

AK1 Series / Inductive Proximity Switches

Switching Sensors



- Construction type: M18x1
- Switching distance: 5 mm / 8 mm / 12 mm
- Connection type: Cable and M12 connector
- Housing material: Brass nickel-plated
- IP67 Ingress protection
- Power supply: 10 - 30 V DC

	AK1/xx-xA	AK1/xx-xH
GENERAL DATA		
Series	AK1	
Measurement method	Induction	
Sensorfunction	Switch	
Construction type	M18x1	
Display elements	LED – Output status	
MEASUREMENT DATA		
Repeat accuracy	5 %	
Temperature drift	10 %	
OUTPUTS		
Output current	≤ 400 mA	
Time delay before availability	50 ms	
Switching hysteresis	1 - 20 %	
Switching frequency	<ul style="list-style-type: none"> • AK1/xx-1x - AK1/xx-2x: 600 Hz • AK1/xx-3x - AK1/xx-4x: 300 Hz 	
POWER SUPPLY		
Power supply	10 - 30 V DC	
No-load current	20 mA	
Short circuit protection	Yes	
Reverse polarity protection	Yes	
Induction protection	Yes	
Ripple	≤ 10 %	
Voltage drop	≤ 1 V @ 400 mA	
Leakage current	≤ 10 µA	
PHYSICAL CHARACTERISTICS		
Housing material	Brass nickel-plated	
Ingress protection	IP67	
Dimensions (ø x L)	18 x 50 mm	18 x 64 mm
Cable length	2000 mm	-
Weight	30 g	55 g
Sensing face	PBT (polybutylene terephthalate)	
ENVIRONMENTAL		
Operating temperature range	-25 - +70 °C	
APPROVALS		
Shock	EN 60947-5-2 / § 7.4	
Vibration	EN 60947-5-2 / § 7.4	
EMC	EN 60947-5-2 / EN 60255-5 / EN61000-4-2,3,4 Level 3	

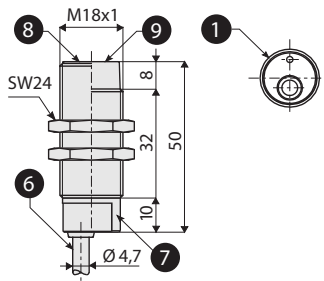
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Versions

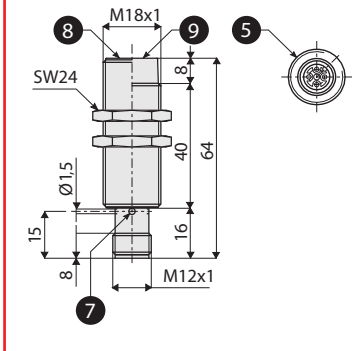
CONSTRUCTION TYPE	TYPE OF INSTALLATION	CONNECTION TYPE	SWITCHING-DISTANCE	DIGITAL NPN NO	DIGITAL PNP NO	DIGITAL NPN NC	DIGITAL PNP NC
M18x1	Shielded	Cable 4-core (3 of them used)	5 mm	AK1/AN-1A	AK1/AP-1A	AK1/CN-1A	AK1/CP-1A
		M12 connector, 4-pin	5 mm	AK1/AN-1H	AK1/AP-1H	AK1/CN-1H	AK1/CP-1H
	Unshielded	Cable, 4-core (3 of them used)	8 mm	AK1/AN-2A	AK1/AP-2A	AK1/CN-2A	AK1/CP-2A
		M12connector, 4-pin	8 mm	AK1/AN-2H	AK1/AP-2H	AK1/CN-2H	AK1/CP-2H
	Shielded	Cable, 4-core (3 of them used)	8 mm	AK1/AN-3A	AK1/AP-3A	AK1/CN-3A	AK1/CP-3A
		M12 connector, 4-pin	8 mm	AK1/AN-3H	AK1/AP-3H	AK1/CN-3H	AK1/CP-3H
	Unshielded	Cable, 4-core (3 of them used)	12 mm	AK1/AN-4A	AK1/AP-4A	AK1/CN-4A	AK1/CP-4A
		M12 connector, 4-pin	12 mm	AK1/AN-4H	AK1/AP-4H	AK1/CN-4H	AK1/CP-4H

Dimensions (mm)

AK1/xx-xA



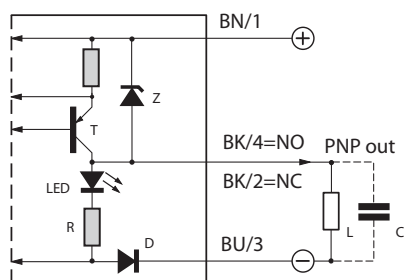
AK1/xx-xH



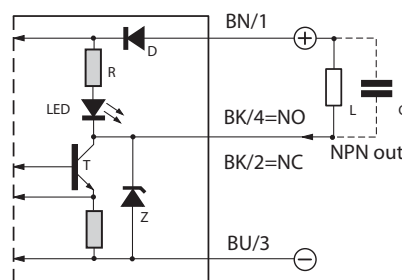
- 1: Cable, 4-core (3 of them used)
- 5: M12 connector, 4-pin
- 6: Cable, Ø 4.7 mm, PVC, 2000 mm
- 7: LED - Output status
- 8: Shielded version
- 9: Unshielded version

Electrical diagrams

PNP



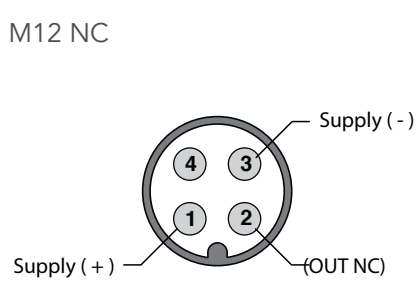
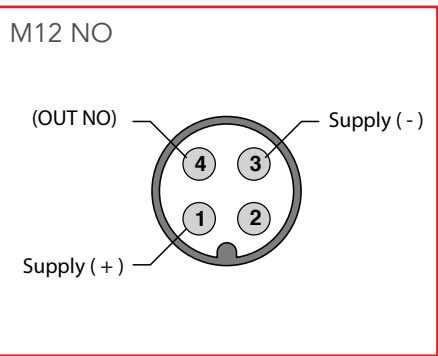
NPN



- BN: brown
- BK: black
- BU: blue

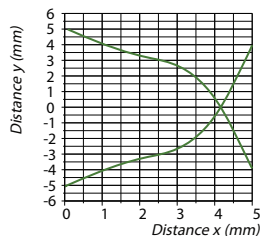
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Connector

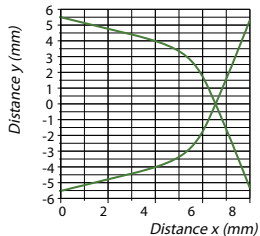


Sensing area

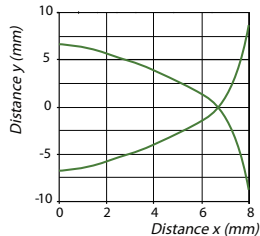
AK1/xx-1x



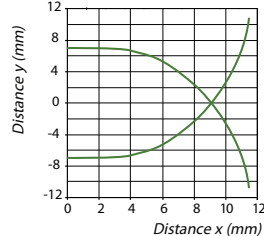
AK1/xx-2x



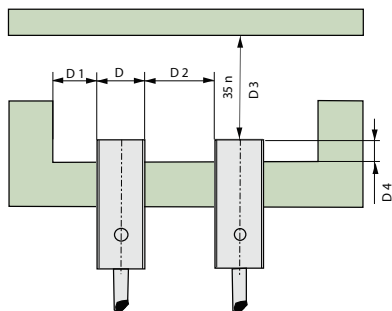
AK1/xx-3x



AK1/xx-4x



Mounting



	D4	D1	D2	D3
AK1/xx-1x	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	≥ 15 mm
AK1/xx-2x	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 24 mm
AK1/xx-3x	≥ 3.6 mm	≥ 9 mm	≥ 18 mm	≥ 24 mm
AK1/xx-4x	≥ 16 mm	≥ 18 mm	≥ 36 mm	≥ 36 mm