SM 3000 USER MANUAL
SpaceMaster Series
Photoelectric DC thru beam sensors

Product Data

Electrical Data

	Transmitter	Receiver
Supply Voltage	10-30 V dc	
Voltage ripple	+/- 15%	
Reverse polarity protected	Yes	
Short circuit protected	-	Yes
Power consumption	Max. 30 mA	Max. 8 mA
Max. output load	-	100 mA

Environmental Data

Temperature, operation	-20 to +50 ºC
Sealing class	IP 67
Approvals	UK CA CE

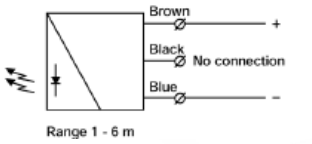
Available Models

	Model	Output	Output Mode	Sensing Range
Transmitter	SMT 3000	-	-	1.5 m / 6 m
	SMT 3000C	-	-	1-6 m, adjustable
	SMT 3012C	-	-	2-12 m, adjustable
	SMT 3000 HC	-	-	2-15 m, adjustable
Receiver	SMR 3006	NPN	Light operated (N.C.)	6 m
	SMR 3106	NPN	Dark operated (N.O.)	
	SMR 3206	PNP	Light operated (N.C.)	
	SMR 3306	PNP	Dark operated (N.O.)	
	SMR 3012	NPN	Light operated (N.C.)	12 m
	SMR 3112	NPN	Dark operated (N.O.)	
	SMR 3212	PNP	Light operated (N.C.)	
	SMR 3312	PNP	Dark operated (N.O.)	
	SMR 3015	NPN	Light operated (N.C.)	15 m
	SMR 3115	NPN	Dark operated (N.O.)	
	SMR 3215	PNP	Light operated (N.C.)	
	SMR 3315	PNP	Dark operated (N.O.)	

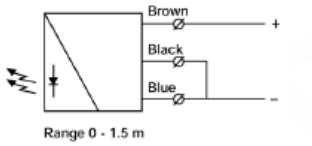
Connection

Wiring Diagrams

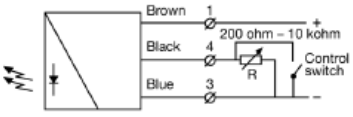
Transmitters



SMT 3000
Long range

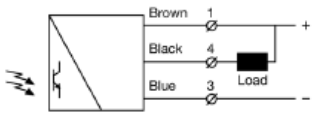


SMT 3000
Short range

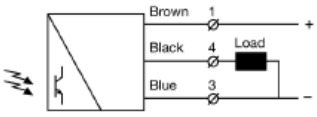


SMT 3000C/SMT 3012C/SMT 3000HC
Variable range and test input

Receivers



SMR 30XX / SMR 31XX
Transistor NPN



SMR 32XX / SMR 33XX
Transistor PNP

Connection Wires/Pins

	Cable	3 pin, M8 plug	4 pin, M12 plug
Supply +	Brown	Pin 1	Pin 1
Supply -	Blue	Pin 3	Pin 3
Control/Output	Black	Pin 4	Pin 4
	-	 Sensor plug	 Sensor plug

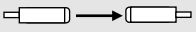
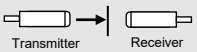
Mounting & Alignment

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 transmitter and receiver sensors securely. Avoid acute angles on cable close to sensor.

Adjustments

Output Logic

Detection	Output Mode	Output status	Yellow LED
Object absent  Transmitter Receiver	Dark operated (N.O.)	Open	Off
	Light operated (N.C.)	Closed	On
Object present  Transmitter Receiver	Light operated (N.C.)	Open	Off
	Dark operated (N.O.)	Closed	On

Transmitter Power Adjustment SMT 3000C / SMT 3012C / SMT 3000 HC

Maximum transmitting power can be used for most applications. Maximum transmitter power (factory set) is advised for applications with contaminated environments.

The transmitting power can be adjusted externally via the wires of the transmitter sensor. Adjust using a resistor (e.g. potentiometer) of 0,2 - 10K ohm or a voltage source of 1 - 4 V dc connected respectively between control and – (negative) supply wires. Adjustment of transmitter power may be required in applications where objects to be detected are small or translucent. Proceed with the following steps:

1	Select target object with the smallest dimensions and most translucent surface.
2	Place target object between transmitter and receiver sensors. If the output status changes, adjustment is not required. If the output status has not changed proceed to step 3.
3	Decrease the transmitter power (by reducing the resistance) until the output status changes. If the output status has not changed, attempt to move the sensors further apart or angle one of the sensors, and then repeat procedure.
4	Remove target object. Observe the output status has changed.

Note: If the transmitter power adjustment is not to be used, it is recommended to connect the control wire to + (positive) supply wire.

Test Input SMT 3000C / SMT 3012C/ SMT 3000 HC

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, a resistor over 200 ohm, or voltage over 0,7 V dc
Disable transmitter	Close (on) control switch, a resistor below 200 ohm, or voltage below 0,7 V dc

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

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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