



Hand in hand for tomorrow



Product data sheet

Universal gripper EGL

Flexible. Robust. Bus capable.

Universal gripper EGL

Servo-electric 2-finger parallel gripper with sensitive gripping force control and long stroke

Field of application

universally applicable, highly flexible electric 2-finger parallel gripper for a wide range of parts in clean to harsh ambient conditions

Advantages – Your benefits

Current-controlled gripping force adjustment of a huge force range for the delicate or powerful gripping of different workpieces

Long and freely programmable stroke for flexible workpiece handling

Fully integrated control and power electronics for creating a decentralized control system

Versatile actuation options for simple integration into existing control concepts via PROFINET or PROFIBUS

Connectors in industrial standard for easy electrical connection

Service interface: USB Host and USB Device for comfortable parameter setting and firmware updates by USB flash drive or PC

Rotary encoding switch and DIP switch for manual fieldbus addressing, baud rate setting and service functions



Sizes
Quantity: 1



Weight
1.8 .. 2.63 kg



Gripping force
600 N



Stroke per jaw
42.5 mm

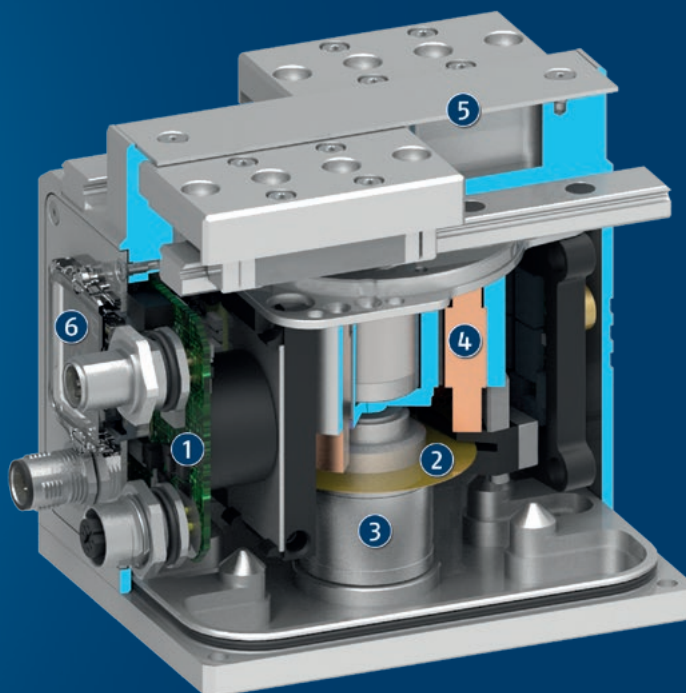


Workpiece weight
3 kg

Functional description

The DC servomotor drives the base jaw gear racks via the gear mechanism. The position is sensed by an encoder. The rotational movement is transformed into the linear movement of the base jaw by base jaws mounted on the

spindle nuts.



- ① **Control electronics**
Integrated control and power electronics for decentralized control of the servomotor
- ② **Encoder**
for gripper positioning and position evaluation
- ③ **Electrical brake**
for maintaining position on shutdown and power failure

- ④ **Drive**
DC servomotor with planet gear
- ⑤ **Kinematics**
Rack and pinion principle with profiled rail guide for self-centering clamping
- ⑥ **Service window**
with customer interface for service functions, altering bus address, USB connection and LED status indicator

General notes about the series

Operating principle: Rack and pinion principle

Housing material: Aluminum alloy, coated

Base jaw material: Steel

Actuation: servo-electric, via brushless DC servomotor

Warranty: 24 months

Scope of delivery: Gripper including safety information and accessory kit with centering sleeves for gripper and finger mounting. Product-specific instructions and software can be downloaded at schunk.com/downloads-manuals and schunk.com/downloads-software.

Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Finger length: is measured from the reference surface as the distance P in direction to the main axis.

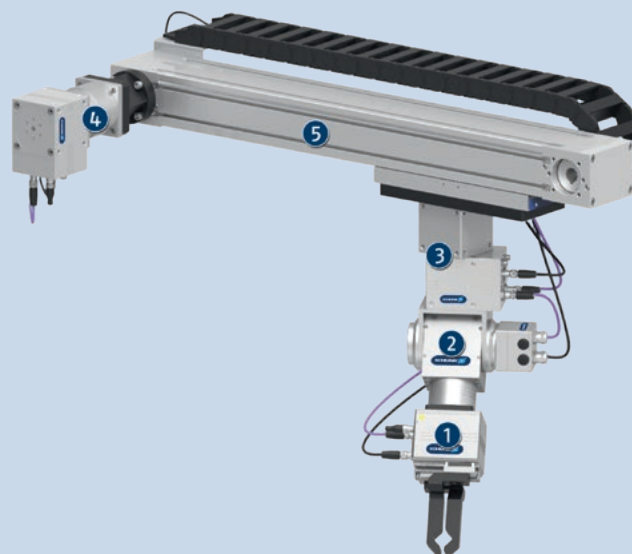
Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g. For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Closing and opening times: Minimum closing and opening times are merely the movement times of the base jaws or fingers at max. speed, max. acceleration, without current limitation (maximum current), and observance of the maximum permissible mass per finger.

Nominal currents: can be permanently actuated. With regard to all the currents which are ranging above the nominal current up to the maximum current, the notes of the individual product documentation has to be respected.

Electrical brake: The built-in, electric holding break is used for fixing and holding the position of the gripper jaws in the event of a power failure. It cannot cover all of the security or gripping force maintenance functions.



Application example

Highly flexible handling unit for gripping and transporting different workpieces with random positional orientation

- ① Universal gripper EGL
- ② Servo-electric rotary pan tilt actuator PW
- ③ 2 servo-electric rotary module PR
- ④ 2 servo-electric drive PDU
- ⑤ Linear module Beta with toothed-belt drive

SCHUNK offers more ...

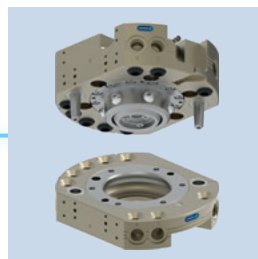
The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Rotation unit



Linear module



Tool changer



Force/torque sensor



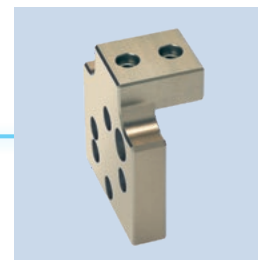
Power cable



Jaw quick-change system



Finger blank



Intermediate jaw



Communication cables

① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

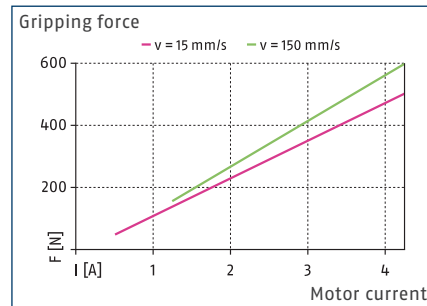
The electrical control of the gripper is carried out by the fully integrated control and power electronics. Hence, the module does not require any additional external control units.

A wide range of interfaces are available for communication, such as PROFINET, PROFIBUS-DP or CAN. This enables the assembly of industrial bus networks and ensures simple integration into existing control concepts. We offer various cables for transmission of power supply and data communications.

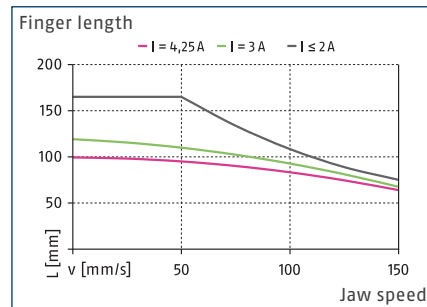
Base jaw interface: The interface of the base jaws corresponds to that of the universal gripper PGN-plus-P. This means that the extensive range of finger accessories for the PGN-plus-P can also be used for this gripper, taking into account the interfering contours, and the application limits that apply.



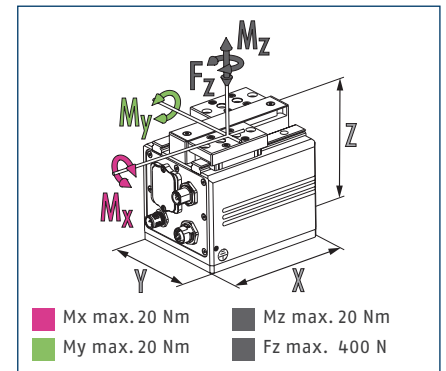
Gripping force



Finger length



Dimensions and maximum loads



① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

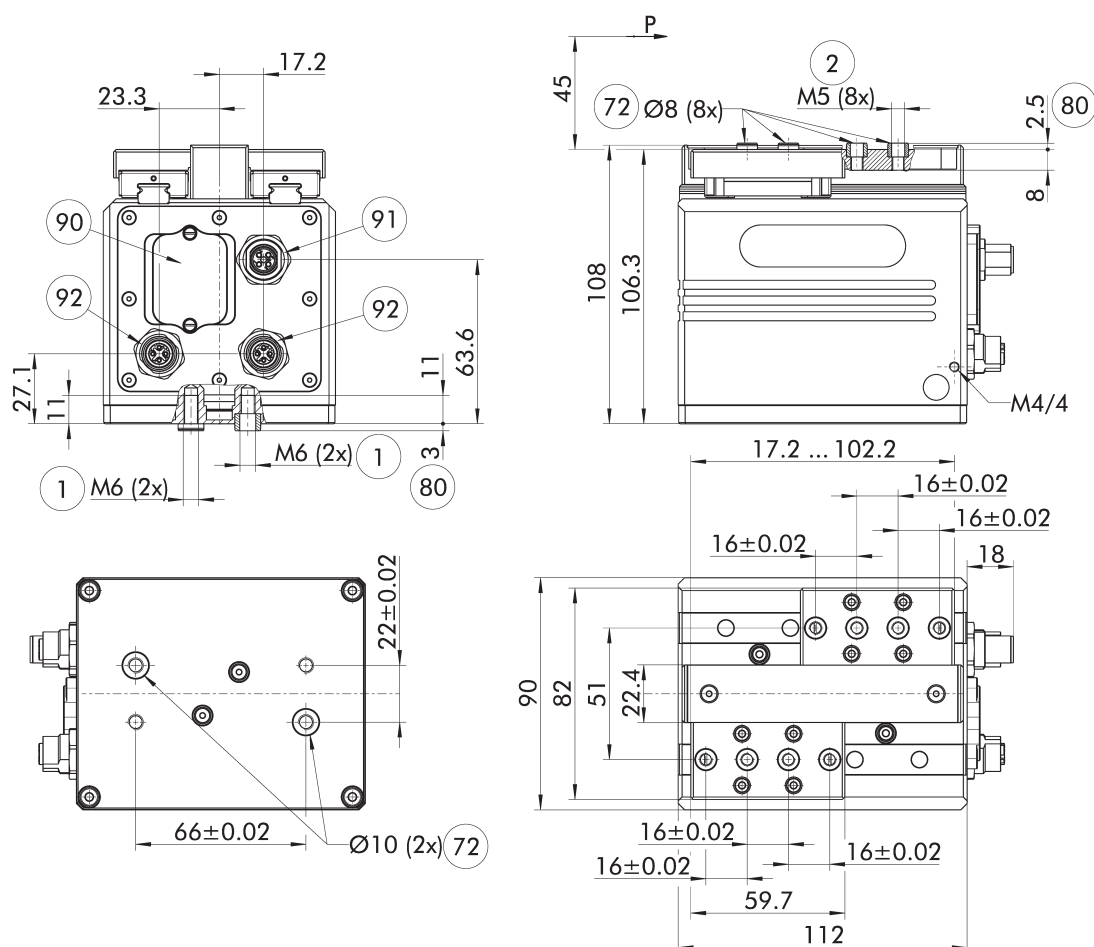
Technical data

Description		EGL 90-PN	E0A-UR3510-EGL90	E0A-UR3510-EGL90-AUB
ID		1302877	1392477	1403607
Robot compatibility			UR 3/5/10/16	UR 3/5/10/16
General operating data				
Stroke per jaw	[mm]	42.5	42.5	42.5
Min./max. gripping force	[N]	50/600	50/600	50/600
Recommended workpiece weight	[kg]	3	3	3
Max. permissible finger length	[mm]	165	165	165
Max. permissible weight per finger	[kg]	0.5	0.5	0.5
Repeat accuracy	[mm]	0.05	0.05	0.05
Closing/opening time	[s]	0.7/0.7	0.7/0.7	0.7/0.7
Max. speed	[mm/s]	150	150	150
Max. acceleration	[mm/s²]	2500	2500	2500
Weight	[kg]	1.8	2.13	2.63
Min./max. ambient temperature	[°C]	5/55	5/55	5/55
IP protection class		46	46	46
Cleanroom class ISO 14644-1:2015		4	4	4
Dimensions X x Y x Z	[mm]	112 x 90 x 108	112 x 100.4 x 121	112 x 100.4 x 121
Electrical operating data				
Controller electronics		integrated	integrated	integrated
Nominal voltage	[V DC]	24	24	24
Communication interface		PROFINET	PROFINET	PROFINET
Parametrized interface		USB	USB	USB
Max. current power	[A]	2.5	2.5	2.5
Max. current logic	[A]	0.5	0.5	0.5
Options and their characteristics				
PROFIBUS version		EGL 90-PB		
ID		1325751		
Data rate	[Mbit/s]	12		

① The maximum current specified in the technical data table refers to the current drawn from the power supply. The graphs 'gripping force' and 'finger length' refer to the motor current, which is specified in the PLC program.

① The "finger length" diagram shows the maximum permissible finger length based on the actuated jaw speed for defined motor currents.

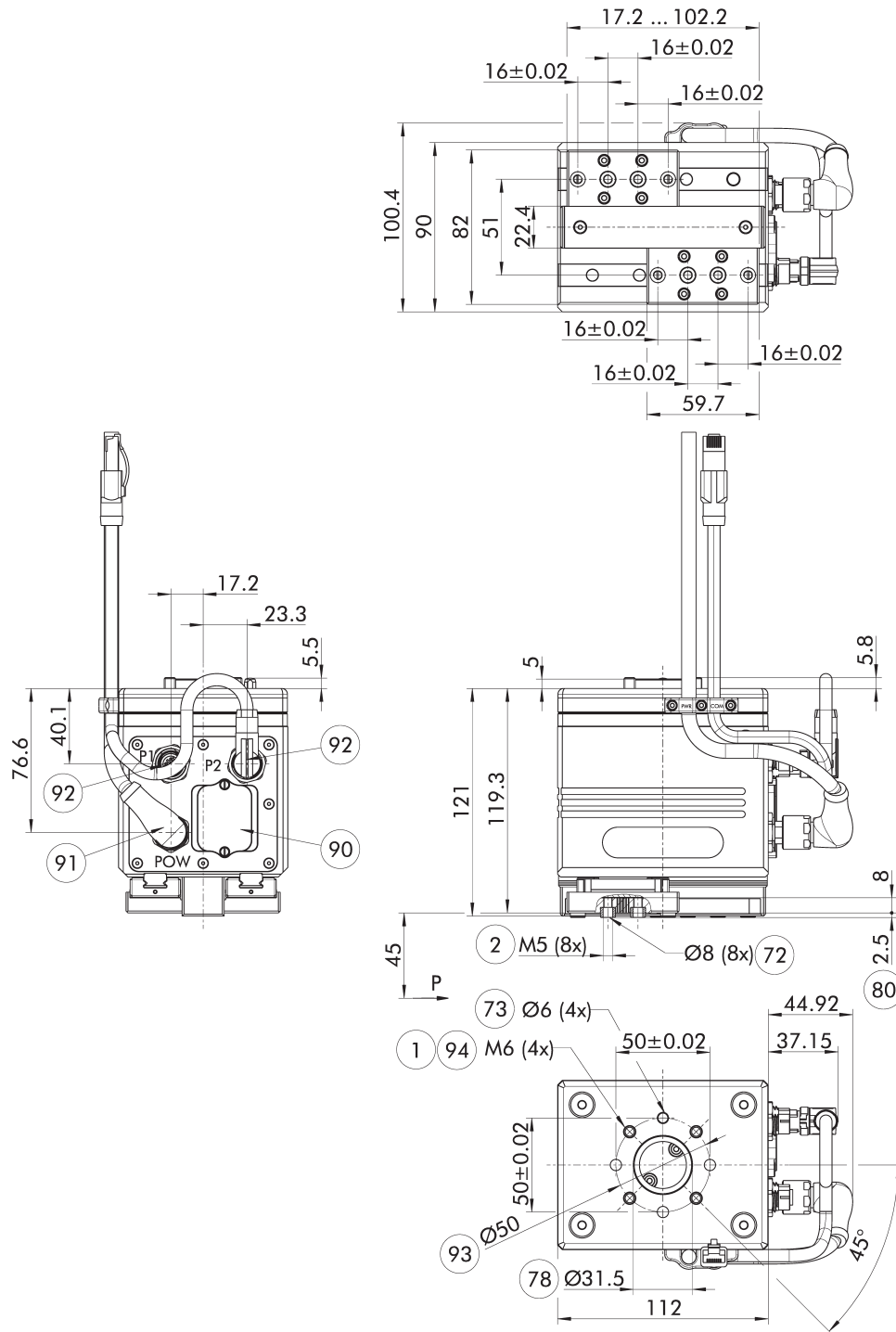
Main view EGL 90-PN



The drawing shows the gripper in the basic version with closed jaws, without dimensional consideration of the options described below.

- | | |
|---|--|
| ① Gripper connection | ⑨⑩ Service window |
| ② Finger connection | ⑨① M12 connector, T-coded (voltage supply) |
| ⑦② Fit for centering sleeves | ⑨② M12 PROFINET socket |
| ⑧⑩ Depth of the centering sleeve hole in the counter part | |

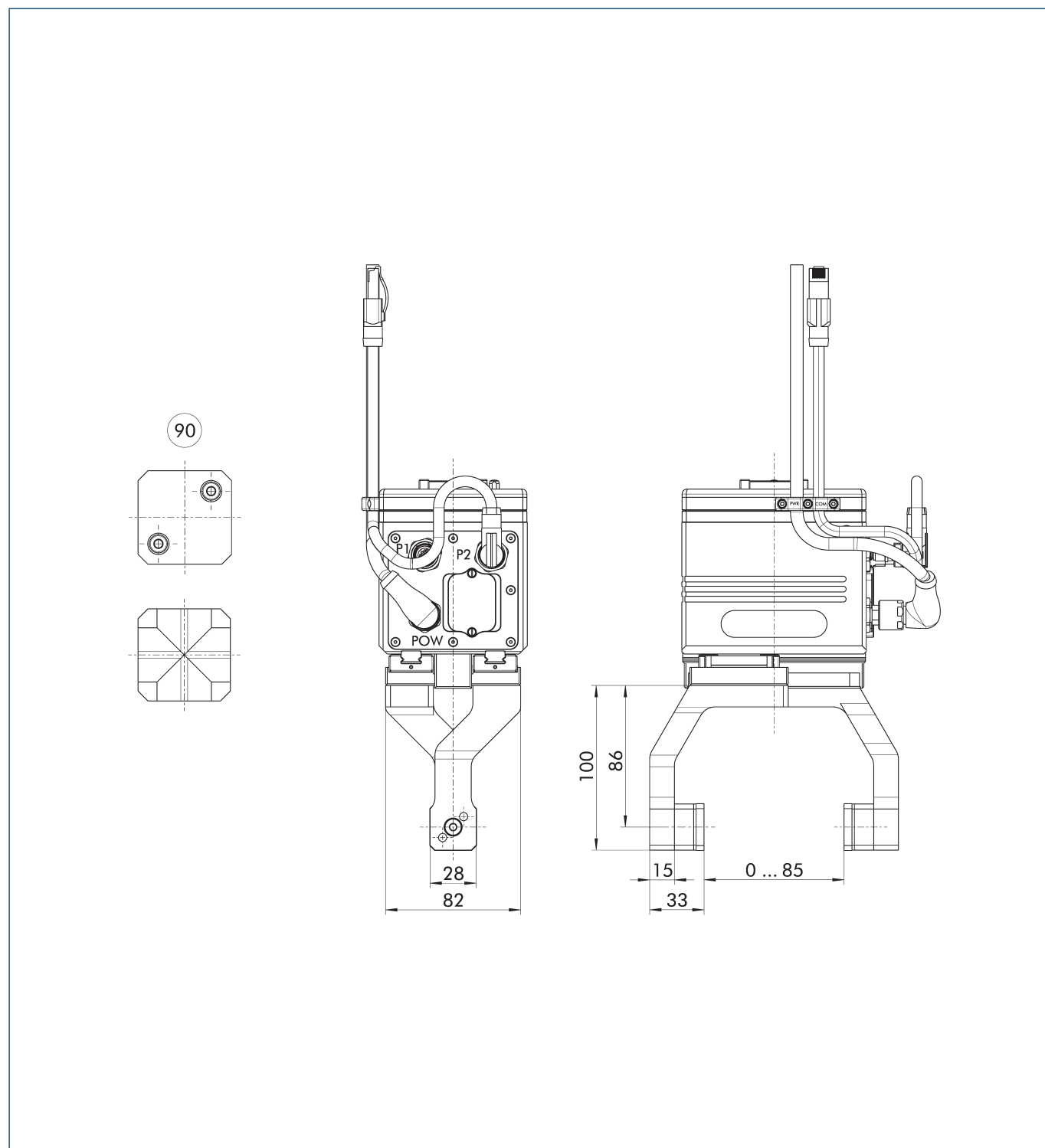
Main view E0A-UR3510-EGL 90



The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

- | | |
|---|--|
| ① Gripper connection | ⑨⑩ Service window |
| ② Finger connection | ⑨① M12 connector, T-coded (voltage supply) |
| ⑦② Fit for centering sleeves | ⑨② M12 PROFINET socket |
| ⑦③ Fit for centering pins | ⑨③ DIN ISO-9409 bolt circle |
| ⑦⑧ Fit for centering | ⑨④ Through holes for screw connections |
| ⑧⑩ Depth of the centering sleeve hole in the counter part | |

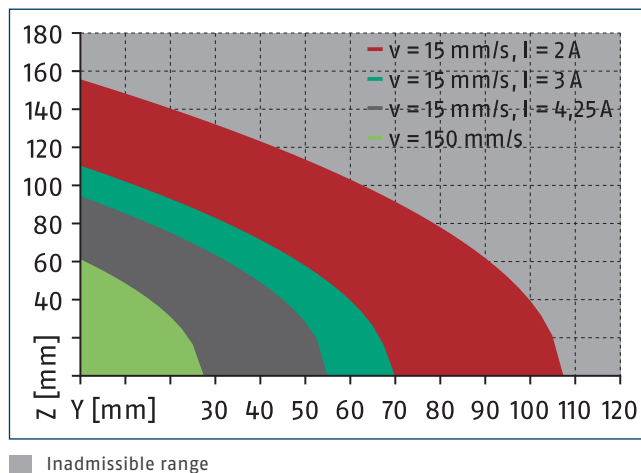
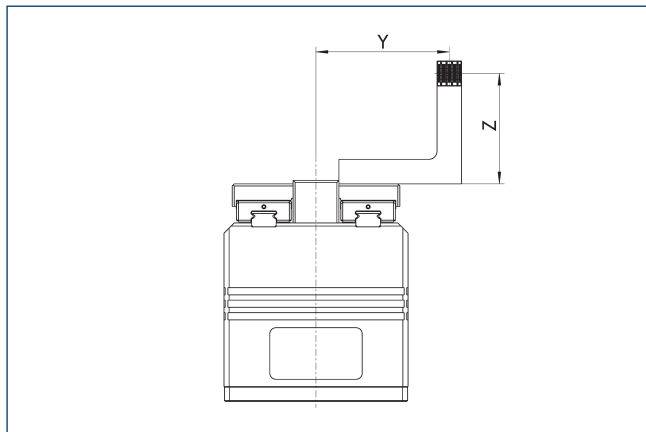
Main view E0A-UR3510-EGL 90-AUB with top jaws



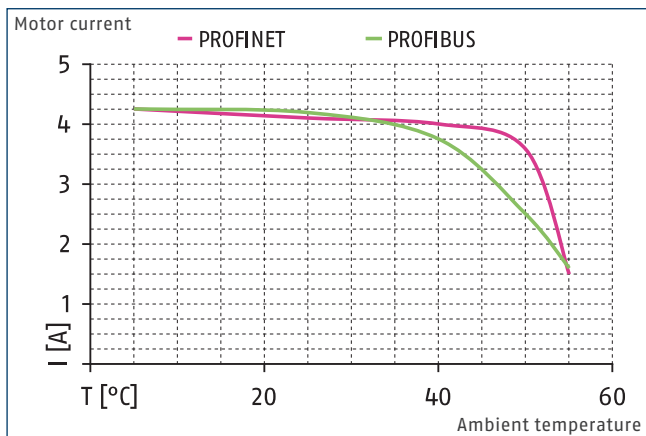
The drawing shows the basic version of the gripper with top jaws.

90 Finger inserts

Maximum permitted finger projection

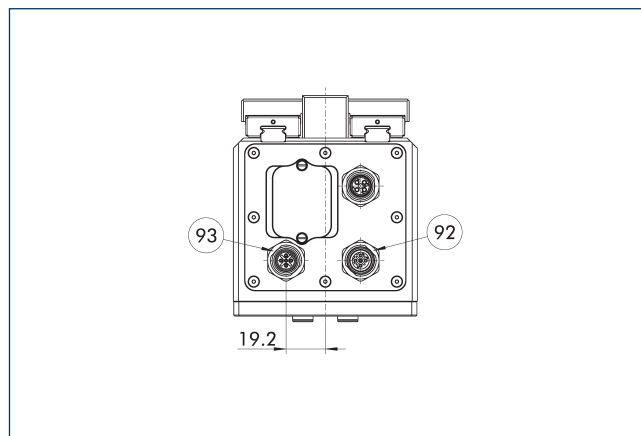


Derating



The throttle diagram shows the maximum admissible motor current depending on the ambient temperature.

PROFIBUS variant

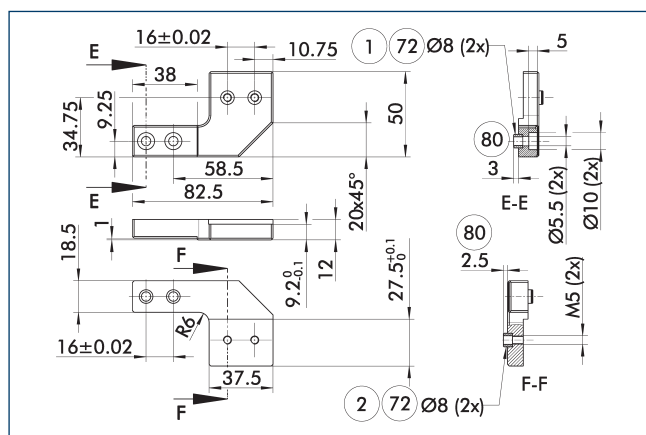


92 M12 socket PROFIBUS

93 M12 connector PROFIBUS

Deviating connection diagram with PROFIBUS variant

Intermediate jaw ZBA-EGL 90

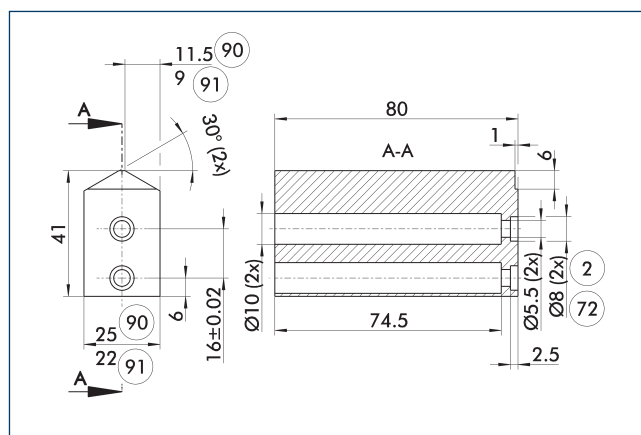


- ① Gripper connection
 ② Finger connection
 ⑦② Fit for centering sleeves
 ⑧② Depth of the centering sleeve hole in the counter part

Optionally intermediate jaws can be used, enabling direct connection and alignment of top jaws and various standard accessories in Z-direction. Furthermore, the intermediate jaws offset the side offset of the base jaws in the Y direction and provide an aligning connection possibility.

Description	ID	Material	Finger interface	Scope of delivery
Intermediate jaw				
ZBA-EGL 90	1001109	Steel	PGN-plus 80	2

Finger blanks ABR/SBR-PGZN-plus 80



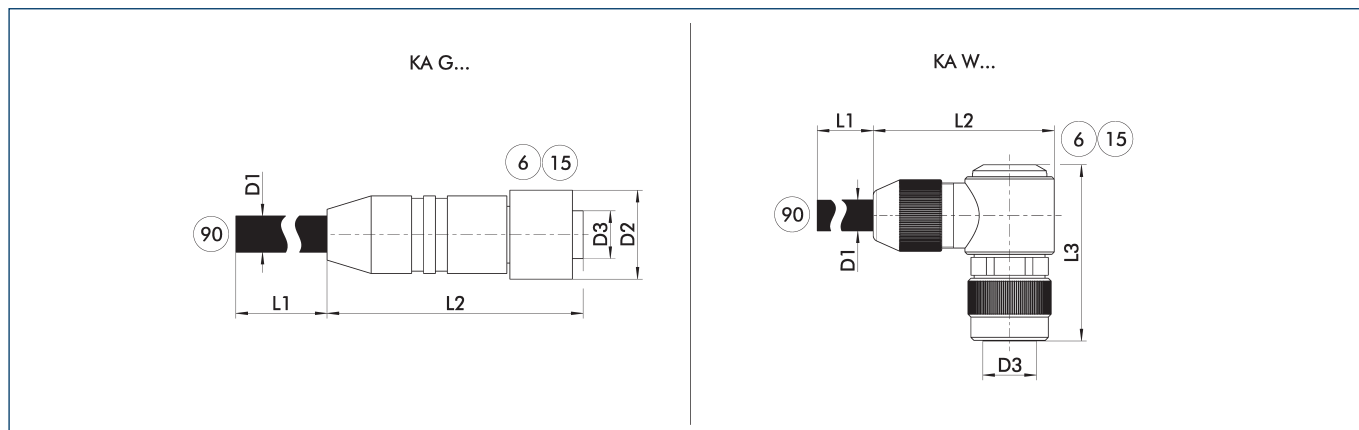
- ② Finger connection
 ⑦② Fit for centering sleeves
 ⑨② ABR-PGZN-plus
 ⑨② SBR-PGZN-plus

The drawing shows the finger blank which can be reworked by the customer.

Description	ID	Material	Scope of delivery
Finger blank			
ABR-PGZN-plus 80	0300011	Aluminum (3.4365)	1
SBR-PGZN-plus 80	0300021	Steel (1.7131)	1

- ① When finger blanks are used, the closing stroke of individual gripper series may be limited. Please check this in detail in advance using the CAD data and adjust the reworking of the fingers accordingly.

Voltage supply connection cable



- KA G... Connection cable with straight plug connector
 KA W... Connection cable with angled plug connector

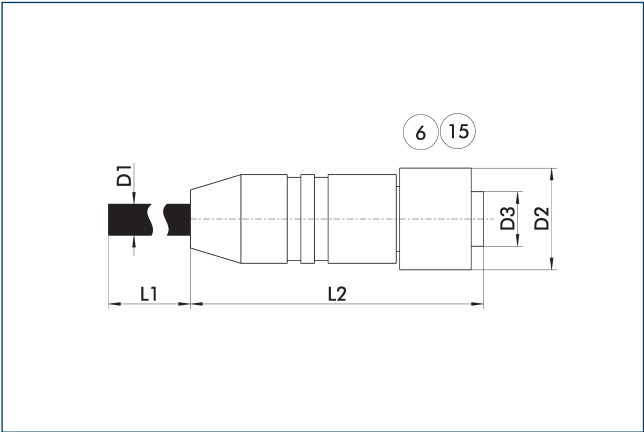
- ⑥ Connection module side
 ⑮ Socket
 ⑨② Cable end with open wire strands

The connection cables are used to connect the SCHUNK product to the voltage supply.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Voltage supply connection cable - cable track compatible							
KA GLN12T0150-LK-00500-A	0310262	5	9.6	51	15		M12 T-coded
KA GLN12T0150-LK-01000-A	0310264	10	9.6	51	15		M12 T-coded
KA WLN12T0150-LK-00500-A	0310263	5	9.6	47.5		35	M12 T-coded
KA WLN12T0150-LK-01000-A	0310265	10	9.6	47.5		35	M12 T-coded

- 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. Please refer to the product documentation for information about max. cable length and min. wire cross section.

PROFIBUS communication cables



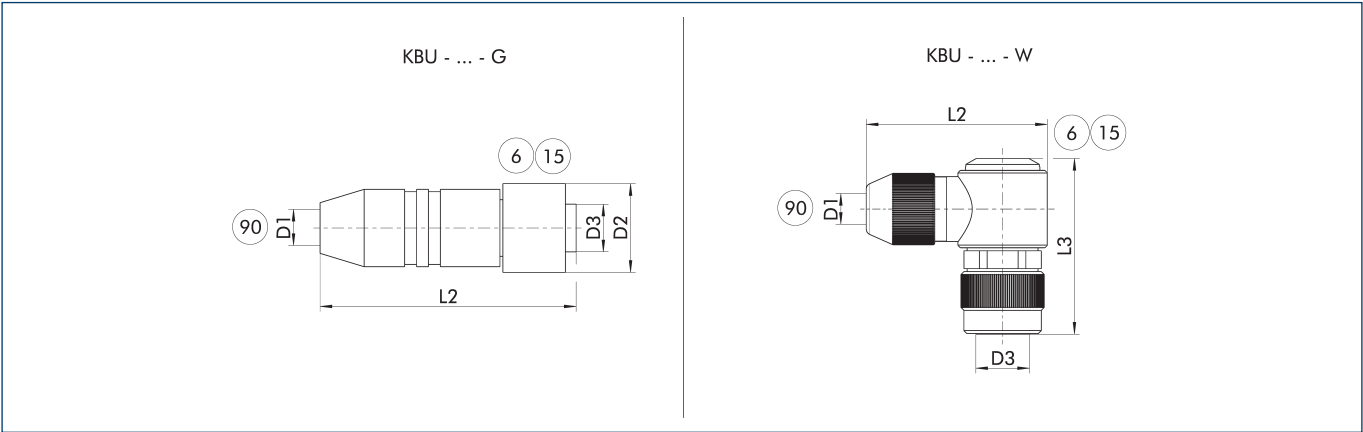
6 Connection module side 15 Socket

The communication cables are ready for use for the mechatronic SCHUNK products. They have M12 connectors on both sides.

Description	ID	L1	D1	L2	D2	D3
		[m]	[mm]	[mm]	[mm]	
PROFIBUS communication cable – drag chain suitable						
KA GGN1204-PB-00150-A	0349750	1.5	8	47	15	M12
KA GGN1204-PB-00300-A	0349751	3	8	47	15	M12
KA GGN1204-PB-00500-A	0349752	5	8	47	15	M12
KA GGN1204-PB-01000-A	0349753	10	8	47	15	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.

Power supply plug-in connector



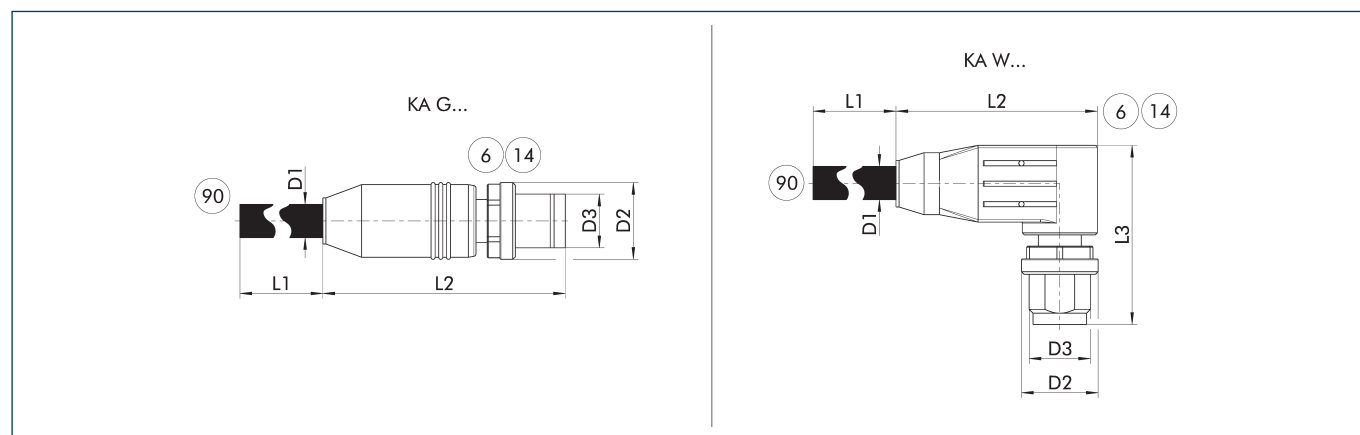
KBU - ... - G Socket with straight outlet 6 Connection module side 90 D1 – max. diameter connection cable
KBU - ... - W Socket with angular outlet 15 Socket

The plug connectors are used to connect the SCHUNK product to the voltage supply. A customer cable can be used for this. The individual wire strands are clamped using screw connections in the plug connector.

Description	ID	D1 (max.)	L2	D2	L3	D3
		[mm]	[mm]	[mm]	[mm]	
Power supply plug-in connector						
KBU-M12T-G 4P	0310260	10	58	20.2		M12 T-coded
KBU-M12T-W 4P	1001514	10	43	20.2	39	M12 T-coded

ⓘ For the connection cable, a cross-section for each individual wire strand of 1.5 mm2 is recommended. Please refer to the product documentation for information about max. cable length and min. wire cross section.

Connection cable communication PROFINET, EtherNet/IP and EtherCAT



KA G... Straight plug connector

KA W... Angular plug connector

⑥ Connection module side

⑭ Connector

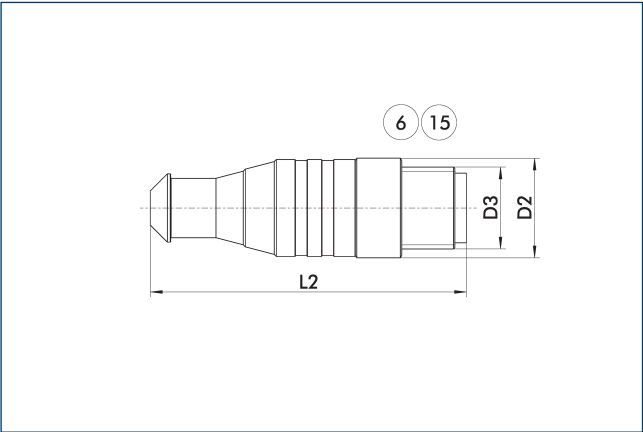
⑨⑩ Cable ends with second plug connector

The communication cables are suitably assembled for the mechatronic products from SCHUNK and can be used for the PROFINET, EtherNet/IP and EtherCAT communication interfaces. They always have an M12 plug connector on the module side (D-coded, connector). The plug connectors are designed straight (KA G...) or angled (KA W...) on the module side. On the second side, the cables either have a straight M12 plug connector (D-coded, connector) or an RJ45 plug connector.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
Communication cable suitable for drag chain M12 connector, straight – to M12 connector, straight							
KA GGN12D04-12D04-ET-00500-A	1505114	5	6.5	47.3	14.8		M12
KA GGN12D04-12D04-ET-01000-A	1505119	10	6.5	47.3	14.8		M12
Communication cable suitable for drag chain M12 connector, straight – to RJ45 connector, straight							
KA GGN12D04-RJ45-ET-00200-A	1511256	2	6.5	47.3	14.8		M12
KA GGN12D04-RJ45-ET-00500-A	1354681	5	6.5	47.8	14.8		M12
KA GGN12D04-RJ45-ET-01000-A	1505143	10	6.5	47.3	14.8		M12
Communication cable suitable for drag chain M12 connector, angled – to M12 connector, straight							
KA WGN12D04-12D04-ET-00500-A	1354661	5	6.5	47.8	14.8		M12
KA WGN12D04-12D04-ET-01000-A	1505141	10	6.5	36.3	14.8	30	M12
Communication cable suitable for drag chain M12 connector, angled – to RJ45 connector, straight							
KA WGN12D04-RJ45-ET-00500-A	1354688	5	6.5	36.3	14.8	30	M12
KA WGN12D04-RJ45-ET-01000-A	1505142	10	6.5	36.3	14.8	30	M12
Communication cable suitable for torsion-resistant M12 connector, straight – to M12 connector, straight							
KAR GGN12D04-12D04-ET-00500-A	1505146	5	6.5	47.8	14.8		M12
KAR GGN12D04-12D04-ET-01000-A	1505147	10	6.5	47.3	14.8		M12
Communication cable suitable for torsion-resistant M12 connector, straight – to RJ45 connector, straight							
KAR GGN12D04-RJ45-ET-00500-A	1354677	5	6.5	47.8	14.8		M12
KAR GGN12D04-RJ45-ET-01000-A	1505160	10	6.5	47.3	14.8		M12
Communication cable suitable for torsion-resistant M12 connector, angled – to M12 connector, straight							
KAR WGN12D04-12D04-ET-00500-A	1354674	5	6.5	47.8	14.8		M12
KAR WGN12D04-12D04-ET-01000-A	1505148	10	6.5	36.3	14.8	30	M12
Communication cable suitable for torsion-resistant M12 connector, angled – to RJ45 connector, straight							
KAR WGN12D04-RJ45-ET-00500-A	1354692	5	6.5	36.3	14.8	30	M12
KAR WGN12D04-RJ45-ET-01000-A	1505149	10	6.5	36.3	14.8	30	M12

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.

Termination resistor



- ⑥ Connection module side
- ⑮ Socket

The terminating resistors are provided for terminating the bus string directly at the SCHUNK module.

Description	ID	L2	D2	D3
		[mm]	[mm]	
Termination resistor - PROFIBUS				
ST SG1204-PB-A-A	0349650	47	15	M12

- ① An appropriate terminating resistor must be installed on the last module in the PROFIBUS string.



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