IF$_2$ | IF$_{61}$

Light Stack and Sensor Kit

Installation Instructions

Contents

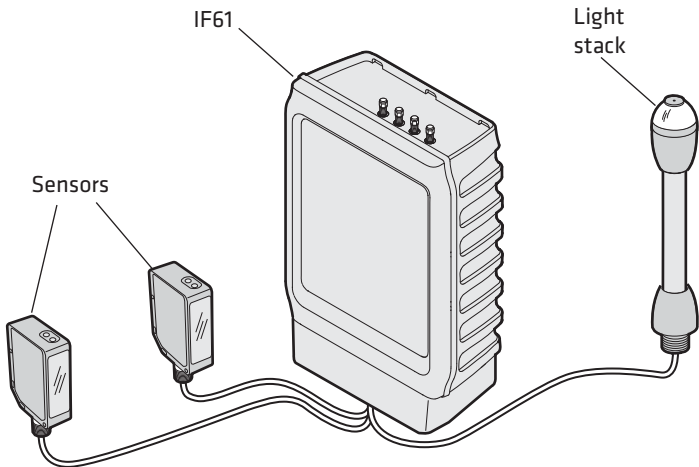# Installing the Light Stack and Sensor Accessories

This guide explains how to assemble and install the light stack and proximity sensor accessories for the IF2 and IF61 RFID readers. The accessories are included in the following kits:

- Light Stack Kit (P/N 203-858-xxx): Includes light module, riser, and connecting cable.

- Sensor Kit (P/N 203-859-xxx): Includes one sensor, one mounting bracket with hardware, and connecting cable.

- Light Stack and Sensor Kit (P/N 203-860-xxx): Includes light module, riser, one sensor, one mounting bracket with hardware, and connecting cable.

When assembled as described, the light stack, sensors, and cable are rated to IP67. An additional sensor (P/N 850-813-xxx) and bracket (P/N 650-776-xxx) can be ordered separately. For more information, contact your Intermec sales representative.

The Light Stack and Sensor Kit Connected to the IF61
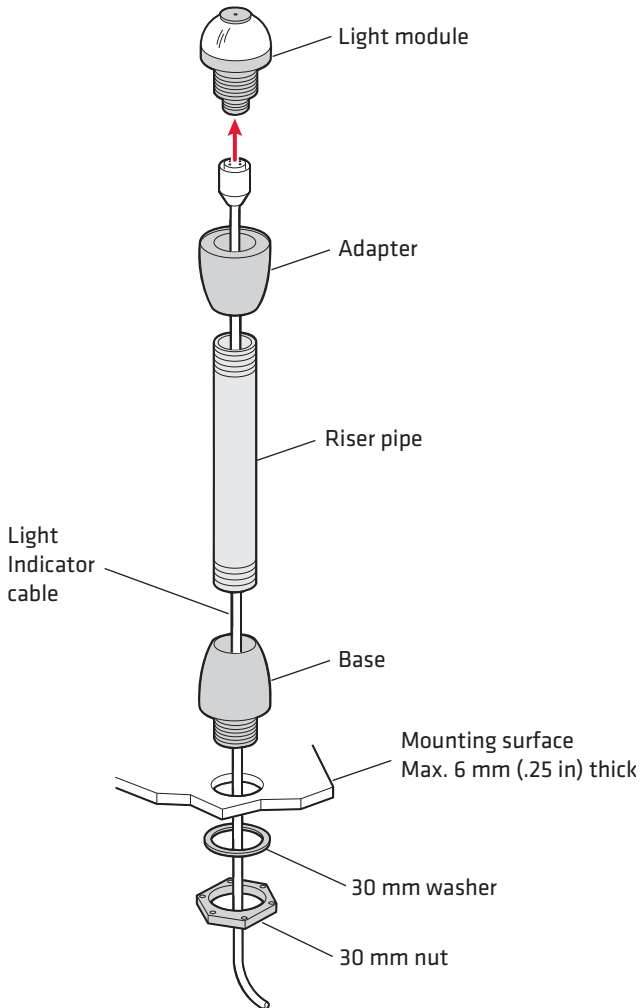
- To install the light stack, see the next section.

- To install the sensor, see **"Installing the Sensor" on page 6.**

- For an example of how to use the accessories, see **"Using the Accessories in a Simple System" on page 9.**

Installing the Light Stack

The light stack includes these components:

*   Light module with green, yellow, and red indicator lamps, and a fixed-volume beeper.
*   Riser assembly. Includes adapter, riser pipe, and base with 30 mm washer and nut.
*   Connecting cable (P/N 236-171-xxx).

The next illustration shows the components in an exploded view.

Light module

Adapter

Riser pipe

Light Indicator cable

Base

Mounting surface
Max. 6 mm (.25 in) thick

30 mm washer

30 mm nut

To install the light stack

1 Choose a mounting location for the light stack. Intermec recommends that the mounting surface be no thicker than 6 mm (.25 in).

2 Drill a 30 mm (1.18 in) hole at the mounting location.

3 Screw the base and adapter onto the riser pipe. Do not overtighten.

4 Place the 30 mm nut and washer on the cable marked "Light Indicator."

5 Thread the cable through the 30 mm (1.18 in) opening, through the base end of the riser assembly, and out through the adapter.

6 Connect the cable to the light module.

7 Screw the riser assembly onto the light module. Do not screw the light module onto the riser assembly, as this places strain on the cable.

8 Insert the base into the hole you drilled in Step 2.

9 Slide the washer and nut onto the base and tighten the nut. Do not overtighten.

10 Connect the 25-pin cable connector to the RFID reader GPIO port.

Using the Light Stack with the GPIO Outputs

The next table shows the four outputs and how each one affects the light stack when activated.

Output	Turns on
1	Green lamp
2	Yellow lamp
3	Red lamp
4	Fixed-volume beeper

Note: When activated, the lamps and beeper stay on until deactivated.

Your application can activate more than one output at a time. For more information, see your RFID reader user's guide.

Installing the Sensor

The sensor kit comes with these components:

- Sensor (P/N 850-813-xxx)
- Mounting bracket and hardware (P/N 650-776-xxx)
- Connecting cable (P/N 236-171-xxx)

When installed as described, the sensor and cable are rated to IP67. After installing the sensor and bracket, you can adjust the position and range of the sensor for best performance.

To install the sensor

1 Determine where the sensor will be installed.

2 Mount the bracket using appropriate hardware (maximum M6 (.25 in)) for your location. If you need to drill holes, use the bracket as a template. The bracket includes M6 hardware.

3 Install the sensor on the bracket using the included M3 hardware as shown in the next illustration.
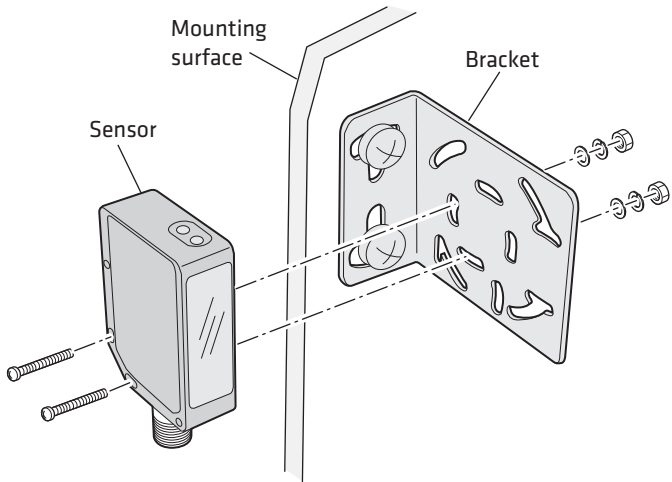
4 Connect one of the sensor cables (marked J2 Inbound and J3 Outbound) to the sensor. For more information, see the next section, "Connecting Sensors to the GPIO Inputs."

5 Repeat Steps 2 to 4 for an additional sensor.

**6** Connect the 25-pin cable connector to the RFID reader GPIO port.

Connecting Sensors to the GPIO Inputs

Each sensor cable connects to two RFID reader GPIO inputs as described in the next table.

Sensor Cable Descriptions

Sensor Cable	Connects to These IF61 Inputs
J2 Inbound	1 (normally open contacts)
	3 (normally closed)
J3 Outbound	2 (normally open)
	4 (normally closed)

About the Sensor
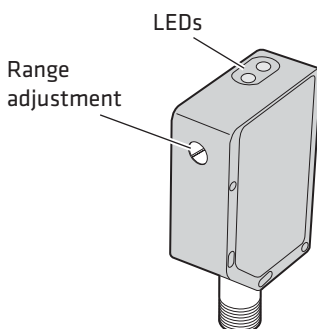
The sensor LEDs indicate status as described in the next table.

Sensor LED Descriptions

| Color	Behavior	Description
Green	Steady	Power to sensor is on.
Green	Flashing	Voltage to sensor is exceeding +12 VDC. If the voltage +12 VDC, you risk damaging the RFID reader. Check the power into the RFID reader and send to service.

Sensor LED Descriptions

Color	Behavior	Description
Yellow	Steady	Motion is detected.
Yellow	Flashing	Not enough gain for reliable detection. Adjust sensor range and/or alignment.

Adjusting Sensor Range

To adjust the sensor range, turn the adjustment screw on the rear of the sensor. The sensor range is 10 mm to 6 m (.4 in to 20 ft).

Adjusting Sensor Alignment

After you install a sensor, you can adjust the rotation and alignment of the sensor as necessary by loosening the sensor hardware, changing the sensor position, and tightening the hardware again.
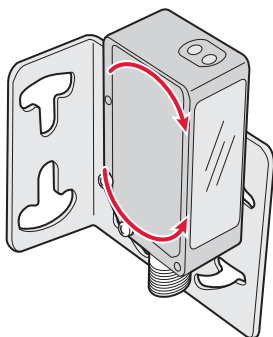
Using the Accessories in a Simple System

As a simple example, two sensors and a light stack can be configured to work with an application as an inbound/outbound indicator system.
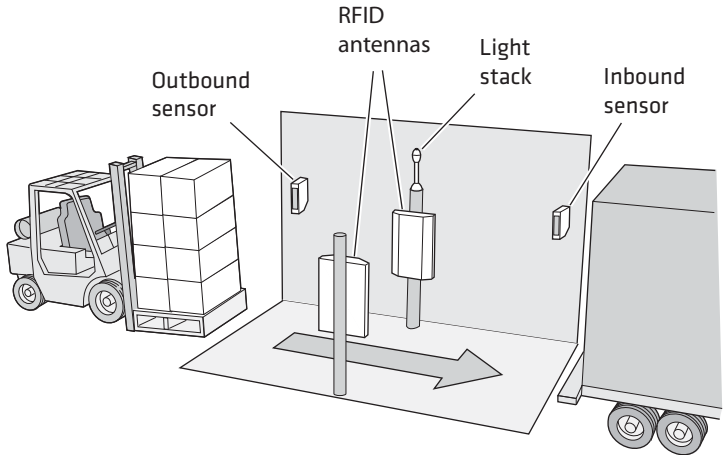
Simple Portal System: Arrow shows path for outgoing pallet. Accessories not to scale. Cables and reader omitted for clarity.

An RFID tag on a pallet or case trips the "Outbound" sensor, and the application begins a tag read operation. As the pallet approaches the antennas, the reader reads the tag ID, and the application turns on the yellow lamp to indicate that the tag is being read.

When the tag ID is confirmed good, the application turns on the green lamp to indicate that the pallet can proceed on its way. As the pallet passes the "Inbound" sensor, it triggers another operation that indicates the pallet has moved on, and resets the application for the next tag read operation.

If the tag ID is incorrect, or if the pallet passes the "Inbound" sensor before the tag ID is confirmed good, the application turns on the red lamp or the beeper.

If a pallet moves in the opposite direction, the sequence in which the sensors are triggered can indicate that direction, and other operations can be controlled accordingly.

Where To Go Next

For more information on using the GPIO interface, see your RFID reader user's manual.

For information on RFID applications, see:

- your RFID reader user's manual.

- the Intermec RFID Resource Kit. To download the Resource Kit, go to **www.intermec.com** and choose **Products** > **Applications & Software** > **Development Tools** > **Developer Resource Kits**.

- the *Basic Reader Interface (BRI) Programmer's Reference Guide* (P/N 937-000-xxx).

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IF2 and IF61 Light Stack and Sensor Kit Installation Instructions

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