Commissioning Instructions for Series R2 and R3

This set of instructions teaches the sensor to a desired switching point within the operating range. The operating ranges are as follows:

- 15 mm ... 60 mm for OBT60-R2* / OBT60-R3*
- 20 mm ... 120 mm for OBT120-R2* / OBT120-R3*

Teach-in

Three types of teach-in methods are available:

1. Single point teach-in - to switch at where the target is
2. Two points teach-in - to switch at a distance between two points
3. Maximum teach-in – to switch at the maximum range of the sensor

The teach-in takes place via teach input on white wire or pin 2.

The output is available on black wire or pin 4.

i **Note**

If the target is moved during the teach-in, the teach-in is aborted.

- Do not move the target 100 ms after start teach (S) or end teach (E).

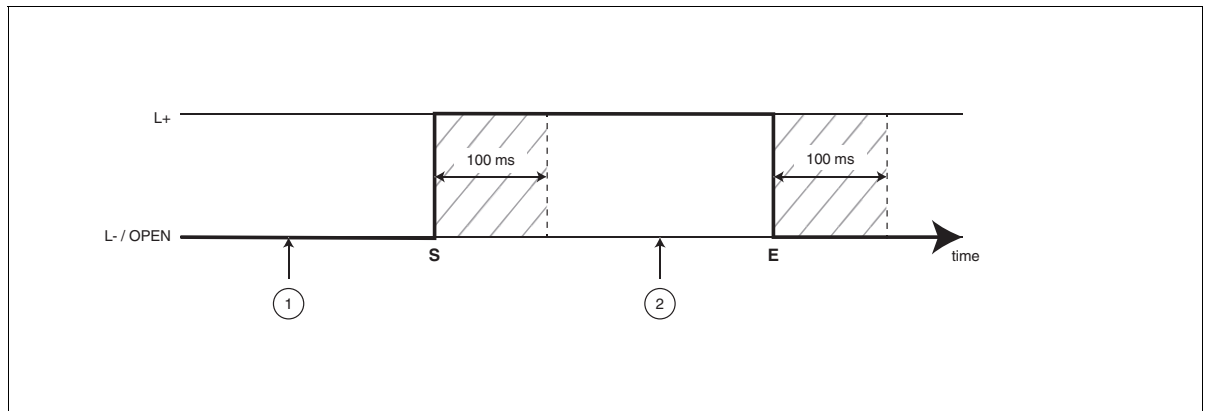| Event		Action / Result	LED indication
S	Start teach	Pull teach input to *HIGH* (L+). First target distance (point 1) will be captured after 100 ms.	Green and yellow flashing simultanuosly at 2.5 Hz.
E	End teach	Pull teach input to *LOW* (L-) / OPEN. Second target distance (point 2) will be captured after 100 ms.	Green and yellow flashing alternately at 2.5 Hz. This also indicates a successful teach-in.

Teach Input State

Figure 1

1 Place target at 1st distance

S Start teach

2 Place target at 2nd distance while keeping the teach input at HIGH (L+)

E End teach

Single point teach-in

To set the sensing range to where the target is, use single point teach-in.

i **Note**

Throughout the single point teach-in, the target remains at the desired detection point within the operating range.

⟩ **Single point teach-in**

1. Place target at the desired range.
2. Execute **Start teach**.
3. Execute **End teach**.

Refer to "General Notes Relating to Pepperl+Fuchs Product Information"

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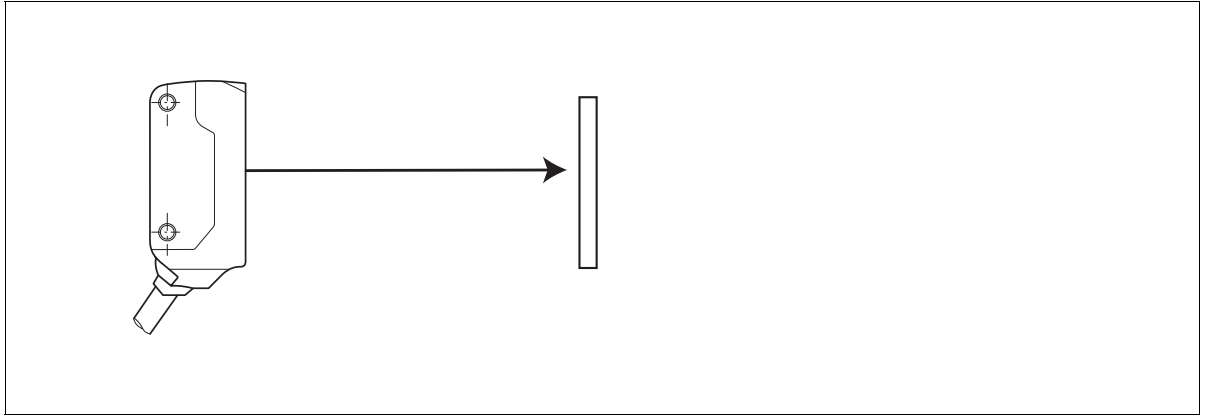
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Figure 2

↳ The sensing range is set to where the target is.

Two-point teach-in

To set the sensing range to a distance between the target and the background, use two-point teach-in.

i **Note**

Point A can be further away than point B or vice versa.

⟩ **Two-point teach-in**

1. Place target at point A.
2. Execute **Start teach**.
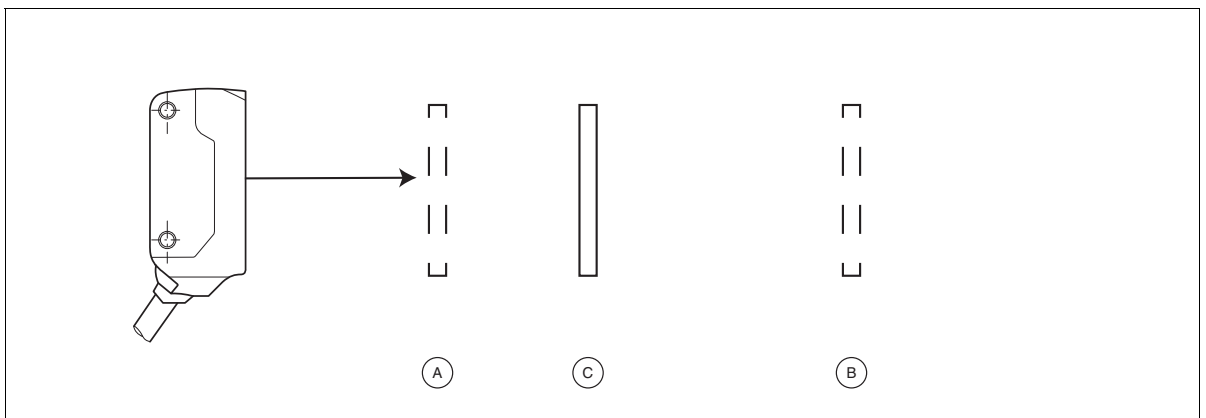3. Place target at point B
4. Execute **End teach**.

Figure 3

↳ The sensor sets the sensing range to an optimized distance (C) between point A and point B. This optimized distance (C) tends to be nearer to point A than point B.

Maximum teach-in

To set the sensing range to the maximum range, use maximum teach-in.

💬 **Tip**

If the background is far away or there is no background, we recommend the maximum teach-in, because this will provide the most reliable detection.

⟩ **Maximum teach-in**

1. Place target beyond the maximum range or do not place any target at all.
2. Execute **Start teach**.
3. Execute **End teach**.

↳ The sensing range is set to the maximum range.

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