

# IndraDrive drive control unit

## Commissioning

## Linear drive with IndraDrive control unit



Dear Customer,

Congratulations on choosing a SCHUNK product. By choosing SCHUNK, you have opted for the highest precision, top quality and best service.

**You are going to increase the process reliability of your production and achieve best machining results – to the customer's complete satisfaction.**

**SCHUNK products are inspiring.**

Our detailed assembly and operation manual will support you.

Do you have further questions? You may contact us at any time – even after purchase. You can reach us directly at the mentioned addresses in the last chapter of these instructions.

Kindest Regards,

Your SCHUNK GmbH & Co. KG  
Precision Workholding Systems  
Bahnhofstr. 106 – 134  
D-74348 Lauffen/Neckar

Tel. +49-7133-103-2503  
Fax +49-7133-103-2189  
automation@de.schunk.com  
www.schunk.com



## Table of contents

<b>1</b>	<b>About this manual.....</b>	<b>5</b>
1.1	Purpose/validity.....	5
1.2	Target groups.....	5
1.3	Applicable documents.....	5
1.4	Symbols in the manual.....	6
<b>2</b>	<b>Basic safety notes .....</b>	<b>7</b>
2.1	Intended use .....	7
2.2	Environmental and operating conditions .....	7
2.3	Controlled production .....	8
2.3.1	Protective equipment.....	8
2.3.2	Constructional changes, attachments, or modifications.....	8
2.4	Personnel qualification .....	9
2.5	Safety-conscious working .....	9
<b>3</b>	<b>Commissioning.....</b>	<b>10</b>
3.1	Required equipment.....	10
3.2	Commissioning tasks .....	10
3.2.1	Loading motor parameters .....	13
3.2.2	Starting field bus.....	15
3.2.3	Selecting operating mode.....	15
3.2.4	Testing measuring system.....	15
3.2.5	Control loop monitoring .....	17
3.2.6	Connecting IndraDrive CS drive control unit to the power supply .....	18
3.2.7	Controller enable (CE).....	18
3.2.8	Setting reference switch .....	19
3.2.9	Mounting drive .....	19
3.2.10	Configuring software limit position .....	20
3.2.11	Configuring position and speed controller .....	21
3.2.12	Commutation setting (only up to firmware 16V10).....	22

---

<b>4</b>	<b>Appendices .....</b>	<b>23</b>
4.1	Connection schematic of IndraDrive CS (Drawing No. 357861).....	23
4.2	Designation key of files for linear motors .....	24
4.3	Assignment of the motors to the drives and files.....	25
4.4	Overview of motor types .....	27
<b>5</b>	<b>Contact .....</b>	<b>29</b>

# 1 About this manual

## 1.1 Purpose/validity

This manual is part of the drive control unit IndraDrive and describes the safe and proper use during all phases of operation.

This manual is valid only for the module specified on the front page.

## 1.2 Target groups

Target group	Task
Manufacturer, operator	<ul style="list-style-type: none"> <li>➔ Keep this manual available for the personnel at all times.</li> <li>➔ Require personnel to read and observe this manual and the applicable documents, especially the safety notes and warnings.</li> </ul>
Skilled personnel, fitter	<ul style="list-style-type: none"> <li>➔ Read, observe and follow this manual and the applicable documents, especially the safety notes and warnings.</li> </ul>

Table 1

## 1.3 Applicable documents

You can find the following documents on our homepage:

Document	Purpose
Catalog	Technical data or application parameters of the module and information on accessories. The last version is always valid.
Assembly and operating manuals for linear motor drives	Detailed information about assembly, adjustment and commissioning of the linear motor drives.
Manual and references for drive control unit IndraDrive	Detailed information about assembly, adjustment and commissioning of the drive control unit IndraDrive.
General terms of business	Including notes on the warranty.

Table 2

## 1.4 Symbols in the manual

To give you quick access to information, the following symbols will be used in this manual:







Symbol	Meaning
 <b>DANGER</b>	Dangers for persons. Nonobservance causes death or serious injuries.
 <b>WARNING</b>	Dangers for persons. Nonobservance can cause death or serious injuries.
 <b>CAUTION</b>	Dangers for persons. Nonobservance can cause slight injuries.
 <b>NOTICE</b>	Information on avoiding material damage.
✓	Prerequisite for a handling instruction.
➔	Handling instruction, also measures in a warning or note.
1. 2. 3. ...	Step-by-step handling instruction. ➔ Observe the order.
	Component/spare part represented in a graphic.
	Part/detail shown in a graphic which is part of a spare part or which must be provided by the customer.
(10), (/10/)	Reference in the text or in a handling instruction to a part that is represented in a graphic.
< >	Menus and menu items

Table 3

## **2 Basic safety notes**

### **2.1 Intended use**

The module is intended for installation in a machine. The requirements of the applicable guidelines must be observed and complied with.

The module may be used only in the context of its defined application parameters.

Any other use or use exceeding that specified is an infringement of use for intended purpose. The manufacturer bears no liability for damage resulting from such use.

### **2.2 Environmental and operating conditions**

- ➔ The module may be used only in the context of its defined application parameters (see catalog and applicable documents).
- ➔ Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Excepted are modules that are designed specially for contaminated environments.

## **2.3 Controlled production**

The module represents the state of the art and the recognized safety rules at the time of delivery. However, it can present risks if, for example:

- The module is not used in accordance with its intended purpose.
- The module is not installed or maintained properly.
- The EC Machinery Directive, the VDE directives, the safety and accident-prevention regulations valid at the usage site, or the safety and installation notes are not observed.

### **2.3.1 Protective equipment**

➔ Provide protective equipment per EC Machinery Directive.

### **2.3.2 Constructional changes, attachments, or modifications**

Additional drill holes, threads, or attachments that are not offered as accessories by SCHUNK may be attached only with permission of SCHUNK.

## 2.4 Personnel qualification

The assembly, initial commissioning, maintenance, and repair of the drive control unit may be performed only by trained specialist personnel.

Every person called upon by the operator to work on the module must have read and understood the complete Assembly and Operating Manual, especially chapter 2 “Basic safety note”. This applies particularly to occasional personnel such as maintenance personnel.

## 2.5 Safety-conscious working

- ➔ Avoid any manner of working that may interfere with the function and operational safety of the drive control unit.
- ➔ Observe the safety and accident-prevention regulations valid at the usage site.

## 3 Commissioning

### 3.1 Required equipment

The following equipment/requirements are necessary for commissioning a drive with IndraDrive

- ✓ a fully installed drive with an IndraDrive CS drive control unit (for connection schematics, see chapter “Appendices” Figure 13 Connection schematic of IndraDrive, page 23)
- ✓ PC with network connection
- ✓ the IndraWorks operating software (from version 08Vxx) installed on the PC
- ✓ Ethernet (patch cable) PC connection cable – IndraDrive (order no. 336 432)
- ✓ Commissioning CD with the motor parameters and the files for parameter selection

### 3.2 Commissioning tasks

#### **DANGER**

##### **Danger to life and limb from electric shock!**

Touching energized parts can cause death.

- ➔ Only professional electricians may carry out work on electrical systems and equipment under compliance of the rules for working with electrical systems.

**! NOTICE**

**Damage to guide block and guide beam!**

Activation of the “automatic control loop” command can cause the guide block to crash.

➔ Under no circumstances may the automatic control loop setting be activated for linear motors.

1. Wire drive control unit IndraDrive to motor and higher-order controller in accordance with the connection schematics. (see chapter 4, page 23)
2. Create connection between PC and controller.  
CAUTION: The control unit has the IP address 192.168.0.1 (default setting)  
The PC interface must have a similar IP address, e.g. 192.168.0.11 and the subnet mask must also be identical: 255.255.255.0.
3. Set the controller to Sercos III communication. This is done using the front side panel.

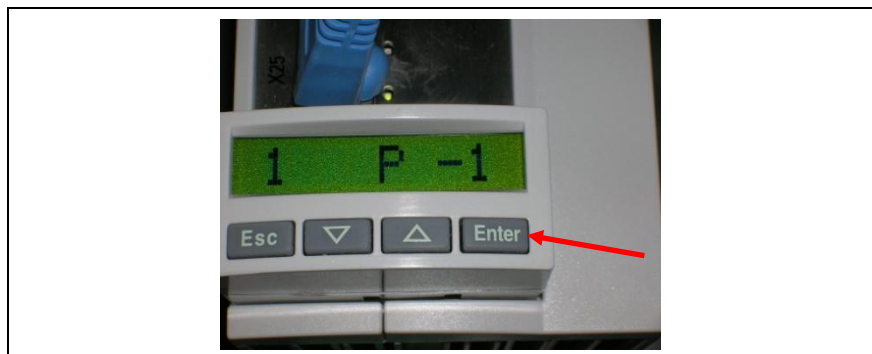




Figure 1 Front Side Panel

- Press the [Enter] key four times.  
The desired field bus option flashes on the display.
- Now use the arrow keys   to select Sercos III.
- Confirm your selection with the [Enter] key.  
The display now shows Sercos III and does **not** flash.
- Switch off the 24V supply and switch it back on again.  
The controller reboots and Sercos III is activated.  
To verify: After startup the display should show **P -1**. (See Figure 1, page 11)

4. Start IndraWorks DS on PC.

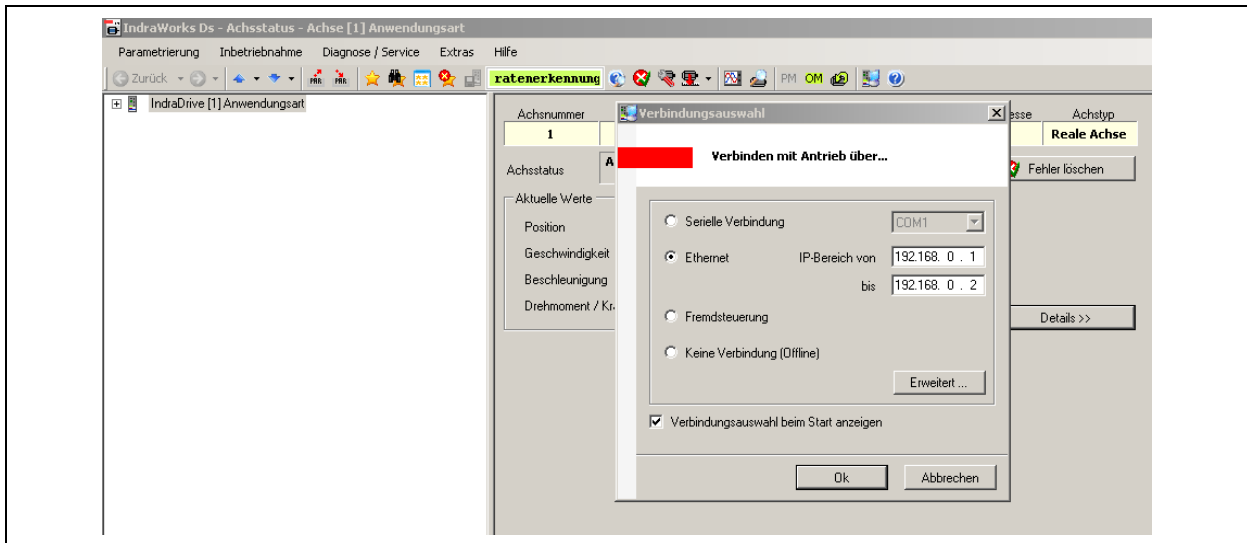


Figure 2

➔ Select Ethernet and set the IP search range.

**Note**

Operation of IndraWorks is explained in the help menu of the program.

### 3.2.1 Loading motor parameters

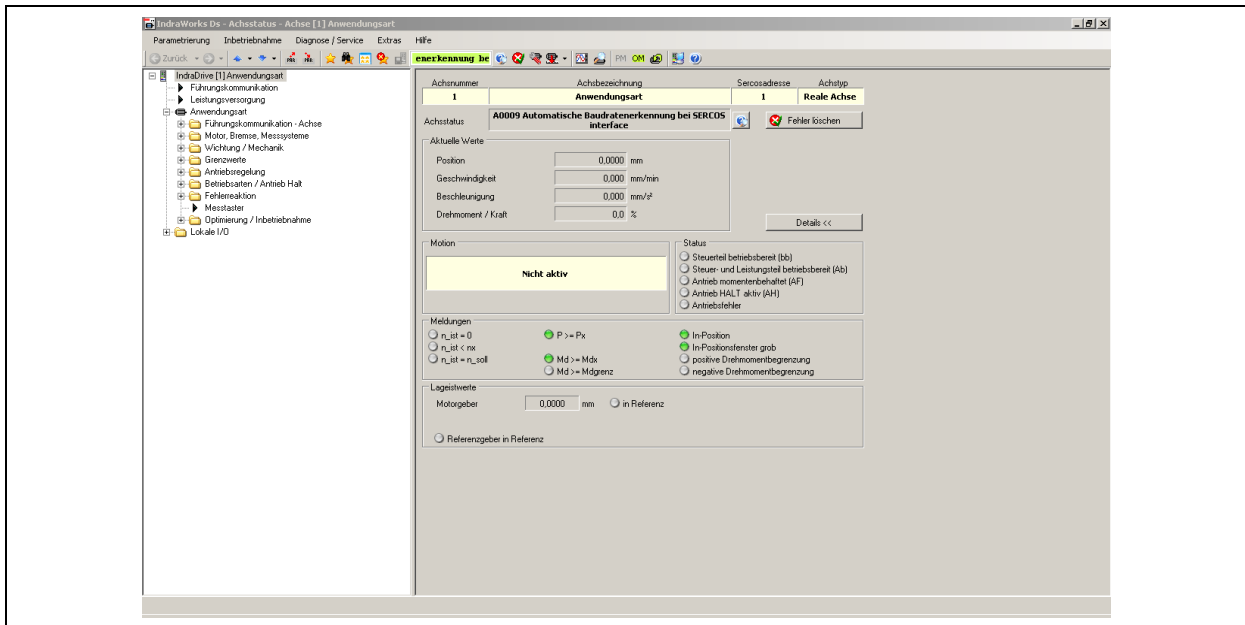


Figure 3 Project Explorer

1. In the main window of IndraWorks, select <View> → <Project Explorer>. The Project Explorer appears.

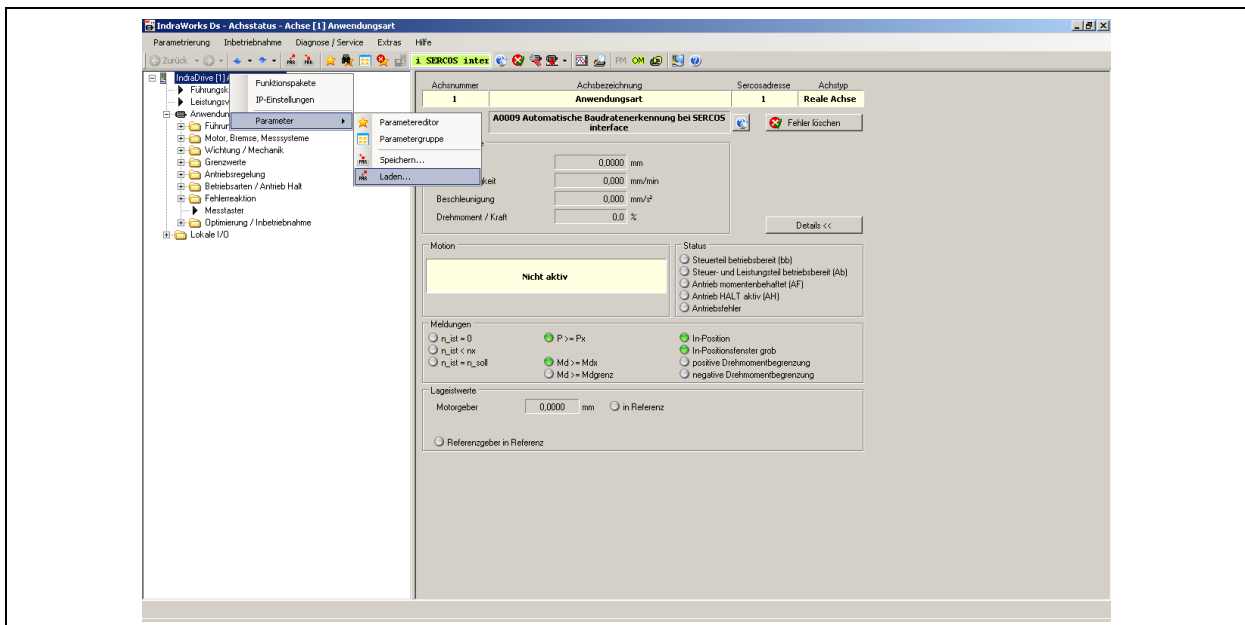


Figure 4 Selecting linear motor type

2. Right click <IndraDrive> and then select <Parameters> → <Load> from the menu which appears:

The dialog box appears:

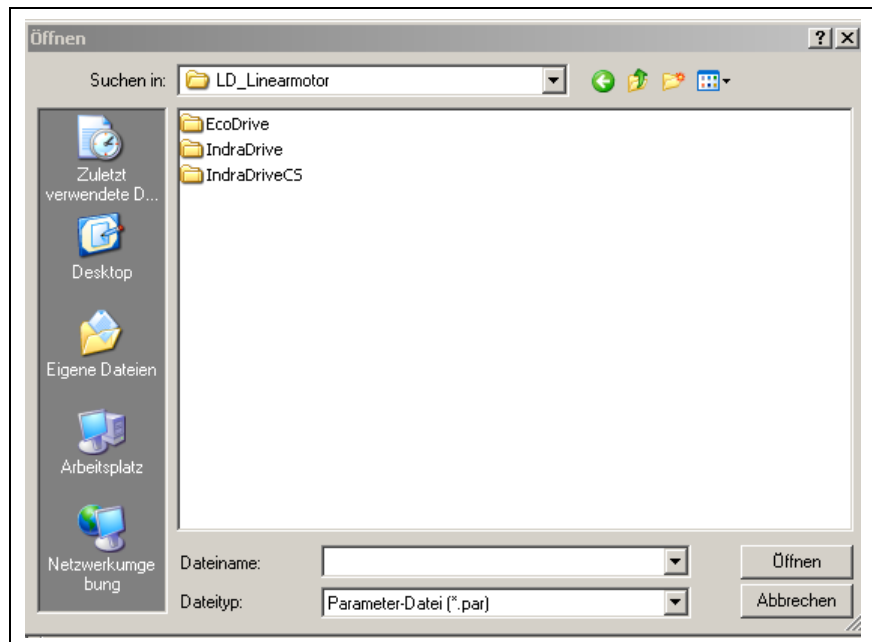


Figure 5 Importing Motor parameters

3. Select the <Motor parameters> folder on the IndraDrive commissioning CD.
4. Select relevant motor parameter file from the description key (see figure in the chapter 4.2, page 24) and select drive/linear motor assignment file (see figures in the chapter 4.3, at page 25).
5. Select the folder of the desired linear motor type in the dialog box.
6. Select desired motor parameter file in the next dialog box and open it.

The motor parameters are loaded:

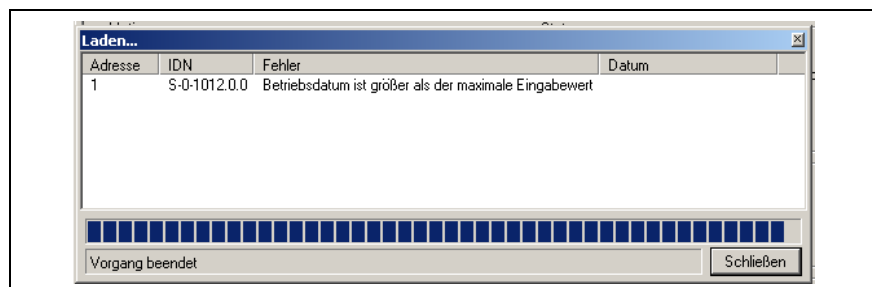


Figure 6 Loading motor parameters

### 3.2.2 Starting field bus

1. Configure field bus interface in accordance with IndraDrive manufacturer documentation and switch cabinet documentation.
2. Connect and start field bus.
3. Implement and check the wiring for controller enable, stop, reference switch and limit switch, depending on the field bus interface.

### 3.2.3 Selecting operating mode

#### **WARNING**

##### **Danger of injury!**

An improperly set operating mode can lead to undesired drive movement.

- ➔ Under no circumstances should the “Torque control” or “Speed control” operating mode be set.
- ➔ Activate contouring error monitoring and configure it sensibly.

➔ Switch the controller to the operating mode (Phase 4).

bb appears on the display of the standard operating field of the IndraDrive drive control unit.

### 3.2.4 Testing measuring system

1. In the tree view of the project Explorer, select <IndraDrive> ➔ <Application type>.

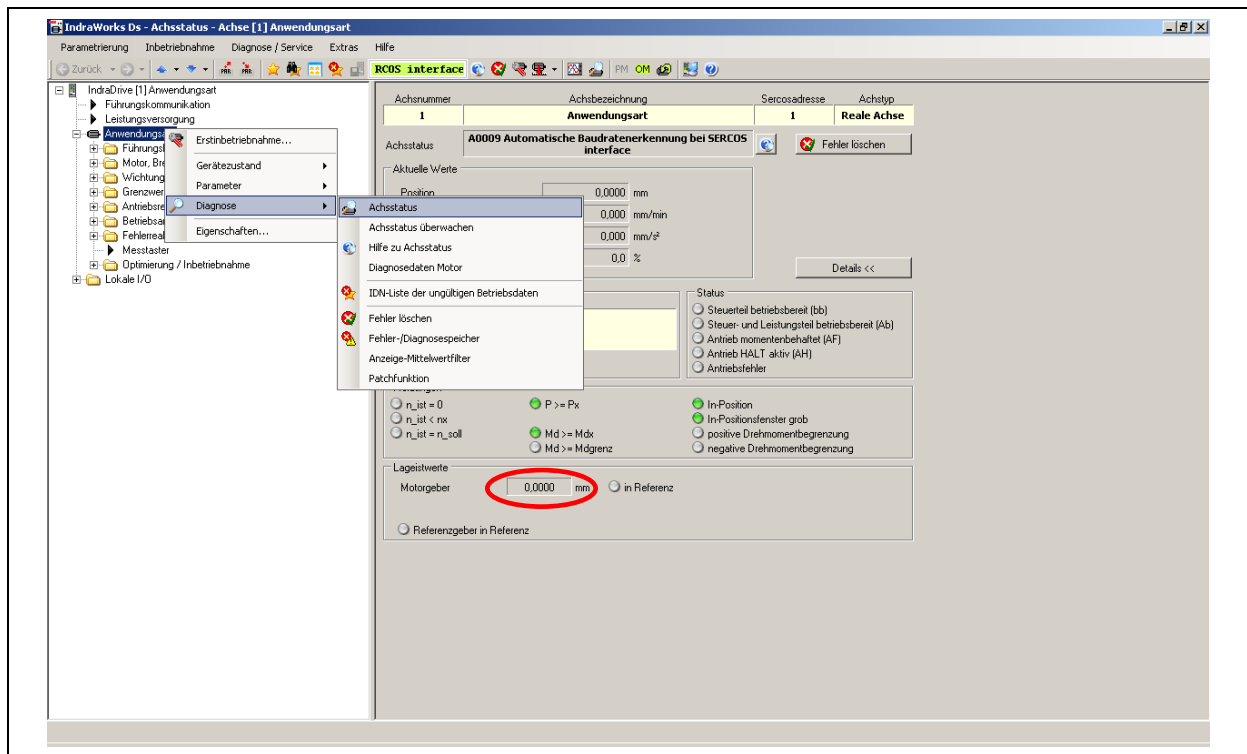


Figure 7 checking status

2. Right click <Application type> and then select <Diagnosis> → <Status> from the menu which appears.  
The dialog box for the <Status> folder appears.

### Checking and enabling functioning of the pneumatic holding brake (optional)

#### **! NOTICE**

##### **Possible damage to the linear motor axis!**

The guide beam and pneumatic holding brake can be damaged by violent movement of the guide block.

- ➔ Do not try to forcefully move the guide beam or guide block with the brake applied.
- ➔ Ensure that only minimal force is applied to the guide block when you are checking the functioning of the pneumatic holding brakes.

1. Carefully try to move the guided slide with the holding brake on.  
The guided slide should not move.
2. Apply 24 V connection to the brake valve.  
The pneumatic holding brake (optional) is enabled.

### Checking display and scale of the measuring system

1. Move guide block by hand.  
The "Position" indicator (see red marking in Figure 7 page 16) may not jump.
2. Place measuring stick (approx. 10cm) on the guide beam and slide the guide block along the measuring stick.
3. Compare the measured traversal path to the display of the actual position.

### 3.2.5 Control loop monitoring

1. In the tree view of the project Explorer, select <IndraDrive> → <Motion> → <Axis> → <Control> → <Axis control> → <control loop monitoring>. The dialog box <Control loop monitoring> appears:

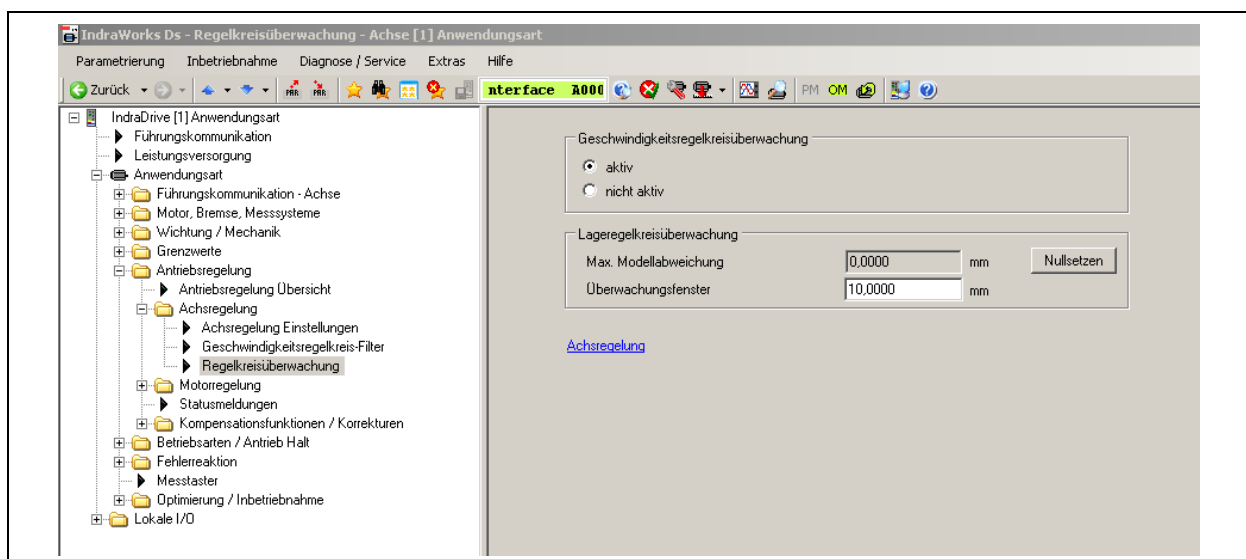


Figure 8 Control loop monitoring

#### NOTICE

##### Damage to guide block and guide beam!

If the Control Loop Monitoring dialog box is deactivated or set too large, the guide block could crash.

➔ Configure control loop monitoring **sensibly**.

2. Activate the <Velocity Loop Monitoring> option field.
3. Configure position loop monitoring.

### 3.2.6 Connecting IndraDrive drive control unit to the power supply

➔ Switch on power at the control switch cabinet (power supply connection: 380 V).

<sup>Ab</sup> appears on the display of the standard operating field of the IndraDrive drive control unit, which indicates that the IndraDrive drive control unit is connected to the power supply.

### 3.2.7 Controller enable (AF)

#### Note

The controller enable can be activated with either hardware or software, depending on the field bus system.

1. Activate controller enable (AF).
2. Activate „stop“.

<sup>AF</sup> appears on the display of the standard operating field of the IndraDrive drive control unit.

### 3.2.8 Setting reference switch

1. In the tree view of the project Explorer, select <IndraDrive> → <Motion> → <Axis> → <Create position data reference> → <Data reference motor encoder>.

The dialog box <Data reference motor encoder> appears:

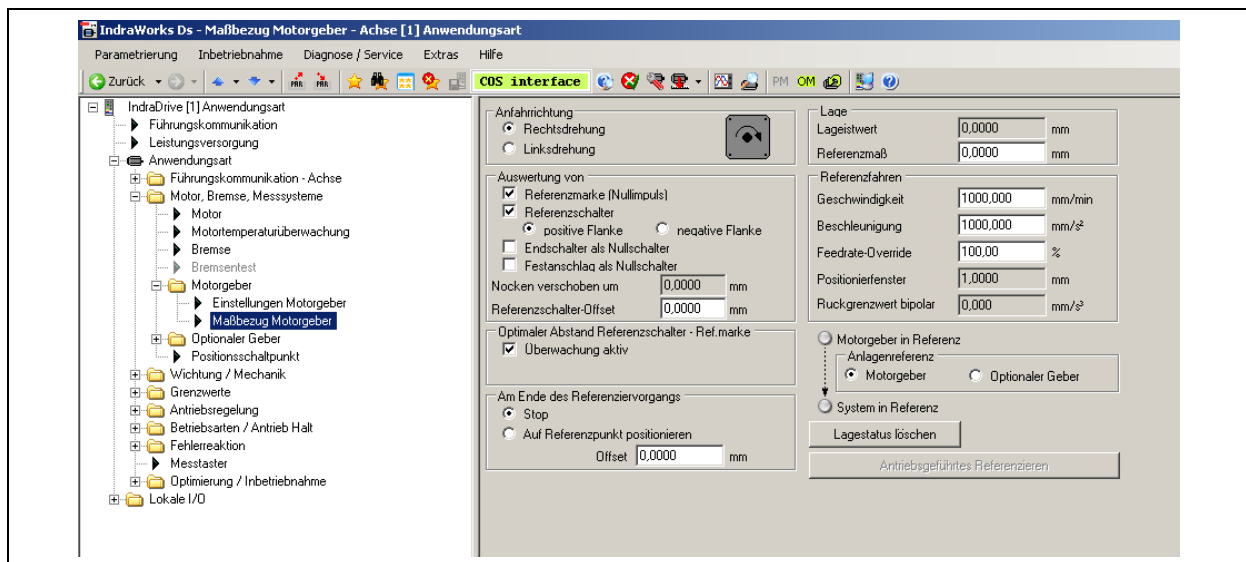


Figure 9 Data reference motor encoder

2. Slowly traverse guide block in both directions via the field bus.
3. Reference, configure and test the direction, velocity and acceleration.

#### Note

Perform configuration in accordance with the functional description in the documentation of the Rexroth IndraDrive drive control unit.

### 3.2.9 Mounting drive

1. Mount all moving modules (moving mass).
2. Set limit switch.
3. Move drive to the intended position.

### 3.2.10 Configuring software limit position

1. In the tree view of the Project Explorer, select <IndraDrive> → <Motion> → <Axis> → <Limit values>.

The dialog box <Motion Limit Values> appears:

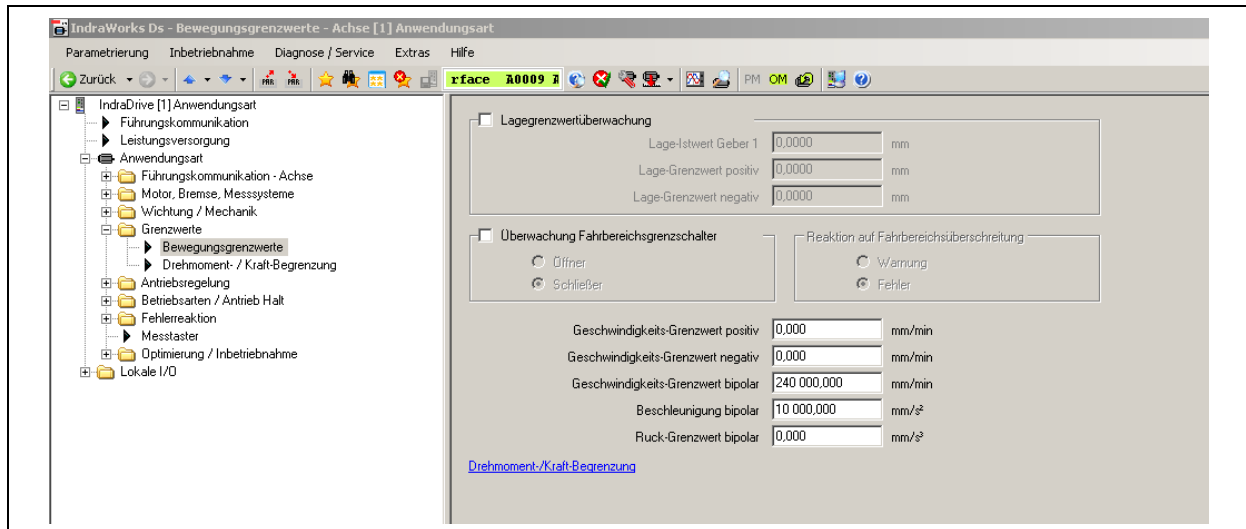


Figure 10 Motion Limit Values

2. Activate the <Position limit value monitoring> option field.
3. Activate the <Velocity Loop Monitoring> option field.
4. Set motion limit values in the dialog box.

### 3.2.11 Configuring position and speed controller

1. In the tree view of the Project Explorer, select <IndraDrive> → <Motion> → <Axis> → <Control> → <Axis control settings>. The dialog box <Axis Control> appears:

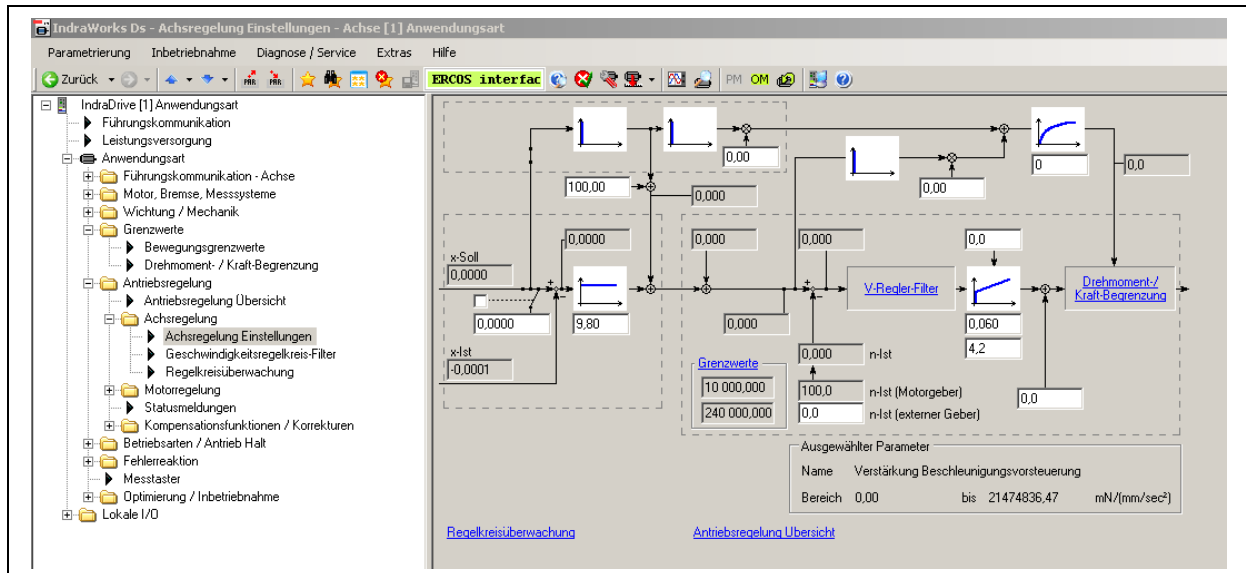


Figure 11 Axis control settings

2. Make fine settings for position controller and speed controller.

#### Note

Perform configuration in accordance with the functional description in the documentation of the Rexroth IndraDrive drive control unit (chapter <Drive control>, section <Axis control (closed-loop operation)>).

### 3.2.12 Commutation setting (only up to firmware 16V10)

1. In the tree view of the project Explorer, select <IndraDrive> → <Application type> → <Drive control> → <Motor control> → <Commutation setting>.

The <Commutation setting> dialog window appears:

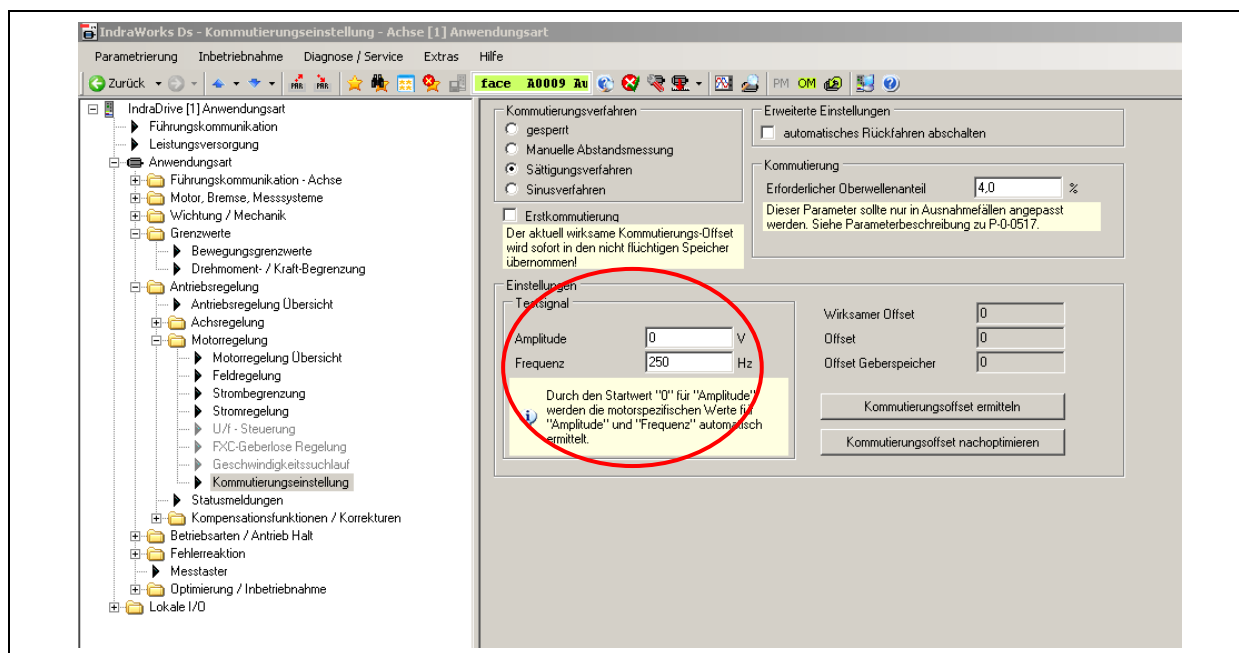


Figure 12 Commutation settings

Up to firmware 16V10, a manual modification needs to be made upon initial commutation of the drive. During its initial commutation, the drive searches independently for a voltage vector (amplitude in the test signal (see Figure 12)). In certain cases, this value is not enough to drive the motor to saturation. Therefore the value needs to be increased manually. For example, if the automatically calculated value is 68V, simply increase it by **40** to 108V. Every value that the controller calculates should be increased by **40**.

#### Note

With firmware version 16V12 and higher, manual intervention in the parameter settings is no longer necessary. The process of commutation finding was improved in these versions.

## 4 Appendices

### 4.1 Connection schematic of IndraDrive CS (Drawing No. 357861)

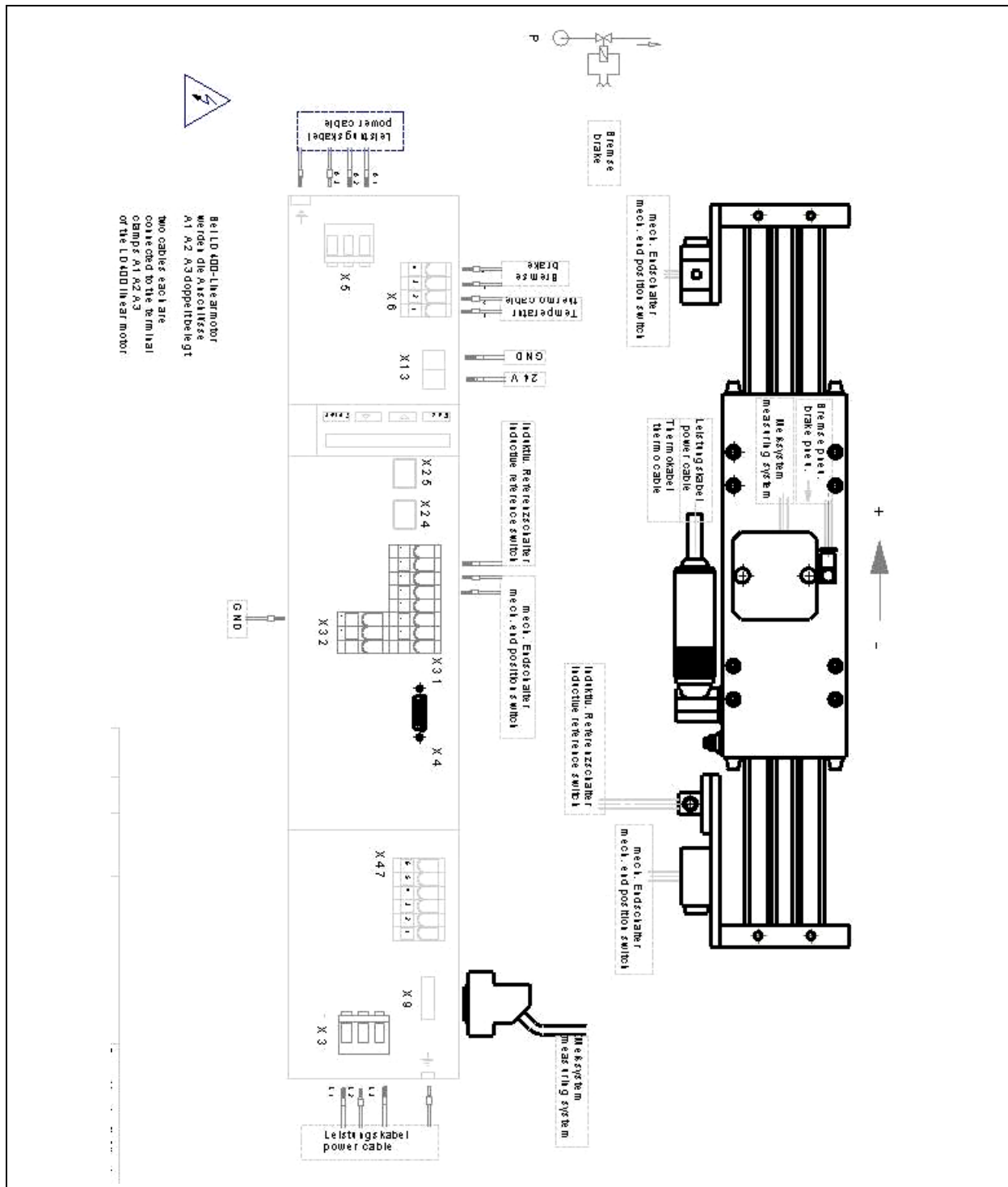


Figure 13 Connection schematic of IndraDrive

## 4.2 Designation key of files for linear motors

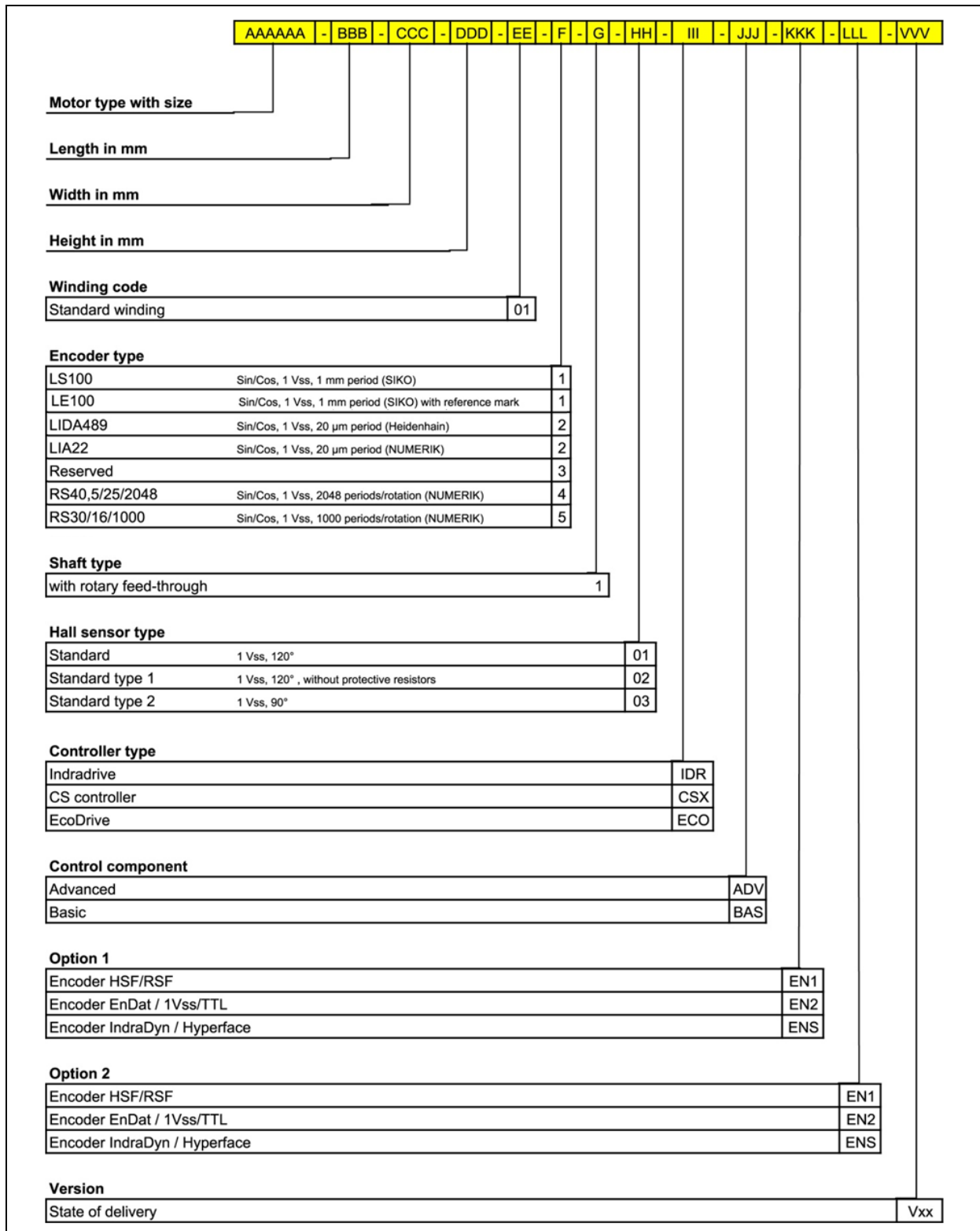


Figure 14 Designation key of files for linear motors



2" MLS 20-85-25	MLS10-250-15	MLS20-250-15	MLS30-250-15	MLS20-250-25	MLS40-250-25	MLS10-170-15	MLS20-170-15	MLS20-170-25	MLS40-170-25
MLD0001	MLD0001	MLD0001	MLD0001	MLD0001	MLD0001	MLD0001	MLD0001	MLD0001	MLD0001
5.6	31.26	4.236	5.647	5.245	7.262	2.2	3.8	3.9	6.967
5.8	3.1	4.2	5.6	5.2	7.2	2.2	3.9	3.9	6.9
32.4	6.1	16.2	24.3	16.2	32.4	6.1	16.2	16.2	32.4
206	123.104	170.143	225.189	208.182	288.247	128.144	152.144	152.144	276.288
2.2	7	3.7	2.1	3.5	1.9	7.0	3.4	3.5	1.881
40	40	40	40	40	40	40	40	40	40
1000	250	500	750	500	1000	250	500	500	1000
0.74	0.65.0.92	0.65.0.92	0.65.0.92	0.65.0.92	0.46.0.60	1.39	1.13.1.37	1.16	0.86
9.9	37.3	19.5	12.1	20.5	9.9	40.2	28	20.5	9.654
6.9	5.8	6.9	7.2	8.7	10.5	5.5	6.193.5.693	1.540.89	10.07.8.970
16.9	5.941.630100mm	6.441.74100mm	6.542.620100mm	6.841.95100mm	7.141.63100mm	1.540.89	6.193.5.693	1.540.89	10.07.8.970
50	50	50	50	50	50	50	50	50	50
15	52	29	17	29	14	5.3	29	35	6
6	5.3	6.9	6.8	6.9	6.2	6.2	6.2	6	5.2
1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
300	300	300	300	300	300	300	300	300	300
0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
5	5	5	5	5	5	5	5	5	5
2" MLS 20-85-25	MLS10-250-15	MLS20-250-15	MLS30-250-15	MLS20-250-25	MLS40-250-25	MLS10-170-15	MLS20-170-15	MLS20-170-25	MLS40-170-25
-4.5	-2.0	-3.1	-4.5	-4.1	-6.1	-1.1	-2.7	-2.8	-5.8
-29.1	-4.8	-12.9	-21.0	-12.9	-29.1	-4.8	-12.9	-12.9	-29.1
-3.6	-1.1	-2.2	-3.6	-3.2	-5.2	-0.2	-1.8	-1.9	-4.9
-26.4	-2.1	-10.2	-18.3	-10.2	-26.4	-2.1	-10.2	-10.2	-26.4
-2.6	-0.1	-1.2	-2.6	-2.2	-4.2	0.8	-0.8	-0.9	-3.9
-23.4	0.9	-7.2	-19.3	-7.2	-23.4	0.9	-7.2	-7.2	-23.4
-1.2	1.3	0.2	-1.2	-0.8	-2.8	2.2	0.6	0.5	-2.5
-19.4	4.9	-3.2	-11.3	-3.2	-19.4	4.9	-3.2	-3.2	-19.4
-3.9	-1.4	-2.5	-3.9	-3.5	-5.5	-0.5	-2.1	-2.2	-5.2
-27.4	-3.1	-11.2	-19.3	-11.2	-27.4	-3.1	-11.2	-11.2	-27.4
-2.9	-0.4	-1.5	-2.9	-2.5	-4.5	0.5	-1.1	-1.2	-4.2
-2.9	-0.4	-1.5	-2.9	-2.5	-4.5	0.5	-1.1	-1.2	-4.2
-24.4	-0.1	-8.2	-16.3	-8.2	-24.4	-0.1	-8.2	-8.2	-24.4
2.0	4.3	3.4	2.0	2.4	0.4	9.4	3.5	3.1	0.7
1.4	3.9	2.8	1.4	1.8	-0.2	4.8	3.2	3.1	0.1
-14.4	9.9	1.8	-6.3	1.8	-14.4	9.9	1.8	1.8	-14.4
5.9	8.4	7.3	5.9	6.3	4.3	9.3	7.7	7.9	4.6
3.4	5.9	4.8	3.4	3.8	1.8	6.8	5.2	5.1	2.1
-4.4	-19.9	11.8	3.7	11.8	-4.4	-19.9	11.8	11.8	-4.4
2" MLS 20-85-25	MLS10-250-15	MLS20-250-15	MLS30-250-15	MLS20-250-25	MLS40-250-25	MLS10-170-15	MLS20-170-15	MLS20-170-25	MLS40-170-25
HCS01.1EM0013_-02	HCS01.1EM0013_-02	HCS01.1EM0018_-03	HCS01.1EM0028_-03	HCS01.1EM0028_-03	HCS01.1EM0018_-03	HCS01.1EM0009_-02	HCS01.1EM0018_-03	HCS01.1EM0018_-03	MLS40-170-25
HCS01.1EM0018_-03	HCS01.1EM0018_-03	HCS01.1EM0018_-03	HCS01.1EM0028_-03	HCS01.1EM0018_-03	HCS01.1EM0018_-03	HCS01.1EM0018_-03	HCS01.1EM0018_-03	HCS01.1EM0018_-03	MLS40-170-25

Figure 16 Assignment of the motors to the drives and files (page 2 of 2)

### 4.4 Overview of motor types

Motor desig.	Axis name	Files	Short name	Length	Width	Height	Winding	Sensor type	Shaft type	Hall sensor	Controller	Control component	Option1	Option2	Version	Suffix	
			AAAAA	BBB	CCC	DDD	EE	F	G	HH	III	JJJ	KKK	LLL	VVV		
MLS05-58-15	LD50K LD50KT	Motor desig.	LDS005	- 150	- 058	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDS005	- 150	- 058	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS005	- 150	- 058	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS005	- 150	- 058	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS005	- 150	- 058	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS005	- 150	- 058	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS005	- 150	- 058	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDS005	- 150	- 058	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDS005	- 150	- 058	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		
MLS10-58-25	LD100KL	Motor desig.	LDS010	- 250	- 058	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDS010	- 250	- 058	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 250	- 058	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 250	- 058	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 250	- 058	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS010	- 250	- 058	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS010	- 250	- 058	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDS010	- 250	- 058	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDS010	- 250	- 058	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		
MLS10-85-15	LD100 LD100U LD100K	Motor desig.	LDS010	- 150	- 085	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDS010	- 150	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 150	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 150	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS010	- 150	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS010	- 150	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS010	- 150	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDS010	- 150	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDS010	- 150	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		
MLD20-85-15	LD200 Double motor	Motor desig.	LDD020	- 150	- 085	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDD020	- 150	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD020	- 150	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD020	- 150	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD020	- 150	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDD020	- 150	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDD020	- 150	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDD020	- 150	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDD020	- 150	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		
MLS20-85-25	LD200L LD200UL LD200K	Motor desig.	LDS020	- 250	- 085	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDS020	- 250	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS020	- 250	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS020	- 250	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDS020	- 250	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS020	- 250	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDS020	- 250	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDS020	- 250	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDS020	- 250	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		
MLD40-85-25	LD400L Double motor	Motor desig.	LDD040	- 250	- 085	- 037	- 01	- X	- X	- ??							
		Motor parameter	LDD040	- 250	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD040	- 250	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD040	- 250	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	. par	
			LDD040	- 250	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDD040	- 250	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
			LDD040	- 250	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	. par	
		Motor data	LDD040	- 250	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	. xls
Dimensioning	LDD040	- 250	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	. xls		

Figure 17 Overview of motor types (page 1 of 2)

Motor desig.	Axis name	Files	Short name													
			Length	Width	Height	Winding	Sensor type	Shaft type	Hall sensor	Controller	Control component	Option1	Option2	Version	Suffix	
			AAAAA	BBB	CCC	DDD	EE	F	G	HH	III	JJJ	KKK	LLL	VVV	
MLS30-85-35	LD300 LD300U	Motor desig.	LDS030	- 350	- 085	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS030	- 350	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 350	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 350	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 350	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS030	- 350	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS030	- 350	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS030	- 350	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS030	- 350	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS30-85-35 x 2	LD600 Double motor	Motor desig.	LDD060	- 350	- 085	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDD060	- 350	- 085	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD060	- 350	- 085	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD060	- 350	- 085	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD060	- 350	- 085	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDD060	- 350	- 085	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDD060	- 350	- 085	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDD060	- 350	- 085	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDD060	- 350	- 085	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS10-250-15	LD100T LD100TU	Motor desig.	LDS010	- 150	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS010	- 150	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS010	- 150	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS010	- 150	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS010	- 150	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS010	- 150	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS010	- 150	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS010	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS010	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS20-250-15	LD200T LD200TU	Motor desig.	LDS020	- 150	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS020	- 150	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 150	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 150	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 150	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS020	- 150	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS020	- 150	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS020	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS020	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS30-250-15	LD300T LD300TU	Motor desig.	LDS030	- 150	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS030	- 150	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 150	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 150	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS030	- 150	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS030	- 150	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS030	- 150	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS030	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS030	- 150	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS20-250-25	LD200TL LD200TUL	Motor desig.	LDS020	- 250	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS020	- 250	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 250	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 250	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS020	- 250	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS020	- 250	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS020	- 250	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS020	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS020	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS40-250-25	LD400TL LD400TUL	Motor desig.	LDS040	- 250	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS040	- 250	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS040	- 250	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS040	- 250	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS040	- 250	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS040	- 250	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS040	- 250	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS040	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS040	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS60-250-25	LD600TL LD600TUL	Motor desig.	LDS060	- 250	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDS060	- 250	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS060	- 250	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS060	- 250	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDS060	- 250	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS060	- 250	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDS060	- 250	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDS060	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDS060	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls
MLS60-250-25 x 2	LD1200 Double motor	Motor desig.	LDD120	- 250	- 250	- 037	- 01	- X	- X	- ??						
		Motor parameter	LDD120	- 250	- 250	- 037	- 01	- 1	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD120	- 250	- 250	- 037	- 01	- 2	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD120	- 250	- 250	- 037	- 01	- 3	- X	- 01	- IDR	- ADV	- EN2	- EN1	- V01	par
			LDD120	- 250	- 250	- 037	- 01	- 1	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDD120	- 250	- 250	- 037	- 01	- 2	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
			LDD120	- 250	- 250	- 037	- 01	- 3	- X	- 02	- IDR	- BAS	- ENS	- EN2	- V01	par
	Motor data	LDD120	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	MOT	- V01	xls
	Dimensioning	LDD120	- 250	- 250	- 037	- 01	-	-	-	-	-	-	-	DIM	- V01	xls

Figure 18 Overview of motor types (page 2 of 2)

## 5 Contact

**GERMANY – HEAD OFFICE**

SCHUNK GmbH & Co. KG  
Spann- und Greiftechnik  
Bahnhofstrasse 106 – 134  
D-Lauffen/Neckar  
Tel. +49-7133-103-0  
Fax +49-7133-103-2399  
info@de.schunk.com  
www.schunk.com

**CANADA**

SCHUNK Intec Corp.  
190 Britannia Road East,  
Units 23-24  
Mississauga, ON L4Z 1W6  
Tel. +1-905-712-2200  
Fax +1-905-712-2210  
info@ca.schunk.com  
www.ca.schunk.com

**DENMARK**

SCHUNK Intec A/S  
Storhaven 7  
7100 Vejle  
Tel. +45-43601339  
Fax +45-43601492  
info@dk.schunk.com  
www.dk.schunk.com

**HUNGARY**

SCHUNK Intec Kft.  
Széchenyi út. 70.  
3530 Miskolc  
Tel. +36-46-50900-7  
Fax +36-46-50900-6  
info@hu.schunk.com  
www.hu.schunk.com

**AUSTRIA**

SCHUNK Intec GmbH  
Holzbauernstr. 20  
4050 Traun  
Tel. +43-7229-65770-0  
Fax +43-7229-65770-14  
info@at.schunk.com  
www.at.schunk.com

**CHINA**

SCHUNK Intec Precision  
Machinery Trading (Shanghai)  
Co., Ltd.  
Xinzhuang Industrial Park  
479 Chundong Road  
Minhang District  
Shanghai 201108  
Tel. +86-21-51760266  
Fax +86-21-51760267  
info@cn.schunk.com  
www.cn.schunk.com

**FRANCE**

SCHUNK Intec SARL  
Parc d'Activités des Trois  
Noyers 15, Avenue James de  
Rothschild  
Ferrières-en-Brie  
77614 Marne-la-Vallée  
Cedex 3  
Tel. +33-1-64 66 38 24  
Fax +33-1-64 66 38 23  
info@fr.schunk.com  
www.fr.schunk.com

**INDIA**

SCHUNK Intec India Private  
Ltd. # 80 B, Yeswanthpur  
Industrial Suburbs,  
Bangalore 560 022  
Tel. +91-80-40538999  
Fax +91-80-41277363  
info@in.schunk.com  
www.in.schunk.com

**BELGIUM, LUXEMBOURG**

SCHUNK Intec N.V./S.A.  
Bedrijvencentrum Regio Aalst  
Industrielaan 4, Zuid III  
9320 Aalst-Erembodegem  
Tel. +32-53-853504  
Fax +32-53-836351  
info@be.schunk.com  
www.be.schunk.com

**CZECH REPUBLIC**

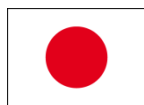
SCHUNK Intec s.r.o.  
Drážni 7  
627 00 Brno  
Tel. +420-545 229 095  
Fax +420-545 220 508  
info@cz.schunk.com  
www.cz.schunk.com

**GREAT BRITAIN, IRELAND**

SCHUNK Intec Ltd.  
Cromwell Business Centre  
10 Howard Way,  
Interchange Park  
Newport Pagnell MK16 9QS  
Tel. +44-1908-611127  
Fax +44-1908-615525  
info@gb.schunk.com  
www.gb.schunk.com

**ITALY**

SCHUNK Intec S.r.l.  
Via Barozzo  
22075 Lurate Caccivio (CO)  
Tel. +39-031-4951311  
Fax +39-031-4951301  
info@it.schunk.com  
www.it.schunk.com



**JAPAN**

SCHUNK Intec K.K.  
45-28 3-Chome Sanno  
Ohta-Ku Tokyo 143-0023  
Tel. +81-33-7743731  
Fax +81-33-7766500  
s-takano@tbk-hand.co.jp  
www.tbk-hand.co.jp



**POLAND**

SCHUNK Intec Sp.z o.o.  
ul. Słoneczna 116 A  
Stara Iwiczna  
05-500 Piaseczno  
Tel. +48-22-7262500  
Fax +48-22-7262525  
info@pl.schunk.com  
www.pl.schunk.com



**SOUTH KOREA**

SCHUNK Intec Korea Ltd.  
# 907 Joongang  
Induspia 2 Bldg.,  
144-5 Sangdaewon-dong  
Jungwon-gu, Seongnam-si  
Kyunggi-do, 462-722  
Tel. +82-31-7376141  
Fax +82-31-7376142  
info@kr.schunk.com  
www.kr.schunk.com



**SWITZERLAND,  
LIECHTENSTEIN**

SCHUNK Intec AG  
Im Ifang 12  
8307 Effretikon  
Tel. +41-523543131  
Fax +41-523543130  
info@ch.schunk.com  
www.ch.schunk.com



**MEXICO, VENEZUELA**

SCHUNK Intec S.A. de C.V.  
Calle Pirineos # 513 Nave 6  
Zona Industrial Benito Juárez  
Santiago de Querétaro,  
Qro. 76120  
Tel. +52-442-211-7800  
Fax +52-442-211-7829  
info@mx.schunk.com  
www.mx.schunk.com



**RUSSIA**

OOO SCHUNK Intec  
ul. Samojlovoj, 5, lit. C  
St. Petersburg 192102  
Tel. +7-812-326-78-35  
Fax +7-812-326-78-38  
info@ru.schunk.com  
www.ru.schunk.com



**SPAIN, PORTUGAL**

SCHUNK Intec S.L.U.  
Foneria, 27  
08304 Mataró (Barcelona)  
Tel. +34-937 556 020  
Fax +34-937 908 692  
info@es.schunk.com  
www.es.schunk.com



**TURKEY**

SCHUNK Intec  
Bağlama Sistemleri ve  
Otomasyon San. ve Tic. Ltd. Şti.  
Küçükyali İş Merkezi  
Girne Mahallesi  
Irmak Sodak, A Blok, No: 9  
34852 Maltepe, Istanbul  
Tel. +90-216-366-2111  
Fax +90-216-366-2277  
info@tr.schunk.com  
www.tr.schunk.com



**NETHERLANDS**

SCHUNK Intec B.V.  
Speldenmakerstraat 3d  
5232 BH 's-Hertogenbosch  
Tel. +31-73-6441779  
Fax +31-73-6448025  
info@nl.schunk.com  
www.nl.schunk.com



**SLOVAKIA**

SCHUNK Intec s.r.o.  
Mostná 62  
949 01 Nitra  
Tel. +421-37-3260610  
Fax +421-37-6421906  
info@sk.schunk.com  
www.sk.schunk.com



**SWEDEN**

SCHUNK Intec AB  
Morabergsvägen 28  
152 42 Södertälje  
Tel. +46-8 554 421 00  
Fax +46-8 554 421 01  
info@se.schunk.com  
www.se.schunk.com



**USA**

SCHUNK Intec Inc.  
211 Kitty Hawk Drive  
Morrisville, NC 27560  
Tel. +1-919-572-2705  
Fax +1-919-572-2818  
info@us.schunk.com  
www.us.schunk.com