

Photoelectric Sensors

Smart Value Photoelectric

SVP Series

FEATURES

- Scan Types:
Retroreflective, Polarized
Retroreflective, Diffuse,
Thru-Scan, and
Convergent Beam
- Self-diagnostic output with
connector versions*
- Smart Distributed System
version
- Highly visible LEDs indicate
power on and output states
- Compact housing fits in
limited spaces
- Right-angle mounting with
thru-hole design
- AC and DC voltage ranges
- Sinking or sourcing output
- Shock and vibration
resistant
- Sealed to IP 67
- Designed to meet UL,
CSA, CE, C-Tick approvals
- IEC conformance
- Quick-connect and pre-
leaded termination

TYPICAL APPLICATIONS

- Material handling
- Warehouse distribution
- Package distribution
- Conveyor monitoring: jam
detection, part counting,
and positioning

⚠ WARNING

PERSONAL INJURY

- DO NOT USE these
products as safety or
emergency stop devices, or
in any other application
where failure of the product
could result in personal
injury.

**Failure to comply with these
instructions could result in
death or serious injury.**

Introducing the NEW AC Version!



The **SVP** Series is designed to meet the Industrial Market's need for adaptability, reliability, speed, and low cost sensing in material handling and package distribution applications. These sensors can be used to monitor package counts, part positions, and general material conveyor runs. Their compact design and thru-hole or front-end mounting options enable scanning between rollers or across conveyor lines.

While offering the performance associated with higher priced sensors, the compact **SVP** sensors are economical and adaptable. This sensor series accommodates retroreflective, polarized retroreflective, diffuse, thru and convergent scanning requirements, light and dark operate modes, and both AC or DC supply voltages.

If it's **value** you are looking for, the **SVP** Series is the **smart** choice for **photoelectric** sensing. **SVP** self diagnostics* can help to reduce machine downtime and optimize sensor performance by detecting sensor or reflector misalignment, environmental changes, and/or reduction in excess gain. Green power and red/yellow output indicator LEDs ease sensor installation, alignment, and troubleshooting. A 4-pin micro connector allows rapid sensor replacement.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as product installation information.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

*Not currently available for Thru-Scan, pre-leaded or AC versions

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ELECTRICAL SPECIFICATIONS

	DC Connector		DC Pre-leaded	AC Connector and Pre-leaded
Supply Voltage	10 to 30 VDC		10 to 30 VDC	93 to 132 VAC
Supply Current	30 mA max.		30 mA max.	—
Power up to stable	300 ms max.		300 ms max.	300 ms max.
Reverse Polarity Protection	Yes		Yes	NA
Response Time	0.8 ms ON		0.8 ms ON	10 ms ON
	0.8 ms OFF		0.8 ms OFF	10 ms OFF
Output Electrical Specifications	Standard	Diagnostic	Standard	Standard
Load Current	100 mA, max.	20 mA	100 mA, max.	150 mA Inductive 300 mA Resistive
Non-Conducting Leakage Current	< 10 μ A	—	< 10 μ A	1.7 mA
Saturation Voltage	\leq 1.5 VDC drop @ 100 mA	< 1.0 VDC drop @ 20 mA (sinking version)	\leq 1.5 VDC drop @ 100 mA	5 VAC
	—	< 1.8 VDC drop @ 20 mA (sourcing version)	—	—
Short Circuit Protection	Yes	No	Yes	No
Output Type	Sinking or Sourcing	Sinking ONLY	Sinking or Sourcing	Mosfet (L.O./D.O.)

ENVIRONMENTAL SPECIFICATIONS

Temperature Range	
Operating	-20° to +55° C (-14° to +131° F)
Storage	-40° to +65° C (-40° to +149° F)
Relative Humidity	10% to 95% RH, non-condensing
Shock	50 G
Vibration	10 G, 10 Hz to 500 Hz
Ambient Light Rejection	5,000 Lux @ 5° off axis
EMI, RFI ratings	IEC 947
Sealing	IP 67

PHYSICAL SPECIFICATIONS

Housing Material	Mindel S-1000
Sensing Lens	Polycarbonate
LED Indicators	Green power LED Red or yellow output LED
Sensitivity Adjustment	1-turn potentiometer
Termination	4-pin micro connector 2 m (6.5 ft.) 3-conductor 22 AWG PVC cable
Mounting Provisions	#6 mounting insert Two mounting holes for #4 hardware

SENSING RANGES

Scan Type	Sensing Range
	6 m (20 feet) ¹
Retroreflective	
Polarized Retroreflective	2,4 m (8 feet) ¹
Diffuse	406 mm (16 inches) ²
Convergent Beam	63,5 mm (2.5 inches)
Thru-Scan	9 m (30 feet)

¹As measured, using 3 in. Reflector (FE-RR1)

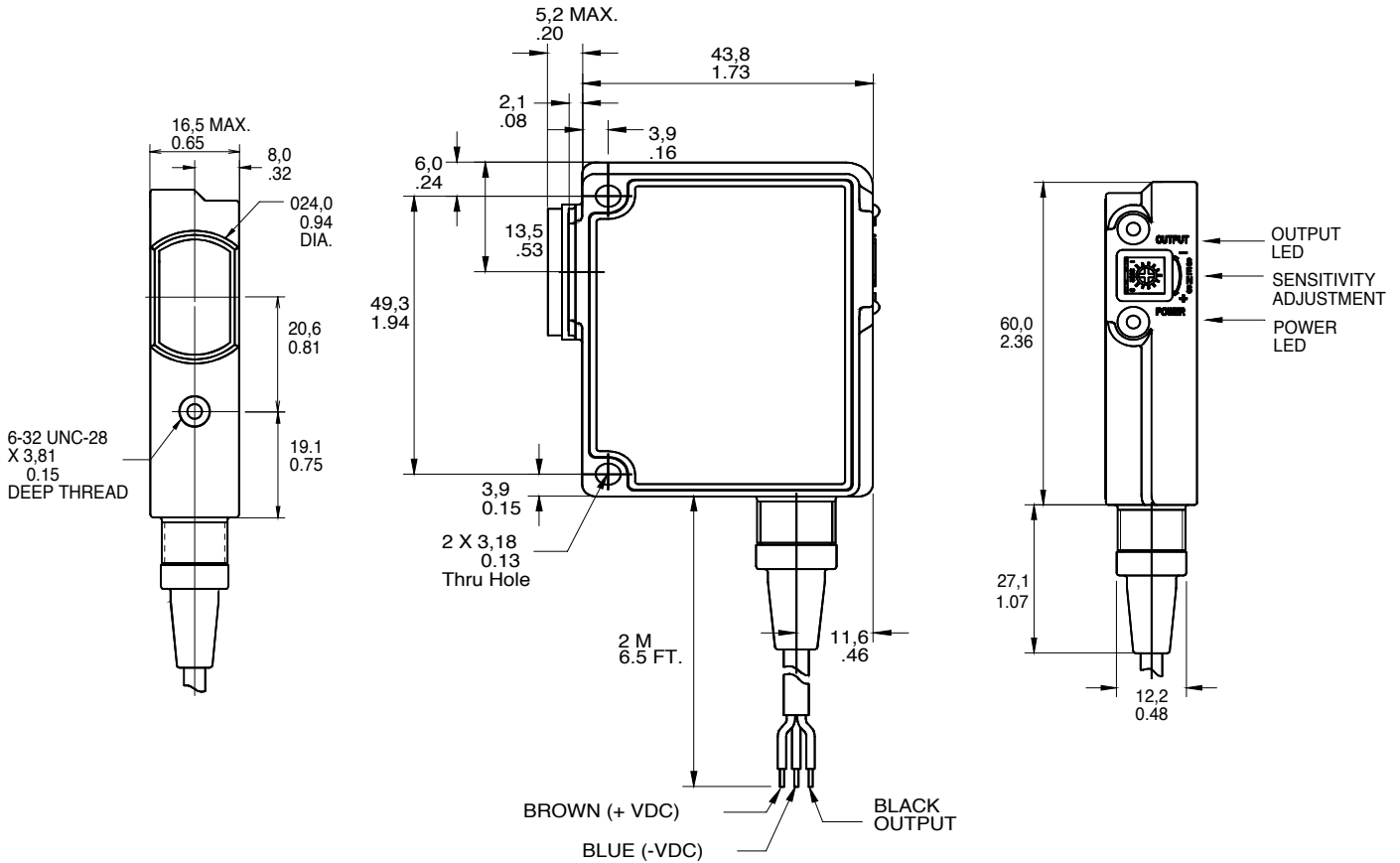
²Using 90% reflectance white card

Photoelectric Sensors

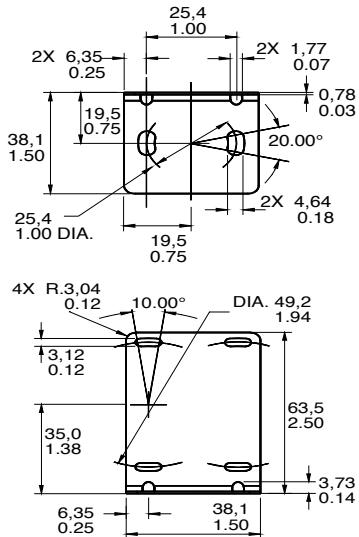
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MOUNTING DIMENSIONS (for reference only)

SVP Series



SVP BRACKET MOUNTING DIMENSIONS (for reference only)

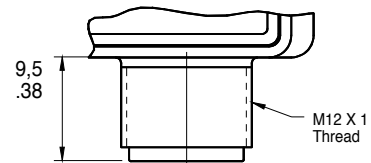


SVP BRACKET ASSEMBLY

The SVP bracket assembly includes the stainless steel sheet metal bracket (shown), 2 split lock washers, 2 split lock screws (4-40 UNC X 25,4 mm or 1 in.), and 2 plain hexagon nuts (4-40 UNC).

The SVP mounting bracket has a bend radius of 3,04 mm or 0.12 inches.

RECEPTACLE DIMENSIONS



Photoelectric Sensors

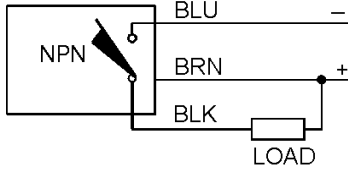
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SVP Series

WIRING SPECIFICATIONS:

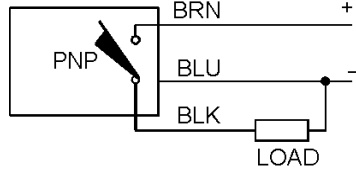
Pre-leaded Termination

NPN Sinking



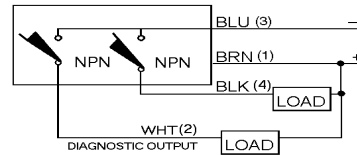
Pre-leaded Termination

PNP Sourcing

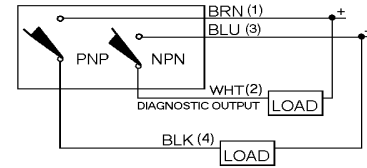


4-Pin Wiring Diagrams

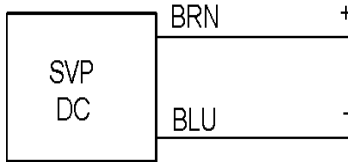
NPN Sinking



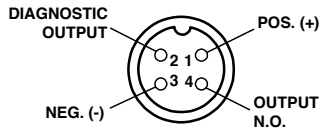
PNP Sourcing



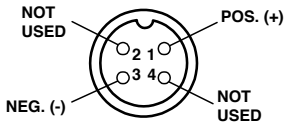
DC Emitter Only



DC Connector: Sensor Pinout



Emitter Only: Sensor Pinout



Cable Connector Pinout

Pin 1	Brown	Power (+)
Pin 2	White	Diagnostic Output
Pin 3	Blue	Power (-)
Pin 4	Black	Output

Self-Diagnostic Output*

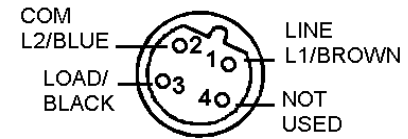
The SVP Series connector version sensors have an NPN sinking diagnostic output that turns on when the light level at the sensor decreases to a marginal level. When triggered, this output acts as an early warning signal that a malfunction may occur unless corrective action is taken, i.e., cleaning the lens/reflector, adjusting the sensitivity, or realigning the sensor. NOTE: This output does not need to be used for proper operation.

NOTICE

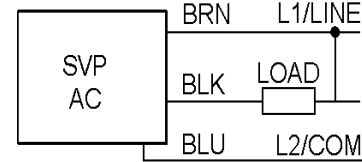
The self-diagnostic output responds instantly and may energize as the target first enters the SVP sensing area. On-delay logic, timer relay, or delay on the PLC input are recommended for use with diagnostic output.

*Not currently available for Thru-Scan, pre-leaded or AC versions

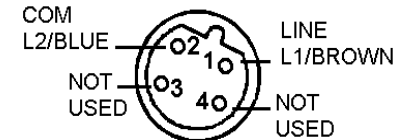
AC Connector: Sensor Pinout



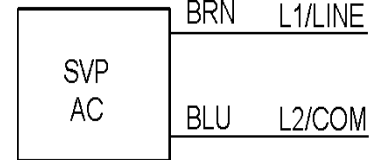
AC Wiring Diagram



AC Emitter: Sensor Pinout



AC Emitter Only



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ORDER GUIDE

Scan Type	Output	Operate	Termination	
		Mode	Pre-leaded	Connector
Retroreflective 6 m (20 ft.)	DC	LO	SVP1-RILNC	SVP1-RILNQ
	NPN	DO	SVP1-RIDNC	SVP1-RIDNQ
Infra-red LED	DC	LO	SVP1-RILPC	SVP1-RILPQ
	PNP	DO	SVP1-RIDPC	SVP1-RIDPQ
	AC	LO	SVP1-RILAC	SVP1-RILAQ
		DO	SVP1-RIDAC	SVP1-RIDAQ
Polar Retroreflective 2,4 m (8 ft.)	DC	LO	SVP1-PRLNC	SVP1-PRLNQ
	NPN	DO	SVP1-PRDNC	SVP1-PRDNQ
Visible Red LED	DC	LO	SVP1-PRLPC	SVP1-PRLPQ
	PNP	DO	SVP1-PRDPC	SVP1-PRDPQ
	AC	LO	SVP1-PRLAC	SVP1-PRLAQ
		DO	SVP1-PRDAC	SVP1-PRDAQ
Diffuse 406 mm (16 in.)	DC	LO	SVP1-DILNC	SVP1-DILNQ
	NPN	DO	SVP1-DIDNC	SVP1-DIDNQ
Infra-red LED	DC	LO	SVP1-DILPC	SVP1-DILPQ
	PNP	DO	SVP1-DIDPC	SVP1-DIDPQ
	AC	LO	SVP1-DILAC	SVP1-DILAQ
		DO	SVP1-DIDAC	SVP1-DIDAQ
Convergent Beam 63,5 mm (2.5 in.)	DC	LO	SVP1-CRLNC	SVP1-CRLNQ
	NPN	DO	SVP1-CRDNC	SVP1-CRDNQ
Visible Red LED	DC	LO	SVP1-CRLPC	SVP1-CRLPQ
	PNP	DO	SVP1-CRDPC	SVP1-CRDPQ
	AC	LO	SVP1-CRLAC	SVP1-CRLAQ
		DO	SVP1-CRDAC	SVP1-CRDAQ
Thru Scan 9 m (30 ft.)	DC	LO	SVP1-TLNCR	SVP1-TLNQR
	NPN	DO	SVP1-TDNCR	SVP1-TDNQR
Receivers ONLY	DC	LO	SVP1-TLPCR	SVP1-TLPQR
	PNP	DO	SVP1-TDPCR	SVP1-TDPQR
	AC	LO	SVP1-TLACR	SVP1-TLAQR
		DO	SVP1-TDACR	SVP1-TDAQR
Emitters ONLY	DC		SVP1-TICE	SVP1-TIQE
Infra-red LED	AC		SVP1-TIACE	SVP1-TIAQE

CABLES		2 m (6 ft.)	5 m (15 ft.)
DC	Straight	804000A09M020	804000A09M050
	Right Angle	804001A09M020	804001A09M050
AC	Straight	B04000A11M020	B04000A11M050
	Right Angle	B04001A11M020	B04001A11M050

BRACKET

SVPBRKT	Bracket with 2 split lock washers, 2 machine thread screws, 2 plain hexagon nuts.
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WARRANTY/REMEDY

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For application assistance, current specifications, pricing or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

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