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

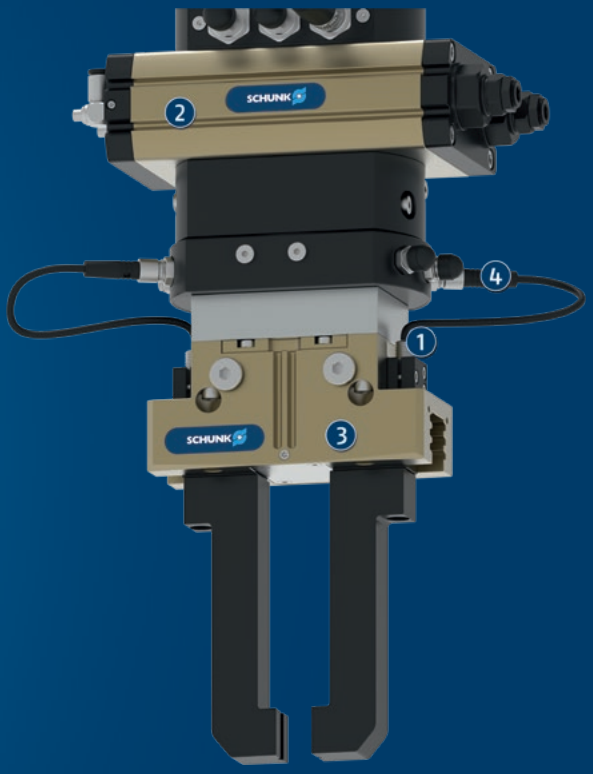
Options and special information

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

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

IN 5

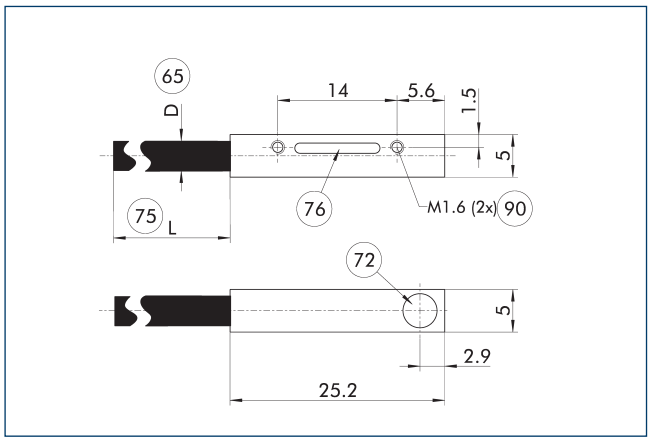
Inductive proximity switches

Technical data

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

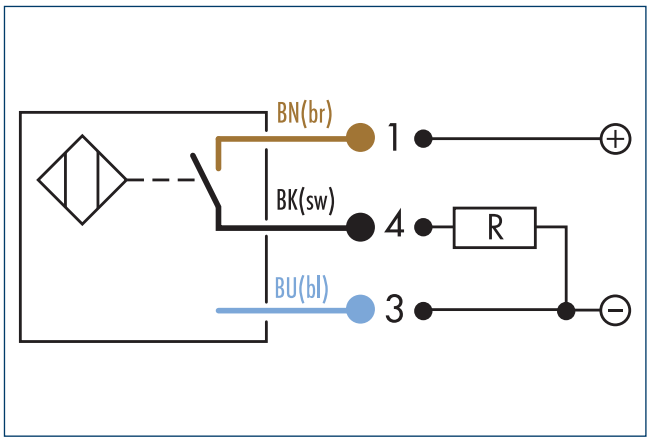
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 5 main view

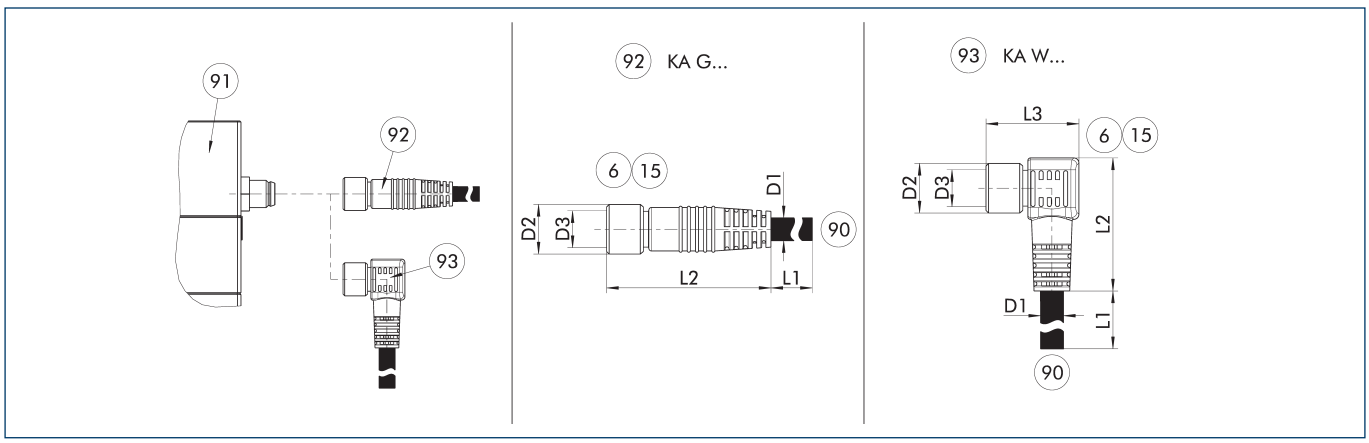


65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED
90 Mounting thread

Wiring diagram closer PNP



Voltage supply/signals connection cable



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

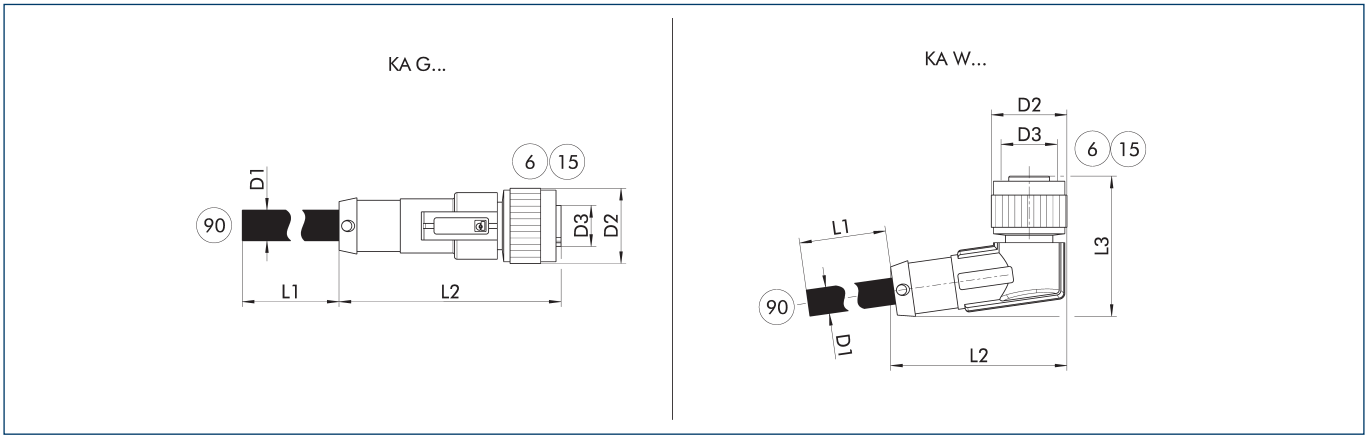
6 Connection module side
15 Socket
90 SAC connection cable with open wire strands
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

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	

ⓘ 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.

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

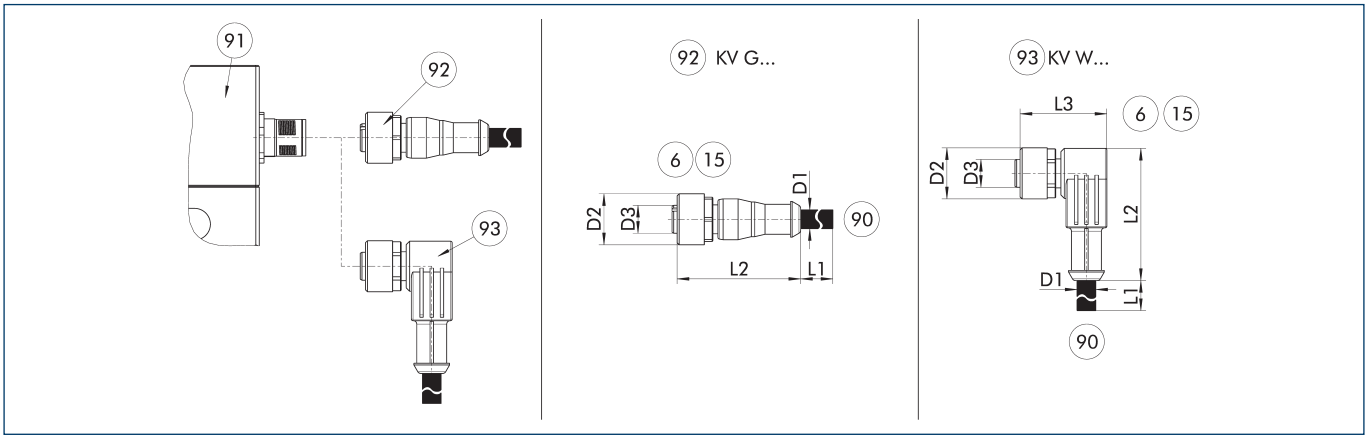
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

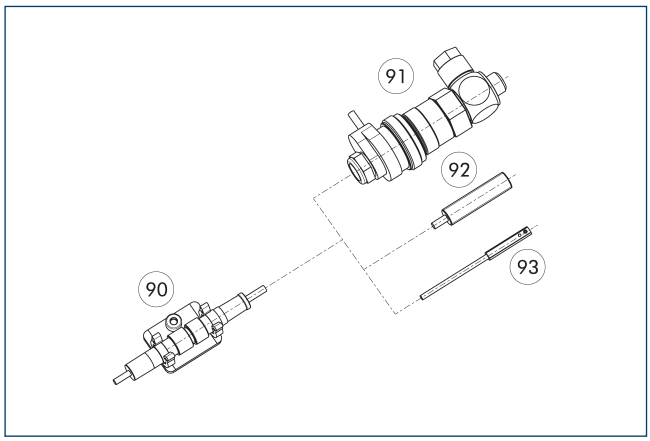
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
91 MV micro valve
92 IN proximity switch
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	

IN 8-S

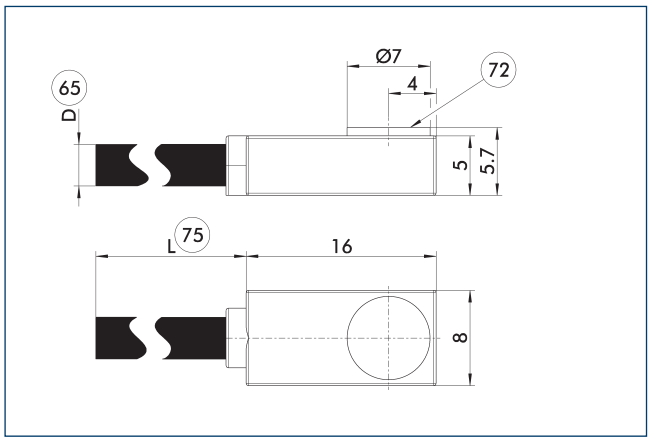
Inductive proximity switches

Technical data

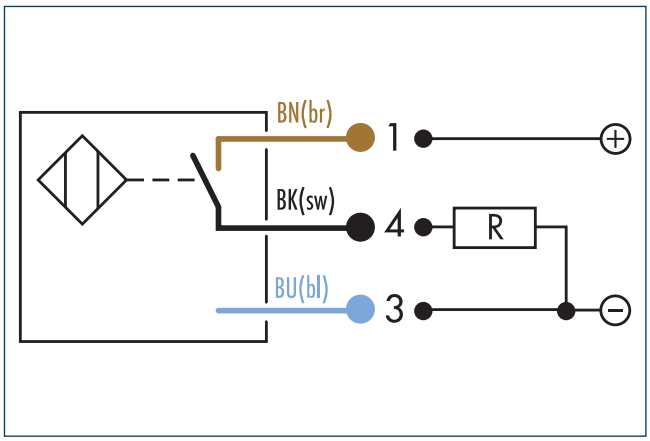
Description		IN 8-S-M8	IN 8-S-M12	INK 8-S
ID		0301481	0301581	9700052
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching 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).

IN 8/INK 8-S main view

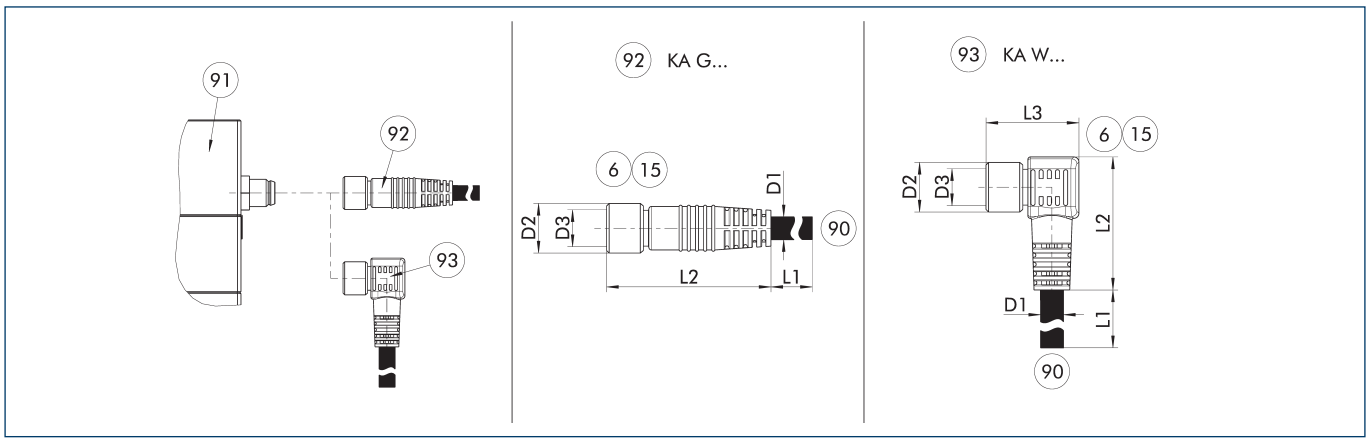


Wiring diagram closer PNP



65 Cable diameter
72 Active sensor surface
75 Cable length

Voltage supply/signals connection cable



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

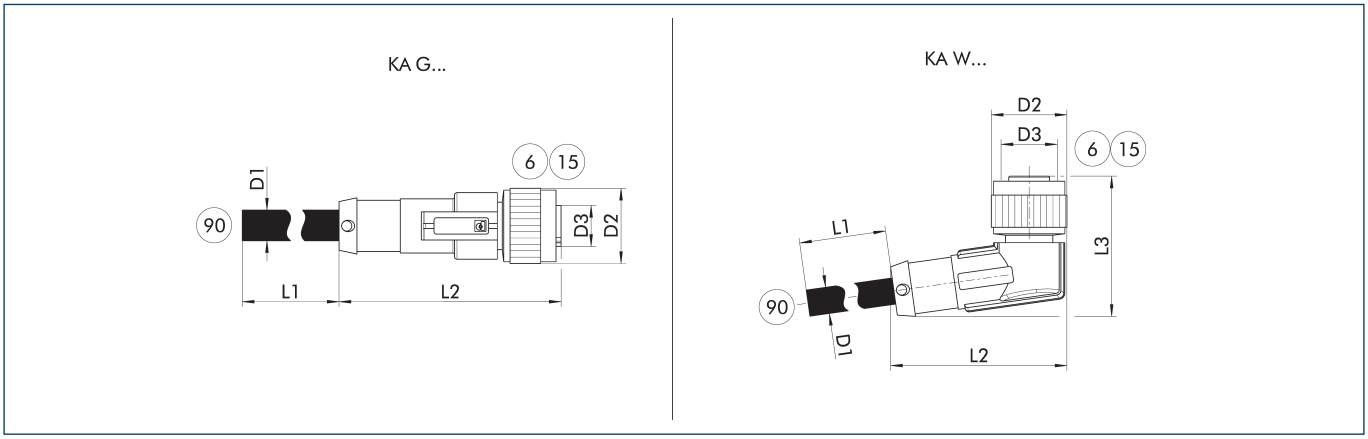
6 Connection module side
15 Socket
90 SAC connection cable with open wire strands
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

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	

ⓘ 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.

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

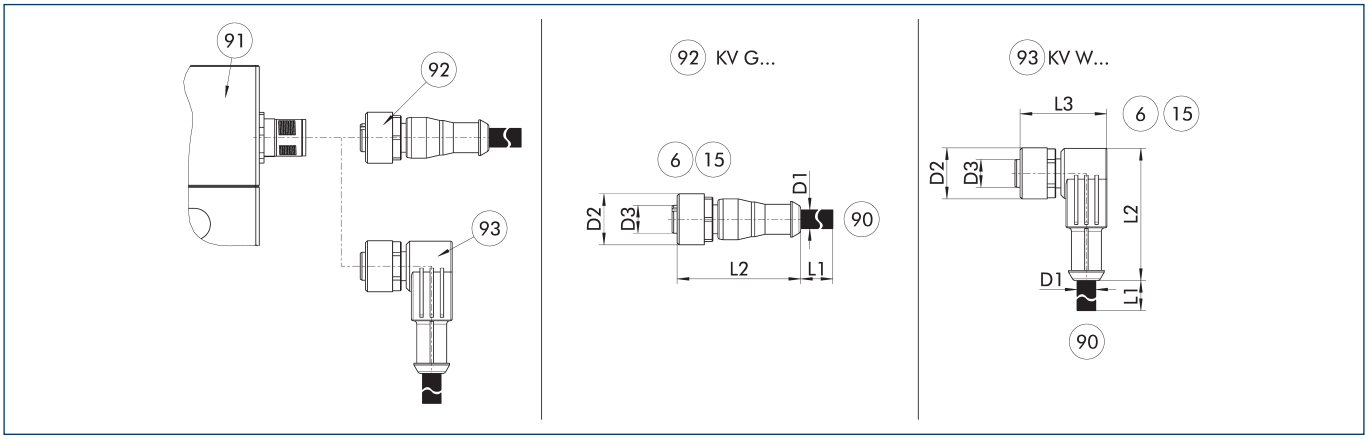
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

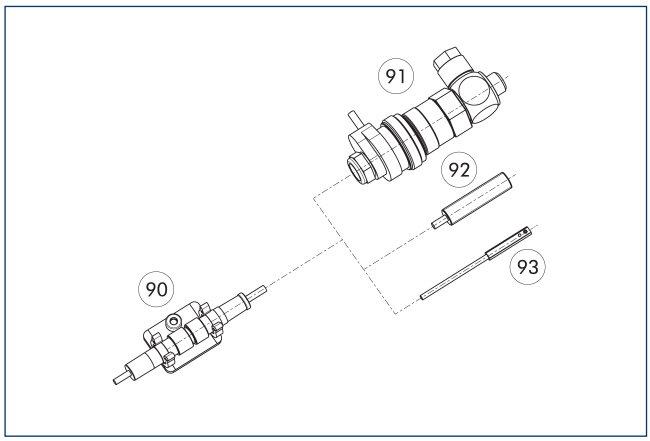
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
(91) MV micro valve
(92) IN proximity switch
(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	

IN 8-SL

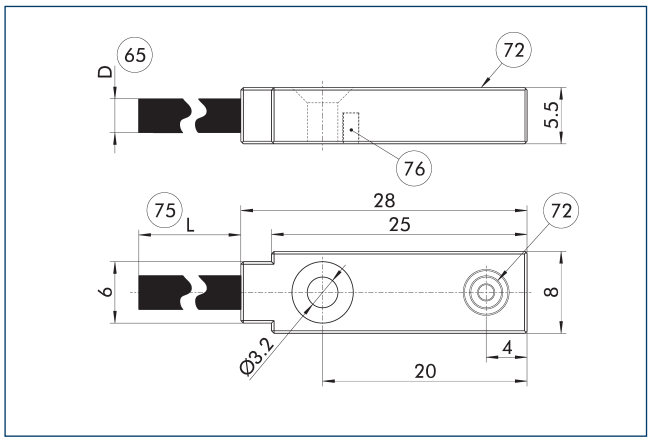
Inductive proximity switches

Technical data

Description		IN 8-SL-M8-SW	INK 8-SL
ID		1622470	0302456
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]	2	2
Switching hysterisis from the nominal switching distance		< 15%	< 15%
Max. switching frequency	[Hz]	2000	2000
Min./max. ambient temperature	[°C]	-25/85	-25/85
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]	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			
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 (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
Drilling emulsion resistance *		no	no

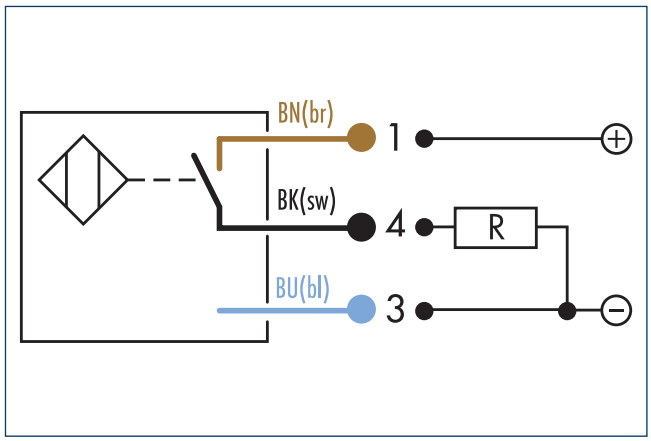
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 8-SL/INK 8-SL main view

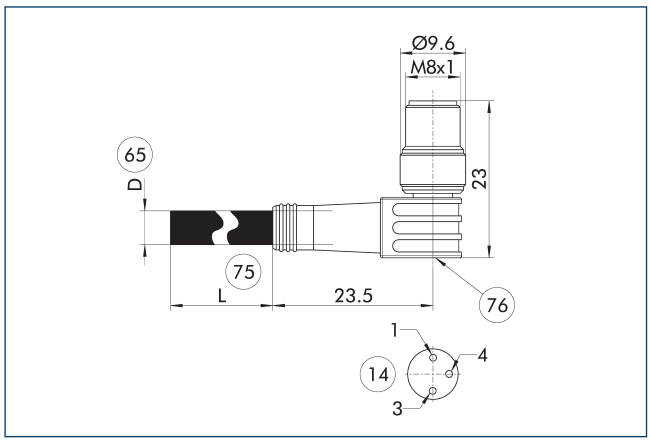


65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

Wiring diagram closer PNP



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



14 Connector
65 Cable diameter
75 Cable length
76 LED

IN 30

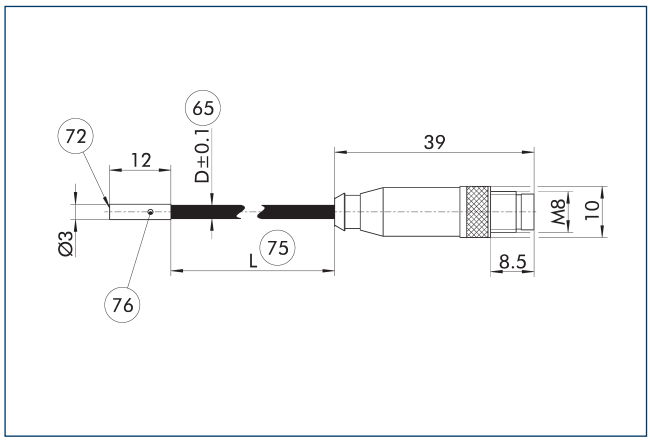
Inductive proximity switches

Technical data

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).

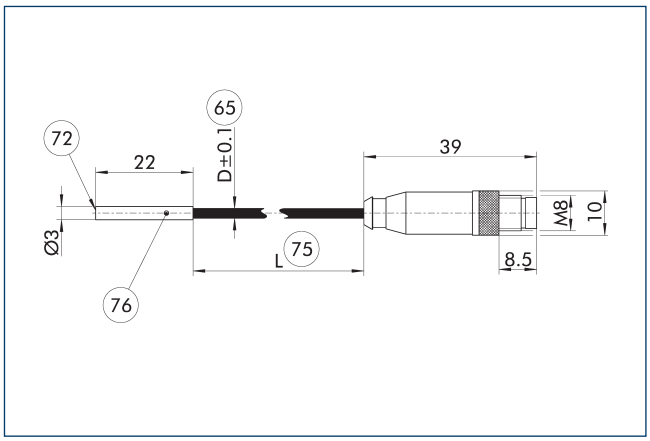
IN 30K main view



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.

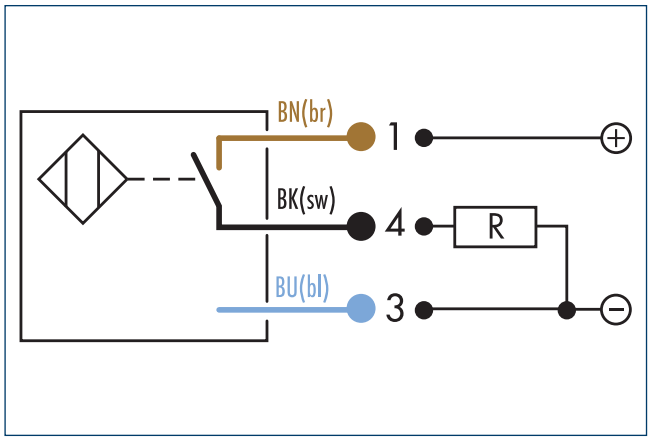
IN 30L main view



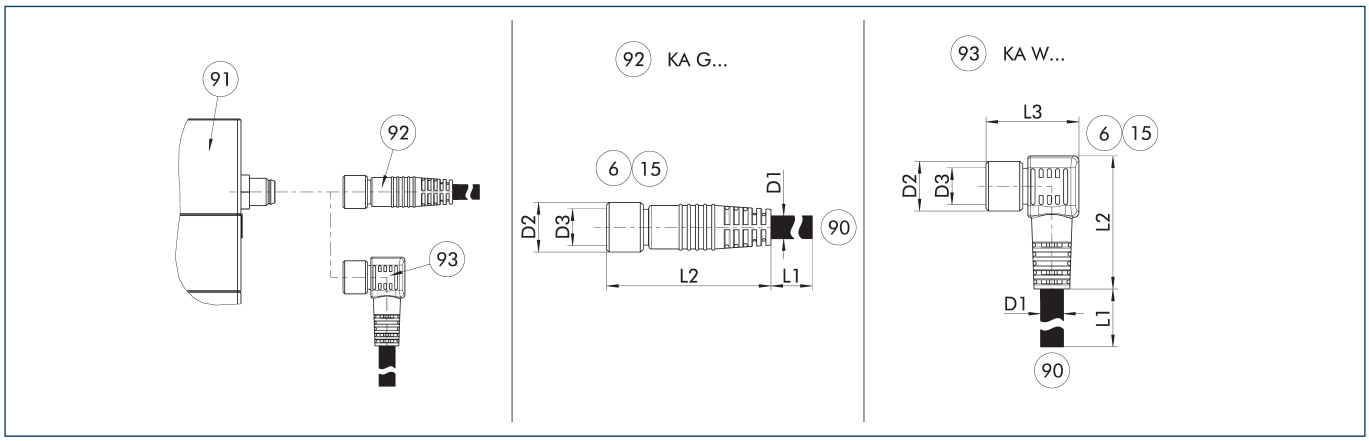
65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

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.

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

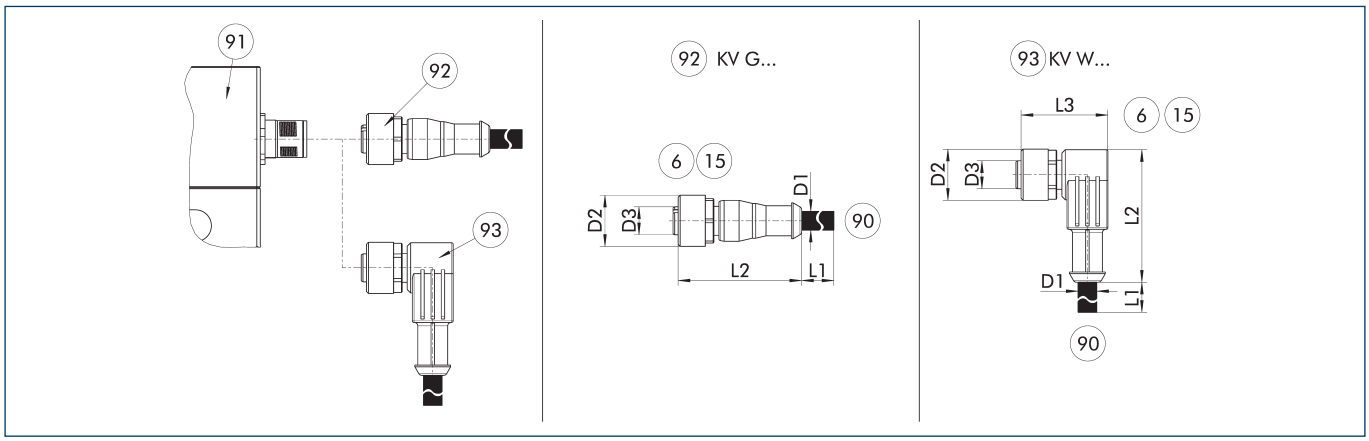
93 Cable with angled female connector

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	

ⓘ 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.

IO-Link cable extension



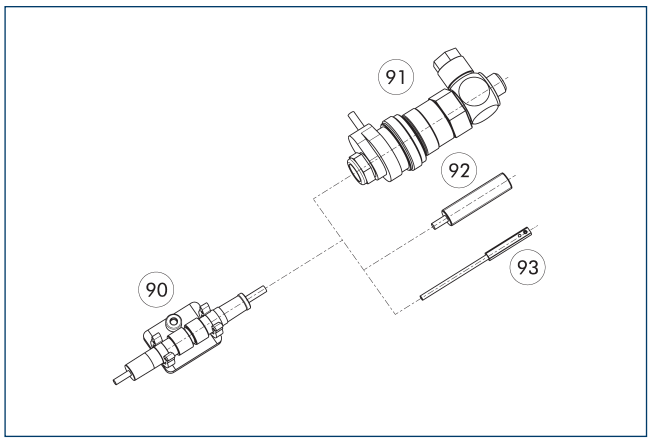
The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions 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	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
- (91) MV micro valve
- (92) IN proximity switch
- (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-M8	0301463	

IN 40

Inductive proximity switches

Technical data

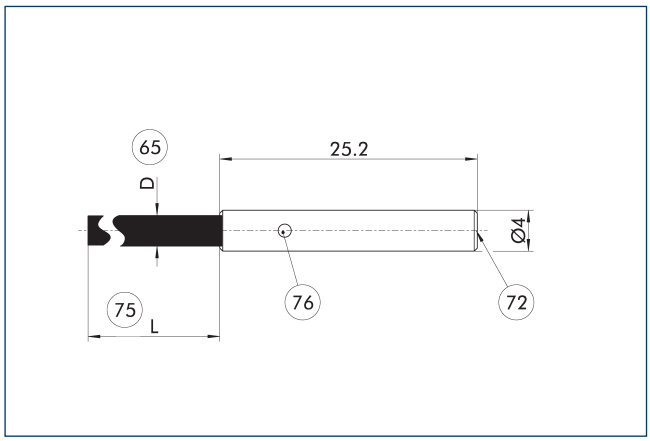
Description		IN 40-S-M8	IN 40-S-M12	INK 40-S	IN 40-O-M8	IN 40-O-M12	INK 40-O
ID		0301474	0301574	0301555	0301484	0301584	0301556
Operating principle							
Measuring principle		inductive	inductive	inductive	inductive	inductive	inductive
Switching function		Closer	Closer	Closer	Opener	Opener	Opener
Type 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]	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		III					
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		yes	yes	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		III
Drilling emulsion resistance *		no

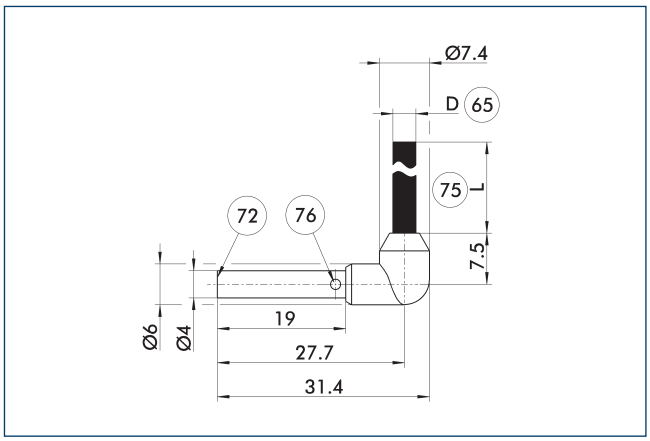
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN(K) 40 main view



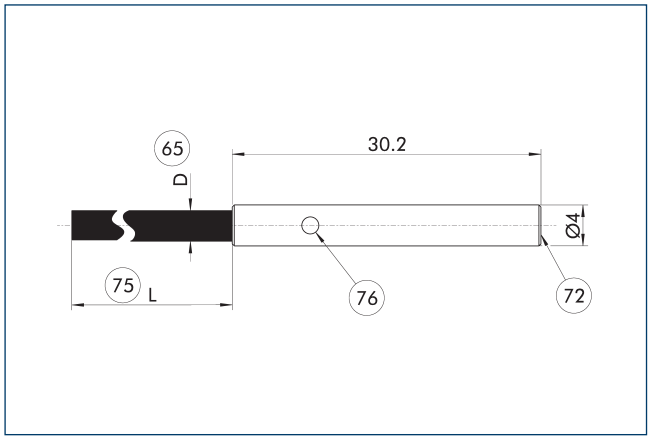
65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

IN(K) 40-SA main view



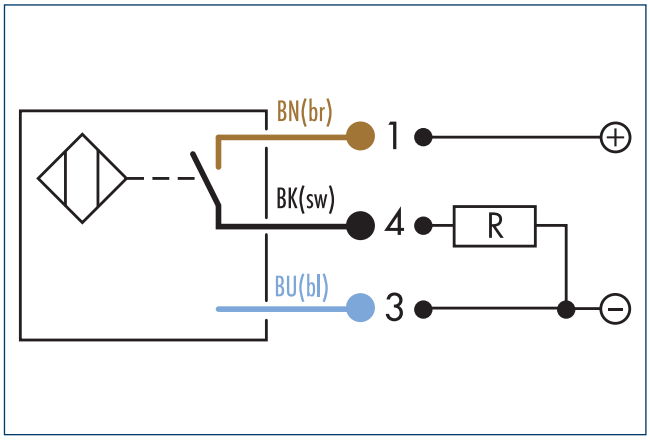
72 Active sensor surface
76 LED
65 Cable diameter
75 Cable length

IN 40L main view

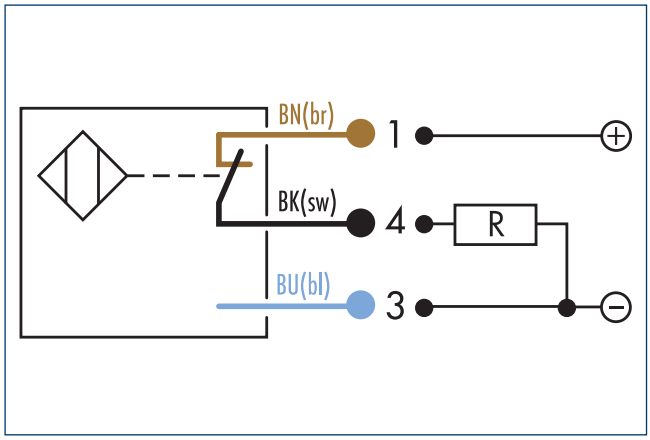


65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

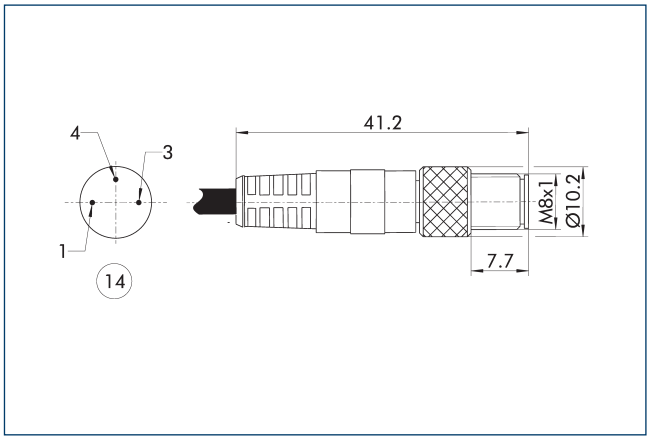
Wiring diagram closer PNP



Wiring diagram opener PNP



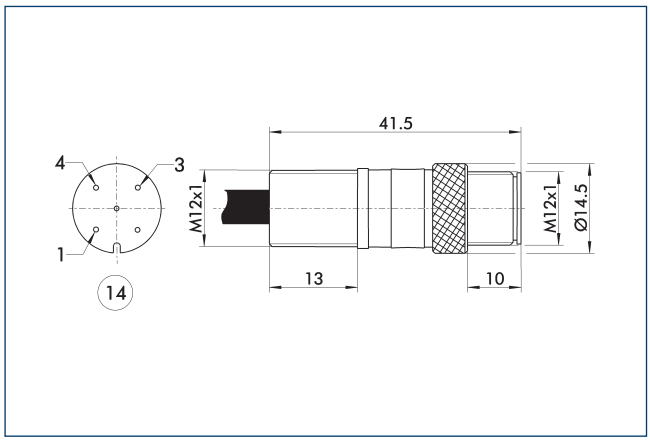
View of M8 connector (3-pin)



14 Connector

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

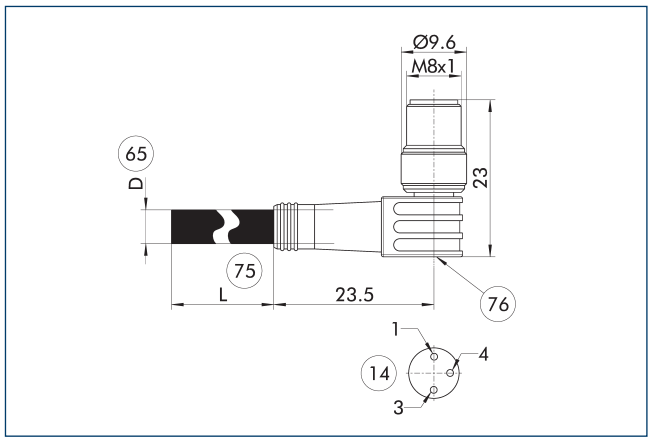
View of M12 connector (4-pin)



(14) Connector

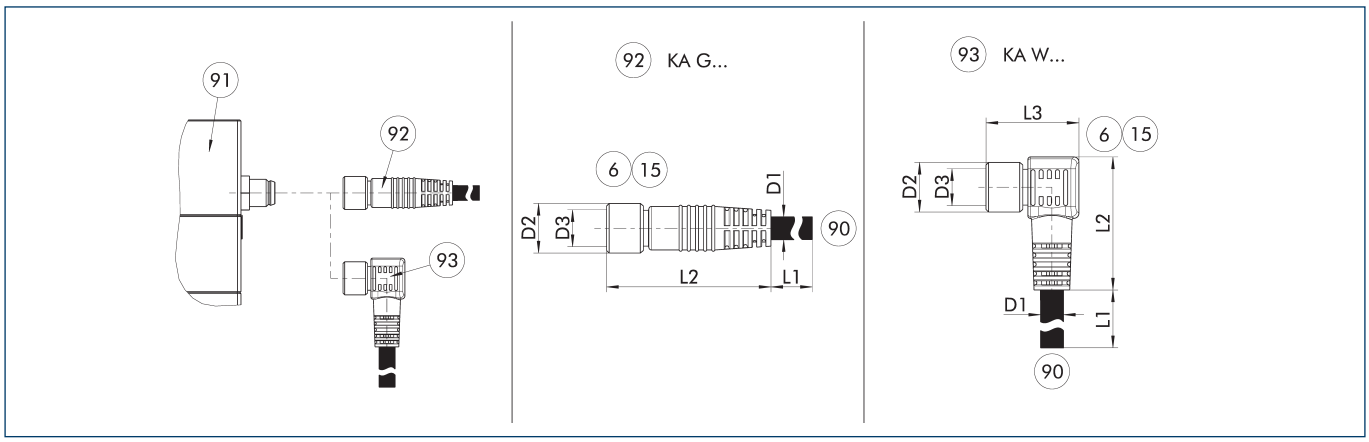
This view shows the plug connector on the cable end of the sensor.

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

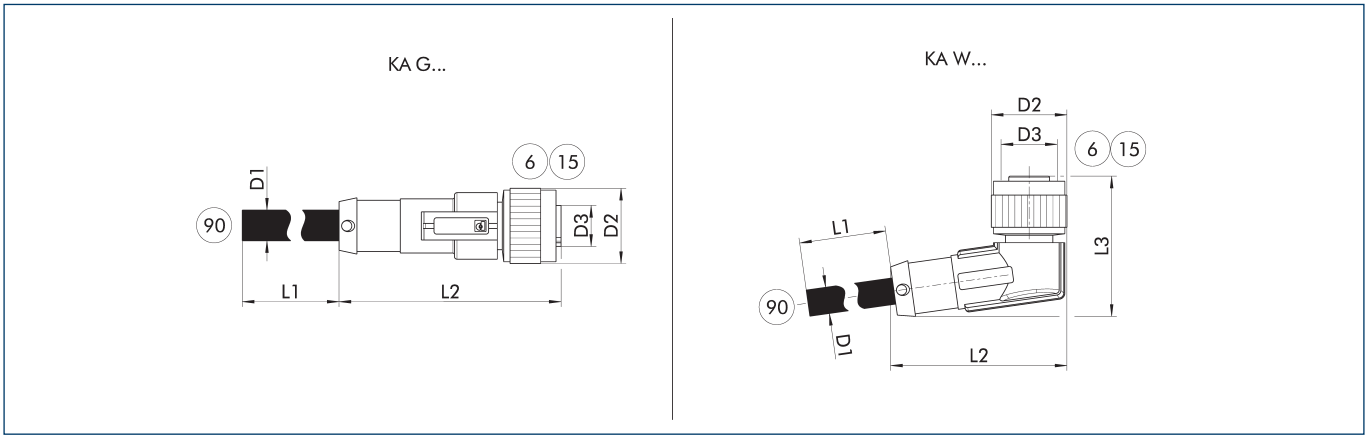
(6) Connection module side
(15) Socket
(90) SAC connection cable with open wire strands
(91) Connection plug component
(92) Cable with straight female connector
(93) Cable with angled female connector

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	

ⓘ 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.

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

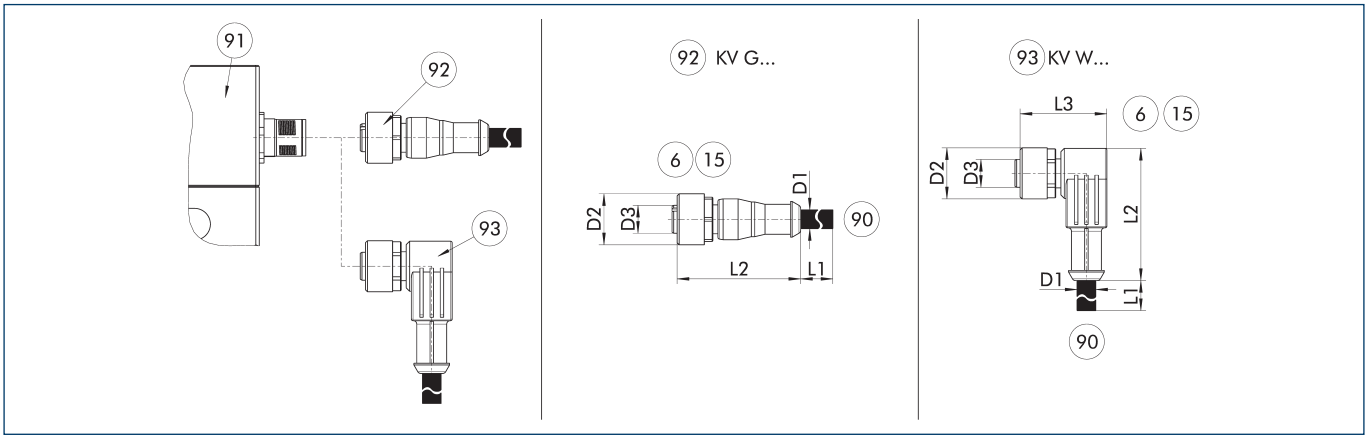
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

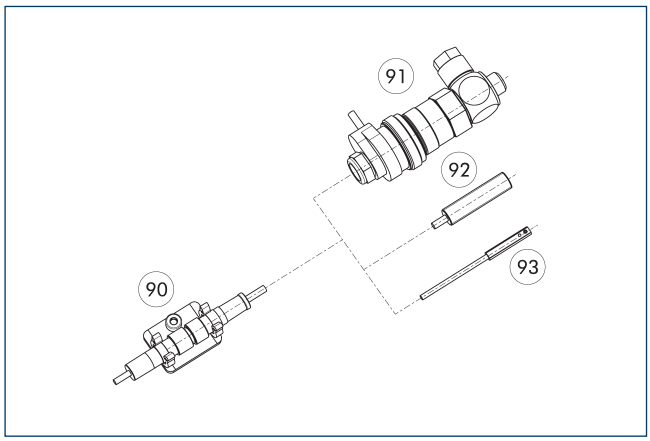
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
91 MV micro valve
92 IN proximity switch
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	

IN 40-B/-C

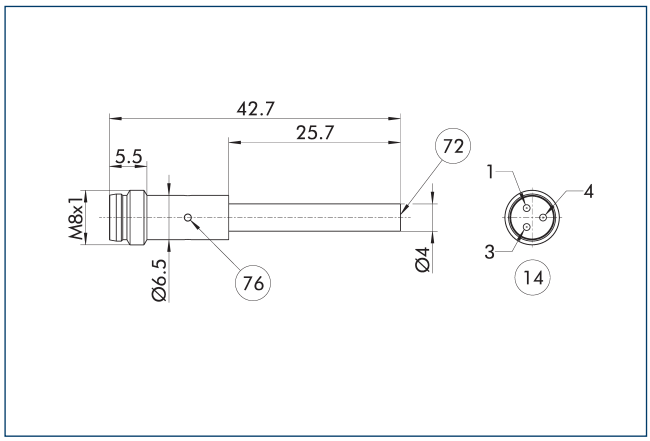
Inductive proximity switches

Technical data

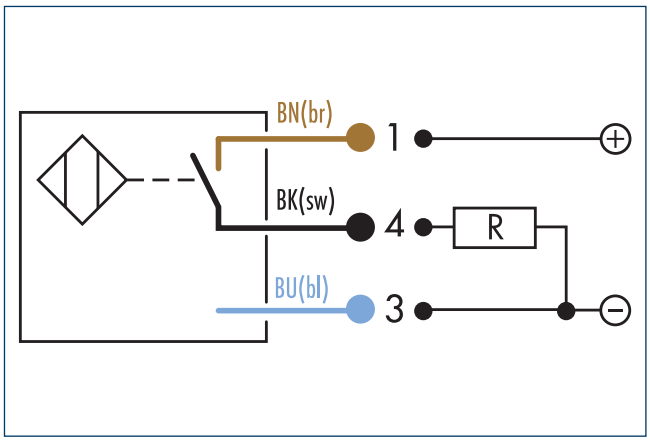
Description		IN-B 40-S-M8-PNP
ID		1619112
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	1
Switching hysterisis from the nominal switching distance		< 15%
Max. 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		II
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



Wiring diagram closer PNP



(14) Connector
(72) Active sensor surface
(76) LED

IN 41

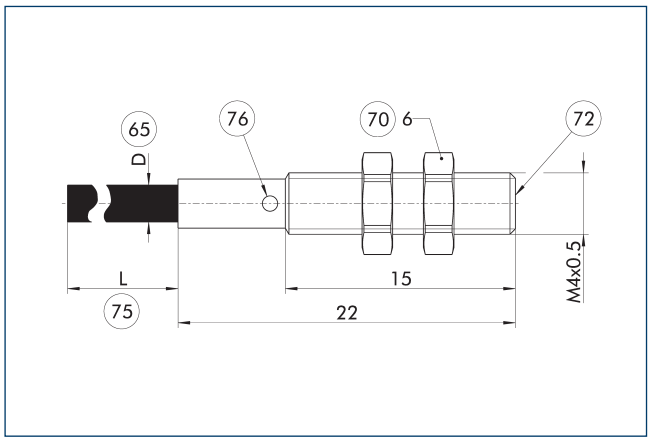
Inductive proximity switches

Technical data

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		III
Drilling emulsion resistance *		no

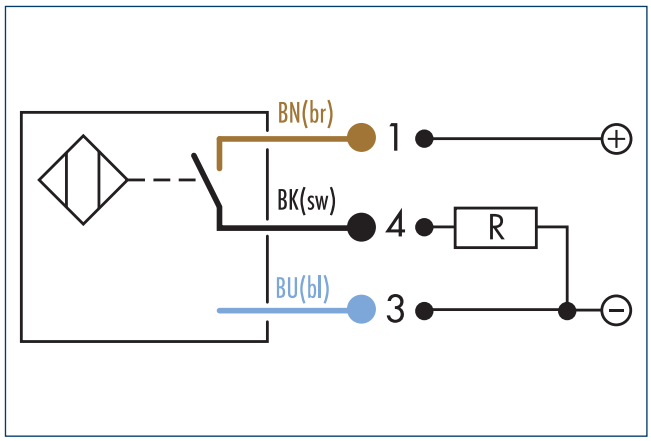
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

Main view

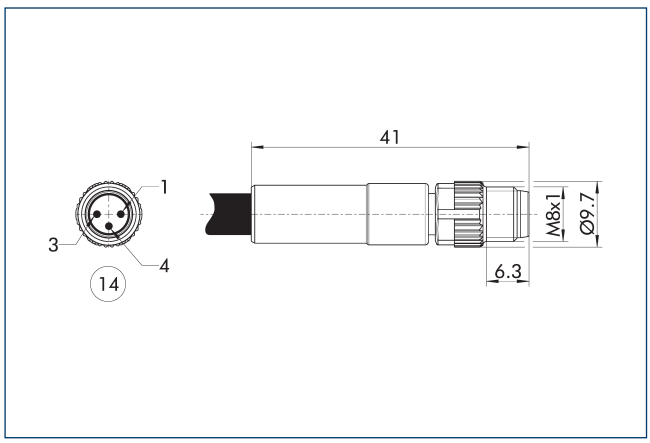


65 Cable diameter
70 Wrench size
72 Active sensor surface
75 Cable length
76 LED

Wiring diagram closer PNP

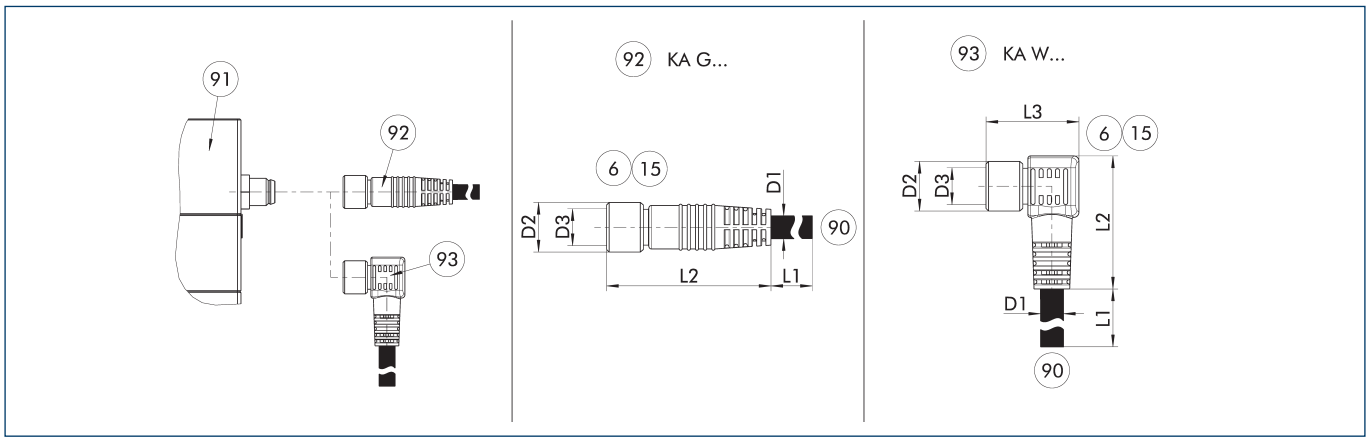


View of M8 connector (3-pin)



14 Connector

Voltage supply/signals connection cable



KA G... Connection cable with straight socket

KA W... Connection cable with angular socket

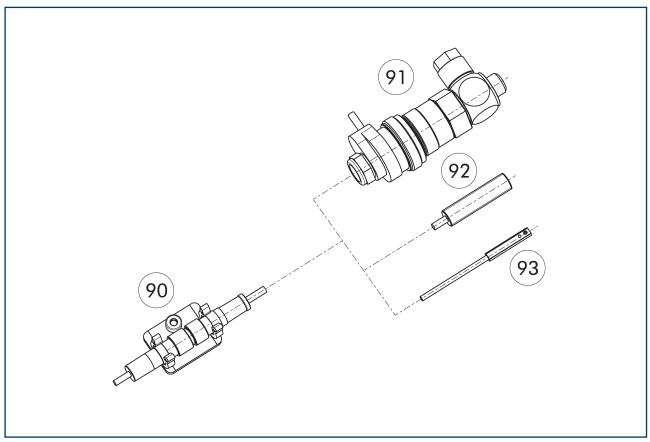
(6) Connection module side
(15) Socket
(90) SAC connection cable with open wire strands
(91) Connection plug component
(92) Cable with straight female connector
(93) Cable with angled female connector

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	

ⓘ 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
(91) MV micro valve
(92) IN proximity switch
(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-M8	0301463	

IN 50

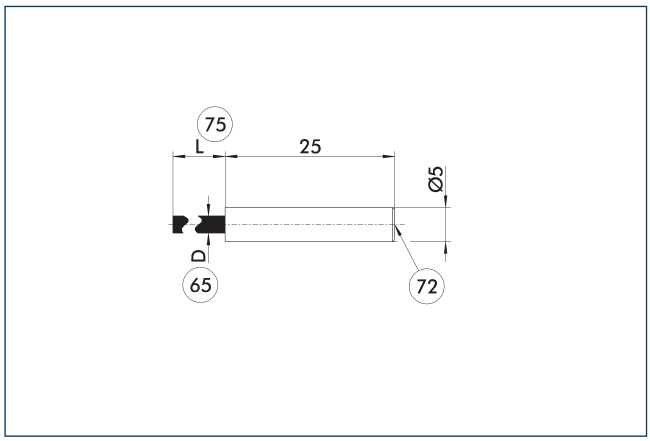
Inductive proximity switches

Technical data

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

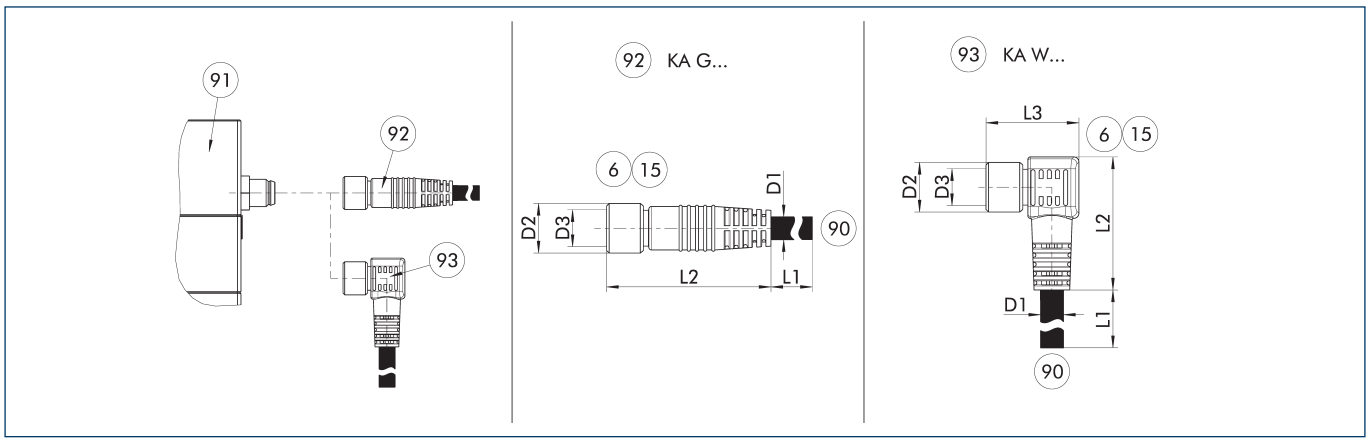
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 50 main view



65 Cable diameter
72 Active sensor surface
75 Cable length

Voltage supply/signals connection cable



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

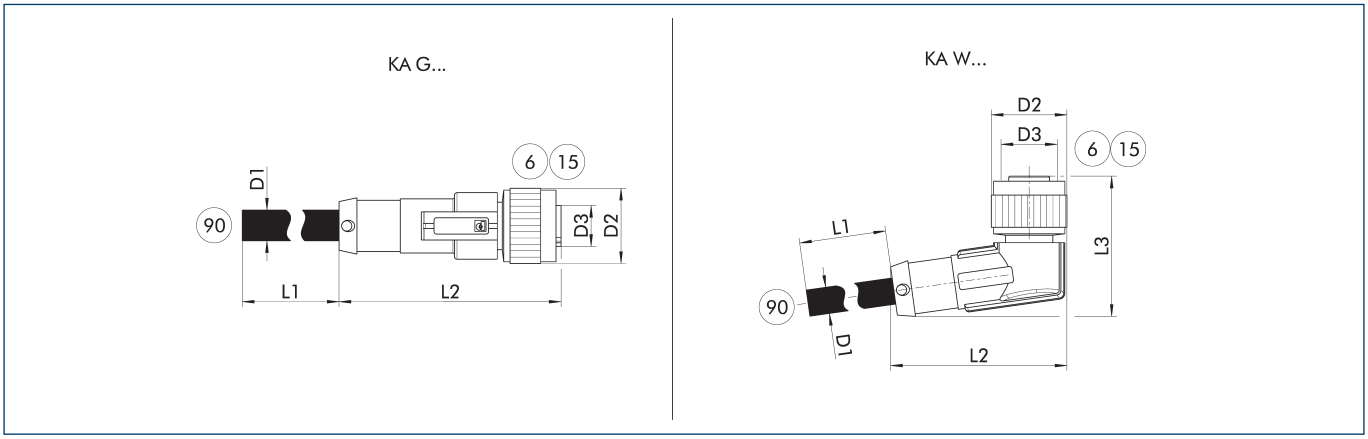
6 Connection module side
15 Socket
90 SAC connection cable with open wire strands
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

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	

ⓘ 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.

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

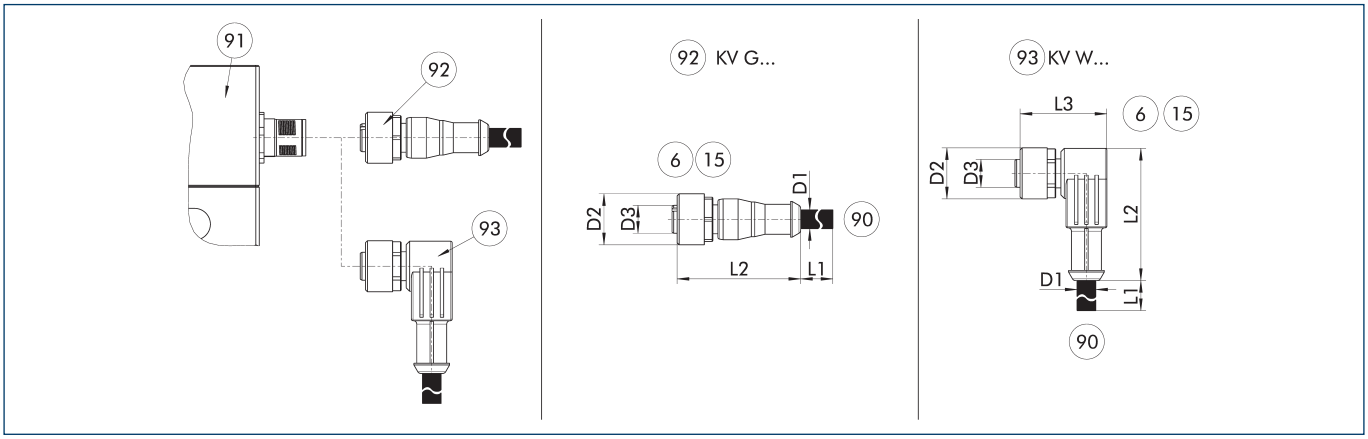
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

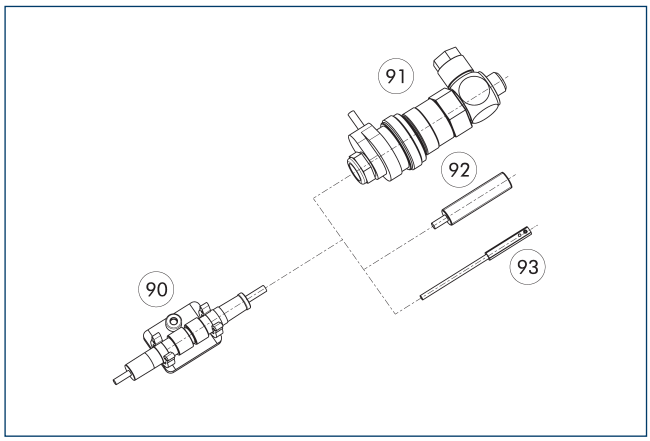
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
(91) MV micro valve
(92) IN proximity switch
(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	

IN 60

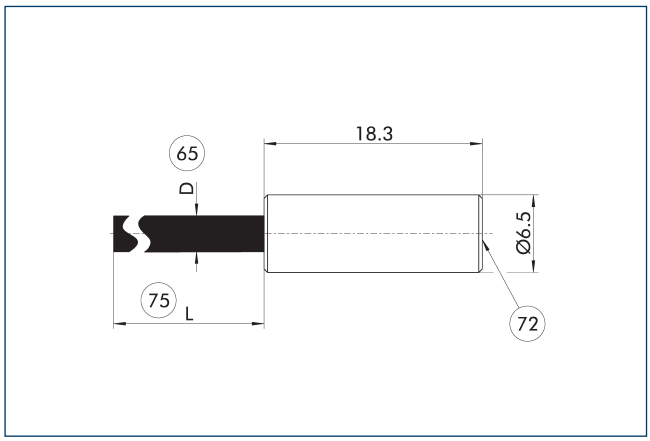
Inductive proximity switches

Technical data

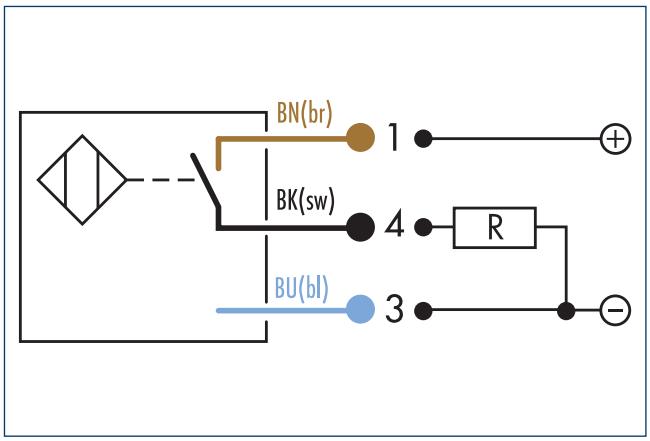
Description		IN 60-S-M8	IN 60-S-M12	INK 60-S
ID		0301485	0301585	0301553
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching 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 Oemeta 760 (1008339).

IN 60 main view

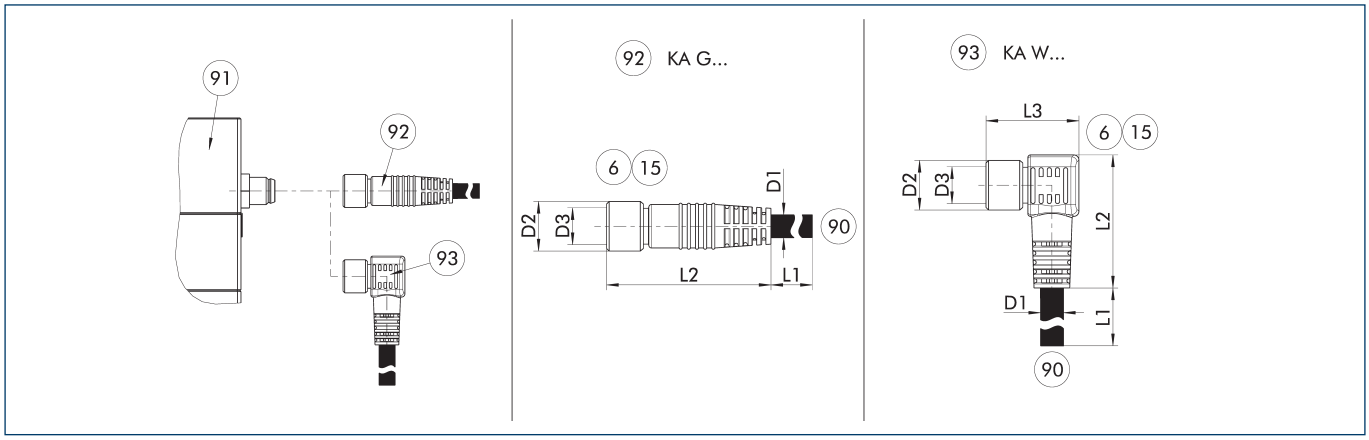


Wiring diagram closer PNP



65 Cable diameter
75 Cable length
72 Active sensor surface

Voltage supply/signals connection cable



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

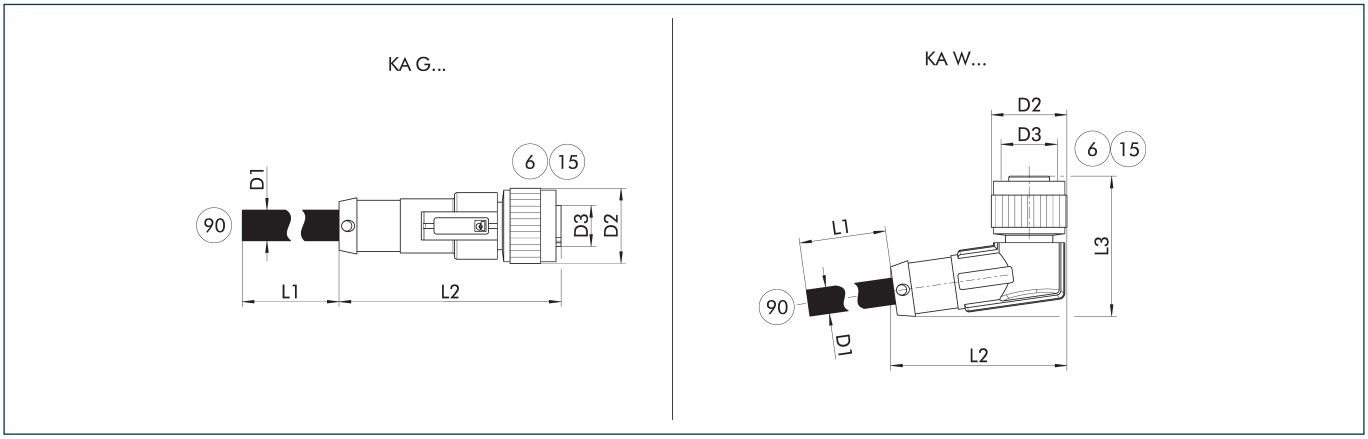
6 Connection module side
15 Socket
90 SAC connection cable with open wire strands
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

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	

ⓘ 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.

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

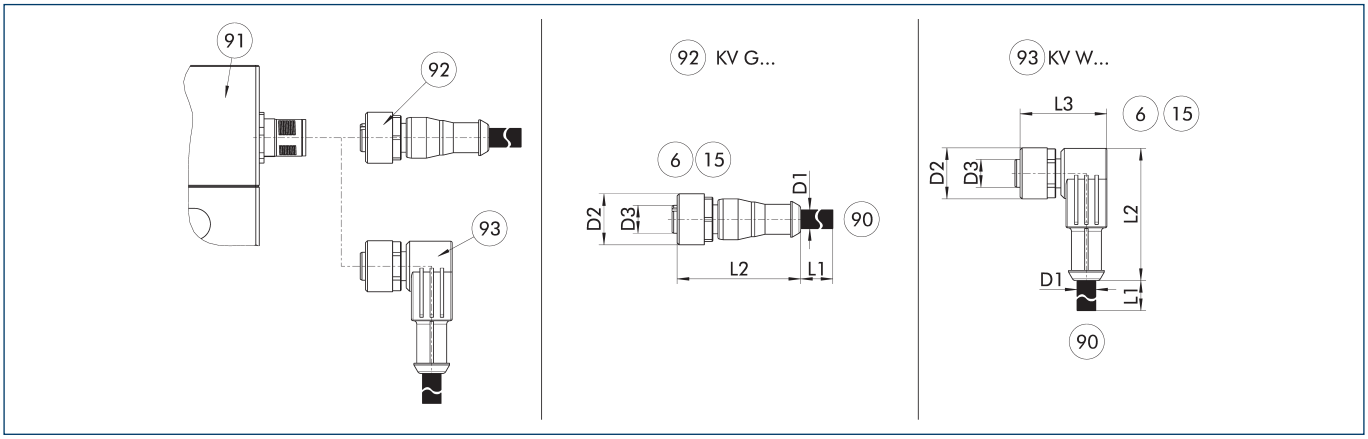
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

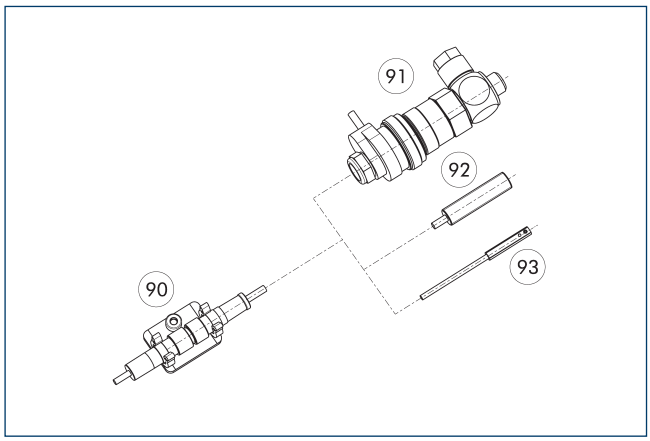
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
(91) MV micro valve
(92) IN proximity switch
(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	

IN 65

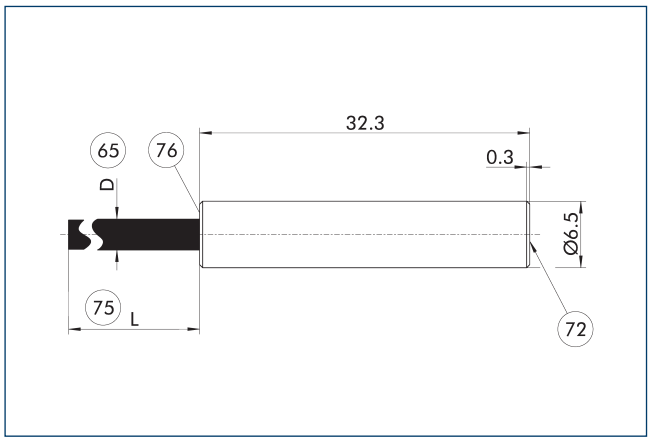
Inductive proximity switches

Technical data

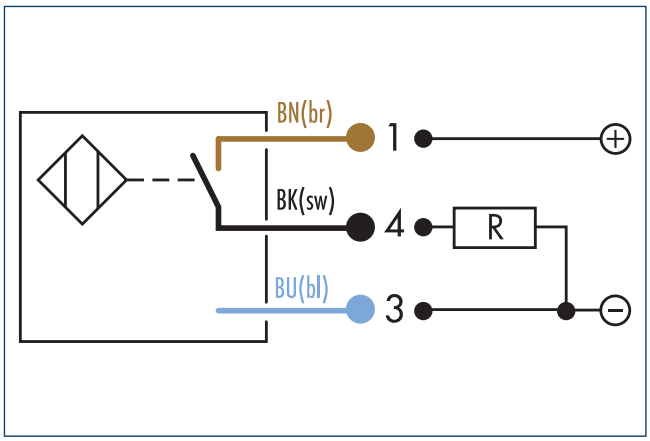
Description		IN 65-S-M8	IN 65-S-M12	INK 65-S
ID		0301476	0301576	0301554
Operating principle				
Measuring principle		inductive	inductive	inductive
Switching function		Closer	Closer	Closer
Type of switching		PNP	PNP	PNP
Number of switching points		1	1	1
Teach function		no	no	no
General data				
Switching 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		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]	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]	0.013	0.02	0.052
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 65 main view

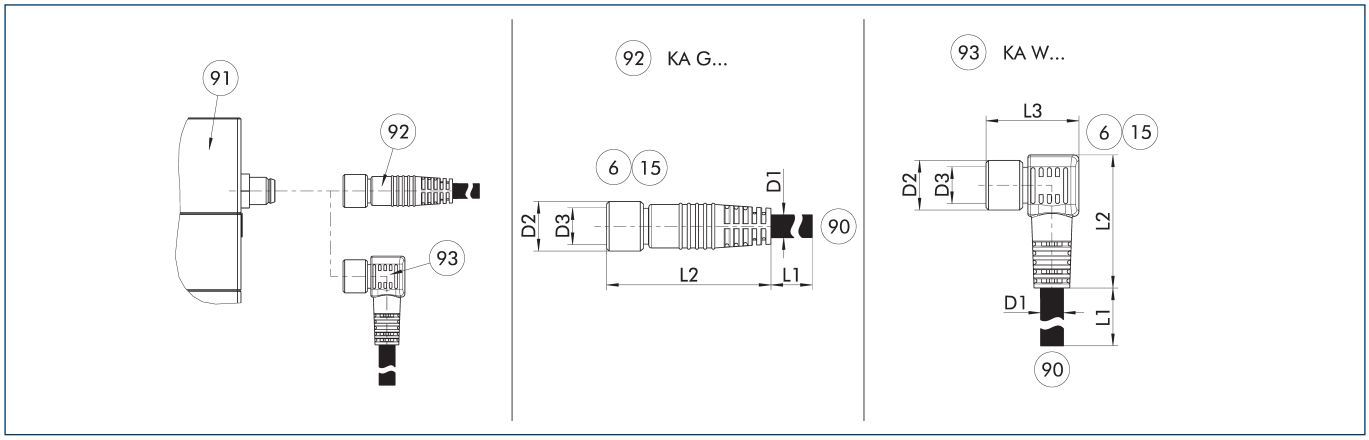


Wiring diagram closer PNP



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

Voltage supply/signals connection cable



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

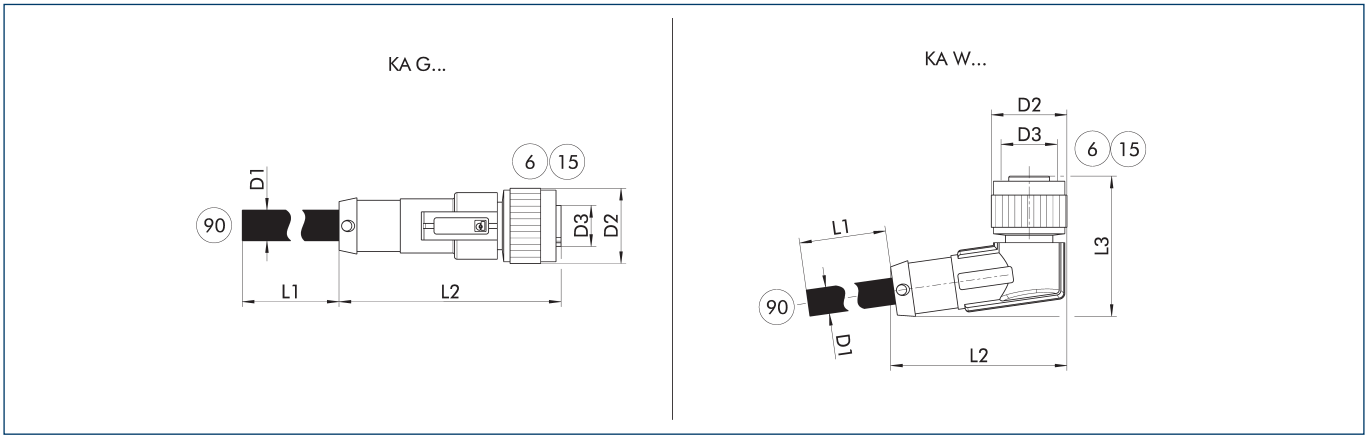
6 Connection module side
15 Socket
90 SAC connection cable with open wire strands
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

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	

ⓘ 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.

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

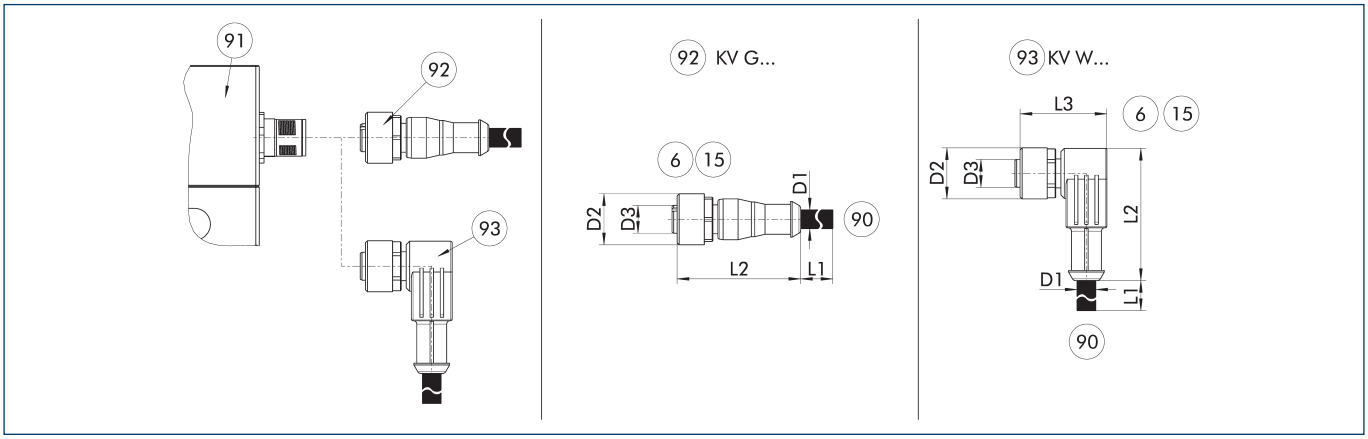
90 Cable end with open wire strands

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

ⓘ 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.

IO-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.

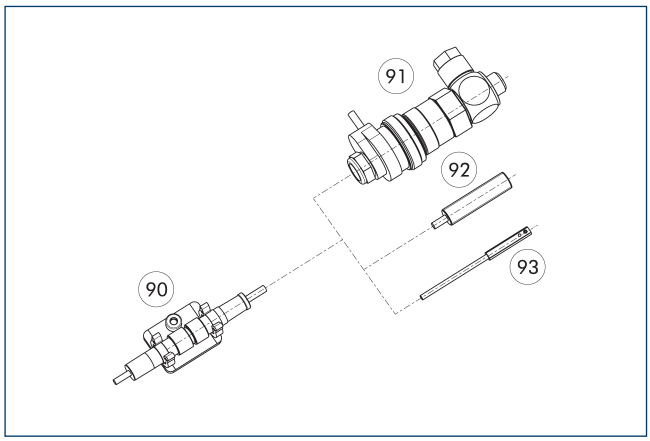
6 Connection module side
15 Socket
90 Cable end with straight connector

91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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
(91) MV micro valve
(92) IN proximity switch
(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	

IN 80

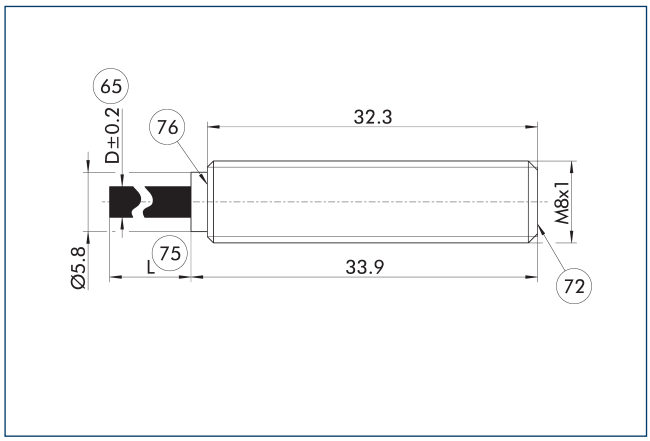
Inductive proximity switches

Technical data

Description		IN 80-S-M8	IN 80-S-M12	INK 80-S	IN 80-O-M8	IN 80-O-M12	INK 80-O
ID		0301478	0301578	0301550	0301488	0301588	0301551
Operating principle							
Measuring principle		inductive	inductive	inductive	inductive	inductive	inductive
Switching function		Closer	Closer	Closer	Opener	Opener	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	II	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			

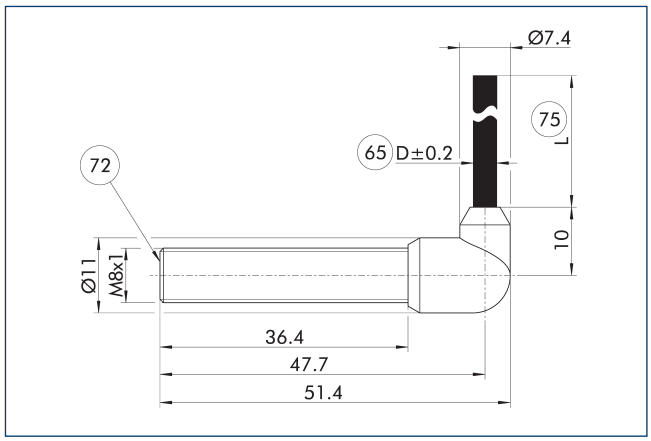
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN 80-M8/M12 main view



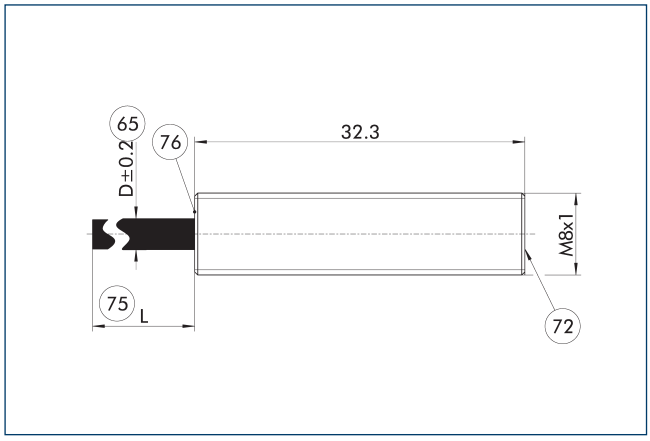
65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

IN(K) 80-SA main view



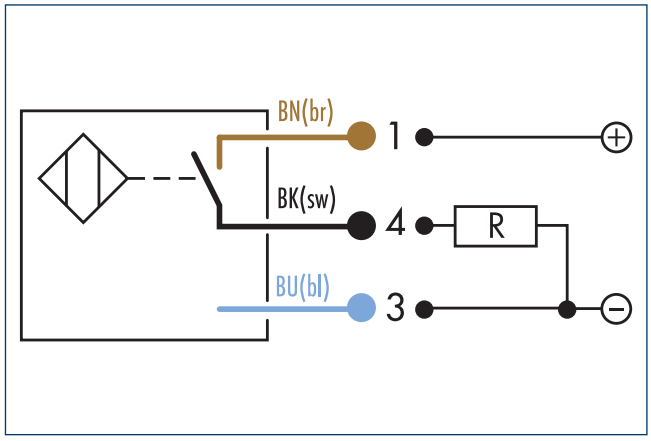
72 Active sensor surface
75 Cable length
65 Cable diameter

INK 80 main view

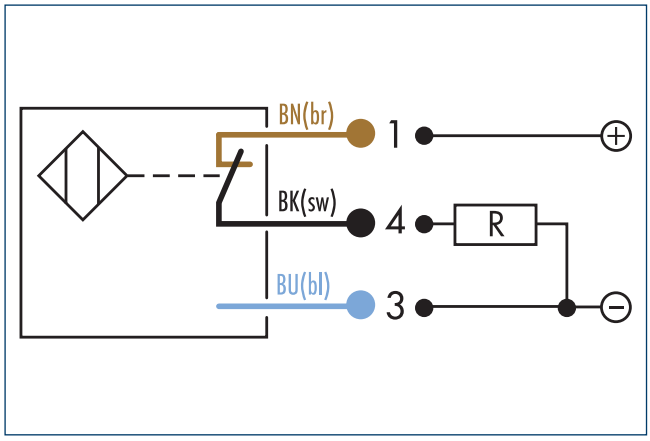


65 Cable diameter
72 Active sensor surface
75 Cable length
76 LED

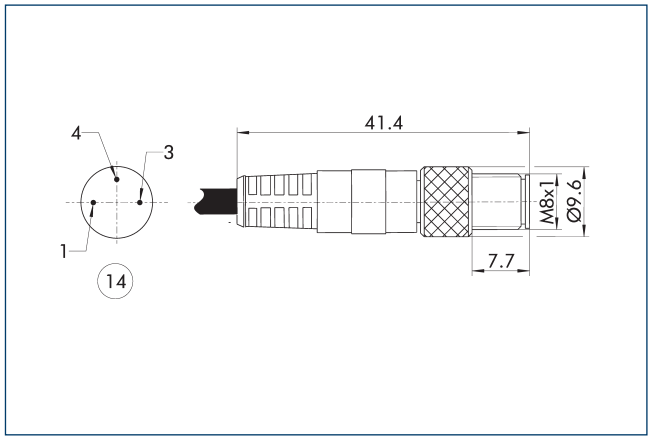
Wiring diagram closer PNP



Wiring diagram opener PNP



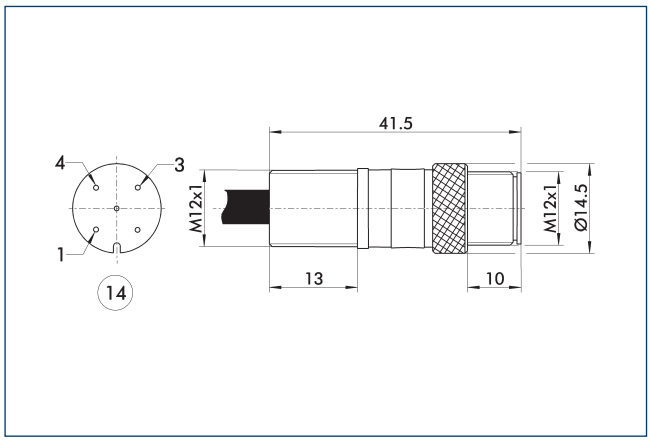
View of M8 connector (3-pin)



14 Connector

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

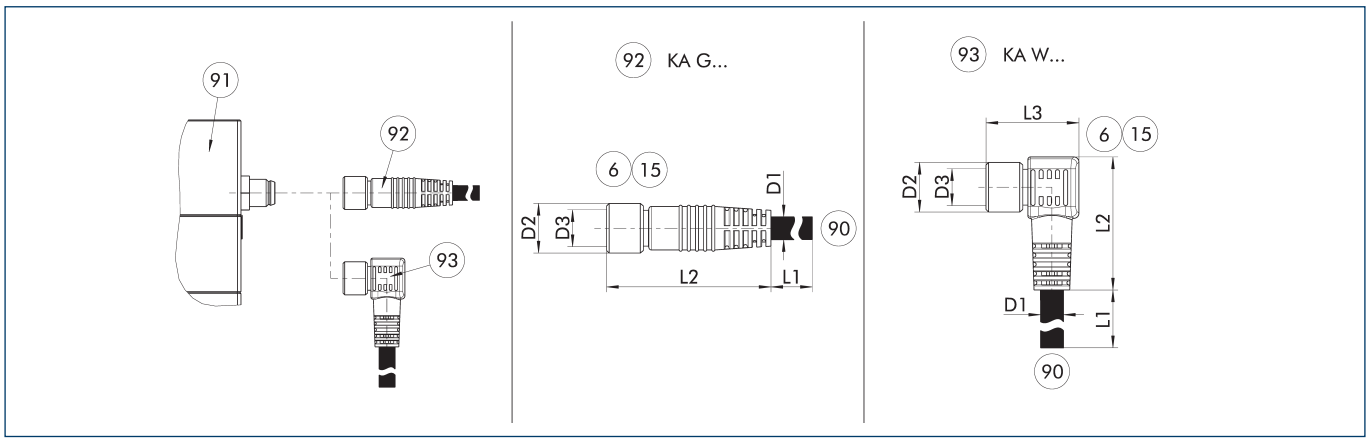
View of M12 connector (4-pin)



(14) Connector

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

Voltage supply/signals connection cable



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

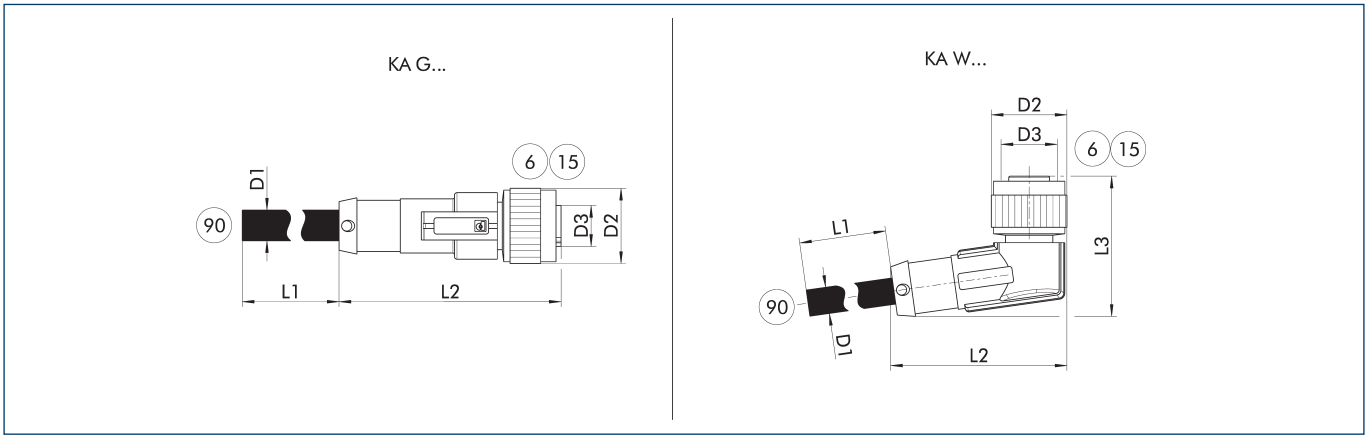
(6) Connection module side
(15) Socket
(90) SAC connection cable with open wire strands
(91) Connection plug component
(92) Cable with straight female connector
(93) Cable with angled female connector

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	

ⓘ 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.

Connection cable for control



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

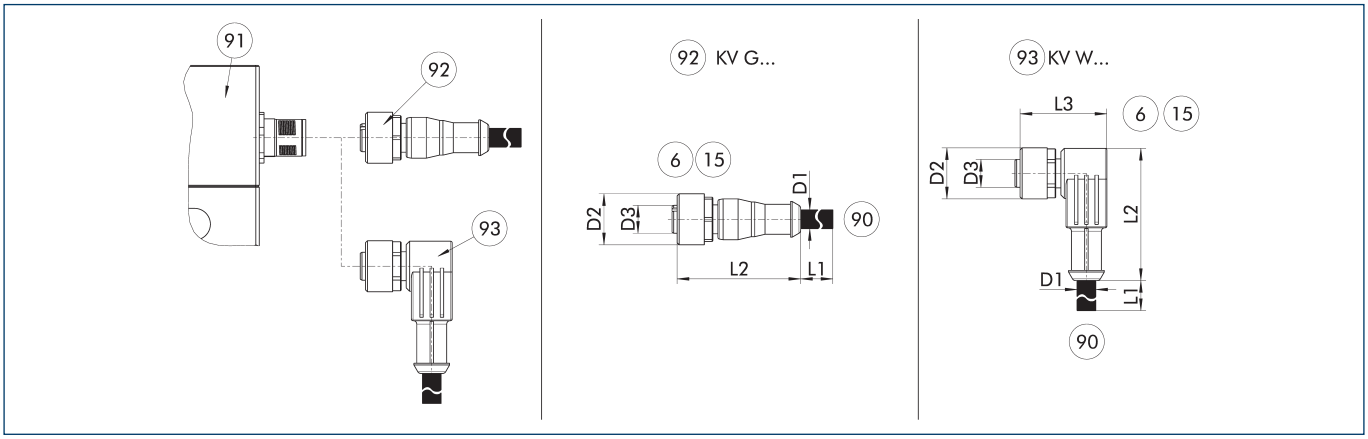
(6) Connection module side
(15) Socket
(90) Cable end with open wire strands

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

ⓘ 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.

IO-Link cable extension



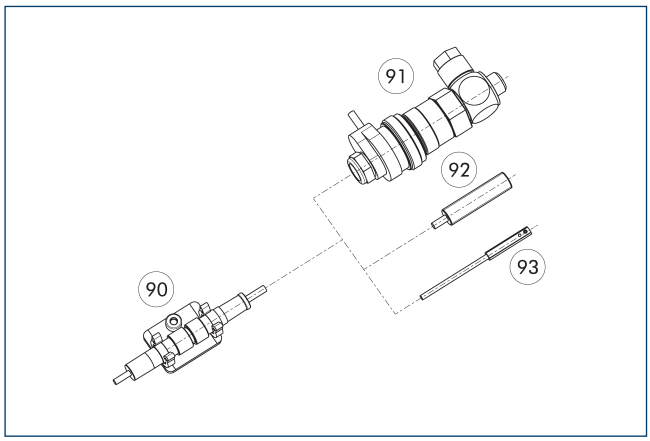
The cable extensions are ideal for connecting the relevant components to the control system, or for use as extension cables. The cable extensions have a 4-pin M8 socket with a straight or angled design on the module side and a 4-pin M8 connector with a straight design on the other side. The cable extensions 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	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
(91) MV micro valve
(92) IN proximity switch
(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	

IN 80-SL

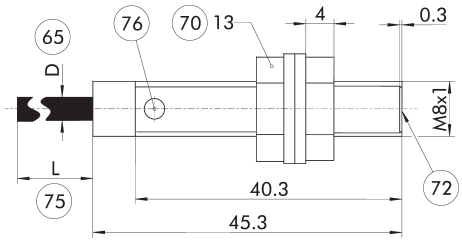
Inductive proximity switches

Technical data

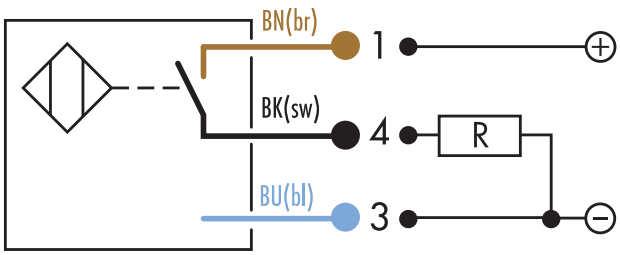
Description		IN 80-SL-M12	INK 80-SL
ID		0301529	0301579
Operating principle			
Measuring principle		inductive	inductive
Switching function		Closer	Closer
Type of switching		PNP	PNP
Number of switching points		1	1
Teach function		no	no
General data			
Switching distance	[mm]	3	3
Switching hysterisis from the nominal switching distance		< 10%	< 10%
Max. switching frequency	[Hz]	500	500
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]	1.5	1.5
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 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
Protection class		II	II
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



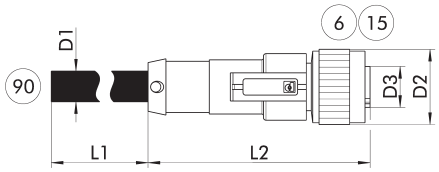
Wiring diagram closer PNP



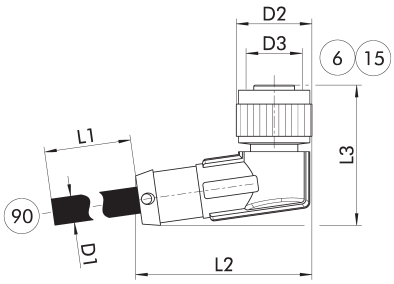
65 Cable diameter
70 Wrench size
72 Active sensor surface
75 Cable length
76 LED

Connection cable for control

KA G...



KA W...



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

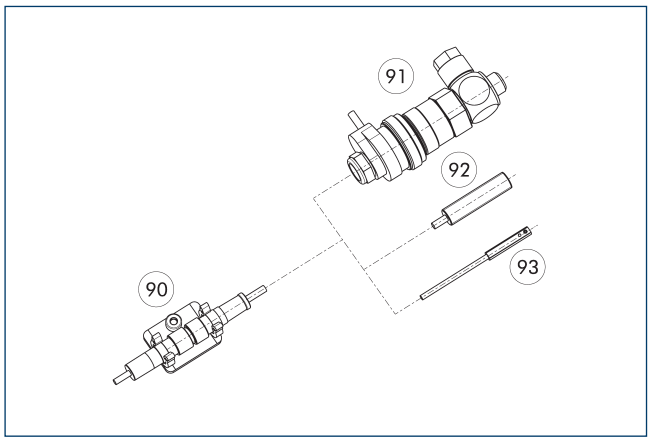
6 Connection module side
15 Socket
90 Cable end with open wire strands

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

ⓘ 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.

Clip for connector/socket



(90) CLI plug bracket
(91) MV micro valve
(92) IN proximity switch
(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	

IN 80-B/-C

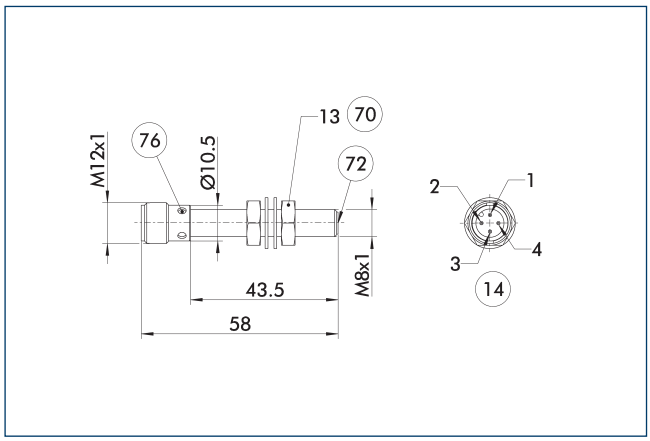
Inductive proximity switches

Technical data

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

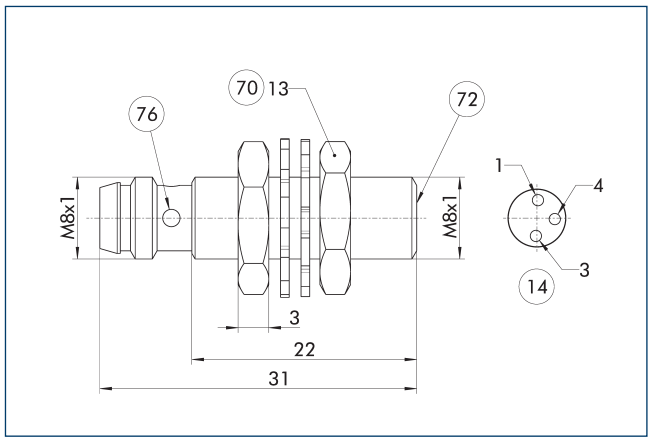
* Tested cutting emulsions: r.rhenus TU 43P, Motorex Swisscool Magnum UX 550 and Oemeta 760 (1008339).

IN-B 80 main view



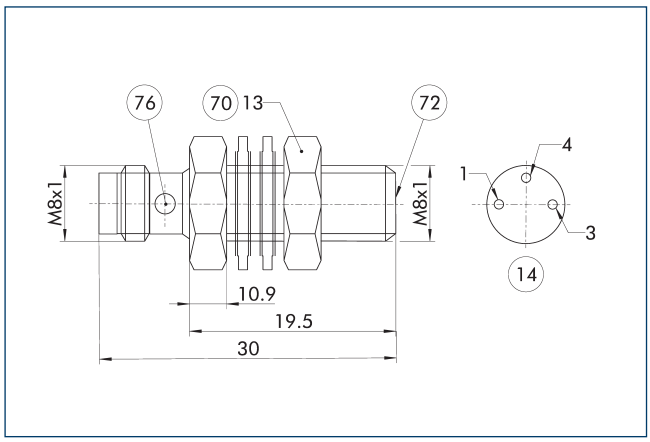
14 Connector
70 Wrench size
72 Active sensor surface
76 LED

IN-C 80-SL main view



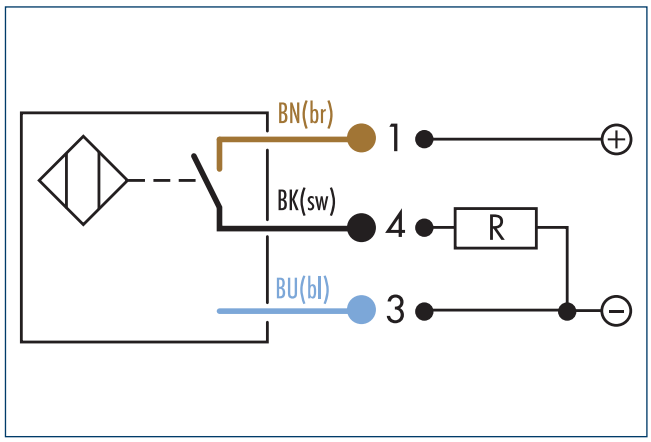
14 Connector
70 Wrench size
72 Active sensor surface
76 LED

IN-C 80 main view

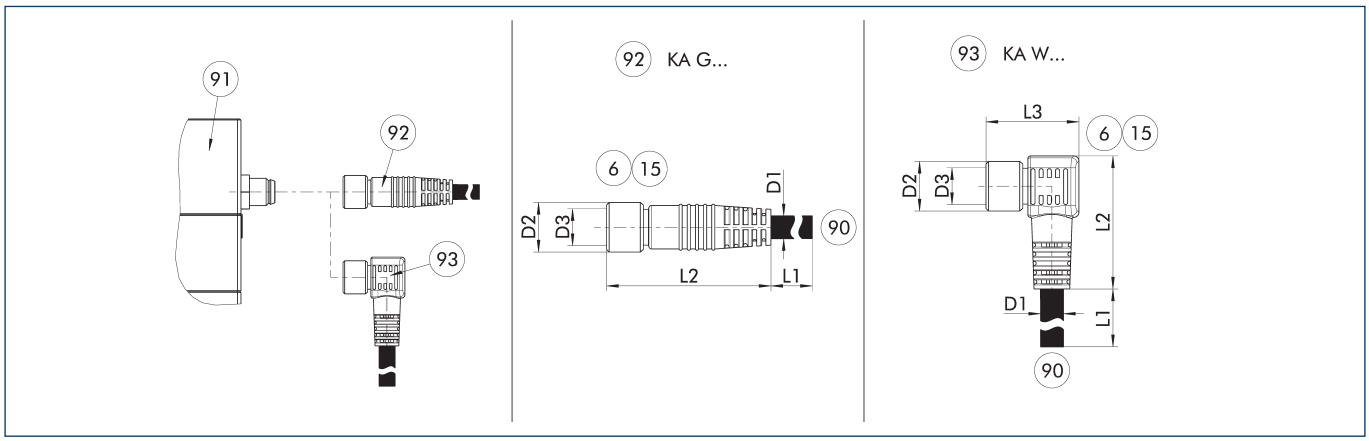


14 Connector
70 Wrench size
72 Active sensor surface
76 LED

Wiring diagram closer PNP



Voltage supply/signals connection cable



KA G... 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

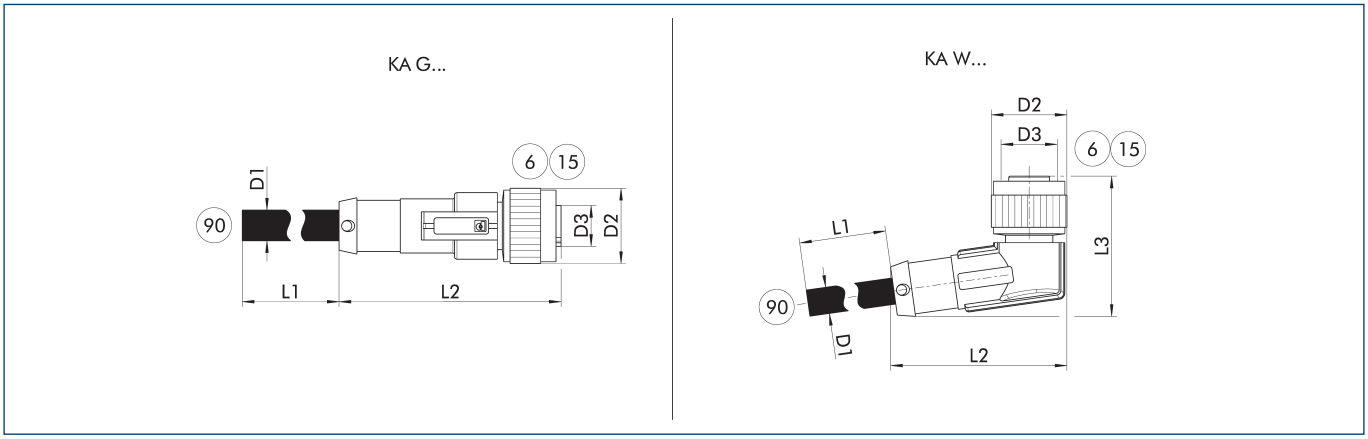
93 Cable with angled female connector

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	

ⓘ 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.

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

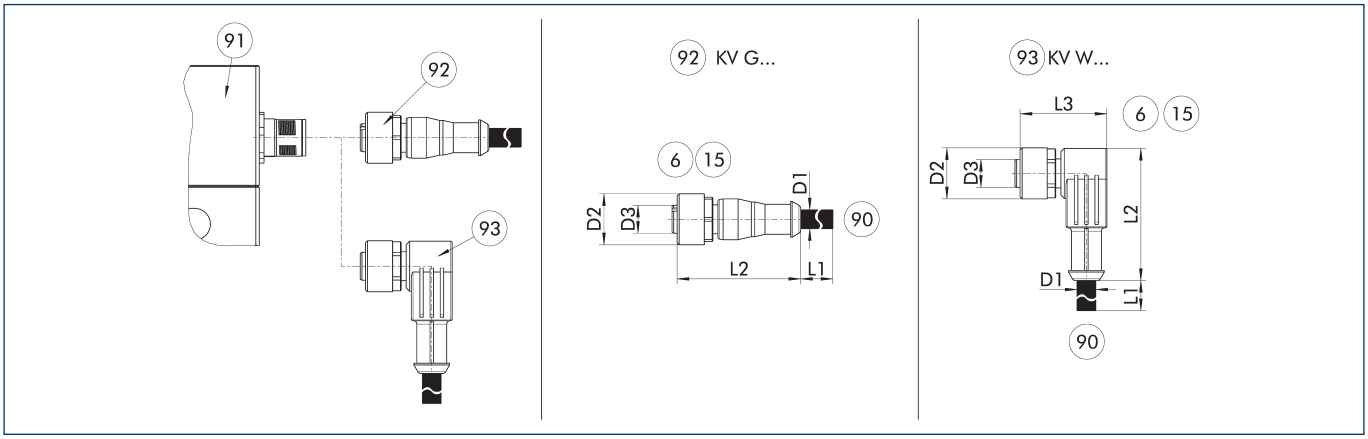
90 Cable end with open wire strands

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

ⓘ 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.

IO-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

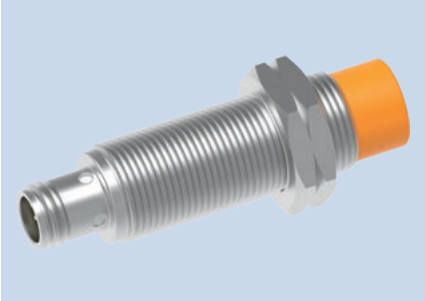
91 Connection plug component
92 Cable with straight female connector
93 Cable with angled female connector

Description	ID	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.

IN 180-B

Inductive proximity switches

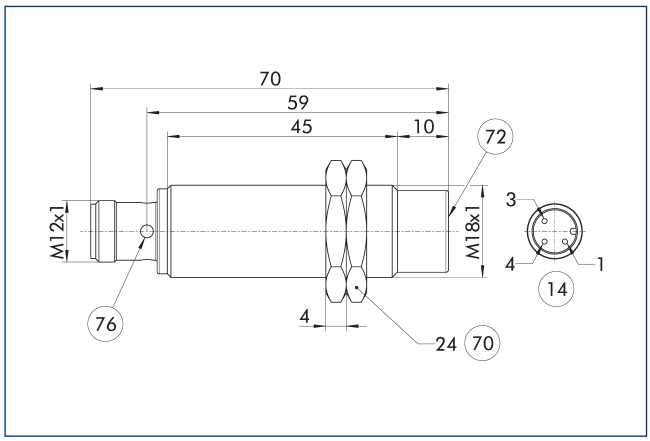


Technical data

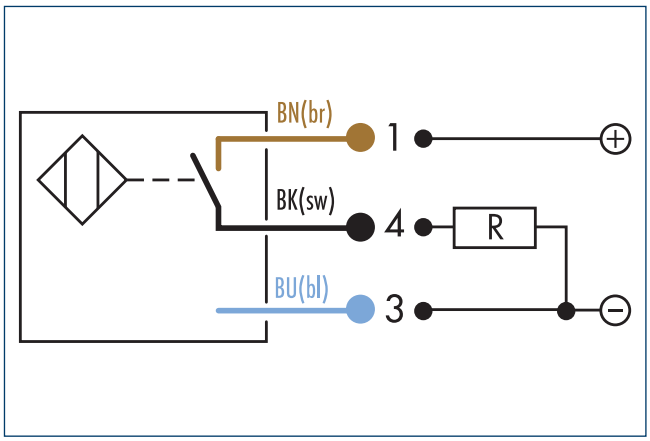
Description		IN-B 180 S-M8
ID		0303244
Operating principle		
Measuring principle		inductive
Switching function		Closer
Type of switching		PNP
Number of switching points		1
Teach function		no
General data		
Switching distance	[mm]	12
Switching hysterisis from the nominal switching distance		< 15%
Max. 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



Wiring diagram closer PNP



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

SCHUNK SE & Co. KG
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