contains descriptions of the E94AYCDN (DeviceNet™) communication module.

Note!

This documentation supplements the **mounting instructions** supplied with the communication module and the **Servo Drives 9400 hardware manual**.

The mounting instructions contain safety instructions that must be observed!

The features and functions of the communication module are described in detail.

Examples illustrate typical applications.

The theoretical concepts are only explained to the level of detail required to understand the function of the communication module.

This documentation does not describe the software of another manufacturer. No guarantee can be given for corresponding information in this documentation. Information on the use of the software can be found in the documents for the host (PLC, scanner).

All brand names mentioned in this documentation are trademarks of their corresponding owners.

Tip!

Detailed information on DeviceNet can be found on the website of the user organisation ODVA (Open DeviceNet Vendor Association):

www.odva.org

Target group

This documentation is intended for all persons who plan, install, commission and maintain the networking and remote servicing of a machine.

Tip!

Current documentation and software updates for Lenze products can be found in the download area at:

www.lenze.com

Validity information

The information in this documentation applies to the following devices:

Extension module	Type designation	From hardware version	From software version
Communication module DeviceNet	E94AYCDN	VA	01.00

Screenshots/application examples

All screenshots in this documentation are application examples. Depending on the firmware version of the communication module and the software version of the installed engineering tools (e.g. »Engineer«), the screenshots in this documentation may differ from the screen representation.

1.1 Document history

Version			Description
1.0	04/2008	TD17	Field test version
2.0	06/2008	TD17	First edition
3.0	11/2008	TD17	General revision
4.0	01/2013	TD17	• Update for C13861 / C14861 (module status) and C13862 / C14862 (network status) • New layout
5.0	02/2014	TD17	General updates

1.2 Conventions used

This documentation uses the following conventions to distinguish different types of information:

Type of information	Identification	Examples/notes
Numbers		
Decimal	Standard notation	Example: 1234
Decimal separator	Point	In general, the decimal point is used. Example: 1234.56
Hexadecimal	0x[0 ... 9, A ... F]	Example: 0x60F4
Binary • Nibble	In inverted commas Point	Example: '100' Example: '0110.0100'
Text		
Version information	Text colour blue	All pieces of information that only apply to or from a specific software version of the device are highlighted accordingly in this documentation. Example: This function extension is available from software version V3.0!
Program name	» «	The Lenze PC software »Engineer«...
Control element	**Bold**	The **OK** button... / The **Copy** command... / The **Properties** tab... / The **Name** input field...
Sequence of menu commands		If several successive commands are required for executing a function, the individual commands are separated from each other by an arrow: Select the command **File → Open** to...
Hyperlink	Underlined	Optically highlighted reference to another topic. Can be activated with a mouse-click in this online documentation.
Icons		
Page reference	(📖 8)	Optically highlighted reference to another page. Can be activated with a mouse-click in this online documentation.
Step-by-step instructions		Step-by-step instructions are marked by a pictograph.

1.3 Terminology used

Term	Meaning
Drive	Lenze inverters of the "Servo Drives 9400" product series
Standard device	
Code	Parameter which serves to parameterise and monitor the drive. In normal usage, the term is usually referred to as "Index".
Subcode	If a code contains several parameters, they are stored in so-called "subcodes". This manual uses a slash "/" as a separator between code and subcode (e.g. "C00118/3"). In normal usage, the term is also referred to as "Subindex".
CoS	**C**hange **o**f **S**tate CoS nodes always transmit their data if the data status changes.
Device	DeviceNet slave
DeviceNet	DeviceNet™ is a fieldbus system based on CAN (Controller Area Network). DeviceNet™ is a trademark and patented technology, licensed by the user organisation ODVA (Open DeviceNet Vendor Association), USA.
»Engineer«	PC software from Lenze which supports you during engineering (parameterisation, diagnostics, and configuration) throughout the entire life cycle, i.e. from planning to maintenance of the commissioned machine.
Explicit messages	Parameter data
HW	Hardware
Host	DeviceNet master
Scanner	
Lenze setting	Setting with which the device is preconfigured ex works.
»RSLogix 5000«	Programming and development software by Rockwell for hosts (PLCs, scanners) in DeviceNet networks (e.g. Allen Bradley Logix control systems).
SW	Software

1.4 Definition of the notes used

The following signal words and symbols are used in this documentation to indicate dangers and important information:

Safety instructions

Layout of the safety instructions:

Danger!

(characterises the type and severity of danger)

Note

(describes the danger and suggests how to prevent dangerous situations)

Pictograph	Signal word	Meaning
	Danger!	**Danger of personal injury through dangerous electrical voltage** Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.
	Danger!	**Danger of personal injury through a general source of danger** Reference to an imminent danger that may result in death or serious personal injury if the corresponding measures are not taken.
	Stop!	**Danger of damage to material assets** Reference to a possible danger that may result in damage to material assets if the corresponding measures are not taken.

Application notes

Pictograph	Signal word	Meaning
	Note!	Important note to ensure trouble-free operation
	Tip!	Useful tip for easy handling
		Reference to other documentation

2 Safety instructions

Note!

It is absolutely vital that the stated safety measures are implemented in order to prevent serious injury to persons and damage to material assets.

Always keep this documentation to hand in the vicinity of the product during operation.

2.1 General safety instructions and application notes

Danger!

Disregarding the following basic safety measures may lead to severe personal injury and damage to material assets.

Lenze drive and automation components ...

- must only be used as directed.
  ▸ Application as directed (📖 12)
- must never be commissioned if they display signs of damage.
- must never be technically modified.
- must never be commissioned if they are not fully mounted.
- must never be operated without required covers.
- can have live, moving or rotating parts during and after operation, depending on their degree of protection. Surfaces can be hot.

The following applies to Lenze drive components ...

- Only use permissible accessories.
- Only use original manufacturer spare parts.

Observe all the specifications contained in the enclosed and related documentation.

- This is the precondition for safe and trouble-free operation and for obtaining the product features specified.
  ▸ Product features (📖 13)
- The procedural notes and circuit details described in this document are only proposals. It is up to the user to check whether they can be adapted to the particular applications. Lenze does not take any responsibility for the suitability of the procedures and circuit proposals described.

All work with or on Lenze drive components and automation components must be carried out only by qualified specialist personnel. According to IEC 60364 or CENELEC HD 384, these are persons ...

- who are familiar with the installation, mounting, commissioning, and operation of the product.
- who have the corresponding qualifications for their work.
- who know and can apply all regulations for the prevention of accidents, directives, and laws applicable at the place of use.

2.2 Device and application-specific safety instructions

- During operation, the communication module must be firmly connected to the standard device.
- With external voltage supply, always use a separate power supply unit, safely separated in accordance with EN 61800-5-1 in every control cabinet (SELV/PELV).
- Only use cables that meet the listed specifications.
  ▸ Specification of the bus cable (📖 25)
- Connect a bus terminating resistor of 120 Ω each to the first and last node of the DeviceNet line.
  ▸ Wiring of the DeviceNet (📖 22)
- Connect the shield at the voltage supply together with the "V-" connection to GND once. For this purpose, use the centre point of the DeviceNet line, if possible.
- Connect the shield of the DeviceNet cable for each node only to the SHIELD connection of the plug connector.

Documentation relating to the standard device, host (PLC, scanner), system/machine

All the other measures prescribed in this documentation must also be implemented. Observe the safety instructions and application notes contained in this manual.

2.3 Residual hazards

Protection of persons

If Servo Drives 9400 are used on a phase earthed mains with a rated mains voltage of ≥ 400V, protection against accidental contact is not ensured without external measures.
▸ Protective insulation (📖 16)

Device protection

The communication module contains electronic components which may be damaged or destroyed by electrostatic discharge.
▸ Installation (📖 20)

3 Product description

3.1 Application as directed

The communication module ...

- is an accessory module which can be used in conjunction with the following standard devices:

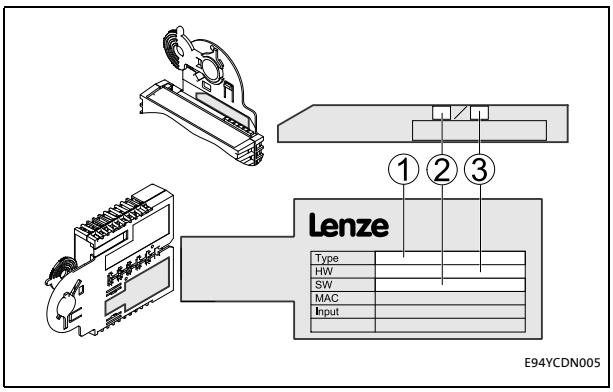
Product series	Type designation	From hardware version	From software version
Servo Drives 9400 HighLine	E94AxHxxxx	1A	01.50
Servo Drives 9400 PLC	E94AxPExxxx	VA	02.00
Regenerative power supply module	E94ARNxxxx	VA	01.00

- is a device intended for use in industrial power systems.
- should only be used under the operating conditions prescribed in this documentation.
- can only be used in DeviceNet networks.

Any other use shall be deemed inappropriate!

3.2 Identification

The type designation and hardware and software version of the communication module are specified on the nameplate:



[3-1] Identification data

1 Type designation (type)
- E94 Product series
- A Version
- Y Module identification: extension module
- C Module type: communication module
- DN DeviceNet

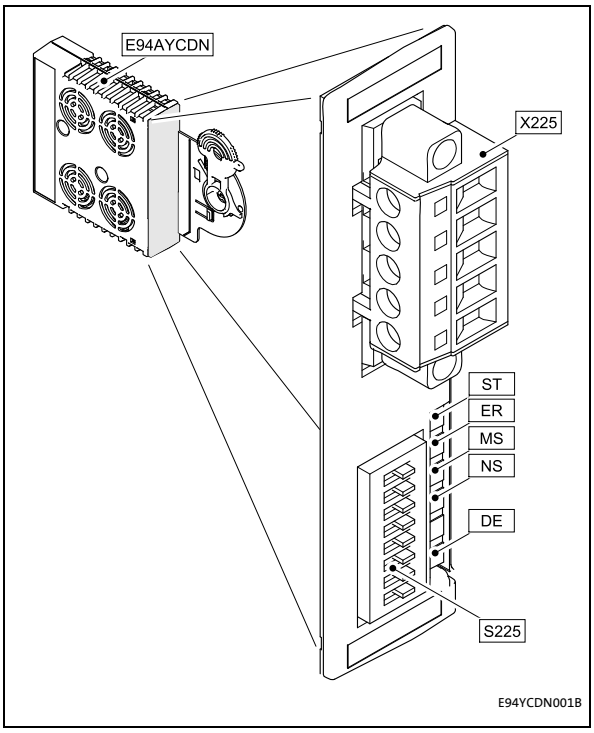
2 Hardware version (HW)

3 Software version (SW)

3.3 Product features

- Interface module for connecting the DeviceNet communication system to the expansion slots of Servo Drives 9400
- External voltage supply via the fieldbus
- "Group 2 Only Server (Device)" functionality
- Access to all Lenze parameters
- The MAC ID and baud rate (125, 250 and 500 kbps) can be set via the DIP switches on the front
- Can be easily connected due to pluggable terminal strip with double screw connection for thick/thin cables
- Up to 32 I/O data words (16 bits/word) per direction can be exchanged.
- Support of the services:
  - Poll Messages I/O
  - Cyclic I/O
  - Change of State (CoS) I/O
  - Explicit messages
  - Device Heartbeat Message

3.4 Equipment



[3-2] E94AYCDN communication module (DeviceNet)

X225 5-pole plug connector with screw connection
- Wiring of the DeviceNet (📖 22)
- DeviceNet connection (📖 24)
- Voltage supply (📖 29)

ST LED status displays for diagnostic purposes
ER
MS
NS
DE
- LED status displays (📖 41)

S225 DIP switches for setting the station address (MAC ID) and baud rate
- Possible settings via DIP switch (📖 32)

4 Technical data

4.1 General data and operating conditions

Area	Values
Order designation	E94AYCDN
Communication profile	DeviceNet
Interface	5-pole plug connector with screw connection
Communication medium	EN 11898
Network topology	Line terminated at both ends (R = 120 Ω)
Number of nodes	Max. 64
Max. cable length	500 m (dependent on the selected baud rate and the cable type used)
DeviceNet nodes	Slave
Vendor ID	445 (0x1BD)
Device type	0 (generic device)
Product code	9400 (0x24B8)
Baud rate	125, 250, 500 kbps (adjustable via DIP switch)
Voltage supply	External supply via the 5-pole plug connector V+ : U = 24 V DC, I_{max} = 170 mA V- : reference potential for external voltage supply
Conformities , approvals	• CE • UL (see also hardware manual)

Servo Drives 9400 hardware manual

Here you can find the **ambient conditions** and information on the **electromagnetic compatibility (EMC)** which also apply to the communication module.

4.2 Protective insulation

Danger!

Dangerous voltage

If the Servo Drives 9400 are operated on a phase earthed mains with a rated mains voltage ≥ 400 V, external measures need to be implemented in order to ensure protection against accidental contact.

Possible consequences:

Death or severe injury

Protective measures:

If protection against accidental contact is required for the control terminals of the drive and the connections of the plugged-in device modules, ...

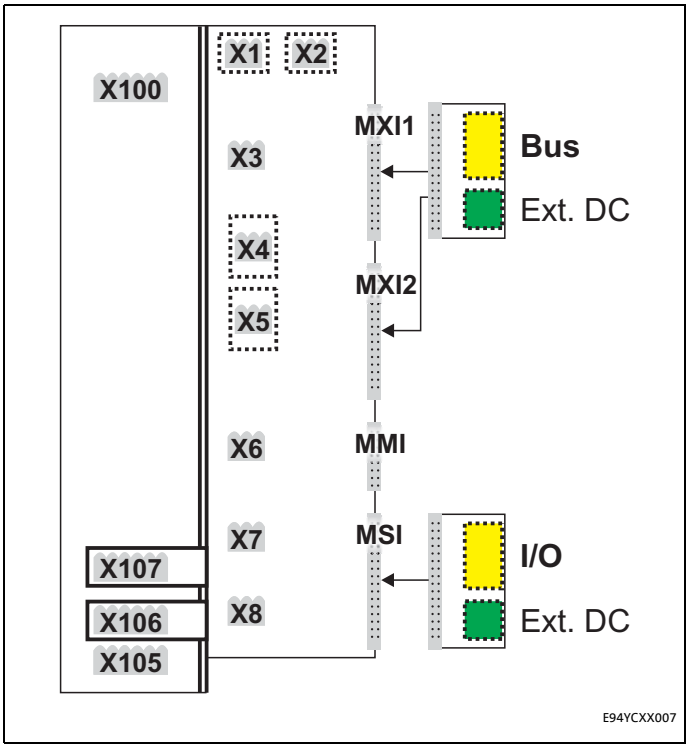
- a double isolating distance must exist.
- the components to be connected must be provided with the second isolating distance.

Note!

The available protective insulation in Servo Drives 9400 is implemented in accordance with EN 61800-5-1.

The following illustration ...

- shows the arrangement of the terminal strips and the separate potential areas of the drive.
- serves to determine the decisive protective insulation between two terminals located in differently insulated separate potential areas.



[4-1] Protective insulation to EN61800-5-1

Terminal strip	Connection	Terminal strip	Connection
X100	L1, L2, L3 (only Single Drive)	X1	CAN on board 9400
	+UG, -UG	X2	Statebus
X105	U, V, W		24 V (ext.)
	Rb1, Rb2 (only Single Drive)	X3	Analog inputs/outputs
X106	Motor PTC	X4	Digital outputs
X107	Control of the motor holding brake	X5	Digital inputs
		X6	Diagnostics
		X7	Resolver
		X8	Encoder
		MXI1, MXI2	Extension module
		MMI	Storage module
		MSI	Safety module

Example

Which type of protective insulation is there between the bus terminal of the device module on slot MXI1 or MXI2 and the mains terminal X100?

The separate potential area with the better protective insulation is decisive.

- The separate potential area of the bus terminal of the device module has a "functional insulation".
- The separate potential area of the mains terminal has a "reinforced insulation".

Result: The insulation between mains terminal X100 and the bus terminal is a "reinforced insulation".

4.3 Protocol data

Area	Values
Process data words	1 ... 32 words (16 bits/word)
Supported services	• Reset • Get_Attribute_Single • Set_Attribute_Single • Allocate_Master/Slave_Connection_Set • Release_Group_2_Identifier_Set

4.4 Communication time

The communication time is the time between the start of a request and the arrival of the corresponding response.

The communication times in an DeviceNet network depend on the ...

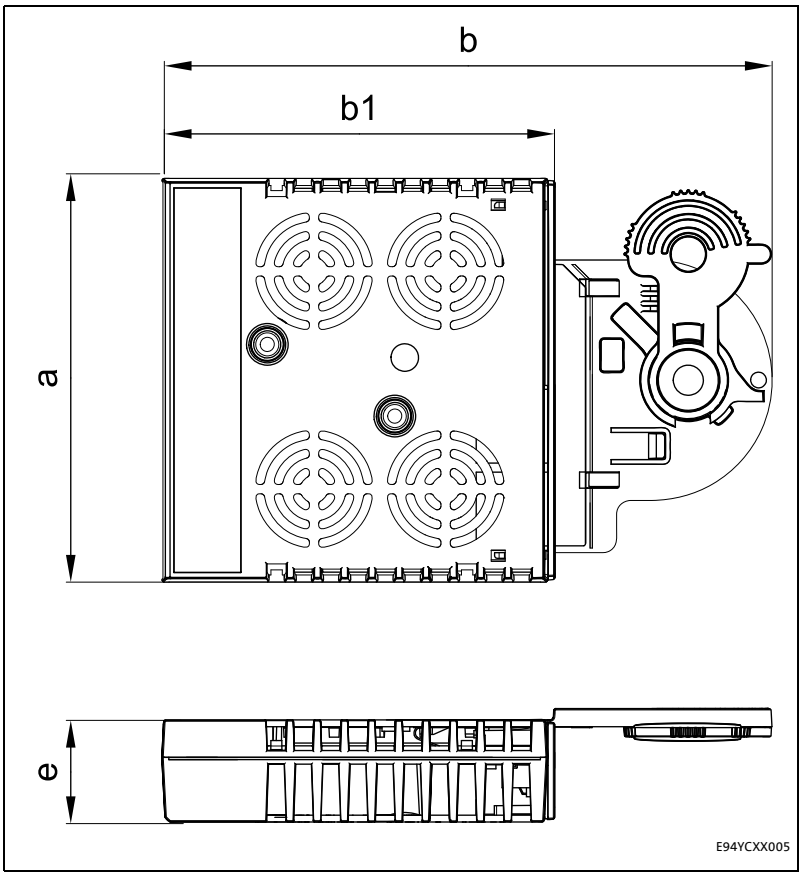
- Processing time inside the drive;
- telegram runtime (baud rate / telegram length).

Processing time inside the drive

There are no interconnections between parameter data and process data.

Data	Processing time
Process data	Approx. 2 ms + 1 ms tolerance + runtime of the technology applications used
Parameter data	Approx. 30 ms + a tolerance of 20 ms (typically) For some codes the processing time can be longer (see reference manual/ »Engineer« online help for the Servo Drive 9400).

4.5 Dimensions



a 89 mm
b 134 mm
b1 87 mm
e 23 mm

[4-2] Dimensions

5 Installation

Stop!

Electrostatic discharge

Electronic components within the communication module can be damaged or destroyed by electrostatic discharge.

Possible consequences

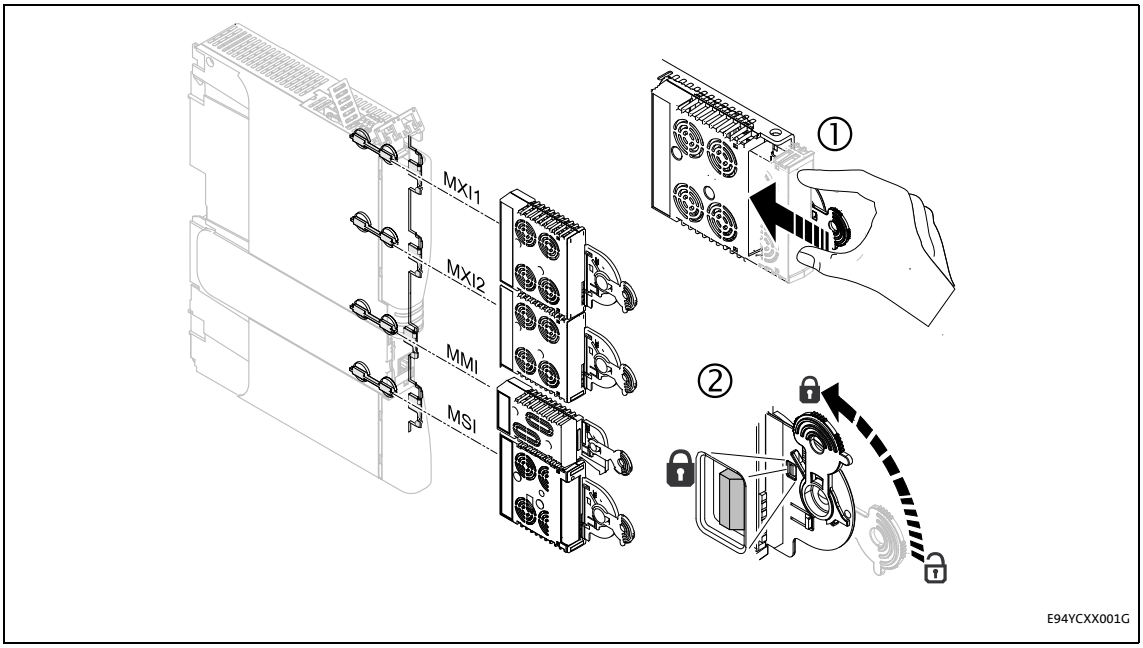
- The communication module is defective.
- Fieldbus communication is not possible or faulty.

Protective measures

Free yourself from any electrostatic charge before you touch the module.

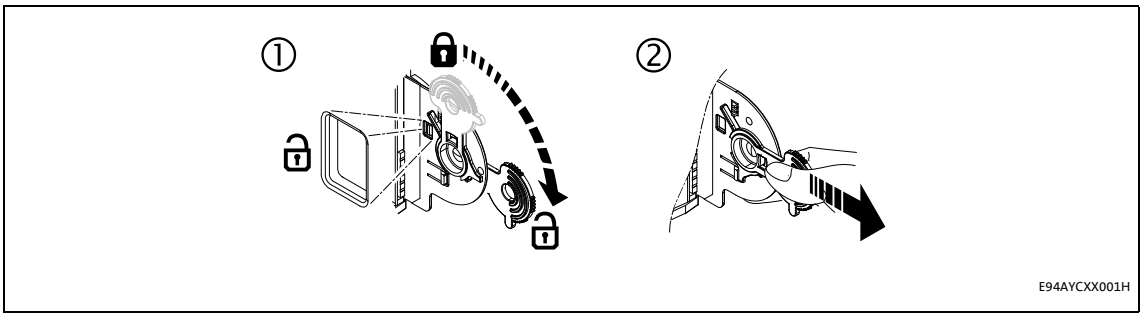
5.1 Mechanical installation

5.1.1 Mounting



[5-1] Mounting

5.1.2 Dismounting



[5-2] Dismounting

5.2 Electrical installation

Documentation relating to the standard device, host (PLC, scanner), system/machine

Observe the notes and wiring instructions contained in this documentation.

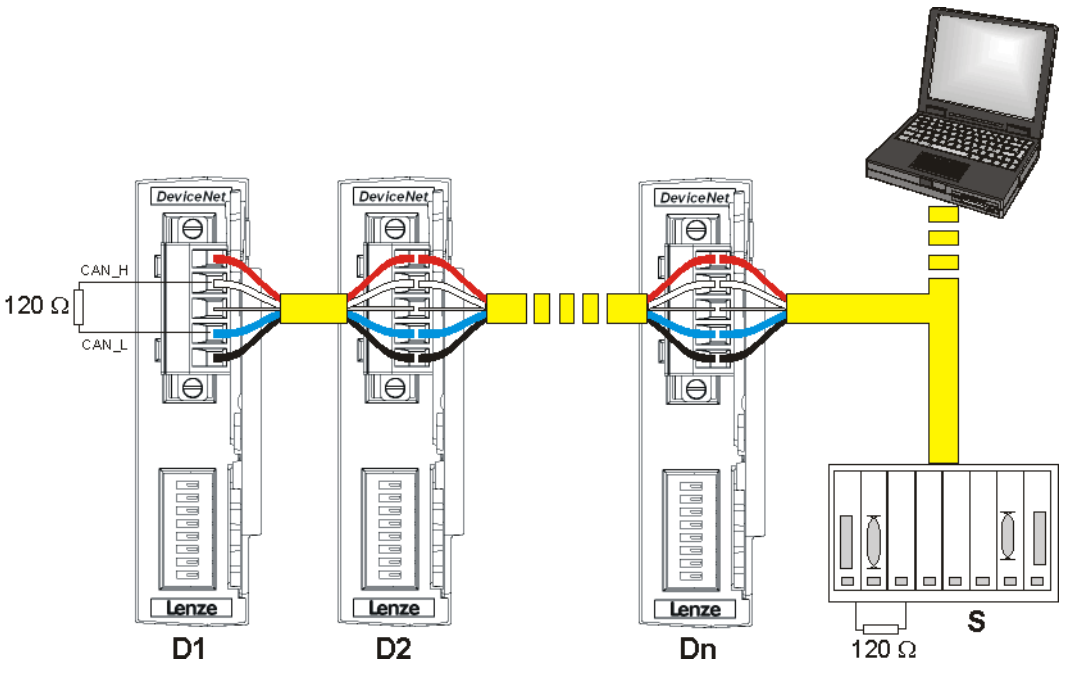
5.2.1 Wiring of the DeviceNet

For communication with the scanner and all further components, Servo Drives 9400 have to be assembled with communication modules.

A DeviceNet line can have a maximum number of 64 nodes. The nodes include ...

- the scanner;
- the connected drives (devices);
- all other components which take part in communication.

For integrating the communication modules in the DeviceNet line, a PC/laptop with installed configuration software (e. g. »RSNetWorx«) is required. The PC/laptop solely serves to the configuration and diagnostics and therefore is not a DeviceNet node.



D1 ... n: Devices 1 ... n
S: scanner (e.g. PLC, IPC)

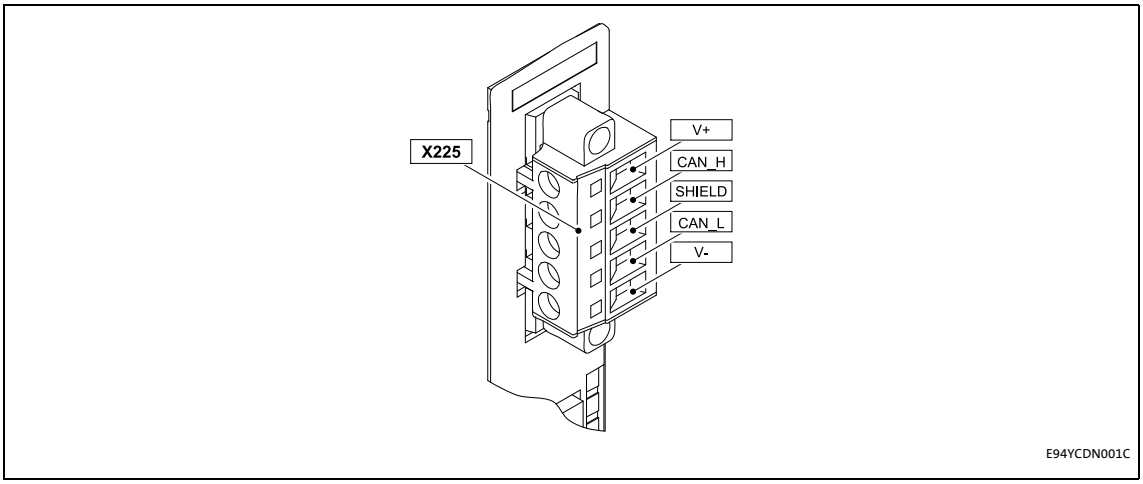
[5-3] DeviceNet line

Note!

- Connect a bus terminating resistor of 120 Ω each to the first and the last node of the DeviceNet line.
- Connect the shield at the voltage supply together with the "V-" connection to GND once. For this purpose, use the centre point of the DeviceNet line, if possible.
- Connect the shield of the DeviceNet cable for each node only to the SHIELD connection of the plug connector.

5.2.2 DeviceNet connection

The bus connection of the communication module is effected via the 5-pole plug connector with double screw connection (X225).

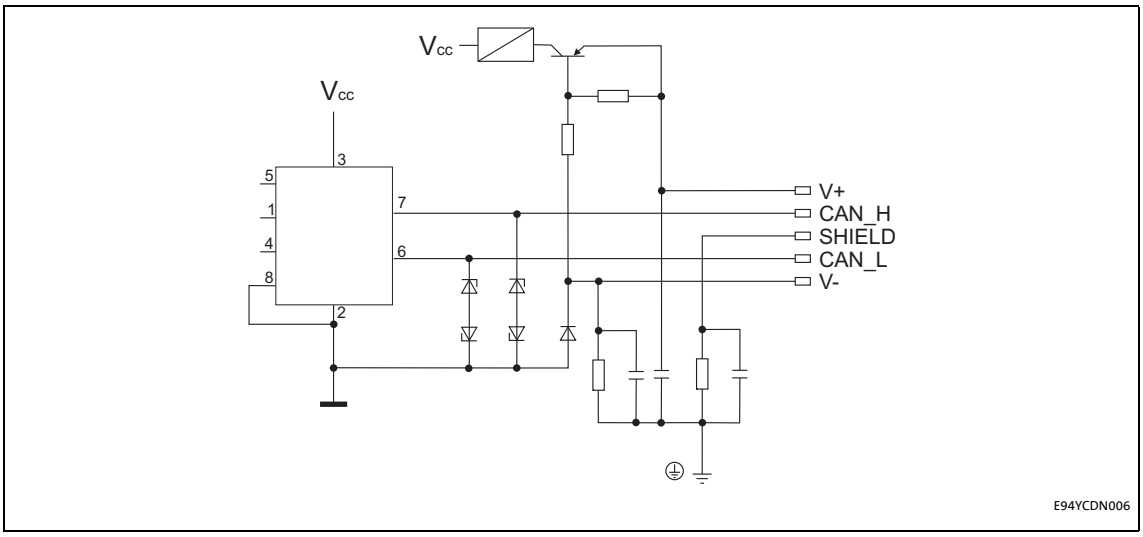


[5-4] 5-pole plug connector with double screw connection

Plug connector assignment (X225)

Terminal	Cable colour	Description
V+	red	External voltage supply • U = 24 V DC • I_{max} = 170 mA
CAN_H	White	Data line / input for bus terminating resistor (120 Ω)
SHIELD		Shielding
CAN_L	Blue	Data line / input for bus terminating resistor (120 Ω)
V-	Black	Reference potential for external voltage supply

Internal wiring of the plug connector (X225)



[5-5] Internal wiring X225

5.2.3 Specification of the bus cable

The nodes of the bus system must be wired with a fieldbus cable - a DeviceNet thick or thin cable - according to the DeviceNet specifications (DeviceNet Adaption of CIP, Edition 1.1, Volume 3). DeviceNet thick and thin cables for instance are manufactured by Belden Inc., Lapp, C&M Corp., and Madison Cable Corp.

Note!

If you do not wish to use a thick or thin cable, the cable used must meet the requirements given in the DeviceNet specifications.

A cable that does not meet the requirements given in the DeviceNet specifications must not be used!

Properties of the thick cable according to the DeviceNet specifications

General properties	
Arrangement	Two shielded, symmetrical cables, common axis with drain wire in the centre
Overall shielding	Coverage: 65 percent AWG 36, or at least 0.12 mm tinned copper braid (individually tinned)
Drain wire	At least copper 18; at least 19 cores (individually tinned)
Outer diameter	10.41 mm (min.) ... 12.45 mm (max.)
Roundness	A radius deviation must not exceed 15 percent of one half of the outer diameter
Cable sheath labelling	Vendor name, part number and additional labelling
DC resistor specification (braid, wrapping, discharge)	5.74 Ω/km (nominally up to 20°C)
Certifications (U.S. and Canada)	NEC (UL), CL2/CL3 (minimum)
Bend radius	20 x the diameter (installation) / 7 x the diameter (fixed)
Ambient temperature during operation	-20 ... +60°C at 8 A; linear current derating to zero at 80°C
Storage temperature	-40 ... +85°C
Pull tension	max. 845.5 N

Data line properties	
Wire pair	At least copper 18; at least 19 cores (individually tinned)
Insulation diameter	3.81 mm (nominal)
Colours	Light blue / white
Pair windings / m	Approx. 10
Shielding per wire pair	2000/1000, Al/Mylar, Al side outside, w/shorting fold (pull tension)
Impedance	120 Ω +/- 10 % (at 1 MHz)
Capacity between conductors	39.37 pF/m at 1 kHz (nominal)
Capacity between a conductor and another which is connected to the shield	78.74 pF/m at 1 kHz (nominal)
Capacitive unbalance	3937 pF/km at 1 kHz (nominal)
DC resistor specification at 20°C	max. 22.64 Ω/km
Damping	max. 0.43 dB/100 m at 125 kHz max. 0.82 dB/100 m at 500 kHz max. 1.31 dB/100 m at 1 MHz

Voltage conduction properties	
Wire pair	At least copper 15; at least 19 cores (individually tinned)
Insulation diameter	2.49 mm (nominal)
Colours	Red / black
Pair windings / m	Approx. 10
Shielding per wire pair	1000/1000, Al/Mylar, Al side outside, w/shorting fold (pull tension)
DC resistor specification at 20°C	max. 11.81 Ω/km

Properties of the thin cable according to the DeviceNet specifications

General properties	
Arrangement	Two shielded, symmetrical cables, common axis with drain wire in the centre
Overall shielding	Coverage: 65 percent AWG 36, or at least 0.12 mm tinned copper braid (individually tinned)
Drain wire	At least copper 22; at least 19 cores (individually tinned)
Outer diameter	6.096 mm (minimum) ... 7.112 mm (maximum)
Roundness	A radius deviation must not exceed 20 percent of one half of the outer diameter
Cable sheath labelling	Vendor name, part number and additional labelling
DC resistor specification (braid, wrapping, discharge)	10.5 Ω/km (nominally at 20°C)
Certifications (U.S. and Canada)	NEC (UL), CL2 (minimum)
Bend radius	20 x the diameter (installation) / 7 x the diameter (fixed)
Ambient temperature during operation	-20 ... +70°C at 1.5 A; linear current derating to zero at 80°C
Storage temperature	-40 ... +85°C
Pull tension	289.23 N (maximum)

Data line properties	
Insulation diameter	1.96 mm (nominal)
Wire pair	At least copper 24; at least 19 cores (individually tinned)
Colours	Light blue / white
Pair windings / m	Approx. 16
Shielding per wire pair	1000/1000, Al/Mylar, Al side outside, w/shorting fold (pull tension)
Impedance	120 Ω +/- 10 % (at 1 MHz)
Runtime	4.46 ns/m (maximum)
Capacity between conductors	39.37 pF/m at 1 kHz (nominal)
Capacity between a conductor and another which is connected to the shield	78.74 pF/m at 1 kHz (nominal)
Capacitive unbalance	Max. 3.94 pF/km at 1 kHz
DC resistor specification at 20°C	max. 91.86 Ω/km
Damping	max. 0.95 dB/100 m at 125 kHz 1.64 dB/100 m at 500 kHz (maximum) 2.30 dB/100 m at 1 MHz (maximum)

Voltage conduction properties	
Wire pair	At least copper 22; at least 19 cores (individually tinned)
Insulation diameter	1.4 mm (nominal)
Colours	Red / black
Pair windings / m	Approx. 16
Shielding per wire pair	1000/1000, Al/Mylar, Al side outside, w/shorting fold (pull tension)
DC resistor specification at 20°C	57.41 Ω/km (maximum)

5.2.4 Bus cable length

The following bus cable lengths are possible depending on the baud rate and the cable type used (thick cable/thin cable):

Baud rate [kbps]	Bus cable lengths [m]	
	Thick cable	Thin cable
125	500	
250	250	100
500	100	

If both thick and thin cables are used, the maximum cable lengths depending on the baud rate can be determined as follows:

Baud rate [kbps]	Max. bus cable length
125	500 m = L_{thick} + 5 L_{thin}
250	250 m = L_{thick} + 2.5 L_{thin}
500	100 m = L_{thick} + L_{thin}
L_{thick}: Length of the thick cable L_{thin} : Length of the thin cable	

Note!

Select the baud rate which depends on the data volume, cycle time, and number of nodes just high enough to suit your application.

5.2.5 Voltage supply

The communication module is externally supplied with voltage at the 5-pole plug connector (X225) via the DeviceNet line.

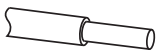
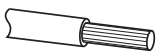
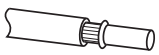
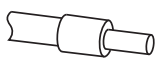
Note!

Use a safely separated power supply unit (SELV/PELV) in accordance with EN 61800-5-1.

- The communication module always requires an external voltage supply.
- Communication with a standard device that is separated from the mains is not possible.

Terminal data (X225)

Terminal	Cable colour	Description
V+	red	External voltage supply • U = 24 V DC • I_{max} = 170 mA
V-	Black	Reference potential for external voltage supply

Area	Values	
Electrical connection	Plug connector with double screw connection	
Possible connections	rigid:	
		2.5 mm² (AWG 14)
	flexible:	
		without wire end ferrule 2.5 mm² (AWG 14)
		with wire end ferrule, without plastic sleeve 2.5 mm² (AWG 14)
		with wire end ferrule, with plastic sleeve 2.5 mm² (AWG 14)
Tightening torque	0.5 ... 0.6 Nm (4.4 ... 5.3 lb-in)	
Bare end	7 mm	

6 Commissioning

During commissioning, system-related data such as motor parameters, operating parameters, responses, and parameters for fieldbus communication are defined in the drive. For Lenze devices, this is done by means of codes.

The codes of the drive and communication are saved non-volatilely as a data set in the memory module.

In addition to codes for the configuration, there are codes for diagnosing and monitoring the nodes.

Note!

When parameterising the communication module, please note that the code number depends on the slot of the standard device which the communication module is plugged into.

The first two digits of the code number specify the slot:

- C**13**nnn for slot MXI1
  - Parameters of the communication module for the MXI1 slot (📖 50)
- C**14**nnn for slot MXI2
  - Parameters of the communication module for the MXI2 slot (📖 57)

Furthermore set Communication-relevant parameters of the standard device (📖 48).

6.1 Before initial switch-on

Stop!

Before switching on the standard device with the communication module for the first time, check ...

- the entire cabling for completeness, short circuit and earth fault.
- whether the bus system is terminated at the first and last physical node by means of a bus terminating resistor (120 Ω).

6.2 Configuring the host (PLC, scanner)

For communication with the communication module, the host (PLC, scanner) must be configured first.

Configuration for device control

For the configuration of DeviceNet, the EDS file of the communication module has to be imported via the configuration software (e.g. »RSNetWorx« Rockwell software).

The EDS file **E94AYCDN_Vxxx.eds** required for configuration can be found in the download area at:

www.lenze.com

Specifying the user data length

Note!

The direction of the flow of information must be observed!

- Consumed I/O data: process data from the scanner to the drive (device)
- Produced I/O data: process data from the drive (device) to the scanner

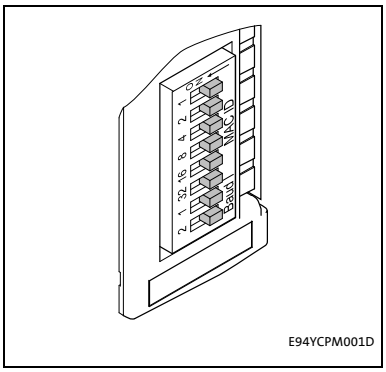
The Servo Drives 9400 support the configuration of max. 32 process data words (max. 64 bytes) per direction.

The user data length for consumed and produced I/O data can vary.

The user data lengths (number of process data) must be set and stored via the »Engineer« or the scanner (Lenze Class (0x66 / 102) (📖 75)):

User data length for consumed I/O data	User data length for produced I/O data
Setting via the »Engineer« using C13883 / C14883	Setting via the »Engineer« using C13884 / C14884
The length of the ports mapped into the receipt PDO results from the Configuring I/O data (PDO mapping) (📖 36) and is displayed in C13854/1 / C14854/1. If this length does not correspond to the user length data of the consumed I/O data from C13883 / C14883, the DeviceNet: Consumed I/O data length is contradictory [0x00C88211] (📖 46) error message will be generated and entered as a warning in the logbook of the standard device when the I/O connection is established.	The length of the ports mapped into the transmission PDO results from the Configuring I/O data (PDO mapping) (📖 36) and is displayed in C13855/1 / C14855/1. If this length does not correspond to the user length data of the produced I/O data from C13884 / C14884, the DeviceNet: Produced I/O data length is contradictory [0x00C88212] (📖 46) error message will be generated and entered as a warning in the logbook of the standard device when the I/O connection is established.

6.3 Possible settings via DIP switch



[6-1] DIP switch

The following can be set via the DIP switch on the front:

- Station address
  Range: MAC ID
  Switches: 1 ... 32
- Baud rate
  Range: Baud
  Switches: 1 and 2

Lenze setting: all switches OFF

6.3.1 Setting the station address (MAC ID)

- The station address is set via the switches 1 ... 32 (MAC ID).
- The housing labelling corresponds to the binary values of the individual switches for determining the station address.
- Valid address range: 0 ... 63
- The current address setting is displayed in C13864 / C14864.

Example: Setting of station address 23

Switch (MAC ID)	32	16	8	4	2	1
Switch status	OFF	**ON**	OFF	**ON**	**ON**	**ON**
Value	0	16	0	4	2	1
Station address	**= sum of the values = 16 + 4 + 2 + 1 = 23**					

▸ DIP switch positions for setting the station address (📖 83)

6.3.2 Setting the baud rate

The baud rate is set via the switches 1 and 2 (Baud).

Switch (Baud)		Baud rate
2	1	
OFF	OFF	125 kbps
OFF	**ON**	250 kbps
ON	OFF	500 kbps
ON	**ON**	No function / switch status is not supported.

The current baud rate setting is displayed in C13863 / C14863.

6.4 Initial switch-on

Documentation for the standard device

Observe the safety instructions and information on residual hazards contained in this documentation.

Note!

Establishing communication

When the communication module is externally supplied, the standard device must also be switched on to establish communication.

After communication has been established, communication of the externally supplied module is independent of the switching status of the standard device.

Activating changed setting

In order to activate any changed settings, ...

- execute the device command "11: Save start parameter" via the standard device code **C00002** and ...
- then execute a "reset node" of the node or switch off and then on again the voltage supply of the communication module.

Protection against uncontrolled restart

Following a fault (short-term mains failure, for example), it is sometimes undesirable or even impermissible for the drive to restart.

In the Lenze setting of Servo Drives 9400, the restart protection is activated.

The restart behaviour of the drive can be set via **C00142** ("auto restart after mains connection"):

C00142 = "0: Inhibited" (Lenze setting)

- The drive remains inhibited (even if the fault is no longer active).
- A controlled restart of the drive is effected by explicit drive enable: LOW/HIGH edge at the digital input X5/RFR.

C00142 = 1: Enabled

- An uncontrolled restart of the drive is possible.

7 Data transfer

7.1 Communication channels

The Telegram types (📖 35) are assigned to the communication channels according to their time-critical behaviour:

The process data channel transmits I/O data.

- The drive is controlled by means of the I/O data.
- The host (PLC, scanner) can directly access the I/O data. In the PLC, the data are, for instance, directly stored in the I/O area.
- I/O data are not stored in the drive (device).
- I/O data are transmitted cyclically between the host and the drives (permanent exchange of current input and output data).

The parameter data channel transmits explicit messages.

- The parameter data channel provides access to all Lenze codes.
- Parameter changes must be stored via code C00002 code of the Servo Drives 9400.

7.2 Telegram types

The "I/O data" (process data) and "Explicit Messages (parameter data) telegram types are transmitted between the host (PLC, scanner) and the drives (devices).

7.2.1 I/O data (process data)

I/O data are transmitted or received according to the producer/consumer principle. There is one transmitter and no receiver or an optional number of receivers.

- Consumed I/O data: process data from the scanner to the drive (device)
- Produced I/O data: process data from the drive (device) to the scanner

▸ Assembly Class (0x04 / 4) (📖 69)

The following transmission modes are supported:

- Poll I/O data:
  The polling command which is transmitted by the scanner includes output data for the device. The device then transmits its input data to the scanner. The polling response can also be regarded as an acknowledgement.
- Cyclic I/O data:
  The scanner and the device use cyclic I/O data to generate their data independently of each other, which are then transmitted depending on a timer. The value of the timer must be set by the user.
- Change of State (CoS) I/O data:
  This I/O data type is a special case of cyclic I/O data. CoS nodes always transmit their data if the state of the data changes.

▸ Connection Class (0x05 / 5) (📖 70)

7.2.2 Explicit messages (parameter data)

Explicit messages serve to configure and parameterise the individual devices of the DeviceNet.

Two nodes have a client/server relationship:
The client transmits a job (request). The server receives this job and tries to accomplish it. The server then transmits the requested data (positive response) or an error message (negative response).

▸ Connection Class (0x05 / 5) (📖 70)

7.2.3 Device Heartbeat Message

Within a configurable time interval, the device transmits its own device state to the bus via the Device Heartbeat Message. The Device Heartbeat Message can be configured via the DeviceNet object Identity Class (0x01 / 1) (📖 67) - instance 1, attribute 10.

Adjustable time interval: 1 ... 255 ms

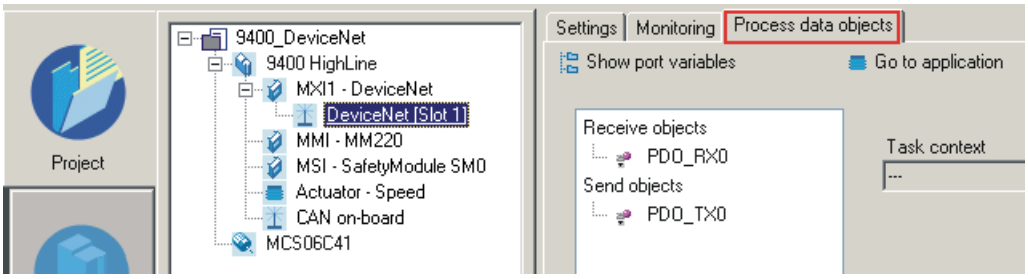
7.3 Configuring I/O data (PDO mapping)

For Servo Drives 9400 HighLine, the I/O data can be arranged individually (mapping). For this purpose, the »Engineer« provides a port configurator.

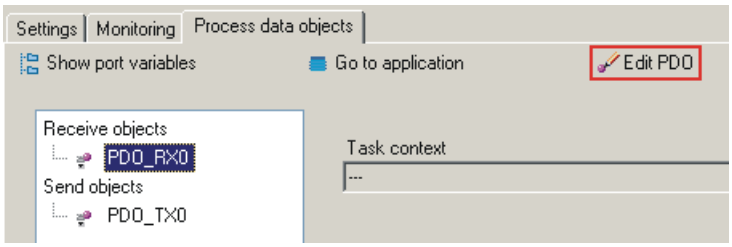
The following example describes the steps required for the Servo Drive 9400 HighLine to implement I/O data communication with a host (PLC, scanner) during which a control/status word and a 32-bit setpoint/actual value is exchanged, respectively.

How to set the PDO mapping with the »Engineer«:

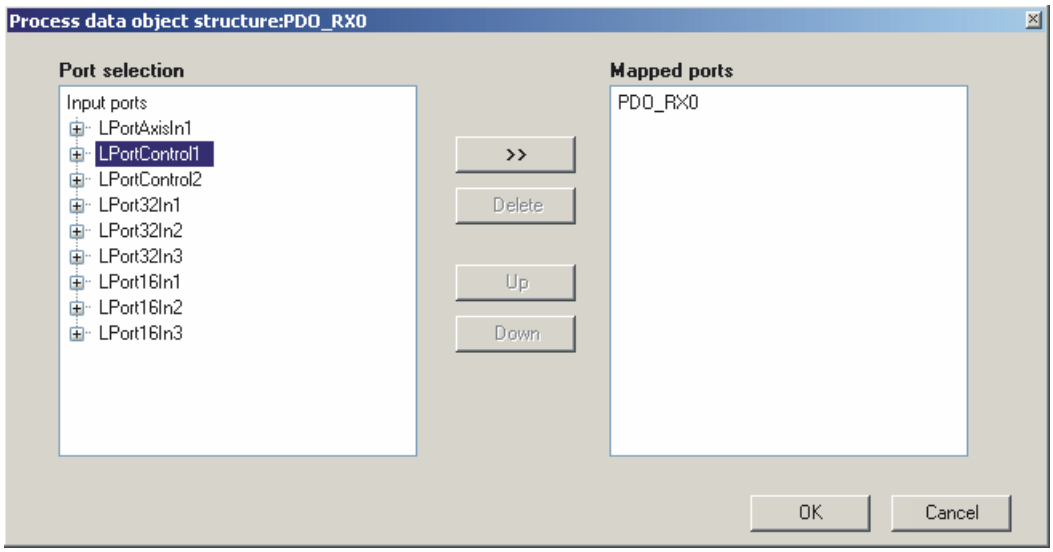
1. The I/O data mapping to the port variables is executed in the »Engineer« under the **Process data objects** tab of the corresponding fieldbus communication module:



2. Select the **PDO_RX0** receive object:



3. Click the **Edit PDO** button. The selection window **Process data object structure: PDO_RX0** will open:



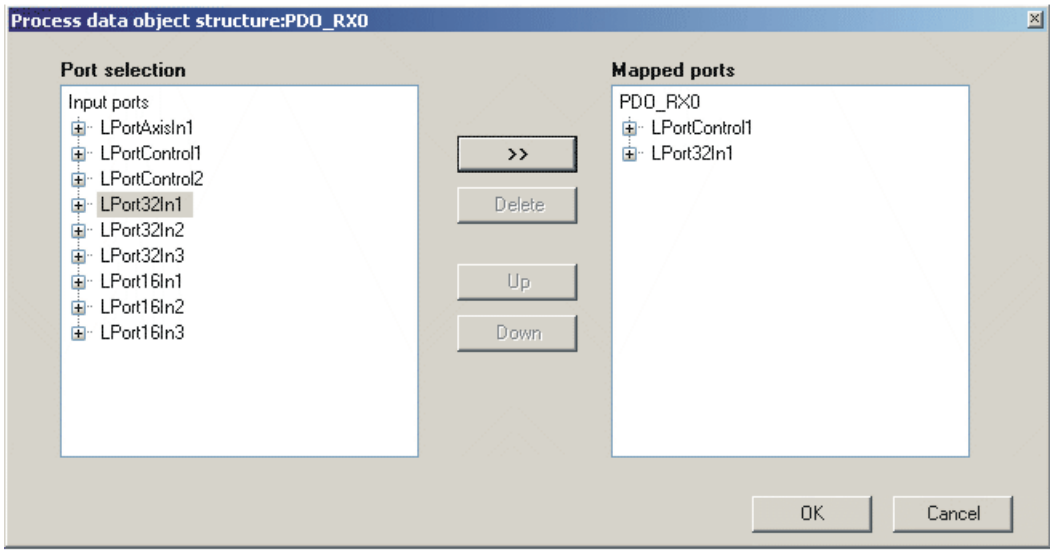
Here you can transfer the individual ports from the **Port Selection** list to the "PDO_RX0" receive PDO by clicking the **>>** button.

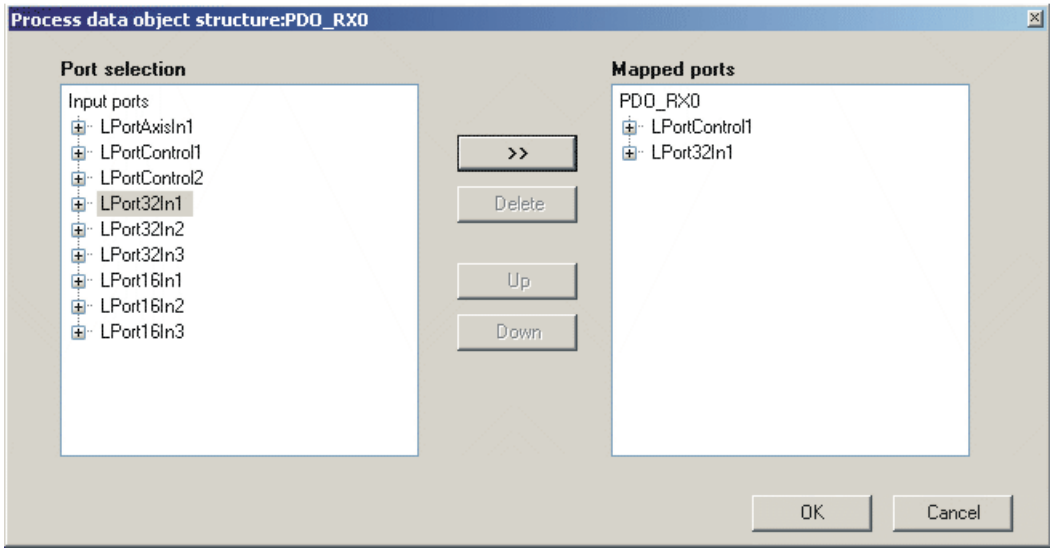
The **Up** and **Down** buttons serve to shift the sequence of the ports within the PDOs.

Note

Port mapping is no configuration that can be carried out online for the Servo Drive 9400 HighLine. The »Engineer« project must always be updated and the application must always be downloaded afterwards.

The following example shows the mapping of the ports "LPortControl1" and "Lport32In1" into the reception PDO "PDO_RX0" and the mapping of the ports "LPortStatus1" and "LPort32Out1" into the transmission PDO "PDO_TX0":





4. Confirm the selection with **OK**.
5. Repeat the steps 2. to 4. for the transmit object **PDO_TX0**.
6. Then link the ports to application signals in the technology application selected.

   If the »FB Editor« is not enabled, this action can be carried out in the multiplexer codes (> C03000).

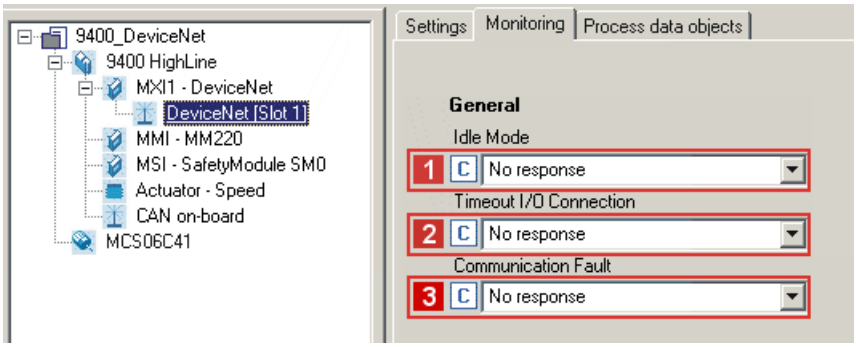
   If the »FB-Editor« is enabled, the multiplexer codes (> C03000) are no longer available. In this case, the interconnection must be executed directly in the »FB Editor«.

8 Monitoring

8.1 Interruption of the DeviceNet communication

An interruption of the DeviceNet communication, e.g. by a cable break or a failure of the host (PLC, scanner), is detected by the communication module.

Responses to communication faults can be set in the DeviceNet object Lenze Class (0x65 / 101) (📖 74) or under the **Monitoring** tab:



Settings		Description
1	**Idle Mode**	The scanner does not transmit any I/O data if it is in idle state. If the device (communication module) is in the idle state, the response parameterised here (C13880/1 / C14880/1) is activated in the drive.
2	**I/O connection timeout**	The data transmission of the poll or CoS/Cyclic I/O connections can be monitored by timeouts. The timeout values are configured within the Connection Class (0x05 / 5) (📖 70) - instance 2 (poll I/O) or instance 4 (CoS/Cyclic I/O), attribute 9. After the monitoring time has elapsed, the response parameterised here (C13880/2 / C14880/2) is activated in the drive.
3	**Communication error**	The device (communication module) automatically recognises communication faults. If a communication fault is active, the response parameterised here (C13880/3 / C14880/3) is activated in the drive.

8.2 Fault with regard to internal communication

The response to a communication error between the communication module and the standard device can be set via these codes:

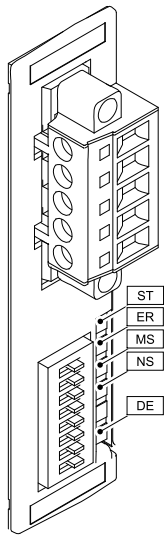
- C01501 (module in slot MXI1)
- C01502 (module in slot MXI2).

9 Diagnostics

The LEDs on the front of the communication module are provided for the purpose of fault diagnostics.

Furthermore, you can query the current module status (C13861 / C14861) and the current network status (C13862 / C14862) via codes.

9.1 LED status displays

LED status display	Pos.	Colour/Status		Description
 E94YCDN007	**ST**	Green is lit		The communication module is supplied with voltage and has established a connection to the standard device.
		Green is blinking		The communication module is supplied with voltage, but has no connection to the basic device (basic device is either switched off, in the initialisation phase, or not available).
	ER	Red is lit		There is an error in the area of the communication module.
	MS	**green**	**red**	
		off	off	The communication module is not being supplied with voltage.
		off	on	The communication module is defective and must be replaced.
		off	blinking	The communication module has a fault that can be rectified.
		on	off	The communication module is working perfectly.
		blinking	off	The communication module has not been completely configured or the configuration is defective.
		blinking	blinking	The communication module is currently undergoing a self-test.
	NS	**green**	**red**	
		off	off	The communication module is not supplied with voltage via DeviceNet or the "Duplicate MAC ID" test has not been completed yet.
		off	on	The communication module cannot access the bus (e.g. "Duplicate MAC ID", bus off, invalid baud rate, etc.).
		off	blinking	The communication module has a fault that can be rectified.
		on	off	The communication module is working perfectly and has established a connection to the scanner.
		blinking	off	The communication module ... • is working correctly; • has performed the "Duplicate MAC ID" test; • has not been connected to the scanner yet.
		blinking	blinking	The communication module ... • is in an error status; • received a telegram to identify the faulty nodes (Identify Communication Faulted Request).
	DE	Red is lit		The communication module is not accepted by the standard device (see notes in the documentation for the standard device).

9.2 Polling the current module status

C13861 / C14861 shows the current module status of the DeviceNet node:

Value C13861/C14861	Module status	Description
0	Nonexistent	No online value available (communication module is offline).
1	Device Self Test	The communication module is currently undergoing a self-test.
2	Device Operational	The communication module is working perfectly.
3	Device in Standby	The communication module has not been completely configured yet or the configuration is incorrect.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Unrecoverable Fault	The communication module is defective and must be replaced.

9.3 Polling the current network status

C13862 / C14862 shows the current network status of the DeviceNet node:

Value C13862/C14862	Module status	Description
0	Nonexistent	No online value available (communication module is offline).
1	Not online	• The communication module is not supplied with voltage via DeviceNet. • The Duplicate MAC ID test has not been completed yet.
2	Link OK	The communication module is working perfectly and has established a connection to the scanner.
3	Online / Not connected	The communication module • is working correctly; • has performed the Duplicate MAC ID test; • has not been connected to the scanner yet.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Critical Link Failure	The communication module cannot access the fieldbus (e.g. Duplicate MAC ID, Bus Off, invalid baud rate etc.).

10 Error messages

This chapter supplements the error list in the reference manual and the »Engineer« online help for the Servo Drive 9400 by the error messages of the communication module.

Reference manual/»Engineer« online help for the Servo Drive 9400

Here you will find general information on diagnostics & fault analysis and on error messages.

10.1 Short overview of the DeviceNet error messages

The following table lists all DeviceNet error messages in the numerical order of the error numbers. Furthermore, the preset error response and – if available – the parameter for setting the error response are specified.

Tip!

If you click on the cross-reference in the first column, you will get a detailed description (causes and remedies) of the corresponding error message.

Error number		Designation	Response (Lenze setting)	Adjustable in
hex	dec			
0x00c85532	13129010	DeviceNet: Memory: Error when reading	6: Information	-
0x00c85533	13129011	DeviceNet: Memory: Error when writing	6: Information	-
0x00c86010	13131792	DeviceNet: Restart by watchdog reset	1: Fault	-
0x00c86011	13131793	DeviceNet: Internal error	1: Fault	-
0x00c86101	13132033	DeviceNet: Internal error	1: Fault	-
0x00c86110	13132048	DeviceNet: Internal mapping error	4: Warning locked	-
0x00c8641f	13132831	DeviceNet: Parameter set invalid	1: Fault	-
0x00c86420	13132832	DeviceNet: Error: Lenze setting loaded	1: Fault	-
0x00c88111	13140241	DeviceNet: Time-out I/O connection	0: No Response	C13880/2 / C14880/2
0x00c88112	13140242	DeviceNet: Explicit Message time-out	6: Information	-
0x00c88121	13140257	DeviceNet: Communication error	0: No Response	C13880/3 / C14880/3
0x00c88132	13140274	DeviceNet: Idle mode	0: No Response	C13880/1 / C14880/1
0x00c88141	13140289	DeviceNet: Online	6: Information	-
0x00c88211	13140497	DeviceNet: Consumed I/O data length inconsistent	5: Warning	-
0x00c88212	13140498	DeviceNet: Produced I/O data length inconsistent	5: Warning	-

10.2 Possible causes and remedies

This chapter lists all DeviceNet error messages in the numerical order of the error numbers. Possible causes and remedies as well as responses to the error messages are described in detail.

DeviceNet: Memory: Error when reading [0x00c85532]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☒ **Information**	

Cause	Remedy
Parameter could not be read.	Send the module to Lenze and include a description of the error.

DeviceNet: Memory: Error when writing [0x00c85533]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System fault ☐ Fault ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☒ **Information**	

Cause	Remedy
Parameter could not be written.	Send the module to Lenze and include a description of the error.

DeviceNet: Restart by watchdog reset [0x00c86010]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ system fault ☒ **Fault** ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☐ Information	

Cause	Remedy
Defective module	Send the module to Lenze and include a description of the error.

DeviceNet: Internal error [0x00c86011]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ system fault ☒ **Fault** ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☐ Information	

Cause	Remedy
Defective module	Send the module to Lenze and include a description of the error.

DeviceNet: Internal error [0x00c86101]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ system fault ☒ **Fault** ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☐ Information	

Cause	Remedy
Internal error	Send the module to Lenze and include a description of the error.

DeviceNet: Internal mapping error [0x00c86110]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☒ **Warning locked** ☐ Warning ☐ Information	

Cause	Remedy
More than 64 bytes have been mapped	Carry out Configuring I/O data (PDO mapping) (📖 36) again.

DeviceNet: Invalid parameter set [0x00c8641f]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ system fault ☒ **Fault** ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☐ Information	

Cause	Remedy
No active parameter set could be loaded.	Download application again (including module).

DeviceNet: Error: Lenze setting loaded [0x00c86420]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System fault ☒ **Fault** ☐ Trouble ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☐ Information	

Cause	Remedy
Access to parameter set in memory module via standard device was not successful.	Download application again (including module).

DeviceNet: Idle mode [0x00c88132]

Response (Lenze setting printed in bold)	**Setting:** C13880/1 / C14880/1 (☑ Adjustable response)
☒ **None** ☐ System fault ☑ Fault ☐ Trouble ☑ Quick stop by trouble ☑ Warning locked ☐ Warning ☑ Information	

Cause	Remedy
The host (PLC, scanner) is in the "Program" mode (RUN bit in the Scanner Command Register has not been set).	Set the host (PLC, scanner) to "Run" mode.

DeviceNet: Timeout I/O Connection [0x00c88111]

Response (Lenze setting printed in bold)	**Setting:** C13880/2 / C14880/2 (☑ Adjustable response)
☒ **None** ☐ System fault ☑ Fault ☐ Trouble ☑ Quick stop by trouble ☑ Warning locked ☐ Warning ☑ Information	

Cause	Remedy
Timeout of the poll or CoS/Cyclic I/O connection	Check the Expected Packet Rate in class 5, instance 2 (Poll I/O)/instance 4 (CoS/Cyclic I/O), attribute 9

DeviceNet: Explicit Message Timeout [0x00c88112]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☒ **Information**	

Cause	Remedy
Time-out of the Explicit Message connection	Check the Expected Packet Rate in class 5, instance 1 (Explicit Message), attribute 9

DeviceNet: Communication error [0x00c88121]

Response (Lenze setting printed in bold)	**Setting:** C13880/3 / C14880/3 (☑ Adjustable response)
☒ **None** ☐ System fault ☑ Fault ☐ Trouble ☑ Quick stop by trouble ☑ Warning locked ☐ Warning ☑ Information	

Cause	Remedy
A communication error occurred	Check cables and terminals.

DeviceNet: Online [0x00c88141]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☐ Warning locked ☐ Warning ☒ **Information**	

Cause	Remedy
The DeviceNet is online	-

DeviceNet: Consumed I/O data length is contradictory [0x00C88211]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☐ Warning locked ☒ **Warning** ☐ Information	

Cause	Remedy
The number of consumed I/O data via DeviceNet does not correspond to the number configured by the standard device through port mapping (displayed in C13854/1 / C14854/1)	Check whether the differing data length is sufficient for the application. If required, adapt the port mapping or the data length of the I/O data consumed via C13883 / C14883).

DeviceNet: Produced I/O data length is contradictory [0x00C88212]

Response (Lenze setting printed in bold)	**Setting:** not possible
☐ None ☐ System error ☐ Error ☐ Fault ☐ Quick stop by trouble ☐ Warning locked ☒ **Warning** ☐ Information	

Cause	Remedy
The number of produced I/O data via DeviceNet does not correspond to the number configured by the standard device through port mapping (displayed in C13855/1 / C14855/1)	Check whether the differing data length is sufficient for the application. If required, adapt the port mapping or the data length of the I/O data produced via C13884 / C14884).

10.3 DeviceNet error messages

Code [hex]	Error designation	Description
0x00	SUCCESS	No fault
0x02	RESOURCE UNAVAILABLE	Resource required to perform the service not available.
0x03	INVALID PARAM VALUE	Invalid parameter value
0x08	SERVICE NOT SUPP	Service is not supported.
0x09	INVALID ATTRIB VALUE	Invalid attribute.
0x0B	ALREADY IN STATE	The object is already in the required state.
0x0C	OBJ STATE CONFLICT	The object cannot perform the service.
0x0E	ATTR NOT SETTABLE	The attribute is write-protected.
0x0F	PRIVILEGE VIOLATION	Access denied.
0x10	DEVICE STATE CONFLICT	The current state of the device prohibits performing the requested service.
0x11	REPLY DATA TOO LARGE	The response data are longer than the response buffer
0x13	NOT ENOUGH DATA	The data length is too short.
0x14	ATTRIBUTE NOT SUPP	The attribute is not supported.
0x15	TOO MUCH DATA	The data length is too long.
0x16	OBJECT DOES NOT EXIST	The device does not support the object.
0x17	FRAGMENTATION	The fragmentation for the requested service is currently not activated.
0x20	INVALID PARAMETER	Invalid parameter

11 Parameter reference

This chapter supplements the parameter list and the table of attributes contained in the reference manual and in the »Engineer« online help for the Servo Drive 9400 with the parameters of the E94AYCDN (DeviceNet) communication module.

Reference manual/»Engineer« online help for the Servo Drive 9400

Here you will find general information on parameters.

11.1 Communication-relevant parameters of the standard device

In this chapter communication-relevant parameters of the Servo Drive 9400 are listed in numerically ascending order.

C00615

Parameter | Name: **C00615 | Resp. to imp. device config.**		Data type: UNSIGNED_32 Index: 23960 = 0x5D98
Response for an impermissible device configuration		
Selection list		
1	Fault	
3	Quick stop by trouble	
4	Warning Locked	
6	Information	
0	No Response	
Subcodes	**Lenze setting**	**Info**
C00615/1	0: No Response	Reserved
C00615/2	1: Fault	Response to non-permissible module in MXI1
C00615/3	1: Fault	Response to non-permissible module in MXI2
C00615/4	0: No Response	Reserved
C00615/5	0: No Response	Reserved
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer		

C00636

Parameter | Name: **C00636 | Resp. to new module in MXI1**		Data type: UNSIGNED_32 Index: 23939 = 0x5D83
Response for the case where a new module has been plugged into slot 1 of the standard device.		
Selection list (Lenze setting printed in bold)		
1	Fault	
6	Information	
5	Warning	
4	**Warning Locked**	
3	Quick stop by trouble	
0	No Response	
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer		

C00637

Parameter | Name: **C00637 | Resp. to new module in MXI2**		Data type: UNSIGNED_32 Index: 23939 = 0x5D83
Response for the case where a new module has been plugged into slot 2 of the standard device.		
Selection list (Lenze setting printed in bold)		
1	Fault	
6	Information	
5	Warning	
4	**Warning Locked**	
3	Quick stop by trouble	
0	No Response	
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer		

C01501

Parameter | Name: **C01501 | Resp. to comm. error with MXI1**		Data type: UNSIGNED_32 Index: 23074 = 0x5A22
Response to a communication error between an "intelligent" module in slot 1 and the standard device		
Selection list (Lenze setting printed in bold)		
0	**No Response**	
1	Fault	
3	Quick stop by trouble	
4	Warning Locked	
5	Warning	
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer		

C01502

Parameter | Name: **C01502 | Resp. to comm. error with MXI2**		Data type: UNSIGNED_32 Index: 23074 = 0x5A22
Response to a communication error between an "intelligent" module in slot 2 and the standard device		
Selection list (Lenze setting printed in bold)		
0	**No Response**	
1	Fault	
3	Quick stop by trouble	
4	Warning Locked	
5	Warning	
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer		

11.2 Parameters of the communication module for the MXI1 slot

In this chapter the parameters of the E94AYCDN communication module (DeviceNet) for slot MXI1 of the Servo Drive 9400 are listed in numerically ascending order.

C13231

Parameter | Name: **C13231 | Service code**			Data type: UNSIGNED_64 Index: 11344 = 0x2C50
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Subcodes	**Lenze setting**		**Info**
C13231/1	0		
...	0		
C13231/32	0		
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13489

Parameter | Name: **C13489 | Service code**			Data type: UNSIGNED_8 Index: 11086 = 0x2B4E
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Setting range (min. value | unit | max. value)			
0		32	
Subcodes	**Lenze setting**		**Info**
C13489/1	0		Service code
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13531

Parameter | Name: **C13531 | Service code**			Data type: UNSIGNED_64 Index: 11044 = 0x2B24
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Subcodes	**Lenze setting**		**Info**
C13531/1	0		
...	0		
C13531/32	0		
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13789

Parameter | Name: **C13789 | Service code**			Data type: UNSIGNED_8 Index: 10786 = 0x2A22
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Setting range (min. value | unit | max. value)			
0		32	
Subcodes	**Lenze setting**		**Info**
C13789/1	0		Service code
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13850

Parameter | Name: **C13850 | All words to scanner**			Data type: UNSIGNED_16 Index: 10725 = 0x29E5
Display of the process data words transferred from the communication module to the scanner. In the subcodes 1 to 32, all process data words to the scanner are displayed. However, only the configured process data words are valid.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C13850/1			
...			
C13850/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13851

Parameter | Name: **C13851 | All words from scanner**			Data type: UNSIGNED_16 Index: 10724 = 0x29E4
Display of the process data words transferred from the scanner to the communication module. In the subcodes 1 to 32, all process data words from the scanner are displayed. However, only the configured process data words are valid.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C13851/1			
...			
C13851/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13852

Parameter | Name: **C13852 | All words to the basic device**			Data type: UNSIGNED_16 Index: 10723 = 0x29E3
Display of the process data words 1 to 32 that are transferred from the communication module to the standard device. In the subcodes 1 to 32, all process data words from the communication module are displayed.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C13852/1			
...			
C13852/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13853

Parameter | Name: **C13853 | All words to the basic device**			Data type: UNSIGNED_16 Index: 10722 = 0x29E2
Display of the process data words 1 to 32 that are transferred from the standard device to the communication module. In the subcodes 1 to 32, all process data words from the standard device are displayed.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C13853/1			
...			
C13853/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13854

Parameter | Name: **C13854 | Length of ports mapped into receive PDO**			Data type: UNSIGNED_8 Index: 10721 = 0x29E1
Display of the total data length (in bytes) of the ports that have been mapped into the receive PDO.			
Display area (min. value | unit | max. value)			
0		255	
Subcodes			**Info**
C13854/1			Length of ports mapped into receive PDO
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13855

Parameter | Name: **C13855 | Length of ports mapped into send PDO**			Data type: UNSIGNED_8 Index: 10720 = 0x29E0
Display of the total data length (in bytes) of the ports that have been mapped into the send PDO.			
Display area (min. value | unit | max. value)			
0		255	
Subcodes			**Info**
C13855/1			Length of ports mapped into send PDO
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13861

Parameter | Name: **C13861 | Module state**		Data type: UNSIGNED_16 Index: 10714 = 0x29DA
Display of the current module state		
Selection list (read only)		**Info**
0	Nonexistent	No online value available (communication module is offline).
1	Device Self Test	The communication module is currently undergoing a self-test.
2	Device Operational	The communication module is working perfectly.
3	Device in Standby	The communication module has not been completely configured yet or the configuration is incorrect.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Unrecoverable Fault	The communication module is defective and must be replaced.
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C13862

Parameter | Name: **C13862 | Network status**		Data type: UNSIGNED_16 Index: 10713 = 0x29D9
Display of the current network status of the DeviceNet node		
Selection list (read only)		**Info**
0	Nonexistent	No online value available (communication module is offline).
1	Not online	• The communication module is not supplied with voltage via DeviceNet. • The Duplicate MAC ID test has not been completed yet.
2	Link OK	The communication module is working perfectly and has established a connection to the scanner.
3	Online / Not connected	The communication module • is working correctly; • has performed the Duplicate MAC ID test; • has not been connected to the scanner yet.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Critical Link Failure	The communication module cannot access the fieldbus (e.g. Duplicate MAC ID, Bus Off, invalid baud rate etc.).
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C13863

Parameter | Name: **C13863 | Baud rate**		Data type: UNSIGNED_8 Index: 10712 = 0x29D8
Display of the baud rate		
Selection list (read only)		
0	125.00 kbps	
1	250.00 kbps	
2	500.00 kbps	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C13864

Parameter | Name: **C13864 | Active MAC ID**			Data type: UNSIGNED_8 Index: 10711 = 0x29D7
Display of the active MAC ID			
Display area (min. value | unit | max. value)			
0		255	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C13880

Parameter | Name: **C13880 | Response in the case of comm. fault**		Data type: UNSIGNED_8 Index: 10695 = 0x29C7
Monitoring response in the case of communication fault A change in the monitoring response becomes immediately effective.		
Selection list		
0	No Response	
1	Fault	
3	Quick stop by trouble	
4	Warning Locked	
6	Information	
Subcodes	**Lenze setting**	**Info**
C13880/1	0: No Response	Idle Mode
C13880/2	0: No Response	Timeout I/O connection
C13880/3	0: No Response	Communication error
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C13883

Parameter | Name: **C13883 | Data length of consumed I/O data**			Data type: UNSIGNED_8 Index: 10692 = 0x29C4
Setting of the data length (in bytes) of the I/O data received by the device via DeviceNet. **Note:** • If the data length is changed, the DeviceNet scanner will be informed about this change (consumed data size). • If the data length is reduced, it must be checked before whether the intended data length is sufficient for the application. • If the data length of the consumed I/O data does not correspond to the length of the mapped ports which is specified by the drive via PDO mapping, the DeviceNet: Consumed I/O data length is contradictory [0x00C88211] (📖 46) error message is generated and entered as a warning into the logbook of the standard device. • If the number of consumed I/O data deviates from the Lenze setting (4 bytes), the "Automap on Add" function in the scanner configuration dialog of the »RSNetWorx« software has to be deactivated and the number of the process data words has to be adapted via the "Edit I/O parameters" button.			
Setting range (min. value | unit | max. value)			**Lenze setting**
0		64	**4**
☑ Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13884

Parameter | Name: **C13884 | Data length of produced I/O data**			Data type: UNSIGNED_8 Index: 10691 = 0x29C3
Setting of the data length (in bytes) of the I/O data to be transmitted by the device via DeviceNet. **Note:** • If the data length is changed, the DeviceNet scanner will be informed about this change (produced data size). • If the data length is reduced, it must be checked before if the intended data length is sufficient for the application. • If the data length of the produced I/O data does not correspond to the length of the mapped ports which is specified by the drive via PDO mapping, the DeviceNet: Produced I/O data length is contradictory [0x00C88212] (📖 46) error message is generated and entered as a warning into the logbook of the standard device. • If the number of produced I/O data deviates from the Lenze setting (4 bytes), the "Automap on Add" function in the scanner configuration dialog of the »RSNetWorx« software has to be deactivated and the number of the process data words has to be adapted via the "Edit I/O parameters" button.			
Setting range (min. value | unit | max. value)			**Lenze setting**
0		64	**4**
☑ Read access ☑ Write access ☐ CINH ☐ PLC STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C13885

Parameter | Name: **C13885 | Delete process data**	Data type: UNSIGNED_8 Index: 10690 = 0x29C2
Setting of the process data which must be further processed by the drive to maintain internal communication if the current network status (C13862) is "Minor Fault" or "Critical Link Failure".	
Selection list (Lenze setting printed in bold)	
0	Use of the latest scanner I/O data
1	**I/O data are set to a value of '0'**
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C13900

Parameter | Name: **C13900 | Firmware: Product type**	Data type: VISIBLE_STRING Index: 10675 = 0x29B3
Display of the product type (string with a length of 8 bytes) The following identification code will be output: "E94AFCDN"	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C13901

Parameter | Name: **C13901 | Firmware: Compilation date**	Data type: VISIBLE_STRING Index: 10674 = 0x29B2
Display of the firmware compilation date (string with a length of 20 bytes) The date ("MMM DD YYYY") and time ("hh:mm:ss") will be provided, e.g. "Mar 21 2005 12:31:21".	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C13902

Parameter | Name: **C13902 | Firmware: Version**	Data type: VISIBLE_STRING Index: 10673 = 0x29B1
Display of the firmware version (string with a length of 5 bytes) The identification code will be output, e.g. "01.11".	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C13920

Parameter | Name: **C13920 | Display: DIP switch position**	Data type: UNSIGNED_8 Index: 10655 = 0x299F
Display of the current DIP switch position • The value displayed corresponds to the sum of the DIP switch values (MAC ID: 1 ... 32, baud: 1 and 2). • The active MAC ID is displayed in C13864. • The active baud rate is displayed in C13863. ▸ Possible settings via DIP switch (📖 32)	

Display area (min. value | unit | max. value)		
0		255

☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT

11.3 Parameters of the communication module for the MXI2 slot

In this chapter the parameters of the E94AYCDN communication module (DeviceNet) for slot MXI2 of the Servo Drive 9400 are listed in numerically ascending order.

C14231

Parameter | Name: **C14231 | Service code**			Data type: UNSIGNED_64 Index: 10344 = 0x2868
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Subcodes	**Lenze setting**		**Info**
C14231/1	0		
...	0		
C14231/32	0		
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14489

Parameter | Name: **C14489 | Service code**			Data type: UNSIGNED_8 Index: 10086 = 0x2766
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Setting range (min. value | unit | max. value)			
0		32	
Subcodes	**Lenze setting**		**Info**
C14489/1	0		Service code
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14531

Parameter | Name: **C14531 | Service code**			Data type: UNSIGNED_64 Index: 10044 = 0x273C
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Subcodes	**Lenze setting**		**Info**
C14531/1	0		
...	0		
C14531/32	0		
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14789

Parameter | Name: **C14789 | Service code**			Data type: UNSIGNED_8 Index: 9786 = 0x263A
This code is ... • **used device-internally and may not be written by the user.** • **only displayed from »Engineer« version 2.9.**			
Setting range (min. value | unit | max. value)			
0		32	
Subcodes	**Lenze setting**		**Info**
C14789/1	0		Service code
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14850

Parameter | Name: **C14850 | All words to scanner**			Data type: UNSIGNED_16 Index: 9725 = 0x25FD
Display of the process data words transferred from the communication module to the scanner. In the subcodes 1 to 32, all process data words to the scanner are displayed. However, only the configured process data words are valid.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C14850/1			
...			
C14850/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14851

Parameter | Name: **C14851 | All words from scanner**			Data type: UNSIGNED_16 Index: 9724 = 0x25FC
Display of the process data words transferred from the scanner to the communication module. In the subcodes 1 to 32, all process data words from the scanner are displayed. However, only the configured process data words are valid.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C14851/1			
...			
C14851/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14852

Parameter | Name: **C14852 | All words to standard device**			Data type: UNSIGNED_16 Index: 9723 = 0x25FB
Display of the process data words 1 to 32 that are transferred from the communication module to the standard device. In the subcodes 1 to 32, all process data words from the communication module are displayed.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C14852/1			
...			
C14852/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14853

Parameter | Name: **C14853 | All words from standard device**			Data type: UNSIGNED_16 Index: 9722 = 0x25FA
Display of the process data words 1 to 32 that are transferred from the standard device to the communication module. In the subcodes 1 to 32, all process data words from the standard device are displayed.			
Display area (min. value | unit | max. value)			
0		65535	
Subcodes			**Info**
C14853/1			
...			
C14853/32			
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14854

Parameter | Name: **C14854 | Length of ports mapped into receive PDO**			Data type: UNSIGNED_8 Index: 9721 = 0x25F9
Display of the total data length (in bytes) of the ports that have been mapped into the receive PDO.			
Display area (min. value | unit | max. value)			
0		255	
Subcodes			**Info**
C14854/1			Length of ports mapped into receive PDO
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14855

Parameter | Name: **C14855 | Length of ports mapped into send PDO**			Data type: UNSIGNED_8 Index: 9720 = 0x25F8
Display of the total data length (in bytes) of the ports that have been mapped into the send PDO.			
Display area (min. value | unit | max. value)			
0		255	
Subcodes			**Info**
C14855/1			Length of ports mapped into send PDO
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14861

Parameter | Name: **C14861 | Module state**		Data type: UNSIGNED_16 Index: 9714 = 0x25F2
Display of the current module state		
Selection list (read only)		**Info**
0	Nonexistent	No online value available (communication module is offline).
1	Device Self Test	The communication module is currently undergoing a self-test.
2	Device Operational	The communication module is working perfectly.
3	Device in Standby	The communication module has not been completely configured yet or the configuration is incorrect.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Unrecoverable Fault	The communication module is defective and must be replaced.
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C14862

Parameter | Name: **C14862 | Network status**		Data type: UNSIGNED_16 Index: 9713 = 0x25F1
Display of the current network status of the DeviceNet node		
Selection list (read only)		**Info**
0	Nonexistent	No online value available (communication module is offline).
1	Not online	• The communication module is not supplied with voltage via DeviceNet. • The Duplicate MAC ID test has not been completed yet.
2	Link OK	The communication module is working perfectly and has established a connection to the scanner.
3	Online / Not connected	The communication module • is working correctly; • has performed the Duplicate MAC ID test; • has not been connected to the scanner yet.
4	Minor Fault	The communication module has a fault that can be rectified.
5	Critical Link Failure	The communication module cannot access the fieldbus (e.g. Duplicate MAC ID, Bus Off, invalid baud rate etc.).
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C14863

Parameter | Name: **C14863 | Baud rate**		Data type: UNSIGNED_8 Index: 9712 = 0x25F0
Display of the baud rate		
Selection list (read only)		
0	125.00 kbps	
1	250.00 kbps	
2	500.00 kbps	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C14864

Parameter | Name: **C14864 | Active MAC ID**			Data type: UNSIGNED_8 Index: 9711 = 0x25EF
Display of the active MAC ID			
Display area (min. value | unit | max. value)			
0		255	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

C14880

Parameter | Name: **C14880 | Response in the case of comm. fault**		Data type: UNSIGNED_8 Index: 9695 = 0x25DF
Monitoring response in the case of communication fault A change in the monitoring response becomes immediately effective.		
Selection list		
0	No Response	
1	Fault	
3	Quick stop by trouble	
4	Warning Locked	
6	Information	
Subcodes	**Lenze setting**	**Info**
C14880/1	0: No Response	Idle Mode
C14880/2	0: No Response	Timeout I/O connection
C14880/3	0: No Response	Communication error
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C14883

Parameter | Name: **C14883 | Data length of I/O data consumed**			Data type: UNSIGNED_8 Index: 9692 = 0x25DC
Setting of the data length (in bytes) of the I/O data received by the device via DeviceNet. **Note:** • If the data length is changed, the DeviceNet scanner will be informed about this change (consumed data size). • If the data length is reduced, it must be checked before whether the intended data length is sufficient for the application. • If the data length of the consumed I/O data does not correspond to the length of the mapped ports which is specified by the drive via PDO mapping, the DeviceNet: Consumed I/O data length is contradictory [0x00C88211] (📖 46) error message is generated and entered as a warning into the logbook of the standard device. • If the number of consumed I/O data deviates from the Lenze setting (4 bytes), the "Automap on Add" function in the scanner configuration dialog of the »RSNetWorx« software has to be deactivated and the number of the process data words has to be adapted via the "Edit I/O parameters" button.			
Setting range (min. value | unit | max. value)			**Lenze setting**
0		64	**4**
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14884

Parameter | Name: **C14884 | Data length of produced I/O data**			Data type: UNSIGNED_8 Index: 9691 = 0x25DB
Setting of the data length (in bytes) of the I/O data to be transmitted by the device via DeviceNet. **Note:** • If the data length is changed, the DeviceNet scanner will be informed about this change (produced data size). • If the data length is reduced, it must be checked before if the intended data length is sufficient for the application. • If the data length of the produced I/O data does not correspond to the length of the mapped ports which is specified by the drive via PDO mapping, the DeviceNet: Produced I/O data length is contradictory [0x00C88212] (📖 46) error message is generated and entered as a warning into the logbook of the standard device. • If the number of produced I/O data deviates from the Lenze setting (4 bytes), the "Automap on Add" function in the scanner configuration dialog of the »RSNetWorx« software has to be deactivated and the number of the process data words has to be adapted via the "Edit I/O parameters" button.			
Setting range (min. value | unit | max. value)			**Lenze setting**
0		64	**4**
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☑ COM ☐ MOT			

C14885

Parameter | Name: **C14885 | Delete process data**		Data type: UNSIGNED_8 Index: 9690 = 0x25DA
Setting of the process data which must be further processed by the drive to maintain internal communication if the current network status (C14862) is "Minor Fault" or "Critical Link Failure".		
Selection list (Lenze setting printed in bold)		
0	Use of the latest scanner I/O data	
1	**I/O data are set to a value of '0'**	
☑ Read access ☑ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT		

C14900

Parameter | Name: **C14900 | Firmware: Product type**	Data type: VISIBLE_STRING Index: 9675 = 0x25CB
Display of the product type (string with a length of 8 bytes) The following identification code will be output: "E94AFCDN"	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C14901

Parameter | Name: **C14901 | Firmware: Compilation date**	Data type: VISIBLE_STRING Index: 9674 = 0x25CA
Display of the firmware compilation date (string with a length of 20 bytes) The date ("MMM DD YYYY") and time ("hh:mm:ss") will be provided, e.g. "Mar 21 2005 12:31:21".	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C14902

Parameter | Name: **C14902 | Firmware: Version**	Data type: VISIBLE_STRING Index: 9673 = 0x25C9
Display of the firmware version (string with a length of 5 bytes) The identification code will be output, e.g. "01.11".	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT	

C14920

Parameter | Name: **C14920 | Display: DIP switch position**			Data type: UNSIGNED_8 Index: 9655 = 0x25B7
Display of the current DIP switch position • The value displayed corresponds to the sum of the DIP switch values (MAC ID: 1 ... 32, baud: 1 and 2). • The active MAC ID is displayed in C14864. • The active baud rate is displayed in C14863. ▸ Possible settings via DIP switch (📖 32)			
Display area (min. value | unit | max. value)			
0		255	
☑ Read access ☐ Write access ☐ CINH ☐ PLC-STOP ☐ No transfer ☐ PDO_MAP_RX ☐ PDO_MAP_TX ☐ COM ☐ MOT			

11.4 Table of attributes

The table of attributes contains information required for communicating with the drive via parameters.

How to read the table of attributes:

Column		Meaning	Entry	
Code		Parameter name	Cxxxxx	
Name		Parameter short text (display text)	*Text*	
Index	dec	Index under which the parameter is addressed. The subindex for array variables corresponds to the Lenze subcode number.	24575 - Lenze code number	Only required for access via a bus system.
	hex		0x5FFF - Lenze code number	
Data	DS	Data structure	E	Single variable (only one parameter element)
			A	Array variable (several parameter elements)
	DA	Number of array elements (subcodes)	*Number*	
	DT	Data type	BITFIELD_8	1 byte, bit-coded
			BITFIELD_16	2 bytes, bit-coded
			BITFIELD_32	4 bytes, bit-coded
			INTEGER_8	1 byte, with sign
			INTEGER_16	2 bytes with sign
			INTEGER_32	4 bytes, with sign
			UNSIGNED_8	1 byte, without sign
			UNSIGNED_16	2 bytes without sign
			UNSIGNED_32	4 bytes, without sign
			VISIBLE_STRING	ASCII string
			OCTET_STRING	
	Factor	Factor for data transmission via a bus system, depending on the number of decimal positions	*Factor*	1 = no decimal positions 10 = 1 decimal position 100 = 2 decimal positions 1000 = 3 decimal positions
Access	R	Read access	☑ Reading permitted	
	W	Write access	☑ Writing permitted	
	CINH	Controller inhibit required	☑ Writing only possible in the case of controller inhibit	

Table of attributes

Code	Name	Index		Data				Access		
		dec	hex	DS	DA	DT	Factor	R	W	CINH
C13231	Service code	11344	0x2C50	A	32	UNSIGNED_64		☑	☑	
C13489	Service code	11086	0x2B4E	A	1	UNSIGNED_8	1	☑	☑	
C13531	Service code	11044	0x2B24	A	32	UNSIGNED_64		☑	☑	
C13789	Service code	10786	0x2A22	A	1	UNSIGNED_8	1	☑	☑	
C13850	All words to scanner	10725	0x29E5	A	32	UNSIGNED_16	1	☑		
C13851	All words from scanner	10724	0x29E4	A	32	UNSIGNED_16	1	☑		
C13852	All words to the basic device	10723	0x29E3	A	32	UNSIGNED_16	1	☑		
C13853	All words to the basic device	10722	0x29E2	A	32	UNSIGNED_16	1	☑		
C13854	Length of ports mapped into receive PDO	10721	0x29E1	A	1	UNSIGNED_8	1	☑		
C13855	Length of ports mapped into send PDO	10720	0x29E0	A	1	UNSIGNED_8	1	☑		
C13861	Module status	10714	0x29DA	E	1	UNSIGNED_16	1	☑		
C13862	Network status	10713	0x29D9	E	1	UNSIGNED_16	1	☑		
C13863	Baud rate	10712	0x29D8	E	1	UNSIGNED_8	1	☑		
C13864	Active MAC ID	10711	0x29D7	E	1	UNSIGNED_8	1	☑		
C13880	Response in the case of comm. fault	10695	0x29C7	A	3	UNSIGNED_8	1	☑	☑	
C13883	Data length of consumed I/O data	10692	0x29C4	E	1	UNSIGNED_8	1	☑	☑	
C13884	Data length of produced I/O data	10691	0x29C3	E	1	UNSIGNED_8	1	☑	☑	
C13885	Delete process data	10690	0x29C2	E	1	UNSIGNED_8	1	☑	☑	
C13900	Firmware: Product type	10675	0x29B3	E	1	VISIBLE_STRING		☑		
C13901	Firmware: Compilation date	10674	0x29B2	E	1	VISIBLE_STRING		☑		
C13902	Firmware: Version	10673	0x29B1	E	1	VISIBLE_STRING		☑		
C13920	Display: DIP switch position	10655	0x299F	E	1	UNSIGNED_8	1	☑		
C14231	Service code	10344	0x2868	A	32	UNSIGNED_64		☑	☑	
C14489	Service code	10086	0x2766	A	1	UNSIGNED_8	1	☑	☑	
C14531	Service code	10044	0x273C	A	32	UNSIGNED_64		☑	☑	
C14789	Service code	9786	0x263A	A	1	UNSIGNED_8	1	☑	☑	
C14850	All words to scanner	9725	0x25FD	A	32	UNSIGNED_16	1	☑		
C14851	All words from scanner	9724	0x25FC	A	32	UNSIGNED_16	1	☑		
C14852	All words to the basic device	9723	0x25FB	A	32	UNSIGNED_16	1	☑		
C14853	All words to the basic device	9722	0x25FA	A	32	UNSIGNED_16	1	☑		
C14854	Length of ports mapped into receive PDO	9721	0x25F9	A	1	UNSIGNED_8	1	☑		
C14855	Length of ports mapped into send PDO	9720	0x25F8	A	1	UNSIGNED_8	1	☑		
C14861	Module status	9714	0x25F2	E	1	UNSIGNED_16	1	☑		
C14862	Network status	9713	0x25F1	E	1	UNSIGNED_16	1	☑		
C14863	Baud rate	9712	0x25F0	E	1	UNSIGNED_8	1	☑		
C14864	Active MAC ID	9711	0x25EF	E	1	UNSIGNED_8	1	☑		
C14880	Response in the case of comm. fault	9695	0x25DF	A	3	UNSIGNED_8	1	☑	☑	
C14883	Data length of consumed I/O data	9692	0x25DC	E	1	UNSIGNED_8	1	☑	☑	
C14884	Data length of produced I/O data	9691	0x25DB	E	1	UNSIGNED_8	1	☑	☑	
C14885	Delete process data	9690	0x25DA	E	1	UNSIGNED_8	1	☑	☑	
C14900	Firmware: Product type	9675	0x25CB	E	1	VISIBLE_STRING		☑		
C14901	Firmware: Compilation date	9674	0x25CA	E	1	VISIBLE_STRING		☑		
C14902	Firmware: Version	9673	0x25C9	E	1	VISIBLE_STRING		☑		
C14920	Display: DIP switch position	9655	0x25B7	E	1	UNSIGNED_8	1	☑		

12 Implemented DeviceNet objects

A DeviceNet node can be seen as an accumulation of objects. An individual object is characterised by its class, its instances and attributes. Several services such as read and write services can be applied to these objects.

Overview of implemented objects

Object	Index		Description
	[hex]	[dec]	
Identity Class	0x01	1	Identification and general information relating to the device
DeviceNet Class	0x03	3	Settings for the DeviceNet communication
Assembly Class	0x04	4	Input/output data of the scanner
Connection Class	0x05	5	Connection settings: • Explicit messages • Poll I/O • CoS/cyclic I/O
Acknowledge Handler Class	0x2B	43	Feedback/confirmation settings
Lenze Class (manufacturer-specific class)	0x65	101	Setting of error responses to communication faults
	0x66	102	Setting of the data lengths for I/O data consumed and produced.
	0x67	103	I/O image of the data produced (process input data of the scanner)
	0x68	104	I/O image of the data consumed (process output data of the scanner)
	0x6E	110	Access to Lenze codes

12.1 Identity Class (0x01 / 1)

This object contains some information regarding the identification and general information relating to the device.

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1	GET	Vendor ID	UINT	445 (0x1BD)
2	GET	Device Type	UINT	0 (generic)
3	GET	Product Code	UINT	9400 (0x24B8)
4	GET	Revision	Struct of	
		Major Revision	USINT	1 (0x01)
		Minor Revision	USINT	1 (0x01)
5	GET	Status	WORD	Depending on the current state of the communication module
6	GET	Serial number	UDINT	Individually for the respective communication module
7	GET	Product Name	SHORT_STRING	E94AYCDN
10 [1)]	GET / SET	Heartbeat interval	USINT	0 ... 255 s (0x0 ... 0xFF) Lenze setting: 0 s (0x0)

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Services

Service code	Designation	Description
0x05	Reset	Reset of the communication module
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.2 DeviceNet Class (0x03 / 3)

This object contains some information relating to the DeviceNet communication.

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	2 (0x02)

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1	GET	MAC ID	USINT	0 ... 63 (0x0 ... 0x3F)
2	GET	Baud rate	USINT	0 ... 2 (0x0 ... 0x02)
3	GET	BOI	BOOL	0
4	GET / SET	Bus-off counter	USINT	0 ... 255 (0x0 ... 0xFF)
5	GET	Allocation information	Struct of	
		Allocation choice byte	BYTE	0 ... 63 (0x0 ... 0x3F)
		Scanner MAC ID	USINT	0 ... 63 (0x0 ... 0x3F)
8	GET	MAC ID switch value	USINT	0 ... 63 (0x0 ... 0x3F)
9	GET	Baud rate switch value	USINT	0 ... 2 (0x0 ... 0x02)

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute
0x4B	Allocate_Master/ Slave_Connection_Set	Requires the application of the "Predefined Master/Slave Connection Set"
0x4C	Release_Group_2_Identifier _Set	Connections via the "Predefined Master/Slave Connection Set" are deleted.

12.3 Assembly Class (0x04 / 4)

This object contains some information relating to input and output data of the scanner.

Instance 768 ... 832 (scanner input data)

Attribute	Service(s)	Designation	Data type	Instance/value
3 [1)]	GET / SET	Data	Array of BYTE	Instance 768 (0x300): 0 bytes to the scanner
				Instance 769 (0x301): 1 byte to the scanner
				Instance 770 (0x302): 2 bytes to the scanner
				Instance 771 (0x303): 3 bytes to the scanner
				...
				Instance 832 (0x340): 64 bytes to the scanner

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Instance 833 ... 897 (scanner output data)

Attribute	Service(s)	Designation	Data type	Instance/value
3	GET / SET	Data	Array of BYTE	Instance 833 (0x341): 0 bytes from the scanner
				Instance 834 (0x342): 1 byte from the scanner
				Instance 835 (0x343): 2 bytes from the scanner
				Instance 836 (0x344): 3 bytes from the scanner
				...
				Instance 897 (0x381): 64 bytes from the scanner

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.4 Connection Class (0x05 / 5)

This object contains some information relating to connection settings:

- "Explicit Messages" (instance 1)
- "Poll I/O" (instance 2)
- "CoS/Cyclic I/O" (instance 4)

Instance 1 ("Explicit Messages" connection)

Attribute	Service(s)	Designation	Data type	Value
1	GET	state	USINT	Status of the object 0: Nonexistent 1: Configuring 2: Waiting for connection ID 3: Established 4: Timed Out 5: Deferred Delete
2	GET	instance_type	USINT	0 (Explicit Message)
3	GET	transportClass_trigger	BYTE	131 (0x83)
4	GET	produced_connection_id	UINT	Transmitting CAN identifier
5	GET	consumed_connection_id	UINT	Receiving CAN identifier
6	GET	initial_comm_characteristics	BYTE	33 (0x21)
7	GET	produced_connection_size	UINT	132 (0x84) Maximum amount of data produced
8	GET	consumed_connection_size	UINT	132 (0x84) Maximum amount of data consumed
9 **1)**	GET / SET	expected_packet_rate	UINT	Connection-dependent Lenze setting: 2500 ms (0x9C4)
10	-	Not in use	-	Not defined
11	-	Not in use	-	Not defined
12 **1)**	GET / SET	watchdog_timeout_action	USINT	Defines time-out treatment • 1 = Auto Delete (Lenze setting) • 3 = Deferred Delete
13	GET	produced_connection_path_length	UINT	0
14	GET	produced_connection_path	EPATH	-
15	GET	consumed_connection_path_length	UINT	0
16	GET	consumed_connection_path	EPATH	-
17	GET	production_inhibit_time	UINT	0

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Instance 2 ("Poll I/O" connection)

Attribute	Service(s)	Designation	Data type	Value
1	GET	state	USINT	Status of the object 0: Nonexistent 1: Configuring 2: Waiting for connection ID 3: Established 4: Timed Out 5: Deferred Delete
2	GET	instance_type	USINT	1 (0x01)
3	GET	transportClass_trigger	BYTE	128/130 (0x80/0x82)
4	GET	produced_connection_id	UINT	Transmitting CAN identifier
5	GET	consumed_connection_id	UINT	Receiving CAN identifier
6	GET	initial_comm_characteristics	BYTE	1 (0x01)
7	GET	produced_connection_size	UINT	Depending on the number of I/O data words
8	GET	consumed_connection_size	UINT	Depending on the number of I/O data words
9 **1)**	GET / SET	expected_packet_rate	UINT	Connection-dependent
10	-	Not in use	-	Not defined
11	-	Not in use	-	Not defined
12	GET	watchdog_timeout_action	USINT	Defines time-out treatment (0 = Transition to Timed Out)
13	GET	produced_connection_path_length	UINT	7 (0x07)
14	GET	produced_connection_path	EPATH	0x20, 0x67, 0x25, 0x01, 0x00, 0x30, 0x01
15	GET	consumed_connection_path_length	UINT	7 (0x07)
16	GET	consumed_connection_path	EPATH	0x20, 0x68, 0x25, 0x01, 0x00, 0x30, 0x01
17	GET	production_inhibit_time	UINT	0

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Instance 4 ("CoS/Cyclic I/O" connection)

Attribute	Service(s)	Designation	Data type	Value
1	GET	state	USINT	Status of the object 0: Nonexistent 1: Configuring 2: Waiting for connection ID 3: Established 4: Timed Out 5: Deferred Delete
2	GET	instance_type	USINT	1 (0x01)
3	GET	transportClass_trigger	BYTE	18/0 (0x12/0x00)
4	GET	produced_connection_id	UINT	Transmitting CAN identifier
5	GET	consumed_connection_id	UINT	Receiving CAN identifier
6	GET	initial_comm_characteristics	BYTE	1 (0x01)
7	GET	produced_connection_size	UINT	Depending on the number of I/O data words
8	GET	consumed_connection_size	UINT	0
9 **1)**	GET / SET	expected_packet_rate	UINT	Connection-dependent
10	-	Not in use	-	Not defined
11	-	Not in use	-	Not defined
12	GET	watchdog_timeout_action	USINT	Defines time-out treatment (0 = Transition to Timed Out)
13	GET	produced_connection_path_length	UINT	7 (0x07)
14	GET	produced_connection_path	EPATH	0x20, 0x67, 0x25, 0x01, 0x00, 0x30, 0x01
15	GET	consumed_connection_path_length	UINT	7 (0x07)
16	GET	consumed_connection_path	EPATH	0x20, 0x68, 0x25, 0x01, 0x00, 0x30, 0x01
17 **1)**	GET / SET	production_inhibit_time	UINT	0 ... 65535 ms (0x0 ... 0xFFFF) Lenze setting: 0 ms (Inhibit Time deactivated)

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Services

Service code	Designation	Description
0x05	Reset	• Resetting the watchdog timer • The communication between the scanner and the device changes to the "Established State"
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.5 Acknowledge Handler Class (0x2B / 43)

This object contains some information relating to feedbacks/confirmations:

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1 **1)**	GET / SET	Acknowledge Timer	UINT	1 ... 65534 ms (0x0001 ... 0xFFFE) Lenze setting: 16 ms (0x10)
2	GET	Retry Limit	USINT	1 ms (0x01)
3	GET	CoS Producing Connection Instance	UINT	4 (0x04)

1) The device commands "Load Lenze setting", "Save start parameters", and "Load start parameters" do not have an effect on this attribute.

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.6 Lenze Class (0x65 / 101)

This object contains some information regarding responses to communication faults.

▸ Interruption of the DeviceNet communication (📖 39)

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	1 (0x01)

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1	GET / SET	Response to "Idle Mode"	USINT	Corresponds to the value in C13880/1 / C14880/1: 0 = no response 1 = error 3 = quick stop by trouble 4 = warning locked 6 = information
2	GET / SET	Response to communication errors	USINT	Corresponds to the value in C13880/3 / C14880/3: 0 = no response 1 = error 3 = quick stop by trouble 4 = warning locked 6 = information
4	GET / SET	Response to I/O timeout	USINT	Corresponds to the value in C13880/2 / C14880/2: 0 = no response 1 = error 3 = quick stop by trouble 4 = warning locked 6 = information

Note

The parameters of the "0x65" class are described in the EDS file and therefore can be set directly in the properties dialog of the DeviceNet nodes under "Parameters" via the »RSNetWorx« Rockwell software.

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.7 Lenze Class (0x66 / 102)

This object contains some information relating to data lengths of the I/O data consumed and produced.

- Consumed I/O data: process data from the scanner to the drive (device)
- Produced I/O data: process data from the drive (device) to the scanner

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	1 (0x01)

Instance 1

Attribute	Service(s)	Designation	Data type	Value
2	GET / SET	Data length of the I/O data consumed	USINT	Corresponds to the value in C13883 / C14883: 0 ... 64 (0x00 ... 0x40)
3	GET / SET	Data length of produced I/O data	USINT	Corresponds to the value in C13884 / C14884: 0 ... 64 (0x00 ... 0x40)

Note

The parameters of the "0x66" class are described in the EDS file and therefore can be set directly in the properties dialog of the DeviceNet nodes under "Parameters" via the »RSNetWorx« Rockwell software.

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.8 Lenze Class (0x67 / 103)

This object contains some information relating to the I/O image of the data produced (process input data of the scanner).

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	1 (0x01)

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1	GET	I/O image of the data produced (process input data of the scanner)	USINT	Connection-dependent

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute

12.9 Lenze Class (0x68 / 104)

This object contains some information relating to the I/O image of the data consumed (process output data of the scanner).

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	1 (0x01)

Instance 1

Attribute	Service(s)	Designation	Data type	Value
1	GET / SET	I/O image of the data consumed (process output data of the scanner)	USINT	Connection-dependent

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.10 Lenze Class (0x6E / 110)

This object contains some information regarding the access to Lenze codes.

Instance 0

Attribute	Service(s)	Designation	Data type	Value
1	GET	Revision	UINT	1 (0x01)

Instance (Lenze code)

Attribute	Service(s)	Designation	Data type	Value
Lenze subcode	GET / SET	Access to Lenze code (0x6E)	Data type of the Lenze code	Value of the Lenze code/ subcode

Note!

- If the corresponding Lenze code does not have a subcode, the value 1 must be entered in the attribute.
- A display code cannot be configured by the "SET" service.

Services

Service code	Designation	Description
0x0E	Get_Attribute_Single	Reading an attribute
0x10	Set_Attribute_Single	Writing an attribute

12.11 Examples for reading/writing with the »Class Instance Editor«

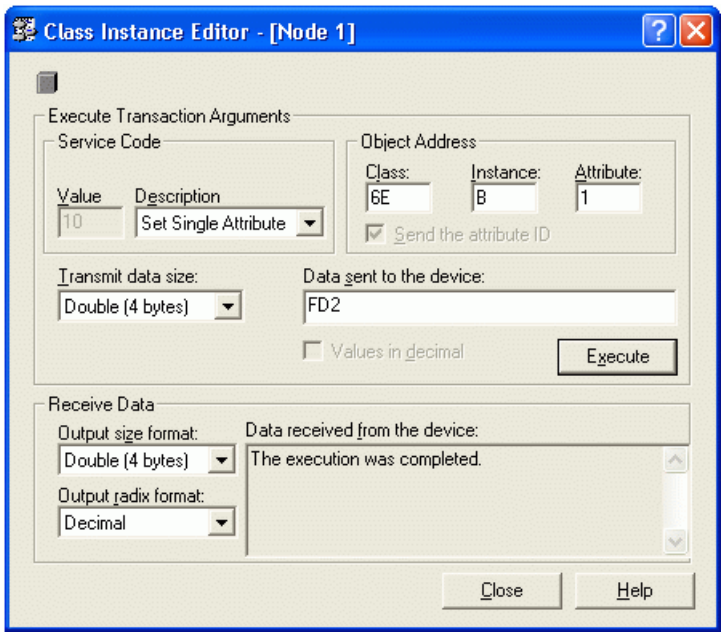
The »Class Instance Editor« is a function of the Rockwell software »RSNetWorx«.

12.11.1 Writing integer codes

The maximum speed (n_{max}) is to be set to 4500 rpm using code C00011.

Enter the following in the input fields of the »Class Instance Editor« (fig. [12-1]):

- Description: **Set Single Attribute** (write code)
- Class: **6E** (access to Lenze code)
- Instance: **B** (hex value of the code)
- Attribute: **1** (hex value of the subcode)
- ”Data sent to the device”:
  4500 = 4500 [min^{-1}] = **FD2** (speed as hex value)
- Transmit data size: **Double (4 bytes)**



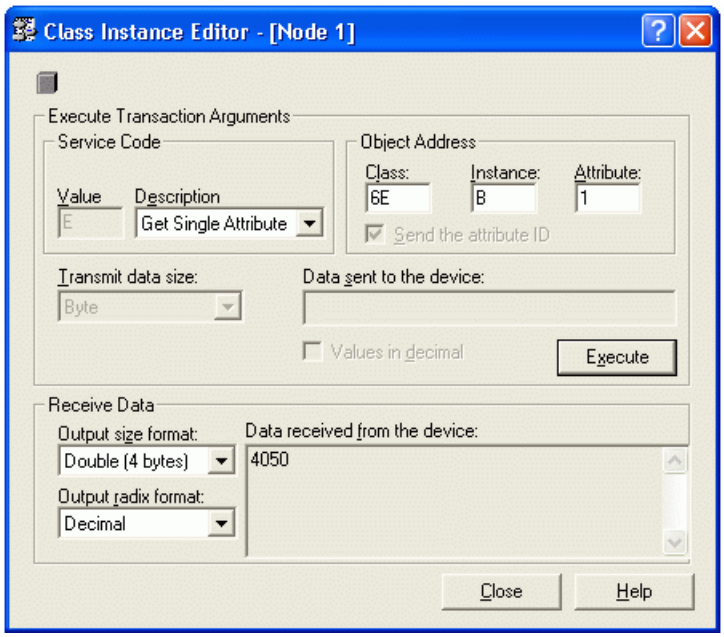
[12-1] »Class Instance Editor«: Writing integer codes

12.11.2 Reading integer codes

The maximum speed (n_{max}) is to be read from code C0011.

Enter the following in the input fields of the »Class Instance Editor« (fig. [12-2]):

- Description: **Get Single Attribute** (read code)
- Class: **6E** (access to Lenze code)
- Instance: **B** (hex value of the code)
- Attribute: **1** (hex value of the subcode)
- Output size format: **Double (4 bytes)**
- Output radix format: **Decimal**
- Read the decimal data that are returned:
  ”Data received from the device”: 4050 = 4050 [min^{-1}]



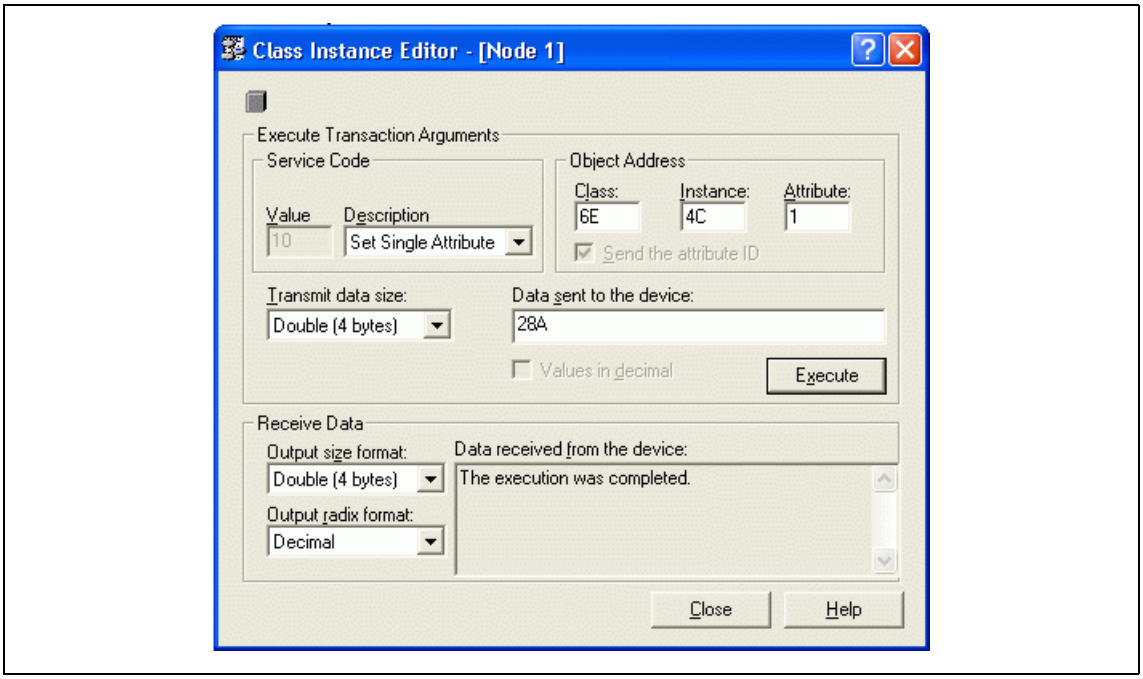
[12-2] »Class Instance Editor«: Reading integer codes

12.11.3 Writing codes with two decimal positions

The current controller reset time is to be set to 6.50 ms using code C00076.

Enter the following in the input fields of the »Class Instance Editor« (fig. [12-3]):

- Description: **Set Single Attribute** (write code)
- Class: **6E** (access to Lenze code)
- Instance: **4C** (hex value of the code)
- Attribute: **1** (hex value of the subcode)
- ”Data sent to the device”: **28A** = 650 → "6.50" is written.
- Transmit data size: **Double (4 bytes)**



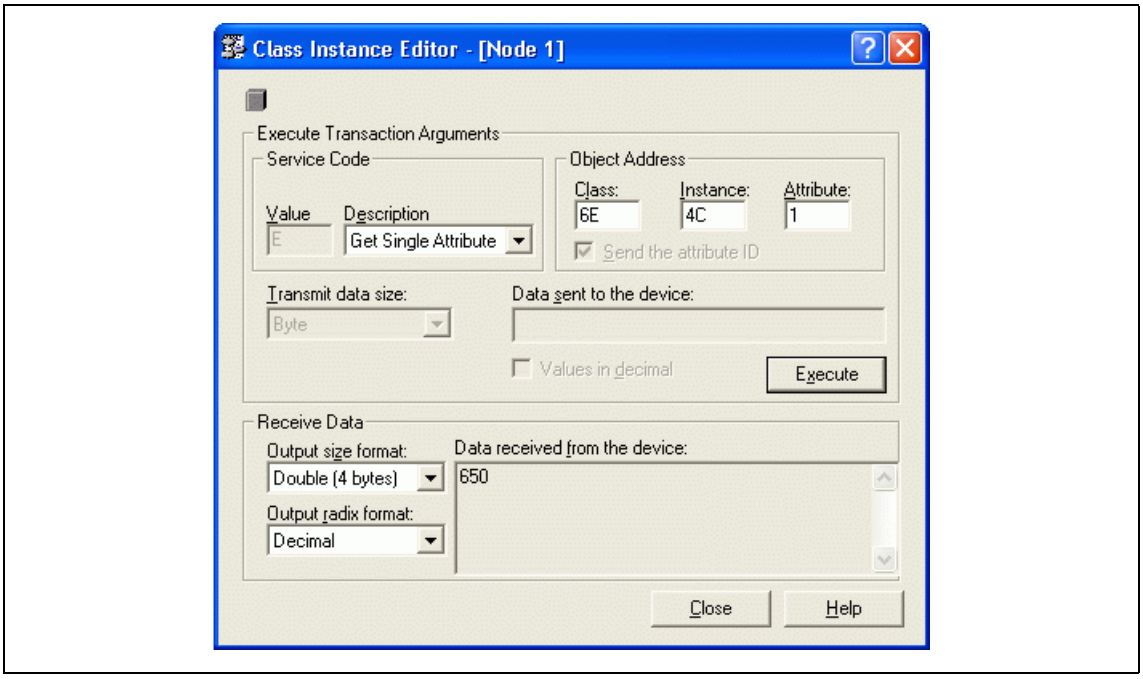
[12-3] »Class Instance Editor«: Writing codes with two decimal positions

12.11.4 Reading codes with two decimal positions

The current controller reset time is to be read from code C00076.

Enter the following in the input fields of the »Class Instance Editor« (fig. [12-4]):

- Description: **Get Single Attribute** (read code)
- Class: **6E** (access to Lenze code)
- Instance: **4C** (hex value of the code)
- Attribute: **1** (hex value of the subcode)
- Output size format: **Double (4 bytes)**
- Output radix format: **Decimal**
- Read the decimal data that are returned:
  ”Data received from the device”: 650 → The code has the value "6.50" [ms].



[12-4] »Class Instance Editor«: Reading codes with two decimal positions

13 DIP switch positions for setting the station address

The station address results from the sum of the binary values of switches 1 ... 32.

The following table shows the switch positions for the valid address range 0 ... 63.

Station address (MAC ID	DIP switch					
	32	16	8	4	2	1
0	OFF	OFF	OFF	OFF	OFF	OFF
1	OFF	OFF	OFF	OFF	OFF	**ON**
2	OFF	OFF	OFF	OFF	**ON**	OFF
3	OFF	OFF	OFF	OFF	**ON**	**ON**
4	OFF	OFF	OFF	**ON**	OFF	OFF
5	OFF	OFF	OFF	**ON**	OFF	**ON**
6	OFF	OFF	OFF	**ON**	**ON**	OFF
7	OFF	OFF	OFF	**ON**	**ON**	**ON**
8	OFF	OFF	**ON**	OFF	OFF	OFF
9	OFF	OFF	**ON**	OFF	OFF	**ON**
10	OFF	OFF	**ON**	OFF	**ON**	OFF
11	OFF	OFF	**ON**	OFF	**ON**	**ON**
12	OFF	OFF	**ON**	**ON**	OFF	OFF
13	OFF	OFF	**ON**	**ON**	OFF	**ON**
14	OFF	OFF	**ON**	**ON**	**ON**	OFF
15	OFF	OFF	**ON**	**ON**	**ON**	**ON**
16	OFF	**ON**	OFF	OFF	OFF	OFF
17	OFF	**ON**	OFF	OFF	OFF	**ON**
18	OFF	**ON**	OFF	OFF	**ON**	OFF
19	OFF	**ON**	OFF	OFF	**ON**	**ON**
20	OFF	**ON**	OFF	**ON**	OFF	OFF
21	OFF	**ON**	OFF	**ON**	OFF	**ON**
22	OFF	**ON**	OFF	**ON**	**ON**	OFF
23	OFF	**ON**	OFF	**ON**	**ON**	**ON**
24	OFF	**ON**	**ON**	OFF	OFF	OFF
25	OFF	**ON**	**ON**	OFF	OFF	**ON**
26	OFF	**ON**	**ON**	OFF	**ON**	OFF
27	OFF	**ON**	**ON**	OFF	**ON**	**ON**
28	OFF	**ON**	**ON**	**ON**	OFF	OFF
29	OFF	**ON**	**ON**	**ON**	OFF	**ON**
30	OFF	**ON**	**ON**	**ON**	**ON**	OFF
31	OFF	**ON**	**ON**	**ON**	**ON**	**ON**
32	**ON**	OFF	OFF	OFF	OFF	OFF
33	**ON**	OFF	OFF	OFF	OFF	**ON**
34	**ON**	OFF	OFF	OFF	**ON**	OFF
35	**ON**	OFF	OFF	OFF	**ON**	**ON**
36	**ON**	OFF	OFF	**ON**	OFF	OFF
37	**ON**	OFF	OFF	**ON**	OFF	**ON**
38	**ON**	OFF	OFF	**ON**	**ON**	OFF

Station address (MAC ID	DIP switch					
	32	16	8	4	2	1
39	**ON**	OFF	OFF	**ON**	**ON**	**ON**
40	**ON**	OFF	**ON**	OFF	OFF	OFF
41	**ON**	OFF	**ON**	OFF	OFF	**ON**
42	**ON**	OFF	**ON**	OFF	**ON**	OFF
43	**ON**	OFF	**ON**	OFF	**ON**	**ON**
44	**ON**	OFF	**ON**	**ON**	OFF	OFF
45	**ON**	OFF	**ON**	**ON**	OFF	**ON**
46	**ON**	OFF	**ON**	**ON**	**ON**	OFF
47	**ON**	OFF	**ON**	**ON**	**ON**	**ON**
48	**ON**	**ON**	OFF	OFF	OFF	OFF
49	**ON**	**ON**	OFF	OFF	OFF	**ON**
50	**ON**	**ON**	OFF	OFF	**ON**	OFF
51	**ON**	**ON**	OFF	OFF	**ON**	**ON**
52	**ON**	**ON**	OFF	**ON**	OFF	OFF
53	**ON**	**ON**	OFF	**ON**	OFF	**ON**
54	**ON**	**ON**	OFF	**ON**	**ON**	OFF
55	**ON**	**ON**	OFF	**ON**	**ON**	**ON**
56	**ON**	**ON**	**ON**	OFF	OFF	OFF
57	**ON**	**ON**	**ON**	OFF	OFF	**ON**
58	**ON**	**ON**	**ON**	OFF	**ON**	OFF
59	**ON**	**ON**	**ON**	OFF	**ON**	**ON**
60	**ON**	**ON**	**ON**	**ON**	OFF	OFF
61	**ON**	**ON**	**ON**	**ON**	OFF	**ON**
62	**ON**	**ON**	**ON**	**ON**	**ON**	OFF
63	**ON**	**ON**	**ON**	**ON**	**ON**	**ON**

▸ Possible settings by DIP switch (📖 33)

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Your opinion is important to us

These instructions were created to the best of our knowledge and belief to give you the best possible support for handling our product.

Perhaps we have not succeeded in achieving this objective in every respect. If you have suggestions for improvement, please e-mail us to:

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Thank you very much for your support.

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