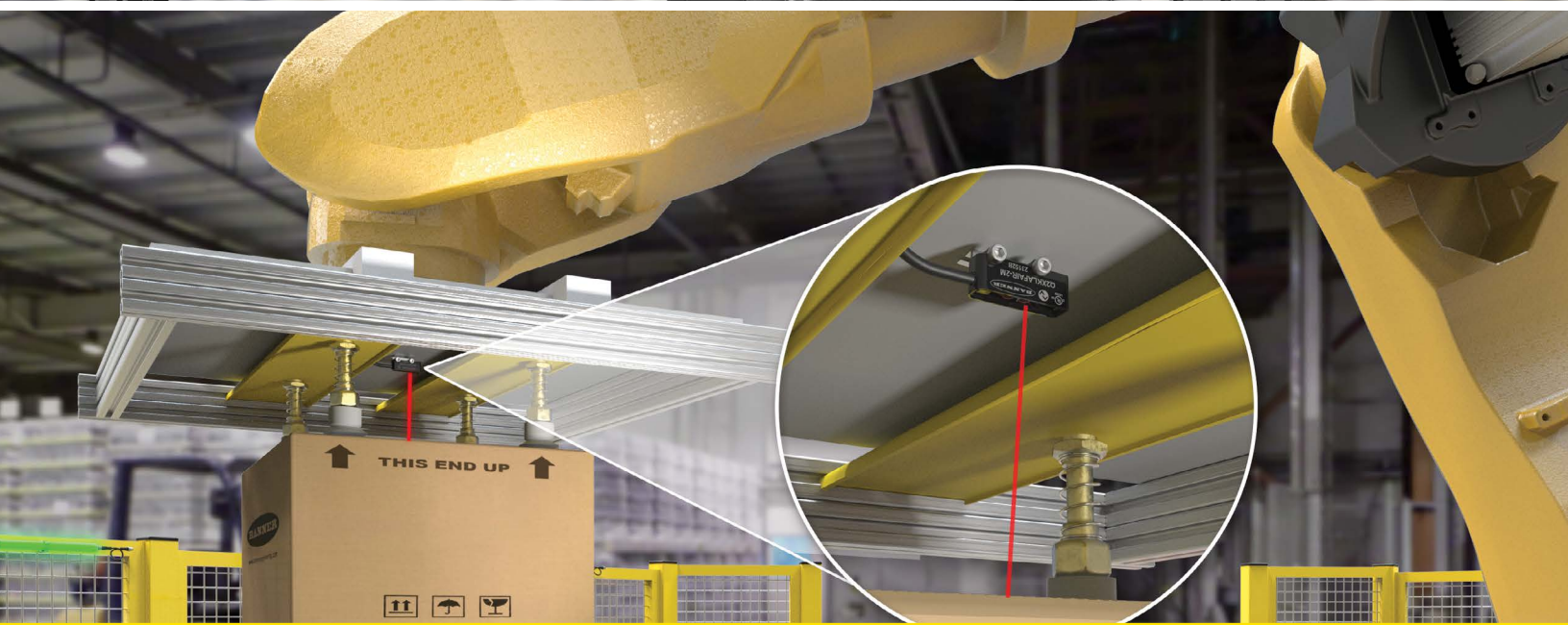


Compact Laser Measurement Sensors



Cost-Efficient Sensing out to 3 Meters

Infrared laser sensor's best-in-class range uses time-of-flight technology to consistently and reliably detect challenging targets up to 3 meters away

- Multiple sensing modes solve many different application problems, reducing stock by using just one sensor
- IO-Link® streamlines control system integration and provides easy access to measurement values, delay timers, and advanced diagnostics
- PulsePro output allows direct integration with Banner Pro lighting for real-time visual feedback without a PLC



Two Powerful Sensors with Compact Housings

Reliably Detect Challenging Targets at Long Range

- Best-in-class sensing range detects targets up to 3 meters away
- Powerful infrared laser with best-in-class excess gain senses the most challenging targets like dark totes, shiny poly bags, or clear bottles

Reduce Inventory While Serving Many Applications

- Solve many application problems by consolidating to one sensor model with the array of teach modes including background suppression, window mode, and dual mode
- Integrate easily into most control systems and access measurement values, delay timers, and advanced diagnostics via IO-Link®
- The PulsePro output can be directly integrated with Banner Pro lights to provide real-time visual feedback for machine operators, without using a PLC

Simplify Machine Design with Compact Housing

- Compact size permits installation in space-constrained locations
- Light weight housing for end of arm tooling and other weight sensitive applications



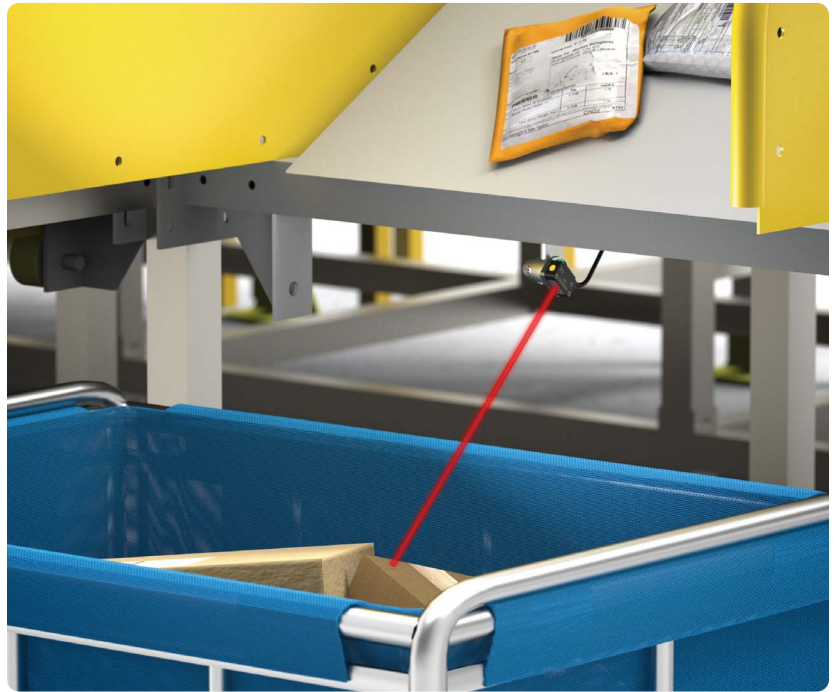
Single-Point Bin Fill Level Measurement

Challenge

Without real-time bin-fill measurement, workers in a distribution center won't know when to most efficiently retrieve bulk containers full of packages distributed by automated sorting systems. This can lead to overfilled bins and possibly lost or misplaced goods if packages land in unexpected places.

Solution

- A Q20-2 Laser Measurement Sensor detects fill height using an infrared laser
- Measures varying types of surfaces, without regard to color, that may be shiny, dark, or clear
- Ideal for monitoring a single point, it delivers high performance at a lower cost than 3D time-of-flight options
- Visible red LED alignment aid for easy setup and installation



Jam Detection on Sorter Chutes

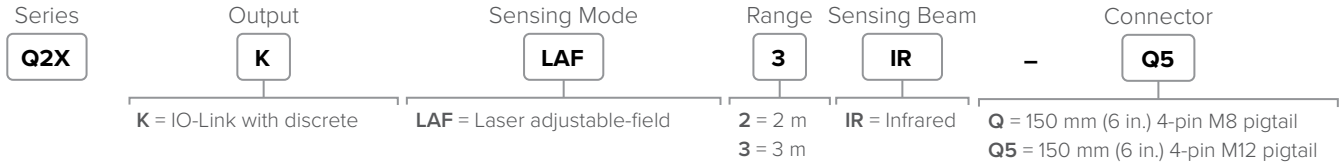
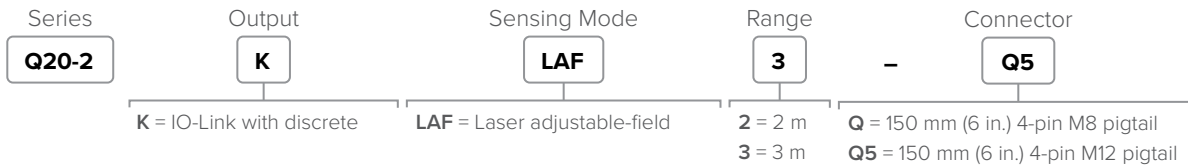
Challenge

Within warehouses, retroreflective sensors are often used to detect blocked chutes before they can disrupt throughput. However, a single package stuck blocking a beam can cause a false jam and shut down equipment.

Solution

- A Q2X Laser Measurement Sensor with adjustable background suppression detects jams accurately and reliably
- A cutoff distance taught slightly away from the back wall ignores temporarily stuck packages without halting operations
- Built-in delay timing (available over IO-Link) ensures the system waits to confirm a true jam before shutting down
- Reduces false jam events, resulting in improved throughput and operational efficiency

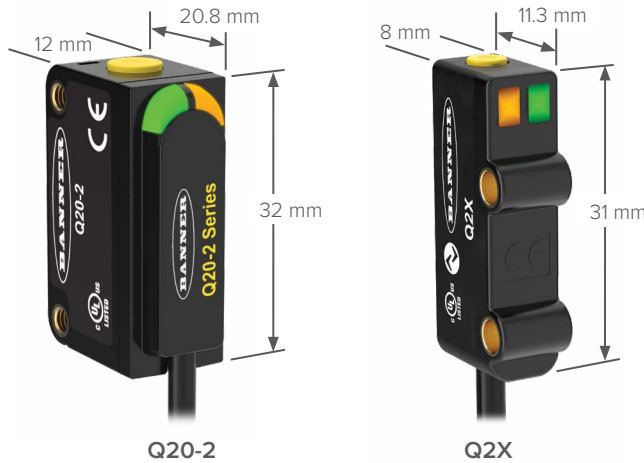
Q20-2 and Q2X Cost-Efficient Laser Measurement Sensors



Wiring and I/O Information

Pin	Wire Color	Q20-2 and Q2X Models
1	Brown	Power: 10–30 V DC
2	White	I/O: Remote input/PNP output
3	Blue	Common: 0 V DC
4	Black	I/O: PNP/IO-Link

Specifications



Power	10 to 30 V DC
Sensing Range	20 mm to 3 m
Output Response	Fast: 33 ms Medium: 100 ms Slow: 500 ms
Operating Conditions	-20 to +50 °C (-4 to +122 °F)
Environmental Rating	IP67
Construction	Housing: ABS Lens cover: PVC
Certifications	

Accessories

<p>SMBQ20L Right-angle bracket for Q20-2</p>	<p>SMBQ2XA Right-angle bracket for Q2X</p>	<p>4-Pin M12 Straight connector models listed; for right-angle models, add A to the end of M12F4 (example, BC-M12F4A-22-2)</p>	<p>4-Pin M12 Double-Ended Straight connector models</p>
<p>SMBQ20FA Bracket kit for 10 mm (3/8 in) rod bracket systems for Q20-2 and Q2X</p>	<p>4-Pin M8 Straight connector models</p>	<p>4-Pin M8 Double-Ended Straight connector models</p>	<p>4-Pin M8 Double-Ended Straight connector models</p>



Banner Engineering Corp.

1-888-373-6767 • www.bannerengineering.com

© 2025 Banner Engineering Corp. Minneapolis, MN USA

PN B_51941735 rev. B