SMPF 8000 USER MANUAL
SpaceMaster Series
Photoelectric fibre sensors

EN

Telco 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

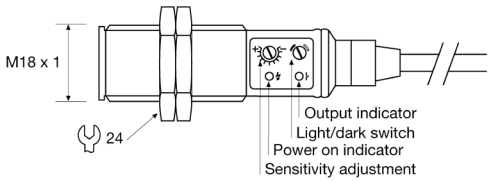
Environmental Data

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

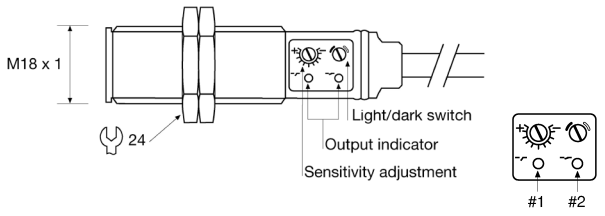
Available Models

	Model	Supply Voltage	Output	Output Mode	Sensing Range
Fibre Sensor	SMPF 8400	10-30 V dc	NPN	Light/dark	Dependent of fibre optics
	SMPF 8500		PNP	Light/dark	
	SMPF 8800	20-250 V ac	SCR	Light/dark	

Illustration



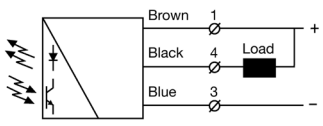
DC Model



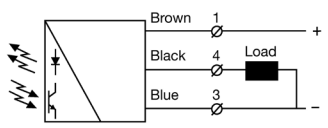
AC Model

Connection

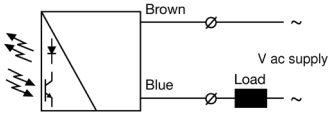
Wiring Diagrams



SMPF 8400
Transistor NPN



SMPF 8500
Transistor PNP



SMPF 8800
SCR

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

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 & Alignment

Mounting & Alignment Steps

1	Select the appropriate fibre optic cables for your application. Mount the fibre optic adaptor by screwing on the threaded nut onto the front of the sensor.
2	For Thru Beam: Position the fibre optic tips facing each other.
	For Diffuse Proximity: Position the fibre optic tip pointing at the target object.
3	For Thru Beam: Align by moving fibre optic tips horizontally and vertically until the output mode is correct when no object is present.
	For Diffuse Proximity: Align by moving fibre optic tip horizontally and vertically until the output mode is correct when object is present.
4	Fasten the sensor securely using the enclosed locking nuts and/or a mounting bracket, and fasten the fibre optic tips securely using mounting brackets (not included). 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.

Light Operated	Turn switch to full clockwise position
Dark Operated	Turn switch to full counter clockwise position

Output Logic for Thru Beam

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

Output Logic for diffuse proximity

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.

For Thru Beam

Sensitivity adjustment may be required in applications where objects to be detected are small or translucent. Proceed with the following steps:

1	Start with the sensitivity at maximum by turning the potentiometer to full clockwise position.
2	Select target object with smallest dimensions and most translucent surface. And place it between fibre optic tips.
3	Decrease the sensitivity by turning the potentiometer counter clockwise until the output changes.
4	Remove target object. Check output has changed.

For Diffuse Proximity

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 fibre optic tip.
4	Increase the sensitivity by turning the potentiometer clockwise until the target object is detected and the output changes (Position 1). If the output has not changed attempt to move fibre optic tip closer to target object and then 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 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 has changed (Position 2). A background is now detected.
7.3	Turn the potentiometer counter clockwise to a position midway between Position 1 and Position 2. Observe the output status has changed.
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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