

MINI-BEAM® Sensors SM312LV, SM312LVAG and SM312LP

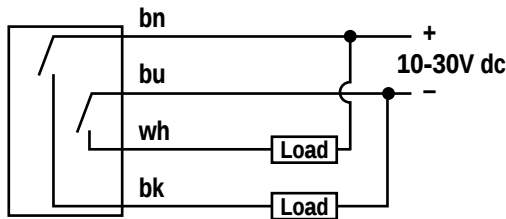
MINI-BEAM DC Product Specifications			
Supply Voltage and Current	10 to 30V dc (10% maximum ripple) at less than 25mA (exclusive of load)		
Supply Protection Circuitry	Protected against reverse polarity and transient voltages		
Output Configuration	Bipolar: One current sourcing (PNP) and one current sinking (NPN) open-collector transistor		
Output Rating	150mA maximum each output at 25°C, derated to 100mA at 70°C (derate ≈1mA per °C) Off-state leakage current less than 1 microamp Output saturation voltage (PNP output) less than 1 volt at 10mA and less than 2 volts at 150mA Output saturation voltage (NPN output) less than 200 millivolts at 10mA and less than 1 volt at 150mA		
Output Protection Circuitry	Protected against false pulse on power-up and continuous overload or short-circuit of outputs		
Output Response Time	Sensors will respond to either a "light" or a "dark" signal of 1 millisecond or longer duration, 500Hz max. 0.3 millisecond response modification is available. See Note below. 100 millisecond delay on power-up; outputs do not conduct during this time.		
Repeatability	0.3 milliseconds. Response time and repeatability specifications are independent of signal strength.		
Adjustments	LIGHT/DARK OPERATE select switch, and 15-turn slotted brass screw GAIN (sensitivity) adjustment potentiometer (clutched at both ends of travel). Both controls are located on rear panel of sensor and protected by a gasketed, clear acrylic cover.		
Indicators	Exclusive, patented Alignment Indicating Device system (AID™, US patent #4356393) lights a rear-panel mounted red LED indicator whenever the sensor sees a "light" condition, with a superimposed pulse rate proportional to the light signal strength (the stronger the signal, the faster the pulse rate).		
Construction	Reinforced PBT thermoplastic polyester housing, totally encapsulated, o-ring sealing, acrylic lenses, and stainless steel screws.		
Environmental Rating	Meets NEMA standards 1, 2, 3, 3S, 4, 4X, 6, 12, and 13; IEC IP67		
Connections	PVC-jacketed 4-conductor 2 m (6.5') or 9 m (30') cables, or 4-pin Euro-style quick disconnect (QD) fitting are available. QD cables are ordered separately. See page 8.		
Operating Temperature	Temperature: -20° to +70° C (-4° to +158° F) Maximum relative humidity: 90% at 50° C (non-condensing)		
Application Notes	The NPN (current sinking) output of dc MINI-BEAM sensors is directly compatible as an input to Banner logic modules, including all non-amplified MAXI-AMP and MICRO-AMP modules. MINI-BEAMS are TTL compatible.		
Certifications			

NOTES:

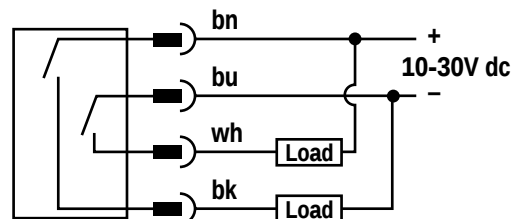
- 9 m (30') cables are available by adding suffix "**W/30**" to the model number of any cabled sensor (e.g., **SM312LP W/30**).
- Standard models have 1 millisecond output response; models with 0.3 millisecond (300 microsecond) response are available by adding suffix "**MHS**" to the model number (e.g., **SM312LPMHS**). Note that this modification reduces the maximum operating temperature to +50° C (122° F).
- A 150 mm (6") long pigtail cable with attached QD connector is available by adding suffix "**QDP**" to the model number (e.g., **SM312LPQDP**).
- A model with a QD connector requires an optional mating cable (see accessories, page 8).

MINI-BEAM DC Hookup Diagrams

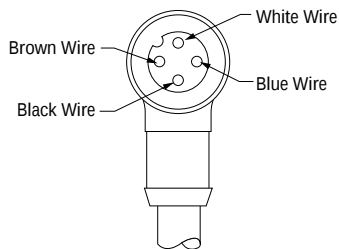
DC Sensors with Attached Cable



DC Sensors with Quick Disconnect (4-Pin Euro-Style)



4-Pin Euro-Style Pin-out (Cable Connector Shown)



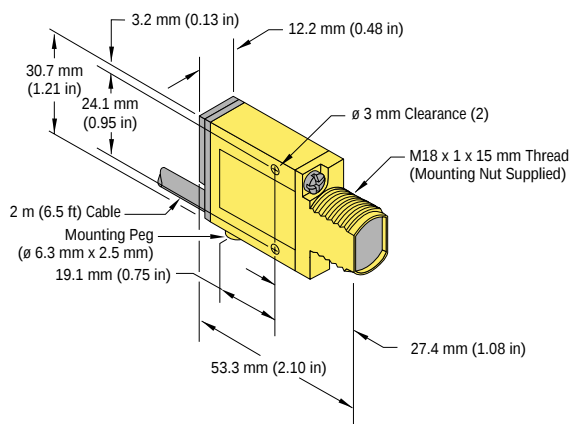
Quick Disconnect (QD) Option

DC MINI-BEAM sensors are sold with either a 2 m (6.5') or a 9 m (30') attached PVC-covered cable, or with a 4-pin Euro-style QD cable fitting.

DC QD sensors are identified by the letters "QD" in their model number suffix. Mating cables for QD MINI-BEAM sensors are model MQDC-415 (straight connector) or MQDC-415RA (right-angled connector). Cables are supplied in a standard length of 5 m (15'). For more information on QD cables, see page 8.

MINI-BEAM Dimension Information

MINI-BEAM DC Sensor with Integral Cable



MINI-BEAM DC Sensor with Quick-Disconnect

