SE-15 VISIBLE LIGHT SENSOR

**General Information**

The SE-15 Reflex Edge Guide Sensor uses an identical optical axis for the transmitted and received light beams. Its very small size and insensitivity to ambient light allow for convenient installations. A visible red LED light source provides easy setup, and the indicator LED simplifies alignment and adjustment. The material being guided can be positioned anywhere between the sensor and reflector. Refer to Step 1-D for considerations in material placement. (See Sensor Installation Figure Sheet 1-638 for sensor dimensions and specifications.)

**STEP 1: Sensor Mounting and Installation**

**NOTE:** As shown in Figure 1, the light beam of the sensor must be at 90° to the web surface. Maintaining the angle will prevent guide point shift due to plane changes in the web.

**A.** The distance between sensor and reflector can be up to 39.4 inches (1 meter).

**B.** The sensor is to be installed so that the light beam is at a 1° to 10° angle to the perpendicular plane of the reflector. This will help avoid excessive reflected light from hitting the sensor. (see Figure 2).

**C.** For glossy or reflective surface materials, the angle between the light beam and the perpendicular plane of the material surface being sensed should be a minimum of 5°. Any angle is acceptable for non-reflective materials. (see Figure 2).

**D.** If the distance between the sensor and the guided material is up to 19 inches (500 mm), the orientation of the sensor to the edge of the material is important. The sensor field of view is elliptical, with a minor axis of 0.2 inch (5 mm) and a major axis of 0.3 inch (8 mm) when the material is at the minimum clearance position to the sensor. As the distance between material and sensor is increased, the two axes of the field of view become more equal. The major axis of the field of view runs parallel to the long edge of the sensor. So, if the long edge of the sensor is installed parallel to the web edge the sensor field of view is small, if it is placed perpendicular to the web edge the field of view is larger. (see Figure 3).
STEP 2: Reflectors Installation and Alignment

A. If a positioning mechanism is used to move the sensor, care should be taken to align the reflector so that the light beam is centered on it, across the full range of sensor movement. The mechanism must be constructed to ensure that the sensor does not tilt as it moves. A tilt or “rocking” of the sensor could cause the light beam to miss the reflector or cause the web guide point to shift. Either case will cause inaccurate guiding.

STEP 3: Sensor Connection

A. Remove power from the signal processor and connect sensor cable to the signal processor.

B. On the signal processor, select MANUAL mode and the SENSOR mode which corresponds to the sensor cable connection on the signal processor. Refer to the connection diagram for proper wiring.

C. Return power to the signal processor.

D. With no material or obstruction between the sensor and reflector, turn the adjustment knob/screw on the sensor counterclockwise until the indicator LED on the sensor turns on. (NOTE: The range of adjusting the knob/screw is approximately 12 turns for sensor part no. 534541-001/2 and 3/4 turns for part no. 573888-001.) With the LED on, turn the adjustment knob on the sensor clockwise until the LED just turns off.

CAUTION: Sensor part no. 573888-001 may be damaged if the adjustment screw is turned too far.

E. If an amplifier is installed, the sensor must be calibrated prior to the amplifier being calibrated. Once the sensor is calibrated, any adjustments made at the amplifier will not affect the calibration of the sensor. The sensor should be recalibrated only if the reflector or the distance to the reflector is changed.

F. Check the function of the sensor by inserting a test material in the light beam. The indicator LED should turn on. The sensor is now ready for operation.

Figure 3.

NOTE: All dimensions and specifications in inches [mm] unless specified otherwise.