Collision Avoidance Sensing Solutions
Banner Radar Sensors for Crane Collision Avoidance

Harbour cranes like STS, RTG, RMG represent an expensive investment. Banner Engineering’s R-GAGE radar-based sensor series is the perfect solution for crane to crane, or crane to obstacle collision avoidance applications, and can operate in harsh weather conditions like strong winds, heavy rain, direct sunshine, hot & cold temperatures.

Radar sensors use Frequency Modulated Continuous Wave (FMCW) technology to reliably detect moving or stationary targets, including cranes, cars, trains, trucks and cargo in extreme weather conditions.

Features:
- FMCW (true-presence) radar detects moving and stationary objects
- Sensing functions are unaffected by wind, falling rain or snow, fog, light, humidity and air temperatures
- Easy configuration using DIP switches, no PC required
- Adjustable sensing field — ignores objects beyond the setpoint
- Detects vehicles at distances up to 40 m
- Includes DIP switches for sensing distance, sensitivity and output configuration
- Operates at 24 GHz in the Industrial, Scientific and Medical (ISM) telecommunication band; no special licensing required
- Delivers operating temperature range of -40° to +65° C
- Operates at 12 to 30 VDC with bipolar PNP and NPN output
- Rugged IP67 housing withstands harsh environments

Adjustable-Field Radar-Based Sensors

Q120RA-AF2Q

**Long Range High Sensitivity**
- Two independent adjustable sensing zones
- Narrow beam pattern (horizontal: 20°, vertical: 50°)
- Detects objects from 1 to 40 m

QT50R-AFHQ

**Standard Wide Angle**
- Adjustable sensing field
- Detects objects up to 15 m
- One single detection zone
- Total beam angle 90°

QT50R-AF2WQ

**Narrow Beam**
- Adjustable sensing field with detection up to 24 m
- Two independent adjustable sensing zones
- Total beam angle 20°

See data sheet for region-specific model numbers.
Banner Radar Sensor
Typical Applications

STS Collision Avoidance
Radar sensors can reliably detect the presence of another crane or obstacle and activate stop or warning signals.

Container Detection
Radar sensors detect the presence of a container and reduce the spreader dropping speed when the container is approached.

Obstacle detection
The dual detection zones allow high speed gantry cranes to slow down or stop when approaching an obstacle or another crane.

Gate Control
Radar sensors detect the presence of container trains while the radar sensor output activates measuring equipment such as RFID antennas, Gamma Ray Gates...
Banner Engineering's Worldwide Presence

**Headquarters USA**
Banner Engineering
9714 10th Avenue North
Minneapolis, Minnesota 55441 USA
+1 763 544 3164
Fax: +1 763 544 3213
sensors@bannerengineering.com
www.bannerengineering.com

**EU, Middle East, Africa**
Banner Engineering EMEA
Park Lane, Culliganlaan 2F
1831 Diegem | Belgium
+32 (2) 456 07 80
Fax: +32 (2) 456 07 89
mail@bannerengineering.com
www.bannerengineering.com/eu

**China**
Banner Engineering Int’l Inc. (China)
Shanghai Rep., Xinlan Scientific Research Building:
Level 12, Building 2, 1535 Hongmei Road, Shanghai 200233
+86 21 33 98 68 88
sensors@bannerengineering.com.cn
www.bannerengineering.com.cn

**India**
Banner Engineering India – Pune (HQ)
Office No. 1001, 10th Floor
Sai Capital, Opp. ICC
Senapati Bapat Road, Pune 411016
+91 20 66405624
salesindia@bannerengineering.com
www.bannerengineering.com.co

**Japan**
Banner Engineering Japan
Cent-Urban Building 305
3-23-15 Nishi-Nakajima
Yodogawa-Ku, Osaka 532-0011
+81 6 6309 0411
mail@bannerengineering.co.jp
www.bannerengineering.co.jp

**Taiwan**
Banner Engineering Int’l Incorporated Taiwan Rep. Office
8F-2, No. 308, Sec. 1, Neihu Rd. Taipei 114
+886 2 8751 9966 #15
info@bannerengineering.com.tw
www.bannerengineering.com.tw

**Turkey**
Barbaros Mah. Uphill Court Towers A
Blok D:49 34746 Atasehir Istanbul
+90 216 688 8282
Fax: (+90) 216 688 8181
turkey@bannerengineering.com.tr
www.bannerengineering.com.tr

Banner offers a full range of sensing solutions
www.bannerengineering.com/eu