

AK Series Analog Inductive Proximity Sensors



M18 (18 mm) metal – analog output

- Voltage or current analog output
- 4 models available
- Metal housing
- Axial cable or M12 quick-disconnect models
- IP67 rated
- Purchase cable separately (for quick-disconnect model)
- Lifetime warranty



AK Series M18 Analog Inductive Prox Selection Chart						
Part Number	Price	Sensing Range	Mounting	Output	Connection	Dimensions
AK9-05-1A	retired	No direct replacement				
AK9-05-1H	retired	No direct replacement				
AK9-10-1A	\$99.00	0 to 10 mm (0-0.39 in)	Semi-flush	0-10 VDC or 4-20 mA	2 m (6.5 ft) axial cable	Figure 1
AK9-10-1H	\$99.00	0 to 10 mm (0-0.39 in)	Semi-flush	0-10 VDC or 4-20 mA	M12 (12 mm) connector	Figure 2

Dimensions

mm [inches]

Figure 1

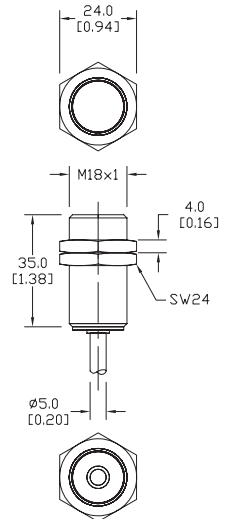
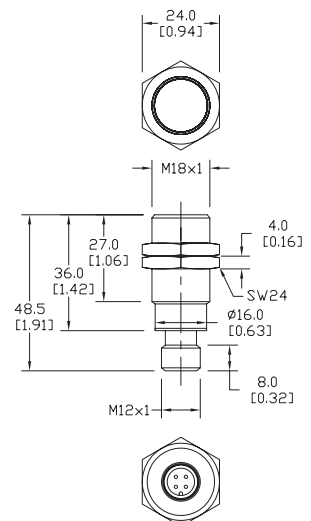
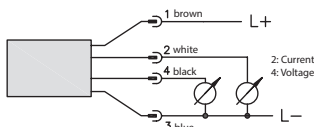


Figure 2



Specifications	
Mounting Type	AK9-10-1* Semi-flush
Nominal Sensing Distance	0 to 10 mm (0-0.39 in)
Operating Distance	NA
Material Correction Factors	See the Material influence table
Output Type	0-10 VDC or 4-20 mA
Current Output Max. Load / Power Supply	0.5 kΩ / 15 VDC; 1 kΩ / 30 VDC
Voltage Output Min. Load	1 kΩ
Operating Voltage	15 -30 VDC
No-load Supply Current	≤12 mA
Operating (Load) Current	
Off-state (Leakage) Current	NA
Voltage Drop	≤2.0 V
Switching Frequency	NA
Differential Travel (% of Nominal Distance)	NA
Repeat Accuracy	±0.02 mm
Ripple	≤20%
Response Time	2 ms
Time Delay Before Availability (tv)	≤50 ms
Input Voltage Transient Protection	Up to 30 VDC
Reverse Polarity Protection	Yes
Short-Circuit Protection	Yes (switch auto-resets after overload is removed)
Operating Temperature	-25° to +70° C (-13° to 158° F)
Protection Degree (DIN 40050)	IEC IP67
Indication/Switch Status	NA
Housing Material	Chrome-plated brass
Sensing Face Material	Polybutylene Terephthalate (PBT)
Shock/Vibration	See Proximity Sensor Terminology
Tightening Torque	30 Nm (22 lb-ft)
Weight (cable/M8 connector)	110 g (3.88 oz.) / 50 g (1.76 oz.)
Connection	2 m (6.5') axial cable or M12 (12 mm) connector
Agency Approvals	UL file E328811

Wiring diagram



Connector

M12 connector



Sensors with M12 connectors must use 2M or 7M cables (4-wire).

Accessories for 18mm Sensors

Axial Mounting Bracket

Axial mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included.

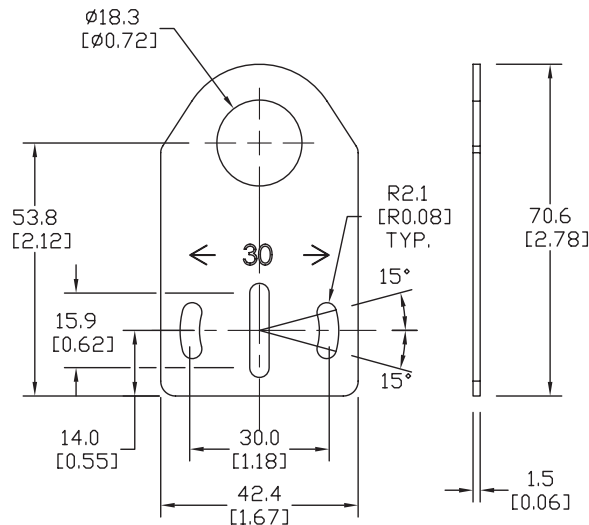
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST18A	\$1.25	Mounting bracket, axial, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06 (27.2)
ST18A7W	\$6.50	Mounting bracket, axial, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06 (27.2)



ST18A

Dimensions

mm [inches]



Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

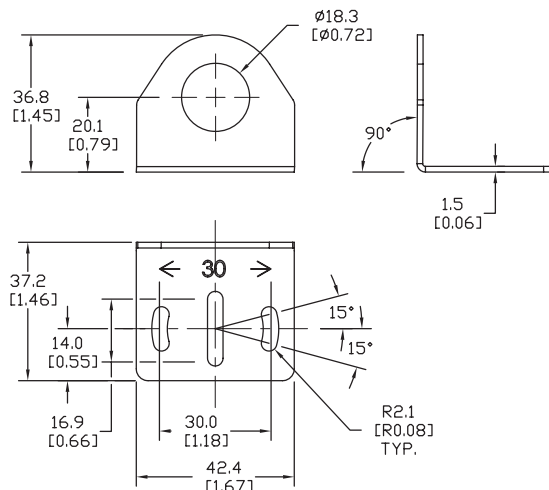
Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
ST18C	\$1.25	Mounting bracket, right angle, zinc-plated steel. For use with 18mm sensors. 1/pk.	0.06 (27.2)
ST18C7W	\$6.50	Mounting bracket, right angle, 316L stainless steel. For use with 18mm sensors. 1/pk.	0.06 (27.2)



ST18C

Dimensions

mm [inches]



See our website: www.AutomationDirect.com for complete engineering drawings

Accessories for 18mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

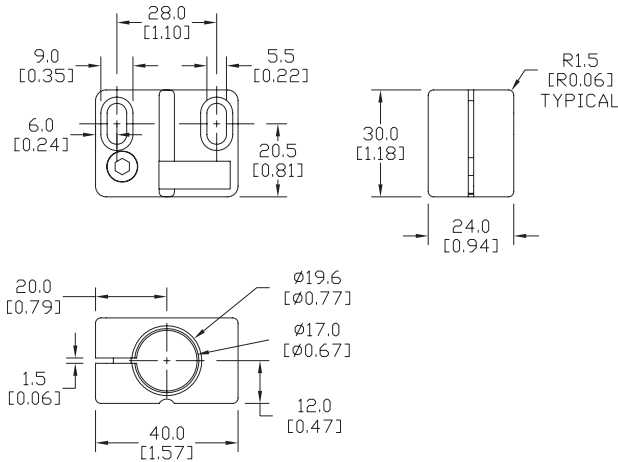


OPT2104, OPT2105

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb (g)
OPT2104	\$8.50	Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	0.06 (27.2)
OPT2105	\$8.50	Mounting bracket, right-angle, plastic. For use with 18mm sensors.	0.06 (27.2)

Dimensions

mm [inches]



Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.



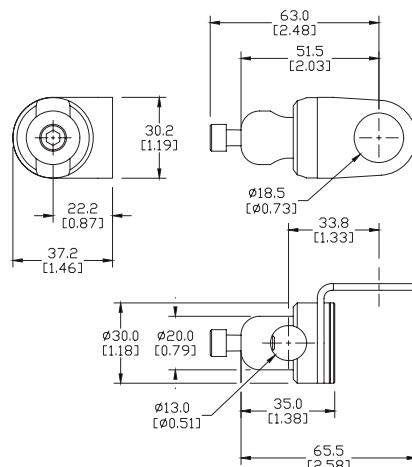
OPT2116, OPT2117

Accessories for 18mm Sensors					
Part Number	Price	Description	Mounting Head	Mounting Plate	Weight lb (g)
OPT2116	\$9.50	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	0.15 (68.0)
OPT2117	\$17.00	Mounting bracket, right-angle swivel, 360 vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	0.28 (127.0)

Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm [7.87 in] length), OPT2110 (300mm [11.81 in] length), and OPT2111 (500mm [19.69 in] length).

Dimensions

mm [inches]



See our website: www.AutomationDirect.com for complete engineering drawings

Mounting Rods

Mounting Rods

304 Stainless steel rods for mounting swivel brackets OPT2112 - OPT2127. Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

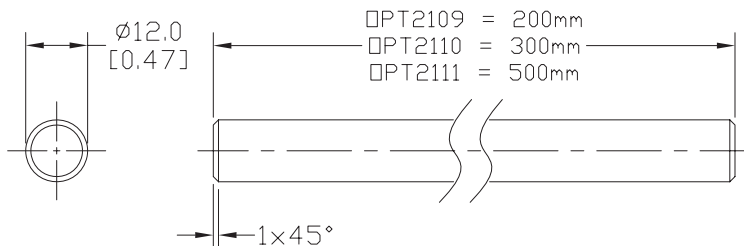
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets			
Part Number	Price	Description	Weight lb (g)
OPT2109	\$10.50	Mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	0.41 (185.97)
OPT2110	\$13.00	Mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	0.60 (272.16)
OPT2111	\$17.00	Mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	0.98 (444.52)



OPT2109, OPT2110, OPT2111

Dimensions

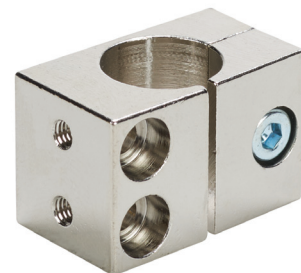
mm [inches]



Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.

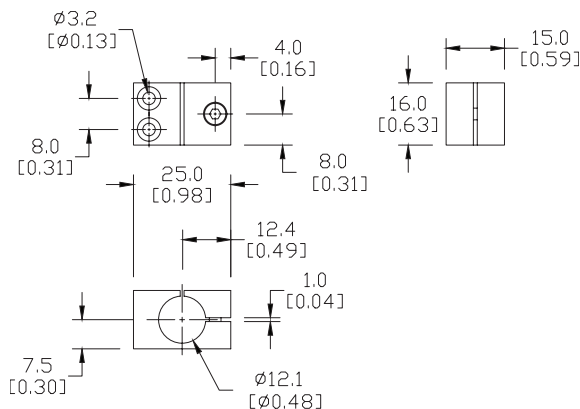
Accessories for 12mm Sensors			
Part Number	Price	Description	Weight lb (g)
OPT2108	\$13.00	Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	0.07 (31.8)



OPT2108

Dimensions

mm [inches]



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