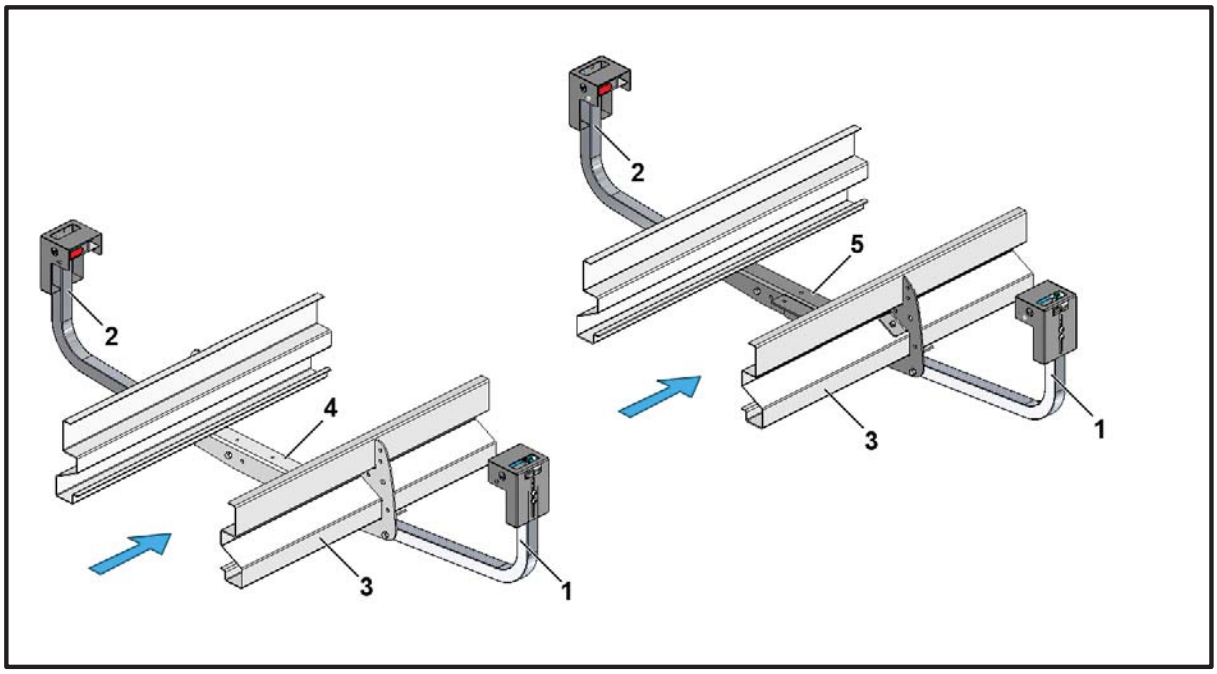
Stray Parcel Supervision (SPS) Photocells

The SPS photocells, if used, are located on the outside of the sorter frame as shown in Figure 2-100.

The photocells are attached to either one of the section's fixed frames or a loose frame.

Figure 2-100 Location of SPS Photocells



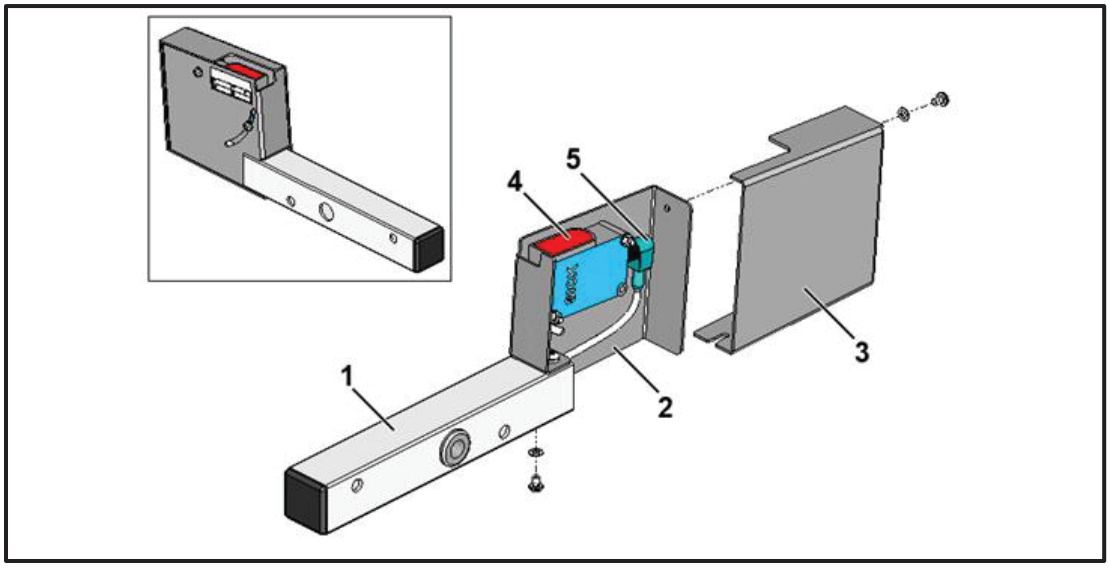
1. SPS photocell, right
2. SPS photocell, left
3. Section
4. Fixed frame
5. Loose frame

Construction

A complete SPS photocell shown in Figure 2-101 consists of the following parts:

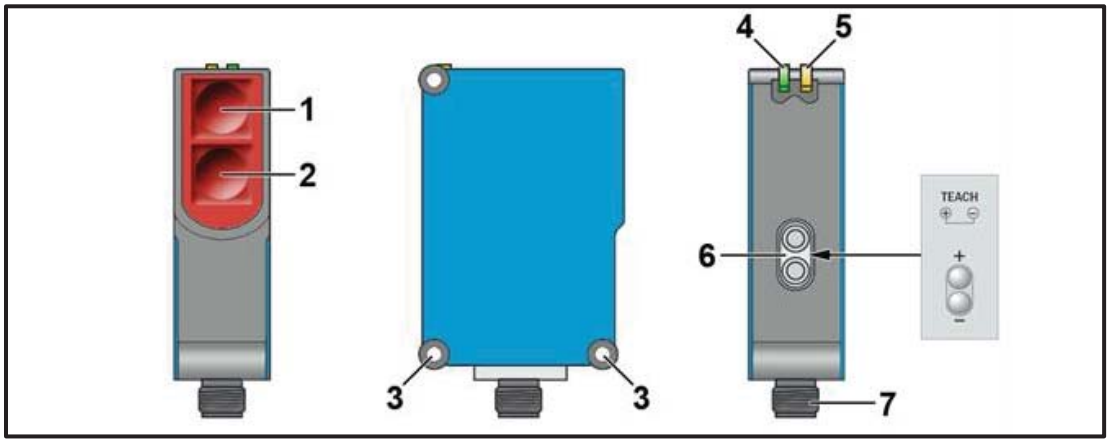
- A support for mounting on one of the sorter section's frames or a loose frame.
- A height-adjustable photocell housing mounted on top of the support; the photocell housing can be adjusted +/- 57.5 mm vertically in relation to the support.
- An angle-adjustable mounting bracket for the photocell; the mounting bracket is inside the photocell housing.
- A diffuse-reflective photocell with teach-in function for quick adjustment of sensing distance.
- A 4-pole photocell cable with an M12 angle connector at the photocell and an M8 straight connector at the other end. The photocell cable is routed through the support.

Figure 2-101 Complete SPS Photocell, Right



1. Support
2. Photocell housing, vertically adjustable
3. Mounting for photocell, adjustable
4. Photocell, diffuse-reflective
5. Photocell cable

Figure 2-102 Diffuse-Reflective Photocell (SICK WTB27-3P2413S09)



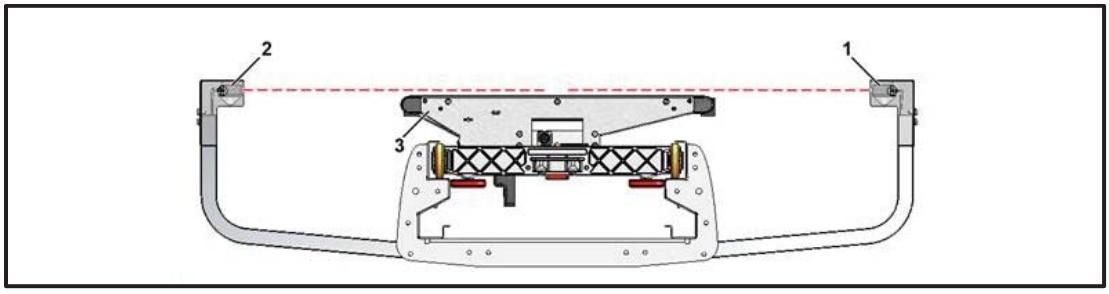
1. Transmitter
2. Receiver
3. Mounting holes
4. LED indicator, green, supply connected
5. LED indicator, yellow, status of received light
6. Adjustment of sensing distance + / - (TEACH)
7. M12 connector for photocell cable

Function

Stray Parcel Supervision (SPS) is one of the sorter's safety functions, which the machine controller uses to detect irregularities in the system.

The SPS photocells are used to detect whether the passing cross-belt unit is occupied by an item or not.

Figure 2-103 Supervision of Items on Cross-Belt Units



1. SPS photocell, right
2. SPS photocell, left
3. Cross-belt unit

An SPS arrangement consists of two SPS photocells – one on each side of the sorter.

The SPS arrangement can be positioned immediately before or after an induction area depending on the supervision function to be performed.

When the SPS arrangement is positioned before an induction area, the machine controller uses the signal from the photocells to establish whether cross-belt units that should be empty and ready for induction of a new item are empty. If a stray item is discovered on a cross-belt unit, the machine controller will take the necessary precautions in terms of blocking the cross-belt unit and discharging the stray item.

When the SPS arrangement is positioned after an induction area, the machine controller uses the signal from the photocells based on the type of induction being used. The signal can be used either to establish whether an item has been inducted onto a cross-belt unit or not, or to verify that an item has been inducted onto a cross-belt unit as planned.