



INDUCTIVE SENSORS ANALOG

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Product overview

All sensors at a glance

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INDUCTIVE SENSORS ANALOG

NOTES



INDUCTIVE SENSORS ANALOG

DESIGNATION CODE

Example: **K J 10 - M 30 M B 45 - D P S - V1 - X0000**

1	2	3	4	5	6	7	8	9	10	11	12

1 = Working principle

A	Acoustic		
B	Acceleration sensor		
C	Capacitive		
D	Strain gauge sensor		
H	Hall-effect		
J	Inductive	JR	Inductive ring
		JF	Inductive surface
		JG	Inductive slot
		JD	Metalface
M	Magnetoresistive		
N	Inclination sensor		
R	Reed-contact		
W	Angle sensor		

2 = Switching distance / range

3 = Design

D	Ring housing
G	Cylindrical housing without thread
M	Cylindrical housing with metrical thread
Q	Square housing

4 = Housing diameter / edge length

5 = Housing material

A	Aluminium
E	Stainless steel
K	Plastic
M	Brass, nickel plated
T	PTFE

6 = Installation

B	Shielded
N	Non shielded

7 = Tube length

8 = Operating voltage

AZ	AC alternating current voltage
D	DC direct current voltage
VZ	AC/DC all voltages

9 = Type of output signal

AN	Analog	ANI	Current output
		ANU	Voltage output
CAN	CAN-bus interface		
N	NPN		
NA	Namur		
P	PNP		
Z	Two wire		

10 = Function

A	Changeover
I	Impulse output
Ö	N.C.
S	N.O.
U	Switchable

11 = Termination

V1	M8 screw-/snap-in
V2	M12 metal
V2/1	M12 plastic
V3	M5 metal
V4	Amphenol Tuchel
V6	Brad Harrison
V7	Valve connector type A
V8	M8 snap-in only
V9	Torson
V10	Valve connector type C
V11	AC connector 1/2" UNF
V12	M18 plastic
VE	Euchner connector
RS232	Data interface
PG	Thread joint PG
Mxx	Thread joint metrical

others as requested

12 = Additional marks

AM	Sensing face in centre
FE	Reduction 1 to steel / iron
HT	High temperature
NF	Reduction 1 to nonferrous metal
SF	Weld field immune
T	Enlarged temperature range
W	Angled sensing face / angled cable exit
X	Customized design with detailed description



INDUCTIVE SENSORS ANALOG

CIRCUIT DIAGRAMS

Circuit diagram for	Cable / clamp connection	Connector V1 ... V9
DPS DC PNP N.O.		
DPÖ DC PNP N.C.		
DPA DC PNP changeover		
DPU DC NO/NC switchable		
DNS DC NPN N.O.		
DNÖ DC NPN N.C.		
DNA DC NPN changeover		
DNU DC NO/NC switchable		
NA Namur EN 60947-5-6		
DZS DC two-wire N.O.		
DZÖ DC two-wire N.C.		
AZS/VZS AC/DC two-wire N.O.		
AZÖ/NZÖ AC/DC two-wire N.C.		
Analog		



INDUCTIVE SENSORS ANALOG

PROGRAMMABLE ANALOG SENSORS

Technical data

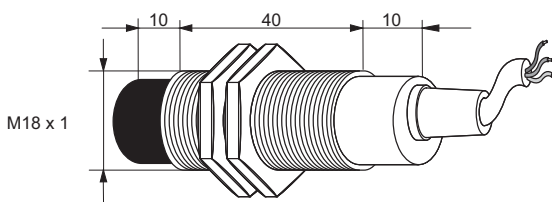
With four programmable switching points and an enlarged switching distance this sensor provides for large flexibility. Depending on the application the switching points can be configured as normally open or normally close contact. Current and voltage values can be set freely within the thresholds. The user realises any desired output characteristics until an ideal linearity in the application is attained. By programming a switching window the user is able to gate out unwanted measured data.



Article number	Designation
08317144730	KJ10-M18MN60-ANU-DPSS
Mounting	non shielded
Output signal	0 ... 10V
Operating voltage U_b	11 ... 30V DC
Ripple voltage of U_b	$\leq 5\%$
Reverse voltage protection	between + and -
Linearity	$\leq 3\%$
Off-state current I_0	$\leq 10,0\text{mA}$ (typ. 4 ... 5mA)
Operating current I_e	$\leq 10\text{mA}$
Internal resistor R_i	$\leq 500\text{Ohm}$
Operating frequency f	200Hz
Switching distance	0,5 ... 10,0mm
Repeat accuracy R	$\leq 1\%$
Average Rising	1,05V / mm +/- 5%
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 8%
Protection class	IP67
EMV-standard	according to IEC 60947-5-7
Housing material	brass, nickel-plated
Front cap	PA 6.6
Termination	2m cable PVC 4 x 0,34mm ²

Other cable lengths as requested.

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER G6,5 ANALOG VOLTAGE OUTPUT (ANU)

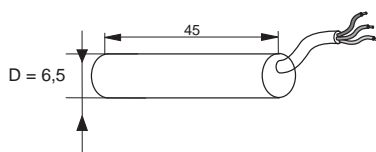
Technical data

Article number	Designation
08317140050	KJ2-G6,5MB40-ANU
Mounting	shielded
Output signal	0V ... 10V
Operating voltage U_b	11V ... 35V DC
Ripple voltage of U_b	$\leq 5\%$
Reverse voltage protection	between + and -
Linearity	$\leq 3\%$
Off-state current I_0	10,0mA (typ. 4 ... 5mA)
Operating frequency f	400Hz
Switching distance	0,5 ... 2mm
Repeat accuracy R	$\leq 1\%$
Average rising	6,66V / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 8%
Protection class	IP67
EMV-standard	according to IEC 60947-5-7
Housing material	brass, nickel-plated
Front cap	PA 6.6
Termination	2m cable PVC 3 x 0,14mm ²



Other cable lengths as requested.

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M8 ANALOG VOLTAGE OUTPUT (ANU)

General data

Mounting	shielded
Output signal	0V ... 10V
Operating voltage U_b	11V ... 35V DC
Ripple voltage of U_b	$\leq 5\%$
Reverse voltage protection	between + and -
Linearity	$\leq 3\%$
Off-state current I_0	10,0mA (typ. 4 ... 5mA)
Operating frequency f	400Hz
Switching distance	0,5 ... 2mm
Repeat accuracy R	$\leq 1\%$
Average rising	6,66V / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 8%
Protection class	IP67
EMV-standard	according to IEC 60947-5-7
Housing material	brass, nickel-plated
Front cap	PA 6.6

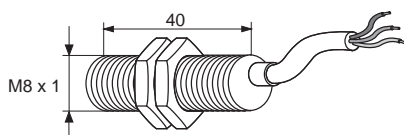


Selection chart

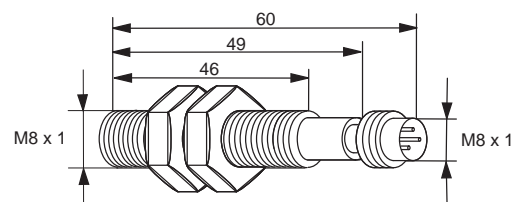
Article number	Designation	Termination	Drawing
08317140000	KJ2-M8MB40-ANU	2m cable PVC 3 x 0,14mm ²	A
08317140064	KJ2-M8MB60-ANU-V1	Connector M8 3-pole	B

Dimensions

A)



B)



all data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M12 ANALOG VOLTAGE OUTPUT (ANU)

General data

Output signal	1V ... 9V
Operating voltage U_b	11V ... 35V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 5\%$
Off-state current I_o	$\leq 5\text{mA}$
Operating frequency f	KJ3... 500Hz KJ4... 400Hz
Repeat accuracy R	$\leq 1\%$
Average rising	KJ3... 2,91V / mm KJ4... 2,28V / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PCP

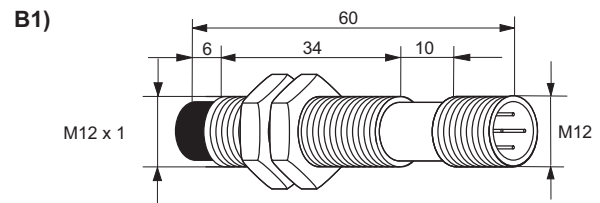
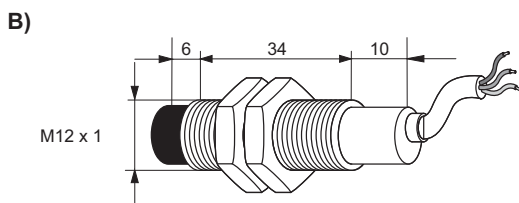
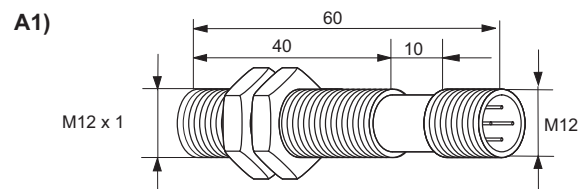
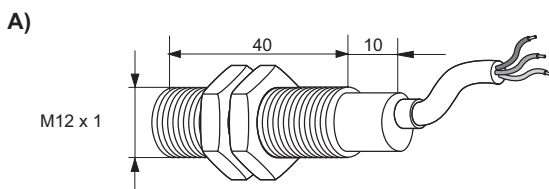


Selection chart

Article number	Designation	Mounting	Switching distance in mm	Termination	Drawing
08317143800	KJ3-M12MB50-ANU	shielded	0,25 ... 3	2m cable PVC 3 x 0,34mm ²	A
08317143865	KJ3-M12MB60-ANU-V2	shielded	0,25 ... 3	Connector M12 4-pole	A1
08317144800	KJ4-M12MN50-ANU	non shielded	0,5 ... 4	2m cable PVC 3 x 0,34mm ²	B
08317144865	KJ4-M12MN60-ANU-V2	non shielded	0,5 ... 4	Connector M12 4-pole	B1

Other cable lengths as requested.

Dimensions



alle data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M12 ANALOG CURRENT OUTPUT (ANI)

General data

Output signal	4 ... 20mA
Operating voltage U_b	10 ... 35V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 5\%$
Off-state current I_0	$\leq 10\text{mA}$
Operating frequency f	KJ3... 450Hz KJ4... 400Hz
Repeat accuracy R	$\leq 1\%$
Average rising	KJ3... 5,82mA / mm KJ4... 4,57mA / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PCP

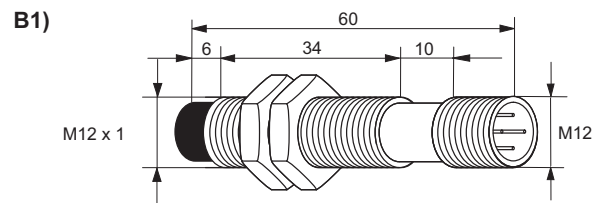
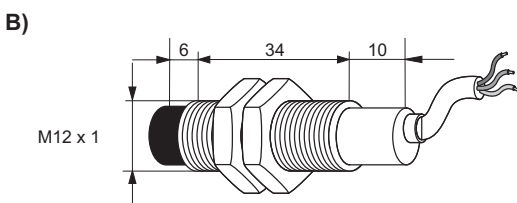
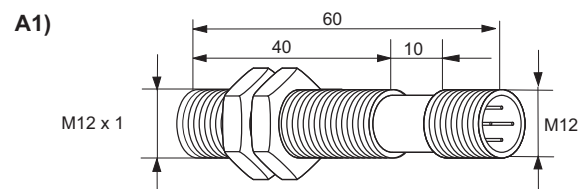
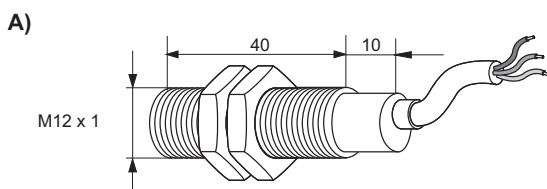


Selection chart

Article number	Designation	Mounting	Switching distance in mm	Termination	Drawing
08317141800	KJ3-M12MB50-ANI	shielded	0,25 ... 3	2m cable PVC 3 x 0,34mm ²	A
08317141865	KJ3-M12MB60-ANI-V2	shielded	0,25 ... 3	Connector M12 4-pole	A1
08310000287	KJ4-M12MN50-ANI	non shielded	0,5 ... 4	2m cable PVC 3 x 0,34mm ²	B
08310001033	KJ4-M12MN60-ANI-V2	non shielded	0,5 ... 4	Connector M12 4-pole	B1

Other cable lengths as requested.

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M18 ANALOG VOLTAGE OUTPUT (ANU)

General data

Output signal	1V ... 9V
Operating voltage U_b	11V ... 35V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 5\%$
Off-state current I_o	$\leq 5\text{mA}$
Operating frequency f	KJ5... 500Hz KJ8... 400Hz
Repeat accuracy R	$\leq 1\%$
Average rising	KJ5... 1,778V / mm KJ8... 1,143V / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PCP

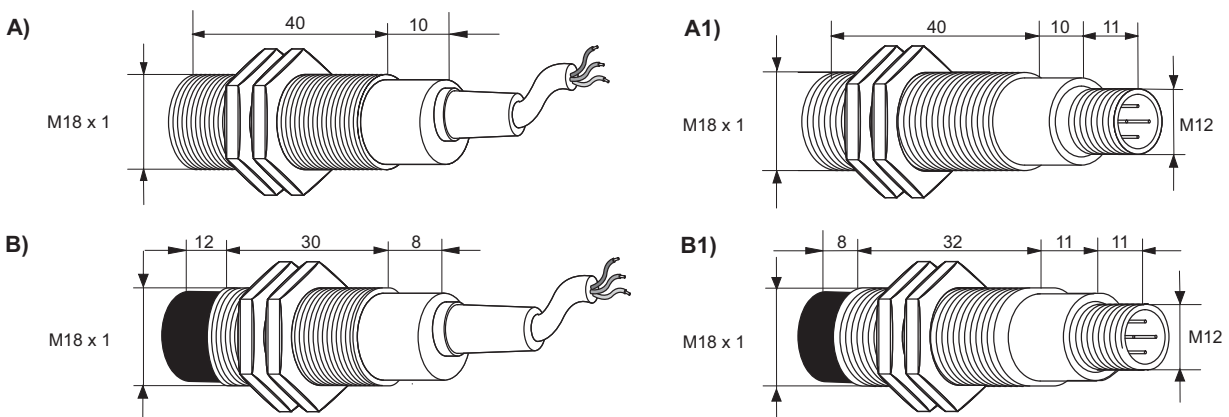


Selection chart

Article number	Designation	Mounting	Switching distance in mm	Termination	Drawing
08317143700	KJ5-M18MB50-ANU	shielded	0,5 ... 5	2m cable PVC 3 x 0,34mm ²	A
08317143765	KJ5-M18MB61-ANU-V2	shielded	0,5 ... 5	Connector M12 4-pole	A1
08317144700	KJ8-M18MN50-ANU	non shielded	1 ... 8	2m cable PVC 3 x 0,34mm ²	B
08317144765	KJ8-M18MN61-ANU-V2	non shielded	1 ... 8	Connector M12 4-pole	B1

Other cable lengths as requested.

Dimensions



all data in mm



CYLINDER M18 ANALOG CURRENT OUTPUT (ANI)

General data

Output signal	4 ... 20mA
Operating voltage U_b	10V ... 35V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 5\%$
Off-state current I_0	$\leq 10\text{mA}$
Operating frequency f	400Hz
Repeat accuracy R	$\leq 1\%$
Average rising	KJ5... 3,56mA / mm KJ8... 2,29mA / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PCP

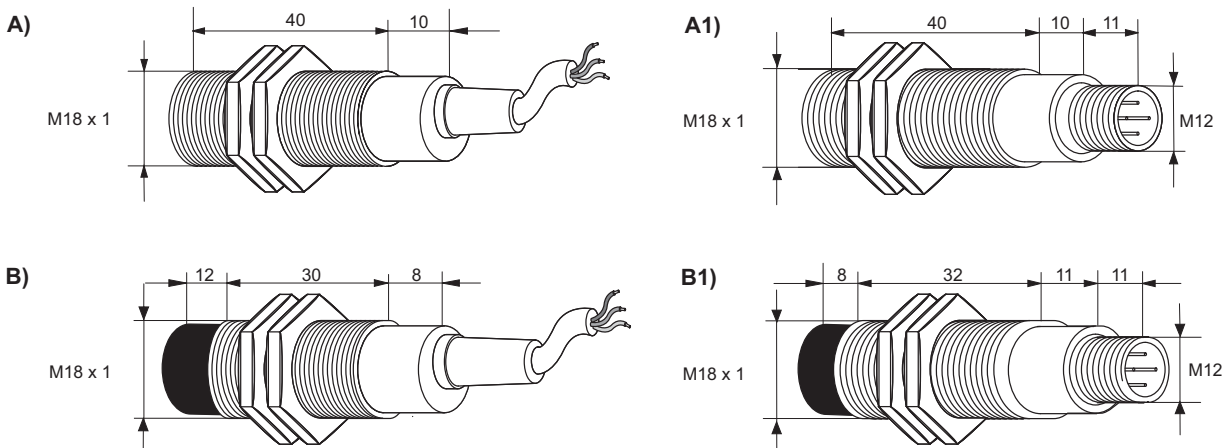


Selection chart

Article number	Designation	Mounting	Switching distance in mm	Termination	Drawing
08317141700	KJ5-M18MB50-ANI	shielded	0,5 ... 5	2m cable PVC 3 x 0,34mm ²	A
08317141765	KJ5-M18MB61-ANI-V2	shielded	0,5 ... 5	Connector M12 4-pole	A1
08310000293	KJ8-M18MN50-ANI	non shielded	1 ... 8	2m cable PVC 3 x 0,34mm ²	B
08310001031	KJ8-M18MN61-ANI-V2	non shielded	1 ... 8	Connector M12 4-pole	B1

Other cable lengths as requested.

Dimensions



alle data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M30 ANALOG VOLTAGE OUTPUT (ANU)

General data

Output signal	1V ... 9V	
Operating voltage U_b	KJ9...	11 ... 35V DC
	KJ14...	18 ... 30V DC
	KJ15...	11 ... 35V DC
Ripple voltage of U_b	≤ 10%	
Reverse voltage protection	yes	
Linearity	≤ 5%	
Off-state current I_o	KJ9...	5mA
	KJ14...	≤ 10mA
	KJ15...	≤ 5mA
Repeat accuracy R	≤ 1%	
Average rising	KJ9...	1V / mm
	KJ14 ... (4BIT)	1,14V / mm
	KJ15...	0,667V / mm
Operating temperature T_a	-25°C ... +70°C	
Temperature drift	+/- 5%	
Protection class	IP67	
EMV-standard	according to EN 60947-5-7	
Housing material	brass, nickel-plated	
Frontcap	PCP	



The drawings of these sensors are shown on the following page.

Selection chart

Article number	Designation M30 Switching distance 1 ... 9mm	Mounting	Operating frequency	Termination	Drawing (following page)
08317143600	KJ9-M30MB40-ANU	shielded	400Hz	2m cable PVC 3 x 0,34mm ²	A
08317143665	KJ9-M30MB50-ANU-V2	shielded	400Hz	Connector M12 4-pole	A1

	Designation M30 Switching distance 7 ... 14mm				
08317140500	KJ14-M30MN80-ANU-F1*	non shielded	100Hz	2m cable PVC 3 x 0,14mm ²	B
08317140600	KJ14-M30MN80-ANU-F2*	non shielded	100Hz	2m cable PVC 3 x 0,14mm ²	B
08317141000	KJ14-M30MN80-ANU 4BIT**	non shielded	30Hz	2m cable PVC 7 x 0,14mm ²	B

* several working frequencies for opposed mounting

** with additional 4 BIT NPN-digital output

	Designation M30 Switching distance 3 ... 15mm				
08317144600	KJ15-M30MN40-ANU	non shielded	300Hz	2m cable PVC 3 x 0,34mm ²	C
08317144665	KJ15-M30MN50-ANU-V2	non shielded	300Hz	Connector M12 4-pole	C1

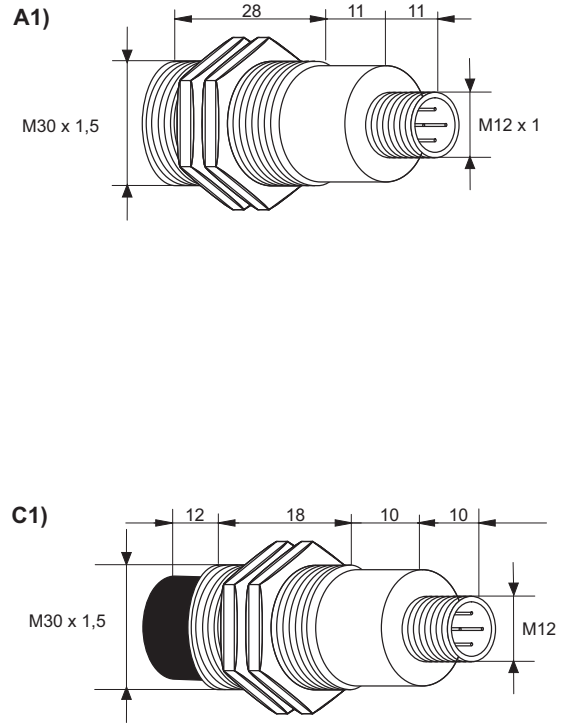
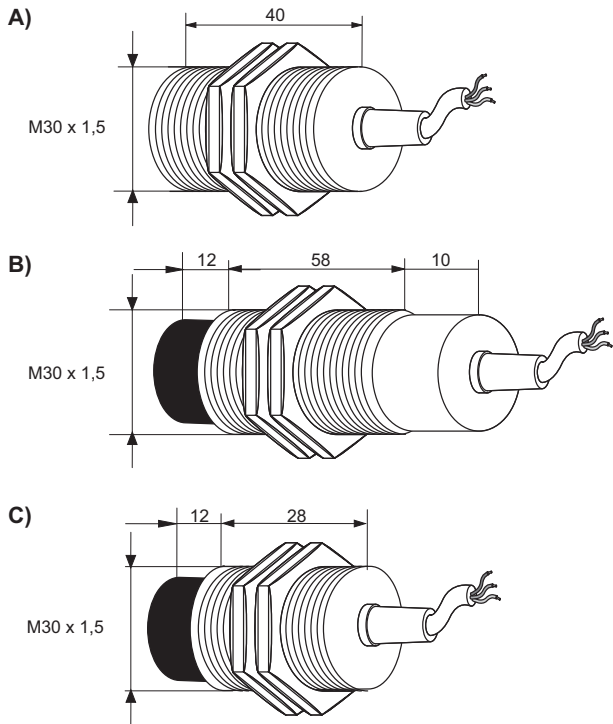
Other cable lengths as requested.



INDUCTIVE SENSORS ANALOG

CYLINDER M30 ANALOG VOLTAGE OUTPUT (ANU)

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

CYLINDER M30 ANALOG CURRENT OUTPUT (ANI)

General data

Output signal	4 ... 20mA
Operating voltage U_b	10V ... 35V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 5\%$
Off-state current I_0	$\leq 10\text{mA}$
Operating frequency f	KJ9... 350Hz KJ15... 300Hz
Repeat accuracy R	$\leq 1\%$
Average rising	KJ9... 2mA / mm KJ15... 1,33mA / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PCP

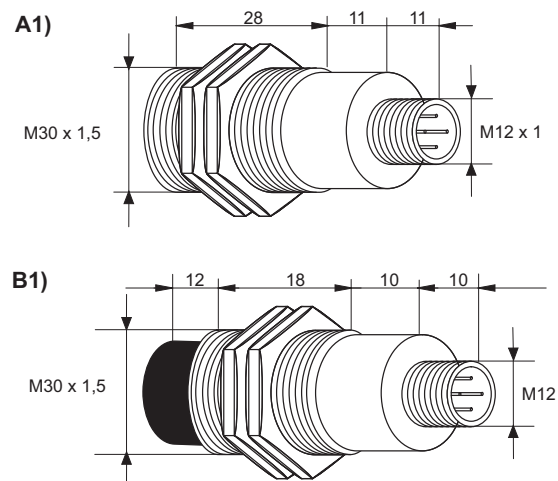
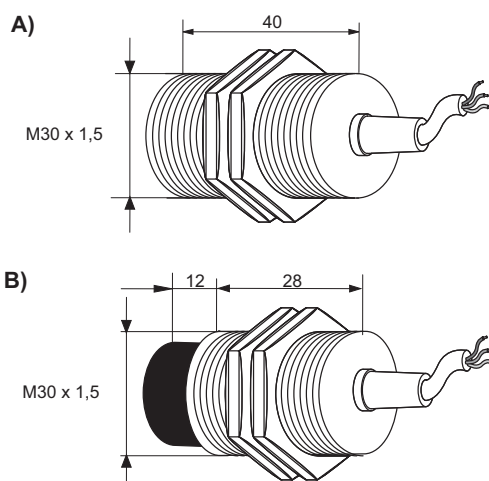


Selection chart

Article number	Designation	Mounting	Switching distance in mm	Termination	Drawing
08317141600	KJ9-M30MB40-ANI	shielded	1 ... 9	2m cable PVC 3 x 0,34mm ²	A
08317141665	KJ9-M30MB50-ANI-V2	shielded	1 ... 9	Connector M12 4-pole	A1
08310000294	KJ15-M30MN40-ANI	non shielded	3 ... 15	2m cable PVC 3 x 0,34mm ²	B
08310001032	KJ15-M30MN50-ANI-V2	non shielded	3 ... 15	Connector M12 4-pole	B1

Other cable lengths as requested.

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

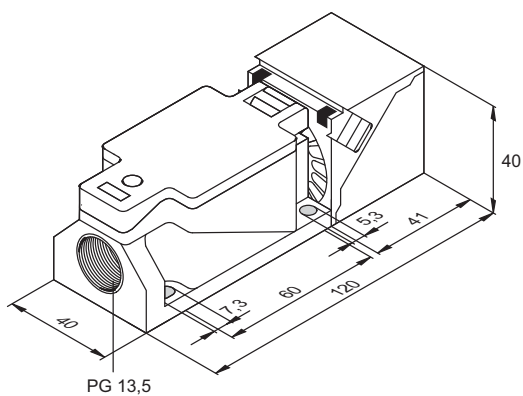
SQUARE Q40 ANALOG VOLTAGE OUTPUT (ANU)

Technical data

Article number	Designation
08317141100	KJ20-Q40KN-ANU
Mounting	non shielded
Output signal	1 ... 9V
Operating voltage U_b	18 ... 30V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	between + and -
Linearity	$\leq 5\%$
Off-state current I_0	$\leq 10\text{mA}$
Operating frequency f	25Hz
Switching distance	10 ... 20mm
Repeat accuracy R	$\leq 5\%$
Average rising	0,8V / mm
Operating temperature T_a	-25°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	Trogamid
Termination	Terminals 1,5mm ²



Dimensions



all data in mm



CYLINDER ANALOG VOLTAGE AND CURRENT OUTPUT (ANUI)

General data

Output signal	0 ... 10V 4 ... 20mA
Operating voltage U_b	18V ... 30V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	$\leq 10\%$
Off-state current I_o	$\leq 15\text{mA}$
Operating frequency f	SJ4... 100Hz SJ7... 30Hz SJ10... 100Hz SJ14... 30Hz
Repeat accuracy R	$\leq 0,02\%$
Average Rising	SJ4... 3,3V /mm / 6,66mA /mm SJ7... 1,66V /mm / 3,33mA /mm SJ10... 2V /mm / 4mA /mm SJ14... 1,43V /mm / 2,86mA /mm
Operating temperature T_a	0°C ... +70°C
Temperature drift	+/- 5%
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	brass, nickel-plated
Front cap	PBT
Termination	2m cable PUR 4 x 0,5mm ²



The drawings of these sensors are shown on the following page.

Selection chart

Article number	Designation	Mounting	Switching distance in mm	Drawing (following page)
08313180410	SJ4-M18MB80-ANUI	shielded	1 ... 4	A
08313180710	SJ7-M18MN80-ANUI	non shielded	1 ... 7	B
08313103010	SJ10-M30MB80-ANUI	shielded	5 ... 10	C
08313301410	SJ14-M30MN80-ANUI	non shielded	7 ... 14	D

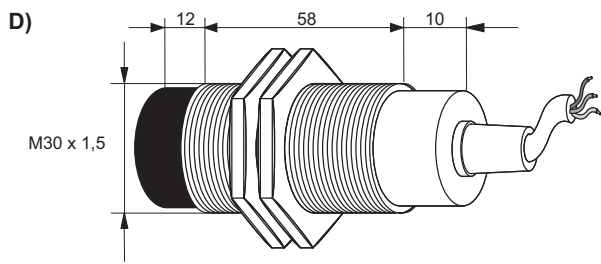
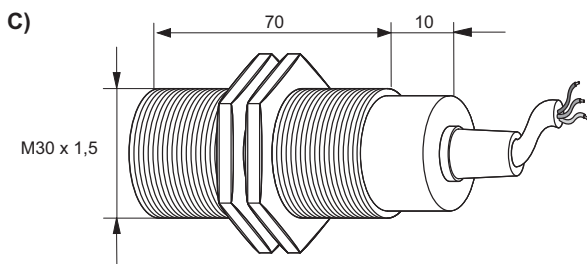
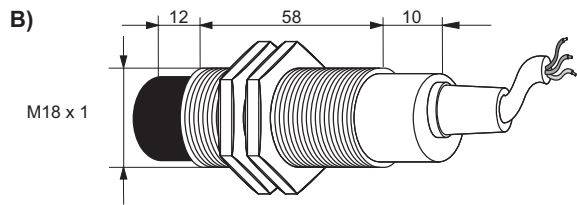
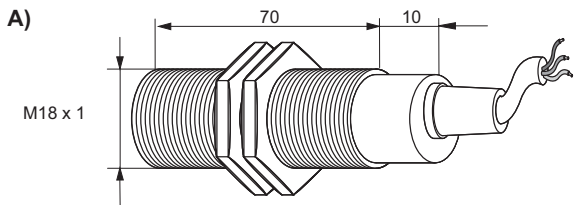
Other cable lengths as requested.



INDUCTIVE SENSORS ANALOG

CYLINDER ANALOG VOLTAGE AND CURRENT OUTPUT (ANUI)

Dimensions



all data in mm



INDUCTIVE SENSORS ANALOG

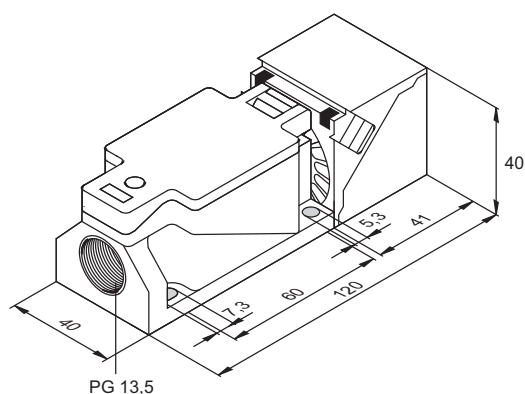
SQUARE ANALOG VOLTAGE AND CURRENT OUTPUT (ANUI)

Technical data

Article number	Designation
08313204010	SJ20-Q40KN-ANUI
Mounting	non shielded
Output signal	0 ... 10V 0mA ... 20mA
Operating voltage U_b	18 ... 30V DC
Ripple voltage of U_b	$\leq 10\%$
Reverse voltage protection	yes
Linearity	0%
Off-state current I_0	$\leq 15\text{mA}$
Operating frequency f	30Hz
Switching distance	10 ... 20mm
Repeat accuracy R	$\leq 0,02\%$
Average rising	$0,77\text{V} / \text{mm} = 1,54 \text{mA} / \text{mm}$
Operating temperature T_a	$0^\circ\text{C} \dots +70^\circ\text{C}$
Temperature drift	$\pm 5\%$
Protection class	IP67
EMV-standard	according to EN 60947-5-7
Housing material	PBT
Termination	Terminals 1,5mm ²



Dimensions



all data in mm



PRODUCT OVERVIEW

Product group	Designation	Article number	Matchcode	Page
Inductive Analog	KJ2-G6,5MB40-ANU	08317140050		6
Inductive Analog	KJ2-M8MB40-ANU	08317140000		7
Inductive Analog	KJ2-M8MB60-ANU-V1	08317140064		7
Inductive Analog	KJ3-M12MB50-ANU	08317143800		8
Inductive Analog	KJ3-M12MB60-ANU-V2	08317143865		8
Inductive Analog	KJ3-M12MB50-ANI	08317141800		9
Inductive Analog	KJ3-M12MB60-ANI-V2	08317141865		9
Inductive Analog	KJ4-M12MN50-ANU	08317144800		8
Inductive Analog	KJ4-M12MN60-ANU-V2	08317144865		8
Inductive Analog	KJ4-M12MN50-ANI	08310000287		9
Inductive Analog	KJ4-M12MN60-ANI-V2	08310001033		9
Inductive Analog	SJ4-M18MB80-ANUI	08313180410		16
Inductive Analog	KJ5-M18MB50-ANU	08317143700		10
Inductive Analog	KJ5-M18MB61-ANU-V2	08317143765		10
Inductive Analog	KJ5-M18MB50-ANI	08317141700	9914-1700	11
Inductive Analog	KJ5-M18MB61-ANI-V2	08317141765	9914-1765	11
Inductive Analog	SJ7-M18MN80-ANUI	08313180710		16
Inductive Analog	KJ8-M18MN50-ANU	08317144700		10
Inductive Analog	KJ8-M18MN61-ANU-V2	08317144765		10
Inductive Analog	KJ8-M18MN50-ANI	08310000293		11
Inductive Analog	KJ8-M18MN61-ANI-V2	08310001031		11
Inductive Analog	KJ9-M30MB40-ANU	08317143600		12
Inductive Analog	KJ9-M30MB50-ANU-V2	08317143665		12
Inductive Analog	KJ9-M30MB40-ANI	08317141600	9914-1600	14
Inductive Analog	KJ9-M30MB50-ANI-V2	08317141665	9914-1665	14
Inductive Analog	KJ10-M18MN60-ANU-DPSS-D	08317144730		5
Inductive Analog	SJ10-M30MB80-ANUI	08313103010		16
Inductive Analog	KJ14-M30MN80-ANU-4BIT	08317141000	9914-1000	12
Inductive Analog	KJ14-M30MN80-ANU-F1	08317140500	9914-0500	12
Inductive Analog	KJ14-M30MN80-ANU-F2	08317140600	9914-0600	12
Inductive Analog	SJ14-M30MN80-ANUI	08313301410		16
Inductive Analog	KJ15-M30MN40-ANU	08317144600		12
Inductive Analog	KJ15-M30MN50-ANU-V2	08317144665		12
Inductive Analog	KJ15-M30MN40-ANI	08310000294		14
Inductive Analog	KJ15-M30MN50-ANI-V2	08310001032		14
Inductive Analog	KJ20-Q40KN-ANU	08317141100	9814-1100	15
Inductive Analog	SJ20-Q40KN-ANUI	08313204010		18



INDUCTIVE SENSORS ANALOG

NOTES
