

## Description

- Operation mode and max sensing range:  
Thru beam: 1-12 m
- Cable or plug connection
- Sensitivity adjustment via control input
- Wide variety of housings
- Power and output indicator
- High tolerance to hostile environments
- 10 – 30 V dc supply voltage
- 3 wire, NPN or PNP transistor output



The 3000 series consists of a low cost self-contained transmitter SMT, and a receiver SMR, which are to be used in thru beam mode. The complete series is available in a wide range of housings with either cable or plug connection.

The SMR is supplied with a 10-30 V dc supply voltage with a 3 wire, NPN or PNP transistor output with a choice between light or dark function.

The control input in the SMT may be used for either disabling or enabling the transmitting power temporarily for test purpose, multiplexing applications or as a gradual regulation of the transmitting power level.

Both the transmitter and receiver are protected against reverse polarity of power supplies, control input and output signals. The output is also protected against short circuit and inductive loads.

## Technical Data

|                                  | SMT 3000C         | SMT 3012C | SMR 3X06        | SMR 3X12 |
|----------------------------------|-------------------|-----------|-----------------|----------|
| 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       |          |
| Maximum output load              | -                 |           | 100 mA          |          |
| Maximum residual voltage         | -                 |           | 2,5 V           |          |
| Maximum operation frequency      | -                 |           | > 125 Hz        |          |
| Response time $t_{ON} / t_{OFF}$ | -                 |           | < 4 ms / < 6 ms |          |
| Power on indicator               | Green LED         |           | -               |          |
| Output indicator                 | -                 |           | Yellow LED      |          |
| Hysteresis                       | -                 |           | Approx. 25 %    |          |
| Transmitter diode                | Ga Al As (880 nm) |           | -               |          |
| Opening angle                    | -                 |           | +/- 10°         | +/- 8°   |
| Emission angle                   | +/- 11°           | +/- 5°    | -               |          |

## Environmental Data

|                                |                    |            |            |
|--------------------------------|--------------------|------------|------------|
| Vibration                      | 10 – 55 Hz, 0,5 mm |            |            |
| Shock                          | 30 g               |            |            |
| Light immunity, @ 5° incidence | -                  | 35 000 lux | 12 000 lux |
| Temperature, operation         | - 20 to +50 °C     |            |            |
| Temperature, storage           | - 40 to +80 °C     |            |            |
| Sealing class                  | IP 67              |            |            |
| Approvals                      | CE                 |            |            |

| Available Types    |              |                                 |        |                     |                      |                       |                        |                        |            |
|--------------------|--------------|---------------------------------|--------|---------------------|----------------------|-----------------------|------------------------|------------------------|------------|
|                    | Type         | Control Feature                 | Output | Connection          |                      | 5 m Cable             | 3 pin, M8 Plug         | 4 pin, M12 Plug        | Range      |
|                    |              |                                 |        | Housing Material    | Housing Size         | Order Reference       |                        |                        |            |
| <b>Transmitter</b> | <b>3000C</b> | Adjustable range and test input |        | Polycarbonate       | Ø10                  | <b>SMT 3000C AP 5</b> | <b>SMT 3000C AP T3</b> | -                      | 1-6 metres |
|                    |              |                                 |        |                     | M12 x 1              | <b>SMT 3000C TP 5</b> | <b>SMT 3000C TP T3</b> | -                      |            |
|                    |              |                                 |        | Nickel Plated Brass |                      |                       | <b>SMT 3000C TB 5</b>  | <b>SMT 3000C TB T3</b> |            |
|                    |              |                                 |        | ABS                 | Ø12,7 (Snap Housing) | <b>SMT 3000C S 5*</b> | -                      | -                      |            |

|                    |              |                                 |  |                     |         |                       |                        |                        |             |
|--------------------|--------------|---------------------------------|--|---------------------|---------|-----------------------|------------------------|------------------------|-------------|
| <b>Transmitter</b> | <b>3012C</b> | Adjustable range and test input |  | Polycarbonate       | Ø10     | <b>SMT 3012C AP 5</b> | <b>SMT 3012C AP T3</b> | -                      | 1-12 metres |
|                    |              |                                 |  |                     | M12 x 1 | <b>SMT 3012C TP 5</b> | <b>SMT 3012C TP T3</b> | -                      |             |
|                    |              |                                 |  | Nickel Plated Brass |         |                       | <b>SMT 3012C TB 5</b>  | <b>SMT 3012C TB T3</b> |             |

|                     |                      |                          |                          |                       |                      |                       |                       |                       |          |
|---------------------|----------------------|--------------------------|--------------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|----------|
| <b>Receiver</b>     | <b>3006</b>          | NPN, NC (light operated) |                          | Polycarbonate         | Ø10                  | <b>SMR 3006 AP 5</b>  | <b>SMR 3006 AP T3</b> | -                     | 6 metres |
|                     |                      |                          |                          |                       | M12 x 1              | <b>SMR 3006 TP 5</b>  | <b>SMR 3006 TP T3</b> | -                     |          |
|                     |                      |                          |                          | Nickel Plated Brass   |                      |                       | <b>SMR 3006 TB 5</b>  | <b>SMR 3006 TB T3</b> |          |
|                     | ABS                  | Ø12,7 (Snap Housing)     | <b>SMR 3006 S 5*</b>     | -                     | -                    |                       |                       |                       |          |
|                     |                      | Polycarbonate            | NPN, NO (dark operated)  |                       | Ø10                  | <b>SMR 3106 AP 5</b>  | <b>SMR 3106 AP T3</b> | -                     |          |
|                     |                      |                          |                          |                       | M12 x 1              | <b>SMR 3106 TP 5</b>  | <b>SMR 3106 TP T3</b> | -                     |          |
|                     | Nickel Plated Brass  |                          | <b>SMR 3106 TB 5</b>     | <b>SMR 3106 TB T3</b> | <b>SMR 3106 TB J</b> |                       |                       |                       |          |
|                     | ABS                  | Ø12,7 (Snap Housing)     | <b>SMR 3106 S 5*</b>     | -                     | -                    |                       |                       |                       |          |
|                     |                      | Polycarbonate            | PNP, NC (light operated) |                       | Ø10                  | <b>SMR 3206 AP 5</b>  | <b>SMR 3206 AP T3</b> | -                     |          |
|                     |                      |                          |                          |                       | M12 x 1              | <b>SMR 3206 TP 5</b>  | <b>SMR 3206 TP T3</b> | -                     |          |
|                     | Nickel Plated Brass  |                          | <b>SMR 3206 TB 5</b>     | <b>SMR 3206 TB T3</b> | <b>SMR 3206 TB J</b> |                       |                       |                       |          |
|                     | ABS                  | Ø12,7 (Snap Housing)     | <b>SMR 3206 S 5*</b>     | -                     | -                    |                       |                       |                       |          |
| Polycarbonate       |                      | PNP, NO (dark operated)  |                          | Ø10                   | <b>SMR 3306 AP 5</b> | <b>SMR 3306 AP T3</b> | -                     |                       |          |
|                     |                      |                          |                          | M12 x 1               | <b>SMR 3306 TP 5</b> | <b>SMR 3306 TP T3</b> | -                     |                       |          |
| Nickel Plated Brass |                      | <b>SMR 3306 TB 5</b>     | <b>SMR 3306 TB T3</b>    | <b>SMR 3306 TB J</b>  |                      |                       |                       |                       |          |
| ABS                 | Ø12,7 (Snap Housing) | <b>SMR 3306 S 5*</b>     | -                        | -                     |                      |                       |                       |                       |          |

|                 |               |                          |  |                     |                      |                       |                       |                       |           |
|-----------------|---------------|--------------------------|--|---------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------|
| <b>Receiver</b> | <b>3012</b>   | NPN, NC (light operated) |  | Polycarbonate       | Ø10                  | <b>SMR 3012 AP 5</b>  | <b>SMR 3012 AP T3</b> | -                     | 12 metres |
|                 |               |                          |  |                     | M12 x 1              | <b>SMR 3012 TP 5</b>  | <b>SMR 3012 TP T3</b> | -                     |           |
|                 |               |                          |  | Nickel Plated Brass |                      |                       | <b>SMR 3012 TB 5</b>  | <b>SMR 3012 TB T3</b> |           |
|                 | Polycarbonate | NPN, NO (dark operated)  |  | Ø10                 | <b>SMR 3112 AP 5</b> | <b>SMR 3112 AP T3</b> | -                     |                       |           |
|                 |               |                          |  | M12 x 1             | <b>SMR 3112 TP 5</b> | <b>SMR 3112 TP T3</b> | -                     |                       |           |
|                 |               |                          |  | Nickel Plated Brass |                      | <b>SMR 3112 TB 5</b>  | <b>SMR 3112 TB T3</b> | <b>SMR 3112 TB J</b>  |           |
|                 | Polycarbonate | PNP, NC (light operated) |  | Ø10                 | <b>SMR 3212 AP 5</b> | <b>SMR 3212 AP T3</b> | -                     |                       |           |
|                 |               |                          |  | M12 x 1             | <b>SMR 3212 TP 5</b> | <b>SMR 3212 TP T3</b> | -                     |                       |           |
|                 |               |                          |  | Nickel Plated Brass |                      | <b>SMR 3212 TB 5</b>  | <b>SMR 3212 TB T3</b> | <b>SMR 3212 TB J</b>  |           |
|                 | Polycarbonate | PNP, NO (dark operated)  |  | Ø10                 | <b>SMR 3312 AP 5</b> | <b>SMR 3312 AP T3</b> | -                     |                       |           |
|                 |               |                          |  | M12 x 1             | <b>SMR 3312 TP 5</b> | <b>SMR 3312 TP T3</b> | -                     |                       |           |
|                 |               |                          |  | Nickel Plated Brass |                      | <b>SMR 3312 TB 5</b>  | <b>SMR 3312 TB T3</b> | <b>SMR 3312 TB J</b>  |           |

**Note: Sensors marked \* do not have power on or output indicators incorporated.**

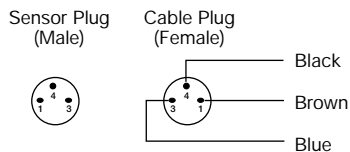
**6m transmitters only work with 6m receivers.**

**12m transmitters only work with 12m receivers.**

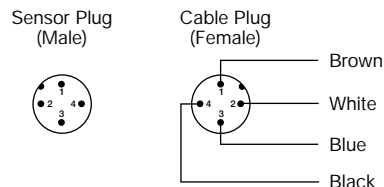
Connections

|             | Cable | M8 Plug/Cable | M12 Plug/Cable |
|-------------|-------|---------------|----------------|
| Supply +    | Brown | Pin 1/Brown   | Pin 1/Brown    |
| Supply -    | Blue  | Pin 3/Blue    | Pin 3/Blue     |
| SMT control | Black | Pin 4/Black   | Pin 4/Black    |
| SMR output  | Black | Pin 4/Black   | Pin 3/Black    |

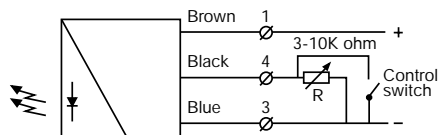
3 pin, M8



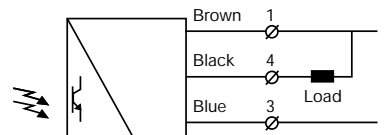
4 pin, M12



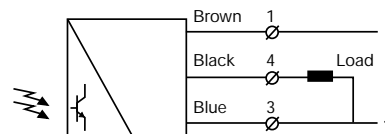
Wiring Diagrams



SMT 30XXC 1-6 m variable range and ON/OFF switch for transmitting power

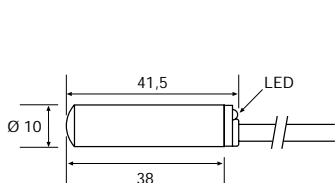


SMR 30XX / 31XX

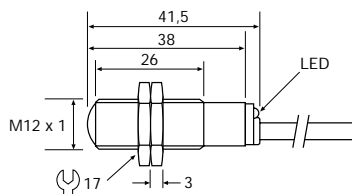


SMR 32XX / 33XX

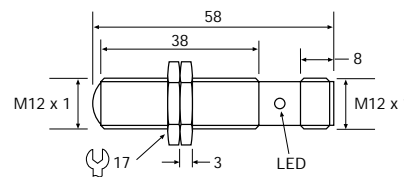
Dimensions and Descriptions



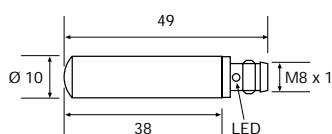
AP 2,5/5



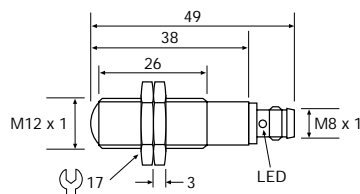
TP/TB 2,5/5



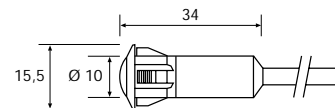
TB J



AP T3



TP/TB T3



S 2,5/5

(Units in mm)