SP 2000 USER MANUAL
SpacePak Series
Photoelectric thru beam sensors

EN

Telco sensors

Product Data

Electrical Data

	DC		AC	
	Transmitter	Receiver	Transmitter	Receiver
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		-	

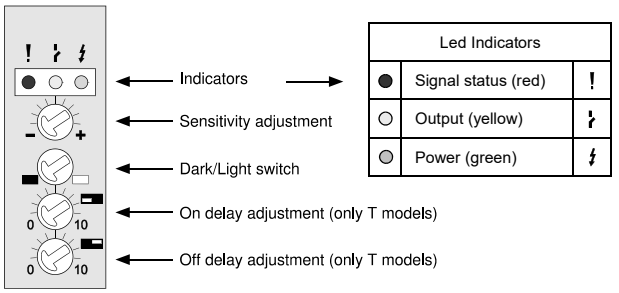
Environmental Data

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

Available Models

	Model	Supply Voltage	Output	Time Delay	Sensing Range
Transmitter	SPT 2618	10-30 V dc	-	-	20 m
	SPT 2918	12 – 240 V dc 20 – 240 V ac	-	-	
	SPT 2645	10-30 v dc	-	-	45 m
	SPT 2945	12 – 240 V dc 20 – 240 V ac	-	-	
Receiver	SPR 2618 T	10-30 V dc	NPN / PNP	On/Off Delay	0 – 20 m, adjustable
	SPR 2618			-	
	SPR 2918 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPR 2918			-	
	SPR 2645 T	10-30 V dc	NPN / PNP	On/Off Delay	0 - 45 m, adjustable
	SPR 2645			-	
	SPR 2945 T	12 – 240 V dc 20 – 240 V ac	Relay	On/Off Delay	
	SPR 2945			-	

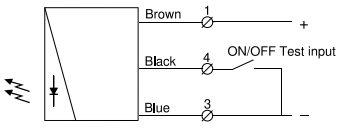
Illustration



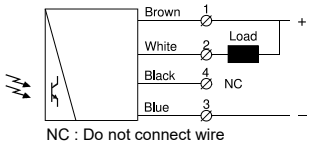
Connection

Wiring Diagrams

Transmitters | Receivers

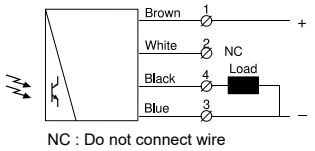


SPT 2618 / SPT 2645
Test input



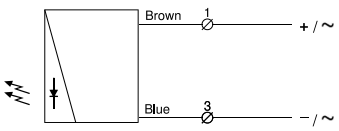
NC : Do not connect wire

SPR 2618 / SPR 2645
Load as NPN

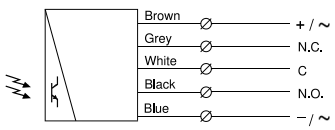


NC : Do not connect wire

SPR 2618 / SPR 2645
Load as PNP



SPT 2918 / SPT 2945



SPR 2918 / SPR 2945
Relay output

Connection Wires/Pins

	Cable	4 pin, M12 plug
Supply + / Supply ac	Brown	Pin 1 / Brown
Supply - / Supply ac	Blue	Pin 3 / Blue
SPT test input	Black	Pin 4 / Black
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	Mount the transmitter and receiver sensors facing each other. Make sure the distance between the sensors does not exceed the specified sensing range of the system.
2	Align the sensors by moving, either the transmitter or receiver sensor, horizontally and vertically until the output is: - Deactivated when no object is present. (Dark operated) - Activated when no object is present. (Light operated)
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 switch on the receiver sensor. 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 potentiometer to full clockwise position
Dark Operated (N.O.)	Enables the output to be active when there is an object present.	Turn potentiometer full counter clockwise position

Output Logic

Detection (thru beam)	Output mode	Relay Output	Transistor Output	Output indicator
Object present LT → LR	Dark operated	C NO NC	Closed	On
	Light operated	C NO NC	Open	Off
Object absent LT → LR	Dark operated	C NO NC	Open	Off
	Light operated	C NO NC	Closed	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, on the receiver sensor, to full clockwise position.

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.
3	Place target object between transmitter and receiver sensors.
4	Decrease the sensitivity by turning the potentiometer counter clockwise until the output changes.
5	Remove target object. Check output status has changed.
	If the signal level is low, the red LED (signal status) will go on. In general, it is recommended to increase the sensitivity till the LED goes off and to check the following:
	Alignment of sensors
	Transmitter and receiver sensors are within sensing range
	Sensor front are not excessively contaminated

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.

Test Input DC models only

The transmitter can be externally disabled and enabled, via the control wire, for test purposes. The test input requires the control wire to be connected to – (negative) supply wire. Make sure no object is present in the detection area when transmitter is disabled for test. When the transmitter is disabled, the receiver should change output.

Enable transmitter	Open (off) control switch (connected to + , or not connected)
Disable transmitter	Close (on) control switch (connected to -)

Note: If the test input is not to be used, it is recommended to connect the control wire to + supply wire

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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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