SMP 8x01 USER MANUAL
SpaceMaster Series
Photoelectric diffuse proximity sensors

Product Data

Electrical Data

	DC	AC
Supply Voltage	10-30 V dc	20-250 V ac
Voltage ripple	+/- 15%	-
Reverse polarity protected	Yes	-
Short circuit protected	Yes	-
Current consumption	14 mA	2 mA
Max. output load	120 mA	200 mA

Environmental Data

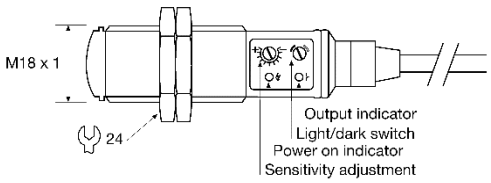
Temperature, operation		-20 to +60 ºC
Sealing class		IP 67
Approvals	ac	UK CA CE
	dc	UK CA CE

Available Models

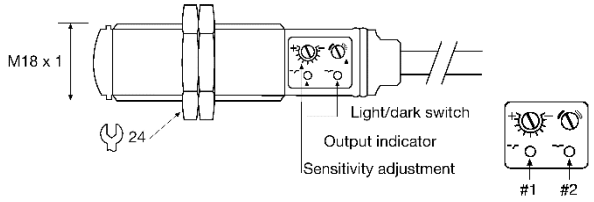
	Model	Supply Voltage	Output	Output Mode	Sensing Range
Diffuse Proximity	SMP 8401	10-30 V dc	NPN	Light/dark	100 cm, adjustable*
	SMP 8501		PNP	Light/dark	
	SMP 8801	20-250 V ac	SCR	Light/dark	

* Note: Measured against matt white A4 paper.

Illustration



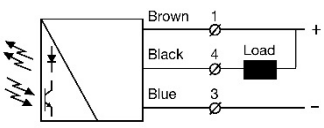
DC Models



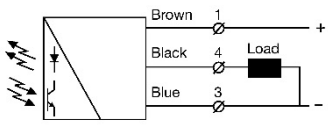
AC Models

Connection

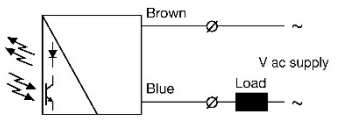
Wiring Diagrams



SMP 8401
Transistor NPN



SMP 8501
Transistor PNP



WARNING: ON AC MODELS
DO NOT CONNECT THE SENSOR WITHOUT A SERIAL LOAD

SMP 8801
SCR

Connection Wires/Pins

	Cable	3 pin, M8 plug	4 pin, M12 plug
AC supply	Blue & Brown	-	-
Supply +	Brown	Pin 1	Pin 1
Supply -	Blue	Pin 3	Pin 3
Output	Black	Pin 4	Pin 4
	-	 Sensor plug	 Sensor plug

Mounting & Installation

Mounting & Installation

1	Position the sensor pointing at the target object.
2	Align by moving sensor horizontally and vertically until the output changes when the target object is present (refer to Output Logic table).
3	Fasten the sensor securely using the enclosed locking nuts and/or a mounting bracket. Avoid acute angles on cable close to sensor.

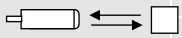
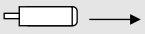
Adjustments

Output Mode Selection

The output mode can be selected via an integral light/dark switch. Refer to Output Logic table for output mode reference.

Light Operated (N.O.)	Enables the output to be active when there is an object present.	Turn switch to full clockwise position
Dark Operated (N.C.)	Enables the output to be inactive when there is an object present.	Turn switch to full counter clockwise position

Output Logic

Detection	Output mode	Output status	Yellow LED		
			DC models	AC models	
				#1	#2
Object present 	Dark operated (N.C.)	Open	Off	On	Off
	Light operated (N.O.)	Closed	On	Off	On
Object absent 	Light operated (N.O.)	Open	Off	On	Off
	Dark operated (N.C.)	Closed	On	Off	On

Sensitivity Adjustment

Maximum sensitivity can be used for most applications and is advised for applications with contaminated environments. Increase the sensitivity to maximum by turning the potentiometer to full clockwise position.

Sensitivity adjustment may be required in applications where objects to be detected have highly reflective, dark or textured surfaces and/or applications where a background is present. Proceed with the following steps:

1	Start with the sensitivity at minimum by turning the potentiometer to full counter clockwise position.
2	Select target object with the smallest dimensions and least reflective surface.
3	Place target object in front of sensor.
4	Increase the sensitivity by turning the potentiometer clockwise until the target object is detected and the output status changes (Position 1). If the output has not changed, attempt to move sensor closer to target object and repeat procedure.
5	If there is a background proceed to step 7.1. If there is no background proceed to step 6.
6	Turn the potentiometer clockwise to a position midway between Position 1 and maximum clockwise position.
7.1	Remove target object. If the output changes, proceed to step 7.2. If the output has not changed, a background is detected. Proceed to step 7.4
7.2	Turn the potentiometer clockwise until the output status change (Position 2). A background is now detected.
7.3	Turn the potentiometer counter clockwise to a position midway between Position 1 and Position 2.
7.4	If the background is still detected and the output has not changed, attempt to angle the sensor in relation to the plane of the background. Then repeat procedure from step 1.

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Made in Denmark

Warning
This device is not to be used for Personnel Protection in Machine Guarding Safety applications. This device does not include the self-checking redundant circuitry necessary to allow its use in personnel machine guarding stand-alone safety applications.

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Telco A/S reserves the right to make changes without prior notice