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. 40 mA	
Max. Output load	-	100 mA

Environmental Data

Temperature, operation	-20 to +60 ºC
Sealing class	IP 67
Approvals	CE

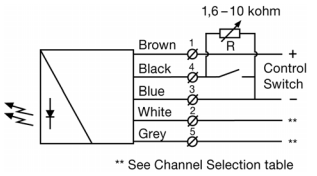
Available Models

	Model	Output	Output Mode	Sensing Range
Transmitter	SMT 9020C	-	-	1 - 20 m, adjustable
	SMT 9070C	-	-	1 - 70 m, adjustable
Receiver	SMR 9020	NPN	Light operated (N.C.)	20 m
	SMR 9120	NPN	Dark operated (N.O.)	
	SMR 9220	PNP	Light operated (N.C.)	
	SMR 9320	PNP	Dark operated (N.O.)	
	SMR 9070	NPN	Light operated (N.C.)	70 m
	SMR 9170	NPN	Dark operated (N.O.)	
	SMR 9270	PNP	Light operated (N.C.)	
	SMR 9370	PNP	Dark operated (N.O.)	

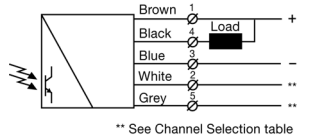
Connection

Wiring Diagrams

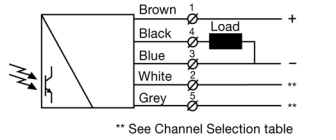
Transmitter | Receivers



SMT 90X0C
Variable range & test input setup



SMR 9XX0
Transistor NPN



SMR 9XX0
Transistor PNP

Connection Wires/Pins

	Cable	5 pin, M12 plug, male
Supply +	Brown	Pin 1 / Brown
Supply –	Blue	Pin 3 / Blue
SMT Test Input/Control	Black	Pin 4 / Black
SMR Output	Black	Pin 4 / Black
SMT / SMR Channel Selection	Grey	Pin 5 / Grey
	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 making sure they are pointing at each other 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 	Dark operated (N.O)	Open	Off
	Light operated (N.C.)	Closed	On
Object present 	Light operated (N.C.)	Open	Off
	Dark operated (N.O)	Closed	On

Transmitter Power Adjustment SMT 9020C / SMT 9070C

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 'Black' control wire of the transmitter SMT unit. The transmitter level can be adjusted using a resistor (e.g. potentiometer) of 1.6k to 10K ohm or a voltage source of 0.8 – 2.0 V dc connected respectively between the 'Black' control wire and – (negative) 'Blue' supply wires. Adjustment of transmitter SMT 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 'Black' control wire to the + (positive) 'Brown' supply wire.

Test Input SMT 9020C / SMT 9070C

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

Enable transmitter	Open (off) control switch, a resistor over 1.6k ohm, or voltage over 0.8 V dc
Disable transmitter	Close (on) control switch, a resistor below 200 ohm, or voltage below 0.7 V dc

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

Channel Selection table

The transmitter and the receiver are capable of operating on 4 individual channels. This allows 4 separate sensor pairs to operate in close proximity to each other without optically cross-talking, provided that each SMT/SMR pair is operating on different channels. The channel settings for the SMT & SMR pairs are shown below.

Channel nº	Connection Configuration	
	Grey Wire	White Wire
1	Supply – (blue wire)	Supply – (blue wire)
2	Supply + (brown wire)	Supply – (blue wire)
3	Supply – (blue wire)	Supply + (brown wire)
4	Supply + (brown wire)	Supply + (brown wire)

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Made in Denmark

Warning

This product is not a safety system and must not be used as such.
It is not designed for personnel safety applications, and must not be used as a standalone personnel safety system.

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