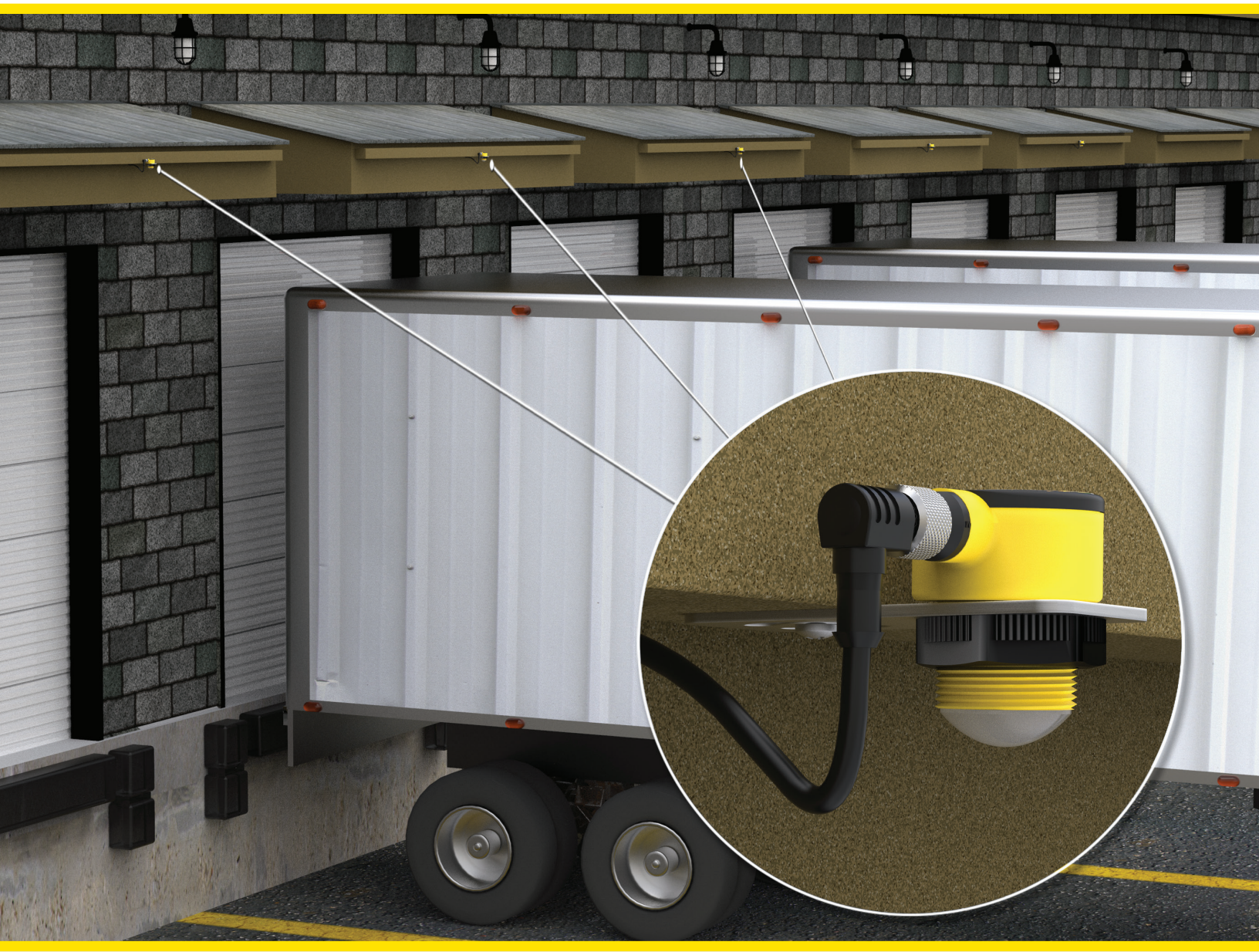
T30R Compact Radar Sensors



Detecting Where Others Cannot

- Robust, longer-range alternative to ultrasonics
- More precise and reliable alternative to traditional 24 GHz radar
- Easy setup—simple integration

BANNER®

Bridging the Gap Between Ultrasonics and Radar

	Range	Dead Zone	Outdoor Durability	Measurement Precision	Crosstalk Immunity
Other Banner Radar (24 GHz)	✓		✓		✓
T30R (122 GHz)	✓	✓	✓	✓	✓
Ultrasonics		✓		✓	

Robust, Longer-Range Alternative to Ultrasonics

Ideal for outdoor applications
- Resistant to rain, snow, fog, steam, or sunlight
- IP67 and IP69K-rated models available

Temperature stability
- Temperature interferes with ultrasonic (sound wave) sensors, but it does not affect radar (which uses radio waves)
- Consistent measurement from -40 to 65 °C

Detect near or far
- Sensing range of 100 mm to 25 m

No crosstalk
- No problem mounting multiple sensors close together

More Precise and Reliable Alternative to Traditional 24 GHz Radar

Accurate measurement
- Linearity and repeatability less than 1 cm

Senses more objects
- 122 GHz radar detects a wider range of low-dielectric materials for use in many applications

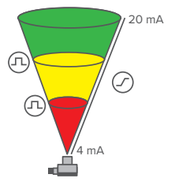
Precise measurement up to 15 meters
- Sensors use two independent, adjustable sensing zones and operate at 122 GHz, which enables higher-precision measurements with a narrow or wide beam pattern up to 15 meters away

Easy Setup—Simple Integration

Flexible setup and configuration
- Optional PC configuration, push buttons, IO-Link or remote teach

Direct integration with Banner lights
- No separate controller needed

Solve more problems
- Dual discrete outputs for slow and stop
- Analog and IO-Link for absolute measurement values
- Available in 15°x15° and 45°x45° beam patterns



Beam Pattern Considerations

Radar sensors are available in narrow and wide beam patterns. Narrow beam patterns avoid false detection of objects outside of the region of interest and allow for a more precise measurements. Wide beam patterns provide coverage of larger areas and provide more robust detection of irregular surfaces and targets presented at steep angles.

Narrow Beam Applications
- Drive-through
- Overhead crane
- Tank level
- Gantry crane
- Loading docks

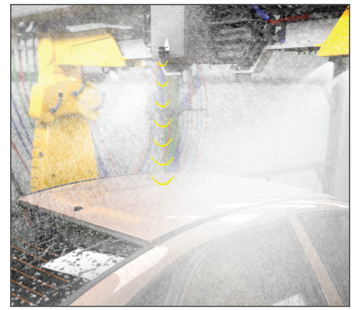
Wide Beam Applications
- Mobile equipment collision avoidance
- Vehicle detection: trains, cars, boats

Provide Reliable Position Feedback

Dual Discrete outputs are available for slow and stop positions for port equipment such as reach stackers and container handlers. Analog and IO-Link outputs are also available for absolute distance measurement values for ground support equipment such as baggage handlers or de-icing vehicles.

Level Monitoring in a Plastic Tank

With the help of a Banner mounting bracket, a T30R can be installed outside the tank, with its high-frequency radio wave signal penetrating through the plastic container wall down to the liquid's surface. The shorter dead zone of the Near Range T30R allows measurement of the liquid even closer to the sensor.



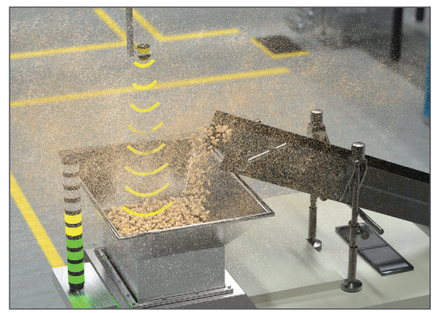
Reliable Vehicle Detection in Challenging Environmental Conditions

Banner radar is resistant to rain, wind, and snow and has a wide operating temperature range, making it ideal for vehicle detection at loading docks, tolls, gates, and car washes.

Reliable Collision Avoidance

The T30R measures the distance of ground support equipment from an aircraft and signals an alert when it reaches a programmed distance to prevent collisions.

With the 45°x45° beam pattern, the T30R can detect curved surfaces, such as an airplane, more reliably, since a smaller beam can be deflected by the target's curvature.



Challenging Level Management

The T30R can see through steam, dust, and debris buildup on the sensor face, while ultrasonics may struggle. Banner's T30R also measures up to 15 m for larger tanks where ultrasonic range isn't sufficient.

Pulse Pro output for direct integration with Banner lights. Direct process feedback which only requires power; no controller needed.

T30R Radar Sensor

Series	Housing		Beam Angle		Bandwidth		Output		Connector
T30R		–	**1515**	–		–	**KD**		**Q**

- **Housing**
  - **Blank** = Standard
  - **W** = IP69K*
- **Beam Angle**
  - **1515** = 15° x 15° beam
  - **4545** = 45° x 45° beam
- **Bandwidth**
  - **Blank** = Standard
  - **C** = Near range*
  - **L** = Long range*
- **Output**
  - **KD** = Dual discrete with IO-Link
  - **KI** = Discrete with IO-Link and 4–20 mA analog
  - **KU** = Discrete with IO-Link and 0–10 V analog
- **Connector**
  - **Q** = Integral M12 QD
  - **QP** = 150 mm M12 QD pigtail

QD models require mating cordset

*Only available in 1515 beam angles

Specifications

T30R-1515

T30R-4545

T30RW

	1515-C	1515	1515-L	4545
Beam Pattern	15° x 15°	15° x 15°	15° x 15°	45° x 45°
Dead Zone	0.10 m	0.15 m	0.15 m	0.30 m
Detection Range	6 m	15 m	25 m	10 m
Linearity	< ±4 mm	< ±20 mm at < 500 mm < ±4 mm > 500 mm		
Approvals	USA	USA, Europe, Canada, Malaysia, Australia/New Zealand		

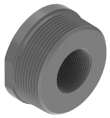
Note: For the most reliable detection, the target should be larger than half of the beam width.

Accessories

T30R Brackets

SMB30A

SMB30SC



SAFT30R-PVC-G2

SMB30MM

SMB30FA

SMBT30RTM

T30RW Brackets

SMB40A

SMBAMS40P

PRO-KIT
for PC configuration

5-Pin M12 with Shield Straight connector models listed; for right-angle, add RA to the end of the model number (example, **MQDEC2-506RA**)

MQDEC2-506
2 m (6.5 ft)
MQDEC2-515
5 m (15 ft)
MQDEC2-530
9 m (30 ft)

5-Pin Double-Ended M12 with Shield (Male/Female)

MQDEC3-506SS
2 m (6.5 ft)
MQDEC3-515SS
5 m (15 ft)
MQDEC3-530SS
9 m (30 ft)

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