

**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 / 30V DC

Environmental Data		
Temperature, operation	-20 to +60 °C	
Sealing class	IP 69K	
Approvals	UK CA CE	

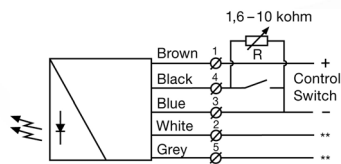
**Available Models**

	Model	Output	Output Mode	Channel	Sensing Range	
Transmitters	SMT 9020C	-	-	Selectable 1 to 4	4 - 20 m, adjustable	
	SMT 9070C	-	-		4 - 70 m, adjustable	
Receivers	SMR9421	Dark / Light	-	Fixed to CH 1	20 m	
	SMR9422			Fixed to CH 2		
	SMR9423			Fixed to CH 3		
	SMR9424			Fixed to CH 4		
	SMR9528	Dark Operated	-	CH 1 / CH 2		
	SMR9529			CH 3 / CH 4		
	SMR9628	Light Operated	-	CH 1 / CH 2		
	SMR9629			CH 3 / CH 4		
	SMR9471	Dark / Light	Solid State Relay	Fixed to CH 1		70 m
	SMR9472			Fixed to CH 2		
	SMR9473			Fixed to CH 3		
	SMR9474			Fixed to CH 4		
	SMR9578	Dark Operated	-	CH 1 / CH 2		
	SMR9579			CH 3 / CH 4		
	SMR9678	Light Operated	-	CH 1 / CH 2		
	SMR9679			CH 3 / CH 4		

**Connection**

**Wiring Diagrams**

Transmitters

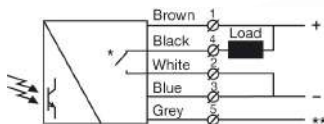


\*\* See Channel Selection table

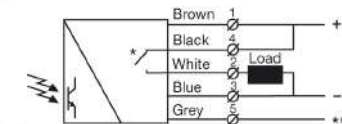
**Receivers**

SMT 90X0C Variable range & test input setup

Receivers



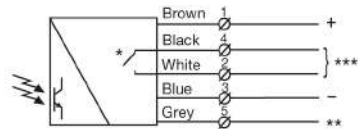
\*\* Function selection see table.



\*\* Function selection see table.

SMR 9XXX solid state relay used as NPN output

SMR 9XXX solid state relay used as PNP output



\* Relay type: Open when SMR not powered.

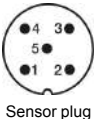
\*\* Function selection see table.

\*\*\* Max. 30 Vdc/ 20 Vac

**SMR 9XXX Solid State Output**

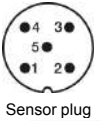
**Connection Wires/Pins for transmitters SMT**

	Cable	5 pin, M12 plug, male
Supply +	Brown	Pin 1 / Brown
Supply -	Blue	Pin 3 / Blue
SMT Test Input/Control	Black	Pin 4 / Black
SMT Channel Selection	Grey	Pin 5 / Grey
	White	Pin 2 / White



**Connection Wires/Pins for receivers SMR**

	Cable	5 pin, M12 plug, male
Supply +	Brown	Pin 1 / Brown
Supply -	Blue	Pin 3 / Blue
Solid State Relay : Contact 1	White	Pin 2 / White
Solid State Relay : Contact 2	Black	Pin 4 / Black
Function selection wire	Grey	Pin 5 / Grey



**Mounting & Alignment**

**Mounting & Alignment**

- 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.
- 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)
- 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:

- Select target object with the smallest dimensions and most translucent surface.
- 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.
- 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.
- Remove target object. Observe the output status has changed.

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

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 10k ohm, or voltage over 2.5 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 or power adjustment is not to be used, it is recommended to connect the 'Black' control wire to the + (positive) 'Brown' supply wire.

Channel Selection table for transmitters			SMT
The transmitter is capable of operating on 4 individual channels. Please see below.			
Channel n°	Wire Color		
	Grey Wire	White Wire	
1	Supply —	Supply —	
2	Supply +	Supply —	
3	Supply —	Supply +	
4	Supply +	Supply +	

Function Selection table for receivers			SMR
Each model has a fixed function and then 2 functions which can be selected using the Grey function selection wire.			
Model	Fixed Function	Function Select by Grey Wire	
		Connected to Supply -	Connected to Supply +
SMR9421	Operate on Channel 1	Dark operated	Light operated
SMR9422	Operate on Channel 2		
SMR9423	Operate on Channel 3		
SMR9424	Operate on Channel 4		
SMR9528	Dark Operated	Channel 1	Channel 2
SMR9529		Channel 3	Channel 4
SMR9628	Light operated	Channel 1	Channel 2
SMR9629		Channel 3	Channel 4
SMR9471	Operate on Channel 1	Dark operated	Light operated
SMR9472	Operate on Channel 2		
SMR9473	Operate on Channel 3		
SMR9474	Operate on Channel 4		
SMR9578	Dark Operated	Channel 1	Channel 2
SMR9579		Channel 3	Channel 4
SMR9678	Light Operated	Channel 1	Channel 2
SMR9679		Channel 3	Channel 4



**Warning**

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Telco A/S reserves the right to make changes without prior notice

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