

Hand in hand for tomorrow



Product data sheet

Inductive proximity switches IN

Reliable. Non-contact. Easy assembly. Inductive proximity switches IN

Inductive proximity switches are used to scan the current status of automation components. They are offered by SCHUNK in versions IN and INK. The version IN is directly pluggable or has a molded cable with plug connector. The INK version is suitable for direct wiring. It has a molded cable with an open end.

Field of application

Sensors are used for monitoring gripping and rotary modules, as well as linear modules, and robot accessories. Inductive SCHUNK sensors detect metals without contact, and are resistant to vibration, dust, and water. The sensors are suitable for connection to a digital input module.

Advantages – Your benefits

Mounting with brackets for easy and fast assembly

Version with LED display for control of the switching position directly at the sensor

Version with standard plug connector for fast and easy exchangeability of the extension cable

Very flexible cable in PUR version for a long service life

Proximity switches for flush mounting for minimal interfering contours in the application



Options and special information

Functional description: With their oscillator coil, inductive proximity switches produce a high-frequency, alternating magnetic field. This field occurs on the active surface of the sensor. If a metal object enters the field, it draws energy from the magnetic field, thereby reducing the oscillation amplitude. This change is detected, and the sensor switches.

Signal output and switching type: Depending on the size and design of the sensors, they are available with the signal outputs opener and closer, and in the switching modes PNP and NPN. Please contact us for assistance.

High protection class: IP67 when plugged in, for use in clean or dusty environments or in case of contact with water. Operability in case of contact with other media (coolant, acids, bases, etc.) is often given, however cannot be guaranteed by SCHUNK.

Application example



Handling and rotary unit for components with sensor monitoring on the gripping module

- ① IN sensors
- **② Universal rotary actuator SRM**
- 3 2-finger parallel gripper PGN-plus-P
- (4) KST cable connector

SCHUNK offers more ...

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



2-finger parallel gripper



Rotary unit



Sensor cables



Sensor distributor

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

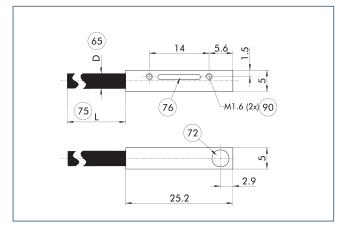


Description		IN 5-S-M8	IN 5-S-M12	INK 5-S
ID		0301469	0301569	0301501
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching distance	[mm]	1	1	1
Switching hysterisis from the nominal switching distance		< 15%	< 15%	< 15%
Max. switching frequency	[Hz]	3000	3000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
LED display in sensor		yes	yes	yes
Electrical operating data				
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30
Voltage drop	[V]	1.5	1.5	1.5
Max. switching current	[A]	0.2	0.2	0.2
Short circuit protection		yes	yes	yes
Protected against polarity reversal		yes	yes	yes
Mechanical operating data				
Housing material		Brass, nickel-plated	Brass, nickel-plated	Brass, nickel-plated
Cable connector/cable end		M8	M12	open wire strands
Cable length L	[cm]	30	30	200
Cable diameter D	[mm]	3.5	3.5	3.5
Cable sheath material		PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	35	35	35
Min. bending radius (static)	[mm]	17.5	17.5	17.5
Weight	[kg]	0.014	0.021	0.057
Protection class IP (sensor, plugged)		67	67	67
Protection class		II	II	II
Drilling emulsion resistance *		no	no	no

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

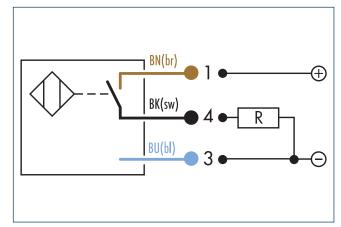
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IN 5 main view

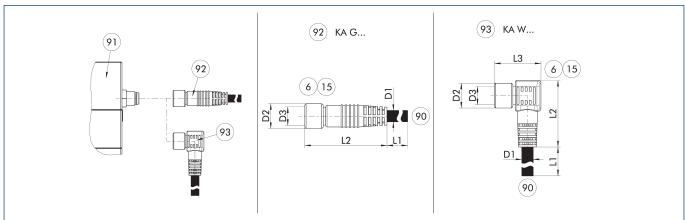


- 65 Cable diameter
- 72 Active sensor surface
- 75 Cable length
- 76 LED
- 90 Mounting thread

Wiring diagram closer PNP



Voltage supply/signals connection cable



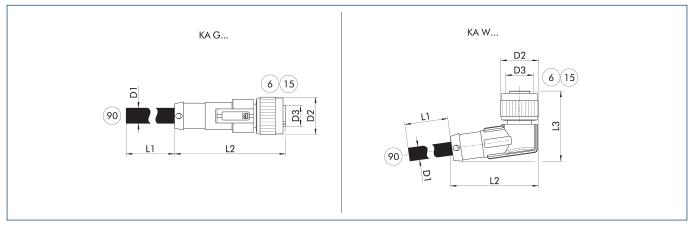
- KA G... KA W...
- Connection cable with straight socket Connection cable with angular socket

- (6) Connection module side
- (15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



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

6 Connection module side (15) Socket

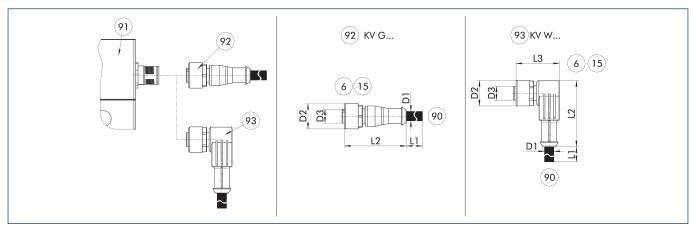
90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

10-Link cable extension

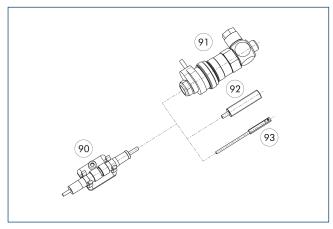


The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- © Cable end with straight connector
- 91 Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•

Clip for connector/socket



- 90 CLI plug bracket
- **92** IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

Description	ID		
Clip for connector/socket			
CLI-M12	0301464		
CLI-M8	0301463		

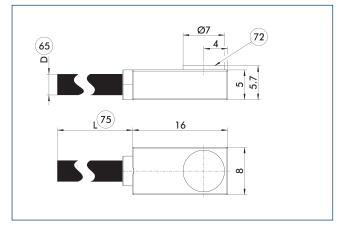


Description		IN 8-S-M8	IN 8-S-M12	INK 8-S
ID		0301481	0301581	9700052
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching distance	[mm]	1.5	1.5	1.5
Switching hysterisis from the nominal switching distance		< 10%	< 10%	< 10%
Max. switching frequency	[Hz]	1000	1000	1000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
LED display in sensor		no	no	no
Electrical operating data				
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24	24	24
Min./max. operating voltage	[V]	10/36	10/36	10/36
Voltage drop	[V]	1.5	1.5	1.5
Max. switching current	[A]	0.2	0.2	0.2
Short circuit protection		yes	yes	yes
Protected against polarity reversal		yes	yes	yes
Mechanical operating data				
Housing material		PA 6, black	PA 6, black	PA 6, black
Cable connector/cable end		M8	M12	open wire strands
Cable length L	[cm]	30	30	200
Cable diameter D	[mm]	3.5	3.5	3.5
Cable sheath material		PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	35	35	35
Min. bending radius (static)	[mm]	17.5	17.5	17.5
Weight	[kg]	0.012	0.019	0.1
Protection class IP (sensor, plugged)		67	67	67
Protection class		II	II	II
Drilling emulsion resistance *		no	no	no

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

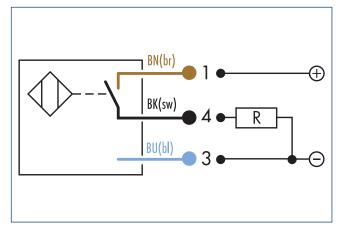
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IN 8/INK 8-S main view

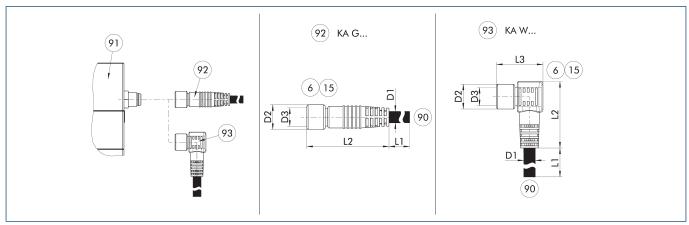


- 65 Cable diameter
- (72) Active sensor surface
- 75) Cable length

Wiring diagram closer PNP



Voltage supply/signals connection cable



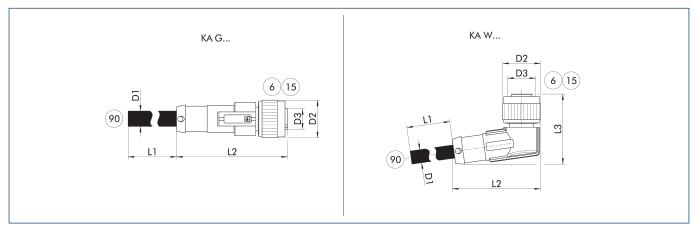
- KA G... KA W...
- Connection cable with straight socket
- Connection cable with angular socket

- (6) Connection module side
- (15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

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Connection cable for control



KA G...

Connection cable with straight plug connector

KA W...

Connection cable with angled plug connector

6 Connection module side

(15) Socket

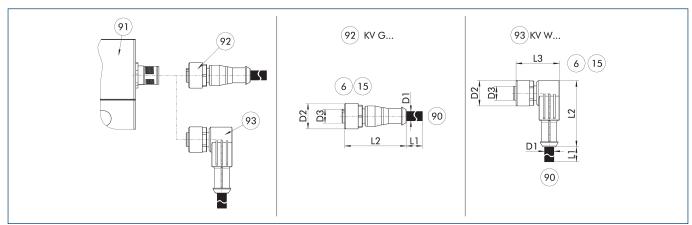
90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

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		[m]	[mm]
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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.

10-Link cable extension

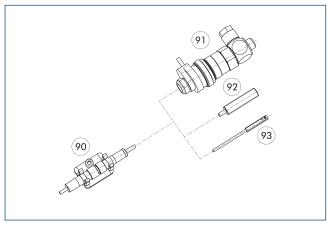


The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- © Cable end with straight connector
- $\textcircled{91} \ \ \textbf{Connection plug component}$
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•

Clip for connector/socket



- 90 CLI plug bracket
- 92 IN proximity switch
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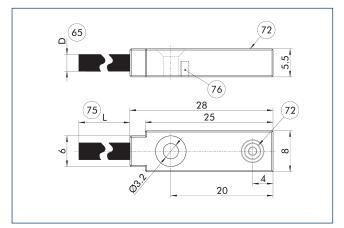
Description	ID	
Clip for connector/socket		
CLI-M12	0301464	
CII-M8	0301463	



Operating principle inductive inductive Measuring principle inductive inductive Switching principle inductive Closer Oye of switching PMP PNP Number of switching points 1 1 Each function no no General data W V Switching fistance [mm] 2 2 Switching fistance showing in strates [mm] 2 2 Max. switching frequency [Hz] 2000 2000 Welson yes yes LEB display in sensor yes yes LEB display in sensor yes yes LEB display in sensor yes yes Visited and policy and poli	Description		IN 8-SL-M8-SW	INK 8-SL
Measuring principle inductive inductive Workthing function Closer Closer Wumber of switching PNP PNP Wumber of switching points 1 1 Beach function no no General data C C Witching distance [mm] 2 2 Switching hysterisis from the nominal switching distance [mm] 2 2 Switching fishance [mm] 2 2000 2000 Min./max. ambient temperature [%] 2000 2000 ELD display in sensor yes yes yes Use distriction operating data Post Profescitorial operating data Profescitorial operating data Profescitorial operating voltage Most 1.8 1.8 Max. switching current [A] 0.15 1.8 1.8 1.8 Max. switching current [A] 0.15 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 <t< td=""><td>ID</td><td></td><td>1622470</td><td>0302456</td></t<>	ID		1622470	0302456
Switching function Closer Closer Closer Closer	Operating principle			
Type of switching PNP PNP Number of switching points 1 1 Each function no no General data U Control or	Measuring principle		inductive	inductive
Number of switching points 1	Switching function		Closer	Closer
Teach function	Type of switching		PNP	PNP
Sewitching distance [mm] 2 2 2 2 2 2 2 2 2	Number of switching points		1	1
Switching distance	Teach function		no	no
Switching hysterisis from the nominal switching distance	General data			
15% 15%	Switching distance	[mm]	2	2
Min./max. ambient temperature [°C] -25/85 -25/85 LED display in sensor yes yes Electrical operating data U C Type of voltage DC DC Nominal voltage [V] 24 24 Min./max. operating voltage [V] 10/30 10/30 Voltage drop [V] 1.8 1.8 Max. switching current [A] 0.15 0.15 Short circuit protection yes yes Protected against polarity reversal yes yes Housing material PP-GF20, yellow PP-GF20, yellow Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (synamic) [mm] 35 35 Min. bending radius (synamic) [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67	Switching hysterisis from the nominal switching distance		< 15%	< 15%
LED display in sensor yes yes Electrical operating data Type of voltage DC Nominal voltage Min./max. operating vo	Max. switching frequency	[Hz]	2000	2000
DC	Min./max. ambient temperature	[°C]	-25/85	-25/85
DC DC Nominal voltage V]	LED display in sensor		yes	yes
Nominal voltage [V] 24 24 Min./max. operating voltage [V] 10/30 10/30 Voltage drop [V] 1.8 1.8 Max. switching current [A] 0.15 0.15 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data PP-GF20, yellow PP-GF20, yellow Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II II	Electrical operating data			
Min./max. operating voltage [V] 1.0/30 10/30 Voltage drop [V] 1.8 1.8 Max. switching current [A] 0.15 0.15 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data PP-GF20, yellow PP-GF20, yellow Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II III	Type of voltage		DC	DC
Voltage drop [V] 1.8 1.8 1.8 Max. switching current [A] 0.15 0.15 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data PP-GF20, yellow PP-GF20, yellow Open wire strands Cable connector/cable end M8 Open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class	Nominal voltage	[V]	24	24
Max. switching current [A] 0.15 0.15 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data Housing material PP-GF20, yellow PP-GF20, yellow open wire strands Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class	Min./max. operating voltage	[V]	10/30	10/30
Short circuit protection yes yes yes Protected against polarity reversal yes yes Mechanical operating data Housing material PP-GF20, yellow PP-GF20, yellow open wire strands Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class	Voltage drop	[V]	1.8	1.8
Protected against polarity reversal yes yes Mechanical operating data Housing material PP-GF20, yellow PP-GF20, yellow Open wire strands Cable connector/cable end M8 Open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class	Max. switching current	[A]	0.15	0.15
Mechanical operating data Housing material Cable connector/cable end M8 Open wire strands Cable length L Cable diameter D Cable sheath material PUR PUR Min. bending radius (dynamic) Min. bending radius (static) Ming I (kg) Protection class IP (sensor, plugged) Frotection class PP-GF20, yellow Open wire strands Open	Short circuit protection		yes	yes
Housing material PP-GF20, yellow PP-GF20, yellow open wire strands Cable connector/cable end M8 open wire strands Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class	Protected against polarity reversal		yes	yes
Cable connector/cable end M8 Cable length L Cable diameter D Cable sheath material MI MI MI MI MI MI MI MI MI M	Mechanical operating data			
Cable length L [cm] 30 200 Cable diameter D [mm] 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II II	Housing material		PP-GF20, yellow	PP-GF20, yellow
Cable diameter D [mm] 3 3 3 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class III II	Cable connector/cable end		M8	open wire strands
Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II II II	Cable length L	[cm]	30	200
Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II II II	Cable diameter D	[mm]	3	3
Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class III II	Cable sheath material		PUR	PUR
Weight [kg] 0.03 0.03 Protection class IP (sensor, plugged) 67 67 Protection class II II	Min. bending radius (dynamic)	[mm]	35	35
Protection class IP (sensor, plugged) 67 67 Protection class II II II	Min. bending radius (static)	[mm]	17.5	17.5
Protection class II II	Weight	[kg]	0.03	0.03
	Protection class IP (sensor, plugged)		67	67
Prilling amulaion recistance *	Protection class		II	II
orining enimpion regiprance. In	Drilling emulsion resistance *		no	no

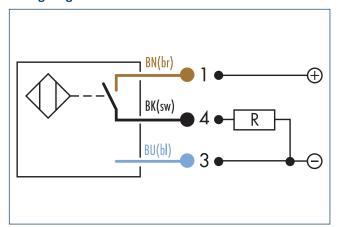
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 8-SL/INK 8-SL main view

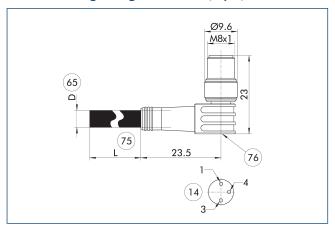


- 65 Cable diameter
- 72 Active sensor surface
- 75 Cable length
- 76 LED

Wiring diagram closer PNP



View of a M8 right-angle connector (3-pin)



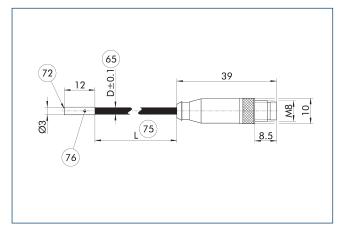
- (14) Connector
- 65 Cable diameter
- 75) Cable length 76) LED



Description		IN 30K-S-M8-PNP	IN 30L-S-M8-PNP
ID		1001272	1001274
Operating principle			
Measuring principle		inductive	inductive
Switching function		Closer	Closer
Type of switching		PNP	PNP
Number of switching points		1	1
Teach function		no	no
General data			
Switching distance	[mm]	0.9	1
Max. switching frequency	[Hz]	8000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70
LED display in sensor		yes	yes
Electrical operating data			
Type of voltage		DC	DC
Nominal voltage	[V]	24	24
Min./max. operating voltage	[V]	10/30	10/30
Voltage drop	[V]	2	2
Max. switching current	[A]	0.1	0.1
Short circuit protection		yes	yes
Protected against polarity reversal		yes	yes
Mechanical operating data			
Housing material		stainless steel	stainless steel
Cable connector/cable end		M8 connector, 3-pin	M8 connector, 3-pin
Cable length L	[cm]	20	20
Cable diameter D	[mm]	2.6	2.6
Cable design (wire cross section/ number of wires)		3 x 0,055mm2	3 x 0,055mm2
Cable sheath material		PUR	PUR
Min. bending radius (dynamic)	[mm]	26	26
Min. bending radius (static)	[mm]	26	26
Weight	[kg]	0.08	0.08
Protection class IP (sensor, plugged)		67	67
Protection class		III	III
Drilling emulsion resistance *		no	no

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

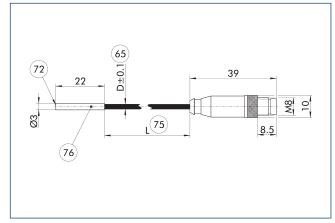
IN 30K main view



- 65 Cable diameter
- 72 Active sensor surface
- 75) Cable length
- 76 LED

The drawing shows the sensor with a connection cable and plug connector. For further information, for example on cable diameter and cable length, see the technical data table.

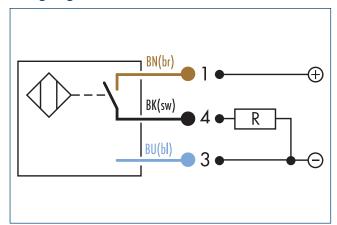
IN 30L main view



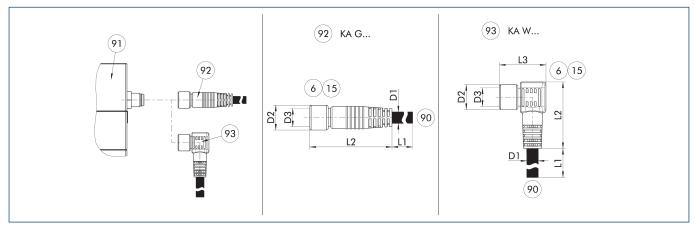
- 65 Cable diameter
- 75 Cable length
- 72 Active sensor surface
- 76 LED

The drawing shows the sensor with a connection cable and plug connector. For further information, for example on cable diameter and cable length, see the technical data table.

Wiring diagram closer PNP



Voltage supply/signals connection cable



KA G...

Connection cable with straight socket Connection cable with angular socket

- 6 Connection module side
- (15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

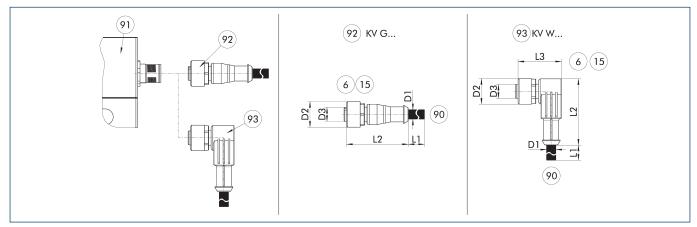
The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined		
		[m]	[mm]				
Connection cables	Connection cables						
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•		
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8			
KA BW08-L 3P-0300-PNP	0301594	3	4.5				
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8			

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.

16

10-Link cable extension



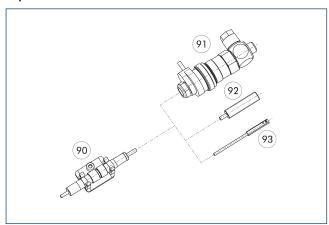
The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- 6 Connection module side
- (15) Socket
- © Cable end with straight connector
- 91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	l1	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•

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.

Clip for connector/socket



- 90 CLI plug bracket
- 92 IN proximity switch
- (91) MV micro valve
- (93) Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

Description	ID
Clip for connector/soc	ket
CLI-M8	0301463



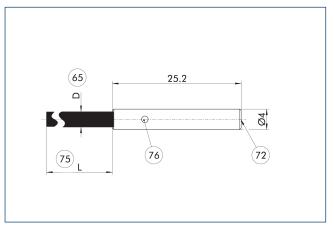
Description		IN 40-S-M8	IN 40-S-M12	INK 40-S	IN 40-0-M8	IN 40-0-M12	INK 40-0
ID		0301474	0301574	0301555	0301484	0301584	0301556
Operating principle							
Measuring principle		inductive	inductive	inductive	inductive	inductive	inductive
Switching function		Closer	Closer	Closer	0pener	Opener	0pener
Type of switching		PNP	PNP	PNP	PNP	PNP	PNP
Number of switching points		1	1	1	1	1	1
Teach function		no	no	no	no	no	no
General data							
Switching distance	[mm]	0.8	0.8	0.8	0.8	0.8	0.8
Switching hysterisis from the nominal switching distance		< 5%	< 5%	< 5%	< 5%	< 5%	< 5%
Max. switching frequency	[Hz]	3000	3000	3000	3000	3000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70	-25/70	-25/70	-25/70
LED display in sensor		yes	yes	yes	yes	yes	yes
Electrical operating data							
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24	24	24	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30	10/30	10/30	10/30
Voltage drop	[V]	1.8	0.6	0.6	0.6	0.6	0.6
Max. switching current	[A]	0.1	0.2	0.2	0.2	0.2	0.2
Short circuit protection		yes	yes	yes	yes	yes	yes
Protected against polarity reversal		yes	yes	yes	yes	yes	yes
Mechanical operating data							
Housing material		stainless steel	stainless steel	stainless steel	stainless steel	stainless steel	stainless steel
Cable connector/cable end		M8 connector, 3-pin	M12 connector, 3-pin	open wire strands	M8 connector, 3-pin	M12 connector, 3-pin	open wire strands
Cable length L	[cm]	30	30	200	30	30	200
Cable diameter D	[mm]	3	3.3	3.3	3.3	3.3	3.3
Cable design (wire cross section/ number of wires)		3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2
Cable sheath material		PUR	PUR	PUR	PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	32	34	34	34	34	34
Min. bending radius (static)	[mm]	16	17	17	17	17	17
Weight	[kg]	0.012	0.02	0.062	0.013	0.02	0.05
Protection class IP (sensor, plugged)		67	67	67	67	67	67
Protection class		Ш					
Drilling emulsion resistance *		yes	yes	no	yes	yes	no
Options and their characteristics							
Version with lateral cable outlet		IN 40-S-M8-SA	IN 40-S-M12-SA	INK 40-S-SA			
ID		0301473	0301577	0301565			
LED display in sensor		ves	ves	yes			

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

Description		IN 40L-S-M8-SW
ID		1618937
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	1
Switching hysterisis from the nominal switching distance		< 10%
Max. switching frequency	[Hz]	3000
Min./max. ambient temperature	[°C]	-25/70
LED display in sensor		yes
Electrical operating data		
Type of voltage		DC
Nominal voltage	[V]	24
Min./max. operating voltage	[V]	10/30
Voltage drop	[V]	1.8
Max. switching current	[A]	0.1
Short circuit protection		yes
Protected against polarity reversal		yes
Mechanical operating data		
Housing material		stainless steel
Cable connector/cable end		M8
Cable length L	[cm]	30
Cable diameter D	[mm]	3.3
Cable design (wire cross section/ number of wires)		3x 0.14mm2
Cable sheath material		PUR
Min. bending radius (dynamic)	[mm]	35
Min. bending radius (static)	[mm]	17.5
Weight	[kg]	0.02
Protection class IP (sensor, plugged)		67
Protection class		
Drilling emulsion resistance *		no

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

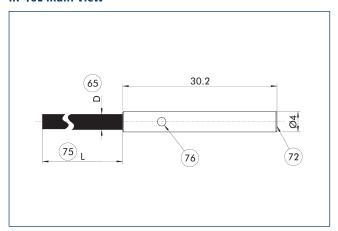
IN(K) 40 main view



- 65 Cable diameter
- 72 Active sensor surface
- 75 Cable length
- 76 LED

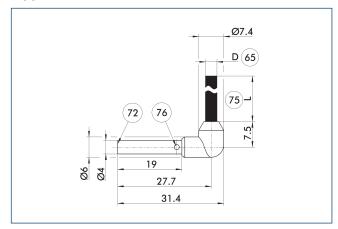
tive selisor surface (76) LED

IN 40L main view



- 65 Cable diameter
- (72) Active sensor surface
- (75) Cable length
- 76 LED

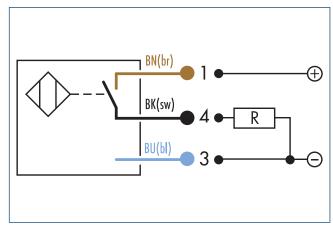
IN(K) 40-SA main view



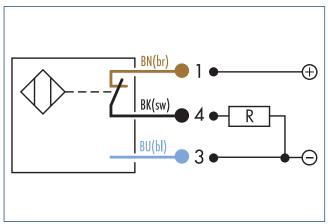
- **72** Active sensor surface
- 76 LED

- 65 Cable diameter
- 75 Cable length

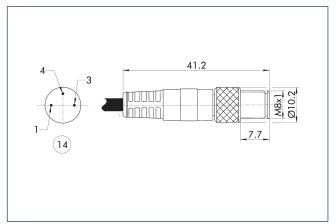
Wiring diagram closer PNP



Wiring diagram opener PNP



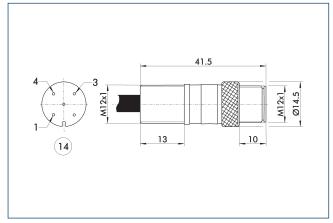
View of M8 connector (3-pin)



14) Connector

This view shows the plug connector on the cable end of the sensor.

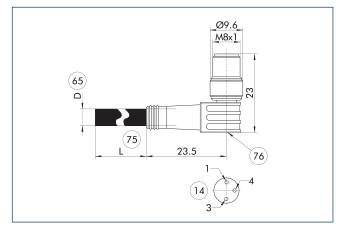
View of M12 connector (4-pin)



(14) Connector

This view shows the plug connector on the cable end of the sensor.

View of a M8 right-angle connector (3-pin)



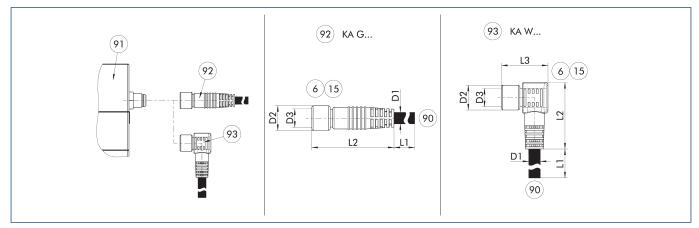
(14) Connector

65 Cable diameter

75 Cable length

76) LED

Voltage supply/signals connection cable



KA G...

Connection cable with straight socket

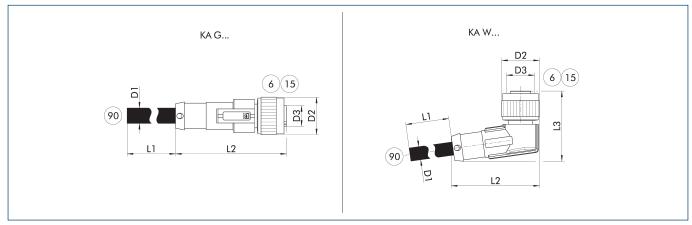
KA W... Connection cable with angular socket

- (6) Connection module side
- 15 Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- ©2 Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined			
		[m]	[mm]					
Connection cables	Connection cables							
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•			
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8				
KA BW08-L 3P-0300-PNP	0301594	3	4.5					
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8				

Connection cable for control



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

6 Connection module side15 Socket

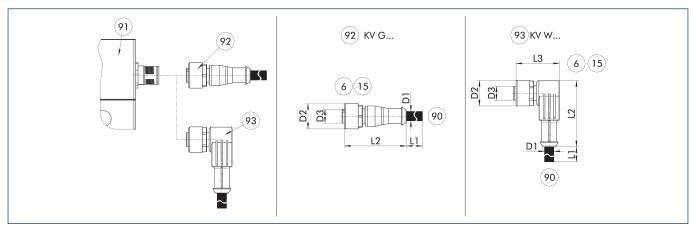
90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

10-Link cable extension

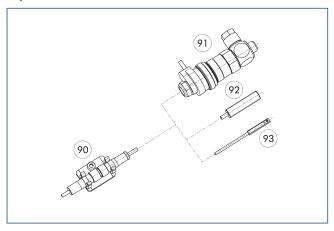


The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15 Socket
- © Cable end with straight connector
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	l1	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•

Clip for connector/socket



- 90 CLI plug bracket
- **92** IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

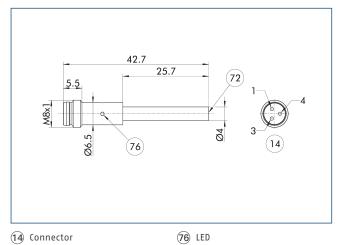
Description	ID
Clip for connector/soc	ket
CLI-M12	0301464
CII-M8	0301463



Description		IN-B 40-S-M8-PNP
ID		1619112
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	1
Switching hysterisis from the nominal switching distance		< 15%
Max. switching frequency	[Hz]	3000
Min./max. ambient temperature	[°C]	-25/70
LED display in sensor		yes
Electrical operating data		
Type of voltage		DC
Nominal voltage	[V]	24
Min./max. operating voltage	[V]	10/30
Voltage drop	[V]	1.8
Max. switching current	[A]	0.1
Short circuit protection		yes
Protected against polarity reversal		yes
Mechanical operating data		
Housing material		stainless steel
Cable connector/cable end		M8x1
Weight	[kg]	0.01
Protection class IP (sensor, plugged)		67
Protection class		
Drilling emulsion resistance *		no

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

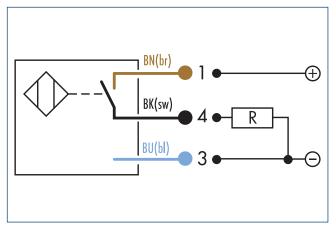
IN-B 40 main view



 $\bigcirc 14$ Connector

72 Active sensor surface

Wiring diagram closer PNP

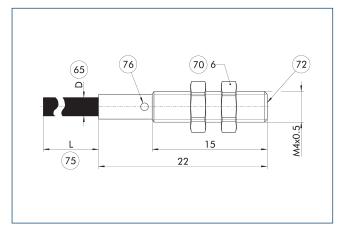




Description		IN 41-S-M8-PNP
ID		1325755
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	0.8
Switching hysterisis from the nominal switching distance		< 15%
Max. switching frequency	[Hz]	3000
Min./max. ambient temperature	[°C]	-25/75
LED display in sensor		yes
Electrical operating data		
Type of voltage		DC
Nominal voltage	[V]	24
Min./max. operating voltage	[V]	6/30
Voltage drop	[V]	2
Max. switching current	[A]	0.1
Short circuit protection		yes
Protected against polarity reversal		yes
Mechanical operating data		
Housing material		stainless steel
Cable connector/cable end		M8 connector, 3-pin
Cable length L	[cm]	20
Cable diameter D	[mm]	2.4
Cable design (wire cross section/ number of wires)		3x 0.14mm2
Cable sheath material		PUR
Min. bending radius (dynamic)	[mm]	24
Min. bending radius (static)	[mm]	24
Weight	[kg]	0.007
Protection class IP (sensor, plugged)		67
Protection class		
Drilling emulsion resistance *		no

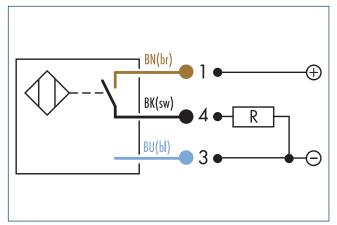
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

Main view

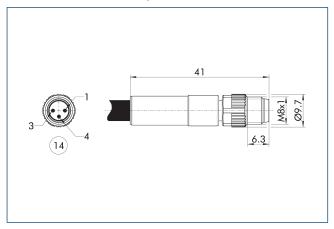


- 65 Cable diameter
- 70 Wrench size
- 72 Active sensor surface
- 75 Cable length
- 76 LED

Wiring diagram closer PNP

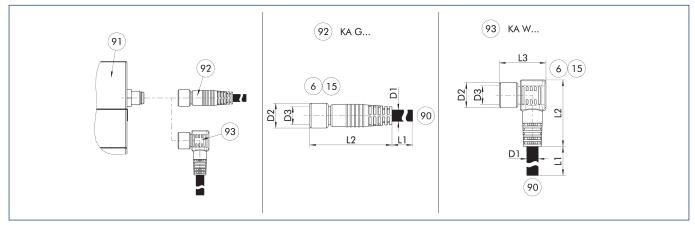


View of M8 connector (3-pin)



(14) Connector

Voltage supply/signals connection cable



KA G...

Connection cable with straight socket Connection cable with angular socket

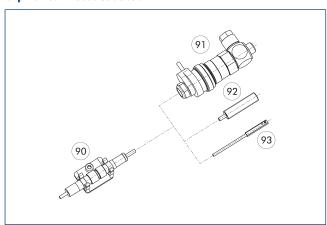
- 6 Connection module side
- (15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined		
		[m]	[mm]				
Connection cables	Connection cables						
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•		
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8			
KA BW08-L 3P-0300-PNP	0301594	3	4.5				
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8			

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.

Clip for connector/socket



- 90 CLI plug bracket
- (92) IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

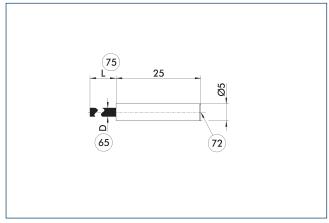
Description	ID
Clip for connector/soc	:ket
CLI-M8	0301463



Description		IN 50-S-M8	IN 50-S-M12	INK 50-S
ID		0301568	0301575	0301560
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching distance	[mm]	1	1	1
Switching hysterisis from the nominal switching distance		< 5%	< 5%	< 5%
Max. switching frequency	[Hz]	3000	3000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
LED display in sensor		yes	yes	no
Electrical operating data				
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30
Voltage drop	[V]	0.6	0.6	0.6
Max. switching current	[A]	0.2	0.2	0.2
Short circuit protection		yes	yes	yes
Protected against polarity reversal		yes	yes	yes
Mechanical operating data				
Housing material		Brass, nickel-plated	Brass, nickel-plated	Brass, nickel-plated
Cable connector/cable end		M8	M12	open wire strands
Cable length L	[cm]	30	30	200
Cable diameter D	[mm]	3.5	3.5	3.5
Cable sheath material		PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	35	35	35
Min. bending radius (static)	[mm]	17.5	17.5	17.5
Weight	[kg]	0.014	0.021	0.1
Protection class IP (sensor, plugged)		67	67	67
Protection class		II	II	II
Drilling emulsion resistance *		no	no	no

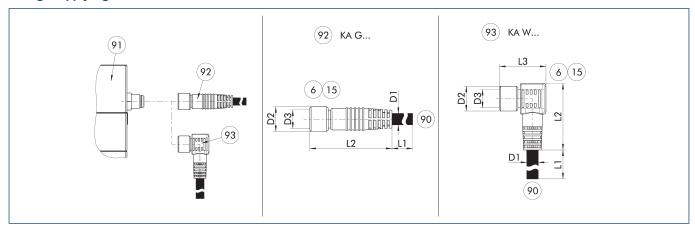
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 50 main view



- 65 Cable diameter
- 75) Cable length
- 72 Active sensor surface

Voltage supply/signals connection cable



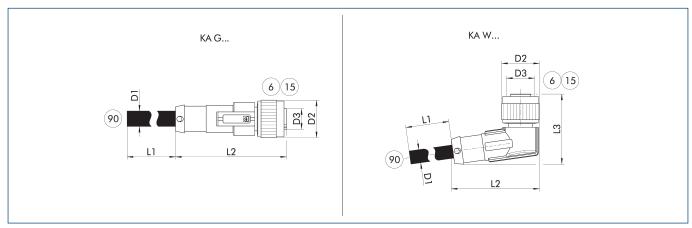
- KA G... KA W...
- Connection cable with straight socket Connection cable with angular socket

- (6) Connection module side
- 15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- 93 Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



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

6 Connection module side15 Socket

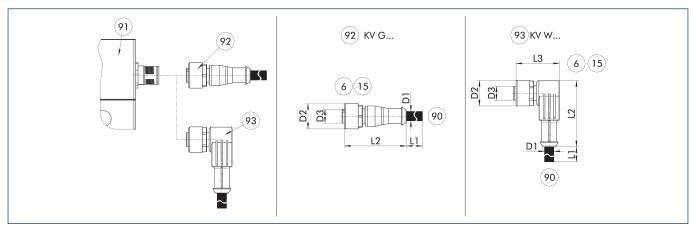
(90) Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

10-Link cable extension

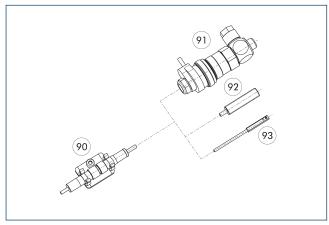


The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- © Cable end with straight connector
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•

Clip for connector/socket



- 90 CLI plug bracket
- 92 IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

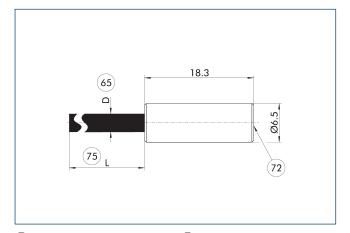
Description	ID	
Clip for connector/socket		
CLI-M12	0301464	
CLI-M8	0301463	



Description		IN 60-S-M8	IN 60-S-M12	INK 60-S
ID		0301485	0301585	0301553
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching distance	[mm]	1.5	1.5	1.5
Switching hysterisis from the nominal switching distance		< 10%	< 10%	< 10%
Max. switching frequency	[Hz]	1000	1000	1000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
LED display in sensor		no	no	no
Electrical operating data				
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30
Voltage drop	[V]	1.5	1.5	1.5
Max. switching current	[A]	0.2	0.2	0.2
Short circuit protection		yes	yes	yes
Protected against polarity reversal		yes	yes	yes
Mechanical operating data				
Housing material		stainless steel	stainless steel	stainless steel
Cable connector/cable end		M8	M12	open wire strands
Cable length L	[cm]	30	30	200
Cable diameter D	[mm]	3.5	3.5	3.5
Cable sheath material		PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	35	35	35
Min. bending radius (static)	[mm]	17.5	17.5	17.5
Weight	[kg]	0.008	0.019	0.056
Protection class IP (sensor, plugged)		67	67	67
Protection class		II	II	II
Drilling emulsion resistance *		no	no	no

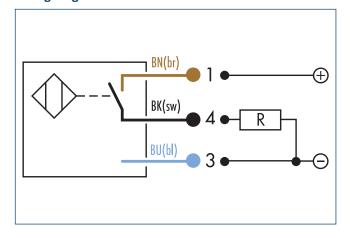
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and 0emeta 760 (1008339).

IN 60 main view

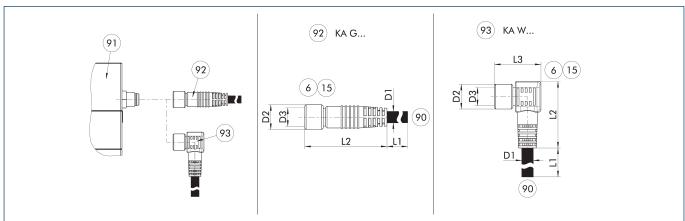


- 65 Cable diameter
- 72 Active sensor surface
- 75) Cable length

Wiring diagram closer PNP



Voltage supply/signals connection cable



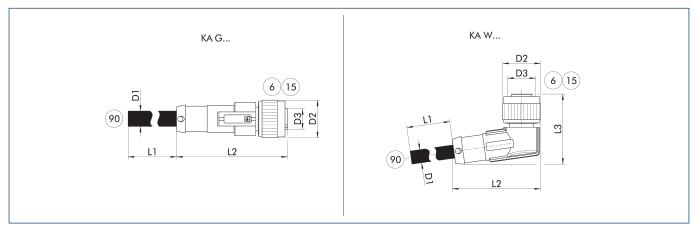
- KA G...
- Connection cable with straight socket
- KA W... Connection cable with angular socket

- (6) Connection module side
- 15) Socket
- 90 SAC connection cable with open wire strands
- 91 Connection plug component
- ©2 Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



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

Connection cable with angled plug connector

6 Connection module side15 Socket

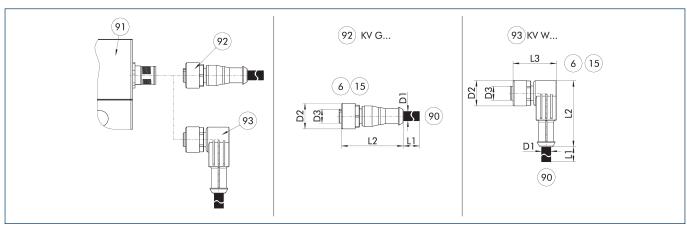
(90) Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

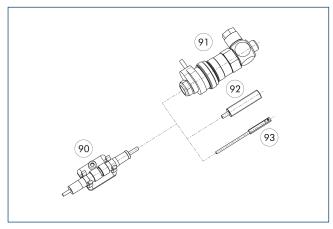
10-Link cable extension



The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- 90 Cable end with straight connector
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•



- 90 CLI plug bracket
- **92** IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

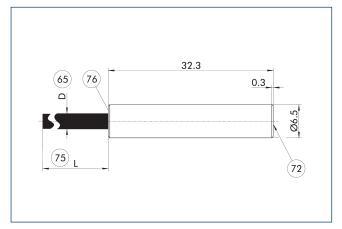
Description	ID
Clip for connector/so	cket
CLI-M12	0301464
CII-M8	0301463



Operating principle Inductive Inductive Inductive Measuring principle Inductive Inductive Inductive Switching function Closer Closer Closer Type of switching points 1 1 1 1 Teach function no no no no no no General data Image: Comparison of Switching distance [mm] 1.5	Description		IN 65-S-M8	IN 65-S-M12	INK 65-S
Measuring principle inductive inductive inductive Switching function Closer Closer Closer Type of switching PNP PNP PNP Number of switching points 1 1 1 Teach function no no no General data Image: Closer of Market of Mark	ID		0301476	0301576	0301554
Switching function Closer Closer Closer Type of switching PNP PNP PNP Number of switching points 1 1 1 Teach function no no no Switching distance [mm] 1.5 1.5 1.5 Switching hysterisis from the nominal switching distance < 10%	Operating principle				
Type of switching points PNP PNP PNP PNP Number of switching points 1 1 1 Teach function no no no Switching distance [mm] 1.5 1.5 1.5 Switching hysterisis from the nominal switching distance "10% 1000 1000 1000 1000 Max. switching frequency [Hz] 1000 1000 1000 1000 Min./max. ambient temperature [°] -25770 -25770 -25770 -25770 Electrical operating data "VE VS yes no 1000 Nominal voltage [V] 10/30	Measuring principle		inductive	inductive	inductive
Number of switching points 1 1 1 Teach function no no no General data Image: Common of Switching distance 1.5 1.5 1.5 1.5 1.5 1.0%	Switching function		Closer	Closer	Closer
Reach function	Type of switching		PNP	PNP	PNP
General data Image: Company of the Compa	Number of switching points		1	1	1
Switching distance [mm] 1.5 1.5 1.5 Switching hysterisis from the nominal switching distance < 10%	Teach function		no	no	no
Switching hysterisis from the nominal switching distance < 10%	General data				
nominal switching distance < 10% < 10% < 10% Max. switching frequency [Hz] 1000 1000 1000 Min./max. ambient temperature [°C] -25/70 -25/70 -25/70 Electrical operating data yes no -25/70 Step of voltage DC DC DC Nominal voltage [V] 24 24 24 Min./max. operating voltage [V] 10/30 10/30 10/30 10/30 Voltage drop [V] 1.5 1.5 1.5 1.5 1.5 Max. switching current [A] 0.2 0.2 0.2 0.2 1.5 <td< td=""><td>Switching distance</td><td>[mm]</td><td>1.5</td><td>1.5</td><td>1.5</td></td<>	Switching distance	[mm]	1.5	1.5	1.5
Min./max. ambient temperature [°C] -25/70 <td>Switching hysterisis from the nominal switching distance</td> <td></td> <td>< 10%</td> <td>< 10%</td> <td>< 10%</td>	Switching hysterisis from the nominal switching distance		< 10%	< 10%	< 10%
EED display in sensor yes yes no Electrical operating data DC DC DC Nominal voltage IV 24 24 24 Min./max. operating voltage IV 10/30 10/30 10/30 10/30 Voltage drop IV 1.5	Max. switching frequency	[Hz]	1000	1000	1000
Electrical operating data IDC DC DC <th< td=""><td>Min./max. ambient temperature</td><td>[°C]</td><td>-25/70</td><td>-25/70</td><td>-25/70</td></th<>	Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
Type of voltage DC DC Nominal voltage [V] 24 24 24 Min./max. operating voltage [V] 10/30 10/30 10/30 Voltage drop [V] 1.5 1.5 1.5 Max. switching current [A] 0.2 0.2 0.2 0.2 0.2 Short circuit protection yes yes yes yes yes Protected against polarity reversal yes yes yes Mechanical operating data Image: stainless steel	LED display in sensor		yes	yes	no
Nominal voltage [V] 24 24 24 Min./max. operating voltage [V] 10/30 10/30 10/30 Voltage drop [V] 1.5 1.5 1.5 Max. switching current [A] 0.2 0.2 0.2 Short circuit protection yes yes yes Protected against polarity reversal yes yes yes Mechanical operating data Image: steel of the connector/cable end M8 M12 Open wire strands Cable connector/cable end M8 M12 Open wire strands Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) <td>Electrical operating data</td> <td></td> <td></td> <td></td> <td></td>	Electrical operating data				
Min./max. operating voltage [V] 10/30 10/30 10/30 Voltage drop [V] 1.5 1.5 1.5 Max. switching current [A] 0.2 0.2 0.2 Short circuit protection yes yes yes Protected against polarity reversal yes yes yes Mechanical operating data Image: steel of the connector/cable end open wire strands tainless steel open wire strands Cable connector/cable end M8 M12 open wire strands Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class III	Type of voltage		DC	DC	DC
Voltage drop [V] 1.5 1.5 1.5 Max. switching current [A] 0.2 0.2 0.2 Short circuit protection yes yes yes Protected against polarity reversal yes yes Mechanical operating data The control of the control	Nominal voltage	[V]	24	24	24
Max. switching current [A] 0.2 0.2 0.2 Short circuit protection yes yes yes yes Protected against polarity reversal yes yes yes Mechanical operating data Mechanical operating data Stainless steel stainless steel stainless steel Cable connector/cable end M8 M12 open wire strands Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 67 Protection class	Min./max. operating voltage	[V]	10/30	10/30	10/30
Short circuit protection yes yes yes yes Protected against polarity reversal yes yes yes Mechanical operating data Housing material stainless steel stainless steel stainless steel open wire strands Cable connector/cable end M8 M12 open wire strands Cable length L [cm] 30 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 3.5 Cable sheath material PUR PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class	Voltage drop	[V]	1.5	1.5	1.5
Protected against polarity reversalyesyesyesMechanical operating dataImage: Compact of the polarity of t	Max. switching current	[A]	0.2	0.2	0.2
Mechanical operating datastainless steelstainless steelHousing materialstainless steelstainless steelCable connector/cable endM8M12open wire strandsCable length L[cm]30200Cable diameter D[mm]3.53.53.5Cable sheath materialPURPURPURMin. bending radius (dynamic)[mm]353535Min. bending radius (static)[mm]17.517.517.5Weight[kg]0.0130.020.052Protection class IP (sensor, plugged)676767Protection classIIIIII	Short circuit protection		yes	yes	yes
Housing material stainless steel stainless steel open wire strands Cable connector/cable end M8 M12 open wire strands Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class	Protected against polarity reversal		yes	yes	yes
Cable connector/cable end M8 M12 open wire strands Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 67 Protection class II II II II	Mechanical operating data				
Cable length L [cm] 30 30 200 Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class II II II	Housing material		stainless steel	stainless steel	stainless steel
Cable diameter D [mm] 3.5 3.5 3.5 Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 67 Protection class II II II II	Cable connector/cable end		M8	M12	open wire strands
Cable sheath material PUR PUR PUR Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class II II II	Cable length L	[cm]	30	30	200
Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 17.5 Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class II II II	Cable diameter D	[mm]	3.5	3.5	3.5
Min. bending radius (static) [mm] 17.5	Cable sheath material		PUR	PUR	PUR
Weight [kg] 0.013 0.02 0.052 Protection class IP (sensor, plugged) 67 67 67 Protection class II II II	Min. bending radius (dynamic)	[mm]	35	35	35
Protection class IP (sensor, plugged) 67 67 67 67 Protection class II II II II II	Min. bending radius (static)	[mm]	17.5	17.5	17.5
Protection class II II II II	Weight	[kg]	0.013	0.02	0.052
	Protection class IP (sensor, plugged)		67	67	67
Drilling emulsion resistance * no no no	Protection class		II	П	II
	Drilling emulsion resistance *		no	no	no

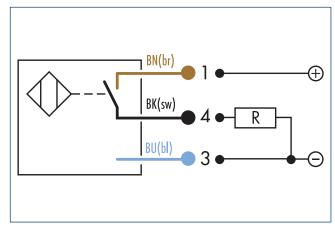
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 65 main view

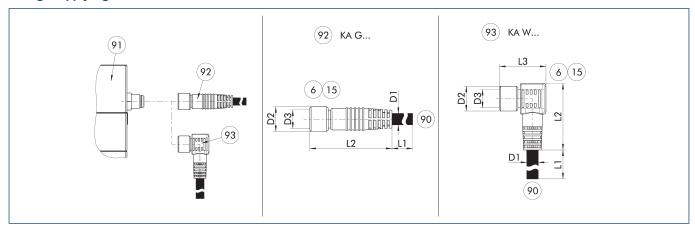


- 65 Cable diameter
- 72 Active sensor surface
- 75 Cable length
- 76) LED

Wiring diagram closer PNP



Voltage supply/signals connection cable



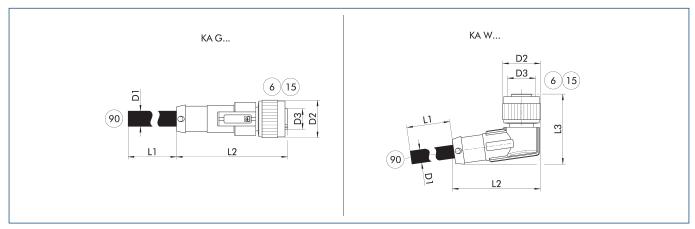
- KA G...
- Connection cable with straight socket
- KA W... Connection cable with angular socket

- (6) Connection module side
- 15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



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

Connection cable with angled plug connector

6 Connection module side15 Socket

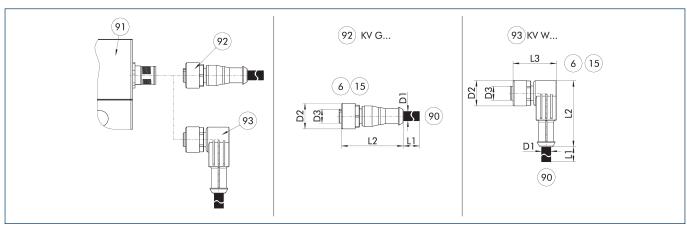
90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

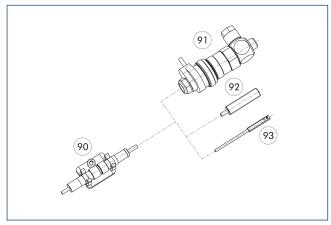
10-Link cable extension



The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- © Cable end with straight connector
- $\textcircled{91} \ \ \textbf{Connection plug component}$
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•



- 90 CLI plug bracket
- 92 IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

Description	ID
Clip for connector/soc	ket
CLI-M12	0301464



Description		IN 80-S-M8	IN 80-S-M12	INK 80-S	IN 80-0-M8	IN 80-0-M12	INK 80-0
ID		0301478	0301578	0301550	0301488	0301588	0301551
Operating principle							
Measuring principle		inductive	inductive	inductive	inductive	inductive	inductive
Switching function		Closer	Closer	Closer	Opener .	0pener	Opener
Type of switching		PNP	PNP	PNP	PNP	PNP	PNP
Number of switching points		1	1	1	1	1	1
Teach function		no	no	no	no	no	no
General data							
Switching distance	[mm]	1.5	1.5	1.5	1.5	1.5	1.5
Switching hysterisis from the nominal switching distance		< 15%	< 15%	< 10%	< 15%	< 15%	< 10%
Max. switching frequency	[Hz]	3000	1000	1000	1000	1000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70	-25/70	-25/70	-25/70
LED display in sensor		yes	yes	yes	yes	yes	yes
Electrical operating data							
Type of voltage		DC	DC	DC	DC	DC	DC
Nominal voltage	[V]	24	24	24	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30	10/30	10/30	10/30
Voltage drop	[V]	1.8	1.5	1.5	1.5	1.5	1.5
Max. switching current	[A]	0.15	0.2	0.2	0.2	0.2	0.2
Short circuit protection		yes	yes	yes	yes	yes	yes
Protected against polarity reversal		yes	yes	yes	yes	yes	yes
Mechanical operating data							
Housing material		stainless steel	stainless steel	stainless steel	stainless steel	stainless steel	stainless steel
Cable connector/cable end		M8 connector, 3-pin	M12	open wire strands	M8	M12	open wire strands
Cable length L	[cm]	30	30	200	30	30	200
Cable diameter D	[mm]	3	3.3	3.3	3.3	3.3	3.3
Cable design (wire cross section/ number of wires)		3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2	3x 0.14mm2
Cable sheath material		PUR	PUR	PUR	PUR	PUR	PUR
Min. bending radius (dynamic)	[mm]	30	33	33	33	33	33
Min. bending radius (static)	[mm]	15	16.5	16.5	16.5	16.5	16.5
Weight	[kg]	0.023	0.03	0.073	0.023	0.03	0.062
Protection class IP (sensor, plugged)		67	67	67	67	67	67
Protection class		III	II	II	П	II	II
Drilling emulsion resistance *		yes	yes	yes	yes	yes	yes
Options and their characteristics							
Version with lateral cable outlet		IN 80-S-M8-SA	IN 80-S-M12-SA	INK 80-S-SA			
ID		0301483	0301587	0301566			
LED display in sensor		no	no	no			

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

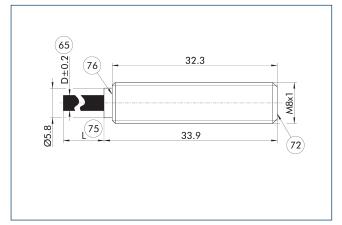
(65)D±0.2

65 Cable diameter

Ø7.4

(75)

IN 80-M8/M12 main view



- 65 Cable diameter
- 72 Active sensor surface
- 75) Cable length
- 76 LED

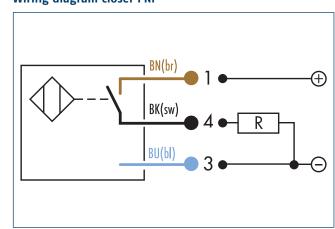
Wiring diagram closer PNP

72 Active sensor surface

75 Cable length

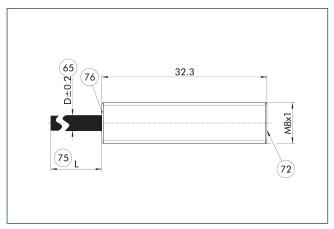
IN(K) 80-SA main view

(72)



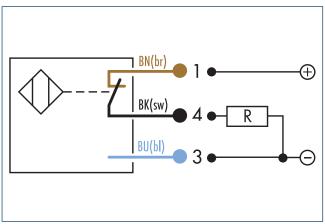
36.4 47.7 51.4

INK 80 main view

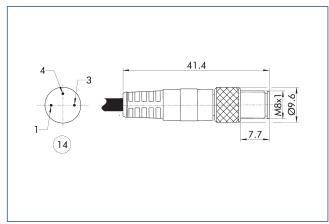


- 65 Cable diameter
- 75 Cable length
- (72) Active sensor surface
- 76 LED

Wiring diagram opener PNP



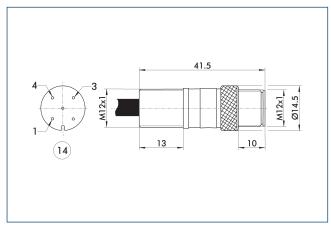
View of M8 connector (3-pin)



14) Connector

This view shows the plug connector on the cable end of the sensor.

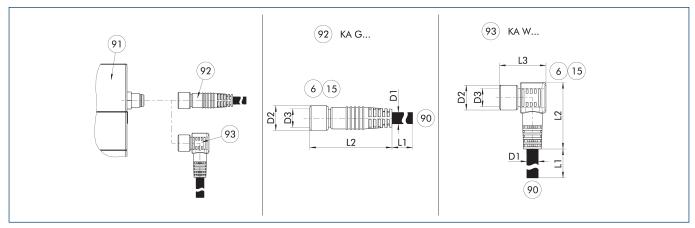
View of M12 connector (4-pin)



(14) Connector

This view shows the plug connector on the cable end of the sensor.

Voltage supply/signals connection cable



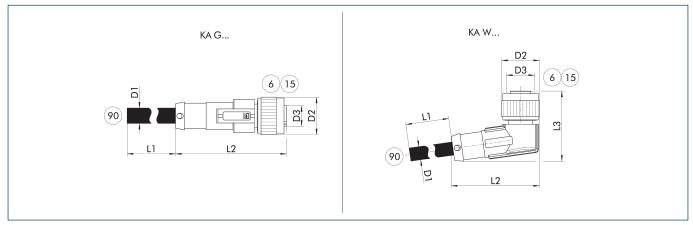
KA G... KA W... Connection cable with straight socket Connection cable with angular socket

- (6) Connection module side
- 15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- 93 Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



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

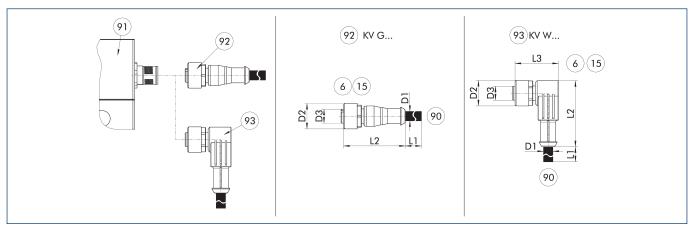
- 6 Connection module side15 Socket
- 90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1
		[m]	[mm]
Connection cables			
KA BG12-L 3P-0500-PNP	30016369	5	1.5
KA BW12-L 3P-0300-PNP	0301503	3	1.5
KA BW12-L 3P-0500-PNP	0301507	5	1.5

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.

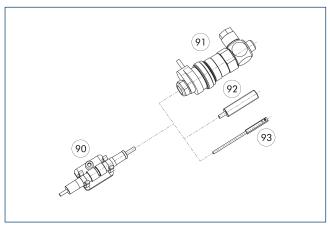
10-Link cable extension



The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15) Socket
- © Cable end with straight connector
- $\textcircled{91} \ \ \textbf{Connection plug component}$
- (92) Cable with straight female connector
- (93) Cable with angled female connector

Description	ID	u	D1	Often combined
		[m]	[mm]	
Cable extension				
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25	
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25	
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•



- 90 CLI plug bracket
- **92** IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

Description	ID
Clip for connector	/socket
CLI-M12	0301464
CII-M8	0301463

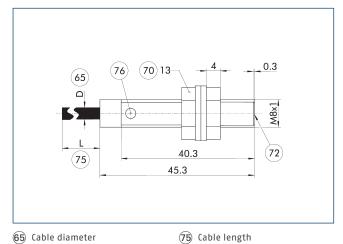
46



Measuring principle	Description		IN 80-SL-M12	INK 80-SL
Measuring principle inductive inductive Switching function Closer Closer Yeye of switching PNP PNP Number of switching points 1 1 General data Image: Common of the point of the po	ID		0301529	0301579
Switching function Closer Closer Type of switching points 1 1 Reach function no no Secretal data Image: Common point of switching distance	Operating principle			
Kype of switching PNP PNP Number of switching points 1 1 General data I I Switching distance [mm] 3 3 Switching frequency (Integration of mominal switching distance [mm] 500 500 Max. switching frequency (Integration of mominal switching current (Integration of mominal switching frequency (Integration of mominal switch	Measuring principle		inductive	inductive
Number of switching points 1 1 1 1 1 1 1 1 1	Switching function		Closer	Closer
Feach function	Type of switching		PNP	PNP
General data (mm) 3 3 Switching distance (mm) 3 3 switching systerisis from the nominal switching distance < 10%	Number of switching points		1	1
Switching distance [mm] 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Teach function		no	no
Switching hysterisis from the nominal switching distance	General data			
10% 10%	Switching distance	[mm]	3	3
Min./max. ambient temperature [°C] -25/70 yes yes yes Electrical operating data Type of voltage DC DC Nominal voltage [V] 24 24 24 24 24 24 24 24 24 24 24 24 24	Switching hysterisis from the nominal switching distance		< 10%	< 10%
RED display in sensor yes yes Retectrical operating data Type of voltage DC Nominal voltage VI 10/30	Max. switching frequency	[Hz]	500	500
Electrical operating data Type of voltage DC Nominal voltage [V] 24 Min./max. operating voltage [V] 10/30 10/30 Max. switching current [A] 0.2 Short circuit protection yes yes yes Protected against polarity reversal M12 Brass, nickel-plated Brass, nickel-plated Supen wire strands Cable eliameter D [mm] 3.5 Min. bending radius (dynamic) [mm] 17.5 Weight [kg] 0.031 DC 10/30	Min./max. ambient temperature	[°C]	-25/70	-25/70
Rype of voltage DC DC Nominal voltage VI 24 24 Min./max. operating voltage VI 10/30 10/30 Voltage drop VI 1.5 1.5 Max. switching current [A] 0.2 0.2 Short circuit protection yes yes Protected against polarity reversal yes yes Housing material Brass, nickel-plated Brass, nickel-plated Cable connector/cable end M12 open wire strands Cable length L [cm] 3.0 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	LED display in sensor		yes	yes
Nominal voltage [V] 24 24 Min./max. operating voltage [V] 10/30 10/30 Voltage drop [V] 1.5 1.5 Max. switching current [A] 0.2 0.2 Short circuit protection yes yes Protected against polarity reversal yes yes Housing material Brass, nickel-plated Brass, nickel-plated Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Electrical operating data			
Min./max. operating voltage VI 10/30 Voltage drop VI 1.5 Max. switching current [A] 0.2 Short circuit protection yes Protected against polarity reversal Housing material Cable connector/cable end Cable length L Cable diameter D Cable diameter D Cable sheath material Min. bending radius (dynamic) [mm] 3.5 Cable sheath material Min. bending radius (static) [mm] 17.5 Weight Protection class IP (sensor, plugged) Frotection class IP (sensor, plugged) 10/30 10/30 10/30 10/30 10/30 10.5 1.5 1.5 1.5 1.5 1.5 1.5 1	Type of voltage		DC	DC
Max. switching current [A] 0.2 0.2 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data Housing material Brass, nickel-plated Brass, nickel-plated open wire strands Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 Min. bending radius (static) [mm] 17.5 Weight [kg] 0.031 O.2 O.2 O.2 O.2 O.2 O.2 O.2 O.	Nominal voltage	[V]	24	24
Max. switching current [A] 0.2 0.2 Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data Housing material Brass, nickel-plated Brass, nickel-plated Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable length L [cm] 3.5 3.5 Cable sheath material PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67	Min./max. operating voltage	[V]	10/30	10/30
Short circuit protection yes yes Protected against polarity reversal yes yes Mechanical operating data Housing material Brass, nickel-plated Brass, nickel-plated Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Voltage drop	[V]	1.5	1.5
Protected against polarity reversal yes yes Mechanical operating data Housing material Brass, nickel-plated Brass, nickel-plated Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67	Max. switching current	[A]	0.2	0.2
Mechanical operating data Housing material Cable connector/cable end Cable length L Cable diameter D Cable sheath material Min. bending radius (dynamic) Min. bending radius (static) Meight [kg] Dools Protection class IP (sensor, plugged) Brass, nickel-plated Brass, nickel-plated Open wire strands 300 300 300 300 400 400 400 400 400 40	Short circuit protection		yes	yes
Housing material Cable connector/cable end Cable length L Cable diameter D Cable sheath material Min. bending radius (dynamic) [mm] 17.5 Weight Protection class IP (sensor, plugged) Brass, nickel-plated open wire strands 300 300 300 PUR PUR PUR PUR PUR 17.5 17.5 17.5 0.085 67	Protected against polarity reversal		yes	yes
Cable connector/cable end M12 open wire strands Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Mechanical operating data			
Cable length L [cm] 30 300 Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Housing material		Brass, nickel-plated	Brass, nickel-plated
Cable diameter D [mm] 3.5 3.5 Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Cable connector/cable end		M12	open wire strands
Cable sheath material PUR PUR Min. bending radius (dynamic) [mm] 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Cable length L	[cm]	30	300
Min. bending radius (dynamic) [mm] 35 35 35 Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Cable diameter D	[mm]	3.5	3.5
Min. bending radius (static) [mm] 17.5 17.5 Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Cable sheath material		PUR	PUR
Weight [kg] 0.031 0.085 Protection class IP (sensor, plugged) 67 67	Min. bending radius (dynamic)	[mm]	35	35
Protection class IP (sensor, plugged) 67 67	Min. bending radius (static)	[mm]	17.5	17.5
	Weight	[kg]	0.031	0.085
	Protection class IP (sensor, plugged)		67	67
Protection class II II	Protection class		II	II
Drilling emulsion resistance * yes yes	Drilling emulsion resistance *		yes	yes

^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

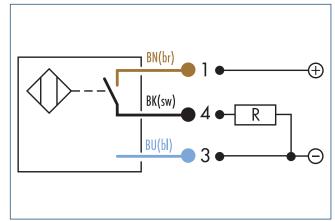
IN 80-SL main view



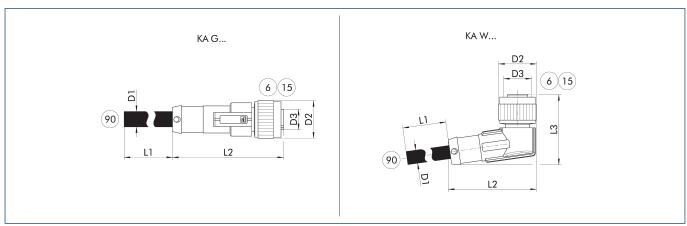
76 LED

- 65 Cable diameter
- 70 Wrench size
- 72 Active sensor surface

Wiring diagram closer PNP



Connection cable for control



KA G...

Connection cable with straight plug connector

KA W...

Connection cable with angled plug connector

(6) Connection module side

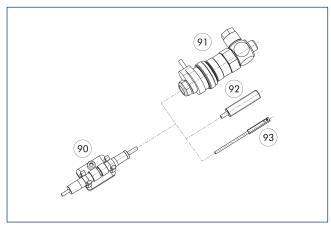
(15) Socket

(90) Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1	
		[m]	[mm]	
Connection cables				
KA BG12-L 3P-0500-PNP	30016369	5	1.5	
KA BW12-L 3P-0300-PNP	0301503	3	1.5	
KA BW12-L 3P-0500-PNP	0301507	5	1.5	

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.



- 90 CLI plug bracket
- **92** IN proximity switch
- 91) MV micro valve
- 93 Magnetic switch MMS

The CLI clip is used for fastening and strain relief for the plug connectors. For example for the sensor and cable extension connection.

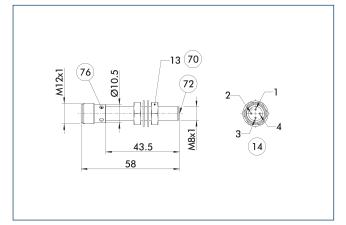
Description	ID
Clip for connector/so	cket
CLI-M12	0301464



Description		IN-B 80-S-M12	IN-C 80-SL-M8-PNP	IN-C 80-S-M8-PNP
ID		0301479	1619110	0301475
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching distance	[mm]	1.5	2	1.5
Switching hysterisis from the nominal switching distance		< 15%	< 20%	< 15%
Max. switching frequency	[Hz]	1000	3000	3000
Min./max. ambient temperature	[°C]	-25/70	-25/70	-25/70
LED display in sensor		yes	yes	yes
Electrical operating data				
Type of voltage		DC	DC	DC
Nominal voltage	[V]	24	24	24
Min./max. operating voltage	[V]	10/30	10/30	10/30
Voltage drop	[V]	1.5	1.8	1.5
Max. switching current	[A]	0.2	0.2	0.1
Short circuit protection		yes	yes	yes
Protected against polarity reversal		yes	yes	yes
Mechanical operating data				
Housing material		stainless steel	stainless steel	stainless steel
Cable connector/cable end		M12	M8x1	M8
Weight	[kg]	0.02	0.02	0.013
Protection class IP (sensor, plugged)		67	67	68
Protection class			II	II
Drilling emulsion resistance *		no	no	no

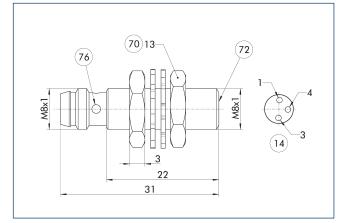
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN-B 80 main view



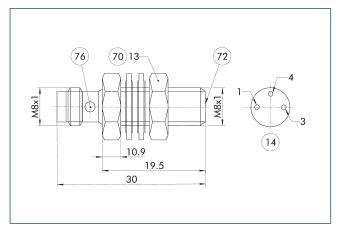
- (14) Connector
- 70 Wrench size
- **72** Active sensor surface
- 76 LED

IN-C 80-SL main view



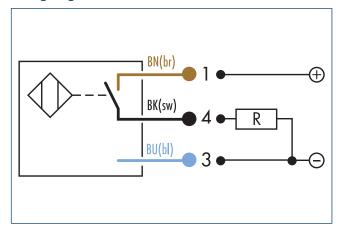
- (14) Connector
- 70 Wrench size
- (72) Active sensor surface
- 76 LED

IN-C 80 main view

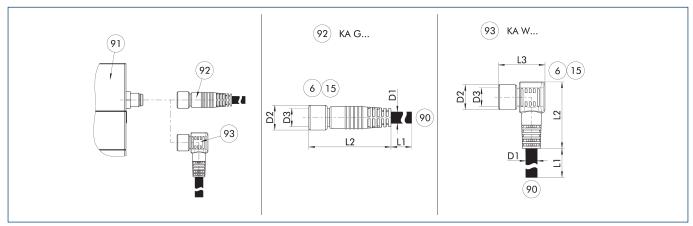


- (14) Connector
- 70 Wrench size
- **72** Active sensor surface
- 76 LED

Wiring diagram closer PNP



Voltage supply/signals connection cable



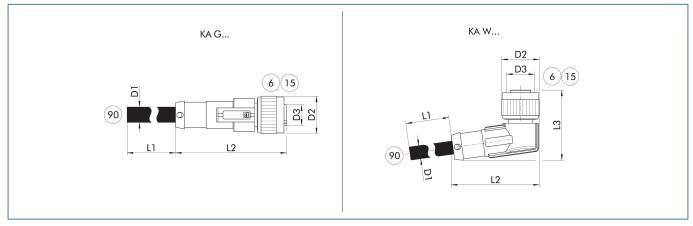
KA G... KA W... Connection cable with straight socket Connection cable with angular socket

- 6 Connection module side
- (15) Socket
- 90 SAC connection cable with open wire strands
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

The connection cable is ideal for connecting the corresponding components to the controller or the power supply unit. The connection cable has a 4-pin M8 socket on one side and an open wire strand on the other side for individual connections. The connection cables are suitable for use both in the cable track as well as in torsion applications.

Description	ID	L1	D1	D3	Often combined
		[m]	[mm]		
Connection cables					
KA BG08-L 3P-0300-PNP	0301622	3	4.5		•
KA BG08-L 3P-0500-PNP	0301623	5	4.5	M8	
KA BW08-L 3P-0300-PNP	0301594	3	4.5		
KA BW08-L 3P-0500-PNP	0301502	5	4.5	M8	

Connection cable for control



KA G...

Connection cable with straight plug connector

KA W...

Connection cable with angled plug connector

6 Connection module side15 Socket

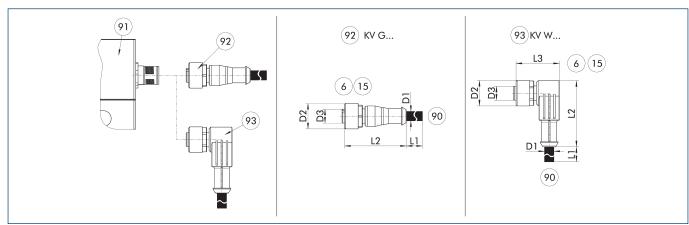
90 Cable end with open wire strands

The connection cables are used to control the SCHUNK product.

Description	ID	L1	D1	
		[m]	[mm]	
Connection cables				
KA BG12-L 3P-0500-PNP	30016369	5	1.5	
KA BW12-L 3P-0300-PNP	0301503	3	1.5	
KA BW12-L 3P-0500-PNP	0301507	5	1.5	

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.

10-Link cable extension



The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions are suitable for use in the cable track and in torsion applications.

- (6) Connection module side
- 15 Socket
- 90 Cable end with straight connector
- (91) Connection plug component
- (92) Cable with straight female connector
- (93) Cable with angled female connector

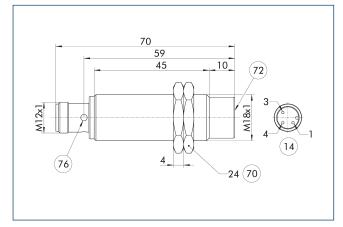
Description	ID	u	D1	Often combined	
		[m]	[mm]		
Cable extension					
KV BW08-SG08 3P-0030-PNP	0301495	0.3	1.25		
KV BW08-SG08 3P-0100-PNP	0301496	1	1.25		
KV BW08-SG08 3P-0200-PNP	0301497	2	1.25	•	



Description		IN-B 180 S-M8
ID		0303244
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	12
Switching hysterisis from the nominal switching distance		< 15%
Max. switching frequency	[Hz]	300
Min./max. ambient temperature	[°C]	-25/70
LED display in sensor		yes
Electrical operating data		
Type of voltage		DC
Nominal voltage	[V]	24
Min./max. operating voltage	[V]	10/30
Voltage drop	[V]	2.8
Max. switching current	[A]	0.1
Short circuit protection		yes
Protected against polarity reversal		yes
Mechanical operating data		
Housing material		Brass, coated
Cable connector/cable end		M12
Weight	[kg]	0.06
Protection class IP (sensor, plugged)		67
Drilling emulsion resistance *		no

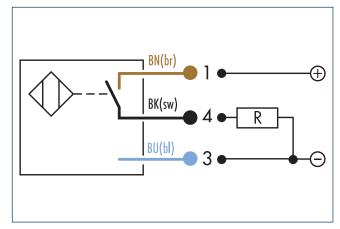
^{*} Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 180-B main view



- $\bigcirc 14$ Connector
- 70 Wrench size
- **72** Active sensor surface
- 76 LED

Wiring diagram closer PNP





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