

Documentation of *LinMot-Talk 6* Configuration Software







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1 Introduction

The LinMot-Talk 6 software is a PC based tool, which helps the user in a comfortable way installing firmware on the drive, setting up the drive's configuration, defining and programming motion profiles, emulating the PLC, watching variables and reading messages and errors. The LinMot-Talk 6 works with the drive series A1100, B1100, C1100, E1100, C1200 E1200, E1400 and B8050. It replaces the LinMot-Talk1100 software. For the rest of this document and all other documents, the more general term "LinMot-Talk" will be used for the Linmot-PC configuration software.

1.1 System Generations (SG)

The LinMot drive families are based on different hardware platforms, which are called system generations. The abbreviation is "SG". Whereas differences of hardware of software functionality exist between the system generations, the documentation is marked with the "SG" term. The following table gives an overview of which drive family belongs to which SG:

SG	Drives
SG1	Families E400, E4000 V1 (not supported by LinMot-Talk 6)
SG2	Families E400, E4000 V2 (not supported by LinMot-Talk 6)
SG3	Family E1100 (GP, CO, DN, DP) (LC/HC/XC)
SG4	Family B1100 (VF, PP, GP, ML) (LC/HC/XC)
SG5	Family E1200 (GP, PL, EC, IP, DP, PN, SC) Family E1400 (GP, PL, EC, IP, DP, PN, SC) Family B8050-ML (PL, EC, IP, PN, SC)
SG6	Family C1200
SG7	Family A1100, C1100

1.2 UPID (Unique Parameter ID)

All parameters have an assigned identification number, which is called a UPID (<u>Unique Parameter ID</u>). All parameters are accessed on the drive over this identification.

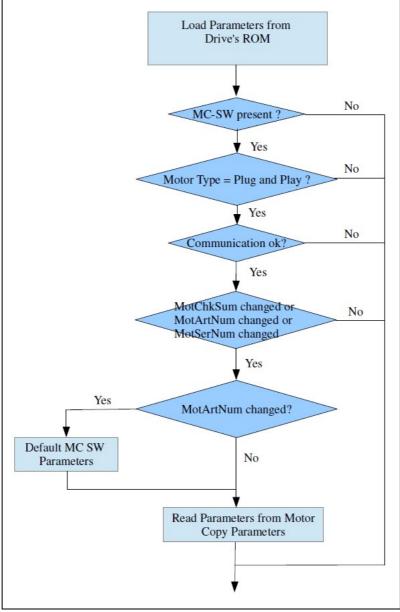


1.3 PnP (Plug and Play)

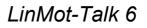
The drive families A1100, C1100, C1200, E1200 and E1400 support the so called "Plug and Play" functionality. When a motor is connected to the drive, the motor will be automatically detected and the parameters will be set accordingly. The drive then can control the motor without any further configuration procedure. When starting the motor wizard, the connected motor is already selected and all the further configuration, such as exact slider, moving mass, friction etc can be set up.

All components (drives and motors) which support the plug and play functionality are marked on the type label with "PnP".

The drive startup sequence is the following:



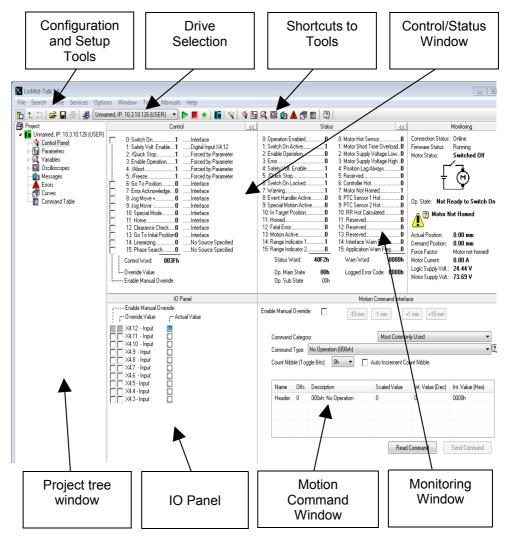
Drive PnP startup sequence.





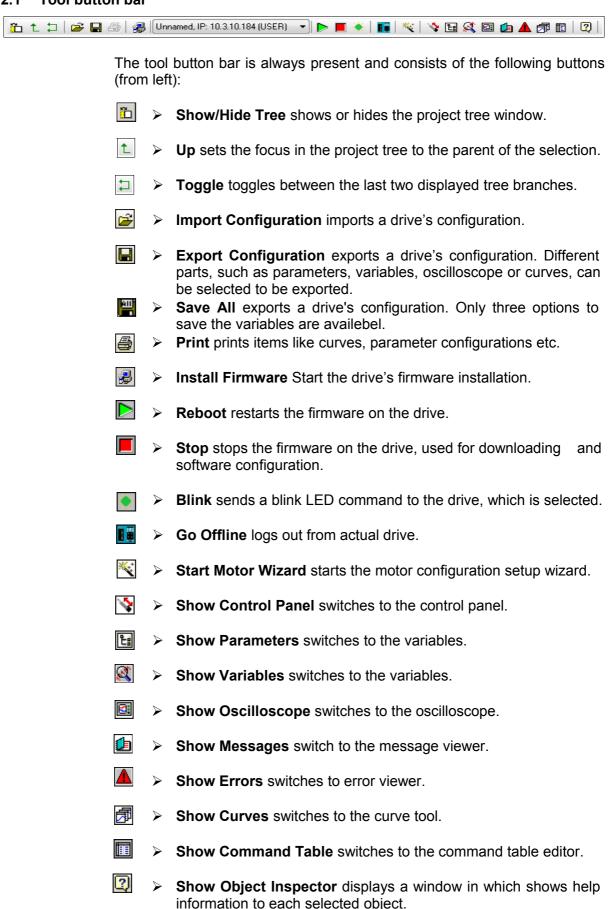
2 Overview

The following screen shot gives an overview of the different functions integrated in the LinMot-Talk software.





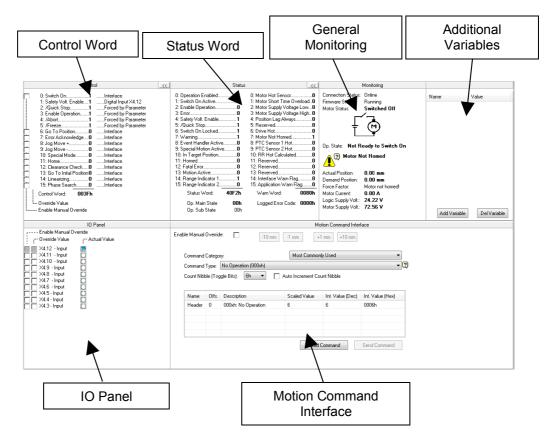
2.1 Tool button bar





2.2 Control Panel

The Control Panel helps the user to access directly to the control and status word of the MC Software. The drive can be commanded from the PC, thus no PLC is necessary to be used for the first commissioning.



- Control Word The MC software's control word can be directly written from the PC. For taking over the PC control the left check box (Enable Manual Override) must be selected. The state of each flag can be set with the right check box (Override Value). If other flags have to be altered, the override mask must be configured in the parameter tree under \Parameters\Motion Control SW\State Machine Setup\Control Word\Ctrl Word Parameter Force Mask.
- Status Word The status word shows the actual state of the drive's MC software status word. It is updated automatically.
- General Monitoring This window displays actual motor and drive information
- Additional Variables In this window variables could be chosen, then they are shown in the list and would updated automatically.
- IO Panel For commissioning. The user can take control of the X4 IOs on E1100 or X14 IOs on B1100 drives.
- Motion Command Interface The MC software's motion command Interface can be directly accessed over this window. When enabled (Enable Manual Override switch must be set), MC commands can be selected, parametrized and sent to the drive. Because the motion command interface is, independent of the interface running on the drive, the same, the commands can be exactly tested before programming them in the PLC.



2.3 Messages

This panel reads out and shows all messages, which are logged on the drive, and displays them in chronological order. If logged in a B1100 series drive, this window does not appear, because those drives do not support message logging.

e Search Drive Services Op	tions Window Tools	Manuals Help	
	named, IP: 10.3.10.126 (U		
	-	ISER) 🔽 Þ 📕 🔅 📘 💘 💊	9 🔍 🖻 🔔 🔺 🗊 🗊 🛛 🕄
Project	. 😢 日		
- 10.3.10.126 (USE) 	Event Time	Message	Source
▷ 🚼 Parameters	001604:11:32.773	MC SW Started	MC SW State Machine
▷ 🐼 Variables	001604:11:30.710	Software Beset	Ins
	001604:11:23.897	MC SW Stopped	MC SW State Machine
Messages	001584:39:45.813	Trn To Error State	MC SW State Machine
Errors	001584:39:44.008	MC SW Started	MC SW State Machine
- 🗇 Curves	001584:39:41.945	Software Beset	DS
Command Table	001582:00:44,953	MC SW Stopped	MC SW State Machine
	001581:40:15.176	Trn To Ready To Switch On State	MC SW State Machine
	001581:10:53.469	Trn To Operation Enabled State	MC SW State Machine
	001581:10:50.487	Trn To Ready To Switch On State	MC SW State Machine
	001581:10:26.394	Trn To Error State	MC SW State Machine
	001581:10:01.482	Trn To Ready To Switch On State	MC SW State Machine
	001581:09:53.817	MC SW Started	MC SW State Machine
	001581:09:51.754	Software Reset	OS
	001581:09:51.603	MC SW Stopped	MC SW State Machine
	001581:04:01.988	Trn To Error State	MC SW State Machine
	001581:04:00.183	MC SW Started	MC SW State Machine
	001581:03:58.120	Software Reset	OS
	001581:03:57.969	MC SW Stopped	MC SW State Machine
	001581:03:41.101	Trn To Error State	MC SW State Machine
	001581:03:39.296	MC SW Started	MC SW State Machine
	001581:03:37.233	Software Reset	OS
	001581:03:37.082	MC SW Stopped	MC SW State Machine
	001581:03:28.981	Tm To Error State	MC SW State Machine
	001581:03:27.176	MC SW Started	MC SW State Machine
	001581:03:25.113	Software Reset	OS

2.4 Errors

This panel reads out and shows all errors, which are logged on the drive and displays them in chronological order.

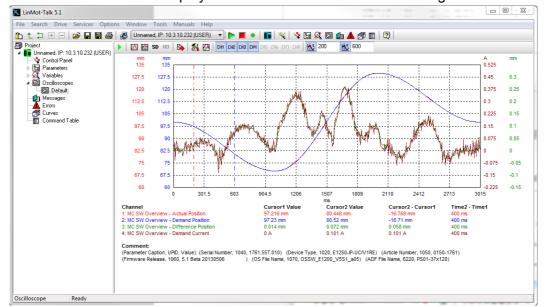
Search Drive Services Optic	ons Window Tools	Manuals H	Help	
	amed, IP: 10.3.10.126 (US		· • • • • • • • • • • • • • • •	
Project	· ·			
Control Panel	Event Time	Error Code	Error Message	Source
⊳ En Parameters	001584:39:45.813	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
⊳ 🥰 Variables	001581:10:26.394	003Ch	Err: Phase W broken	MC SW Error Handler
Dscilloscopes	001581:04:01.988	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
- 💋 Messages	001581:03:41.101	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
Errors	001581:03:28.981	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
- 🗇 Curves	001581:03:02.662	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
Command Table	001581:01:23.733	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001581:00:51.445	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001581:00:36.129	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001581:00:26.539	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001581:00:18.404	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:59:27.847	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:59:18.071	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:59:09.207	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:59:01.009	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:58:43.159	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:58:32.411	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:57:34.069	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:56:59.120	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:55:39.374	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:54:24.900	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:31:55.052	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:31:18.600	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:24:13.443	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	001580:22:28.959	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler
	4		<u> </u>	



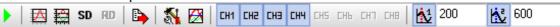
2.5 Oscilloscope

The drive's built in oscilloscope, which can record up to four channels in real time, is controlled with the oscilloscope tool.

During login the oscilloscope reads out the settings and data from the drive. If an oscilloscope shot is running or ready to read out data, an item called "Read out" will be displayed. Otherwise a default item will be generated.



The oscilloscope is controlled with the buttons



The functions are (from left):

- Start/Abort Start or abort an oscilloscope shot.
- Fit View Displays the recorded channels such as they fit best in the scope window.
- Fit View (same unit same fit) Displays the recorded channels such as the channels with the same unit have the same scaling and offset.
- **SD** > **Save Display** stores the settings for zoom, scaling and offset.
- Recall Display restores the settings for zoom, scaling and offset, which are previously stored with Save Display.
- Export Data: Export data and setups of the last recorded oscilloscope shot in a csv file.
- Oscilloscope Settings Switch to setup mask for channels, triggers, times and modes.
- Display Settings is used to set scale, offset and color for the oscilloscope channels.
- Show/Hide: Show and hide the oscilloscope channels.
- Show/Hide Cursor: Two time cursors can be be displayed for measuring the signals.



2.6 Curves

With the curve tool, motor motion profiles can be easily created, joined, uploaded, downloaded and saved. NOTE: On B1100 the curve feature must be enabled with an access key.

🙏 🎞 🖙 🖬 🍜 🥵 Unnamed, I	P: 10.3.10.126 (USER)	-	Þ 📕 🔶 📑 🖓	🔨 🖪 🎉 🖬 🏚	🛕 🗊 🖪 (2
Project				Edit Window		
🚺 Unnamed, IP: 10.3.10.126 (USER)	をご 図 読					
▷ 🛃 Parameters	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints
▷ - A Variables ▷ - B Oscilloscopes	🛃 SineOut	1	Position vs. Time	Sine	1000 ms	501
Messages	🔀 Sineln	2		Sine	500 ms	501
- A Errors	🔀 SinOutIn Curve	3	Position vs. Time	None	1500 ms	1501
Curves						
Command Table						
	×	×				
	¥ ~ ^ *	×		Download Window		
	V V A R		e) 🚅 🖞 Download ir		Curves have chan	gedl Please download.
		Drive	e 📄 🚅 🖞 Download in Type		Curves have chan Length	ged Please download. No. of Setpoints
	Dig Upload from	Drive	~~~~	nto Drive 🗈 🔥		_
	Upload from	Drive	Type Position vs. Time	nto Drive 🔟 🔨 Setpoint Wizard	Length	No. of Setpoints
	Upload from Name SineOut	Drive ID 1 2	Type Position vs. Time Position vs. Time	nto Drive 10 A Setpoint Wizard Sine	Length 1000 ms	No. of Setpoints 501

The curve tool is divided into the edit and the download window. The edit window is used to generate, merge and modify curves with the following buttons:



- New Curve Starts the curve wizard, which guides through the curve generation.
- **Edit Properties** The properties of a selected curve, like name, time or stroke, can be modified.
- Bedit Curve Values The curve points can be manually edited.
- Join Curves All selected curves are joined. A wizard will be started for defining the curve properties of the joined curve.

The download window is used to manage the curves, which are stored on the drive or have to be downloaded. Modifications in this window will show up the message "Curves have changed! Please download." After pressing the download into Drive button the window and the drive will be synchronized.

> Upload Curves from Drive All curves stored on the drive will be uploaded and displayed.

> **Download Curves to Drive** The drive's curve sector will be synchronized with the download window.

ID

> Auto Numerate Curves The curve ID, which must be unique, will be set automatically.

The maximum number of curves and number of sample points is defined as follows:

Series B1100:

```
#Curves * 70Bytes + #SamplePoints * 4Bytes <= 2016Bytes
All other Series:
```

```
#Curves * 70Bytes + #SamplePoints<sup>1</sup> * 4Bytes <= 65280Bytes
```

```
1 #SamplePoints: total of sample points in all curves.
```



2.7 Parameters

The drive's parameters are displayed in a tree view.

1 📜 😂 🖬 🎒 🥵 Unnamed, IP: 10 Project		- 🔨 💶 🕆	V 🖬 🍕 🛙			1		
📲 Unnamed, IP: 10.3.10.184 (USER)	<u> </u>				C 🕲 DEF			
🔖 Control Panel	Name	Value	Raw Data	UPID	Туре	Scale	Offset	Min
 Parameters 	FF Constant Force	0 A	00000000h	139Ch	SInt32	0.001 A	0 A 0	-15 A
>	FF Friction	0 A	00000000h	139Dh	SInt32	0.001 A	0 A 0	0 A
Motion Control SW	FF Spring Compensation	0 A/m	0000h	139Eh	SInt16	1.A/m	0.A/m	-30000 A/m
Drive Configuration	FF Damping	0 A/(m/s)	0000h	139Fh	SInt16	0.01 A/(m/s)	0 A/(m/s)	-300 A/(m/s
Motor Configuration	FF Acceleration	0.015 A/(m/s^2)	000Fh	13A0h	UInt16	0.001 A/(m	0 A/(m/s^2)	0 A/(m/s^2
Motor Type	Spring Zero Position	0 mm	00000000h	13A1h	SInt32	0.0001 mm	0 mm	-214748.36
Motor Demittons E Position Feedback	P Gain	1.5 A/mm	000Fh	13A2h	UInt16	0.1 A/mm	0 A/mm	0 A/mm
	D Gain	3 A/(m/s)	001Eh	13A3h	UInt16	0.1 A/(m/s)	0 A/Im/s)	0 A/(m/s)
 Commutation E Monitoring 	D Filter Time	0 us	0000h	1348h	UInt16	1 us	0 us	0 us
Monitoring	IGain	0 A/(mm*s)	0000h	13A4h	UInt16	0.1 A/imm*s)	0 A/(mm*s)	0 A/Imm*s)
Motor Communication	Integrator Limit	4 A	00000EA0h	1345h	SInt32	0.001 A	0A	0A
Communication Type	Maximal Current	4 A	00000FA0h	1346h	Sint32	0.001 A	0A	0A
State Machine Setup	Noise Deadband Width	0.01 mm	0054b	1347h	UInt16	0.0001 mm	0 mm	0 mm
In a state machine setup In a state machine setup	Noise Deadbaild Width	0.01 1111	000411	1.0M/T	Olikito	0.0001100	0.000	0 11111
A · E Position Controller								
E Feedback Selection								
Ctrl Par Set Selection								
Control Parameter Set A								
Control Parameter Set R								
Advanced Settings								
Current Controller								
Errors & Warnings								
Protected Technology Functions								
Mater Info Block								
▷ E sercos								
Variables								
Osciloscopes								
Default								
Messages								
Errors								
TT Curves								
Command Table								

Parameters, which are marked as live (•), can be altered while the drive's firmware is running; other parameters can only be changed when the software is stopped.

The parameter service is controlled with the following buttons:

0000h	upid 🖌 🗶 🗷 de	-
-------	---------------	---

- Show/Hide Details: Additional information for each parameter, such as unique parameter ID (UPID), scaling, min/max value, can be displayed on demand.
- Show UPID Browser: When parameters are edited, which represent a UPID, this button will be visible. With this button, the UPID browser will be opened for a easy selection of a parameter.
- OK: The input value is confirmed with this button. Pressing the enter key has the same effect.
- **X** > **Cancel:** This button cancels the value typed in.
- **Read:** All parameters will be read and refreshed from the drive.
- Default: Parameters can be defaulted by instances. With this button, the default parameter procedure is started. A window will be shown where the instances (OS, MC, INTF and APPL software) can be selected. All parameters of the selected instances will be set to their default value.



2.8 Variables

The drive's variables, which can be watched, are arranged in different functional groups. The MC SW overview group contains the most used variables.

<u>Search</u> Drive Services Options Window	<u>T</u> ools <u>M</u> anuals <u>H</u> elp						
1. 🕽 😂 🖬 🎒 🚜 Unnamed, IP: 10.3.10).184 (USER) 🛛 🔻 📘 🕴	• I 🖬 I	🔨 💊 🖬 🖉	(🖾 🏚 🖌	L 🕫 🖪 🛛		
Project	₫ ₫ छ • ħ ħ	Fazi 👻 LIPID	RWR				
unnamed, IP: 10.3.10.184 (USER)			-			e 1	0// 1
	Name	Value	RawData	UPID	Туре	Scale	Offset
Parameters	State Machine Main State	0	00h	1B5Eh	UInt8	1	0
⊳ 🖃 OS	State Machine Sub State	0	00h	1B5Fh	UInt8	1	0
▷ E Motion Control SW	State	Not R	00h	1B60h	UInt8 Enumerator		
▷ E sercos ▲ Q Variables	State Var	0000h	0000h	1B62h	UInt16	1	0
Variables	Demand Position	0 mm	00000000h	1B8Ah	SInt32	0.0001 mm	0 mm
- E OS SW Operating Hours / Time	Demand Velocity	0 m/s	00000000h	1B8Bh	SInt32	1E-6 m/s	0 m/s
E OS SW Operating Hours / Time	Demand Acceleration	0 m/s^2		1B8Ch	SInt32	1E-5 m/s^2	0 m/s^2
E OS SW Messager End	Actual Position	-0.000	FFFFFFFAh	1B8Dh	SInt32	0.0001 mm	0 mm
E OS SW HW Configuration	Actual Velocity	+0.000	FFFFFF06h	1B8Eh	SInt32	1E-6 m/s	0 m/s
E OS Hash Value	Actual Velocity Filtered	0 m/s	00000000h	1BAFh	SInt32	1E-6 m/s	0 m/s
E OS SW Status	Difference Position	0.000	00000003h	1B90h	SInt32	0.0001 mm	0 mm
E MC SW Overview	Difference Velocity	0.000	000000FAh	1B91h	SInt32	1E-6 m/s	0 m/s
E MC SW Motor	Demand Current Pos Ctrl	0.002 A	00000002h	1B92h	SInt32	0.001 A	0 A 0
E MC SW X13 Ext Sensor	Demand Current	0 A	00000000h	1B93h	SInt32	0.001 A	0 A 0
- E MC SW Current Controller	Demand Position 16 Bit	0	0000h	1B94h	SInt16	1	0
-E MC SW Control Word	Actual Position 16 Bit	0	0000h	1B95h	SInt16	1	0
- E MC SW Status Word	IO State Word	0200h	0200h	1C84h	UInt16	1	0
E MC SW Warnings	IO State Bit 0 (X4.3)	FALSE	Oh	1C8Eh	Bool		
- 🔚 MC SW Phase Search	IO State Bit 1 (X4.4)	FALSE	Oh	1C8Fh	Bool		
- E MC SW Linearizing	10 State Bit 2 (×4.5)	FALSE	Oh	1C90h	Bool		
- E MC SW Motion Interface	IO State Bit 3 (X4.6)	FALSE	Oh	1C91h	Bool		
E MC SW Capture, Trigger & Mapped Inputs	IO State Bit 4 (X4.7)	FALSE	Oh	1C92h	Bool		
E MC SW VA interpolator	10 State Bit 5 (×4.8)	FALSE	Oh	1C93h	Bool		
- E MC SW Curve	IO State Bit 6 (X4.9)	FALSE	Oh	1C94h	Bool		
MC SW Monitoring MC SW Errors	IO State Bit 7(×4.10)	FALSE	Oh	1C95h	Bool		
MC SW Errors MC SW Encoder CAM	IO State Bit 8 (×4.11)	FALSE	0h	1C96h	Bool		
E MC SW Encouer CAM	IO State Bit 9 (X4.12)	TRUE	1h	1C97h	Bool		
E MC SW Rotor Data Sheet	X4 Intf Outputs	0000h	0000h	1C89h	Uint16	1	0
E MC SW Force Control	Digital Inputs Word	0200h	0200h	1C85h	UInt16	1	0
	Digital Input Force Mask	0000h	0000h	1CC0h	UInt16	1	0
▷ III Osciloscopes	Digital Input Force Value	0000h	0000h	1CC1h	UInt16	1	0
In Messages	X4 Output Mask	0000h	0000h	1C88h	UInt16	1	0
Errors	Digital Output Force Mask	0000h	0000h	1CC2h	UInt16	1	0
- 🗇 Curves	Digital Output Force Value	0000h	0000h	1CC3h	UInt16	1	0
Command Table	X4.4 Analog Voltage	0.010	0004h	1CA4h	UInt16	0.0027027027 V	οv
	X4.4 Analog Voltage Filtered	0V	00000000h	1CA7h	FloatIEEE754	0.0027027027 V	ov
	Diff Analog Voltage	0.059	FFF5h	1CA6h	SInt16	0.00537056928 V	ov
	Diff Analog Voltage Filtered	0 V	0000000h	1CA8h	FloatIEEE754	0.00537056928 V	ov

The variable service is controlled with the following buttons:

õ	😭	Isa 🔻	В	ŝ	F32	Ŧ	UPID	R	W	C	6	±**	
---	---	-------	---	---	-----	---	------	---	---	---	---	-----	--

- Show/Hide Details Additional information for each parameter, such as unique parameter ID (UPID), scaling, min/max value, can be displayed on demand.
- **R** > **Read Variable:** Reads the selected variable from the drive once.
- W > Write Variable: Writes the selected variable to the drive.
- Read All Variables: Reads from the drive all variables of the section once.
- Read All Variables Cyclically: Reads from the drive all variables of the section cyclically.
- **EXAMPLE Remove (Del):** Removes the selected variable from the list.

The following buttons are only used in special cases.

- Edit Properties The parameter properties can be displayed and changed.
- New ... Variable In a new generated variable section a new variable can be defined. This is a drop down menu, which supports different variable types.
- New Bit Variable In a new generated variable section a variable of the type bit can be defined.



5

UPID

> **New String Variable** In a new generated variable section a variable of the type string can be defined.

New Float32 In a new generated variable section a variable of the type float32 can be defined.

> **New With UPID** In a new generated variable section a variable can be added by using the UPID from the appropriate parameter.

Under "User Defined" any variables or parameters can be arranged together. Typically the variables are selected via UPID. It is also possible to drag and drop them from the parameter or variable section.



2.9 Command Table

The drive supports the command table (CT) functionality, which means a set of up to 255 motion commands (31 commands for B1100GP and B1100VF series drives, on B1100PP CT is not supported) can be stored in this table.

An example of is shown in the following picture:

LinMot-Talk 5.0						
<u>File Search Drive Services Options Window</u>	<u>T</u> ools <u>I</u>	<u>M</u> anuals <u>H</u> elp				
🛅 🛍 🎞 🗎 😅 🔚 🎒 🛃 🗓 Unnamed, IP: 10.3.10	.184 (USEF	3) 🔹 🕨 📕	🍋 🚺 🕺 🖄 🎼	🤾 💷 🔔 🔺 🗊 🔝 🤅	2)	
Project	Entry ID		2	🗖 Áuto execute	new command on ne	wt cucle
Innamed, IP: 10.3.10.184 (USER)	Entry N		2 Unnamed			an oyono
▲ E Parameters		Command Category:				•
⊳ [OS		Command Type:	VAI Go To Pos			- 3
▷ E Motion Control SW ▷ E sercos	Targe	t Position:	0 mm			Q
Variables	Maxim	nal Velocity:	1 m/s			
▶ 📴 Oscilloscopes — 🚺 Messages	Accel	eration:	10 m/s^2			
Errors	Decel	eration:	10 m/s^2			Apply
Curves					L	7997
Command Table						
	ີ່ ຍິ່ຍັບ	pload from Drive	Download to Drive	Command Table mo	dified. Please downlo	ad to drive.
	ID	Name	Туре	Par 1	Par 2	Par 3 📩
	1					
	2	Unnamed	VAI Go To Pos	Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s^2
	3	Unnamed	VAI Go To Pos	Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s^2
	4	Unnamed	VAI Go To Pos	Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s^2
	5					
	6					
	7					
	8					
	٠ iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii					F.
Command Table 2/255						

A big variety of commands can be set in this tables, such as motion commands, conditions, sequence directives, parameter access, ... This makes the CT to very powerful functional unit. The CT entries can be

This makes the CT to very powerful functional unit. The CT entries can be accessed (executed) via digital inputs (on X6) or via interface software. The CT tool has the following editing elements:

- > Entry ID indicates the CT entry, which is being edited.
- > Entry Name is a descriptive string of max. 16 characters
- Motion Command Category the available commands are fitted into groups for keeping a better overview
- Motion Command Type specifies the command to be executed in this entry.
- Auto execute new command on next cycle when selected, on the next cycle the entry specified under "ID of Sequenced Entry" will be executed. This gives the possibility of defining cycles, simple logical sequences.
- ID of Sequenced Entry defines the CT entry executed on the next cycle when "Auto execute new command on next cycle" is activated.
- > **Apply** writes the edited values into the entry.
- Upload from Drive reads and displays the entire command table from the drive.

Download to Drive writes the edited table (from the PC) to the drive.

An application example of the CT can be found in the motion control software user manual (Usermanual_MotionCtrlSW_E1100.pdf).



2.10 Access Codes

On the drive special features or customer specific applications can be protected by a software key. This means, a key must be activated by an access code, which is drive specific (pinned to the serial number). Under Drive\Set Access Code\ the following window will open:

Name	Value		Access Code	
Key1	5A93h - Force Closed I	Loop Control	58328193h	
Key2	0000h - No Key			
Кеу3	0000h - No Key			
Key4	0000h - No Key			
et Key Acc ame:	e ss Code: Value (HEX):	Access	Code (HEX):	
(ey2	▼ 5a92	583C6	B91	Write
	/s will not be activated on the	controller until	a reboot bas bee	n processed

A maximum of four keys can be set on the drive. Under Active Keys all valid installed keys are listed (key value and access code).

A new key can be set by selecting the key name and defining the value and access code. With the write button, the key and access code are written to the drive. As soon as the drive has rebooted (click the Activate button) the new key will be active, if the access code fits.

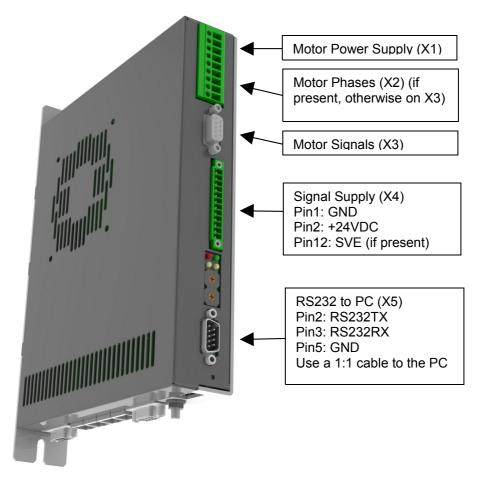
Please note: Access codes are drive specific. They cannot be copied from one drive to another.



3 Quick Start Guide

This chapter helps step by step to set up a system using servo drive and the LinMot-Talk configuration software.

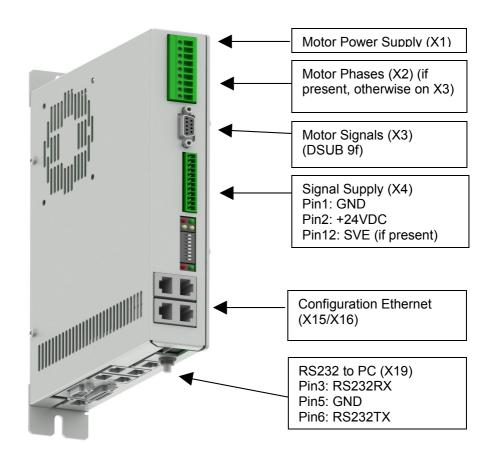
3.1 Cabling E1100



- **X1** Motor Supply, use 48..72 VDC (between PWR+ and PGND).
- X2 Motor Phases: if this connector is not present, connect the motor on X3 only.
- X3 Motor signals: if motor has a DSUB-9 connector, connect it directly, otherwise use an adapter to DSUB-9 or wire the phase lines to X2.
- X4 For a commissioning with the PC it is necessary to wire only the Pin1 (GND), Pin2 (+24VDC) and, if present, Pin12 save voltage enable (SVE, +24VDC).
- X5 RS232: The cable between the LinMot drive and PC must be DSUB-9 F/F, 1:1 (X modem). If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).



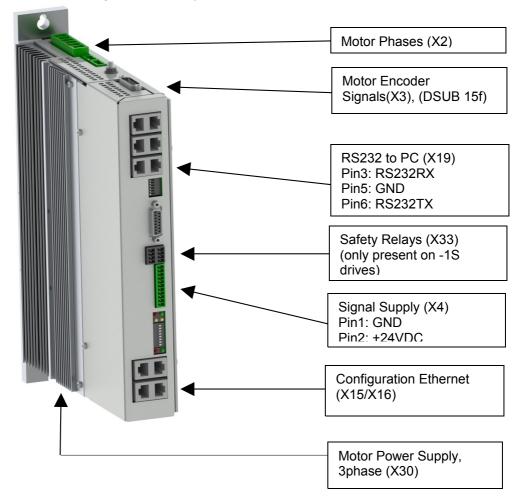
3.2 Cabling E1200



- **X1** Motor Supply, use 48..72 VDC (between PWR+ and PGND).
- **X2** Motor Phases.
- X3 Motor Signals. (Note: the motor phases are not present on this connector. Thus wire the motor phases in any case to X2).
- X4 For a commissioning with the PC it is necessary to wire only the Pin1 (GND), Pin2 (+24VDC) and, if present, Pin12 save voltage enable (SVE, +24VDC).
- X15/X16 Ethernet: Use a standard RJ45 patch cable to wire to the LAN.
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-2143) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).



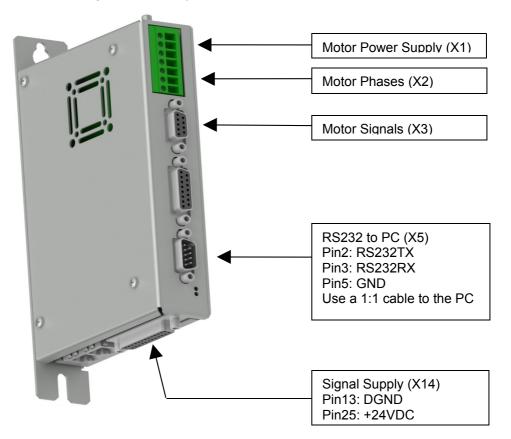
3.3 Cabling E1400



- > X2 Motor Phases.
- **X3** Motor Encoder Signals.
- X4 For a commissioning with the PC it is necessary to wire only the Pin1 (GND) and Pin2 (+24VDC).
- > X15/X16 Ethernet: Use a standard RJ45 patch cable to wire to the LAN.
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-2143) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- **X30** Motor Supply, use 3x400 / 3x480VAC 50/60 Hz
- X33 Safety Relays: For the safety relays use a separate +24VDC supply. For a commissioning it is necessary to wire both Ksr+ (X33.4 and X33.8) to +24 VDC and both Ksr- (X33.3 and X33.7) to GND.



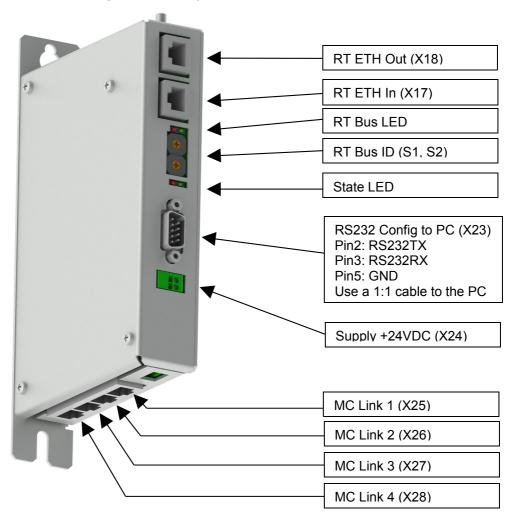
3.4 Cabling B1100



- > X1 Motor Supply, use 48..72 VDC between (PWR+ and PGND).
- > X2 Motor Phases
- X3 Motor signals: if motor has a DSUB-9 connector, connect it directly, otherwise use an adapter to DSUB-9 or wire the phase lines to X2.
- X5 RS232: The cable between the LinMot drive and PC must be DSUB-9 F/F, 1:1 (X modem). If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- X14 For a commissioning with the PC it is necessary to wire only the Pin13 (DGND) and Pin25 (+24VDC).



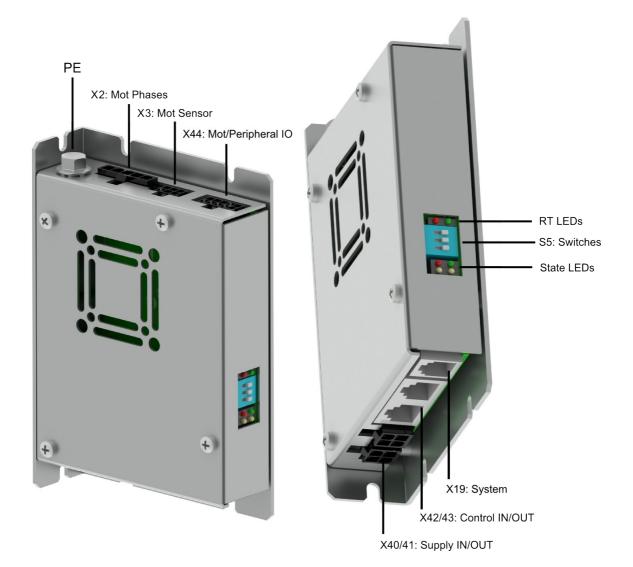
3.5 Cabling B8050-ML



- X23 RS232: The cable between the LinMot drive and PC must be DSUB-9 F/F, 1:1 (X modem). If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- > **X24** Use a 24V switched power supply.



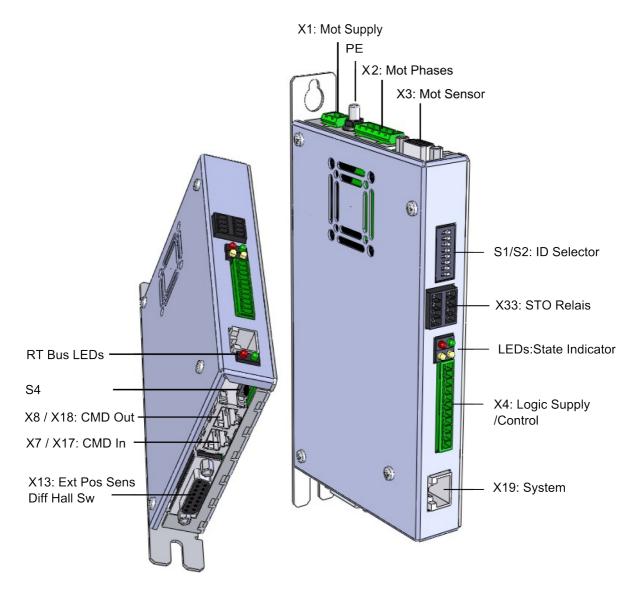
3.6 Cabling A1100



- X2 Motor Phases.
- > X3 Motor Signals.
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-3544) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- X40 Wire Pin1 (GND) and Pin2 (+24VDC) for signal supply, and for motor supply, use 48..72 VDC for PWR+ on Pin4 and PGND is on Pin3. (Linmot provides a connector with the crimped 1.5m long wires as a product under the article number 0150-3545.)



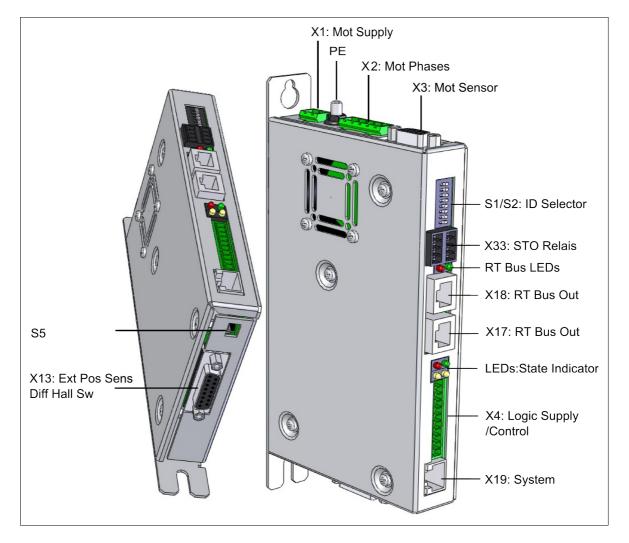
3.7 Cabling C1100



- **X1** Motor Supply, use 48..72 VDC (between PWR+ and PGND).
- **X2** Motor Phases.
- X3 Motor Signals. (Note: the motor phases are not present on this connector. Thus wire the motor phases in any case to X2).
- X4 For a commissioning with the PC it is necessary to wire only the Pin1 (GND) and Pin2 (+24VDC).
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-2143) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- X33 Safety Relays: The connector X33 is only present for 1S safety functionality. For the safety relays use a separate +24VDC supply. For a commissioning it is necessary to wire both Ksr+ (X33.4 and X33.8) to +24 VDC and both Ksr- (X33.3 and X33.7) to GND.



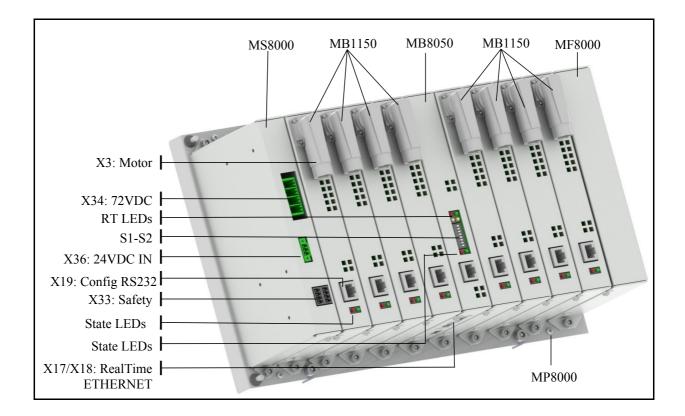
3.8 Cabling C1200



- > X1 Motor Supply, use 48..72 VDC (between PWR+ and PGND).
- > X2 Motor Phases.
- X3 Motor Signals. (Note: the motor phases are not present on this connector. Thus wire the motor phases in any case to X2).
- X4 For a commissioning with the PC it is necessary to wire only the Pin1 (GND) and Pin2 (+24VDC).
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-2143) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- X33 Safety Relays: The connector X33 is only present for 1S safety functionality. For the safety relays use a separate +24VDC supply. For a commissioning it is necessary to wire both Ksr+ (X33.4 and X33.8) to +24 VDC and both Ksr- (X33.3 and X33.7) to GND.



3.9 Cabling M8000



- X3 Motor: This is the only connector to the motor, it includes the phases and signals.
- X19 RS232: Use the RS232 PC configuration cable (LinMot article number 0150-2143) to connect your PC via RS232. If the PC has no COM port available, use the USB to RS232 converter (LinMot article number 0150-3110).
- X33 Safety Relays: The connector X33 is only present for 1S safety functionality. For the safety relays use a separate +24VDC supply. For a commissioning it is necessary to wire both Ksr+ (X33.4 and X33.8) to +24 VDC and both Ksr- (X33.3 and X33.7) to GND.
- X34 Motor Supply, use 48..72 VDC (between PWR+ and PGND). The Axis 1-4 and 5-8 are supplied separately.
- X36: For a commissioning with the PC it is necessary to wire only the Pin1 (GND) and Pin2 (+24VDC).



3.10 Firmware Download

As the cabling is done correctly now, turn on the drive's power and start up the LinMot-Talk software. Before using the drive the first time, the firmware

has to be downloaded. Therefore press install firmware button 🛃 to start the wizard. Choose the file "Firmware_Build20101126.sct" (or similar) and press "Open". Then the wizard will start and guide through the installation. In case of installing the firmware over ETHERNET, the service password is required. This is for safety reasons. Especially if there are a lot of drives

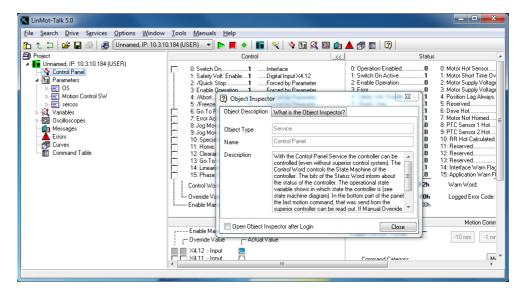
accessible in the network, it can easily happen to confound them. Thus it is strongly recommended to set a password. By default no password is set. If the password is unknown, the parameters can be set to default by hex switches, see 4.1"Setting all Parameters to Default Values".

According to the drive type, different interface and application software can be selected.

3.11 Login

When successfully finished downloading the firmware, login with \File\Login..., then select the appropriate port and press ok. A login info window will appear showing the login progress.

When logged in you will find the following window:



The Object Inspector window can be dragged away or closed. It can be reopened with F1.



3.12 Scanning CAN Bus

When one or several drives are linked with CAN bus for configuring, it can be very helpful to scan the CAN bus for linked drives automatically. Thus, it is not necessary to know all node IDs. Under \File\Scanning (with CANusb) a list of the present drives will be displayed:

🔀 Logir	1			
Login	MACID	Device Name	User ID	Password
	34	Unnamed	USER	
	63	Unnamed	service	
			Login All	Login Selected Abort

With just one click the LinMot-Talk software will log in to all drives.

3.13 Scanning Ethernet

When one or several drives are linked with Ethernet for configuring, it is helpful to scan the automatically for linked drives. Thus, it is not necessary to know all node IP addresses. Under \File\Scanning (via Ethernet) first the interface has to be selected (network link)

With the radio button Group Number could be activated a scan for a special drive group. The list will only display the drives with the group number, like the number in the text field. In the drives this number is saved in the parameter with the name Net Group and the UPID 0078h.

Choose the Interface	•				×
Interface:					
Broadcom NetLink (1	M) Gigabit Ethernet - 10.3.10.	87			•
Send To:					
All Groups	Group Number.	0	۲		
				Continue	Cancel

A list of the present drives will be displayed:

te	IP Address	MACID	Group	Device Name	Device Type	Release Info	User ID	Password
1 🛤	10.3.10.22	00:1A:4E:00:10:5C	0	Lagertest1	E1400-GP-QN /1RB	4.4 Build 20120130	USER	
	10.3.10.61	00:1A:4E:00:1A:5C	0	Flo's E1250-SC	E1250-SC-UC/V1RE	4.4 Build 20120130	USER	
	10.3.10.66	00:1A:4E:00:0A:AA	0	KMT Referenzantrieb		4.3 Build 20110901	USER	
	10.3.10.67	00:1A:4E:00:0D:80	0	MotEnd		4.2 Beta 20110211	USER	
- 🌺	10.3.10.82	00:1A:4E:00:05:0C	0	Flo's E1250-PL	E1250-PL-UC/V1RD	4.4 Build 20120130	USER	
	10.3.10.93	00:1A:4E:00:02:2A	0	MM_E1250_EC_UC	E1250-EC-UC/V1RC	5.0 Beta 20120514	USER	
1 🙀	10.3.10.106	00:1A:4E:00:10:14	0	MM_E1450_SC	E1450-SC-QN /1RB	5.0 Beta 20120514	USER	
- 	10.3.10.107	00:1A:4E:00:22:2C	0	KHS Teststand	E1400-GP-QN /1RD	5.0 Beta 20120514	USER	
	10.3.10.108	00:1A:4E:00:06:78	0	Flo's E1250-IP	E1250-IP-UC/V1RE	4.4 Build 20120130	USER	
	10.3.10.109	00:1A:4E:00:02:48	0	Ludo Desk	E1200-GP-UC/V1RC	4.4 Build 20120130	USER	
	10.3.10.123	00:1A:4E:00:10:0C	0	Unnamed	E1450-IP-QN /1RB	5.0 Beta 20120514	USER	
	10.3.10.127	00:1A:4E:00:2B:08	0	Unnamed	E1250-PN-UC/V1RE	5.0 Beta 20120702	USER	
	10.3.10.129	00:1A:4E:00:1B:B8	0	Laser3 - Laser_X	E1250-EC-UC/V1RE	4.4 Build 20120130	USER	
	10.3.10.132	00:1A:4E:00:1B:BA	0	Laser3 - Laser_Z	E1250-EC-UC/V1RE	4.4 Build 20120130	USER	
	10.3.10.137	00:1A:4E:00:02:24	0	MM_E1250_PL_UC	E1250-PL-UC/V1RC	4.4 Build 20120130	USER	
	10.3.10.143	00:1A:4E:00:22:30	0	QS_TestCtr	E1400-GP-QN /1RD	5.0 Beta 20120514	USER	
- 🏔 -	10.3.10.179	00:1A:4E:00:10:0A	0	Unnamed	E1400-GP-QN /1RB	4.4 Build 20120130	USER	
	10.3.10.184	00:1A:4E:00:03:4E	0	Unnamed	E1250-SC-UC/V1RD	5.0 Build 20120710	USER	
- 🏔	10.3.10.186	00:1A:4E:00:10:24	0	Unnamed	E1450-EC-QN /1RB	4.4 Build 20120130	USER	

With just one click the LinMot-Talk software will log in to all drives. The colored markings have the following meaning:

- Green: The drive is ready to log in.
- - Grey: You are already logged into this drive.
- Red: Another instance is logged into this drive (other user or other interface).

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 (also known as 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). Please note that this process can take up to a minute until a valid address is assigned to the drive this way.



3.14 Motor Wizard

As no motor is defined, the next step is to start the motor setup wizard. Press the button \bowtie and the following window will appear:

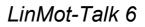
Open	2 🛛
Look in:	Motors 💌 🔶 🖻 📸 🖬 🗸
My Recent Documents Desktop	LinMot Bridge Modules LinMot Linear Modules LinMot Linear Motors Other Motors Other Motors
My Documents	
My Computer	
My Network Places	File name:

As we want to configure a LinMot Motor we choose "LinMot Linear Motors" and press Open.

Open					? 🗙
Look in: My Recent Documents Desktop My Documents My Computer	LinMot Linear	adf df 50f 30f Adf Adf adf 3df 3df	•	¢ 1 i i i]- -
My Network Places	File name: Files of type:	PS01-23x160.adf Actuator Data Files(*.adf) Open as read-only		•	Open Cancel

Select the actuator type you have wired to the drive, then press Open. The following steps will show forms including drawings and descriptive texts.

The first step is to define the stator and slider.





Motor Wizard			<u>-0-</u> ×
Step 1/9: Actuator Selec	tion		
	DC01 07 040 K	Character Asharbara	
Actuator Data File:	PS01-37x240.adf	Change Actuator	
Stator:	P501-37×240	•	
Slider:	PL01-20x500/420	•	
	The slider can be identified by i the type engraved on the surf-		
Slider Mounting Direction:	Regular	•	
	100% FB	Stroke	
Derived Settings	Value	Comment	
MOTOR	P01-37x240/160x360	Commerce	
Maximal Stroke (S)	360 mm		
Shortened Stroke (SS)	160 mm		
Electromagnetic Zero Position			
Force Constant	40.8 N/A		
Edge Force (Fb)	58 %		
STATOR	P501-37x240		
Article Number	0150-1203		
Stator Length	347 mm		
Stator Mass	1385 g		
SLIDER	PL01-20×500/420		
Article Number	0150-1328		
Slider Length	500 mm		
Slider Mass	1064 g		
Help < <u>B</u> ack	Next > Einish	Cancel	

The derived settings show information about the complete motor type, article numbers and the most important technical data.

The next step is to choose the flange for defining the cooling capability.

			JO LO X
Step 2/9: Motor Cooli	ng		
	F lange andard Flange .g. PF0x-37x200	Z	
The bulk of power loss is temperature model calcul	deduced over the flange. The flang ation, which is used for monitoring p	e selection affects the firmware urposes.	
Derived Settings	Value	Comment	
•			



Longer extension cables will have an effect to the motor's phase resistance. In step 3 can be defined two cable segments.

Motor Wizard			<u>10 - 0 ×</u>
Step 3/9: Extension Cab	le Setup		
First Extension Cable Seg	ment		
Type:	K05	-	
Length:	2	m	
congen	Je		
Second Extension Cable 9			
Туре:	No Extension Cable	<u>-</u>	
		igh in relation to the motor's phase	
		ance it can optimize the current	
	here are extension cables u	sed in the application, then	
that (these segment(s) shoul	d be defined bere. The cab		
that/these segment(s) shoul motor is negligible.	d be defined here. The cab	le piece that comes directly out of the	
that/these segment(s) shoul	d be defined here. The cab	le pièce that comes directly out of the	
that/these segment(s) shoul	d be defined here. The cat	le piece that comes directly out of the	
that/these segment(s) shoul motor is negligible.	d be defined here. The cab	le piece that comes directly out of the	
that/these segment(s) shoul motor is negligible.			
that/these segment(s) shoul motor is negligible. Derived Settings	Value		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance	Value 11.5 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm		
that/these segment(s) shoul motor is negligible. Derived Settings Motor Phase Resistance Cable Resistance	Value 11.5 Ohm 0.16 Ohm	Comment	

The next hardware setup step is to define an external position sensor system (if present). For E1100 drives can be chosen between none, incremental AB(Z) and analog sine/cosine 1Vpp. For B1100 drives can be chosen between none, incremental AB(Z) and AB encoder simulation.

Step 4/9: External Positio	n Sensor System		
External Position Sensor			
Type: Anal	og Sine/Cosine (1Vpp)	•	
Count Direction: Posit	ive	•	
Resolution r (1/4 Period Length); 250	um	
		5 1V 2	
With an additional external pos can be improved. The optional	ition measuring system the positi position sensor has to be connec	oning accuracy and the linearity ted to X12 on the controller.	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	
Derived Settings	Value	Comment	



With step 5 the feed forward parameters are set up. Depending on the moving mass, additional load mass, friction and orientation. Under the derived settings the influence can be watched.

🗙 Motor Wizard		
Step 5/9: Feed Forward Par	ameters	
Mechanical Layout		
-	Slider	
Orientation Angle (-90°+90°):		
	,	
Moving Mass		
Slider:	1064 g	
Additional Load Mass:	500 g	
Friction Forces		
Dry Friction:	2 N	
Viscous Friction:	D N/(m/s)	
MagSpring (or other constant fo	orce)	-90°↓ ↔ +90°↓
	D N	
Force Direction:	Negative 🔻	
Derived Settings	Value	Comment
Derived Settings	Value	Comment
Derived Settings Total Moving Mass Gravitation force in motor direction	1564 g	Comment
Total Moving Mass	1564 g	Comment
Total Moving Mass Gravitation force in motor direction	1564 g O N	Comment
Total Moving Mass Gravitation force in motor direction External Constant Force	1564 g O N O N	Comment Current for constant force compensation
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction	1564 g 0 N 0 N 0 N 0 A 0.049 A	Current for constant force compensation Current for compensation of dry friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction	1564 g 0 N 0 N 0 N 0 A 0.049 A	Current for constant force compensation Current for compensation of dry friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry frittion Factor for compensation of viscous friction
Total Moving Mass Gravitation force in motor direction External Constant Force Sum of Constant Effective Forces FF Constant Force FF Friction FF Damping FF Acceleration	1564 g 0 N 0 N 0 A 0 A 0.049 A 0.049 A	Current for constant force compensation Current for compensation of dry friction Factor for compensation of viscous friction Acceleration feed forward factor



With the next and last step the position drive's parameters will be set up:

Motor Wizard				
Step 6/9: PID Po	sition Cor	troller		
PID Position Co	ontroller Set	ting		
P Gain D Gain	1	A/mm A/(m/s)	Set To Default Soft (P=1, D=3, I=0) Set To Default Stiff (P=3, D=8, I=0)	
I Gain Noise Filter Dead Band	0	A/(mm*s) mm	I Enable Noise Filter	
control behavior. F given default setti The Noise Filter eli	For the most a ngs (no addit minates noise nich require hi	applications it is ional loop tuning from the positioning a igh positioning a	on feedback sensor when the motor stands still. ccuracy (typically together with an external	
Derived Settings		Value	Comment	
P Gain		1 A/mm		
D Gain		3 A/(m/s)		
I Gain		0 A/(mm*s)		
Intergrator Limit		8 A		
Maximal Current		8 A		
Noise Filter Dead Ban	d	0.02 mm		
Help <	Back	<u>N</u> ext >	Einish Cancel	

It is recommendable to start with the default soft settings, because the parameters can be changed any time later on (by restarting the motor wizard or by setting in the parameter tree directly).

With the soft parameter setting, PID values will be quite low such as the motor is low noise and the position is not controlled very stiffly.

The stiff parameter set tends to more noise and more power consumption of the motor, but the position will be controlled harder.

In both settings, the I Gain is set to zero, which means a steady-state deviation from the desired position can occur. When using the I Gain, the position controller may tend to swing.

The Noise Filter option is to reduce the noise from the position feedback sensor at standstill.

For finding the best set of PID parameters, the system has to be optimized iteratively. There is no general way of how to optimize the settings, because different goals can be achieved such as position accuracy, power minimization, noise reduction, ...



tep 7/9: Homii	ng l			
Home Position 9	earch Move			
Speed:	0.01	m/s		
Mode:	Mechanical	Stop Negative Search	•	
				
	The motor n is reached.	noves in negative direction This position is assumed to l	until a mechanical stop pe the Home Position.	
Before motion co selected mode, I	ommands can be e the motor searche	executed, the motor must b es a mechanical stop and/or	e homed. Depending on the an electrical switch.	
Before motion co selected mode, l	ommands can be e he motor searche	executed, the motor must b es a mechanical stop and/or	e homed. Depending on the an electrical switch.	
Before motion co selected mode, l	ommands can be e he motor searche	executed, the motor must b es a mechanical stop and/or	e homed. Depending on the an electrical switch.	
selected mode, I	ommands can be e he motor searche	executed, the motor must b es a mechanical stop and/or Value	e homed. Depending on the an electrical switch.	
selected mode, I	ommands can be e he motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	ommands can be e the motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be the motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be the motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be en be motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be e he motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be en be motor searche	es a mechanical stop and/or	an electrical switch.	
selected mode, I	mmands can be en be motor searche	es a mechanical stop and/or	an electrical switch.	
Before motion c selected mode, I erived Settings	mmands can be en be e	es a mechanical stop and/or	an electrical switch.	
selected mode, I	he motor searche	es a mechanical stop and/or	an electrical switch.	

The next step is to define the homing procedure.

The most frequently used homing mode is "Mechanical Stop Negative Search". In this case the slider will move with the notch towards the stator's front end (where no cable is).

Other modes support homing on home switches, limit switches, indexer inputs or some combinations of those.



Step 8 is to define the slider home position. This is for the motor and drive the most important value. It defines at the home position, where the slider is positioned relative to the stator. This defines how far the motor can move in each direction.

Motor Wizard			
Step 8/9: Homing II	I		
	r End to Slider End at the Home	Position	
Please determine eith Position (mechanical s Home Position, Then corresponding value,	10 mm 143 mm to know the physical position of the sluer distance A or distance B when the stop or switch). Hence you can move you can measure A or B (stator end to The other value is calculated by the si, then you have to give your entry a	motor stands at the Home the motor manually to the o slider end) and enter the software. If the slider end is	
Derived Settings	Value	Comment	
Slider Home Position	10 mm	Corresponds to distance A	
	ick Next > Finish	Cancel	¥

With the last wizard step the user's coordinate system can be defined.

📉 Motor Wizard					
Step 9/9: Homing III					
Definition of the Application Re	eference System				
Home Position (HP): -10 mm	143 mm 347 n				
Move to the Initial Position at t	he End of the Homing F	rocedure			
Initial Position (IP): Total Position (IP): Total can define your application specific reference system by assigning any position value to the Home Position. All further position values are based on this system. At the end of the homing procedure the motor moves to the Initial Position. Then it is ready to execute the motion commands. If the motor has to be homed on a mechanical stop, then the Initial Position value should differ from the Home Position.					
Derived Settings	Value	Comment			
Minimal Position (stroke range limit)	-70 mm	Comment			
Maximal Position (stroke range limit)	290 mm				
Distance C	20 mm				
Distance D	133 mm				
•		i	Þ		
Help Sack	lext > Einish	Cancel			

At the end, press finish. If the firmware on the drive is still running, an appropriate message will be shown. All parameters will now being written to the drive.

The motor wizard can be run several times, e.g. to setup an external sensor, to change the load setup or to change the motor type. When rerunning it, at the end will be shown a list of parameters, which will be changed.



3.15 Continuous Curve Mode

We want the motor to run a curve cyclically. (The easiest, but not so informative way to run the motor would be the VAI 2 Pos Continuous mode) The drive is set to continuous curve mode by selecting "Continuous Curve" under \Motion Control SW\Motion Interface\Run Mode Settings\RunMode Selection\ in the parameter tree.

NOTE: For enabling the curve feature on B1100 drives, it is necessary to set an access key.

Search Drive Services Options Window Too				L m L		
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oject Unnamed, IP: 10.3.10.184 (USER)	Continuous Curve		/	🗙 🕑 🛛	F	
💊 Control Panel	Name	Value	Raw Data	UPID	Туре	Scale
Es Parameters	C [*] Motion Command Interface	Off	0001h	1450h	UInt16	
⊳ <u>⊨</u> OS	C ⁺ Triggered VA-Interpolator	Off	0002h	1450h	UInt16	
Motion Control SW	C Rise Triggered VAI For/Backward	Off	000Dh	1450h	UInt16	
Drive Configuration	C ⁺ Triggered Time Curves	Off	0007h	1450h	UInt16	
Motor Configuration	C ⁺ Command Table Mode	Off	0003h	1450h	UInt16	
State Machine Setup	C ^t Triggered Command Table	Off	000Ch	1450h	UInt16	
Motion Interface	C [*] Position Indexing	Off	000Ah	1450h	UInt16	
Run Mode Settings Settings Settings	C [*] Analog	Off	0004h	1450h	UInt16	
Hun Mode Selection	C ⁺ Triggered Analog	Off	000Bh	1450h	UInt16	
Triggered Curves Settings	C [*] CAM Mode	Off	0006h	1450h	UInt16	
Command Table Settings	C ⁺ Triggered CAM Curve	Off	0008h	1450h	UInt16	
Triggered Command Table Settings	C ⁺ VAI 2 Pos Continuous	Off	0009h	1450h	UInt16	
CAM Mode Settings	Continuous Curve	On	0005h	1450h	UInt16	
	C ^L PC Motion Command Interface	Off	0010h	1450h	UInt16	
Analog Mode Settings						
VAI 2 Pos Cont Settings						
16 Bit Interface Scaling						
Predef VA Interpolator						
PV Streaming Settings						
Time Curve Settings						
Master Encoder CAM						
Position Controller						
Current Controller						
▷ Errors & Warnings						
Protected Technology Functions						
🕞 🖅 Motor Info Block						
> E sercos						
X Variables						
- 👍 Messages 🔺 Errors						
- Table Command Table						
	<					

The second parameter to be set is to define which curve has to be run. Set the parameter "Curve ID" to 1 under \Motion Control SW\Motion Interface\Time Curve Settings\.

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ile <u>S</u> earch <u>D</u> rive S <u>e</u> rvices <u>O</u> ptions <u>W</u> indow <u>T</u> o	ols <u>M</u> anuals <u>H</u> elp					
🗅 📜 🗀 📄 🖨 🖉 🖉 🗍 🕮 🗍 Unnamed, IP: 10.3.10.184	(USER) 🚽 ⊳ 🔳 🔶 🔢 🔻	🔇 💊 🖬 🍕	🖾 🕼 🛕 🗊 🗈	2		
Project • 📲 Unnamed, IP: 10.3.10.184 (USER)	<u>ů</u> 1		 Image: A start of the start of	🗙 😢 DE	F	
Control Panel	Name	Value	Raw Data	UPID	Туре	Scale
Parameters	Curve ID	1	0001h	14C8h	UInt16	1
⊳ 🗐 OS	Curve Offset	0 mm	0000000h	14C9h	SInt32	0.0001 m
Motion Control SW	^L Curve Amplitude Scale	100 %	03E8h	14CAh	SInt16	0.1 %
Drive Configuration	CurveTime Scale	100 %	2710h	14CBh	SInt16	0.01 %
Motor Configuration						
⊳ 🚍 State Machine Setup						
▲ I Motion Interface						
▷ - E Run Mode Settings						
16 Bit Interface Scaling Predef VA Interpolator						
Preder VA Interpolator PV Streaming Settings						
Time Curve Settings						
Master Encoder CAM						
Position Controller						
Current Controller						
Current Controller						
Protected Technology Functions						
Motor Info Block						
Variables						
Gli Oscilloscopes						
Errors	1					
Turves	1					
Command Table						
	•					
rameters Path:\\Motion Control SW\Motion Inte	face\Time Curve Settings\Curve ID					

Before running the curve, it is advisable to define the curve we want to run.



3.16 Defining Curves

Curves can be easily defined with the curve wizard. For this example we will define two sine curve forms over a stroke of 50mm out and in with different speeds, which will be joined together.

Now, step by step: Open the curve tool by clicking the "Show Curves" button \square in the tool button bar. Then press the "New Curve" button \square to start the curve wizard.

Curve Type Selection	×
Select Curve Type: Position vs. Tim	•
Linear Position	
	Time
< Back	Next > Cancel

As we want to define a curve in position vs. time mode we can keep the default selection and press the next button.

Curve Settings			×
Curve ID (1100): Curve Name: Setpoint Calculation Wizard Curve Length: Start Point: End Point:	2 SineOut Sine 1000 0 50	mm mm	T
	< Back	Next >	Cancel

In this mask, we will set the curve ID to 2 (we will have the merged curve with ID 1 at the end) and as name we set e.g. "SineOut". The end point is placed at 50mm. With "Next" the wizard will show some curve data:

LinMot-Talk 6

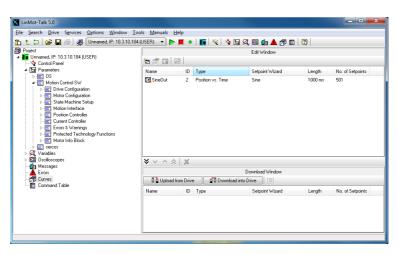


alculated Cu rve Data		×
Based on the Curve Settin curve information:	gs Data the wizard has cal	culated additional
Stroke:	50	mm
Peak Velocity:	0.07854	m/s
Peak Acceleration:	0.24674	m/s^2
		-
	-	
	< Back Next >	Cancel

The next and last mask proposes a number curve setpoints. It is advisable to accept this proposal.

Number of Setpoints	×
The proposed number of setpoints is 501.	
Number of setpoints: 501	
<u></u>	
< Back Finish Canc	el

With "Finish" the first curve is defined. The curve will be displayed as follows:



We will now define curve going back. So we start the curve wizard again and define under curve settings the following:



Curve Settings			×
Curve ID (1100): Curve Name: Setpoint Calculation Wizard Curve Length: Start Point: End Point:	3 Sineln Sine 500 50 0	ms mm mm	Y
	< Back	Next>	Cancel

Set curve ID to 3, Curve Name to "Sineln", Curve Length to 500ms, Start Point to 50mm and End Point to 0mm. Click twice "Next" and then "Finish". Now we have defined the two curve segments and will join them together. Select the two curves

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<u>File Search Drive Services Options Window Too</u>						
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Project				Edit Window		
Control Panel	12 🐨 🖾 🔛	2				
▲ En Parameters	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints
▷ - E OS ▷ - E Motion Control SW	🛃 SineDut	2	Position vs. Time	Sine	1000 ms	501
b - E sercos	🔀 Sineln	3	Position vs. Time	Sine	1000 ms	501
⊳ 🥰 Variables ⊳ 🖽 Oscilloscopes						
D -Esa Uscilloscopes 						
Errors						
Tourves						
	* * ^	×				
				Download Window		
	🗌 🖥 🖢 Upload fro	m Drive	e 🛛 🗳 🛙 Download int	to Drive		
	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints
	U					

then press the "Join Curves" button $\textcircled{\boxtimes}$. The curve settings mask for the joined curve appears:

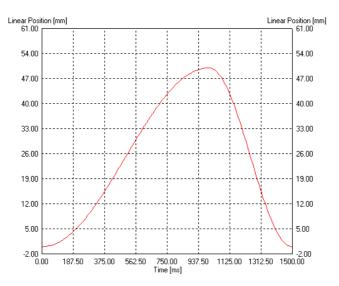
Curve Settings			×
Curve ID (1100): Curve Name: Setpoint Calculation Wizard: Curve Length:	1 SineOutIn None	ms	Y
	< Back	Next >	Cancel



We will set the curve name to "SineOutIn" and make sure the curve ID is 1. The curve length is proposes as the sum of the curve segment times. Press "Next" and "Finish". The curve for the continuous curve mode is now defined and has, according to the parameter settings, the curve ID 1. As we want to download the curves to the drive we select all the curves in the edit window and move them to the download window.

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Eile Search Drive Services Options Window Too	ls <u>M</u> anuals <u>H</u> e	lp				
🛅 🛍 🎞 🖾 🔚 🌧 🖓 🗍 Unnamed, IP: 10.3.10.184 (USER) 🔻 Þ 🖡		- 🛐 💐 🔖 🖬	💐 🖻 🛕 👘 I	E 2	
Project				Edit Window		
Innamed, IP: 10.3.10.184 (USER) Control Panel	12 12 12 12	1941				
A Es Parameters	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints
▷ - E OS ▷ - E Motion Control SW	🔀 SineOut	2	Position vs. Time	Sine	1000 ms	501
	🛃 Sineln	3	Position vs. Time	Sine	1000 ms	501
Variables	🛃 SineOutIn	1	Position vs. Time	None	2000 ms	1001
▷ - Ell Oscilloscopes						
Messages						
Command Table						
	¥ ~ ^ *	X				
				Download Window		
	🛛 🛙 🛓 Upload fro	m Drive	e 🛛 🗳 🛛 Download int	o Drive 🛛 🖬 🖌	Curves have chan	ged! Please download.
	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints
	👴 SineOut	2	Position vs. Time	Sine	1000 ms	501
	😃 Sineln	3	Position vs. Time	Sine	1000 ms	501
	\rm 4 SineOutIn	1	Position vs. Time	None	2000 ms	1001
		_				

When double click the "SineOutIn" Curve the joined curve is shown:



Now the curves must be downloaded to the drive. Therefore press the "Show Curves" button and then the "Download Curves into Drive" button **Controller**. Then a warning comes up which has to be confirmed and the progress window will display the actions taken to download the curves.



3.17 Control Status

As we have defined now all parameters and curves, we will let the motor running. For this time, we will take over the interface control from the PC. So we are interface-independent.

Switch to the control panel with the button \mathbb{N} , then press the start button (starting the drive's firmware) and wait until the control status panel is updated and looks the following:

LinMot-Talk 5.0			_ 0 <u>_ x</u>
<u>File Search Drive Services Options</u>			
🎦 1. 🎞 🖙 🖬 🔿 🛃 Unnam	ed, IP: 10.3.10.184 (USER) 🕒 Þ 📕 🔶 🔢 🖗	3 🖾 🕼 🗖 🖬 🖓	
Project Control Parel Control Parel	Control Control CC 0 Switch find.	Statu C Marking 0 0 0 Motor Hol Sense 0 Concretion Statu: 0 1 Seted 0 Motor Statu 0 Concretion Statu: 0 2 Ende 0 Motor Statu 0 Concretion Statu: Nutring 3 Ende 3 Motor Statu Nutring Motor Statu Nutring 4 Ende 0 Nutring Switched Off Nutring 5 Autor Statu 0 Nutring Nutring Nutring 6 Switch On Locked 1 Freered 0 Nutring Nutring 8 Freered 0 Freered 0 Nutring Autor Nutring 1 Hone 1 Freered 0 Nutring Autor Nutring 1 Freered 0 1 Freered 0 Autor Nutring Autor Nutring 1 1 1 1 1 Autor Nutring	
		Molion Command Interface Enable Manual Overlide: 10 mm Command Category: Mest Commondy Used Command Type: (No Operation 1000eh) Com Nibble (Togde Bin): Mane Offs: Description Scaled Value Int: Unit: Description Scaled Value Int: Discription Scaled Value Mest Command	

Now we will fetch the control over the "Switch On" and the "Home" flags.

Image: Construct on the second seco
Control Word: 003Fh

Now turn off and turn on again the "Switch On" flag, this is because of the auto start prevention. At this time, the motor will be powered and position controlled at the actual position. Set the "Home" flag and the motor will initialize against the inner hard stop.

When the motor stands still, clear the "Home" flag and the motor will run the curve continuously.

Detailed information about the MC software's state diagram can be found in the MC software manual.

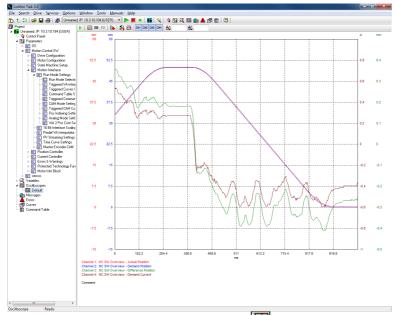


3.18 Oscilloscope

The oscilloscope is a very useful tool for tuning the motor. The LinMot-Talk software has defined a default oscilloscope, which samples the actual position, demand position, position difference and demand current. When clicking on the "Show Oscilloscope" button \square , the focus will be set to the default oscilloscope. We could start the oscilloscope now with the start button \square , but it is recommended to set the recording time about 2 seconds (one curve cycle is 1.5 s). We will switch to the oscilloscope settings with

Oscilloscope Settings	×
General Trigger Advance	ed
Acquisition Mode: Single	
Recording Time: 2071.2	212 ms
Group	Variable
MC SW Overview 💌	Act_Pos
Group	Variable Dem_Pos
Group	Variable
MC SW Overview	Diff_Pos
Group	Variable
MC SW Overview	Dem_Current
	Ok Cancel

Then press Ok and start the oscilloscope with $\boxed{}$. The recorded data on will be read out from the drive and displayed, which will look somehow like the following.



Possibly it is necessary to press button [2] (fit view).

Tuning the system would be started at this point. One possibility is by restarting the Motor Wizard and changing the load or control parameter, another one is to change the parameters directly in the parameter tree.



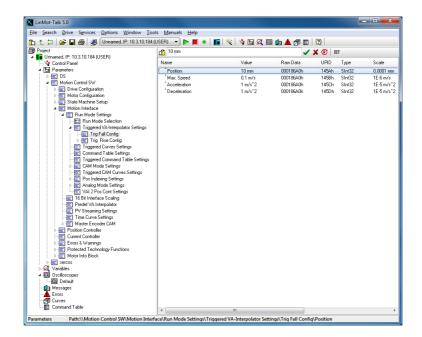
3.19 Continuous Two Point Mode

The easiest way to run the motor continuously is to set the VAI 2 Pos Continuous mode. In this mode the motor moves between the two positions Trig Fall and Trig Rise. The time the motor waits at the two positions is defined under "VAI 2 Pos Cont Settings".

The minimal settings for this mode are shown next. First the mode has to be set:

e <u>S</u> earch <u>D</u> rive S <u>e</u> rvices <u>O</u> ptions <u>W</u> indow <u>T</u> ool	s <u>M</u> anuals <u>H</u> elp					
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Project	VAI 2 Pos Continuous			🗙 🕲 🛛 DI	if.	
- 📲 Unnamed, IP: 10.3.10.184 (USER)						
💊 Control Panel	Name	Value	Raw Data	UPID	Туре	Scale
E Parameters	C [*] Motion Command Interface	Off	0001h	1450h	UInt16	
> E OS	C Triggered VA-Interpolator	Off	0002h	1450h	UInt16	
Motion Control SW Drive Configuration	C Rise Triggered VAI For/Backward	Off	000Dh	1450h	UInt16	
Grive Configuration Grive Configuration	C Triggered Time Curves	Off	0007h	1450h	UInt16	
State Machine Setup	C Command Table Mode	Off	0003h	1450h	UInt16	
A 🗐 Motion Interface	C Triggered Command Table	Off	000Ch	1450h	UInt16	
🔺 🚍 Run Mode Settings	C Position Indexing	Off	ODDAh	1450h	UInt16	
Run Mode Selection	C [*] Analog	0#	0004h	1450h	UInt16	
Triggered VA-Interpolator Settings	C Triggered Analog	Off	000Bh	1450h	UInt16	
- E Triggered Curves Settings	C [*] CAM Mode	Off	0006h 0008h	1450h	UInt16	
Command Table Settings	C [*] Triggered CAM Curve C [*] VAI 2 Pos Continuous	Off On	0009h	1450h 1450h	UInt16 UInt16	
Triggered Command Table Settings	C Continuous Curve	0ff	0005h	1450h	UInt16	
EAM Mode Settings Triggered CAM Curves Settings	C Continuous Curve	Off	0005h 0010h	1450h 1450h	UInt16 UInt16	
Inggered LAM Lurves Settings Pos Indexing Settings	C PC Motion Command Interface	UII	UUTUn	1450h	UINTIB	
Height Analog Mode Settings						
VAI 2 Pos Cont Settings						
16 Bit Interface Scaling						
Predef VA Interpolator						
Time Curve Settings						
Image: Master Encoder CAM						
Position Controller						
Current Controller						
▷ Errors & Warnings						
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 P E Motor mile block E serces 						
Variables						
Osciloscopes						
Default						
👍 Messages						
Errors						
🚮 Curves						
Command Table						
	•					

And then the positions have to be set under "Trig Fall Config\Position" and "Trig Rise Config\Position":



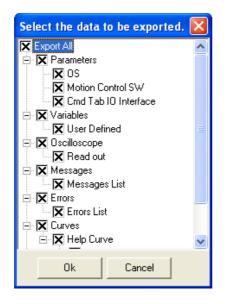
This is all we have to configure. The speed, acceleration and deceleration can also be defined at this place in the parameter tree. The motor can now be started the same way as described under 3.17 Control Status.

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3.20 Export Configuration

When the drive settings are done it is strongly recommended to save the complete configuration. This can be done under File \rightarrow Export... or with by clicking on \square . After the file name dialog the selection of the parts to be exported will be shown:



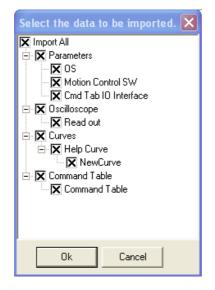
It is recommended to export all. For a configuration recovery it is necessary to select the parameters, curves and command table.

In case of a support request it is very helpful to provide the complete configuration as well (with variables, oscilloscope shots, message and error log).



3.21 Import Configuration

A configuration can be imported with File \rightarrow Import... or with the button \bowtie . When opening a configuration to a drive, a compatibility list of the parameter trees will be shown. Then the selection of the importable parts will be shown:



It is possible to import only some specific parts (e.g. curves or command table).

3.22 Open Offline Configuration

A configuration can also be opened when no drive is present. Under File \rightarrow Login/Open offline...

Login	×
Configuration Interfac	Ce: CRS232 CCAN COFFLINE
Configuration File: C:\Program Files\LI	NMOT\LinTalk11 Browse
Login ID:	USER
Password:	
	OK Cancel
🔲 Open Object Ins	pector after Login

This is a very helpful feature for supporting problems.



3.23 Create Offline Configuration

For any supported drive a configuration can be created offline. Choose the menu item File\Create Offline...

Create (Configuration Offline 🔳 🗖 🗙
Controller:	E1100-GP
Interface:	CT IO Interface
Application:	None
	OK Cancel

The above window will be shown. Select the drive first, then choose the interface and application software. The software parts, which can be selected, are the same as when installing firmware to the drive. When created the configuration, the parameters will have their default values. The configuration can then be altered and saved the normal way.



4 Trouble shooting

4.1 Setting all Parameters to Default Values

E1100, E1200, E1400, B8050, C1100-GP and C1250

All parameters of the SG3 and SG5 drives can be set to their default values without the use of the LinMot-Talk. 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.
- 4. Set the two ID switches to 0x00
- 5. Wait until the WARN and EN LEDs will flash together.
- 6. Power off and on again.

B1100

On SG4 drives an image of the default parameters will be stored during the software installation. This image can be reloaded to the operating parameters. The procedure is the following:

- 1. Set the parameter with UPID 0x6085 to 0x0001.
- 2. Power off the drive.
- 3. Power on the drive.

The value of the parameter with UPID 0x6085 will be automatically cleared to 0x0000.

4.2 Interface does not run

If the interface software (DeviceNet, CANopen, Profibus, LinRS) does not communicate there may be several reasons:

- Specific Interface Software not installed
- Switch S3.4 "Interface" on drive's bottom side must be set to "On". (In case of LinRS, this switch must be set to off when configuring over RS232, and set to on when running the LinRS interface).
- > Parameter with UPID 2008h set to disable.
- Baud Rate and Node ID selection not correctly set (Parameters and/or ID switches on drive's front).

4.3 Stopping Firmware

When the same link is used for configuration purposes and from the interface (e.g. RS232 link and LinRS interface) it may not be possible to login with the LinMot-Talk software. In some cases, it should be possible to log in, e.g. to download new firmware.

On E1100 drives, the interface switch S3.4 can be set to off and after a power up the interface software should be deactivated and the configuration link should be free. If this does not help, or you are working with a B1100 drive, there is a script under File -> Open -> StopFirmware.sct, which keeps trying to stop the drives firmware while it is powered on. After a power up, within the first 2 seconds the interface can be prevented from starting.



5 Contact Addresses

SWITZERLAND	NTI AG Haerdlistr. 15 CH-8957 Spreitenbach	
	Sales and Administration:	+41-(0)56-419 91 91 office@linmot.com
	Tech. Support:	+41-(0)56-544 71 00 support@linmot.com
	Tech. Support (Skype) :	skype:support.linmot
	Fax: Web:	+41-(0)56-419 91 92 http://www.linmot.com/
JSA	LinMot, Inc. 204 E Morrisey Dr.	
	Elkhorn, WI 53121	
	Elkhorn, WI 53121 Sales and Administration:	877-546-3270 262-743-2555
	Sales and Administration:	262-743-2555 877-804-0718

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