

Documentation of *LinMot-Talk 6* Configuration Software







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LinMot®

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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>U</u>nique <u>P</u>arameter <u>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.
 *) All parameters, which are set by the previous PnP motor, will be set to default values prior to load the new parameters.

2 Overview

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



2.1 Tool button bar

🛅 🕇 🎜 😂 🔚 🎒 💹 Unnamed, IP: 10.3.10.184 (USER) 🔍 ⊳ 📕 🔅 🖬 🌂 🍫 🖼 🚳 🕼 🕼 🖉 🔟 📿								
The t	ool I	outton bar is always present and consists of the following buttons (from left):						
	۶	Show/Hide Tree shows or hides the project tree window.						
Ĺ	≻	Up sets the focus in the project tree to the parent of the selection.						
	\succ	Toggle toggles between the last two displayed tree branches.						
≥	۶	Import Configuration imports a drive's configuration.						
	> be	Export Configuration exports a drive's configuration. Different parts, such as parameters, variables, oscilloscope or curves, can be selected to exported.						
		Save All exports a drive's configuration. Only three options to save the variables are available.						
5		Print prints items like curves, parameter configurations etc.						
.		Install Firmware Start the drive's firmware installation.						
	≻	Reboot restarts the firmware on the drive.						
	≻ cor	Stop stops the firmware on the drive, used for downloading and software nfiguration.						
		Blink sends a blink LED command to the drive, which is selected.						
8.0	۶	Go Offline logs out from actual drive.						
×	۶	Start Motor Wizard starts the motor configuration setup wizard.						
\$	۶	Show Control Panel switches to the control panel.						
Ľ.	۶	Show Parameters switches to the variables.						
		Show Variables switches to the variables.						
6		Show Oscilloscope switches to the oscilloscope.						
		Show Messages switch to the message viewer.						
		Show Errors switches to error viewer.						
同	۶	Show Curves switches to the curve tool.						
	۶	Show Command Table switches to the command table editor.						
2	≻ to e	Show Object Inspector displays a window in which shows help information each selected object.						

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 \triangleright 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 altered, the (Override Value). If other flags have to be override mask must be configured in the parameter tree under \Parameters\Motion SW\State Control 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.

LinMot-Talk 5.0			
File Search Drive Services Optio	ns Window Tools	Manuals Help	
🛅 🕇 🕽 😂 🖬 🎒 🐉 Unna	med, IP: 10.3.10.126 (US	ER) 💌 Þ 📕 🔅 🌃 🌾 🔖 🖾	🕻 🖾 🔔 者 🗊 🖥 🔍
Project	🕅 🔲		
 Image: Unnamed, IP: 10.3.10.126 (USER) Control Panel Second Parameters 	Event Time	Message	Source
Variables	001604.11.32.773	Mic Swistaneu Software Boset	MC SW State Machine
	001004.11.30.710	MC Cul Classed	MC Child State Machine
	001604.11.23.837	Tro 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	ns sw state machine
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	Trn 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
Messages Actual drive Time	: 001604:23:08		

2.4 Errors

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

LinMot-Talk 5.0					
File Search Drive Services Onti	ans Window Tools	Manuala	dala		
The Search Drive Services Option	ons window roois	Ivianuais i			
🛅 🗅 🏳 🚅 🖨 🎒 🐉 💷	amed, IP: 10.3.10.126 (US	SER) 🔹 🕨 🕨	। 📕 🔅 🔢 🕺 💘 🛯 🌜	🔺 🗇 🗉 😫	
Project	🕅 🗖				
Unnamed, IP: 10.3.10.126 (USER)	E	Euro Carla	F	6	
Control Panel	Event Time	Effor Lode	Error Message	Source	
▷ La 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	
	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	
	001581:03:28.981	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler	
E Compand Table	001581:03:02.662	0022h	Fatal Err: Motor Slider Missing	MC SW Error Handler	
	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	_
Errors Actual Drive Tim	ie:001604:24:13				

2.5 Oscilloscope

The drive's built in oscilloscope, which can record up to eight 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

🕨 🔛 📇 SD RD 🖺 💦 🔀 СН1 СН2 СН3 СН4 СН5 СН5 СН5 СН3 СН8 🔣 200 🔥 600		SD RD 🕒 🚯 🔀	CH1 CH2 CH3 CH4 CH5 CH	нь снп снв 🔣 200	600
---	--	-------------	------------------------	------------------	-----

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.
- **RD** > **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.
- **CHI** > **Show/Hide:** Show and hide the oscilloscope channels.
- Show/Hide Cursor: Two time cursors can 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.

LinMot-Talk 5.0						- • •			
File Search Drive Services Options W	indow Tools Ma	inual	s Help						
🎦 🕇 🏳 😂 🖬 🏐 🛃 🗍 Unnamed, IP:	10.3.10.126 (USER)	•	🕨 🔳 🔅 🔢 🌾	👒 🗄 💐 🖻 🏚 🛦	🔊 🖪 🛛	0			
Project				Edit Window					
 Image: Control Panel Control Panel 	10 II								
> Es Parameters	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints			
y Sakades Samo Sakades Messages	💽 SineOut 💽 SineIn 💽 SinOutIn Curve	1 2 3	Position vs. Time Position vs. Time Position vs. Time	Sine Sine None	1000 ms 500 ms 1500 ms	501 501 1501			
	¥ ∨ ^ &	x							
		**		Download Window					
	B ² Ustand Gam	Deixe	di Davala di ba			of Discondensity of			
	u g Obroad uou	DIM			es nave chang	jed! mease download.			
	Name	ID	Туре	Setpoint Wizard	Length	No. of Setpoints			
	🕛 SineOut	1	Position vs. Time	Sine	1000 ms	501			
	🕂 Sineln	2	Position vs. Time	Sine	500 ms	501			
	😍 SinUutin Curve	3	Position vs. fime	None	1500 ms	1501			

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:

12 😭 🛃 🚊

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.

> Edit 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 from Drive	🖬 🗓 Download into Drive	ID
-----------------------	-------------------------	----

> **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

1

1

> 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:

	Max. 15 Curves
	#Curves * 70Bytes + #SamplePoints 1 * 4Bytes <= 2016Bytes
Series A1	100/C1100
	Max. 49 Curves
	#Curves * 70Bytes + #SamplePoints * 4Bytes <= 32512Bytes
All other S	Series:
	Max. 99 Curves
	#Curves * 70Bytes + #SamplePoints * 4Bytes <= 65280Bytes

2.7 Parameters

🔏 LinMot-Talk 5.0									
File Search Drive Services Options Wine	dow <u>T</u> ools <u>M</u> anuals <u>H</u> e	lp							
🏠 🕇 🗂 🎯 🔲 🚳 🖉 Unnamed, IP: 10	0.3.10.184 (USER) 🔹 📘	🔳 🔶 🔤 🗠	🛛 😒 🖬 🗶 🛛	a 👍 🔺	🛪 🖬 🛛				
4 🚦 Unnamed, IP: 10.3.10.184 (USER)				· ·	V Ucr				
😵 Control Panel	Name	Value	Raw Data	UPID	Туре	Scale	Offset	Min	
▲ Eg 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	0A	
Motion Control SW	FF Spring Compensation	0 A/m	0000h	139Eh	SInt16	1 A/m	0.A/m	-30000 A/m	
A 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 Type	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 Definitions	Spring Zero Position	0 mm	00000000h	13A1h	SInt32	0.0001 mm	0 mm	-214748.36	
Position Feedback	PGain	1.5 A/mm	000Fh	13A2h	UInt16	0.1 A/mm	0.A/mm	0 A/mm	
D - E Commutation	D Gain	3 A/(m/s)	001Eh	13A3h	UInt16	0.1 A/(m/s)	0.A/(m/s)	0 A/(m/s)	
Image: Provide the second s	D Filter Time	Uus	UUUUh	13A8h	UInt16	1 us	Uus	Uus	
Motor Identification	I tian	U A/(mm*s)	UUUUh	1394h	UInt16	U.1 A/(mm^s)	U.A/(mm*s)	UA/(mm^s)	
A 📰 Motor Communication	Integrator Limit	48	UUUUUFAUh	13A5h	Sint32	0.001 A	0A 0A	UA QA	
E Communication Type	Maximal Current	4 A 0.01	00000FA0h	13450	SINU32	0.001 A	0.4	0.00	
b State Machine Setup	Noise Dieadband widen	0.01 1111	000+m	13471	Unito	0.0001 1111	0.000	0 11111	
A S Position Controller									
Totatin Controller									
Ctrl Par Set Selection									
Control Parameter Set A									
Control Parameter Set B									
Advanced Settings									
Current Controller									
Errors & Warnings									
Frotected Lechnology Functions									
b E serces									
Variables									
A B Osciloscopes									
Default									
- 🕼 Messages									
Errors									
- 🗇 Curves									
·····									
Parameters	1								

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

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:



- 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 an easy selection of a parameter.
- OK: The input value is confirmed with this button. Pressing the enter key has the same effect.
- 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.

LinMot-Talk 5.0						l l	- • • ×			
File Search Drive Services Options Window	<u>Tools</u> <u>Manuals</u> <u>H</u> elp									
동 🕇 특히 🖓 🖉 🗐 🖉 [Hennamed IP-10.3.10.184.(HISER) 🚽 📐 🗰 🔺 🗰 🛞 😒 🕓 🖾 🐼 🐽 📣 🛲 📾 🔞										
		Y 12	* * G &							
A Project	🚹 🐨 🛙 🖼 🔻 🦄 🕮 🕶 🕫 🖪 R 🗰 🕲 🥵 👘									
Control Panel	Name	Value	RawData	UPID	Туре	Scale	Offset			
▲ Tel Parameters	State Machine Main State	0	00b	1B5Eb	Liint8	1	0			
⊳ · ET OS	State Machine Sub State	Ő.	00h	1B5Eh	UInt8	1	ō			
▷ -	State	Not B	006	1860h	Llint8 Enumerator		-			
▷ - E sercos	State Var	0000h	0000h	1B62h	UInt16	1	0			
4 🕰 Variables	Demand Position	0 mm	00000000h	1B8Ah	SInt32	0.0001 mm	0 mm			
User Defined	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	0000000h	1B8Ch	SInt32	1E-5 m/s^2	0 m/s^2			
E US SW Message/Error	Actual Position	-0.000	FFFFFFAh	1B8Dh	SInt32	0.0001 mm	0 mm			
E US SW Monitoring	Actual Velocity	-0.000	FFFFFF06h	1B8Eh	SInt32	1E-6 m/s	0 m/s			
C Useb Value	Actual Velocity Filtered	0 m/s	00000000h	1BAFh	SInt32	1E-6 m/s	0 m/s			
E OS Stul 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			
E MC SW X13 Ext Sensor	Demand Current	0 A	00000000h	1B93h	SInt32	0.001 A	0 A			
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					
- E 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	10 State Bit 4 (×4.7)	FALSE	0h	1C92h	Bool					
E MC SW VA interpolator	10 State Bit 5 (×4.8)	FALSE	Oh	1C93h	Bool					
E MC SW Cuive	10 State Bit 6 (X4.9)	FALSE	Oh	1C94h	Bool					
E MC SW Montoling	IO State Bit 7(×4.10)	FALSE	Oh	1C95h	Bool					
- E MC SW Encoder CAM	10 State Bit 8 (×4.11)	FALSE	Oh	1C96h	Bool					
E MC SW Motor Data Sheet	IO State Bit 9 (X4.12)	TRUE	1h	1C97h	Bool					
E MC SW Command Table	×4 Intf Outputs	0000h	0000h	1C89h	UInt16	1	0			
-E MC SW Force Control	Digital Inputs Word	0200h	0200h	1C85h	UInt16	1	0			
E sercos	Digital Input Force Mask	0000h	0000h	1CC0h	UInt16	1	0			
▷ · I Oscilloscopes	Digital Input Force Value	0000h	0000h	1CC1h	UInt16	1	0			
Messages	X4 Output Mask	0000h	0000h	1C88h	UInt16	1	0			
Errors	Digital Output Force Mask	0000h	0000h	1CC2h	Uint16	1	0			
The Common of Table	Digital Output Force Value	0000h	UUUOh	1CC3h	Uint16	1	U			
	X4.4 Analog Voltage	0.010	0004h	1CA4h	UInt16	0.0027027027 V	07			
	×4.4 Analog Voltage Filtered	UV	0000000h	1CA7h	FloatIEEE754	U.UU27027027 V	UV			
	Diff Analog Voltage	-0.059	FFF5h	1UA6h	Sint16	0.00537056928 V	UV			
	Diff Analog Voltage Filtered	UV	00000000h	1LA8h	FloatIEEE754	0.00537056928 V	UV			

The variable service is controlled with the following buttons:

🛅 🔛 🖛 ங 🕸 🐨 🕶 🖬 R W 😢 😅 📫

- 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 1** 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.
- 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.

UPID

> 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>M</u> anuals <u>H</u> elp								
🛅 🔪 🗊 🕼 🥔 🛃 🎒 (Unnamed, IP: 10.3.10.184 (USER) 🔷 🕨 🧰 🍬 🛯 🃭 💘 🔯 🖼 🖄 🚳 🧰 🖓										
Project Jim Unnamed, IP: 10.3.10.184 (USER) Scholar Control Panel	Entry II Entry N): Iame:		2 Unnamed		Auto execute	new command on ne	xt cycle		
Parameters	Motion	Command Category:		Most Commonly Used				-		
Motion Control SW	Motion	Command Type:		VAI Go To Pos				▼ 3	0	
▶ = sercos	Targe	et Position:		0 mm						
⊳-& Variables	Maxir	nal Velocity:		1 m/s						
P-Ea Uscilloscopes	Acceleration:			10 m/s^2						
Errors	Dece	leration:		10 m/s ²						
- Durves							L			
	0	Ipload from Drive		🖸 Download to Drive	<u> </u>	ommand Table mo	dified. Please downlo	ad to drive.		
	ID	Name	Ту	pe		Par 1	Par 2	Par 3	-	
	1									
	2 Unnamed VA		VA	Al Go To Pos		Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s ²		
	3	Unnamed	VA	Al Go To Pos		Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s^2		
	4	Unnamed	VA	l Go To Pos		Pos: 0 mm	Vel: 1 m/s	Acc: 10 m/s~2	- 1	
	5								-	
	7								-	
	8								-	
									Ψ.	
								+		
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 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:

Set Access C	ode		×
Active Keys	:		
Name	Value		Access Code
Key1	5A93h - Force Closed Lo	op Control	58328193h
Key2	0000h - No Key		
Key3	0000h - No Key		
Key4	0000h - No Key		
Set Key Acc	ess Code:		
Name:	Value (HEX):	Access	Code (HEX):
Key2	5 a92	583C6	B91 Write
Note: The ke Press the "ac	ys will not be activated on the co tivate" button to reboot.	ontroller until	a reboot has been processed.
			Activate Close

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

The following picture shows the connectors on the drive used for a first commissioning (with PC only).



- > 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

The following picture shows the connectors on the drive used for a first commissioning (with PC only).



- X1 Motor Supply, use 48..72 VDC (between PWR+ and PGND). \geq
- X2 Motor Phases. \triangleright
- X3 Motor Signals. (Note: the motor phases are not present on this connector. \triangleright 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), \geq

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. \geq
- 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

The following picture shows the connectors on the drive used for a first commissioning (with PC only).



- **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

The following picture shows the connectors on the drive used for a first commissioning (with PC only).



- **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

The following picture shows the connectors on the drive used for a first commissioning (with PC only).





.	MC Link 1 (X25)
	MC Link 2 (X26)
	MC Link 3 (X27)
\	MC Link 4 (X28)



3.6 Cabling A1100



X40/41: Supply IN/OUT

- > 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.)



3.8 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. LinMot®

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 B 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.

LinMot-Talk 5.0		
LinMot-Talk 5.0 Elle Search Drive Services Options Window The Third Services Options Window Third Third Services Options Project P	Iools Manuals Help 184 (USER) ► ► ► ► ► ■	Status Status
 ▶ QC Variables ▶ 20 Occilisações ▲ Errors → Errors → Command Table 	6: Go To P Object Description What is the Object Inspector? 7: Euror Ac 8: Jog Mo Object Type Service 9: Jog Mo Object Type Control Panel 10: Specie Name Control Panel 12: Clearer Description With the Control Panel Service 13: Bo To Description With the Control Panel Service 15: Phase Control Word controls the Stat 10: Control Word Control Word controls the Stat 10: Control Wo variable shows in which state 10: Control Wo variable shows in which state - Override Va the last motion command, the last motion command, the superior controller can be reas	1 6: Drive Hot
	Open Object Inspector after Login X4.11 - Input	Close Motion Comm

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:

📉 Login	1			
Login	MACID	Device Name	User ID	Password
	34	Unnamed	USER	
Г	63	Unnamed	service	
			Login All Lo	ogin SelectedAbort

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 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.

2				X
M) Gigabit Ethernet - 10.3.10.	.87			•
Group Number.	0	۲		
			Continue	Cancel
	e M) Gigabit Ethernet - 10.3.10. ⓒ Group Number.	M) Gigabit Ethernet - 10.3.10.87	M) Gigabit Ethernet - 10.3. 10.87	M) Gigabit Ethernet - 10.3.10.87

A list of the present drives will be displayed:

📉 Login								
State	IP Address	MACID	Group	Device Name	Device Type	Release Info	User ID	Password
🗖 🛤	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	
🗖 🙀	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	
🗖 兽	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	
Scan	10.3.10.191 Again Blir	00:1A:4F:00:10:40 k Selected Show F	n Help	Lanertest3	F1400-GP-ON /1RB	4.4 Build 20120130 Login All Login Selected	Abort	

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 \bigotimes and the following window will appear:

Open						? 🔀
Look in:	C Motors		•	+ 🗈 💣	·	
My Recent Documents Desktop	CunMot Bridge M LinMot Linear M LinMot Linear M CunMot Linear M Cother Motors	todules Iodules Iotors				
My Documents						
My Computer						
My Network Places	File name: Files of type:	Actuator Data Files(*.adf) Open as read-only		•		Open Cancel

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

Open				? 🛛
Look in: Wy Recent Documents Desktop My Documents Wy Computer	LinMot Linea P501-23580, P501-2380,a P501-23860, P501-23860, P501-37820, P501-37820, P501-37820, P501-48x240F P501-48x240F	r Motors adf df .adf .adf adf HP.adf adf .adf .adf	← € ॉ ⊞	• •
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			
ep 1/9: Actuator Selec	tion		
Actuator Data File:	PS01-37x240.adf	Change Actuator	
Stator:	P501-37x240		
Clider	DL01_20+E00/420		
Slider:	PL01-20X500/420		
	The slider can be identified by it the type engraved on the surfa	is length. Newer sliders have ace.	
Slider Mounting Direction:	Regular		
	Force	Stroke	
erived Settings	Value	Comment	
MOTOR	P01-37x240/160x360	1	
Maximal Stroke (5)	360 mm		
Shortened Stroke (SS)	160 mm		
Electromagnetic Zero Position	(ZP) 130 mm		
Force Constant	40.8 N/A		
Edge Force (Fb)	58 %		
STATOR	P501-37x240		
Article Number	0150-1203		
Stator Length	347 mm		
Stator Macc	1385 g		
Diacon Mass			
SLIDER	PL01-20×500/420		
SLIDER Article Number	PL01-20x500/420 0150-1328		
SLIDER Article Number Slider Length	PL01-20x500/420 0150-1328 500 mm		
SLIDER Article Number Slider Length Slider Mass	PL01-20×500/420 0150-1328 500 mm 1064 g		
SLIDER Article Number Slider Length Slider Mass	PL01-20x500/420 0150-1328 500 mm 1064 g		

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



The next sten	is to	choose	the	flange	for c	lefinina	the	cooling	canahility
тпе пехі эгер	13 10	010030	uic	nange	101 0	ienning.	uic	coomig	capability.

Motor Wizard		
Step 2/9: Motor Co	oling	
Mounting and Cooli	ng Flange	
Type:	Standard Flange	•
	e.g. PF0x-37x200	
The bulk of power los	is is deduced over the flange. The flange	e selection affects the firmware
temperature model c	alculation, which is used for monitoring pu	urposes.
Derived Settings	Value	Comment
•		
Help < Ba	ack <u>N</u> ext > <u>F</u> inish	Cancel

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>- 0 - 1 ×</u>
Step 3/9: Extension Cab	ole Setup		
First Extension Cable Seg	ment		
Type:	K05	-	
Length:	2		
	P.		
Second Extension Cable 9	Seament		
Type:	No Extension Cable	•	
	,	_	
The ohmic resistance of ext	ension cables can be quite hig	n in relation to the motor's phase	
resistance. If the firmware is	nows the total ohmic resistan	ce it can optimize the current	
that/these segment(s) shou	ld be defined here. The cable	piece that comes directly out of the	
motor is negligible.		,	
Derived Settings	Value	Comment	
Motor Phase Resistance	11.5 Ohm		
Cable Resistance	0.16 Ohm		
Total Resistance	11.66 Ohm		
•			
	Mault > Picial	Canal	Þ



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.

in locor micard		<u> ×</u>
Step 4/9: External Po	sition Sensor System	
External Position Sens	or	
Type:	Analog Sine/Cosine (1Vpp)	
Count Direction:	Positive	
Resolution r (1/4 Period	Length): 250 um	
\leq	Tr IV	
With an additional exter can be improved. The o	nal position measuring system the positioning accuracy a ptional position sensor has to be connected to X12 on the	nd the linearity e controller.
Devived Settings	Ushua Commont	
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			
Moving Part of Motor:	Slider	•	
Orientation Angle (-90°+90°):	•		, +
Moving Mass		_	
Slider:	1064 g		
Additional Load Mass:	500 g		
Friction Forces			
Dry Friction:	2 N		
Viscous Friction:	0 N/	/(m/s)	+ - +
MagSpring (or other constant f	orce)		<u>-90°↓</u> ↔ +90°↓
External Constant Force:	0 N		
Force Direction:	Negative 🔻		
	_		
Derived Settings	Value		Comment
Total Moving Mass	1564 g		
Gravitation force in motor direction	0 N		
External Constant Force	0 N		
Sum of Constant Effective Forces	0 N		
FF Constant Force	0 A		Current for constant force compensation
FF Friction	0.049 A		Current for compensation of dry friction
FF Damping	0 A/(m/s)		Factor for compensation of viscous friction
FF Acceleration	0.038 A/(m/s^2)		Acceleration feed forward factor
•			Þ
Helo Sack N	lext > Finis	sh [Cancel

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

Motor Wizard				10_0×
Step 6/9: PID Po	sition Co	ntroller		
PID Position Co	ontroller Sel	tting		
P Gain	1	A/mm	Set To Default Soft (P=1, D=3, I=0)	
D Gain	3	A/(m/s)	Set To Default Stiff (P=3, D=8, I=0)	
I Gain	0	A/(mm*s)		
Noise Filter				
Dead Band	0.02	mm	Enable Noise Filter	
Beside the feed fo control behavior. I	orward param For the most -	eters (see previo applications it is r	us step), the PID controller setup influences the possible to achieve good results with one of the	
given default sett	ings (no addit	ional loop tuning	necessary).	
The Noise Filter el On Applications wi	iminates noise bich require b	from the positio	n feedback sensor when the motor stands still. curacy (typically together with an external	
position sensor) th	ne Noise Filter	should be disabl	ed.	
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 Bar	nd	0.02 mm		
1				
Help	Eack	Next >	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, ...



Motor Wizard				<u>ID-DX</u>
Step 7/9: Homi	ng l			
Home Position	Search Move			
Speed:	0.01	m/s		
Mode:	Mechanica	Stop Negative Search	T	
	1			
		•		
		-		
	The motor r is reached.	moves in negative direction This position is assumed to	n until a mechanical stop be the Home Position.	
Defense verklager	d b		he have all Descendes as the	
Before motion c selected mode,	ommands can be the motor search	executed, the motor must es a mechanical stop and/	be homed. Depending on the or an electrical switch.	
Before motion c selected mode,	ommands can be the motor search	executed, the motor must es a mechanical stop and/	be homed. Depending on the or an electrical switch.	
Before motion c selected mode,	ommands can be the motor search	executed, the motor must es a mechanical stop and/i	be homed. Depending on the or an electrical switch.	
Before motion c selected mode, Derived Settings	ommands can be the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the or an electrical switch.	
Before motion c selected mode, Derived Settings	ommands can be the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the or an electrical switch.	
Before motion c selected mode, Derived Settings	ommands can be the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the or an electrical switch.	
Before motion c selected mode, Derived Settings	ommands can be the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the or an electrical switch.	
Before motion c selected mode,	ommands can be i	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the or an electrical switch.	
Before motion c selected mode, Derived Settings	ommands can be i the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the r an electrical switch. Comment	
Before motion c selected mode, Derived Settings	ommands can be i the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the r an electrical switch. Comment	
Before motion c selected mode, Derived Settings	ommands can be i the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the r an electrical switch. Comment	
Before motion c selected mode,	ommands can be i the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the r an electrical switch. Comment	
Before motion c selected mode,	ommands can be i the motor search	executed, the motor must es a mechanical stop and/ Value	be homed. Depending on the 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			
Distance from Stato	End to Slider End at the Home F	Position	
Distance A Distance B The controller needs Please determine eith Position (mechanical Home Position. Then corresponding value, inside the stator tube	10 mm 143 mm o know the physical position of the slid er distance A or distance B when the m top or switch). Hence you can move th rou can measure A or B (stator end to The other value is calculated by the so then you have to give your entry a n	er relative to the stator. otor stands at the Home e motor manually to the slider end) and enter the ftware. If the slider end is agative sign.	
Derived Settings	Value	Comment	
Slider Home Position	10 mm	Corresponds to distance A	
۲ ۲			
Help < Ba	:k <u>N</u> ext > <u>E</u> inish	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 m		
Move to the Initial Position at t	he End of the Homing P	rocedure	
Initial Position (IP): 0 mm You can define your application sper Home Position. All further position v. At the end of the homing procedure execute the motion commands. If th Initial Position value should differ fro	cific reference system by ass alues are based on this syst the motor moves to the Init ne motor has to be homed or om the Home Position.	igning any position value to the em. al Position. Then it is ready to a mechanical stop, then the	
Derived Settings	Value	Comment	
Minimal Position (stroke range limit)	-70 mm		
Maximal Position (stroke range limit)	290 mm		
Distance C	20 mm		
Distance D	133 mm		
•	1		Þ
Help	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.

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Eile <u>S</u> earch <u>D</u> rive S <u>e</u> rvices <u>O</u> ptions <u>W</u> indow <u>T</u> ools <u>M</u> anuals <u>H</u> elp						
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Project	Continuous Curve		✓ ×	C DEF		
Control Panel	Name	Value	Baw Data	LIPID	Tune	Scale
▲ En Parameters	C ¹ Motion Command Interface	0#	00016	1450b	Upt16	
⊳ E OS	C Triggered VA-Internalator	0#	00026	1450h	Ulpt16	
Motion Control SW	C Bise Triggered VAI For/Backward	Off	0002.1	1450h	UInt16	
Drive Configuration	C ^t Triagered Time Curves	Off	0002h	1450h	UInt16	
Motor Configuration	C Command Table Mode	Off	0003h	1450h	UInt16	
▷ E State Machine Setup	C ^t Triggered Command Table	Off	000Ch	1450h	UInt16	
Motion Interface	C Position Indexing	Off	000Ah	1450h	UInt16	
P Run Mode Settings	C [*] Analog	Off	0004h	1450h	UInt16	
Triggered VAuhterpolator Settings	C ^t Triggered Analog	Off	000Bh	1450h	UInt16	
Triggered VS interpolator settings	C ^L CAM Mode	Off	0006h	1450h	UInt16	
Command Table Settings	C ^L Triggered CAM Curve	Off	0008h	1450h	UInt16	
E Triggered Command Table Settings	C ^L VAI 2 Pos Continuous	Off	0009h	1450h	UInt16	
▷ E CAM Mode Settings	Continuous Curve	On	0005h	1450h	UInt16	
Triggered CAM Curves Settings	O ^L PC Motion Command Interface	Off	0010h	1450h	UInt16	
Pos Indexing Settings	1					
▷ E Analog Mode Settings	1					
VAI 2 Pos Cont Settings	1					
16 Bit Interface Scaling	1					
Predet VA Interpolator	1					
Time Curve Settings	1					
Master Encoder CAM	1					
Presition Controller	1					
	1					
▷ Errors & Warnings	1					
Protected Technology Functions	1					
▷ · E Motor Info Block	1					
▷ -	1					
Variables	1					
Discilloscopes	1					
Messages	1					
Errors /	1					
Curves	1					
Command Lable						F.
Parameters Path:\\Motion Control SW\Motion Interf	ace\Run Mode Settings\Run Mode Sele	ection\Continuous	Curve			

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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Project	<mark>100</mark> 1		🗸 🗸	🕻 😢 DE	F	
Control Panel	Name	Value	Raw Data	UPID	Туре	Scale
Parameters	Curve ID	1	0001h	14C8h	UInt16	1
⊳ E OS	Curve Offset	0 mm	00000000h	14C9h	SInt32	0.0001 mm
A E Motion Control SW	^b Curve Amplitude Scale	100 %	03E8h	14CAh	SInt16	0.1 %
Drive Configuration	CurveTime Scale	100 %	2710h	14CBh	SInt16	0.01 %
State Machine Setup						
A - Motion Interface						
▷ I Run Mode Settings						
16 Bit Interface Scaling						
Predef VA Interpolator						
Time Curve Settings						
D E Master Encoder CAM						
Position Lontroller						
Current Controller						
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Hotor Info Block						
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Variables						
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Errors						
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Deservation Date (MAtion Control SWA Mation Interf	Time Course Settinged Course ID					
Parameters Path:\\Iviotion Control SW\Motion Interf	ace\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 in the tool button bar. Then press the "New Curve" button to start the curve wizard.

Curve Type Selection		×
Select Curve Type:	Position vs. Time	
Linear Position		
	Time	
	< Back Next > Canc	el

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 Wizar Curve Length: Start Point: End Point:	2 SineOut 1000 0 50	ms 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:



Calculated Curve Data		×
Based on the Curve Settin curve information:	gs Data the wizard has calculated additior	nal
Stroke:	50 mm	
Peak Velocity:	0.07854 m/s	
Peak Acceleration:	0.24674 m/s^2	
	< Back Next > Cano	el

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



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 500 50 0	ms mm mm	Y
	< Back	Next >	Cancel

Set curve ID to 3, Curve Name to "SineIn", 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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Project				Edit Window		
Control Panel	12 17 13 2	2				
▲ Ea Parameters	Name	ID Typ	be	Setpoint Wizard	Length	No. of Setpoints
Defail OS	SineOut	2 Po:	sition vs. Time	Sine	1000 ms	501
b - sercos	🔀 Sineln	3 Pos	sition vs. Time	Sine	1000 ms	501
Variables						
▷ -🔝 Osciloscopes						
Errors						
- 🗇 Curves						
Command Table						
	× × ^ à	¥				
				Download Window		
		om Drive	Download in	to Drive		
	Name	ID Typ	pe	Setpoint Wizard	Length	No. of Setpoints

then press the "Join Curves" button 🔛 . The curve settings mask for the joined curve appears:

Curve Settings			×
Curve ID (1100): Curve Name:	1		
Setpoint Calculation Wizard:	None		T
Curve Length:	1500	ms	
	< Back Ne	xt >	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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Project				Edit Window		
Image: Amage:	a 🖉 🖪 🗮					
✓ En Parameters	Name	ID	Tupe	Setpoint Wizard	Length	No. of Setpoints
▶-	Sine Dut	2	Position us Time	Sina	1000 me	501
Motion Control SW	Sineln	3	Position vs. Time	Sine	1000 ms	501
Variables	🛃 SineOutIn	1	Position vs. Time	None	2000 ms	1001
D - Ell Oscilloscopes						
Messages						
Command Table						
	$\times \sim \wedge \otimes$	Х				
			D	Iownload Window		
	🛛 🔋 🖢 Upload from	Drive	🔹 🗍 🖆 Download into E	Drive 🔟 🕂 Curv	es have chang	ed! 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
	😍 SineOutin	1	Position vs. Time	None	2000 ms	1001
	<u> </u>	_				
		_				

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 the Download into 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 3, then press the start button 1 (starting the drive's firmware) and wait until the control status panel is updated and looks the following:

Chimot-Talk 5.0			
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16 1. 🗇 🖙 🖬 🚑 🐙 Unnamed	4. IP: 10.3.10.184 (USER) 🖃 ⊳ 📕 🔶 🔢 🎉	🤾 🔟 🋕 🎢 👩 🔯	
B Project	Control <<	Status << Monitoring	
Project Control (Pr. 10.3.10.194 (USER) Control Fanel Fanel Monon Control SW Fanel Modon Control SW Fanel Modons Control SW Fanel Control SW Control	Codad Cc 0. Switch On	Status Col Marching 0 Operation Enable 0 More Share 0 Connections 1 Status 0 More Share 0 Connections 0 2 Enable Operation 0 3 More Supply Voltage High. 0 0 Connections Connect	
	L Enable Manual Override	Op. Sub State ODh	
	ID Panel	Motion Command Interface	
	Enable Manual Override	Enable Manual Override:	
	X412 - Innut		
	X4.11 - Input	Command Category. Most Commonly Used	
	X4.10 - Input	Command Type: No Operation (000xh)	
	X4.8 - Input	Count Nibble (Tonde Bits) 0h 🔹 🗔 Auto Increment Count Nibble	
	X4.7 - Input		
	X4.5 Input		
	X4.4 Input	Name Urts. Description Scaled Value Int. Value (Dec) Int. Value (Hex)	
	X4.3 · Input	Header U UUUxit: No Uperation U U UUUUh	
		Read Command Send Command	
		1	

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

Image: Constraint of the served of
Enable Manual Overlide

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 , the focus will be set to the default oscilloscope. We could start the oscilloscope now with the start button , 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 Setting General Trinner A	g s dvance	he			X
Acquisition Mode:	Single	Shot			•
Recording Time:	2071.2	212		ms	-
Group		Vari	able		
MC SW Overview	•	Act	_Pos		•
Group	.	Vari	able		.
Group	_	Vari	able		
MC SW Overview	T	Diff	_Pos		•
Group MC SW Overview	T	Vari De	able m_Current		T
			Ok	Ca	ncel

Then press Ok and start the oscilloscope with **b**. 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 🖾 (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:

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Project									
4 1 Unnamed, IP: 10.3.10.184 (USER)			× ^		r				
	Name	Value	Raw Data	UPID	Type	Scale			
▲ Es Parameters	C [*] Motion Command Interface	Off	0001h	1450h	UInt16				
⊳ 🖅 OS	O ^t Triggered VA-Interpolator	Off	0002h	1450h	UInt16				
# 📰 Motion Control SW	C Rise Triggered VAI For/Backward	Off	000Dh	1450h	UInt16				
Drive Configuration	O ^t Triggered Time Curves	Off	0007h	1450h	UInt16				
Motor Configuration	C [*] Command Table Mode	Off	0003h	1450h	UInt16				
State Machine Setup	C [*] Triggered Command Table	Off	000Ch	1450h	UInt16				
A El Motion Interface	O [®] Position Indexing	Off	000Ah	1450h	UInt16				
Figure Mode Settings	C [*] Analog	Off	0004h	1450h	UInt16				
Triggered (A Internal stor Settinge	C [*] Triggered Analog	Off	000Bh	1450h	UInt16				
Triggered Wernterpolator Settings	C [*] CAM Mode	Off	0006h	1450h	UInt16				
Compand Table Settings	C* Triggered CAM Curve	Off	0008h	1450h	UInt16				
Triggered Command Table Settings	◆ VAI 2 Pos Continuous	On	0009h	1450h	UInt16				
CAM Mode Settings	C [*] Continuous Curve	Off	0005h	1450h	UInt16				
Triggered CAM Curves Settings	C* PC Motion Command Interface	Off	0010h	1450h	UInt16				
Pos Indexing Settings									
Analog Mode Settings									
VAI 2 Pos Cont Settings									
- E 16 Bit Interface Scaling									
Predef VA Interpolator									
PV Streaming Settings									
- E Time Curve Settings									
Master Encoder CAM									
Position Controller									
Current Controller									
Errors & Warnings									
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Mator Info Black									
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P K Variables									
Default									
Managana Angelagia									
Firote									
- Tuves									
- E Command Table									
arameters Path:\\Motion Control SW\Motion Interfa	rameters Path:\\Motion Control SW\Motion Interface\Run Mode Settings\Run Mode Selection\VAI 2 Pos Continuous								

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

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<u>File Search Drive Services Options Window Tool</u>	s <u>M</u> anuals <u>H</u> elp									
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Project	-10 mm									
Unnamed, IP: 10.3.10.184 (USER)	U		× ^	Ucr 🕑						
	Name	Value	Raw Data	UPID 1	Туре	Scale				
▲ En Parameters	Position	10 mm	000186A0h	145Ah 9	5Int32	0.0001 mm				
⊳ 😑 OS	Max Speed	0.1 m/s	000186A0h	1458h S	5Int32	1E-6 m/s				
A E Motion Control SW	Acceleration	1 m/s^2	000186A0h	145Ch 9	5Int32	1E-5 m/s^2				
Drive Configuration	Deceleration	1 m/s^2	000186A0h	145Dh S	5Int32	1E-5 m/s^2				
Contraction Contiguiation										
A T Motion Interface										
A E Bun Mode Settings										
Run Mode Selection										
a 🚍 Triggered VA-Interpolator Settings										
📰 Trig Fall Config										
Trig Rise Config										
Triggered Curves Settings										
Command Table Settings										
Tinggered Command Table Settings										
Triggered CAM Durings										
Pos Indexing Settings										
Analog Mode Settings										
VAI 2 Pos Cont Settings										
16 Bit Interface Scaling										
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Parameters Path:\\Motion Control SW\Motion Interfa	ce\Run Mode Settings\Triggered VA	-Interpolator Setting	s\Trig Fall Config\F	ameters Path:\\Motion Control SW\Motion Interface\Run Mode Settings\Triggered VA-Interpolator Settings\Trig Fall 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.



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:

Select the data to be exported.	×
Export All	^
🖃 🔀 Parameters	
- 🗙 OS	
- 🗙 Motion Control SW	
🔤 🔀 Cmd Tab IO Interface	
🖻 🗶 Variables	
🔤 🗙 User Defined	≣
🖻 🗶 Oscilloscope	
🔤 🗙 Read out	
🖻 🔀 Messages	
🔤 🗙 Messages List	
🖻 🗶 Errors	
Errors List	
🖻 🗶 Curves	
🖻 🔀 Help Curve	¥
Ok Cancel	

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 2. 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:

Select the data to be imported. 🔀
 Import All Parameters Motion Control SW Cmd Tab IO Interface Coscilloscope Read out Curves Help Curve NewCurve Command Table Command Table
Ok Cancel

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	\mathbf{X}
Configuration Interfac	e: C RS232 C CAN © OFFLINE
Configuration File: C:\Program Files\LIN	IMOT\LinTalk11 Browse
Login ID:	USER
Password:	
	OK Cancel
🥅 Open Object Insp	ector 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 (onfiguration Offline 🔜 🕻	
Controller:	E1100-GP	•
Interface:	CT IO Interface	•
Application:	None	•
	OK Cano	el

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.

3.24 Compare Parameters

Under Drive \rightarrow Compare Parameters, there is a function, which allows to compare the settings between different drives.

🔀 Compare Parameters 📃 🗆 🔀								
Dri	ve 1: M	ly E1400 on COM1 (USER)	V Drive 2:	E1450-SE-QN-05 offline (USER)	×			
✓ OS Parameter ✓ Only writable Parameter ✓ Only writable Parameter								
Nr.	UPID	Path	Name	Value1	Value2			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 26 27 28 27 28 29 20 20 20 20 20 20 20 20 20 20	02828h 1194h 1194h 1197h	OS[Drive Name Motion Control SW/Motor Configuratio Motion Control SW/Motor Controller/ Motion Control SW/Motor Controller/	Drive Name Motor Type Maximal Autor Supply Voltage Phase Resistance Phase Inductance Frore Constant Maximal Autoke Sensor Type Count Direction Motor Sensor WaveForm Table Sel Phase Angle Phase Angle Phase Angle Phase Angle BackEMF Cals Cource Temperature Sensor Type Minimal Position Communication Type Position Recovery Position Tolerance FF Acceleration P Gain D Filter Time Integrator Limit Maximal Current Noise Deadband Width Minimal Position	My E1400 LinNot Plug and Play 34A Janot Plug and Play 34A 700V 2.7000hm 4.900mH 60N/A 2.300m Sine/Coster Sensor Negative ITFT Calculated 2 119.9986 Velocity Of X3 Feedback Communication -10mm 220mm None 20mm 0.054A/(m/s^2) SA/m 34A 34A 34A 34A 34A 34A	E1450-SE-CN-US No motor 40A 750V 100hm 2.800mH 25.600N/A 10000mm No Sensor Positive None 270ø -120.004ø Actual Velocity None -100000mm 100000mm 100000mm 100000mm 20A/(m/s~2) 10A/mm 20A/(m/s) 40A 40A 0mm False False			
Save	the List				Compare	Close		

This useful function works with online and offline configurations. There are different setups available, such as firmware instances (OS, MC, INTF and APPL) or parameter types (read only or writable). The parameter list can be saved as a *.pvl file (comma separated text file).

4 Trouble shooting

4.1 Setting all Parameters to Default Values

E1100, E1200, E1400, B8050, MB8050, 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 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.

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.

A1100

All parameters 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 DIP switch S5.2 to on
- 3. Power on the drive, the Error and Warn LEDs will blink alternately at ~4Hz.
- 4. Set the DIP switch S5.2 to off
- 5. Wait until the Warn and EN LEDs will flash together at ~2Hz.
- 6. Power off and on again

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

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