SP 2000 USER MANUAL
SpacePak Series
Photoelectric diffuse proximity sensors

EN

Telco sensors

Product Data

Electrical Data

	DC	AC
Supply Voltage	10 - 30 V dc	12 - 240 V dc / 20 - 240 V ac
Voltage ripple	+/- 15%	-
Reverse polarity protected	Yes	-
Short circuit protected	Yes	
Current consumption	< 65 mA	< 70 mA
Output relay	-	1 open / 1 close, 240 V ac / 2 A
Output transistor	200 mA / 30 V dc	-

Environmental Data

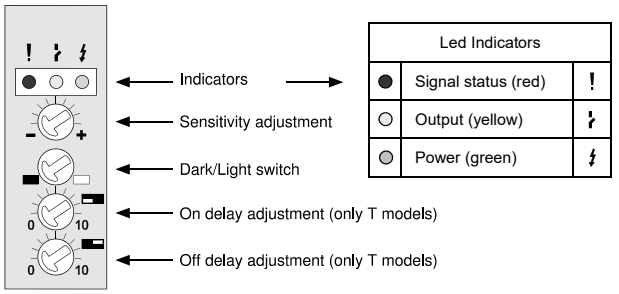
Temperature, operation		-20 to +55 ºC
Sealing class		IP 67
Approvals	ac	UK CA, CE, cULus
	dc	UK CA, CE

Available Models

	Model	Supply Voltage	Output	Time Delay	Sensing Range
Diffuse proximity	SPP 2603 T	10-30 V dc	NPN / PNP	On/Off Delay	0 - 3 m, adjustable*
	SPP 2603			-	
	SPP 2903 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPP 2903			-	
	SPP 2605 T	10-30 V dc	NPN / PNP	On/Off Delay	0 - 5 m, adjustable*
	SPP 2605			-	
	SPP 2905 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPP 2905			-	

* Note: Measured against matt white A4 paper.

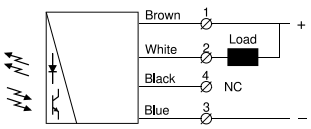
Illustration



Led Indicators		
●	Signal status (red)	!
○	Output (yellow)	
○	Power (green)	

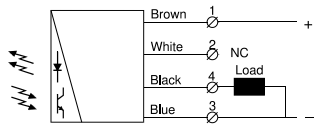
Connection

Wiring Diagrams



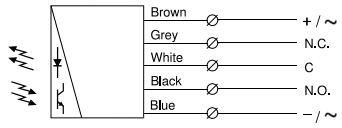
NC : Do not connect wire

SPP 2603 / SPP 2605
Load as NPN



NC : Do not connect wire

SPP 2603 / SPP 2605
Load as PNP



SPP 2903 / SPP 2905
Relay output

Connection Wires/Pins

	Cable	4 pin, M12 plug
Supply + / Supply ac	Brown	Pin 1 / Brown
Supply - / Supply ac	Blue	Pin 3 / Blue
Output NC	Grey	-
Output NO	Black	-
Output COM	White	-
Output PNP	Black	Pin 4 / Black
Output NPN	White	Pin 2 / White

Sensor plug

Mounting & Alignment

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 mounting bracket and hardware. 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	Relay Output	Transistor Output	Output indicator
Object present	Dark operated (N.C.)	C NO NC	Open	Off
	Light operated (N.O.)	C NO NC	Closed	On
Object absent	Light operated (N.O.)	C NO NC	Open	Off
	Dark operated (N.C.)	C NO NC	Closed	On

Sensitivity Adjustment

Proceed with the following steps:

1	Select target object with smallest dimensions and most translucent surface. Place in correct position to the SPP.
2	Increase sensitivity slowly from minimum (full counter clockwise) until the yellow output indicator changes. Increase a little further until the red Insufficient Signal indicator is off.
3	Remove target object. If output changes, the sensitivity is adjusted correctly. If the output does not change then proceed to step 4.
4	Place target object in correct position. Decrease the sensitivity by turning the gain potentiometer counter clockwise until the red Insufficient Signal indicator is on.
5	Remove target object. If the output changes the sensitivity is adjusted to suit the target and target surroundings but the adjustment is very delicate and not advisable.
6	If the output does not change the target object is placed too close to surrounding objects. Attempt to change position or to angle the sensor in relation to the surrounding objects. Then repeat procedure from step 1.

Time Delay Adjustment — T models

The on delay enables output signal to only activate if an object in the detection area is present for the adjusted time period. (In Light operated mode)

The off delay enables output signal to remain activated for the adjusted time period.

The time delay is adjustable between 0 - 10 sec.

On delay	Increase or decrease on delay by turning potentiometer clockwise or counter clockwise respectively.
Off delay	Increase or decrease off delay by turning potentiometer clockwise or counter clockwise respectively.

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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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