

Simple. Fast. Reliable.

ELB Compact Linear Module

Electric linear module with direct drive and integrated control, guided backlash-free with pretensioned roller guides.

Field of Application

For the use in clean environments such as assembly and inspection stations. Optimum standard solution for high-precision applications.



Advantages – Your benefits

Control via digital I/O for simple commissioning and fast connection to existing systems

10-stages adjustable extension and retraction speed for highly flexible cycle times

Linear direct drive for an almost wear-free use ensuring a high service life

Robust roller guides for mounting high loads and an end position accuracy in every installation position

Maintenance-free for a high machine availability and low operating costs

Compact dimensions for less interfering contours

Standardized mounting bores for numerous combinations with other components from the modular system

Sizes
Quantity: 1

Weight
2 .. 3.12 kg

max. driving force
150 N

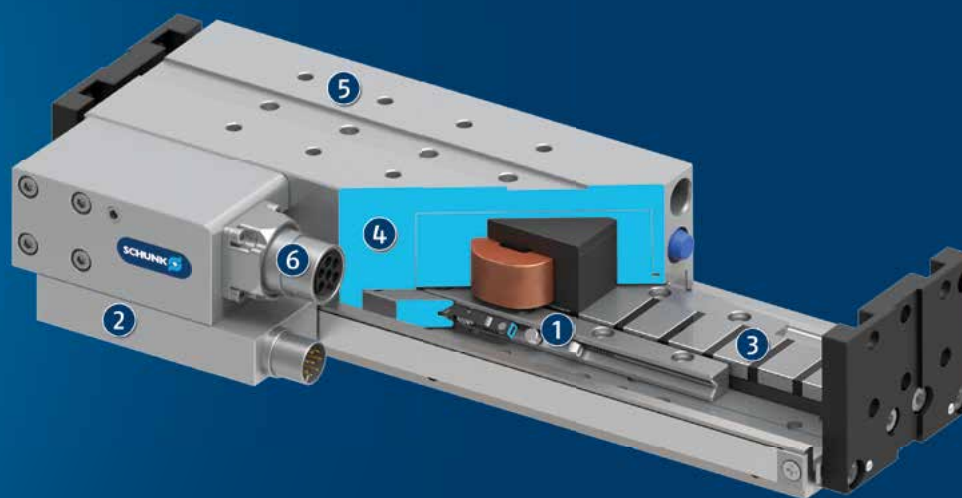
max stroke
30 .. 200 mm

Repeat accuracy
±0.01 mm

Functional Description

The electric drive consists of a primary part (motor coil) and a secondary part (permanent magnets). Inside the controller the phase and amplitude are controlled by the

applied electric current. This sets the profile, which is fitted with magnets, in motion.



① **Roller guides**
for maximum positioning accuracy and moment loads

② **Drive**
Linear direct drive

③ **Control electronics**
Adaptive control technology with integrated control and power electronics

④ **Adjustability of the end positions**
Mechanical adjustment of the end positions via stop screws

⑤ **Connector**
Standard connector for more convenient connection to the sensor and power distributors

⑥ **Modular hole pattern**
Completely integrated in the modular system

CAD data, operating manuals and other current product documents are available at [schunk.com](https://www.schunk.com)

General Notes on the Series

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

Path measuring system: Contactless, magnetic, measuring system with incremental and absolute variants; with Hiperface, SSI, 1Vss and DRIVE-CLiQ interfaces (on request).

Profile: Aluminum profile with pre-loaded junction roller guide that is free from play

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

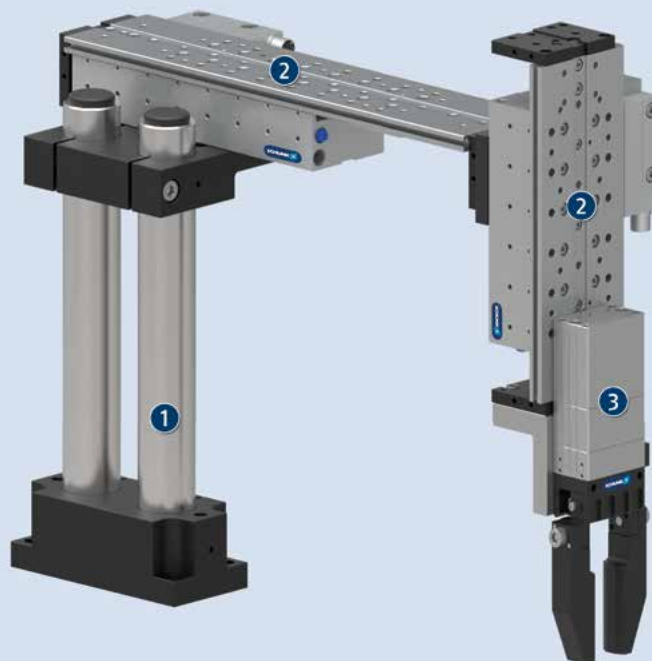
Safety notes: Caution: Magnetic field! This particularly applies for persons with implanted medical devices, such as pacemakers, hearing aids, etc.

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.

Payload: Is the weight of the total weight which is attached to the cantilever arm. Please consider that service life will shorten if the maximum payload is exceeded. SCHUNK cannot assume any warranty for this.



Application Example

Linear direct driven pick & place unit for dynamic movements.

- ❶ Pillar Assembly System
- ❷ ELB Electric Linear Module

- ❸ EGP Electric 2-Finger Parallel Gripper

SCHUNK offers more ...

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



Drive Controller (e.g. BOSCH Rexroth IndraDrive®)



KA Power and Encoder Cables



ERD Electric Rotary Unit



ERS Electric Rotary Unit



Connection Cable for Sensor System



ZH Centering Sleeves



MPG-plus Pneumatic Small Parts Gripper



EGP Electric 2-Finger Parallel Gripper



V Sensor Distributor

① Additional information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

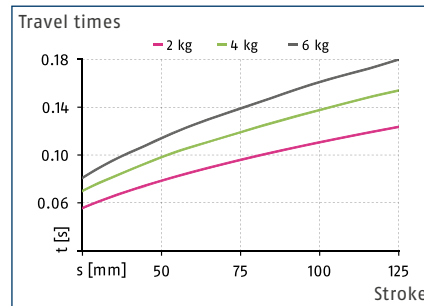
Modular transducer system: The linear module can be supplied with four different path measuring systems. The incremental path measuring system has a 1Vss interface. The absolute path measuring systems come with a choice of interfaces: Hiperface, SSI or DRIVE-CLiQ (on request).

Pneumatic holding brake: The linear module is optionally equipped with a holding brake. This holding brake is pneumatically operated. 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.

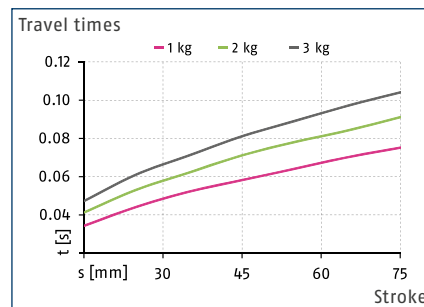
On option, the linear module can be supplied with a load compensation device, located in parallel to the motor. This takes the form of a MagSpring®. For this, the magnetic spring compensates a part of the weight forces during the vertical movement of the linear motor. This can lead to a higher dynamic in application cases.



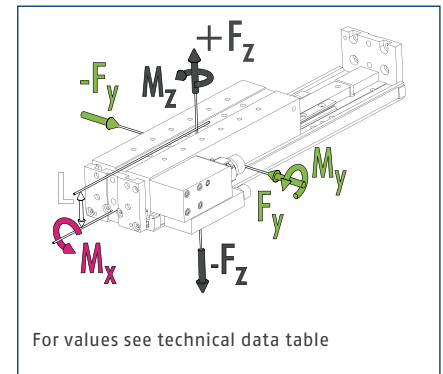
Travel times for 125 mm stroke



Travel times for 50/75 mm stroke



Moment loading



① The forces and torques shown here are maximum values for static loading.

ELB without pneumatic brake technical data

Description		ELB 70-H050-H-N-N	ELB 70-H075-H-N-N	ELB 70-H125-H-N-N	ELB 70-H050-H-N-L	ELB 70-H075-H-N-L	ELB 70-H125-H-N-L
ID		0315400	0315420	0315440	0315403	0315423	0315443
Drive concept		Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive	Linear direct drive
Stroke	[mm]	50	75	125	50	75	125
Max. driving force	[N]	150	150	150	150	150	150
Nominal force	[N]	40	40	40	40	40	40
Max. payload (horizontal)	[kg]	3	3	6	3	3	6
Repeat accuracy	[mm]	±0.01	±0.01	±0.01	±0.01	±0.01	±0.01
Max. speed	[m/s]	4	4	4	4	4	4
Max. acceleration	[m/s ²]	100	100	100	100	100	100
Max. current	[A]	10	10	10	10	10	10
Max. current at standstill	[A]	2.6	2.6	2.6	2.6	2.6	2.6
Min./max. ambient temperature	[°C]	10/40	10/40	10/40	10/40	10/40	10/40
Weight	[kg]	2	2.24	2.72	2.3	2.64	3.12
L (for moment load)	[mm]	34.1	34.1	34.1	34.1	34.1	34.1
Path measuring system interface		Hiperface	Hiperface	Hiperface	Hiperface	Hiperface	Hiperface
Load compensation implementation					MagSpring®	MagSpring®	MagSpring®
Load compensation constant force	[N]				22	22	22
Moments M_x max./ M_y max./ M_z max.	[Nm]	162/170/170	162/170/170	206/211/211	162/170/170	162/170/170	206/211/211
Forces F_y max./ F_z max./- F_z max.	[N]	3835/3835/3835	3835/3835/3835	4853/4853/4853	3835/3835/3835	3835/3835/3835	4853/4853/4853
Options and their characteristics							
Description		ELB 70-H050-I-N-N	ELB 70-H075-I-N-N	ELB 70-H125-I-N-N	ELB 70-H050-I-N-L	ELB 70-H075-I-N-L	ELB 70-H125-I-N-L
ID		0315404	0315424	0315444	0315407	0315427	0315447
Path measuring system interface		Sin/Cos 1Vss	Sin/Cos 1Vss	Sin/Cos 1Vss	Sin/Cos 1Vss	Sin/Cos 1Vss	Sin/Cos 1Vss
Description		ELB 70-H050-S-N-N	ELB 70-H075-S-N-N	ELB 70-H125-S-N-N	ELB 70-H050-S-N-L	ELB 70-H075-S-N-L	ELB 70-H125-S-N-L
ID		0315408	0315428	0315448	0315411	0315431	0315451
Path measuring system interface		SSI	SSI	SSI	SSI	SSI	SSI

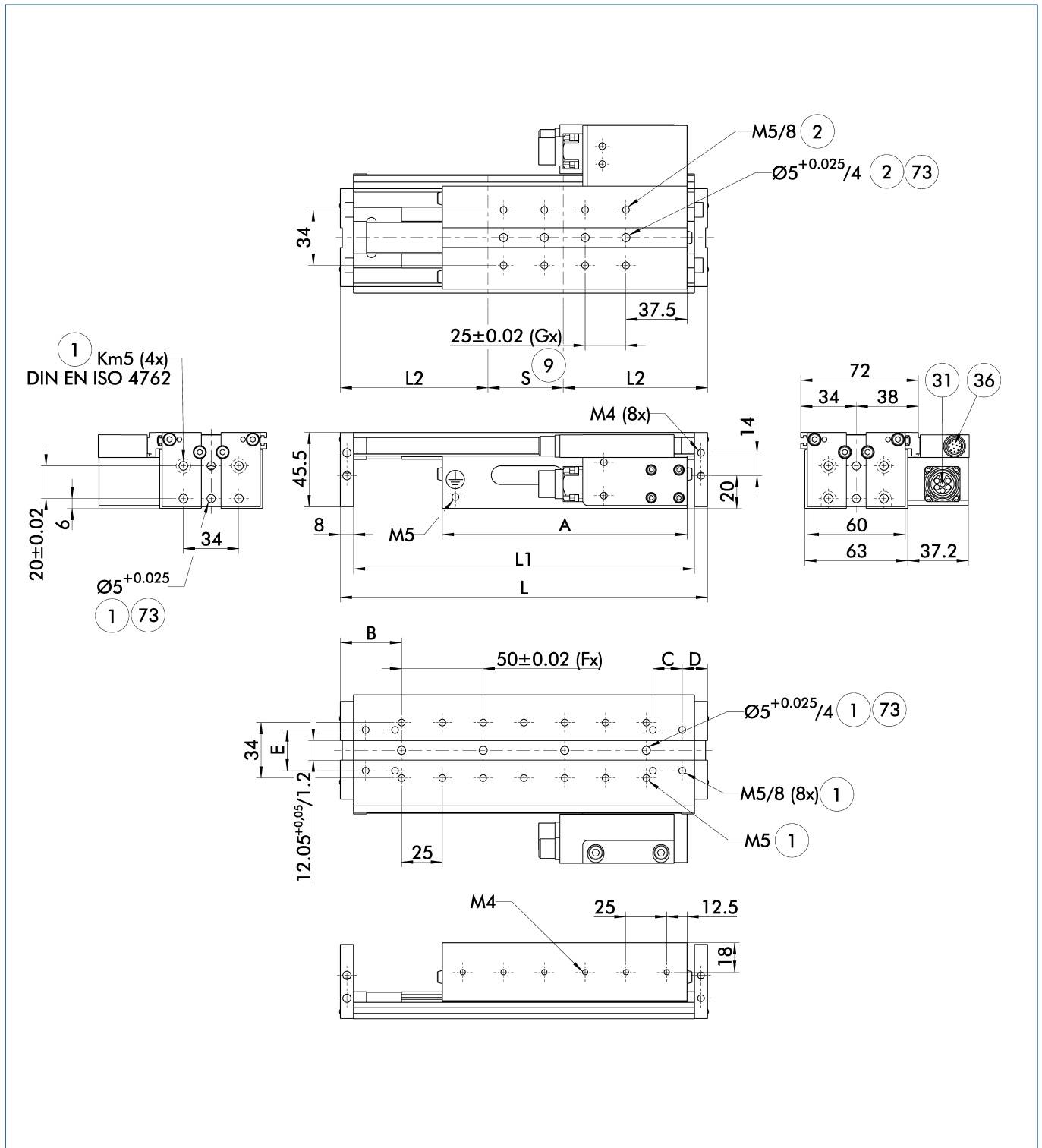
The diagrams are valid for horizontal installation and with sufficient rest periods. Verifying the sizing of the selected unit is absolutely necessary, since otherwise overloading can result. We will be happy to help you design other applications.

ELB with pneumatic brake technical data

Description		ELB 70-H050-H-B-N	ELB 70-H075-H-B-N	ELB 70-H125-H-B-N
ID		0315401	0315421	0315441
Drive concept		Linear direct drive	Linear direct drive	Linear direct drive
Stroke	[mm]	50	75	125
Max. driving force	[N]	150	150	150
Nominal force	[N]	40	40	40
Max. payload (horizontal)	[kg]	3	3	6
Repeat accuracy	[mm]	±0.01	±0.01	±0.01
Max. speed	[m/s]	4	4	4
Max. acceleration	[m/s ²]	100	100	100
Max. current	[A]	10	10	10
Max. current at standstill	[A]	2.6	2.6	2.6
Min./max. ambient temperature	[°C]	10/40	10/40	10/40
Weight	[kg]	2.28	2.46	2.96
L (for moment load)	[mm]	34.1	34.1	34.1
Path measuring system interface		Hiperface	Hiperface	Hiperface
Actuation holding brake		pneumatic	pneumatic	pneumatic
Static holding force break	[N]	350	350	350
Axial play, brake	[mm]	0.3	0.3	0.3
Moments M_x max./ M_y max./ M_z max.	[Nm]	162/170/170	162/170/170	206/211/211
Forces F_y max./ F_z max./ $-F_z$ max.	[N]	3835/3835/3835	3835/3835/3835	4853/4853/4853
Options and their characteristics				
Description		ELB 70-H050-I-B-N	ELB 70-H075-I-B-N	ELB 70-H125-I-B-N
ID		0315405	0315425	0315445
Path measuring system interface		Sin/Cos 1Vss	Sin/Cos 1Vss	Sin/Cos 1Vss
Description		ELB 70-H050-S-B-N	ELB 70-H075-S-B-N	ELB 70-H125-S-B-N
ID		0315409	0315429	0315449
Path measuring system interface		SSI	SSI	SSI

The diagrams are valid for horizontal installation and with sufficient rest periods. Verifying the sizing of the selected unit is absolutely necessary, since otherwise overloading can result. We will be happy to help you design other applications.

Main view

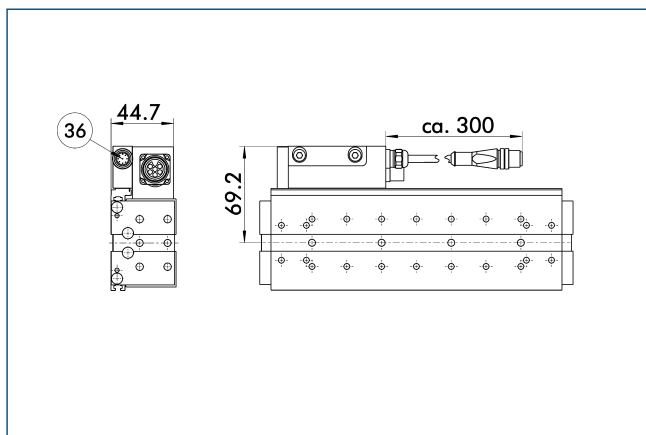


The linear module can be fastened either to the base body or the slide. The structure can also optionally be fastened to either the slide or the base body. This view shows the mounting of the module to the base body and the mounting of the structure to the slide.

- ① Connection linear unit
- ② Attachment connection
- ⑨ Effective stroke
- ③① Motor plug
- ③⑥ Connection plug for the path measuring system
- ⑦③ Fit for centering pins

Description	A	B	Quantity F	C	Quantity G	D	E	L	L1	L2
	[mm]	[mm]		[mm]		[mm]	[mm]	[mm]	[mm]	[mm]
ELB 70-H050-I-N-N	150	37.5	3	18	3	15.5	25	225	209	87.5
ELB 70-H075-I-N-N	150	25	4	0	3	0	0	250	234	87.5
ELB 70-H125-I-N-N	200	25	6	0	5	0	0	350	334	112.5

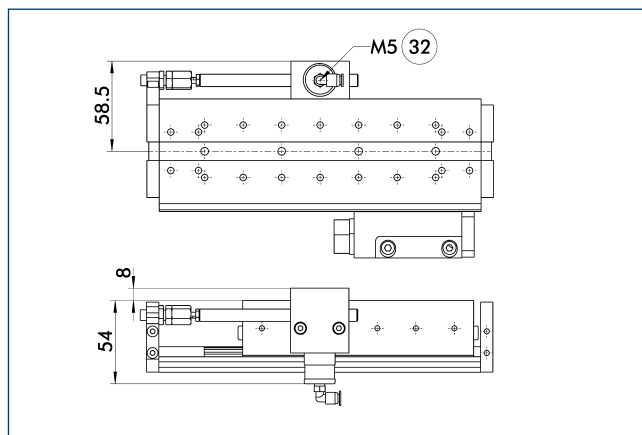
Absolute encoder with Hiperface interface



36 Connection plug for the path measuring system

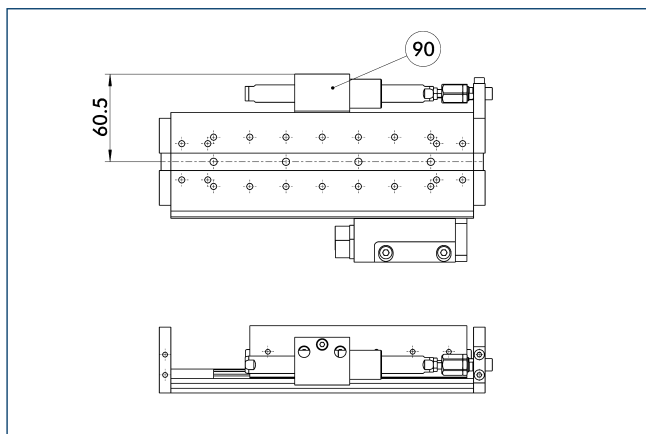
The absolute measuring system with Hiperface interface has a 30 cm cable outlet and a cast-on M12 plug.

Pneumatic holding brake



32 Pneumatic connection for holding brake

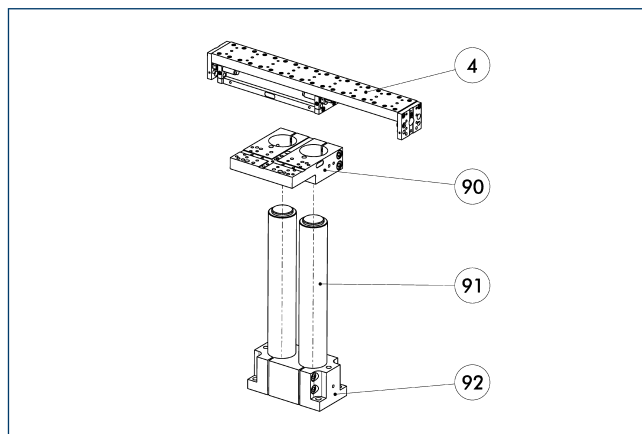
The holding brake holds the slide in a particular position even without energy supply. The holding brake is pneumatically actuated.



90 MagSpring®

With its constant force over the complete stroke, the MagSpring® is the perfect load compensation. It ideally supports the linear motor in vertical applications.

Attachment to a pillar assembly system

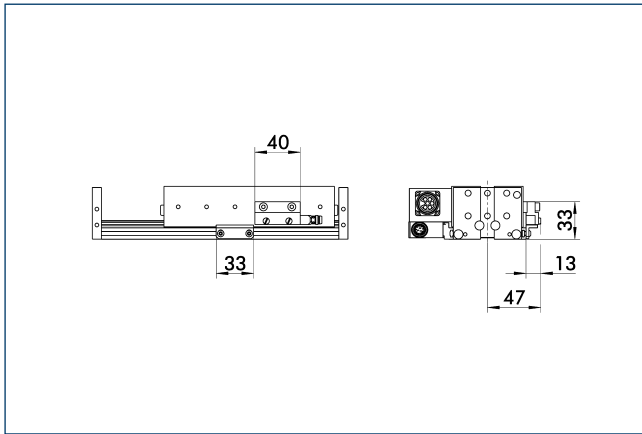


- 4 Linear unit
- 90 APDH double mounting plate
- 91 Pillars, hard-chromium plated, ground
- 92 SOD double socket

This unit can be attached to the pillar assembly system as standard. See the SCHUNK Kombibox software, which can be found online, for the right arrangement for your application.

Description	ID	Pillar diameter [mm]	Material
Pillar assembly system mounting plates			
APDH 85	0313414	55	Aluminum
APDV 35	0313896	35	Aluminum
APDV 85	0313416	55	Aluminum
APEH 85	0313413	55	Aluminum
APEV 35	0313895	35	Aluminum
APEV 85	0313415	55	Aluminum

Attachment kit for IN 41 proximity switch

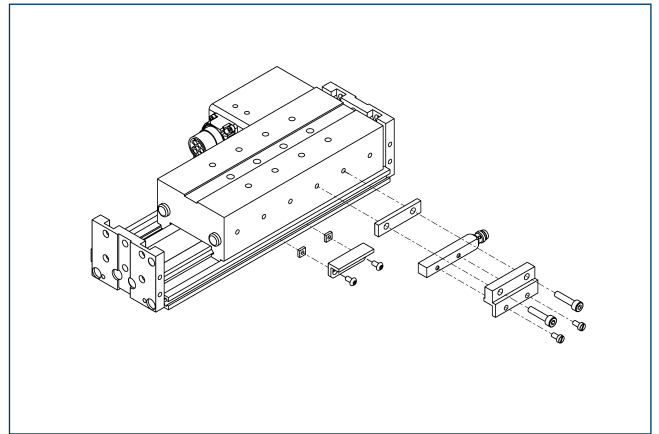


The attachment kit is used to mount the optional IN 41 proximity switches on the linear module, and is available as an optional accessory.

Description	ID	
Attachment kit for proximity switch		
AS-ELB 70	0315490	

① One attachment kit is required for each proximity switch.

Limit and reference switch

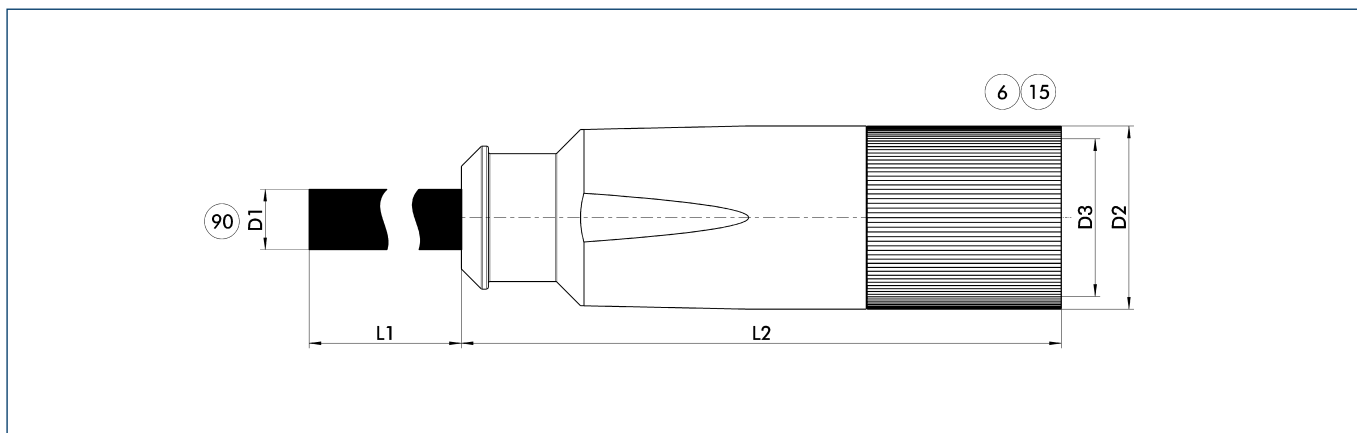


The limit and reference switches are not mandatory for operating of the linear module.

Description	ID	
Attachment kit for proximity switch		
AS-ELB 70	0315490	
Inductive proximity switches		
NI 41-0	0315495	
NI 41-5	0315496	

① One attachment kit is required for each proximity switch.

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.

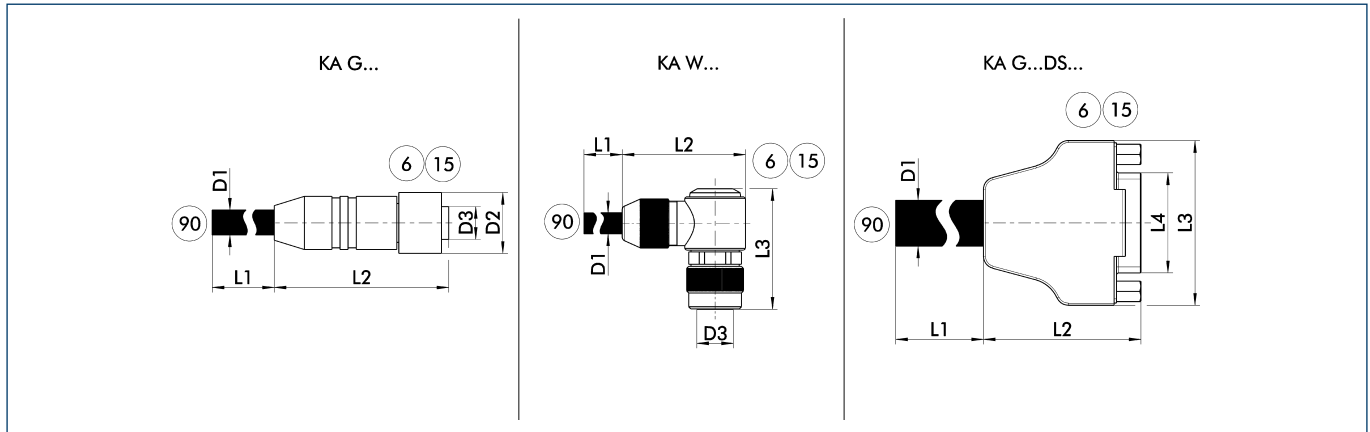
⑥ Connection module side
⑮ Socket

⑨⑩ Prefabricated to connect to the higher-level components

Description	ID	L1 [m]	D1 [mm]	L2 [mm]	D2 [mm]	D3
Power cable for BOSCH Rexroth IndraDrive® A/B						
KA GLT1706-LK-00500-W	0349560	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-W	0349561	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-W	0349562	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-W	0349563	20	8.5	71	21.2	M17
Power cable for BOSCH Rexroth IndraDrive® Cs						
KA GLT1706-LK-00500-1	0349104	5	8.5	71	21.2	M17
KA GLT1706-LK-01000-1	0349105	10	8.5	71	21.2	M17
KA GLT1706-LK-01500-1	0349106	15	8.5	71	21.2	M17
KA GLT1706-LK-02000-1	0349107	20	8.5	71	21.2	M17
Power cable for SIEMENS® Sinamics						
KA GGT1706-LK-00100-6	0349129	1	8.5	71	21.2	M17
KA GGT1706-LK-00200-6	0349130	2	8.5	71	21.2	M17
KA GGT1706-LK-00300-6	0349131	3	8.5	71	21.2	M17

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 angled plug
 KA G...DS... Sub D encoder cable

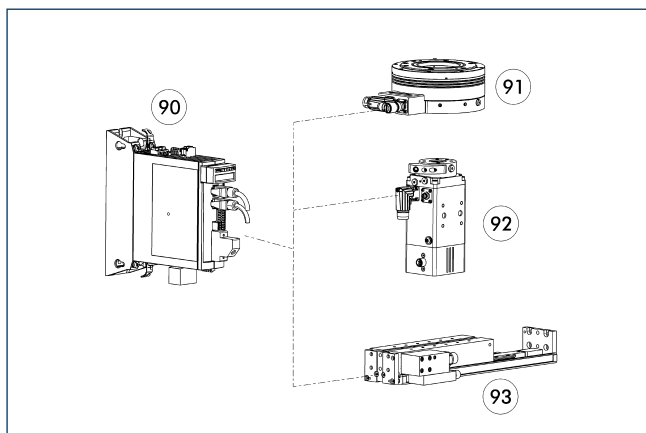
6 Connection module side
 15 Socket
 90 Prefabricated for connection to the drive controller

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	D3
		[m]	[mm]	[mm]	[mm]	
Encoder cable for SIEMENS® Sinamics and SSI encoder interface						
KA GGN1210-GK-00100-Q	0349135	1	6	46	14.65	M12
KA GGN1210-GK-00200-Q	0349136	2	6	46	14.65	M12
KA GGN1210-GK-00300-Q	0349137	3	6	46	14.65	M12
Encoder cable for BOSCH Rexroth IndraDrive® A/B/Cs and Hiperface encoder interface						
KA GWN1208-GK-00500-K	0349125	5	6	50	14.9	M12
KA GWN1208-GK-01000-K	0349126	10	6	50	14.9	M12
KA GWN1208-GK-01500-K	0349127	15	6	50	14.9	M12
KA GWN1208-GK-02000-K	0349128	20	6	50	14.9	M12
Encoder cable for BOSCH Rexroth IndraDrive® A/B and 1Vss encoder interface						
KA GWN1208-GK-00500-R	0349138	5	7.3	50	14.65	M12
KA GWN1208-GK-01000-R	0349139	10	7.3	50	14.65	M12
KA GWN1208-GK-01500-R	0349140	15	7.3	50	14.65	M12
KA GWN1208-GK-02000-R	0349141	20	7.3	50	14.65	M12
Encoder cable for BOSCH Rexroth IndraDrive® Cs and 1Vss encoder interface						
KA GWN1208-GK-00500-T	0349146	5	7.3	50	14.65	M12
KA GWN1208-GK-01000-T	0349147	10	7.3	50	14.65	M12
KA GWN1208-GK-01500-T	0349148	15	7.3	50	14.65	M12
KA GWN1208-GK-02000-T	0349149	20	7.3	50	14.65	M12
Encoder cable for SIEMENS® Sinamics and 1Vss encoder interface						
KA GGN1208-GK-00100-U	0349597	1	7.3	50	14.65	M12
KA GGN1208-GK-00200-U	0349598	2	7.3	50	14.65	M12
KA GGN1208-GK-00300-U	0349599	3	7.3	50	14.65	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



- 90 Controller
 91 ERS electric rotary module
 92 ERD electric rotary module
 93 ELB compact linear module

The controller can be used for operation of the ERS 560-V and ERD rotary modules, as well as for SCHUNK linear drive axes.

Description	Nominal current [A]	Maximum current [A]
Controller		
HCS01.1E-W0008	2.7	8