

Config over Realtime

Establishing the LinMot-Talk Connection over the fieldbus port

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Use of This Document

Description: Login with the LinMot-Talk Software over the Real-time Ethernet Port

Drive: Drives are listed under General

Classification :

- [] Application Note [] Installation Guide [] User Manual
- [x] Documentation
- [] LinMot internally

Recommended Documentation

Beside the documentation included in the libraries available for download, reading the following user manuals is essential to understand the communication between the PLC and the LinMot drive. The manuals are included in the LinMot-Talk software (*Menu Manuals* \rightarrow *All Documents* or *Relevant Documents* if logged in to a drive) or can be downloaded from the LinMot eCatalogue (search by document reference): <u>http://shop.linmot.com</u>

Tools	Manu	ials Help					
250-IP R	1	Parameters and Variables	►		🛛 💐 💊 🖼 🕵	8 👍 🖌	
	1	Errors	•	C	C 11		
ne	1	Motion Commands				RawData	
CID	I	Relevant Documents		7	Usermanual_LinMot-	Talk.pdf	
Address Mask		All Documents			Installation_Guide_E1200.pdf		

User Manuals: General	System Generation	Document Reference
LinMot-Talk	All	<u>0185-1059</u>
Motion Control Software	SG3 & SG4	0185-1092
Motion Control Software	SG5 - SG7	<u>0185-1093</u>
User Manuals: Interfaces	System Generation	Document Reference
EtherCAT (LinMot Profile)	SG5 - SG7	<u>0185-1079</u>
EtherCAT CoE (CiA402, CANopen over EtherCAT)	SG5 - SG7	<u>0185-1103 / 0185-1178</u> (-MI)
EtherCAT SoE (Servo Drive Profile over EtherCAT)	SG5 - SG7	<u>0185-1080</u>
PROFINET IO	SG5 - SG7	<u>0185-1090</u> / <u>0185-1154</u> (-MI)
PROFINET PROFIdrive	SG6	<u>0185-1132</u> / <u>0185-1154</u> (-MI)
Sercos III (FSP_DRIVE or FSP_IO [-SC only!])	SG5 & SG6	<u>0185-1091</u>
EtherNet/IP	SG5 & SG6	<u>0185-1081</u>
EtherNet/IP CIP Sync	SG6	<u>0185-1165</u>
Powerlink	SG5 & SG6	0185-1088
LinUDP V2 (LinMot Ethernet UDP protocol) from FW6.3	SG5 & SG6	0185-1108



General

Requirements

The following tables show which drive types support remote access with LinMot-Talk over the fieldbus. More details can be found in the following chapters:

Interface	Chapter
Ethernet/IP (-IP & -CM)	1 Ethernet/IP
LinUDP (-LU)	2 LinUDP
PROFINET (-PN & -PD)	3 PROFINET
EtherCAT (-EC & -DS & -SE)	4 EtherCAT
Sercos III (-SC)	5 Sercos III
POWERLINK (-PL)	6 POWERLINK
Config Eth	7 Configuration ETH Port

RT ETH supported Interfaces

	IP	СМ	LU	PN	PD	EC	SE	DS	SC	PL
Remote Access with LinMot-Talk	•	•	•	•	•	•	•	•	•	•
Configuration with LinMot-Talk	•	•	•	•	•	•	•	•	•	•
Firmware Installation	х	х	х	x	х	x	х	х	х	х
Scanning Over Ethernet	•	•	•	•*	•*	х	х	х	•	х
Import Configuration file (Imc)	•	•	•	•	•	•	•	•	•	•
Blink Status LED's	•	•	•	•	•	•	•	•	•	•
Login without connected PLC	•	•	•	(-)	(-)	х	х	х	•	х



Yes Yes, -MI drive only

No If IP is set in another way



Attention: -MI drives with Sercos interface installed <u>do not</u> support configuration over RT ETH Ethernet.



Supported Servo Drives Series

	B1100	E1100	C1150*	C1250*	C1450*	E1250**	E1450**
Ethernet Access with LinMot-Talk	х	х	х	•	•	•	•
Ethernet Config with LinMot-Talk	RS232/CAN	RS232/CAN	RS232	•	•	•	•
Firmware Installation over RT	х	х	х	х	х	х	х
Firmware Installation Config ETH	х	х	х	х	х	•	•
Firmware Installation RS232	•	•	•	•	•	•	•
Internet Browser Access	х	х	х	х	х	•	•
Scanning over Ethernet	х	х	х	•	•	•	•
Import Configuration File (.Imc)	RS232/CAN	RS232/CAN	RS232	•	•	•	•
Blink Status LED's	x	х	х	•	•	•	•

Yes ٠

X * No

only supported with the specific interface only Config ETH supported, RT Config check with <u>support@linmot.com</u> **



Note: In case of doubt use for the LinMot-Talk Communication the USB-RS232 Converter (0150-2473) on X19.





1 Ethernet/IP

1.1 Compatibility

Servo Drive	Firmware-Version
C1250-IP-XC-0S-000	LinMot-Talk 6 Version 6.4 Build 20151112 or newer
C1250-IP-XC-1S-000	LinMot-Talk 6 Version 6.4 Build 20151112 or newer
C1450-IP-VS-1S-000	LinMot-Talk 6 Version 6.6 Build xxx or newer
C1250-CM-XC-0S-000 / C1250-MI-XC-0S-000	LinMot-Talk 6 Version 6.8 Build 20190315 or newer
C1250-CM-XC-1S-000 / C1250-MI-XC-1S-000	LinMot-Talk 6 Version 6.8 Build 20190315 or newer
E1250-IP-UC	More details in chapter Configuration ETH Port
E1450-IP-QN-0S	More details in chapter Configuration ETH Port
E1450-IP-QN-1S	More details in chapter Configuration ETH Port

1.2 Login with static IP address



1.2.1 Settings on the LinMot Drive

The default setting of the Ethernet/IP port address is manual IP Configuration using hex switches. With the standard settings, the IP address will be in the following range 192.168.001.xxx. The last number can be set with the hex switches S1 and S2.

Identification	Description	Example
S1 – S2		IP address with the settings below:
1 2 3 4 5 6 7 8	S1: (58) Bit 5 is LSB Bit 8 is MSB S2: (14) Bit 1 is LSB	S1 = binary 0000, dec 0, hex 0 S2 = binary 0011, dec 3, hex 3
0 z ←	BIT 4 IS MSB	Address = 192.168.001.003
X17 – X18		Connect network cable on X17:
	X17 RT ETH In	X17 RT ETH In
	X18 RT ETH Out	

Note: Changes on S1 and S2 need a power up cycle to refresh the values in the drive.



1.2.2 Settings on the PC

The computer needs to be in the same IP subnet as the servo drive. Set the network settings in the PC to an IP address with 192.168.1.xxx. The IP address needs to be different from the IP address of the drive.

temptically if your patriarly a maarta
d to ask your network administrator
ically
192.168.1.1
255 . 255 . 255 . 0
tomatically
addresses:
* * *
Advanced

1.2.3 Login with LinMot-Talk

Open the LinMot-Talk Software and start the Scanning (via Ethernet) in the menu tab: *File -> Scanning (via Ethernet)*.



Select the network card of the laptop. Make sure that the IP address of the Laptop is in the following sub net (192.168.1.xxx).

The following table will show all connected LinMot drives in the network.



K Login		And Annual St	-		Andre 1984	
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info
🔽 🏯	192.168.1.3	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622
•						۰.
Scan	Again Bli	nk Selected Show H	Help		Login All Login Selected	Abort

Login to the drive to adjust drive settings.



Note: When configuring the IP address of the drive, a new scan is necessary to reconnect the LinMot-Talk communication if the IP address is changed. The IP address of the drive can be configured with LinMot Talk:

Parameter/ Ethernet/IP Intf/ IP Configuration Mode



1.3 Login with dynamic IP address (DHCP)



1.3.1 Settings on the LinMot Drive

If the hex switches are set to S1=0 and S2=0, the servo drive is in the dynamic IP configuration mode. The servo drive doesn't support APIPA (Automatic Private IP Addressing). Connect the servo drive with a DHCP Server to receive a TCP/IP address.

Identification	Description	Example
S1 – S2	S1: (58) Bit 5 is LSB Bit 8 is MSB S2: (14) Bit 1 is LSB Bit 4 is MSB	S1 to OFF / S2 to OFF = DHCP.
X17 – X18	X17 RT ETH In X18 RT ETH Out	Connect the network cable to X17: X17 RT ETH In



Note: Changes on S1 and S2 need a power up cycle to refresh the values in the drive.



1.3.2 Setting on PC

Set the Network Configuration IPv4 to "Obtain an IP address automatically".

automaticall eed to ask yo atically	y if y our n	vour ni ietwor	etwork k admi	suppor nistrato
atically s:		•		
s:				
	,			
	•		+	
automaticall	y			
er addresses	:			
	•		+	
		*		
			Adv	vanced.
	automatically	automatically r addresses:	automatically r addresses:	automatically r addresses:



1.3.3 Login with LinMot-Talk

Open the LinMot-Talk Software and start the Scanning (via Ethernet) in the menu. File -> Scanning (via Ethernet





Attention: Use the "Blink Selected" function if you have more than one drive in the network.

×					Login			- • ×
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info	User ID	Password
🔽 🌲	10.3.11.86	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622	USER	
	10.3.11.88	00:1A:4E:00:E2:70	0	Unnamed	E1450PNQN0S/2RB	6.5 Build 20160517	USER	
Scan	Again Blir	nk Selected Show H	lelp		Login All Login Selec	ted Abort		

Login to the drive to adjust the drive settings.



Note: When configuring the IP address of the drive, a new scan is necessary to reconnect the LinMot-Talk communication if the IP address is changed. The IP address of the drive can be configured with LinMot Talk:

Parameter/ Ethernet/IP Intf/ IP Configuration Mode



1.4 IP address configuration with BOOTP/ DHCP Server



1.4.1 Settings on the LinMot Drive

If the hex switches are set to S1=0, and S2 =0, the servo drive is in the dynamic IP configuration. The servo drive doesn't support APIPA (Automatic Private IP Addressing). Connect the servo drive with a DHCP Server to receive a TCP/IP address.

Identification	Description	Example
S1 – S2	S1: (58) Bit 5 is LSB Bit 8 is MSB S2: (14) Bit 1 is LSB Bit 4 is MSB	S1 to OFF / S2 to OFF = DHCP.
X17 – X18	X17 RT ETH In X18 RT ETH Out	The network cable is plugged into X17: X17 RT ETH In

1.4.2 Using the Software BOOTP/ DHCP Server

The following settings are shown with BOOTP/DHCP Server Version 2.3.2.0 from Rockwell Automation. The software shows all the MAC addresses in the Ethernet network. An IP address can be assigned to a LinMot drive with this software. Once the servo drive has an assigned IP address, the LinMot-Talk Software can connect to the drive over the Ethernet real-time port.



1.4.2.1 Search for the LinMot Drive in the Network

The BOOTP Software shows all the slaves in the Network.

(hr:min:sec)	Туре	Ethernet Address (MAC) IP A	Address	Hostname	
13:37:59	DHCP	00:1A:4E:01:02:6E)			
13:37:57	DHCP	00:08:30:26:60:C4				
13:37:49	DHCP	00:1A:4E:01:02:6E 00:08:30:26:60:C4	,			
13:37:32	DHCP	00:08:30:26:60:C4				
13:37:28	DHCP	00:08:30:26:60:C4				
alation List						
New Delet	e Enabl	ROOTE Frable				
Delet	C LIIGDI		Disable	BOOTTYDIICI		
Ethernet Addre	ess (MAC)	Type IP	Address	Hostname	Description	

Compare the MAC-Address in the list with the MAC on the Servo Drive label.





Select the correct MAC and assign the IP address to the drive.

(hr:min:sei 14:03:33	c) Type	Ethernet Ad	dress (MAC)	IP Address	Hostname	
14:03:22	DHCP	00:1A:4E:0	1:02:6D			
14:03:12	New Entry			.	3	
	Ethernet Add	dress (MAC):	00:1A:4E:01	1:02:6D		
		IP Address:	192 . 160	B. 1. 70		
lation Lis		Hostname:	, 			
New 1		Description:	, 			
Ethernet /			, ОК	Cancel	Description	

Add the IP address in the Relation List and press "Enable DHCP". Normally a Communication Error is displayed, but the message can be ignored. Press OK.

equest Hi	stan	
Clear	Communication Error	
(hr:min: 14:11:0 14:10:5 14:10:5 14:10:4	Failed to complete the requested operation. See status bar for further information then press OK when ready to continue.	
elation Lis New	OK st Delete Enable BOOTP Enable DHCP Disable BOOTP/DHCP	
Ethernet	Address (MAC) Type IP Address Hostname Description	
00:1A:4E	:01:02:6D DHCP 192:168.1.70	



Note: After the IP address assignment, the BOOTP/DHCP Server Software must be closed. After that, restart the LinMot-Talk Software to login in the drive.



1.4.3 Login with LinMot-Talk

In the LinMot-Talk Software File -> Login/Open Offline and enter the IP address of the Servo Drive.





Use the Scan function if the IP address is unknown.

📉 Login						
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info
🔽 🕌	192.168.1.70	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622
•						Þ
Scan	n Again 🔋 🛛 🛛 🛛 🛛 🛛 🛛 🖓	ink Selected Show	Help		Login All Login Selected	d Abort



1.4.3.1 Change the IP settings in the LinMot-Talk Software

Go to *Parameters/ Ethernet/IP Intf/ Ethernet Configuration/ IP Configuration Mode* and set the mode to "Static by IP Configuration".



Change the settings of the IP address if the IP Configuration Mode is Static by IP Configuration. *Parameters/ Ethernet/IP Intf/ Ethernet Configuration/ IP Configuration*

File Search Drive Services Options Wi	ndow Tools Manuals Help	
🛅 🕇 🕽 🗄 🖃 😂 🛛 🔀 🔀	Unnamed, IP: 192.168.1.70 (USER)	- 🖬 😫 🕨 🗖
Project	m 15	
▷ 📲 Unnamed, IP: 192.168.1.90 (USER)		
🖉 🏪 Unnamed, IP: 192.168.1.70 (USER)	Name	Value
	IP address 1st Byte	192
Parameters	IP address 2nd Byte	168
⊳ · 🖃 OS	IP address 3rd Byte	1
▷ ·	IP address 4th Byte	15
▲	🔎 Netmask 1st Byte	255
Dis-/Enable	Netmask 2nd Byte	255
Ethernet Configuration	Netmask 3rd Byte	255
B IP Configuration Mode	Netmask 4th Byte	0
	Default Gateway 1st Byte	192
	Default Gateway 2nd Byte	168
	Default Gateway 3rd Byte	1
Errors	Default Gateway 4th Byte	1



Attention: Modifications to the IP address will be activated only after a restart of the firmware. Logging back into the drive with the new IP address will be necessary to reestablish the LinMot-Talk connection.



2 LinUDP

2.1 Compatibility

Servo Drive	Firmware-Version
C1250-LU-XC-0S-000	LinMot-Talk 6 Version 6.4 Build 20151112 or newer
C1250-LU-XC-1S-000	LinMot-Talk 6 Version 6.4 Build 20151112 or newer
C1450-LU-VS-1S-000	LinMot-Talk 6 Version 6.6 Build xxx or newer
E1250-LU-UC	More details in chapter Configuration ETH Port
E1450-LU-QN-0S	More details in chapter Configuration ETH Port
E1450-LU-QN-1S	More details in chapter Configuration ETH Port

2.2 Login with static IP address



2.2.1 Settings on the LinMot Drive

The default setting of the Ethernet/IP port address is manual IP Configuration using hex switches. With the standard settings, the IP address will be in the following range 192.168.001.xxx. The last number can be set by the hex switches S1 and S2.

Identification	Description	Example
S1 – S2		IP address with the settings below:
8 4 5 6 7 8	S1: (58) Bit 5 is the LSB Bit 8 is the MSB	S1 = binary 0000, dec 0, hex 0
	S2: (14) Bit 1 is the LSB Bit 4 is the MSB	S2 = binary 0011, dec 3, hex 3 Address = 192.168.001.003
X17 – X18		
	X17 RT ETH In	Network Cable connected on X17 X17 RT ETH In
	X18 RT ETH Out	





Note: Changes on S1 and S2 need a power up cycle to refresh the values in the drive.

2.2.2 Settings on the PC

Set the IP address of the PC to the same range as the Servo Drive. Change the IP address in the Network Setting to 192.168.1.xxx.

Eigenschaften von Internetprot	okoll Version 4 (TCP/IP ×					
Allgemein						
IP-Einstellungen können automatisch zugewiesen werden, wenn das Netzwerk diese Funktion unterstützt. Wenden Sie sich andernfalls an den Netzwerkadministrator, um die geeigneten IP-Einstellungen zu beziehen.						
O IP-Adresse automatisch beziehen						
Folgende IP-Adresse verwenden:						
IP-Adresse:	192.168.1.1					
Subnetzmaske:	255.255.255.0					
Standardgateway:						
DNS-Serveradresse automatisch b	beziehen					
Folgende DNS-Serveradressen ve	erwenden:					
Bevorzugter DNS-Server:						
Alternativer DNS-Server:						
Einstellungen beim Beenden über	rprüfen					
	Erweitert					
	OK Abbrechen					

2.2.3 Login with LinMot-Talk

Open the LinMot-Talk Software and start the Scanning (via Ethernet) in the menu. *File -> Scanning (via Ethernet)*

ΧL	inMot-Talk 6.6	
File	Search Drive	Services Option
	Login/Open Offli	ne Ctrl+L
	Create Offline	
	Scanning (with C	ANusb) Ctrl+K
	Scanning (via Eth	ernet) Ctrl+E
	Logout	Ctrl+T
1	Import	Ctrl+Alt+I
	Export	Ctrl+Alt+E
ø.	Save All	
÷.	Save Login	
' 4:	Open Login	
6	Print	Ctrl+P
₽	Install Firmware	Ctrl+Alt+F
	New	+
	Exit	Ctrl+X

The subnet of the network should be in the range of 192.168.1.xxx.

If LinMot-Talk can't find a LinMot Servo Drive connected on the network, check the IP address and firewall settings.



📉 Login		And Annual I	-	Second States States	and the second se	
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info
🔽 🏯	192.168.1.3	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622
∢Scan	Again Bli	nk Selected Show H	III Help		Login All Login Selected	Abort



Note: When configuring the IP address of the drive, a new scan is necessary to reconnect the LinMot-Talk communication if the IP address is changed. The IP address of the drive can be configured with LinMot Talk:

Parameter/ Ethernet/IP Intf/ IP Configuration Mode



2.3 Login with dynamic IP address (DHCP)



2.3.1 Settings on the LinMot Drive

If the hex switches are set to 0000 0000, the servo drive is in the dynamic IP configuration. The servo drive doesn't support APIPA (Automatic Private IP Addressing). Connect the servo drive with a DHCP Server to receive a TCP/IP address.

Identification	Description	Example
S1 – S2	S1: (58) Bit 5 is LSB Bit 8 is MSB S2: (14) Bit 1 is LSB Bit 4 is MSB	S1 to OFF / S2 to OFF = DHCP.
X17 – X18	X17 RT ETH In X18 RT ETH Out	Connect the network cable to X17 X17 RT ETH In





2.3.2 Settings on the PC

Set the Network Configuration IPv4 to "Obtain an IP address automatically".

Allgemein IP-Einstel Netzwerk Netzwerk	Alternative Ko lungen können diese Funktion administrator, u	nfiguration automatisc unterstütz um die geei	h zugewi zt. Wende igneten II	esen en Sie P-Eins	werde sich a tellung	n, wen Indernf gen zu	n das alls an d bezieher	en 1.
● IP-A	dresse automa	tisch bezieł	hen					
	ende IP-Adress	e verwend	len:					
IP-Adr	esse:							
Subnel	:zmaske:							
Standa	ardgateway:				÷.,			
ONS	-Serveradresse	automatis	ch bezieł	en				
- Folg	ende DNS-Serv	eradresser	n verwen	den:				
Bevorz	ugter DNS-Serv	ver:						
Alterna	ativer DNS-Serv	/er:						
Eins	stellungen beim	Beenden ü	iberprüfe	n				
						Erw	eitert	



2.3.3 Login with LinMot-Talk

Open the LinMot-Talk Software and start the Scanning (via Ethernet) in the menu. File -> Scanning (via Ethernet)





Attention: Use the "Blink Selected" function if you have more than one drives in the network.

X					Login			- • ×
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info	User ID	Password
🔽 🏯	10.3.11.86	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622	USER	
	10.3.11.88	00:1A:4E:00:E2:70	0	Unnamed	E1450PNQN0S/2RB	6.5 Build 20160517	USER	
Scan	Again Bli	nk Selected Show H	Help		Login All Login Selec	cted Abort		

Login to the drive to adjust drive settings.



Note: When configuring the IP address of the drive, a new scan is necessary to reconnect the LinMot-Talk communication if the IP address is changed. The IP address of the drive can be configured with LinMot Talk:

Parameter/ Ethernet/IP Intf/ IP Configuration Mode



3 PROFINET

3.1 Compatibility

Servo Drive	Firmware-Version
C1250-PN-XC-0S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-PN-XC-1S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-PD-XC-0S-000	LinMot-Talk 6 Version 6.6 Build 20170704 or newer
C1250-PD-XC-1S-000	LinMot-Talk 6 Version 6.6 Build 20170704 or newer
C1250-MI-XC-0S-000	LinMot-Talk 6 Version 6.6 Build 20170704 or newer
C1250-MI-XC-1S-000	LinMot-Talk 6 Version 6.6 Build 20170704 or newer
C1450-PN-VS-1S-000	LinMot-Talk 6 Version 6.6 Build xxx or newer
C1450-PD-VS-1S-000	LinMot-Talk 6 Version 6.6 Build xxx or newer
E1250-PN-UC	More details in chapter Configuration ETH Port
E1250-PD-UC	More details in chapter Configuration ETH Port
E1450-PN-QN-0S	More details in chapter Configuration ETH Port
E1450-PN-QN-1S	More details in chapter Configuration ETH Port
E1450-PD-QN-0S	More details in chapter Configuration ETH Port
E1450-PD-QN-1S	More details in chapter Configuration ETH Port
C1150-PN-XC-0S-000	Only RS232 supported
C1150-PN-XC-1S-000	Only RS232 supported

3.2 Login with static IP address



3.2.1 Assigning the device name and IP address with TIA Portal - Siemens

The following steps show how to assign the device name to LinMot drive using the TIA Portal from Siemens. The IP address is assigned automatically when PROFINET starts.



1. Set the IP address and the device name in the device properties.

		📲 Topology view	h Network view	Device view
cpu1500LMAxis1	🖳 🔚 🔍 ± 🌆	to screen 💌		-
	153-PN			
cpu1500LMAxis1 [Modulo]			turfa 🔿 🗍 Diam	
	1	Properties		lostics
General 10 tags 1 exts				
PROFINET interface [X1] G	eneral			
General				
Ethernet addresses 📃 🖣		Name: cpu1500LN	/Axis1	
Advanced options		Author: laser		
Media redundancy	c	Comment:		^
	e e e e e e e e e e e e e e e e e e e	^P Topology view	A Network view	Device view
cpu1500LMAxis1	🖽 🏑 🗄 🔍 ±	Fit to screen 💌		
	Х 150-РН			
<				> 📃
	D	evice data		
cpu1500LMAxis1 [Module]		Roperties	🗓 Info 🔒 🗓 Diagn	ostics 🗖 🗏 🗸
General IO tags Texts		· · · · · ·		
▶ General		A	dd new subnet	^
✓ PROFINET interface [X1]				
General	IP protocol			
Ethernet addresses 📃 🖣				
 Advanced options 	Use IP protocol			
Interface options		 Set 	IP address in the project	
Isochronous mode			IP address: 10 . 3	. 8 . 161
is cent on ous mode				



- Project Edit View Insert Online Options Tools 🕨 **Totally Integrated Automation** X 🇉 🗈 X らさんす 🍱 🖶 🖽 📲 💾 📑 📑 🔚 Save project PORTAL _ 🗉 🚍 > Devices 📱 Topology view 🛛 📠 Network view Device view Hardware catalog 00 cpu1500LMAxis1 💽 🖽 属 🖽 🔍 ± ' -~ 20140211_IRT_Streaming_Test_... **V** ^ 💕 Add new device ≣ 📩 Devices & networks 🕶 📑 cpu1500pnapp [CPU 1516-... **V** = I Device configuration ų, 😵 Online & diagnostics Online 🕶 🔙 Program blocks 💕 Add new block Diagnostic error inter... đ 💶 Main [OB1] Change device Synchronous Cycle [OB.. Write IO-Device name to Micro Memory Card LM_Axis_1_Cycle_SCL... Start device tool. LM_Axis_1_Init_SCL [... χ Cut Ctrl+X LM_Axis_PN_Min [FB100] Copy Ctrl+C 🥃 GlobalVars [DB1] 🛅 Paste Ctrl+V GLV [DB1000] X Delete Del LM_Axis_1_DB [DB100] 0 Rename F2 LinMot < > 📲 Go to topology view ✓ Details view Go to network view Compile ۲ Download to device ۲ < |||| Name 🚿 Go online Ctrl+K **Device overview** 🛃 Go offline Ctrl+M 🖗 Online & diagnostics Ctrl+D 🍟 ... Module Assign device name \checkmark ▼ cpu1500LMAxis1 Receive alarms ▶ PN-IO \checkmark Show force values ~ LMAxis1_IO Cross-reference information Shift+F11 Q Properties Alt+Enter < 1111 🗓 Info 👔 📱 Diagnostics **Q** Properties 🍟 Setti.. 🗄 Over. 🛄 LM_ Portal view 🚠 cpu1.. Scanning for devices completed for int.
- 2. Choose the device you want to assign the name to (right-click on the device).



3. Search for the LinMot drive you want to name. The safest way to identify the drive is by either activating the "Flash LED" function in TIA Portal or to verify the MAC address (can be found on the housing of the drive).



4. Communication between the drive and LinMot Talk can be established when the drive has a name and assigned IP address.



3.2.2 Assigning the device name and IP address with PRONETA

Siemens PRONETA is a free tool for the analysis and configuration of PROFINET networks. The tool is useful to assign the IP address and device name without a Siemens PLC.

The newest Version from Siemens is available from: <u>https://support.industry.siemens.com/cs/ch/en/view/67460624</u>

1. Run the software on the PC and scan the network for PROFINET or PROFIdrive devices.

Root Siemens - PRONETA	
n Home	
Online Offline Comparison Configuration	
👬 🔜 🕞	
Topology View - online	
nti_sales_026 PRONETA	C1250xPD ?

2. Right-click on the C1250xXX will show the different tool options





Attention: The safest way to identify the drive is by either activating the "Flash LED" function in the Siemens – PRONETA.

3. Define Device Name and IP address



Set Network Parameters					
Please select your network parameters					
Assign device name axis001_linmot_pd					
IP configuration					
 Static IP configuration 					
IP address	192.168.001.70				
Network mask	255.255.255.0				
Use router for Gateway	0. 0. 0. 0				
Obtain IP configuration from a DHC	P server and identified by				
 MAC address 					
 Device name 					
O Client ID					
Devices connected to an enterprise network or directly to the internet must be appropriately protected against unauthorized access, e.g. by use of firewalls and network segmentation. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity					
Apply settings permanently					
	Set Cancel				

4. Communication between the drive and LinMot Talk can be established when the drive has a name and assigned IP address.

3.2.3 Login with LinMot-Talk

In the LinMot-Talk Software File -> Login/Open Offline and enter the IP address of the Servo Drive.

Login		
Configuration Inte	erface:	 RS232 CAN ETHERNET OFFLINE
IP Address:	192 .	168. 1 . 70
Login ID:	USER	
Password:		
Scan B	link	OK Cancel

The Scan over Ethernet functionality is not supported with PROFINET interface. If the IP address is unknown scan the PROFINET network e.g. PRONETA from Siemens or check the settings in the TIA Portal.



4 EtherCAT

4.1 Compatibility

Servo Drive	Firmware-Version
C1250-EC-XC-0S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-EC-XC-1S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-SE-XC-0S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-SE-XC-1S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-DS-XC-1S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-DS-XC-0S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-MI-XC-1S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
C1250-MI-XC-0S-000	LinMot-Talk 6 Version 6.5 Build 20160711 or newer
E1250-EC-UC	More details in chapter Configuration ETH Port
E1450-EC-QN-0S	More details in chapter Configuration ETH Port
E1450-EC-QN-1S	More details in chapter Configuration ETH Port
E1250-SE-UC	More details in chapter Configuration ETH Port
E1450-SE-QN-0S	More details in chapter Configuration ETH Port
E1450-SE-QN-1S	More details in chapter Configuration ETH Port
E1250-DS-UC	More details in chapter Configuration ETH Port
E1450-DS-QN-0S	More details in chapter Configuration ETH Port
E1450-DS-QN-1S	More details in chapter Configuration ETH Port
C11x0-xx-xx-xS-000 Series Drives	Only RS232.supported

4.2 Login over Ethernet over EtherCAT (EoE)





4.2.1 EoE-Settings in TwinCAT (EtherCAT Slave)

4.2.1.1 TwinCAT 2.x

The definition for the EoE function is in the tab "EtherCAT" under "Advanced Settings". The IP address for EoE communication must be in the same range as the PLC (e.g. 192.168.1.1). The DHCP mode for EoE is not currently supported. The EtherCAT communication will not run if the EoE is set to DHCP.



Define each axis with a different IP address.

Advanced Settings ×						
General Mailbox Image: Behavior Mailbox Configuration Image: Identification Special Bootstrap Config Image: FMMU / SM Image: Special Bootstrap Init Commands Out Addr (hex): Image: Out Addr (hex): Image: Out Addr (hex): Image: Out Size = In Size Out Size (hex): Image: Out Size (hex): Image: Out Size (hex):						



4.2.1.2 TwinCAT 3.x

The definition for the EoE function is in the tab "EtherCAT" under "Advanced Settings". The IP address for EoE communication must be in the same range as the PLC (e.g. 192.168.1.1). The DHCP mode for EoE is not currently supported. The EtherCAT communication will not run if the EoE is set to DHCP.



Define each axis with a different IP address.

Advanced Settings	×
 General Behavior Timeout Settings Identification FMMU / SM Init Commands Mailbox Mailbox Mailbox Normal Bootstrap Out Addr (hex): Ox1A00 In Addr (hex): Ox1C00 In Size (hex): Ox0080 Mailbox Data Link Layer Show Messages 	Mailbox Polling Cyclic Cycle Time (ms): 50



4.2.2 EoE-Settings in TwinCAT (EtherCAT Master)

The routing function on the EtherCAT Master need to be activated.

General Adapter Et NetId: 5.43	herCAT Online CoE - Online	Advanced Settings Export Configuration Fi			
Frame Cmd 0 LRD 0 LRW 0 BRD	 State Machine Cyclic Frames Distributed Clocks EoE Support Redundancy Diagnosis 	Virtual Ethernet S ✓ Enable Max Ports: Max Frames: Max MAC Ids:	6 🔷 200 🗢 100 🛧	Windows Network Connect to TCP/IP Stack Windows IP Routing IP Enable Router Changes require system reboot!	
Number Bo		EtherCAT Mailbox	x Gateway 0 . 0 . 0 . 0	Virtual MAC: 00 00 00 00 00 00 00	

4.2.3 Settings on the PC

Use the following command to route the network of the PC to the EoE network.

- 1. Run the Windows Commander Prompt (CMD) as an Administrator:
- 2. Add Route:

or

i

```
route add 192.0.0.0 mask 255.0.0.0 10.3.11.65
```

- route add 192.168.0.0 mask 255.255.0.0 10.3.11.65
- or route add 192.168.1.0 mask 255.255.255.0 10.3.11.65

Cav.	Administrator: Eingabeaufforderung	-		
Microsoft Windows [Vers: (c) 2013 Microsoft Corpo C:\Windows\system32>rout OK!	ion 6.3.9600] oration. Alle Rechte vorbehalten. e add 192.0.0.0 mask 255.0.0.0 10.3.11.65		^	

Note: The Command "route add" for a new route in the network routing table is activated until the next restart of the PC. The command in the example contains the following components: **route add** "*Destination – EoE IP Range*" **mask** "*Subnet mask*" "*Gateway – IP of PLC Ethernet Port*"



4.2.4 Login with LinMot-Talk

Open the LinMot-Talk Software and select *File-> Login/Open Offline*.

👗 LinMot-Talk 6.6							
File	Search	Drive	Services	Options			
	Login/O	pen Offl	ine q	ŧł+۲			
	Create O	ffline		~			
	Scanning) (with C	ANusb) C	trl+K			
	Scanning) (via Etł	nernet) C	trl+E			
	Logout		C	trl+T			
e P	Import		Ctrl+	Alt+I			
	Export		Ctrl+/	Alt+E			
ø.	Save All						
÷	Save Log	in					
' 4:	Open Lo	gin					
6	Print		С	trl+P			
₿	Install Fir	mware.	Ctrl+/	Alt+F			
	New			+			
_	Exit		C	trl+X			

File Search Drive Services Options Window	Тос
Login	
Configuration Interface: CAN © ETHERNET O OFFLINE	
IP Address: 192 . 168 . 1 . 2 Login ID: USER Password: Scan Blink OK Cancel Open Object Inspector after Login	



Attention: Scanning (via Ethernet) does not work with EoE and the routing function. Without routing, e.g. when LinMot-Talk is run on the PLC, it is possible to use the scan functionality of LinMot-Talk.



LinMot-Talk shows the IP address and Mac address in the variables.

8		LinMot-Talk 6.5				- 🗆 ×
Datei Suche Drive Services Einstellu	ngen Fenster Tools Handbüche	r Hilfe				
🛅 t 🕽 🗄 🖻 😅 🗐 🛃	Unnamed, IP: 192.168.1.2 (USER)	💌 🖡 🎦 [🍉 🔳 🔅 DEF 🔢	ᄣ 🛛 😵 🔛	🗟 🏚 🔺	🗗 🖪 🖉 🛛	
Project	💼 💣 🖬 🕶 🐐 🐄 🖛 🕶 🕫	🛛 🖪 🗰 🕑 🕑 👘				
Control Panel	Name	Value	RawData	UPID	Туре	Scale
Parameters Variables User Defined S SW Operating Hours / T S SW Message/Error OS SW Monitoring S SW HW Configuration OS SW Status MC SW Variation MC SW Varent Controller MC SW Current Controller MC SW Control Word MC SW Varings MC SW Varings MC SW Phase Search MC SW Variation	MAC Address IP Address Subnet Mask Default Gateway	03:E9:05:30:02:01 192:168.1.2 255:255:255.0 192:168.1.1		2D 00h 2D 30h 2D 40h 2D 60h	String String String	>
Variables						



4.3 LinMot-Talk on the Beckhoff PLC running on a Windows Embedded System



4.3.1 EoE Settings in TwinCAT

The definition for the EoE function is in the tab "EtherCAT" under "Advanced Settings". The IP address for EoE-Communication must be in the same range as the PLC (e.g. 192.168.1.1). The DHCP mode for EoE is not supported. The EtherCAT communication will not run if the EoE is set to DHCP.



Define each axis with a different IP address.



4.3.2 Login with LinMot-Talk

Open the LinMot-Talk Software and go to File -> Scanning (via Ethernet).

Χı	inMot-Talk 6.6	
File	Search Drive	Services Options
	Login/Open Offlin	ne Ctrl+L
	Create Offline	
	Scanning (with C	ANusb) Ctrl+K
	Scanning (via Eth	ernet) Ctrl+E
	Logout	Ctrl+T
	Import	Ctrl+Alt+I
	Export	Ctrl+Alt+E
Ø.,	Save All	
÷.	Save Login	
' 4;	Open Login	
6	Print	Ctrl+P
B	Install Firmware	Ctrl+Alt+F
	New	+
	Exit	Ctrl+X



Attention:

The safest way to identify the drive is by activating the "Blink Selected" function in the LinMot-Talk Software. It's also possible to login to all drives at the same time ("Login All").

Login						- 🗆 🗡		
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info	User ID	Password
🔽 🌲	10.3.11.86	00:1A:4E:01:02:6D	0	Unnamed	C1250IPXC1S/V1RF	6.5 Build 20160622	USER	
	10.3,11.88	00:1A:4E:00:E2:70	0	Unnamed	E1450PNQN0S/2RB	6.5 Build 20160517	USER	
Scan	Again Blin	k Selected Show H	elp		Login All Login Selec	ted Abort		



5 Sercos III

5.1 Compatibility

Servo Drive	Firmware-Version
C1250-SC-XC-0S-000	LinMot-Talk 6 Version 6.6 Build 2017xxxx
C1250-SC-XC-1S-000	LinMot-Talk 6 Version 6.6 Build 2017xxxx
C1450-SC-VS-1S-000	Coming soon
E1250-SC-UC	More details in chapter Configuration ETH Port
E1450-SC-QN-0S	More details in chapter Configuration ETH Port
E1450-SC-QN-1S	More details in chapter Configuration ETH Port



Attention: -MI drives with Sercos interface installed <u>do not</u> support configuration over RT Ethernet.

5.2 Login over Sercos III (PC To Drive)





5.2.1 Settings on the PC

The default setting of the LinMot IP address is 192.168.1.2 (255.255.255.0). Remove the cable from the SERCOS ring and replace it with the ethernet cable to the PC. It's important to connect the PC with Port X17 on the Servo Drive.



Attention:

If Bosch Rexroth PLC is used and drive IP was written by PLC, default IP of LinMot drive is no longer valid! Network card must be configured in same IP range as PLC SERCOS Interface for use with this chapter!

Set the IP address of the PC to the same range as the Servo Drive. Change the IP address in the Network Settings to 192.168.1.xxx.

Eigenschaften von Internetprotokoll, \	/ersion 4 (TCP/IPv4)							
Allgemein								
IP-Einstellungen können automatisch zugewiesen werden, wenn das Netzwerk diese Funktion unterstützt. Wenden Sie sich andernfalls an den Netzwerkadministrator, um die geeigneten IP-Einstellungen zu beziehen.								
O IP-Adresse automatisch beziehen								
Folgende IP-Adresse verwenden:								
IP-Adresse:	192.168.1.10							
Subnetzmaske:	255 . 255 . 255 . 0							
Standardgateway:								
ODNS-Serveradresse automatisch b	peziehen							
Folgende DNS-Serveradressen ver	rwenden:							
Bevorzugter DNS-Server:								
Alternativer DNS-Server:								
Einstellungen beim Beenden überprüfen								
	Erweitert							
	OK Abbrechen							

5.2.2 Connection LinMot Servo Drive

Connect ethernet network cable to X17 on the Servo Drive.

Spezifikationen sind abhängig vom Echtzeitbus. Bitte beachten Sie die entsprechende
Dokumentation.
RJ-45



5.2.3 Login with LinMot-Talk

Open the LinMot-Talk Software and start the Scanning (via Ethernet) in the menu.



Select the correct Ethernet Adapter with the same IP range of the Servo Drive.

Choose the Interface			×
Interface:			
ASIX AX88179 USB 3	0 to Gigabit Ethernet Adapte	r - 192.168.1.10	~
Send To:			
All Groups	◯ Group Number.	0	
			Continue Cancel



Attention:

The safest way to identify the drive is by activating the "Blink Selected" function in the LinMot-Talk Software. It's also possible to login to all drives at the same time ("Login All").

📉 Login	1					
State	IP Address	MACID	Group	Drive Name	Device Type	Release Info
🗖 🍓	192.168.1.2	00:1A:4E:00:B5:C9	0	Unnamed	C1250SCXC1S/V1RF	6.6 Build 20170224

The IP address and NetMask are shown in the Variables/ OS SW Monitoring:

Image: Control Panel Image: Control Panel <t< th=""><th>Datei Suche Drive Services Einstellungen</th><th>Fenster Tools Handbücher Hill</th><th>fe</th></t<>	Datei Suche Drive Services Einstellungen	Fenster Tools Handbücher Hill	fe
Project Image: Control Panel Control Panel Name Parameters MAC ID Value Variables Working Config MAC ID High User Defined Working Config MAC ID Mid Image: Control Panel Working Config MAC ID Mid Value Working Config MAC ID Mid Image: Control Panel Working RT MAC ID Mid Image: Control Panel Working RT MAC ID Mid Image: Control Panel Working RT MAC ID Low Image: Cont	<u>n t 🕽 🗄 🖃 🚔 📲 🥔 🥮 </u>	nnamed, IP: 192.168.1.2 (USER) 🛛 🗸 ᇽ	: 🔁 ⊳ 🔳 🔶 DEF 🚺
I ME SW Motor	 Project Control Panel Parameters Variables User Defined OS SW Operating Hours / Time OS SW Message/Error OS SW HW Configuration OS SW Status OS SW Overview 	Image: Image	Value 00:1A:4E:00:B5:C9 001Ah 4E00h B5C9h 001Ah 4E00h B5C9h 192.168. 1. 2 255.255.255. 0 0.0.0.0.0



Settings for the IP address if the IP configuration mode is Static by IP Address. Logging back into the drive with the new IP address will be necessary to reestablish the LinMot-Talk connection.

🔀 LinMot-Talk 6.6

Datei Suche Drive Services Einstellungen Fenster Tools Handbücher Hilfe						
🛅 🏠 🚍 🖃 🖃 🚅 🖥 🚰 🎒 🐉 🗍 Unnamed, IP: 192.168.1.2 (USEI	🏗 🗅 🗇 🖅 🖅 🖅 🕼 🎜 🖓 🐉 Unnamed, IP: 192.168.1.2 (USER) - 🗸 😨 🕨 📕 🔅 DEF 🌉 👋 😼 🚳 🕼 🕼 🕼 🕼 🕼					
Project Control Parale Control Parameters Control Parameters Control Parameters Control Parameters Control SW Control	Image: Static IP address 1st Byte Static IP address 2nd Byte Static IP address 3nd Byte Netmask 1st Byte Netmask 1st Byte Netmask 3rd Byte Netmask 3rd Byte Static Default Gateway IP 1st Byte Static Default Gateway IP 3rd Byte	Value Use static IP Address (unless re-configured by PLC) 192 168 1 2 255 255 255 255 0 0 0 0				

5.3 Login over Sercos III (PC To PLC) with Schneider PLC





1. Settings in SoMachine - The MasterIPAddress of the SERCOS is by default 172.20.0.1 (255.255.252.0). It's not possible to change the IP address.

Devices 🗸 🕂 🗙	Vis_AxisModule_DRV_LMAxis1	LMC_PacDrive S SE	RCOSIII 🗙 📲 DRV_LMA	xis1 🔌 Mechatronic data
LMC_LinMot_AxisModule_1V1_Example	Parameters	Parameter	Tune	Current Value
EMC_PacDrive [connected] (PacDrive LMC 300/400)			type	current value
Mechatronic data		Common		
Device Addressing		🖤 🖗 Name	STRING(40)	'SERCOSIII'
🛃 Message logger		🖉 🖗 CycleTime	DINT(10000004000000)	2000000
🖶 🗐 PLC Logic		🖤 🖗 Topology	Enumeration of DINT	line P1 / 1
🕮 🧑 Application [run]		ScannedDevices	DINT	1
LE_Axis (Log. Encoder)		UsedDevices	DINT	1
VME_Enc (Virt. Master Encoder)		LastDeviceP1	STRING(40)	
😑 😔 S SERCOSIII (Sercos Master)		LastDeviceP2	STRING(40)	
		🖶 🚞 Phase control		
🗉 - 😳 📢 DQG_DigitalOut (Digital Outputs)		🔷 🔷 State	Enumeration of DINT	Phase 4 / 4
🗉 😏 🎲 DIG_DigitalIn (Digital Inputs)		PhaseSet	DINT(04)	4
🖲 😳 🎼 TPG_TPIn_3 (Touch Probe Inputs)		PhaseUpCounter	UDINT	10
		🖹 🗀 Identification		
- 😔 🗇 AI_1 (Analog Input)		StaticAddressCount	UINT(01007)	0
		🖤 < NetID	STRING(15)	'172.20.0.0'
		NetIDOffsetC2C	STRING(15)	'0.2.0.0'
		MasterIPAddress	STRING(15)	'172.20.0.1'
		MasterSubnetmask	STRING(15)	'255.255.252.0'
		IPAddressRangeStatic	STRING(31)	'no staticaddresses'
< >>		IPAddressRangeDynamic	STRING(31)	'172.20.0.2-172.20.3.240'

 Settings in LinMot-Talk - change the IP settings on the drive to the PC network card IP Address range. Use the USB-RS232 Converter (0150-2473) or follow the instruction in Login over Sercos III (PC To Drive).

Configuration from the Master is not supported in the Schneider SERCOS drive object.

👗 LinMot-Talk 6.6 Datei Suche Drive Services Einstellungen Fenster Tools Handbücher Hilfe 8 🔏 Unnamed on COM4 (USER) DEF 📑 🛅 🕇 🎝 🛨 🗖 🗃 9 \sim 노 큰 🐴 Project õ 🗸 🗙 🕑 📲 Unnamed on COM4 (USER) UPID Name Value Raw Data 🔖 Control Panel 🗸 🔚 Parameters 🔚 IP Configuration Mode Use static IP Ad... 0002h 2250h > 🖃 OS Static IP address 1st Byte 172 2252h ACh Motion Control SW 20 Static IP address 2nd Byte 14h 2253h 🗸 🖃 sercos Static IP address 3rd Byte n. 00h 2254h 📲 Dis-/Enable Static IP address 4th Byte 2 02h 2255h sercos Address 5 Netmask 1st Byte 255 FFh 2257h Netmask 2nd Byte 255 FFh 2258h IP Configuration Netmask 3rd Byte 252 FCh 2259h sercos Homing Moc > Netmask 4th Byte 0 00h 225Ah > 😑 sercos Function Sp Static Default Gateway IP 1st Byte 172 ACh 225Ch 🖃 Easy Steps - 5 Static Default Gateway IP 2nd Byte 20 14h 225Dh 🔇 🛛 🖓 🔍 225Eh Static Default Gateway IP 3rd Byte 0 00h 🖭 User Defined Static Default Gateway IP 4th Byte 01h 225Fh 1 📳 OS SW Operating Hour



- 3. Settings on the PC Use the following command to route the network of the PC to the SERCOS (172.020.000.xxx) network.
 - a) Run the Windows Commander Prompt (CMD) as an Administrator
 - b) Add Route:

	route add 172.0.0.0 mask 255.0.0.0 10.3.199.6
or	route add 172.20.0.0 mask 255.255.0.0 10.3.199.6
or	route add 172.20.0.0 mask 255.255.252.0 10.3.199.6

Administrator: Eingabeaufforderung	1		\times
Microsoft Windows [Version 10.0.14393] (c) 2016 Microsoft Corporation. Alle Rechte vorbehalten.			^
C:\WINDOWS\system32>route add 172.20.0.0 mask 255.255.252.0 OK!	10.3.3	199.6	
C:\WINDOWS\system32>ping 172.20.0.2			
Ping wird ausgeführt für 172.20.0.2 mit 32 Bytes Daten: Antwort von 172.20.0.2: Bytes=32 Zeit<1ms TTL=49 Antwort von 172.20.0.2: Bytes=32 Zeit<1ms TTL=49 Antwort von 172.20.0.2: Bytes=32 Zeit<1ms TTL=49 Antwort von 172.20.0.2: Bytes=32 Zeit<1ms TTL=49			
<pre>Ping-Statistik für 172.20.0.2: Pakete: Gesendet = 4, Empfangen = 4, Verloren = 0 (0% Verlust), Ca. Zeitangaben in Millisek.: Minimum = 0ms, Maximum = 0ms, Mittelwert = 0ms</pre>			



Note: The Command "route add" for a new route in the network routing table is activated until the next restart of the PC. The command in the example contains the following components: **route add** "*Destination – EoE IP Range*" **mask** "*Subnet mask*" "*Gateway – IP of PLC Ethernet Port*"



5.4 Login over Sercos III (PC To PLC) with Bosch IndraLogic / IndraMotion



1. When PLC commissioning is done and axis is running, open in the project root by right mouse click the "Communication->Gateway" topic:





2. The IP address is shown in the Engineering tab:



3. Onboard Sercos III - Settings

Engineering Onboard Sercos	III Bridge		
	Actual configuration	Command configuration	
Bridging	Active	Active	
Auto address generation	Active	Active	
IP address		172 . 16 . 254 . 254	
Subnet mask		255 . 255 . 255 . 0	
MAC address	s 00-60-34-02-DE-BD		
	Apply command	d configuration	
	Load basic parameter network		



4. Bridge- Settings

Engineering Onboard Sercos III Bridge					
	Actual configuration	Command configuration			
Auto address generation IP address Subnet mask MAC address	 Active 172. 31. 254. 254 255. 255. 0. 0 00-60-34-02-DE-BD 	✓ Active 172 31 254 254 255 255 0 0			
	Apply comman Load basic para	d configuration			



Note: Onboard Sercos III and Bridge settings are normally auto-set during project startup.



5. Press in the "Onboard Sercos III" on "Apply command configuration". This will write the IP addresses to the SERCOS devices.

Engineering	Onboard Sercos II	Bridge	
	Γ	Actual configuration	Command configuration
	Bridging	log Active	Active
Auto add	ress generation	Active	Active
	IP address		172 . 16 . 254 . 254
	Subnet mask		255 . 255 . 255 . 0
	MAC address	00-60-34-02-DE-BD 255 . 255 . Rigure Image: Comboard sercos III	
		Apply command	d configuration
		Load basic para	ameter network

Then you need to add a route from your PC over PLC to SERCOS slaves, here a LinMot drive:



"route add" in your console will create a new route on your computer (172.31.254.0), which is located in the Sercos III address range over the engineering IP (10.3.199.1) of the PLC.



Attention:

Keep in mind, the route is temporary. After rebooting PC route must be set again! For permanent route, use parameter -P! (route add 172.31.254.0 MASK 255.255.255.0 10.3.199.1 -p)



6. After that, you can connect by Ethernet in LinMot Talk, entering drives IP:

Login	×			
Configuration Interface:	 ○ RS232 ○ CAN ● ETHERNET ○ OFFLINE 			
IP Address: 172 .	31 . 254 . 1			
Login ID: user				
Password:				
Scan Blink	OK Cancel			
Open Object Inspector after Login				



Attention:

Scanning over Ethernet is not supported in this use case!

7. IP address must be read from Sercos properties window:

Position	_mode	Sercos p	properties -	Sercos Test PlcP	rog Sercos c	onfiguration of the contro	- SercosTest
SercosTest			-	▲ ▼ ♥ ▼ 🕘			
Bus diagnosti	ics /	0 diagnostics	Settings				
Control							
Sercos ph Cycle time	nase [e [P4					
Topology	Add	r. Device id	entification	Error counter	Diagnostics	IP address	
		Control po	ort X7E1	00002			
1	1	0150-1887	0	P1:00002; P2:00002	No Erons or Warning	gs 172.31.254.1	
		Control po	ort X7E2	00002			



6 POWERLINK

6.1 Compatibility

Servo Drive	Firmware-Version
C1250-PL-XC-0S-000	LinMot-Talk 6 Version 6.9 Build 20190605-IM or newer
C1250-PL-XC-1S-000	LinMot-Talk 6 Version 6.9 Build 20190605-IM or newer
C1250-MI-XC-0S-000	LinMot-Talk 6 Version 6.12 or newer
C1250-MI-XC-1S-000	LinMot-Talk 6 Version 6.12 or newer
C1450-PL-XC-0S-000	LinMot-Talk 6 Version 6.9 Build 20190605-IM or newer
C1450-PL-XC-1S-000	LinMot-Talk 6 Version 6.9 Build 20190605-IM or newer
E1250-PL-UC	More details in chapter Configuration ETH Port
E1450-PL-QN-0S	More details in chapter Configuration ETH Port
E1450-PL-QN-1S	More details in chapter Configuration ETH Port

6.2 Login over POWERLINK NAT



Servo Drive 1 – Node1	Servo Drive 2 – Node2
NAT IP 192.168.101.1	NAT IP 192.168.101.2
255.255.255.0	255.255.255.0

The POWERLINK NAT (Network Address Translator) converts the POWERLINK IP to a global address. Each station within the larger IP network can be addressed uniquely. The POWERLINK NAT subnet specifies the subnet mask for this POWERLINK network. The NAT IP address of the individual servo drives is put together using the mask and having the last position replaced by the node number. The POWERLINK station with the node number **17** therefore has NAT IP address 192.168.101.**17**.



Attention:

This parameter is available in Automation Runtime A2.90 and later when using operating mode POWERLINK V2



6.3 POWERLINK NAT Settings in the Automation Studio

 ¹ 2 X20CP1584.JF3 [Configuration]

 ×
 ¹ Sample_Linear_ST::Main_Linear.st [Structured Text]

 ¹ Sample_LM::Sample_LM.:pvm [Watch]

 ¹ Sample_Rotary_EC02_ST::Main_Rotary.s

 ¹ Sample_LM::Sample_LM

Name	Value	Unit	Description
🖃 📲 IF3			
Module type	Type 4		Indicates module features
🗄 🛶 🎦 Operating mode	POWERLINK V2		
····· 📦 MTU size	300		
🖗 Baud rate	100 MBit half dupl		
🖻 📲 POWERLINK parameters			
Activate POWERLINK communication	on		
🖗 Device name	<interfaceaddress></interfaceaddress>		
🗄 🚰 Host names			
🖗 Cycle time	800	μs	
····· 📦 Multiplexing prescale	8		
🗄 🛶 🌁 Mode	managing node		
🚊 🗤 🚰 Advanced			
🛱 🚰 Node definition	set explicitely		
🛶 🖗 Node number	240		
🖗 Asynchronous timeout	25	μs	
🖗 Asynchronous Slots per cycle	1		
🖗 Data transfer restricted to active station	off		
Optimization	minimal latency		
🖗 Basic Ethernet in Service Mode	Basic Ethernet dis		
🖇 POWERLINK NAT subnet	192.168.101.0		Last number should be 0 and is ignored
🗄 🚰 Cycle loss limit	automatically		Modify error tolerance of the network
🖃 🚰 Broadcast channels			
Er Channel 1			



Attention for -MI drives:

In the above Powerlink interface configuration the node number is 240 which acts as gateway for the NAT sub net. In the MI drive settings this address must be set to the same value:

Name	Value	Unit	Description
[1250-MIPL-XC-1S-000 [1250-MIPL-XC			
🗄 ···· 🚰 General			
🚊 📲 POWERLINK parameters			
🗄 🚰 Mode	controlled node		
🖃 📲 Advanced			
🖗 SoC Jitter Threshold	15		Threshold for 'SoC Jitter' error symptoms, error-reaction will
🖗 SoC Jitter Interval	2000	ns	Range in ns, within the SoC Jitter may vary
🕀 🐨 🎦 Verify Device Type	off		Verify device type on boot
🕀 🗠 🚰 Verify VendorlD	off		Verify vendor id on boot
🕀 😁 🎦 Verify RevisionNumber	off		Verify revision number on boot
🕀 😁 🎦 Verify ProductCode	off		Verify product code on boot
📲 📦 IP Gateway	240		Node number of EPL station acting as IP default gateway
🖃 🗠 🚰 Multiplexed station	off		
📦 Optimization	data throughput		
🗄 🚰 Channels			Objects for cyclic transmission
🗄 🖷 🚰 Device specific parameters			Transmitted to the device at startup



6.3.1 Add the route in the Online Settings

The route need be defined to the IP address of the PLC!

_Linear_ST::Main_L	inear.st [Structur	ed Text] 备 Samp	le_LM::Sample_LM.p	ovm [Watch] 🛛 🚮 Sam
64				
•				
Use in active config	Source INA node number	Destination IP address	Destination host name	Destination INA node number
	1	10.3.10.238		
	1	127.0.0.1		
	1	192.168.0.2		
	1			2
	Use in active config	Use in Source INA node number	e_Linear_ST::Main_Linear.st [Structured Text] Samp Use in active config node number IP address I 103.10.238 1 127.0.0.1 1 192.168.0.2	e_Linear_ST::Main_Linear.st [Structured Text] Sample_LM::Sample_LM::Sample_LM.:Sample_LM.:Sample_LM::Sample_LM::Sample_LM.:Sample_LM::Sampl

6.4 Settings on the PC

Use the following command to route the network of the PC to the NAT network.

- 1. Run the Windows Commander Prompt (CMD) as an Administrator:
- 2. Add Route:
 - route add 192.0.0.0 mask 255.0.0.0 10.3.10.238
 - route add 192.168.0.0 mask 255.255.0.0 10.3.10.238
- or route add 192.168.101.0 mask 255.255.255.0 10.3.10.238

Administrator Eingabeaufforderung Microsoft Windows [Version 10.0.17763.475] (c) 2018 Microsoft Corporation. Alle Rechte vorbehalten. C:\WINDOWS\system32>route add 192.168.0.0 mask 255.255.0.0 10.3.10.238 OK!



or

Note: The Command "route add" for a new route in the network routing table is activated until the next restart of the PC. The command in the example contains the following components: **route add** "Destination – NAT IP Range" **mask** "Subnet mask" "Gateway – IP of PLC Ethernet Port"



6.5 Login with LinMot-Talk

Open the LinMot-Talk Software and select File-> Login/Open Offline.

₽	Install Firmware	Strg+Alt+F	
5	Print	Strg+P	
4:	Open Login		
84°.	Save All		
	Export	Strg+Alt+E	
	Import	Strg+Alt+I	
	Logout	Strg+T	
	Scanning (via Ethernet)	Strg+E	
	Scanning (with CANusb) Strg+K	
	Create Offline		
	Login/Open Offline	Strg+L	
File	Search Drive Servic	es Options	٧





Attention:

Keep in mind, the route is temporary. After rebooting PC route must be set again! For permanent route, use parameter -p! (route add 192.168.101.0 mask 255.255.255.0 10.3.10.238 -p)



7 Configuration ETH Port

7.1 Compatibility

Servo Drive	Supported Firmware-Version
E1250-xx-UC	All
E1450-xx-QN-0S (V1 und V2)	All
E1450-xx-QN-1S (V1 und V2)	All

7.2 Login with dynamic IP address (first login)

7.2.1 Servo Drive E1250/ E1450



X15 - X16	Config Ethernel	10/100 Mbit/s
	X15 X16	Internal 2-Port 10BASE-T and 100BASE-TX Ethernet Switch with Auto MDIX. LEDs on the lower side of the device indicate "Link/Activity" per port, the upper ones are not used.
RJ-45		

7.2.1.1 DHCP and APIPA (default Settings)

The default mode for acquiring an IP address is via DHCP. If no servers on the connected network respond, the drive switches to the Ipv4 Link-Local addressing scheme (APIPA on Windows systems). This way the drive automatically assigns itself an address within the range of 169.254.0.1 through 169.254.255.254 (Subnet Mask 255.255.0.0).



Note: This process can take up to a minute until a valid address is assigned to the drive this way.



1. Check the Ipv4- Settings of the network connection:

Eigenschaften von Ethernet 6	K Eigenschaften von Internetprotokoll, Version 4 (TCP/IPv4) X
Netzwerk Freigabe	Allgemein Alternative Konfiguration
Verbindung herstellen über:	IP-Einstellungen können automatisch zugewiesen werden, wenn das Netzwerk diese Funktion unterstützt. Wenden Sie sich andernfalls an den Netzwerkadministrator, um die geeigneten IP-Einstellungen zu beziehen.
	O Folgende IP-Adresse verwenden: IP-Adresse: Subnetzmaske: Standardgateway: Standardgateway:
Installieren Deinstallieren Finanschaften	O Folgende DNS-Serveradressen verwenden: Bevorzunter DNS-Server:
Beschreibung TCP/IP, das Standardprotokoll für WAN-Netzwerke, das den	Alternativer DNS-Server:
Datenaustausch über verschiedene, miteinander verbundene Netzwerke ermöglicht.	Einstellungen beim Beenden überprüfen Erweitert
OK Abbreche	en OK Abbrechen

2. Open LinMot-Talk and click on File -> Scanning (via Ethernet):

Choose the Interface	2			\times
Interface:				
ASIX AX88179 USB 3	3.0 to Gigabit Ethernet Adapte	r - 169.254.247.89		~
Send To:				
All Groups	◯ Group Number.	0		
			Continue	Cancel

Connected servo drives will appear in the login window

🔀 Login	I	-				_		×
State	IP Address	MACID	Group	Drive Name	Device Type	Releas	e Info	
🖂 🚔	169.254.21.177	00:1A:4E:00:0C:58	11	Master	E1250-EC-UC/V1RE	6.6 Build	20170410	
<								>
Scan	Again Blin	k Selected Show	w Help		Login All Login Selecte	d	Abort	



7.3 Login with fix IP address

Login first with the dynamic IP address and change the settings in the LinMot-Talk Software: Parameters/OS/Communication/Ethernet Configuration/IP Configuration

👗 LinMot-Talk 6.6

File Search Drive Services Options Window Tools Manuals Help

🛅 📩 🔁 🛨 🖃 🗃 🛱 🏭 🎒 🖓 Master, IP: 10.3.11.219 (USE	ER) 🔜 🗸 🔁 🕨 🗖 🔶 🛛	: 🔢 🌾 🔖 🖬 🕵 🛙	31 🕼 🔺 🗊 🗉	2	
Project	ü		🗸 🗙 🕑		
Control Panel	Name	Value	Raw Data	UPID	Туре
V 🕒 Parameters	🔚 IP Configuration Mode	Use static IP Address	0002h	020Ah	UInt16
🌱 🗐 OS 🥣	Static IP address 1st Byte	192	COh	0074h	UInt8
> 🖃 Hardware	Static IP address 2nd Byte	168	A8h	0075h	UInt8
> 😑 Software	Static IP address 3rd Byte	1	01h	0076h	UInt8
> E Parameter Trees	Static IP address 4th Byte	2	02h	0077h	UInt8
	Netmask 1st Byte	255	FFh	0201h	UInt8
El RS-232/RS485 Configuration	Netmask 2nd Byte	255	FFh	0202h	UInt8
	Netmask 3rd Byte	255	FFh	0203h	UInt8
	Netmask 4th Byte	0	00h	0204h	UInt8
	Static Default Gateway IP 1st Byte	0	00h	0206h	UInt8
Special Function Parameters	Static Default Gateway IP 2nd Byte	0	00h	0207h	UInt8
> I Motion Control SW	Static Default Gateway IP 3rd Byte	0	00h	0208h	UInt8
> 🔄 EtherCAT Intf	Static Default Gateway IP 4th Byte	0	00h	0209h	UInt8





7.4 Troubleshooting with Config ETH

7.4.1 No Communication with E1450-PN

Config Ethernet and Config over RT Ethernet are both handled with PROFINET interface, which can cause problems when config telegrams are send over both interfaces.

When Config Ethernet is plugged in, all Config Ethernet traffic is handled exclusively via this interface (No Config over RT ETH possible).

Config over RT ETH is selected when all cables are disconnected from the Config Ethernet interface at start up.



Attention:

LinMot-Talk 6.6 Build 20170704 with Hardware E1450 (check Release Notes).

7.4.2 Setting all Parameters to Default Values

With E1200 and E1400, all parameters can be set to their default values without the use of the LinMot-Talk Software. This can be done according these steps:

- 1. Power off the drive
- 2. Set the two ID switches to 0xFF
- 3. Power on the drive, the Error and Warn LEDs will blink alternately at ~4Hz.
- 4. Set the two ID switches to 0x00
- 5. Wait until the Warn and EN LEDs will flash together at ~2Hz.
- 6. Power off and on again.



7.5 LinMot WebUI

Connect the LinMot Drive with the internet browser. The browser will show the following variables.



LinMot[®] E1250-PL-UC/V1RC

Controller Name: Support Serial Number: 1760.4HT.019 Article Number: 0150-1760 Firmware Release: 6.9 Build 20190605

Status Monitoring

Name	Value	Unit
Status Word:	0x50FA	-
Warn Word:	0x80	-
State Var:	0x464	-
Actual Position:	0	0.1µm
Demand Position:	0	0.1µm
Demand Current:	0	mA
Operating Hours:	24365	h
Operating Sub Hours:	2084255	ms

X4 I/O State

X4.3 💽 X4.4 🌑
X4.5 💽 X4.6 💽
X4.7 💽 X4.8 🌑
X4.9 🕓 X4.10 🌑
X4.11 🜑 X4.12 📀

Status LEDs

Error	0	0	24V OK
Warning	۲		Motor Enabled

Last Motion Command Interface Command

Header	Par_1	Par_2	Par_3	Par_4	Par_5	Par_6	Par_7
0x0	0x0	0x0	0x0	0x0	0x0	0x0	0x0

Read UPID

Update Value	
UPID (decimal):	0
UPID Value:	0

Recent Errors

Operating hrs/sub-hrs Time Error Code Error Message



8 Troubleshooting

8.1 Communication Timeout

Depending on the traffic on the network, it's possible to having communication issues with LinMot-Talk because of the low- priority of the ethernet communication. It can be fixed by increasing the timeout for the LinMot-Talk communication – Option/ Set Login Timeout

👗 LinMot-Talk 6.6

File	Search Drive Services Optic	ns Window Tools Manuals Help	
ĩ o 1	CANTalk Settings	🛃 🛛 Sanduhr on COM4 (USER) 💫 🖓 🤹 🛬 📘 🕨	📕 🔶 🛛 DEF 📘
🞒 Pr 🗸 🥖	Language	* 🖃 🖩 👻 🎋 🕮 🕶 IPD R W 🕃 🕓	±≩
>	Raw Data Display Mode	Timeout Settings -	×
	Set Login Timeout	Default 250ms	
	Save Debug Window Data	P O Custom Timeout [ms] 5000 Sta IR]
	MC SW Motor MC SW X13 Ext Sensor MC SW Current Control MC SW Control Word MC SW Status Word	Re Re Minimal IO Cycle Time 6960008.8 us Maximal IO Cycle Time 6960008.8 us	

LinMot®

9 Document version

Version	Date	Author	Description
0V1	23.11.2016	mm	Initial version
1V0	31.08.2017	mm	Added Sercos III & improvements
1V1	01.11.2017	mm	Corrections
1V2	03.07.2019	mm	Added POWERLINK & improvements
1V3	03.03.2021	mm	Release version
1V4	15.11.2021	mm	Wrong IP-address in EtherCAT
1V5	22.05.2024	fj	Updated several chapters



Notes



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