

BANNER[®]

more sensors, more solutions

VALU-BEAM[®] 912 Series

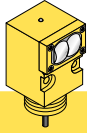
AC- and DC-powered sensors with solid-state outputs



Features

- Choose models for 10 to 30V dc or 24 to 250V ac operation.
- DC models have bipolar solid-state outputs: one NPN (sinking) and one PNP (sourcing).
- AC models have an SPST solid-state output rated for up to 3/4 amp with simple 2-wire hookup.
- All models have a rear panel sensitivity adjustment and light/dark operate switch.
- DC models include Banner's Alignment Indicating Device (AID™) system.
- Choose models with integral 2 m (6.5') cable or Mini-style QD (quick-disconnect) connector; 9 m (30') cables are also available.

VALU-BEAM® Sensors – 912 Series



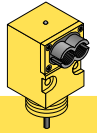
Retroreflective Mode Models

Models	Range [†]	Cable*	Supply Voltage	Output Type	Excess Gain	Beam Pattern
Non-Polarized						
SM912LV SM912LVQD	0.15 to 9 m (6" to 30')	2 m (6.5') 4-Pin Mini QD	10-30V dc	Bipolar NPN/PNP		
SM2A912LV SM2A912LVQD		2 m (6.5') 3-Pin Mini QD	24-250V ac	SPST SCR Solid-state 2-Wire		
Polarized^{††}						
SM912LVAG SM912LVAGQD	0.3 to 4.5 m (1' to 15')	2 m (6.5') 4-Pin Mini QD	10-30V dc	Bipolar NPN/PNP		
SM2A912LVAG SM2A912LVAGQD		2 m (6.5') 3-Pin Mini QD	24-250V ac	SPST SCR Solid-state 2-Wire		

[†]Retroreflective range is specified using one model BRT-3 retroreflector (3" diameter). Actual sensing range may be more or less than specified, depending upon the efficiency and reflective area of the retroreflector used.

^{††}Use polarized models when shiny objects will be sensed.

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Watertight o-ring-sealed sensor/fiber interface.



Infrared, 880 nm

Glass Fiber Optic Models

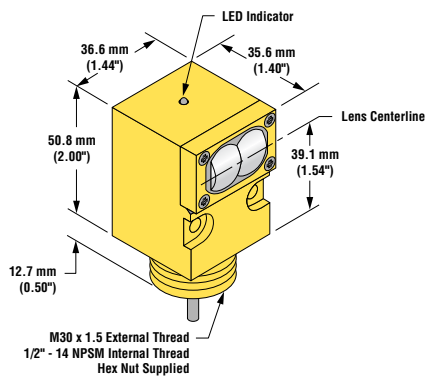
Models	Range	Cable*	Supply Voltage	Output Type	Excess Gain	Beam Pattern
					Performance based on 90% reflectance white test card	
SM912F SM912FQD	Range varies with sensing mode and fiber optics used.	2 m (6.5') 4-Pin Mini QD	10-30V dc	Bipolar NPN/PNP		
SM2A912F SM2A912FQD		2 m (6.5') 3-Pin Mini QD	24-250V ac	SPST SCR Solid-state 2-Wire		

* 9 m (30') cables are available by adding suffix "W/30" to the model number of any cabled sensor (e.g., SM912F W/30).

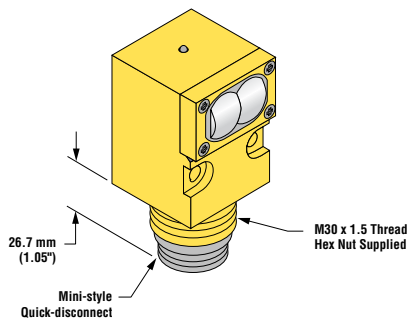
A model with a QD connector requires a mating cable; see page 7.

Dimensions

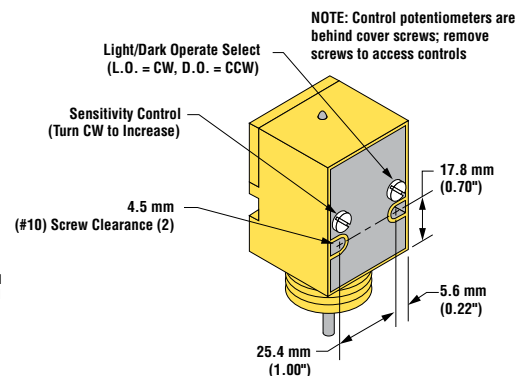
Cabled Models



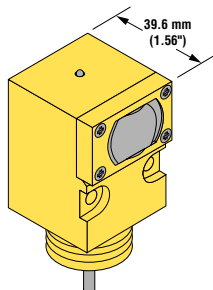
QD Models



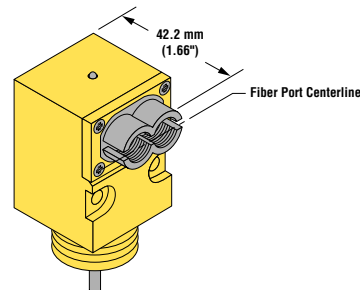
Rear View



Convergent Sensing Mode (model suffix LVAG, C and CV)



Glass Fiber Optic (model suffix F, EF and RF)



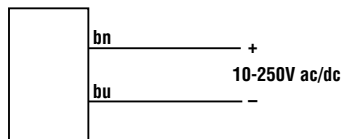
VALU-BEAM® Sensors – 912 Series

Specifications – DC Models

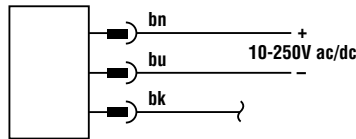
Supply Voltage and Current	10 to 30V dc at 20 mA maximum, exclusive of load (except for SMA91E, ESR and EF emitters, which operate from 10 to 250V ac or dc, 10 mA max.)
Supply Protection Circuitry	Protected against reverse polarity and transient voltages
Output Configuration	Bipolar: One current sourcing (PNP) and one current sinking (NPN) open-collector transistor
Output Rating	250 mA continuous, each output Off-state leakage current: less than 10 microamps Output saturation voltage: (PNP output) less than 1 volt at 10 mA and less than 2 volts at 250 mA Output saturation voltage: (NPN output) less than 200 millivolts at 10 mA and less than 1 volt at 250 mA
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short-circuit of outputs
Output Response Time	Receivers only: 8 milliseconds ON and 4 milliseconds OFF, independent of signal strength. All other models: 4 milliseconds ON/OFF NOTE: 100 millisecond delay on power-up; outputs do not conduct during this delay.
Repeatability	Opposed and Glass Fiber Optic Emitter-Receiver pairs: 1.0 millisecond Retro, Diffuse, Convergent and Glass Fiber Optic Models: 1.3 milliseconds
Adjustments	Light/Dark Operate select switch and Sensitivity control potentiometer, both located at rear of sensor
Indicators	Alignment Indicating Device (AID™) lights a top-mounted red LED indicator whenever the sensor sees a “light” condition; its pulse rate is proportional to the light signal strength (the stronger the signal, the faster the pulse rate). Model SMA91E and SM91ESR emitters: visible-red “tracer beam” indicates “Power ON” and enables line-of-sight alignment.
Construction	Reinforced thermoplastic polyester housing, totally encapsulated, molded acrylic lenses and stainless steel hardware
Environmental Rating	Meets NEMA standards 1, 2, 3, 3S, 4, 4X, 12 and 13; IEC IP66
Connections	PVC-jacketed 2 m (6.5') or 9 m (30') cables or 4-pin Mini-style quick-disconnect (QD) fitting available. NOTE: Opposed-mode emitters use 3-pin Mini-style QD fitting. See page 7.
Operating Conditions	Temperature: -20° to +70° C (-4° to +158° F) Maximum relative humidity: 90% at 50° C (non-condensing)
Certifications	CE SP® UL

DC Hookups

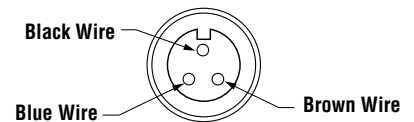
Emitters – Cabled



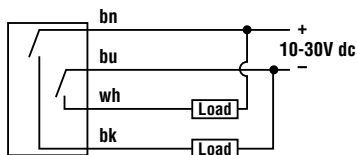
Emitters – QD
(3-Pin Mini-Style)



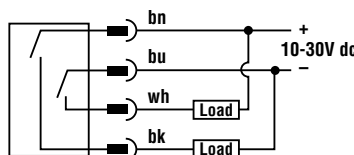
3-Pin Mini-Style Pinout
(Cable Connector Shown)



Other DC Models – Cabled



Other DC Models – QD
(4-Pin Mini-Style)



4-Pin Mini-Style Pinout
(Cable Connector Shown)

