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### Product overview

All sensors at a glance

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## NOTES

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## DESIGNATION CODE

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

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

### 1 = Working principle

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

### 2 = Switching distance / range

### 3 = Design

<b>D</b>	Ring housing
<b>G</b>	Cylindrical housing without thread
<b>M</b>	Cylindrical housing with metrical thread
<b>Q</b>	Square housing

### 4 = Housing diameter / edge length

### 5 = Housing material

<b>A</b>	Aluminium
<b>E</b>	Stainless steel
<b>K</b>	Plastic
<b>M</b>	Brass, nickel plated
<b>T</b>	PTFE

### 6 = Installation

<b>B</b>	Shielded
<b>N</b>	Non shielded

### 7 = Tube length

### 8 = Operating voltage

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

### 9 = Type of output signal

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

### 10 = Function

<b>A</b>	Changeover
<b>I</b>	Impulse output
<b>Ö</b>	N.C.
<b>S</b>	N.O.
<b>U</b>	Switchable

### 11 = Termination

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

others as requested

### 12 = Additional marks

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



# INDUCTIVE SENSORS AC + AC/DC

## 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/VZÖ AC/DC two-wire N.C.		
Analog		



## CYLINDER AC

### General data

Operating voltage $U_b$	20 ... 250V AC
Voltage frequency	50/60Hz
Voltage drop $U_d$	$\leq 5V$
Min. load current $I_{emin}$	5mA
Residual current $I_r$	$\leq 2mA$
Peak current	2A (20ms / 1Hz)
Max. switching frequency $f$	15Hz
Hysteresis $H$	$\leq 15\%$
Operating temperature $T_a$	-25°C ... +70°C
Temperature drift	$\leq 10\%$
Repeat accuracy $R$	$\leq 5\%$
Protection class	IP67
Switching state	LED
EMV-standard	according to EN60947-5-2
Housing material	brass, nickel-plated
Front cap	PCP
Connection	2m cable PVC 3 x 0,5mm <sup>2</sup>



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

Other cable lengths as requested.

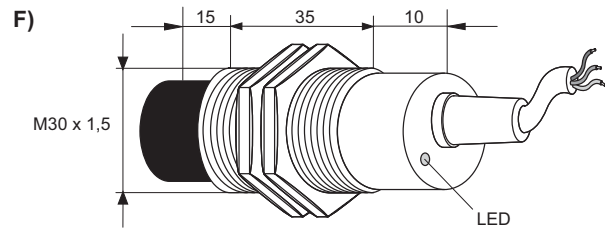
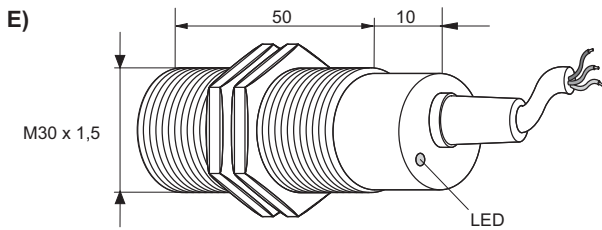
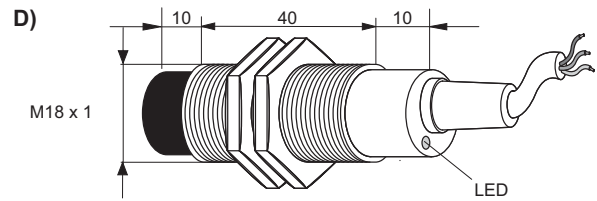
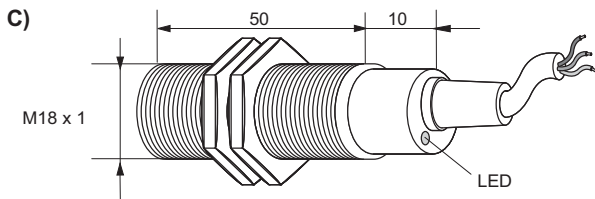
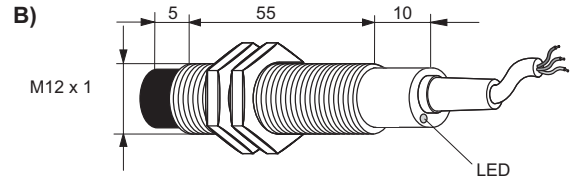
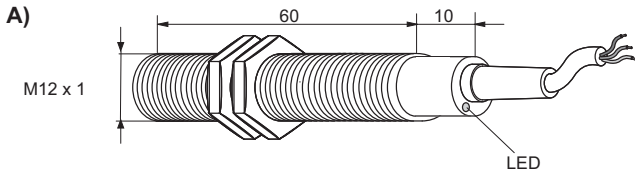
### Selection chart

Article number	Designation	Mounting	Output signal	Switching distance in mm	Max. load current	Drawing (next page)
08317240500	<b>KJ2-M12MB70-AZS</b>	shielded	two-wire	2	300mA	A
08317240400	<b>KJ2-M12MB70-AZÖ</b>	shielded	two-wire	2	300mA	A
08317240700	<b>KJ4-M12MN70-AZS</b>	non shielded	two-wire	4	300mA	B
08317240900	<b>KJ4-M12MN70-AZÖ</b>	non shielded	two-wire	4	300mA	B
08317211200	<b>KJ5-M18MB60-AZS</b>	shielded	two-wire	5	300mA	C
08317211300	<b>KJ5-M18MB60-AZÖ</b>	shielded	two-wire	5	300mA	C
08317211500	<b>KJ10-M18MN60-AZS</b>	non shielded	two-wire	10	300mA	D
08317211700	<b>KJ10-M18MN60-AZÖ</b>	non shielded	two-wire	10	300mA	D
08317162600	<b>KJ10-M30MB60-AZS</b>	shielded	two-wire	10	300mA	E
08317162100	<b>KJ10-M30MB60-AZÖ</b>	shielded	two-wire	10	300mA	E
08317162700	<b>KJ15-M30MN60-AZS</b>	non shielded	two-wire	15	300mA	F
08317162300	<b>KJ15-M30MN60-AZÖ</b>	non shielded	two-wire	15	300mA	F



## CYLINDER AC

### Dimensions



all data in mm





## INDUCTIVE SENSORS AC + AC/DC

### CYLINDER AC/DC

#### General data

Operating voltage $U_b$	20 ... 250V AC/DC
Voltage frequency	50/60Hz
Voltage drop $U_d$	$\leq 5V$
Min. load current $I_{e\min}$	2mA
Max. load current $I_e$	350mA (M12 300mA)
Residual current $I_r$	$\leq 1,7mA$
Peak current	2A (20ms/1Hz)
Max. switching frequency $f$	30Hz
Hysteresis $H$	$\leq 15\%$
Operating temperature $T_a$	-25°C ... +70°C
Temperature drift	$\leq 10\%$
Repeat accuracy $R$	$\leq 5\%$
Protection class	IP67
Switching state	LED
EMV-standard	according to EN60947-5-2
Housing material	brass, nickel-plated
Front cap	PCP
Connection	2m cable PVC 3 x 0,5mm <sup>2</sup>



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

Short circuit protection and overload protection locking. After removal of the short circuit the voltage supply has to be interrupted for approximately 2sec.

Other cable lengths as requested.

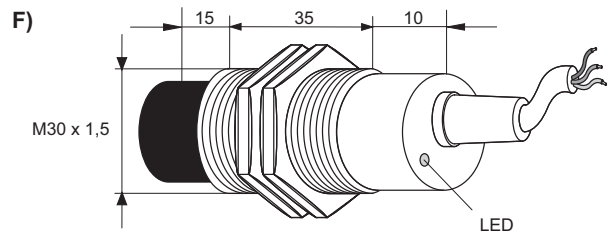
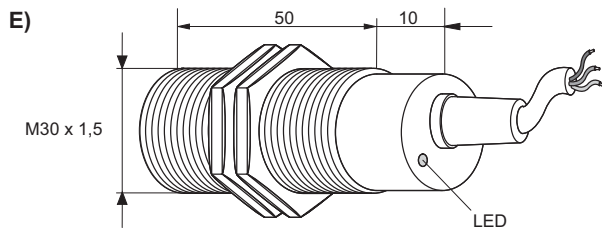
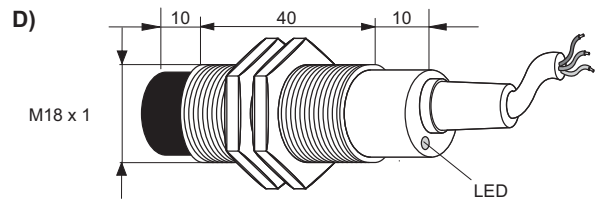
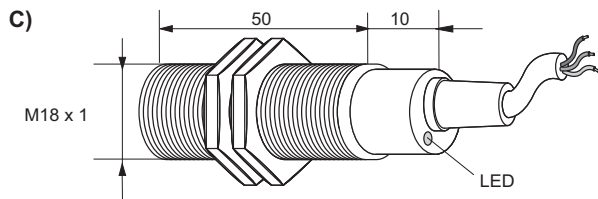
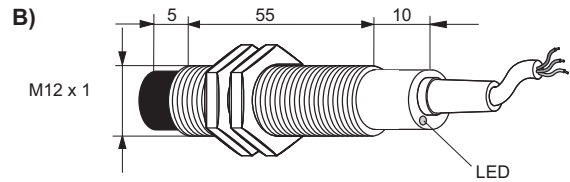
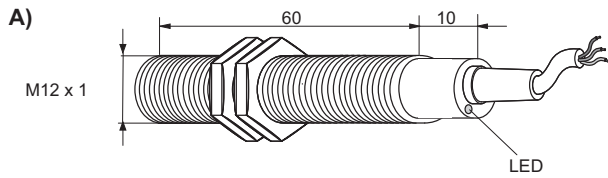
#### Selection chart

Article number	Designation	Mounting	Output signal	Switching distance in mm	Drawing (next page)
08317251200	<b>KJ2-M12MB70-VZS</b>	shielded	two-wire	2	A
08317251300	<b>KJ2-M12MB70-VZÖ</b>	shielded	two-wire	2	A
08317251500	<b>KJ4-M12MN70-VZS</b>	non shielded	two-wire	4	B
08317251700	<b>KJ4-M12MN70-VZÖ</b>	non shielded	two-wire	4	B
08317231200	<b>KJ5-M18MB60-VZS</b>	shielded	two-wire	5	C
08317231300	<b>KJ5-M18MB60-VZÖ</b>	shielded	two-wire	5	C
08317231500	<b>KJ8-M18MN60-VZS</b>	non shielded	two-wire	8	D
08317231700	<b>KJ8-M18MN60-VZÖ</b>	non shielded	two-wire	8	D
08317171200	<b>KJ10-M30MB60-VZS</b>	shielded	two-wire	10	E
08317171300	<b>KJ10-M30MB60-VZÖ</b>	shielded	two-wire	10	E
08317171500	<b>KJ15-M30MN60-VZS</b>	non shielded	two-wire	15	F
08317171700	<b>KJ15-M30MN60-VZÖ</b>	non shielded	two-wire	15	F



## CYLINDER AC/DC

### Dimensions



all data in mm





## SQUARE AC

### General data

	KJ15-Q40KB-AZU	KJ40-Q40KN-AZU	KJ50-Q80KN-AZS
Operating voltage $U_b$	20 ... 250V AC	20 ... 250V AC or DC	20 ... 250V AC
Voltage frequency	50/60Hz	50/60Hz	50/60Hz
Voltage drop $U_d$	$\leq 5V$	$\leq 5V$	$\leq 8V$ bei 400mA
Min. load current $I_{emin}$	5mA	5mA	5mA
Max. load current $I_e$	$\leq 500mA$	$\leq 500mA$	$\leq 400mA$
Residual current $I_r$	$\leq 2mA$	$\leq 2mA$	$\leq 1,8mA$
Peak current	8,0A (20ms)	8,0A (20ms)	5,0A (20ms)
Max. switching frequency $f$	15Hz	15Hz	25Hz
Output function	two-wire changeover	two-wire changeover	two-wire changeover
Hysteresis $H$	$\leq 15\%$	$\leq 15\%$	$\leq 15\%$
Operating temperature $T_a$	-25°C ... +70°C	-25°C ... +70°C	-25°C ... +70°C
Temperature drift	$\leq 10\%$	$\leq 10\%$	$\leq 10\%$
Repeat accuracy $R$	$\leq 5\%$	$\leq 5\%$	$\leq 5\%$
Protection class	IP67	IP67	IP67
Switching state	2 LED	2 LED	2 LED
EMV-standard	according to EN60947-5-2	according to EN60947-5-2	according to EN60947-5-2
Housing material	Trogamide T	Trogamide T	PBT Resin
Connection	clamps 1,5mm <sup>2</sup>	clamps 1,5mm <sup>2</sup>	clamps 1,5mm <sup>2</sup>



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

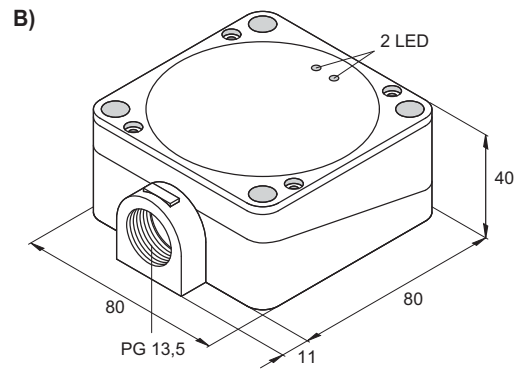
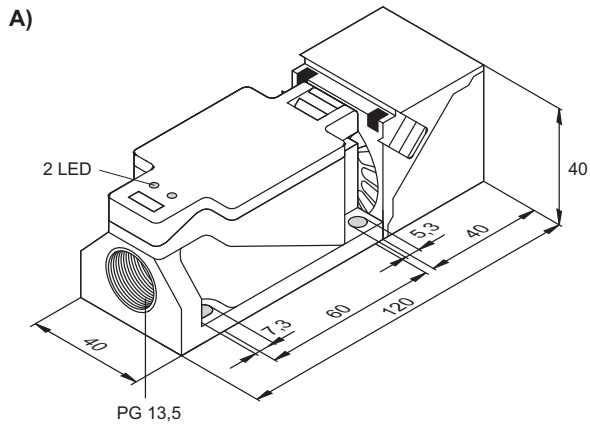
### Selection chart

Article number	Designations	Mounting	Switching distance in mm	Drawing (next page)
08317533000	<b>KJ15-Q40KB-AZU</b>	shielded	15	A
08317533200	<b>KJ40-Q40KN-AZU</b>	non shielded	40	A
08317551000	<b>KJ50-Q80KN-AZS</b>	non shielded	50	B



## SQUARE AC

### Dimensions



all data in mm



## INDUCTIVE SENSORS AC + AC/DC

### SQUARE AC/DC

#### General data

Mounting	shielded
Operating voltage $U_b$	20 ... 250V AC /DC
Voltage frequency	50/60Hz
Voltage drop $U_d$	$\leq 5V$
Min. load current $I_{emin}$	5mA
Max. load current $I_e$	400mA
Residual current $I_r$	$\leq 2mA$
Peak current	8A (20ms)
Max. switching frequency $f$	15Hz
Output function	two-wire changeover
Hysteresis $H$	$\leq 15\%$
Operating temperature $T_a$	$-25^\circ C \dots +70^\circ C$
Temperature drift	$\leq 10\%$
Repeat accuracy $R$	$\leq 5\%$
Protection class	IP67
Switching state	2 LED
EMV-standard	according to EN 60947-5-2
Housing material	PA 6.6 GF30
Connection	clamps $1,5mm^2$

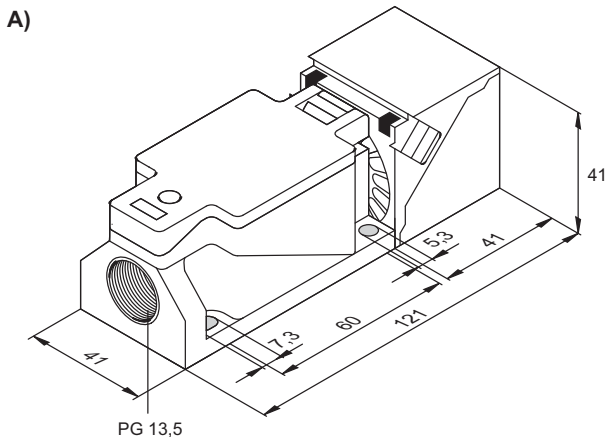


Short circuit protection and overload protection locking. After removal of the short circuit the voltage supply has to be interrupted for approximately 2sec.

#### Selection chart

Article number	Designation	Switching distance in mm	Drawing
08317730000	<b>KJ20-Q40KB-VZU</b>	20	A
08317730200	<b>KJ40-Q40KN-VZU</b>	40	A

#### Dimensions



all data in mm



## PRODUCT OVERVIEW

Product group	Designation	Article number	Matchcode	Page
Induktive ACDC	KJ2-M12MB70-AZS	08317240500	9924-0500	5
Induktive ACDC	KJ2-M12MB70-AZÖ	08317240400	9924-0400	5
Induktive ACDC	KJ2-M12MB70-VZS	08317251200		7
Induktive ACDC	KJ2-M12MB70-VZÖ	08317251300		7
Induktive ACDC	KJ4-M12MN70-AZS	08317240700	9924-0700	5
Induktive ACDC	KJ4-M12MN70-AZÖ	08317240900	9924-0900	5
Induktive ACDC	KJ4-M12MN70-VZS	08317251500		7
Induktive ACDC	KJ4-M12MN70-VZÖ	08317251700		7
Induktive ACDC	KJ5-M18MB60-AZS	08317211200	9921-1200	5
Induktive ACDC	KJ5-M18MB60-AZÖ	08317211300	9921-1300	5
Induktive ACDC	KJ5-M18MB60-VZS	08317231200		7
Induktive ACDC	KJ5-M18MB60-VZÖ	08317231300		7
Induktive ACDC	KJ8-M18MN60-VZS	08317231500		7
Induktive ACDC	KJ8-M18MN60-VZÖ	08317231700		7
Induktive ACDC	KJ10-M18MN60-AZS	08317211500	9921-1500	5
Induktive ACDC	KJ10-M18MN60-AZÖ	08317211700	9921-1700	5
Induktive ACDC	KJ10-M30MB60-AZS	08317162600	9916-2600	5
Induktive ACDC	KJ10-M30MB60-AZÖ	08317162100	9916-2100	5
Induktive ACDC	KJ10-M30MB60-VZS	08317171200		7
Induktive ACDC	KJ10-M30MB60-VZÖ	08317171300		7
Induktive ACDC	KJ15-M30MN60-AZS	08317162700	9916-2700	5
Induktive ACDC	KJ15-M30MN60-AZÖ	08317162300	9916-2300	5
Induktive ACDC	KJ15-M30MN60-VZS	08317171500		7
Induktive ACDC	KJ15-M30MN60-VZÖ	08317171700		7
Induktive ACDC	KJ15-Q40KB-AZU	08317533000	9853-3000	9
Induktive ACDC	KJ20-Q40KB-VZU	08317730000	9873-0000	11
Induktive ACDC	KJ40-Q40KN-AZU	08317533200	9853-3200	9
Induktive ACDC	KJ40-Q40KN-VZU	08317730200	9873-0200	11
Induktive ACDC	KJ50-Q80KN-AZS	08317551000	9855-1000	9