SP 2000 USER MANUAL
SpacePak Series
Photoelectric retro-reflective sensors & polarized retro-reflective

EN

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

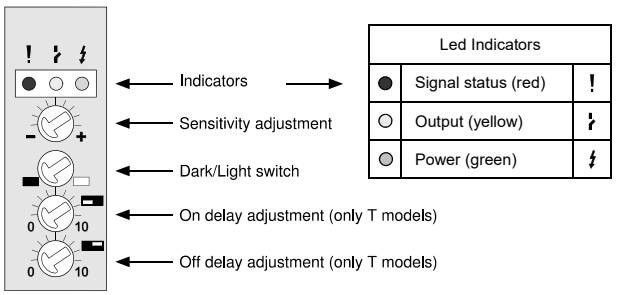
Temperature, operation		-20 to +55 ºC
Sealing class		IP 67
Approvals	ac	UKCA CE cULus
	dc	UKCA CE

Available Models

	Model	Supply Voltage	Output	Time Delay	Sensing Range
Retro reflective	SPRR 2612 T	10-30 V dc	NPN / PNP	On/Off Delay	0 – 12 m, adjustable*
	SPRR 2612			-	
	SPRR 2912 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPRR 2912			-	
Polarized Retro reflective	SPPR 2610 T	10-30 V dc	NPN / PNP	On/Off Delay	0 – 10 m, adjustable*
	SPPR 2610			-	
	SPPR 2910 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPPR 2910			-	

* Note: Measured against Ø85 mm retro-reflector.

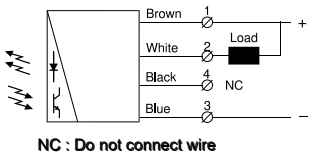
Illustration



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

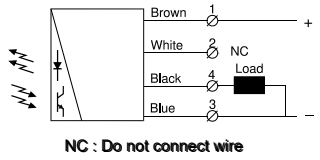
Connection

Wiring Diagrams



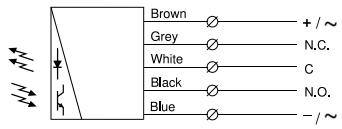
NC : Do not connect wire

SPRR 2612 / SPPR 2610
Load as NPN



NC : Do not connect wire

SPRR 2612 / SPPR 2610
Load as PNP



SPRR 2912 / SPPR 2910
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 & Alignment

1	Position the sensor pointing at a retro-reflector.
2	Align by moving sensor horizontally and vertically until the output status changes when pointing at retro-reflector and when no 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.C.)	Enables the output to be inactive when there is an object present.	Turn switch to full clockwise position
Dark Operated (N.O.)	Enables the output to be active 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.O.)	C NO NC	Closed	On
	Light operated (N.C.)	C NO NC	Open	Off
Object absent	Light operated (N.C.)	C NO NC	Closed	On
	Dark operated (N.O.)	C NO NC	Open	Off

Sensitivity Adjustment

Proceed with the following steps:

1	Make sure there is no object present between SPRR / SPPR and retro reflector.
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	Select target object with smallest dimensions and most translucent surface.
4	Place target object between SPRR / SPPR and retro reflector. If the output changes, the sensitivity is adjusted correctly. If the output does not change then proceed to step 5.
5	Remove the object and decrease the sensitivity by turning the sensitivity potentiometer counter clockwise until the red Insufficient Signal indicator is on.
6	Place target object between SPRR / SPPR and retro reflector. If the output changes the sensitivity is adjusted to suit the target but the adjustment is very delicate and not advisable.

*Note: For SPPR is it essential to use a retro refector that depolarises the reflected light. Telco type ILR3 and other similar types may be used, while many reflecting tape types not are advisable.

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 Dark 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.

Website: www.telcosensors.com
E-Mail: info@telcosensors.com

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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