



Superior Clamping and Gripping



## Product data sheet

Stroke module LDK

## Flexible. Reliable. Fast.

### Stroke module LDK

Compact short stroke axis with linear motor and roller guidance

#### Field of application

For use in clean and slightly polluted environment. For faster and precise moving or controlled press-in operation of workpieces in the high-speed assembly, measurement and testing technology, microelectronics or in the medical technology.

#### Advantages – Your benefits

**Almost no wear parts** For long service life and reliability of the system

**No mechanical play between the drive components** for flexible response behavior and high positioning accuracy

**Low oscillations and high holding force** for the shortest positioning times and process stability

**Integrated motor and measuring system in the axis** minimizes interfering contours and space requirements

**Can be fitted with absolute stroke measuring system** Less programming effort and time saving when commissioning and in operation

**High dynamics for shorter cycle times** therefore a high productivity is achieved

**Many different variants possible e.g. long slides** for special optimization on exactly your application

**Optional pneumatic holding brake as rod lock** for process reliability during system downtime

**Optionally certified safety devices according to SIL2/PLd** with the HIPERFACE® and DRIVE-CliQ interfaces for applications with high standards in the area of machine safety



Sizes  
Quantity: 1

Max. stroke  
200 mm

Max. driving force  
250 .. 500 N

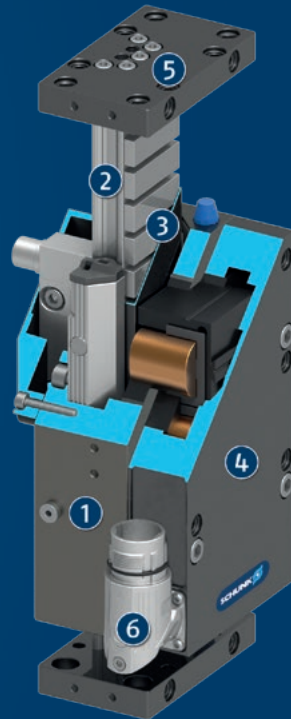
Repeat accuracy  
±0.01 mm

Max. speed  
4 m/s

## Functional description

The electric drive consists of a primary part (motor coil) and a secondary part (permanent magnets). The phase and the amplitude of the applied electrical current are regulated in the controller. Depending on the application,

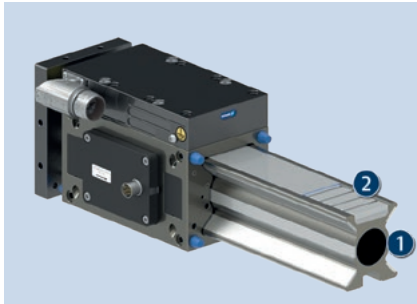
this sets the profile fitted with magnets in motion or moves the slides of the axis.



- ① **Pneumatic holding brake**  
for maintaining the position in downtime
- ② **High precision, hardened and ground steel guide rails**  
for optimal guidance properties and speeds
- ③ **Integrated secondary parts**  
with high power magnets
- ④ **Compact primary part slide**  
with mounting surfaces, scope-free adjusted rollers and integrated measuring system
- ⑤ **End plates**  
for mounting sensors, shock absorbers, and additional attachments
- ⑥ **Motor plug**  
Position right/left can be selected

## Detailed functional description

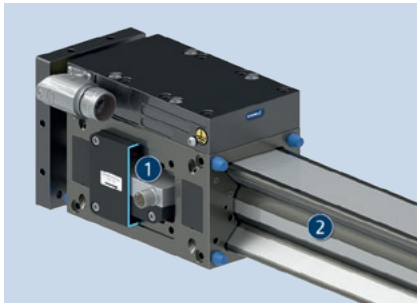
### Design of the linear direct axis



The linear direct axes of the product series LDx (illustration corresponds to linear module LDN) comprise a motor slide with integrated primary part and measuring system. The secondary part consists of permanent magnets and is integrated into the axis profile of the linear axis.

- ❶ Axis profile (e.g. steel guide rail or aluminum profile)
- ❷ Permanent magnets with dirt cover

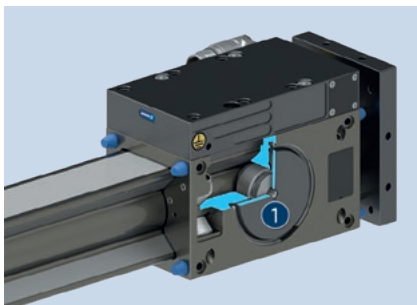
### Modular transducer system



The linear module (similar to illustration) is available with three different path measuring systems. The incremental stroke measuring system has a 1Vss interface. The absolute path measuring systems are optionally available with the interfaces: HIPERFACE® or DRIVE-CLiQ.

- ❶ Measuring system reading head, fixed on the motor slide
- ❷ Measuring system tape measure, fixed on the aluminum profile

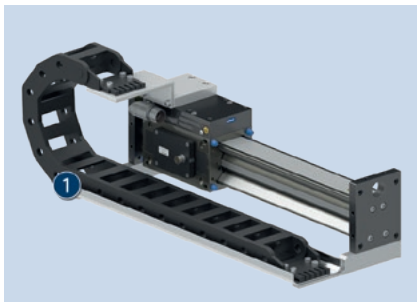
### Pneumatic holding brake



On option, the linear module (similar to illustration) is equipped with a holding brake. This holding brake is pneumatically actuated. Its function is activated in a non-ventilated state. The holding brake is used to maintain the position of the linear axis in a currentless state.

- ❶ Holding brake, operated pneumatically

### Drag chain



Matching cable tracks are available as accessories for the linear axes. (Similar to illustration). These are adapted to the respective effective stroke, supplied incl. mounting material, and if necessary, pre-assembled.

- ❶ Drag chain

## Ordering example

LDK - EL - 0100 - 270 - 0500 - 1 - LXBV - 111A - SB03 - 0132

### Axis version

LDH = linear direct drive with narrow short-stroke profile  
 LDK = linear direct drive with short-stroke profile  
 LDN = linear motor drive with single X profile  
 LDM = Linear direct drive with double X-profile  
 LDT = Linear direct drive with triple X-profile  
 LDL = Linear direct drive with flat profile

### Guidance and motor versions

E = non-supported version  
 U = supported version

### Slide length

S = standard slide  
 L = Long slide

### Size

### Nominal stroke

### Overall length

### Number of active slides

### Option group 1

Number 1: Motor option  
 Number 2: Additional passive slides option  
 Number 3: On option holding brake in active slide  
 Number 4: On option valve

### Option group 2

Number 1: Reference switch option  
 Number 2: Limit switch option  
 Number 3: On option drag chain  
 Number 4: On option wipers

### Option group 3

Number 1: Shock absorbers option  
 Numbers 2 – 4: Mounting strips

### Option group 4 Measuring system

Number 1: stroke measuring system  
 Number 2: Position measurement system  
 Number 3: Cable length  
 Number 4: Controller interface

## General notes about the series

**Guidance:** Roller guide

**Drive:** Linear direct drive based on a 3-phase, electronically commutated and permanently excited AC synchronous linear motor

**Stroke measuring system:** Contactless, magnetic measuring system with incremental and absolute variants; with HIPERFACE®, 1Vss and DRIVE-CLiQ interfaces.

**Profile:** Width of steel guide rail

**Slide:** Aluminum slide, primary part and measuring system reading head directly integrated

**Scope of delivery:** Accessory pack with centering sleeves and assembly and operating manual with declaration of incorporation

**Drive controller:** Bosch Rexroth IndraDrive and Siemens SINAMICS drive control units supported as standard; matching parameters supplied on DVD, other manufacturers available on request.

**Warranty:** 24 months

**Service life characteristics:** on request

**Repeat accuracy:** defined as the spread of the target position after 100 consecutive positioning cycles under constant conditions.

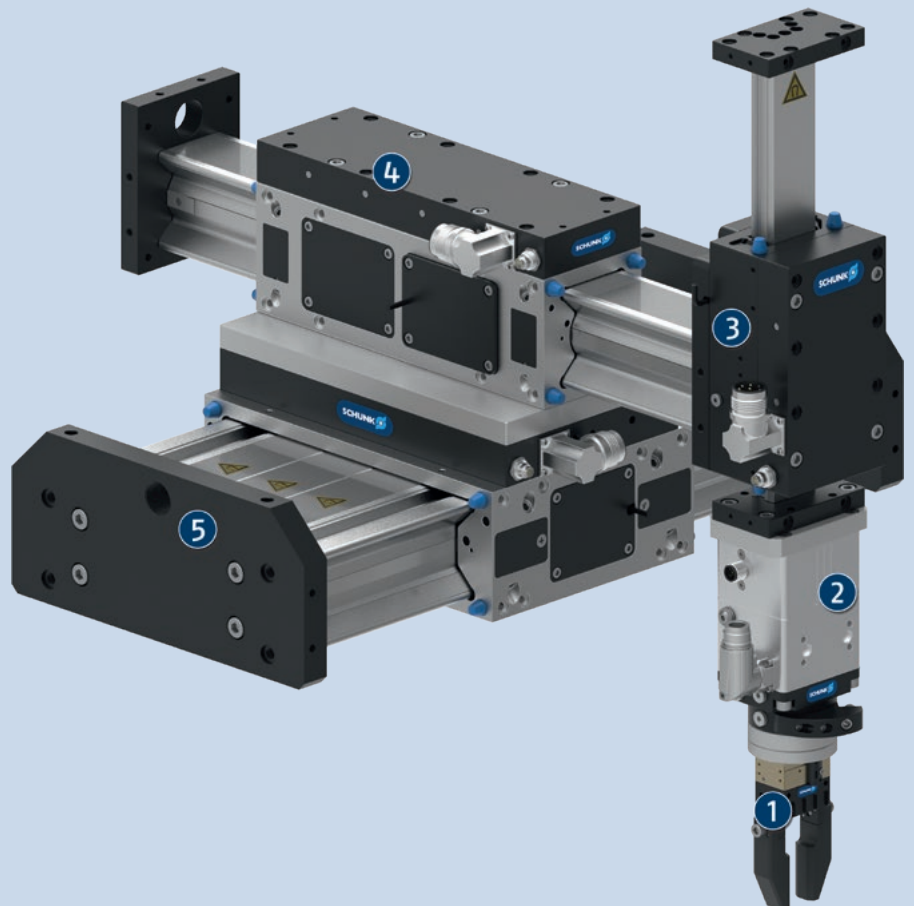
**Ambient conditions:** The modules are mainly designed for the use in clean ambient conditions. Please note that the life time of the modules can shorten if they are used in harsh ambient conditions, and that SCHUNK cannot assume liability in such cases. Please contact us for assistance.

**Layout or control calculation:** Verifying the sizing of the selected unit is necessary, since otherwise overloading can result. Please contact us for assistance.

## Application example

Linear gripper rotary unit for dynamic movement of small components.

- ① 2-finger parallel gripper MPG-plus
- ② Miniature rotary module ERD
- ③ Stroke module LDK
- ④ Universal linear module LDN
- ⑤ Universal linear module LDT



## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Gripper for small components



Universal gripper



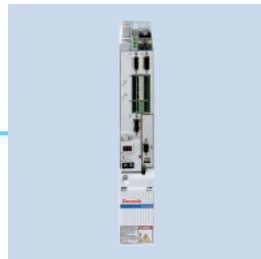
Rotation unit



Rotary gripper module



Power and encoder cables



Drive controller



Drag chain



Pillar assembly system

① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

## Options and special information

**Modular transducer system:** The linear module (similar to illustration) is available with three different path measuring systems. The incremental stroke measuring system has a 1Vss interface. The absolute path measuring systems are optionally available with the interfaces: HIPERFACE® or DRIVE-CLiQ.

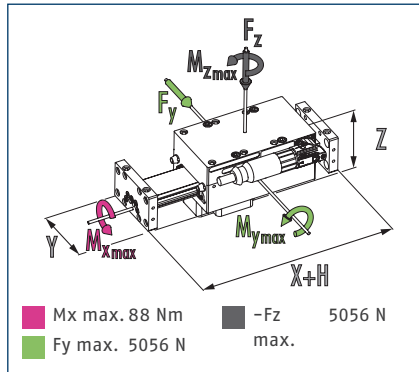
**Pneumatic holding brake:** On option, the linear module is available with a holding brake. This holding brake is pneumatically actuated. Its function is activated in a non-ventilated state. The holding brake is used to maintain the position of the linear axis in a currentless condition.

**Supported axis version:** The axis profile can also be given additional support. When using high payloads, this keeps bending to a minimum, and provides another option for mounting.

**Certified encoder system:** The encoder systems with the HIPERFACE® (optional) and DRIVE-CLiQ interfaces are certified according to SIL2/PLd. This means that even demanding applications with high requirements in the area of machine safety can be implemented. Please contact us for further information.

**NEW: Version with food –compliant lubrication (H1G):** on request as a solution for an easy entry into medical technology, lab automation,, pharmaceutical and food industry. The requirements of EN 1672-2:2020 are not fully met.

### Dimensions and maximum loads



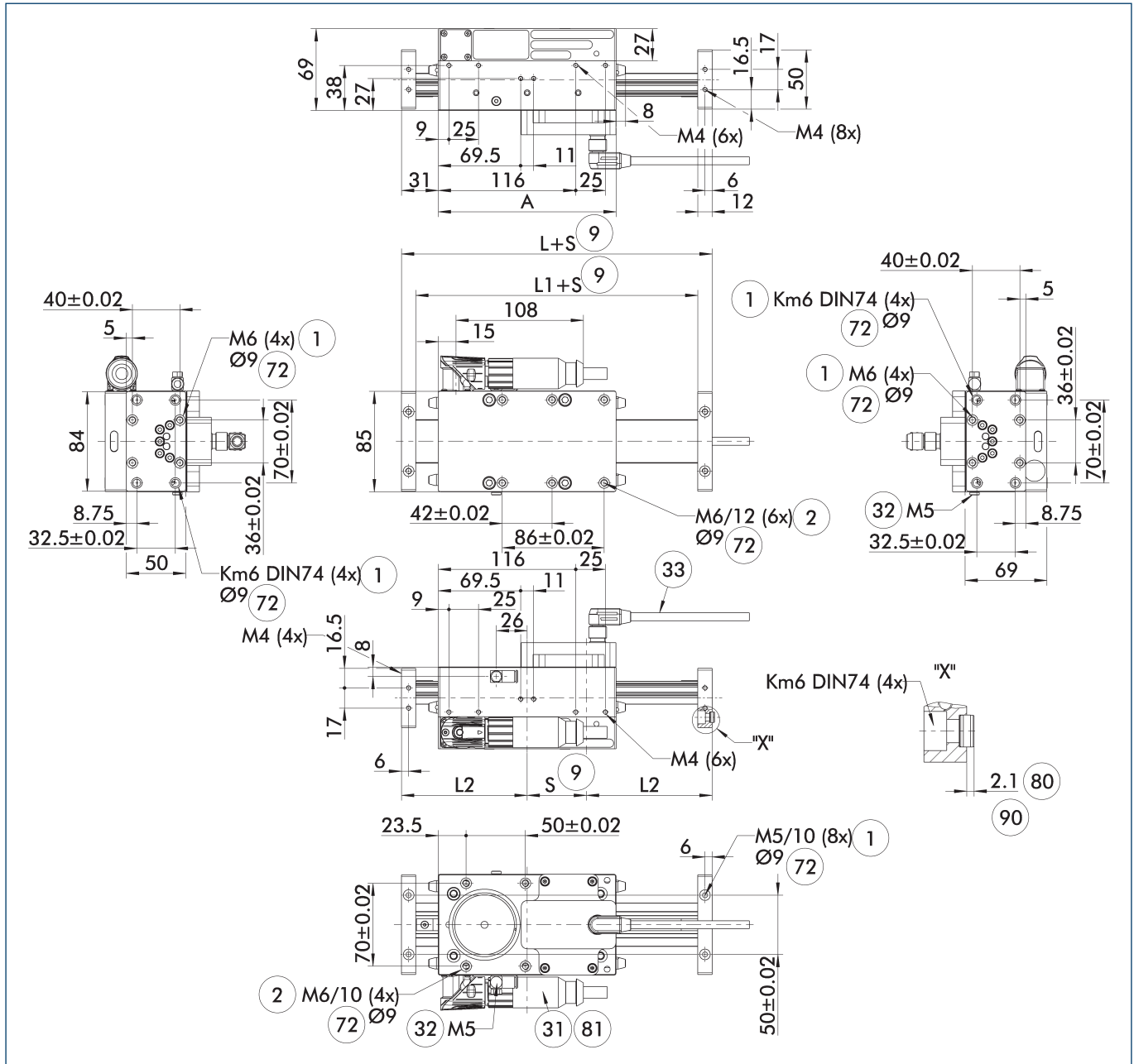
ⓘ The forces and torques shown here are maximum values for static loading.

### Technical data

Description		LDK-ES-0100	LDK-EL-0200
Drive concept		Linear direct drive	Linear direct drive
Max. stroke H	[mm]	200	200
Max. driving force	[N]	250	500
Nominal force	[N]	115	185
Max. payload (vertical)	[kg]	3	6
Repeat accuracy	[mm]	±0.01	±0.01
Max. speed	[m/s]	4	4
Max. acceleration	[m/s <sup>2</sup> ]	40	40
Max. current	[A]	7.5	15
Max. standstill current	[A]	1.98	3.19
Min./max. ambient temperature	[°C]	5/40	5/40
Weight slide and motor	[kg]	2.87	4.57
Weight of end plates	[kg]	0.23	0.23
Additional mass per 100 mm stroke	[kg]	0.34	0.34
Dimensions X x Y x Z	[mm]	212 x 85 x 69	312 x 85 x 69
Moments $M_y$ max./ $M_z$ max.	[Nm]	354/354	607/607
Forces $F_z$ max.	[N]	7584	10112
<b>Options and their characteristics</b>			
Supported version		LDK-US-0100	LDK-UL-0200
Max. stroke	[mm]	200	200
Weight slide and motor	[kg]	2.87	4.57
Weight of end plates	[kg]	0.36	0.36
Additional mass per 100 mm stroke	[kg]	0.47	0.47



Main view

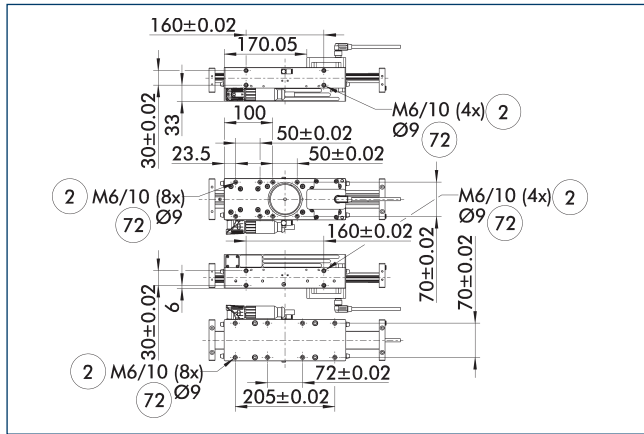


The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- ① Connection linear unit
- ② Attachment connection
- ⑨ Nominal stroke
- ③① Motor plug
- ③② Pneumatic connection for holding brake
- ③③ cable for position measuring system
- ⑦② Fit for centering sleeves
- ⑧① Depth of the centering sleeve hole in the counter part
- ⑧① Not included in the scope of delivery
- ⑨① Applies to all centering sleeves

Description	A	L	L1	L2
	[mm]	[mm]	[mm]	[mm]
LDK-ES-0100	150	212	188	106
LDK-EL-0200	250	312	288	156

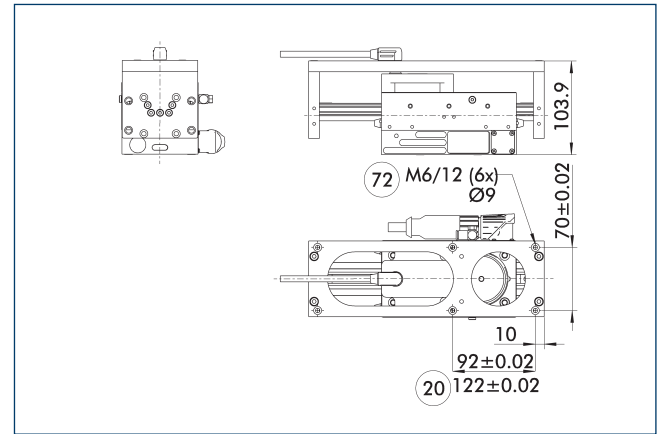
### Version with long slide



- ② Attachment connection
- ⑦② Fit for centering sleeves

The side view shows the dimensional changes when using a long slide.

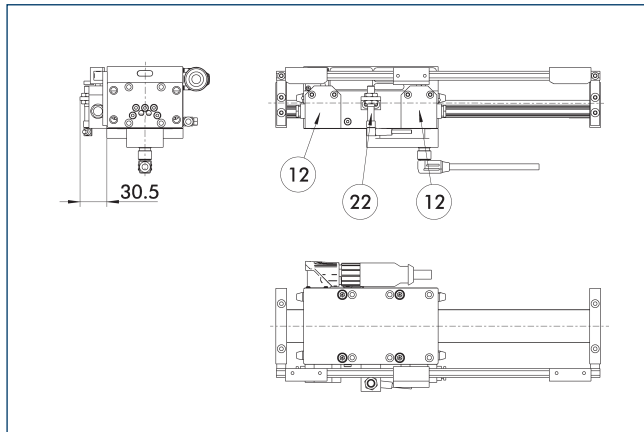
### Supported version



- ②① With long slide plate
- ⑦② Fit for centering sleeves

The support reduces bending and permits an additional type of mounting.

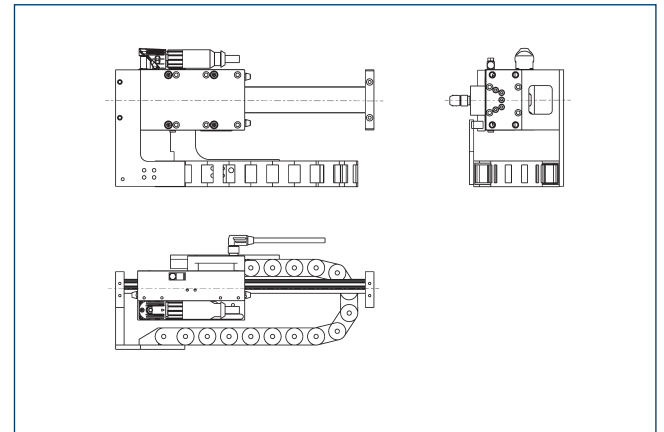
### Limit and reference switch



- ①② Mechanical limit switches
- ②② Inductive reference switch
- ②① With long slide plate

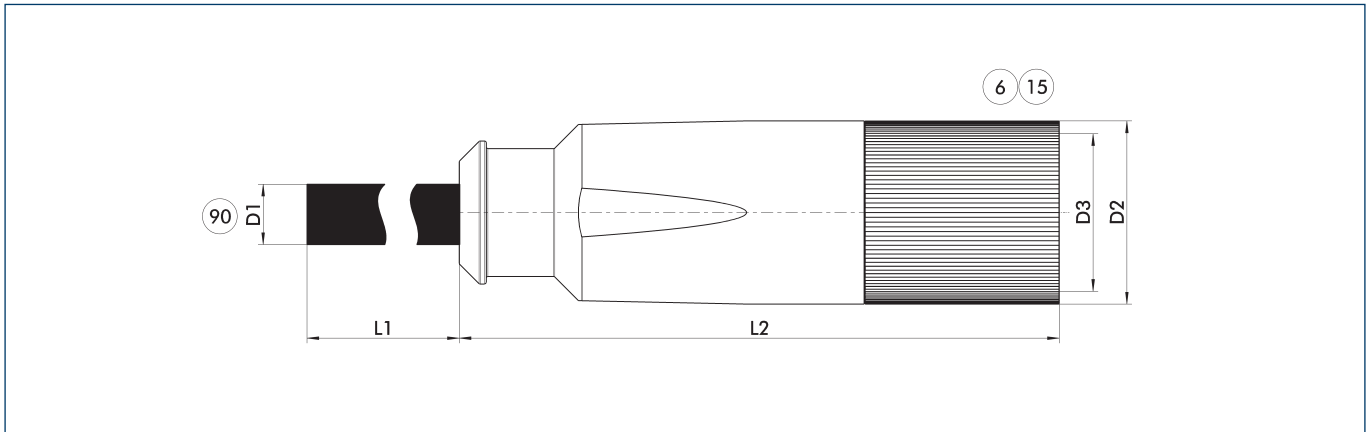
The limit and reference switches are not mandatory for operating of the linear module.

### Drag chain



Matching cable tracks are available as accessories for the linear axes. (Similar to illustration). These are adapted to the respective effective stroke, supplied incl. mounting material, and if necessary, pre-assembled.

Power cable



Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

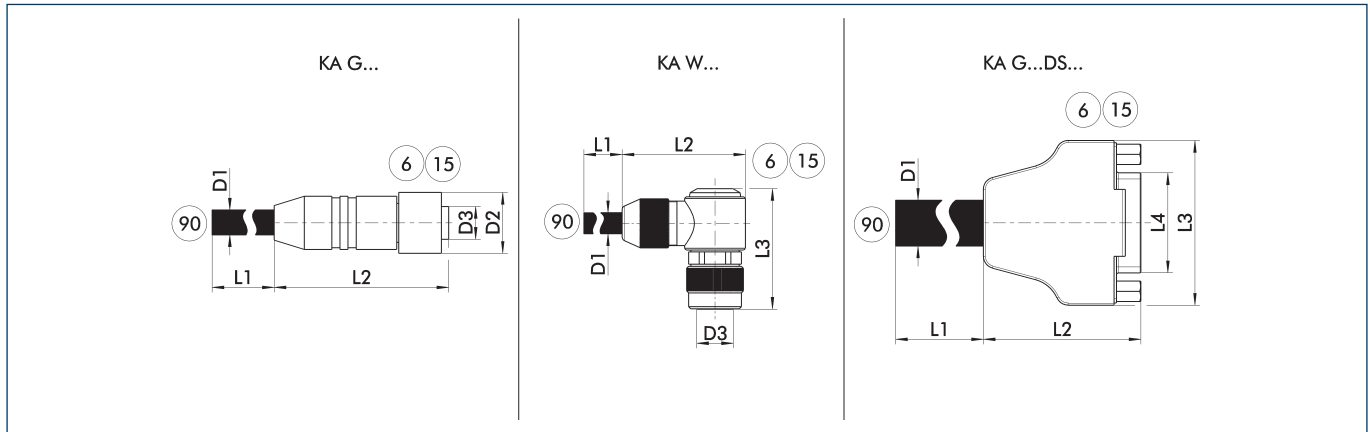
⑥ Connection module side  
⑮ Socket

⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	D3
<b>Power cable for LDx 100-300/SLD 11-14,21,22 to BOSCH IndraDrive A/B</b>						
KA GLT2306-LK-00500-X	0349564	5	10	78.5	27	M23
KA GLT2306-LK-01000-X	0349565	10	10	78.5	27	M23
KA GLT2306-LK-01500-X	0349566	15	10	78.5	27	M23
KA GLT2306-LK-02000-X	0349567	20	10	78.5	27	M23
<b>Power cable for LDx 100-300/SLD 11-14,21,22 to BOSCH IndraDrive CS</b>						
KA GLT2306-LK-00500-2	0349515	5	10	78.5	27	M23
KA GLT2306-LK-01000-2	0349516	10	10	78.5	27	M23
KA GLT2306-LK-01500-2	0349517	15	10	78.5	27	M23
KA GLT2306-LK-02000-2	0349518	20	10	78.5	27	M23
<b>Power cable for LDx 100-300/SLD 11-14,21,22 on Siemens SINAMICS</b>						
KA GGT2306-LK-00100-4	0349111	1	10	78.5	27	M23
KA GGT2306-LK-00200-4	0349112	2	10	78.5	27	M23
KA GGT2306-LK-00300-4	0349113	3	10	78.5	27	M23
<b>Power cable for LDx 100-300/SLD 11-14,21,22 on Siemens SINAMICS with DRIVE-CLiQ – cable track compatible</b>						
LDx100-300/SLD 11-14,21,22 DQ 05m	1315917	5	10	78.5	27	M23
LDx100-300/SLD 11-14,21,22 DQ 10m	1002467	10	10	78.5	27	M23
LDx100-300/SLD 11-14,21,22 DQ 15m	30702114	15	10	78.5	27	M23
LDx100-300/SLD 11-14,21,22 DQ 20m	1342496	20	10	78.5	27	M23

① Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

Encoder cable



KA G... encoder cable with straight plug  
 KA W... encoder cable with angeled plug  
 KA G...DS... Sub D encoder cable

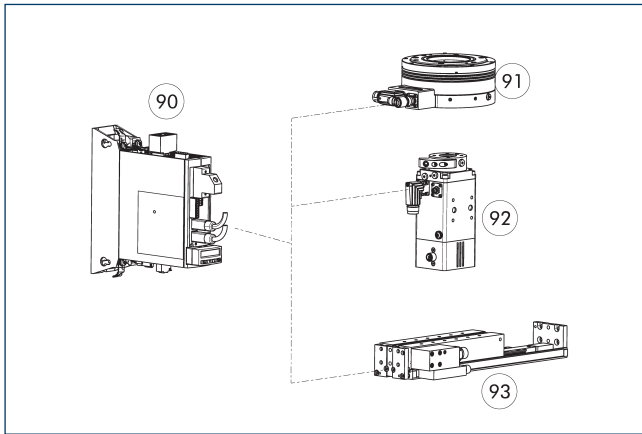
6 Connection module side  
 15 Socket  
 90 Prefabricated for connection to the drive controller

Connection cables such as power cables and encoder cables are specifically designed for connecting SCHUNK products with drive control units. We will gladly help you to select the right connection cables.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
<b>Encoder cable for BOSCH IndraDrive A/B/Cs and HIPERFACE® encoder interface – drag chain compatible</b>							
KA WWN1208-GK-00500-K	0349544	5	6	37.5	14.9	30.8	M12
KA WWN1208-GK-01000-K	0349545	10	6	37.5	14.9	30.8	M12
KA WWN1208-GK-01500-K	0349546	15	6	37.5	14.9	30.8	M12
KA WWN1208-GK-02000-K	0349547	20	6	37.5	14.9	30.8	M12
<b>Encoder cable for BOSCH IndraDrive A/B and 1Vss encoder interface</b>							
KA WWN1208-GK-00500-X	0349150	5	7.3	37.5	14.65	30.8	M12
KA WWN1208-GK-01000-X	0349151	10	7.3	37.5	14.65	30.8	M12
KA WWN1208-GK-01500-X	0349152	15	7.3	37.5	14.65	30.8	M12
KA WWN1208-GK-02000-X	0349153	20	7.3	37.5	14.65	30.8	M12
<b>Encoder cable for BOSCH IndraDrive Cs and 1Vss encoder interface</b>							
KA WWN1208-GK-00500-Y	0349142	5	7.3	37.5	14.56	30.8	M12
KA WWN1208-GK-01000-Y	0349143	10	7.3	37.5	14.56	30.8	M12
KA WWN1208-GK-01500-Y	0349144	15	7.3	37.5	14.56	30.8	M12
KA WWN1208-GK-02000-Y	0349145	20	7.3	37.5	14.56	30.8	M12
<b>Encoder cable for SIEMENS Sinamics and 1Vss encoder interface</b>							
KA WGN1208-GK-00100-Z	0349604	1	7.3	37.5	14.65	30.8	M12
KA WGN1208-GK-00200-Z	0349605	2	7.3	37.5	14.65	30.8	M12
KA WGN1208-GK-00300-Z	0349606	3	7.3	37.5	14.65	30.8	M12
<b>Sensor cable for Siemens SINAMICS and encoder interface DRIVE-CLiQ – cable track compatible</b>							
LDx/SLD – DQ 05m	1311273	5	6	37.5	14.9	30.8	M12
LDx/SLD – DQ 10m	1002466	10	6	37.5	14.9	30.8	M12
LDx/SLD – DQ 15m	30702180	15	6	37.5	14.9	30.8	M12
LDx/SLD – DQ 20m	1327972	20	6	37.5	14.9	30.8	M12

ⓘ Please observe the min. bending radius for cable track-compatible cables or the max. torsion angle for torsion-compatible cables. These are generally 10 times the cable diameter or +/- 180°/m.

**Bosch Rexroth IndraDrive Cs controller**



- ⑨⑩ Controller
- ⑨① Rotary module ERS/ERT, electric
- ⑨② ERD Rotary unit
- ⑨③ Compact linear module ELB

The controller can be used to operate the rotary modules ERS, ERT and ERD as well as for SCHUNK linear motor axes. It is available with the PROFIBUS or Multi-Ethernet (Sercos III, PROFINET, EtherCAT, EtherNet/IP) communication interfaces.

Description	Nominal current [A]	Maximum current [A]	Note
<b>Controller</b>			
HCS01.1E-W0008	2.7	8	

① We will be happy to help you select the right controller. Please contact us for assistance.



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