



Superior Clamping and Gripping



Product Information

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 kg



Gripping force
600 N



Stroke per jaw
42.5 mm

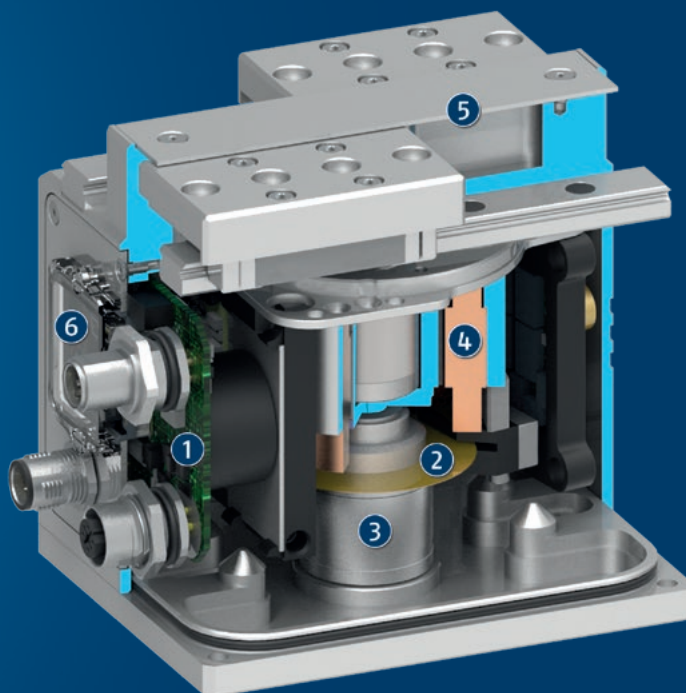


Workpiece weight
3 kg

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: DVD with SCHUNK software and assistant for commissioning, includes assembly- and operation manual, declaration of incorporation, enclosed pack with centering sleeves, functional module for control via Siemens S7-300/400. Finger blanks, and power and data cables are not included.

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.

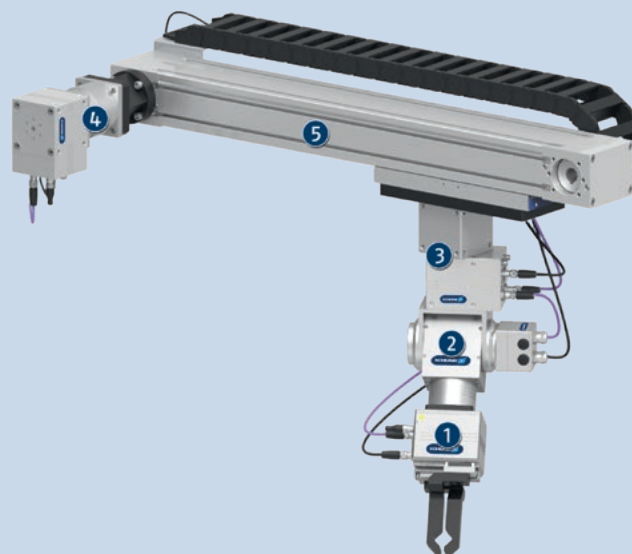
Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

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



Quick change system



Force/torque sensor



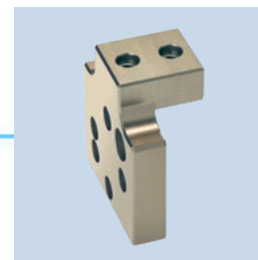
Power cable



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

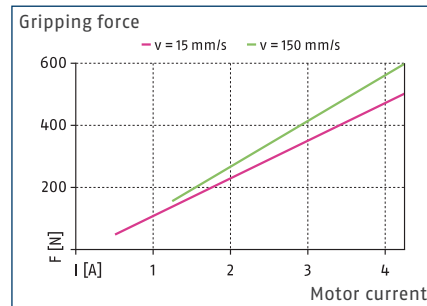
The electrical control of the gripper is carried out by the fully integrated control and power electronics. Hence, the module does not require any additional external control units.

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.

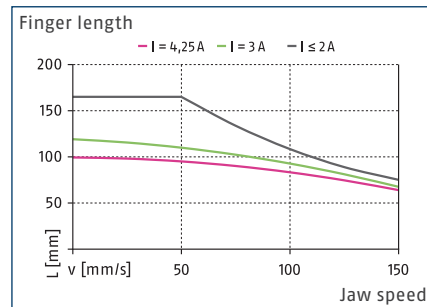
Base jaw interface: The interface of the base jaws corresponds to that of the universal gripper PGN-plus-P. This means that the extensive range of finger accessories for the PGN-plus-P can also be used for this gripper, taking into account the interfering contours, and the application limits that apply.



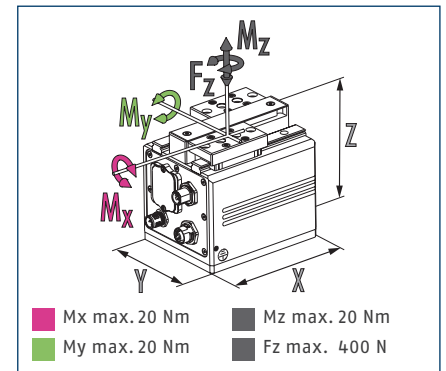
Gripping force



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

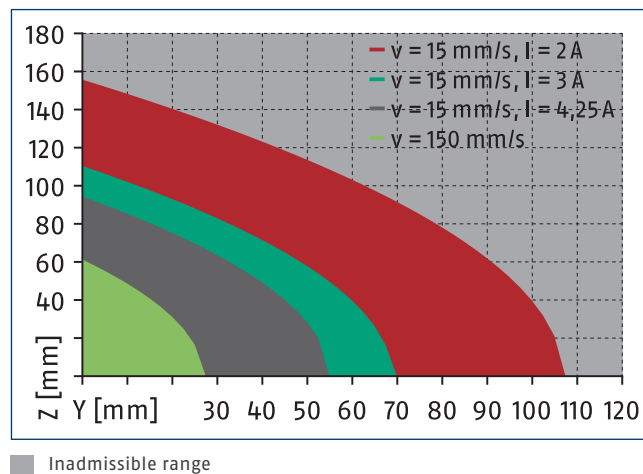
Description		EGL 90-PN
ID		1302877
General operating data		
Stroke per jaw	[mm]	42.5
Min./max. gripping force	[N]	50/600
Recommended workpiece weight	[kg]	3
Max. permissible finger length	[mm]	165
Max. permissible mass per finger	[kg]	0.5
Repeat accuracy	[mm]	0.05
Closing/opening time	[s]	0.7/0.7
Max. speed	[mm/s]	150
Max. acceleration	[mm/s ²]	2500
Weight	[kg]	1.8
Min./max. ambient temperature	[°C]	5/55
IP protection class		46
Cleanroom class ISO 14644-1:2015		4
Dimensions X x Y x Z	[mm]	112 x 90 x 108
Electrical operating data		
Controller electronics		integrated
Nominal voltage	[V DC]	24
Communication interface		PROFINET
Parametrized interface		USB
Max. current power	[A]	2.5
Max. current logic	[A]	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.

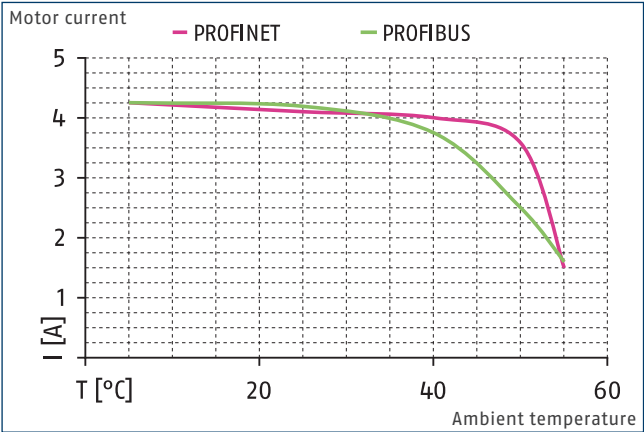
① The "finger length" diagram shows the maximum permissible finger length based on the actuated jaw speed for defined motor currents.

[illegible]

① Gripper connection	⑨0 Service window
② Finger connection	⑨1 M12 connector, T-coded (voltage supply)
⑦2 Fit for centering sleeves	⑨2 M12 PROFINET socket
⑧0 Depth of the centering sleeve hole in the counter part	

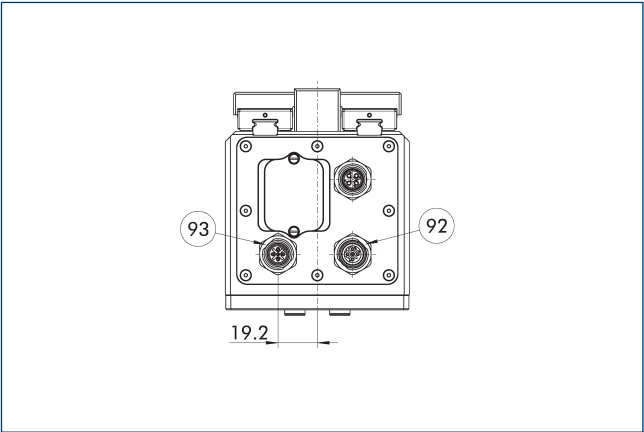


Derating



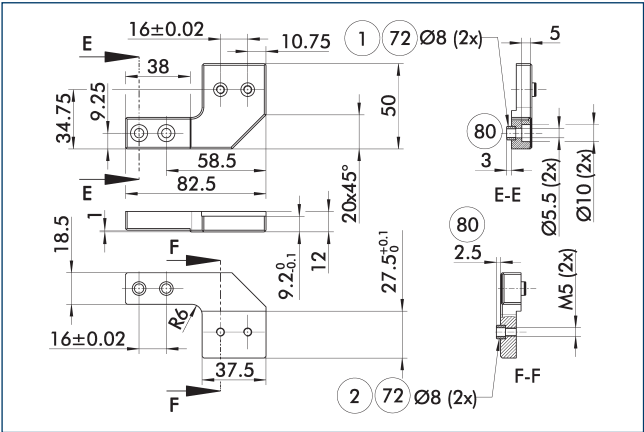
The throttle diagram shows the maximum admissible motor current depending on the ambient temperature.

PROFIBUS variant



92 M12 socket PROFIBUS 93 M12 connector PROFIBUS
Deviating connection diagram with PROFIBUS variant

Intermediate jaw ZBA-EGL 90

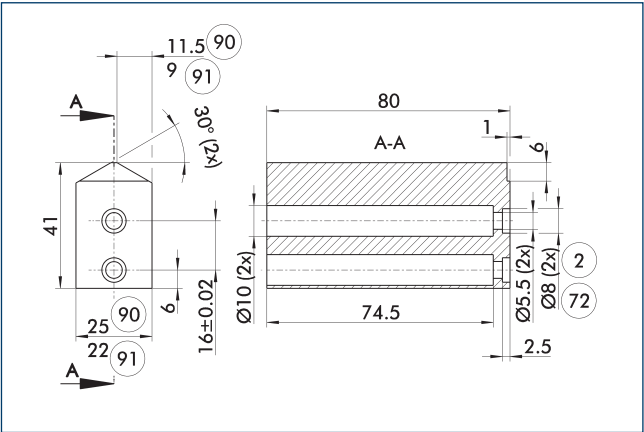


- 1 Gripper connection
- 2 Finger connection
- 72 Fit for centering sleeves
- 80 Depth of the centering sleeve hole in the counter part

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

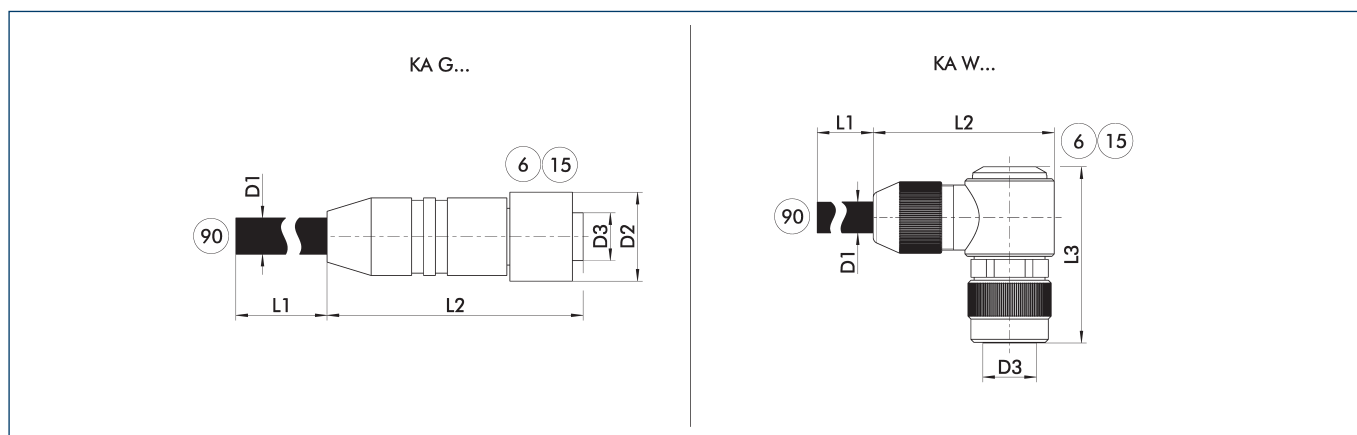


- 2 Finger connection
- 72 Fit for centering sleeves
- 90 ABR-PGZN-plus
- 91 SBR-PGZN-plus

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	1
SBR-PGZN-plus 80	0300021	Steel	1

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

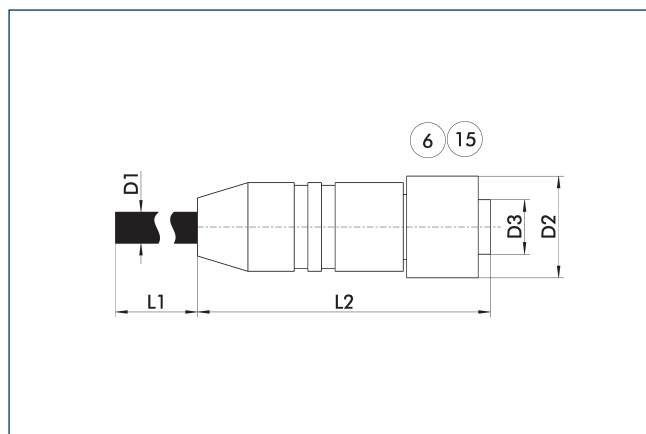
⑨⑩ Cable end with open wire strands

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

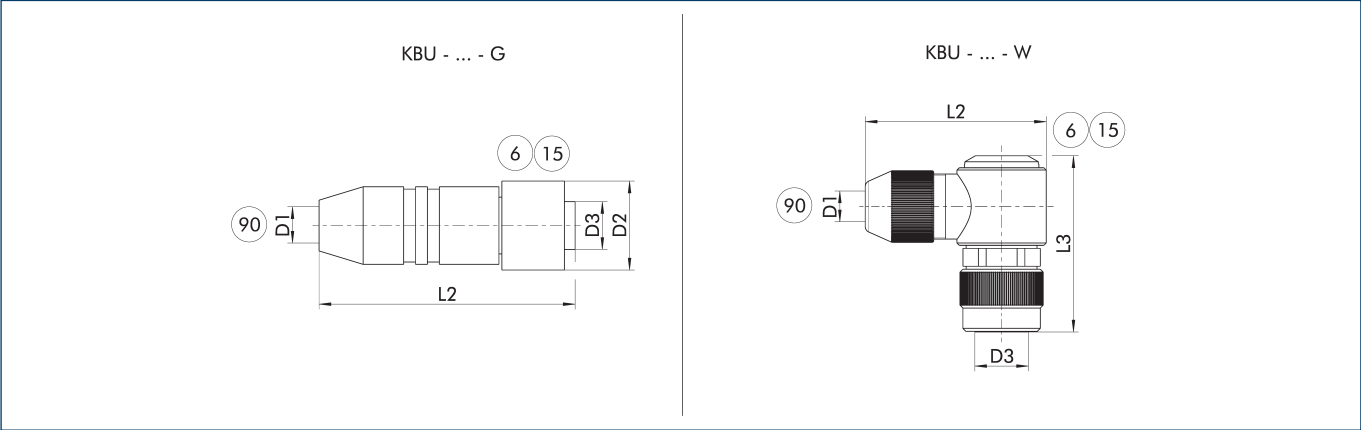
⑮ Socket

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

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.

Power supply plug-in connector



- KBU - ... - G

Socket with straight outlet
- KBU - ... - W

Socket with angular outlet
- 6

Connection module side
- 15

Socket
- 90

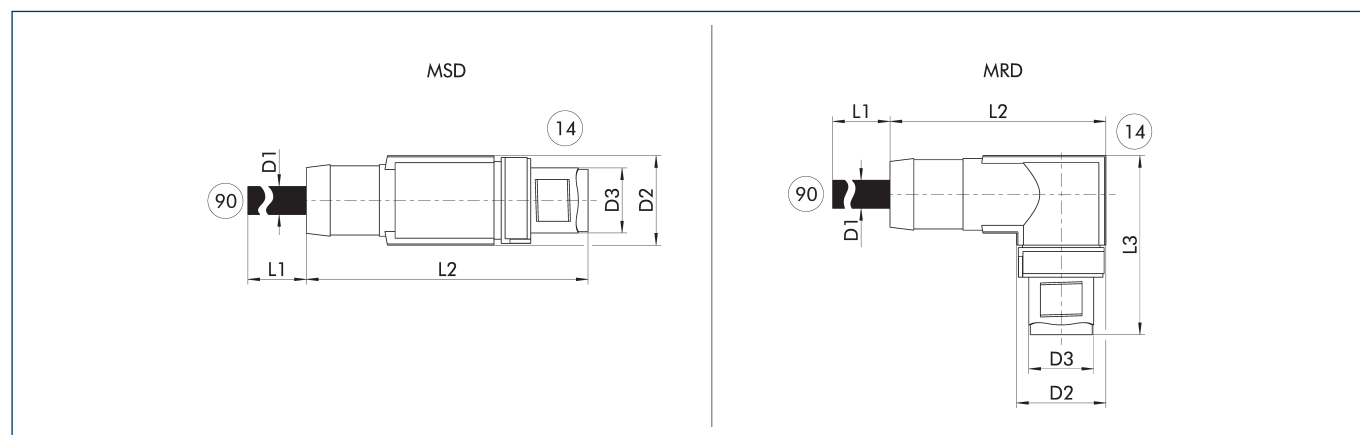
D1 - max. diameter connection cable

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

① 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.

Communication cables



MSD Straight plug connector

MRD Angular plug connector

(14) Connector

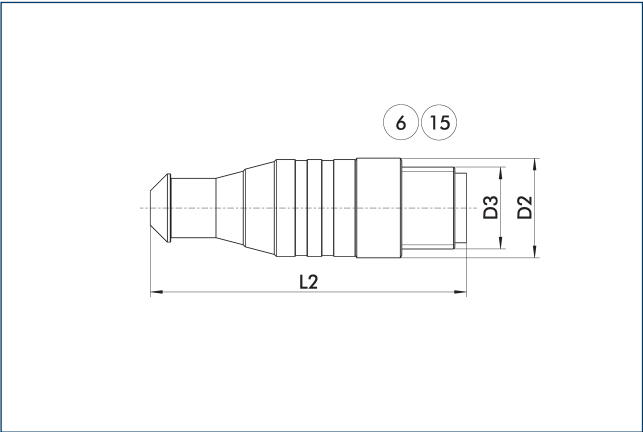
(90) Cable ends with second plug connector

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). On the second side, the cables either have M12 plug connections (D-coded, connector) or RJ45 plug connectors (R4AC). The M12 plug connectors have a straight (MSD) or angular (MRD) design.

Description	ID	L1	D1	L2	D2	L3	D3
		[m]	[mm]	[mm]	[mm]	[mm]	
EtherNet communication cable – cable track compatible							
NBC-MRD-R4AC SCO-PN/93C/5.000	1354688	5	6.5	36.3	14.8	30	M12
NBC-MSD-MRD SCO-PN/93C/5.000	1354661	5	6.5	47.8	14.8		M12
NBC-MSD-MSD SCO-PN/93C/5.000	1354659	5	6.5	47.8	14.8		M12
NBC-MSD-R4AC SCO-PN/93C/5.000	1354681	5	6.5	47.8	14.8		M12
EtherNet communication cable – torsion compatible							
NBC-MRD-R4AC SCO-PN/93R/5.000	1354692	5	6.5	36.3	14.8	30	M12
NBC-MSD-MRD SCO-PN/93R/5.000	1354674	5	6.5	47.8	14.8		M12
NBC-MSD-MSD SCO-PN/93R/5.000	1354668	5	6.5	47.8	14.8		M12
NBC-MSD-R4AC SCO-PN/93R/5.000	1354677	5	6.5	47.8	14.8		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

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



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