

AK PK3 M18 INDUCTIVE PROXIMITY SENSORS

Installation manual - 826004000 Rev. A - ENG - Created: 09/01/2023

SUPPLIED MATERIAL

- Installation manual
- Safety instructions for dangerous areas
- CE Declaration of Conformity
- ATEX label marking

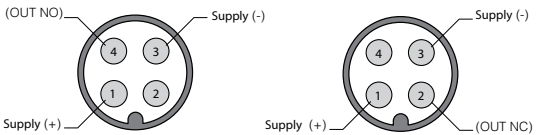
GENERAL DESCRIPTION

- Wide range of models: standard, long distance, DOCOUT output
- Outputs: cable, M12 connector
- Models with 2, 3 and 4 wires
- Special models with double enclosure immersion proof (IP 68)
- Models with complementary output (NO+NC)
- CE Mark
- ATEX certified

CONNECTIONS

3 wire version

M12 - NO	M12 - NC
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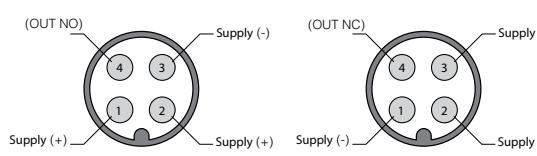
2 wire version

M12 - NO	M12 - NC
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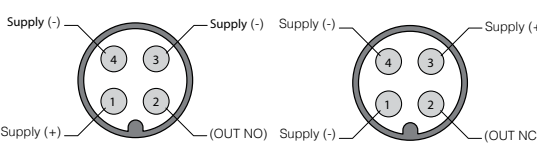
PK3 DECOUT version

PNP - NO	PNP - NC
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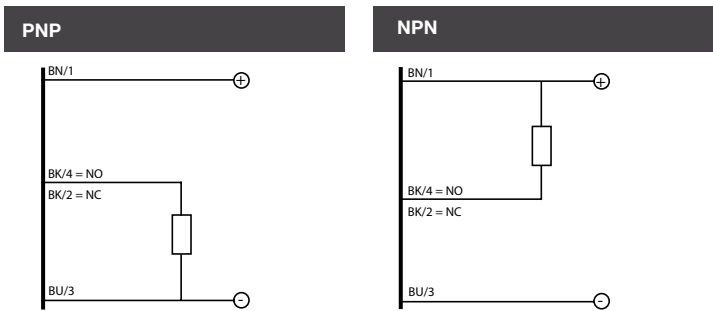
PK3 DECOUT version

NPN - NO	NPN - NC
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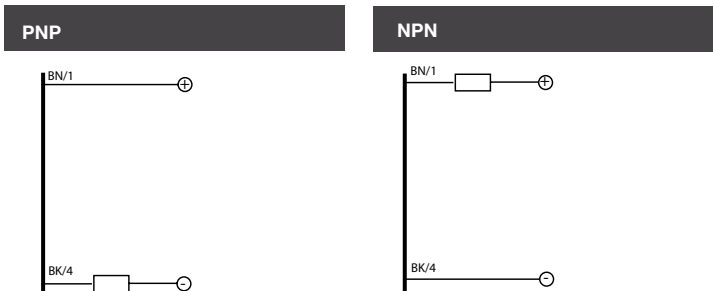


ELECTRICAL DIAGRAMS

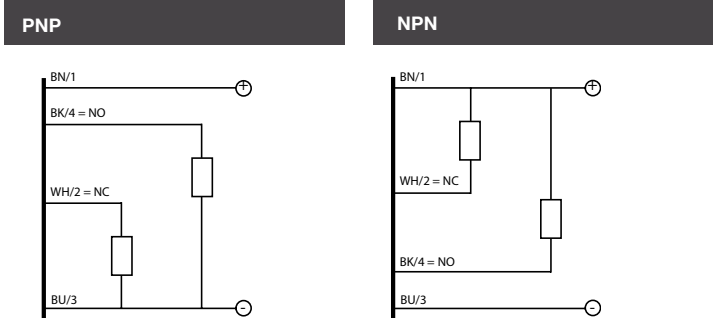
3 wire versions



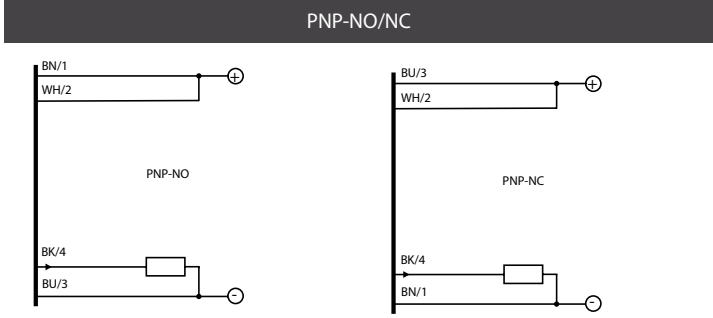
2 wire versions



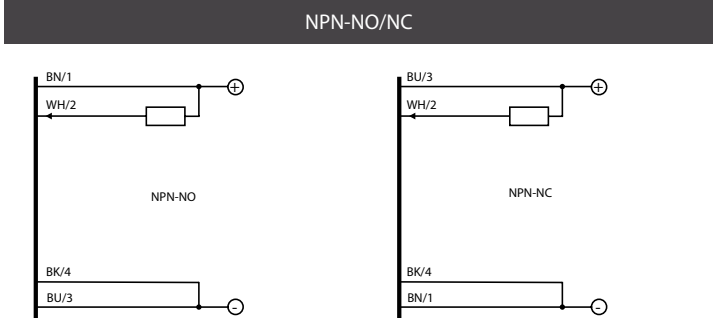
Complementary outputs



PK3 DECOUT versions



PK3 DECOUT versions



KEY:
BN = brown; BK = black; BU = blue; WH = white.

SPECIFICATIONS

Models	AK1*/**_1*	AK1*/**_2*	AK1*/**_3*	AK1*/**_4*	AK6*/**_1*	AK6*/**_2*	AK6*/**_3*	AK6*/**_4*	PK3/00-1*	PK3/00-2*		
nominal sensing range	5 mm	8 mm	8 mm	12 mm	5 mm	8 mm	8 mm	12 mm	5 mm	8 mm		
operating distance	0...4 mm	0...6.5 mm	0...6.5 mm	0...9.7 mm	0...4 mm	0...6.5 mm	0...6.5 mm	0...9.7 mm	0...4 mm	0...6.5 mm		
hysteresis	0...20%											
standard target	18x18 mm FE 360	24x24 mm FE 360		36x36 mm FE 360	18x18 mm FE 360	24x24 mm FE 360		36x36 mm FE 360	18x18 mm FE 360			
repeat accuracy	5%				5% Ub 20-30V Ta=23°C±5°C					5%		
supply voltage range	10...30 Vcc											
max. ripple content	≤ 10 %											
output current	≤ 400 mA (3...100 mA for 2 wire versions)				≤ 400 mA					≤ 100 mA		
output voltage drop	≤ 1V @ 400 mA (2.8 V @ 100 mA for 2 wire versions)				≤ 1.5 V @ 400 mA					≤ 1.2 V @ 100 mA		
no load supply current	20 mA				≤ 10 mA					30 mA		
output logic	-				PNP or NPN					-		
output status	-				NO or NO+NC					-		
leakage current	10 µA (0.8 mA for 2 wire versions)				10 µA							
switching frequency	600 Hz (300 Hz for 2 wires)		300 Hz (150 Hz for 2 wires)		2.5 KHz	2 KHz	2.5 KHz	2 KHz	0.3 KHz			
time delay before availability	≤ 50 ms								100 ms			
temperature range	-25°C ÷ +70°C											
temperature drift	10%				≤ 10%					10%		
short-circuit protection	●				● (self-restoring)					●		
induction protection	●											
voltage reversal protection	●											
EMC	conforming to EMC Directive requirements according to IEC 60947-5-2											
shocks and vibrations	IEC 60947-5-2											
weight	30 g connector version 55 g cable version				-					30 g connector version 70 g cable version		
protection rating	IP67											
housing material	nickel-plated brass								nickel-plated brass (INOX for W versions)			
sensing face material	PBT										-	
LED indicators	yellow LED output state				enabled output (yellow LED)						-	
connection	M12 connector, 2 m PVC cable output											
tightening torque	25 Nm				1.5 Nm (plastic) / 100 Nm (metal)					25 Nm		

CODE DESCRIPTION

AK Series

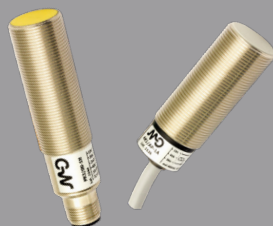
series	AK	M18 inductive proximity switch
housing	1	Standard body
housing	6	Short body
output state	A	NO output state
output state	C	NC output state
output state	B	NO and NC complementary outputs
output logic	N	NPN output logic
output logic	0	2 wire version
output logic	P	PNP output logic
distance	1	Shielded standard 5 mm
distance	2	Unshielded standard 8 mm
distance	3	Long distance shielded 8 mm
distance	4	Long distance unshielded 12 mm
connect.	A	Axial cable output
connect.	C	Radial cable output
connect.	H	M12 connector output

□ ATEX products available, contact your sales representative.

PK3 Series

series	PK	Special M18 inductive sensor
DECOUT®	3	DECOUT® interface
DECOUT®	0	DECOUT® NO/NC selectable
DECOUT®	0	DECOUT® PNP/NPN configurable
distance	1	Shielded standard 5 mm
distance	2	Unshielded standard 8 mm
connect.	A	Axial cable output
connect.	H	M12 connector output

□ ATEX products available, contact your sales representative.



Micro Detectors
Italian Sensors Technology

CE
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificate no.: 0802009X

PK3 model
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificate no.: 0802010X



WARNING These products are NOT safety sensors and are NOT suitable for use in personal safety application.



For ATEX models read carefully safety instruction before installation.

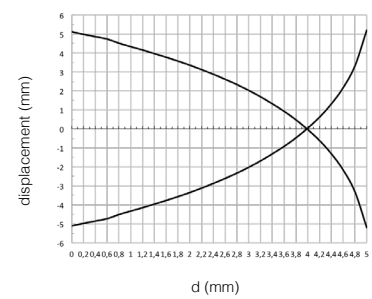
Declaration of conformity

Datasensing S.r.l. declares under our sole responsibility that these products are in conformity with the EMC directive.

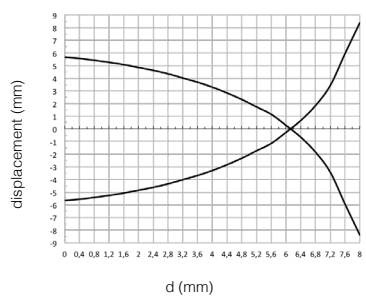
Datasensing S.r.l.
Strada S. Caterina 235 - 41122 Modena - Italy
Tel. +39 059 420411 - Fax +39 059 253973 -
www.datasensing.com

RESPONSE DIAGRAM

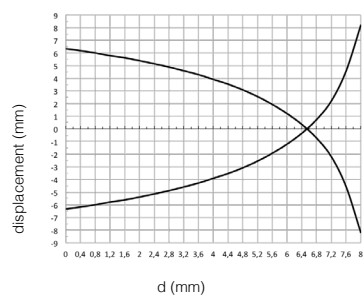
AK1/**-1* parallel displacement



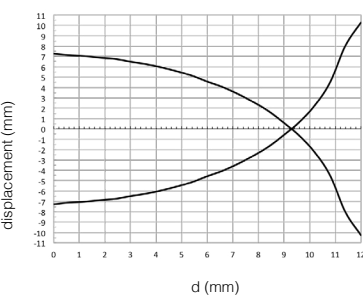
AK1/**-2* parallel displacement



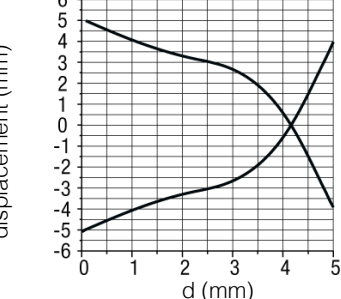
AK1/**-3* parallel displacement



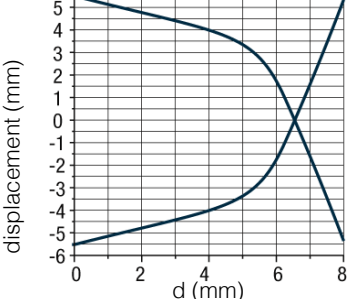
AK1/**-4* parallel displacement



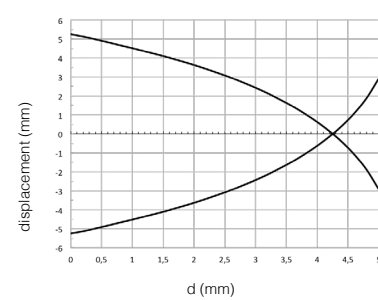
PK3/00-1*



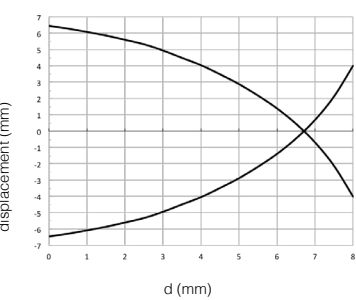
PK3/00-2*



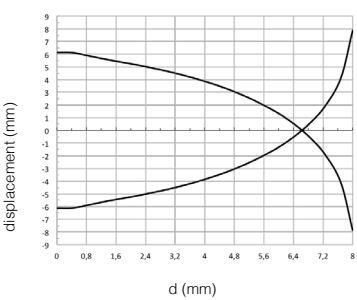
AK6/**-1* parallel displacement



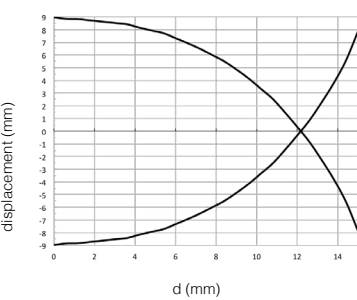
AK6/**-2* parallel displacement



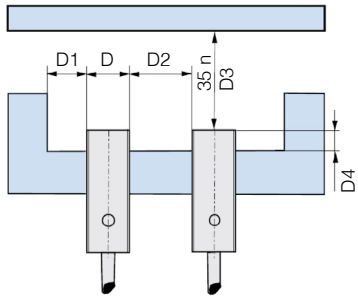
AK6/**-3* parallel displacement



AK6/**-4* parallel displacement



MOUNTING

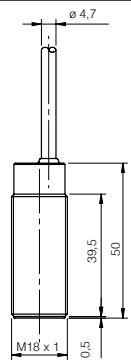


code	D4	D1	D2	D3
AK/**-1*	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
AK/**-2*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm
AK1/**-3*	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	
AK1/**-4*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 36 mm
AK6/**-1*	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
AK6/**-2*	≥ 12 mm	≥ 18 mm	≥ 36 mm	
AK6/**-3*	≥ 1.8 mm ⁽¹⁾	≥ 9 mm	≥ 18 mm	≥ 24 mm
AK6/**-4*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 36 mm
PK3/00-1*	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
PK3/00-2*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm

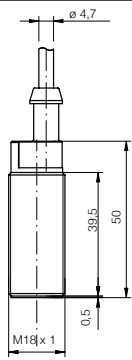
(1) ≥ 2.6 mm for non-magnetic materials

DIMENSIONS (mm)

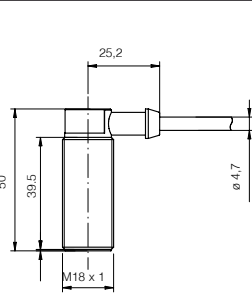
AK1/**-1A
AK1/**-3A



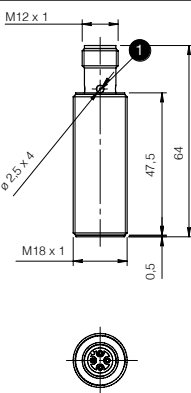
AK1/**-1B
AK1/**-3B



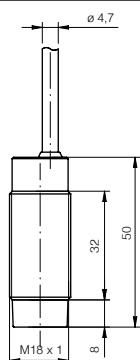
AK1/**-1D
AK1/**-3D



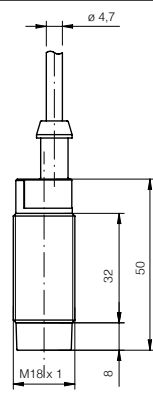
AK1/**-1H
AK1/**-3H



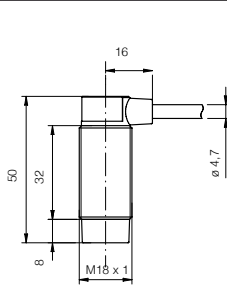
AK1/**-2A
AK1/**-4A



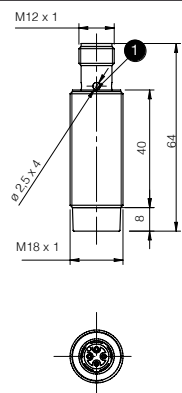
AK1/**-2B
AK1/**-4B



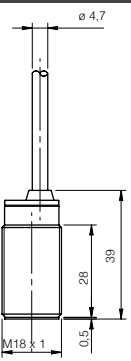
AK1/**-2C
AK1/**-4C



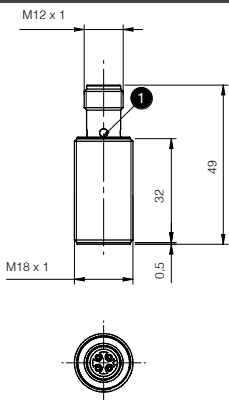
AK1/**-2H
AK1/**-4H



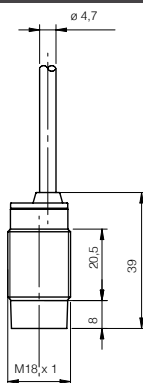
AK6/**-1A
AK6/**-3A



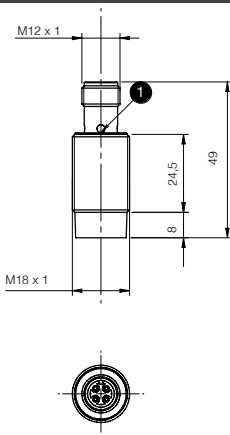
AK6/**-1H
AK6/**-3H



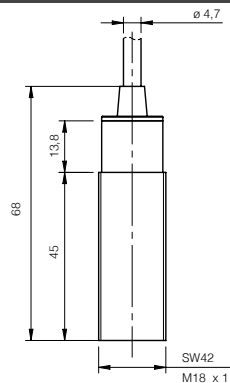
AK6/**-2A
AK6/**-4A



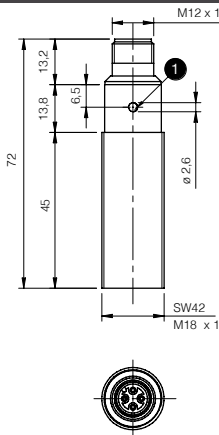
AK6/**-2H
AK6/**-4H



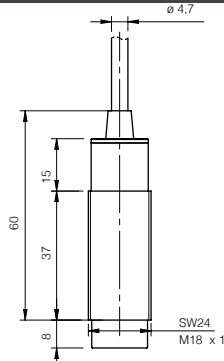
PK3/00-1A



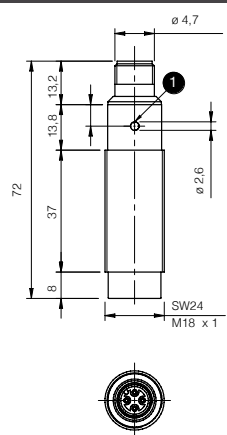
PK3/00-1H



PK3/00-2A



PK3/00-2H



1 LED



Micro Detectors
Italian Sensors Technology



AK model
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificate no.: 0802009X

PK3 model
II 3G Ex nA IIC T6 Gc
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AK
PK3

SENSORI DI PROSSIMITÀ INDUTTIVI
CILINDRICI M18

Manuale d'installazione - 826004000 Rev. A - ITA - Creato il: 09/01/2023

CONTENUTO DELLA CONFEZIONE

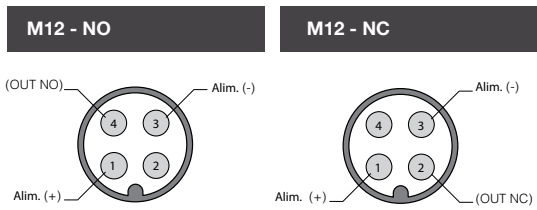
- Manuale di Installazione
- Manuale di sicurezza per aree pericolose
- Dichiarazione di conformità CE
- Etichetta con Marcatura ATEX

DESCRIZIONE GENERALE

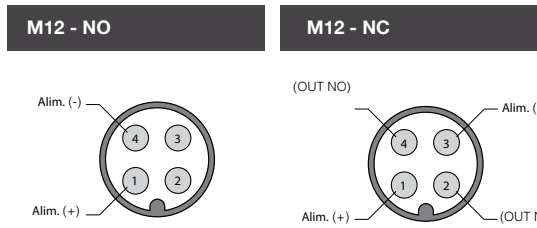
- Vasta gamma di modelli: standard, lunga distanza, con uscita DECOUT
- Uscite: cavo, connettore M12
- Modelli a 2, 3 e 4 fili
- Modelli speciali a doppio involucro protetti all'immersione (IP 68)
- Modelli con uscita complementare (NO+NC)
- Marchio CE
- Certificazione ATEX

CONNETTORI

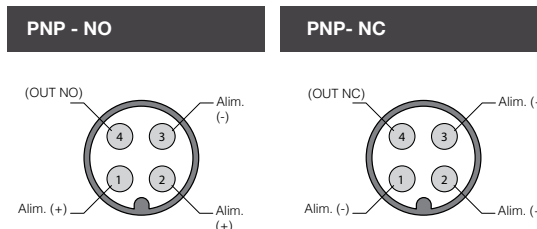
Versioni a 3 fili



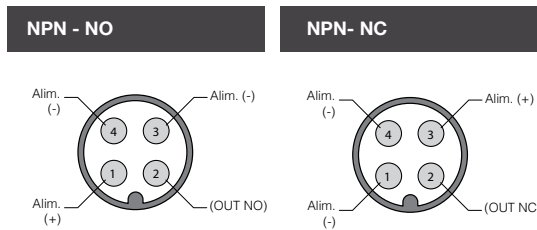
Versioni a 2 fili



Versione PK3 DECOUT

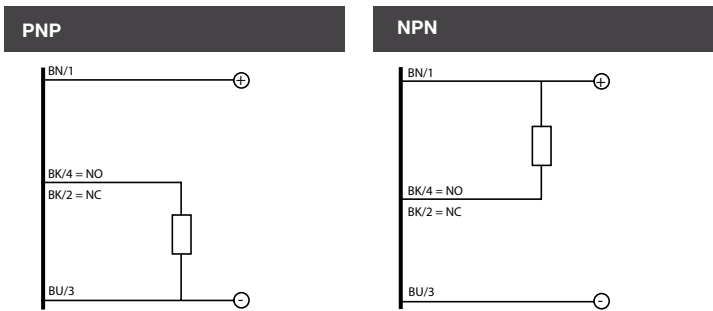


Versione PK3 DECOUT

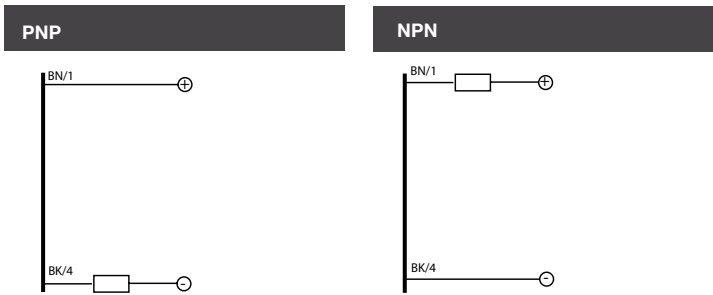


SCHEMI ELETTRICI CONNESSIONI

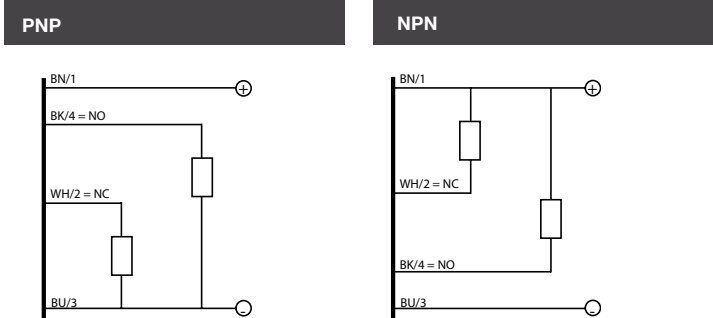
Versioni a 3 fili



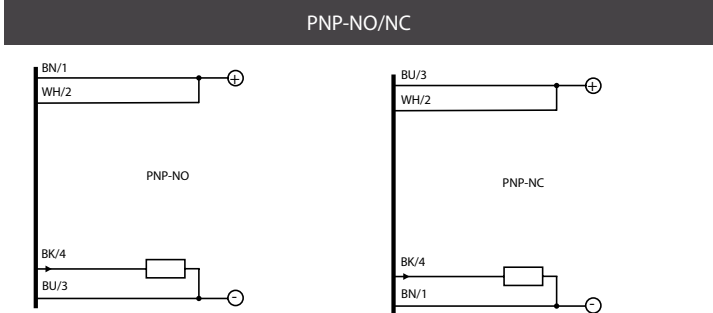
Versioni a 2 fili



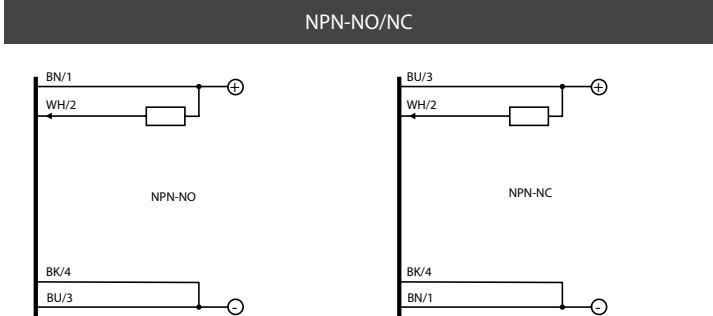
Uscite complementari



Versioni PK3 DECOUT



Versioni PK3 DECOUT



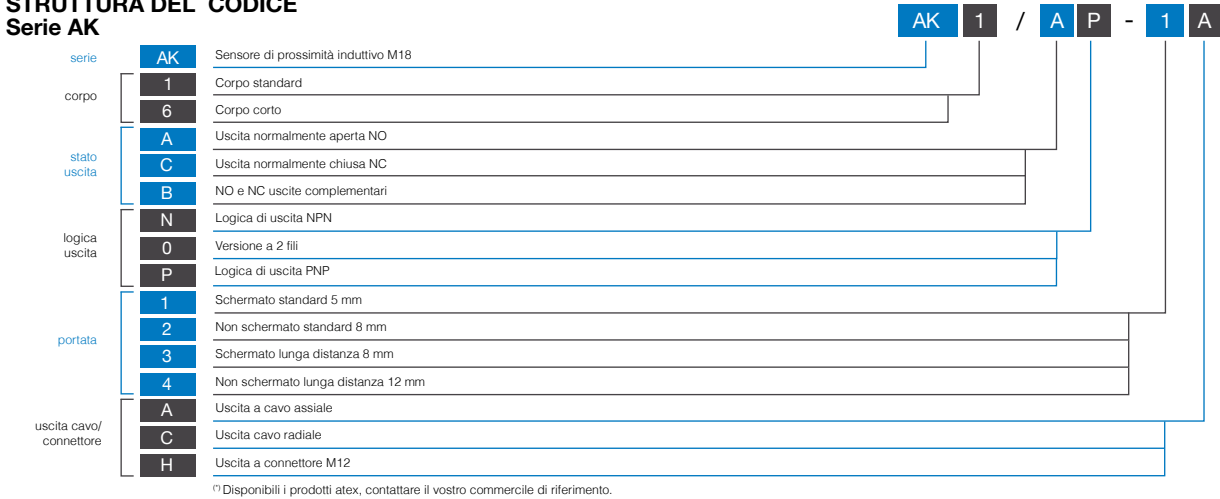
LEGENDA:
BN = marrone; BK = nero; BU = blu; WH = bianco.

SPECIFICHE TECNICHE

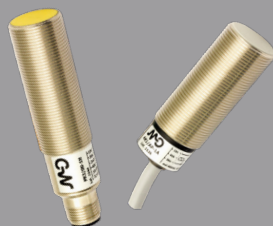
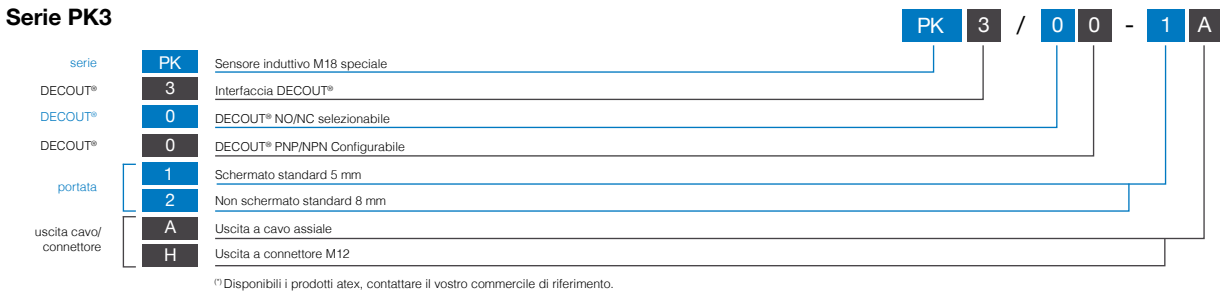
Modelli	AK1*/**~1*	AK1*/**~2*	AK1*/**~3*	AK1*/**~4*	AK6*/**~1*	AK6*/**~2*	AK6*/**~3*	AK6*/**~4*	PK3/00-1*	PK3/00-2*		
distanza di rilevazione nominale Sn	5 mm	8 mm	8 mm	12 mm	5 mm	8 mm	8 mm	12 mm	5 mm	8 mm		
distanza di lavoro	0...4 mm	0...6,5 mm	0...6,5 mm	0...9,7 mm	0...4 mm	0...6,5 mm	0...6,5 mm	0...9,7 mm	0...4 mm	0...6,5 mm		
corsa differenziale	0...20%											
dimensione azionatore normalizzato	18x18 mm FE 360	24x24 mm FE 360		36x36 mm FE 360	18x18 mm FE 360	24x24 mm FE 360		36x36 mm FE 360	18x18 mm FE 360			
ripetibilità	5%				5% Ub 20-30V Ta=23°C±5°C					5%		
campo di tensione di alimentazione	10...30 Vcc											
massima ondulazione residua	≤ 10 %											
corrente di uscita	≤ 400 mA (3...100 mA per versioni a 2 fili)				≤ 400 mA					≤ 100 mA		
tensione di saturazione di uscita	≤ 1V @ 400 mA (2,8 V @ 100 mA per versioni a 2 fili)				≤ 1,5 V @ 400 mA					≤ 1,2 V @ 100 mA		
corrente di alimentazione senza carico	20 mA				≤ 10 mA					30 mA		
logica di uscita	-				PNP oppure NPN					-		
stato dell'uscita	-				NO oppure NO+NC					-		
corrente di perdita	10 µA (0,8 mA per versioni a 2 fili)				10 µA							
frequenza di commutazione	600 Hz (300 Hz per 2 fili)		300 Hz (150 Hz per 2 fili)		2,5 KHz	2 KHz	2,5 KHz	2 KHz	0,3 KHz			
ritardo all'accensione	≤ 50 ms										100 ms	
limiti di temperatura	-25°C ÷ +70°C											
deriva termica	10%				≤ 10%					10%		
protezione al corto circuito	●				● (auto ripristinante)					●		
protezione ai carichi induttivi	●											
protezione all'inversione di polarità	●											
compatibilità elettromagnetica	conforme ai requisiti della Direttiva EMC in accordo a IEC 60947-5-2											
colpi e vibrazioni	IEC 60947-5-2											
peso	30 g versione a connettore 55 g versione a cavo				-					30 g connettore 70 g cavo		
grado di protezione	IP67											
materiale corpo	ottone nichelato									ottone nichelato (INOX per versioni W)		
materiale faccia attiva	PBT										-	
indicatori LED	LED giallo stato dell'uscita				uscita attivata (LED giallo)						-	
connessione	connettore M12, uscita a cavo 2 m PVC											
coppia di serraggio	25 Nm				1,5 Nm (corpo plastico) / 100 Nm (corpo metallico)					25 Nm		

STRUTTURA DEL CODICE

Serie AK



Serie PK3



Micro Detectors

Italian Sensors Technology

CE

Modello AK
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificato N°: 0802009X

Modello PK3
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificato N° : 0802010X

ATTENZIONE Questo prodotto NON è un componente di sicurezza e NON deve essere usato in applicazioni di salvaguardia della sicurezza delle persone.

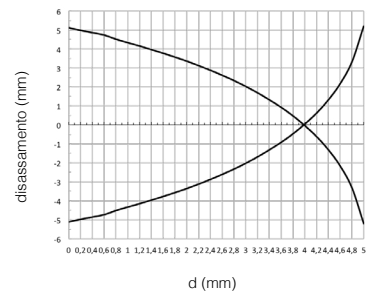
Per i modelli ATEX leggere attentamente le istruzioni di sicurezza prima dell'installazione.

Dichiarazione di conformità
Datasensing S.r.l. dichiara sotto la propria responsabilità che questi prodotti sono conformi ai contenuti della direttiva EMC.

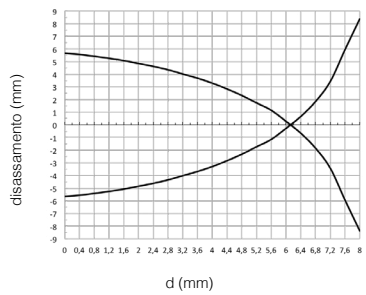
Datasensing S.r.l.
Strada S. Caterina 235 - 41122 Modena - Italy
Tel. +39 059 420411 - Fax +39 059 253973 -
www.datasensing.com

CURVE DI RISPOSTA

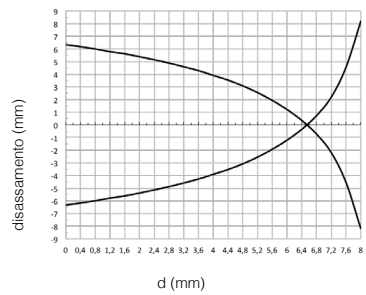
AK1/**-1* disassamento parallelo



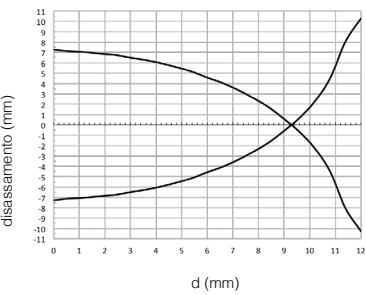
AK1/**-2* disassamento parallelo



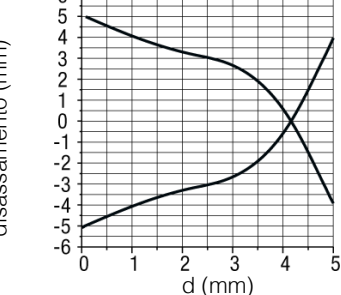
AK1/**-3* disassamento parallelo



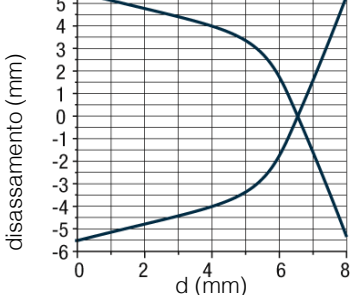
AK1/**-4* disassamento parallelo



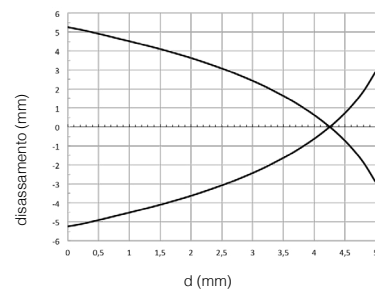
PK3/00-1*



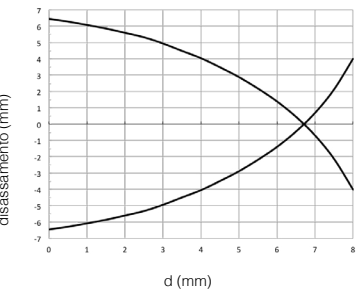
PK3/00-2*



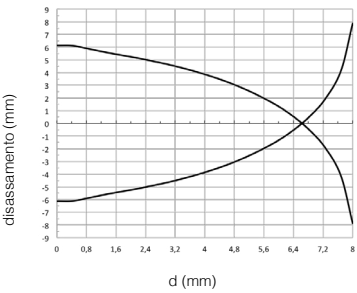
AK6/**-1* disassamento parallelo



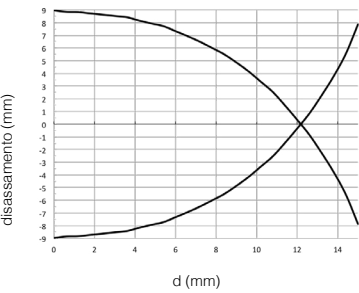
AK6/**-2* disassamento parallelo



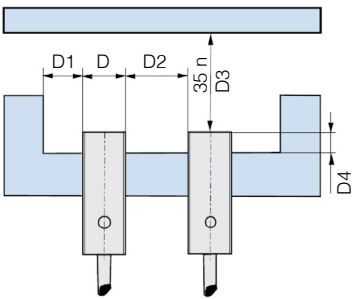
AK6/**-3* disassamento parallelo



AK6/**-4* disassamento parallelo



MONTAGGIO

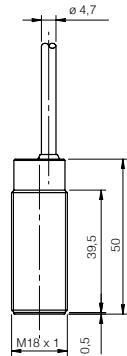


codice	D4	D1	D2	D3
AK**-1*	≥ 3,6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
AK**-2*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm
AK1/**-3*	≥ 3,6 mm	≥ 9 mm	≥ 18 mm	
AK1/**-4*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 36 mm
AK6/**-1*	≥ 3,6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
AK6/**-2*	≥ 12 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm
AK6/**-3*	≥ 1,8 mm ⁽¹⁾	≥ 9 mm	≥ 18 mm	
AK6/**-4*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 36 mm
PK3/00-1*	≥ 3,6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
PK3/00-2*	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm

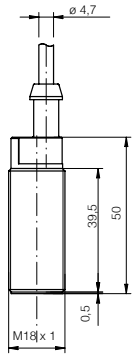
(1) ≥ 2,6 mm per materiali non magnetici

DIMENSIONS (mm)

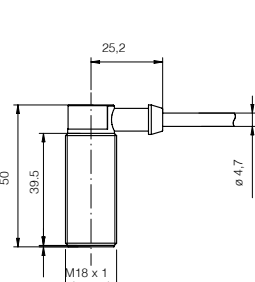
AK1/**-1A
AK1/**-3A



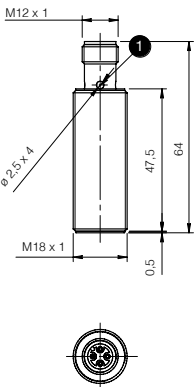
AK1/**-1B
AK1/**-3B



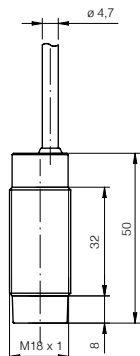
AK1/**-1D
AK1/**-3D



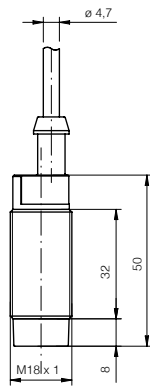
AK1/**-1H
AK1/**-3H



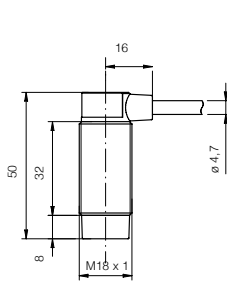
AK1/**-2A
AK1/**-4A



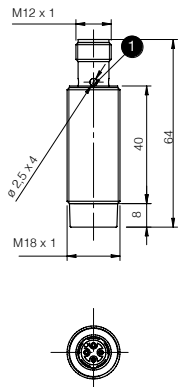
AK1/**-2B
AK1/**-4B



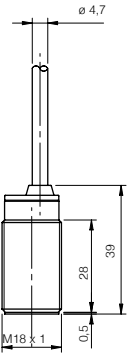
AK1/**-2C
AK1/**-4C



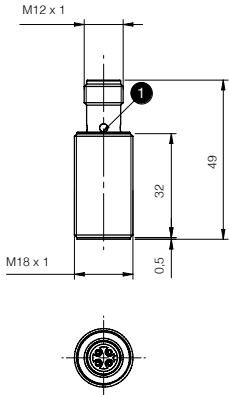
AK1/**-2H
AK1/**-4H



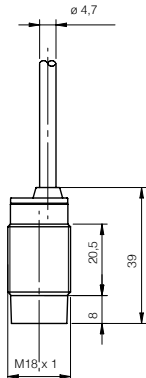
AK6/**-1A
AK6/**-3A



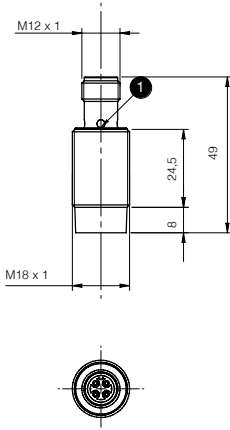
AK6/**-1H
AK6/**-3H



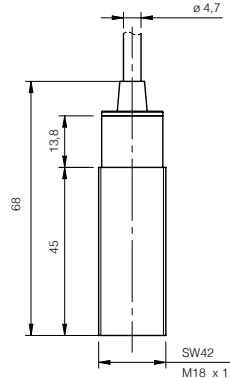
AK6/**-2A
AK6/**-4A



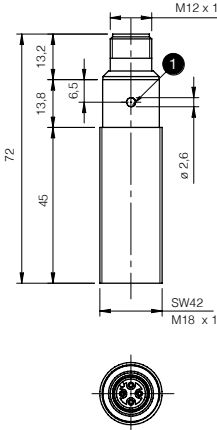
AK6/**-2H
AK6/**-4H



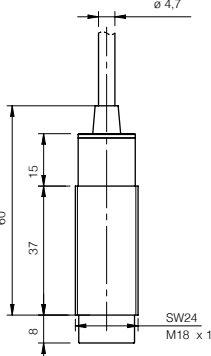
PK3/00-1A



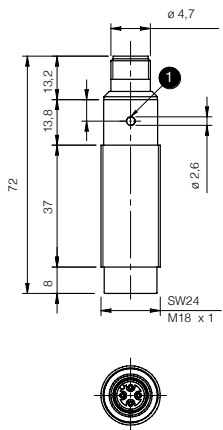
PK3/00-1H



PK3/00-2A



PK3/00-2H



1 LED



Micro Detectors
Italian Sensors Technology



Modello AK
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificato N°: 0802009X

Modello PK3
II 3G Ex nA IIC T6 Gc
II 3D Ex tc IIIB T85°C Dc
Certificato N°: 0802010X

ATTENZIONE Questo prodotto NON è un componente di sicurezza e NON deve essere usato in applicazioni di salvaguardia della sicurezza delle persone.

Per i modelli ATEX leggere attentamente le istruzioni di sicurezza prima dell'installazione.

Dichiarazione di conformità
Datasensing S.r.l. dichiara sotto la propria responsabilità che questi prodotti sono conformi ai contenuti della direttiva EMC.

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