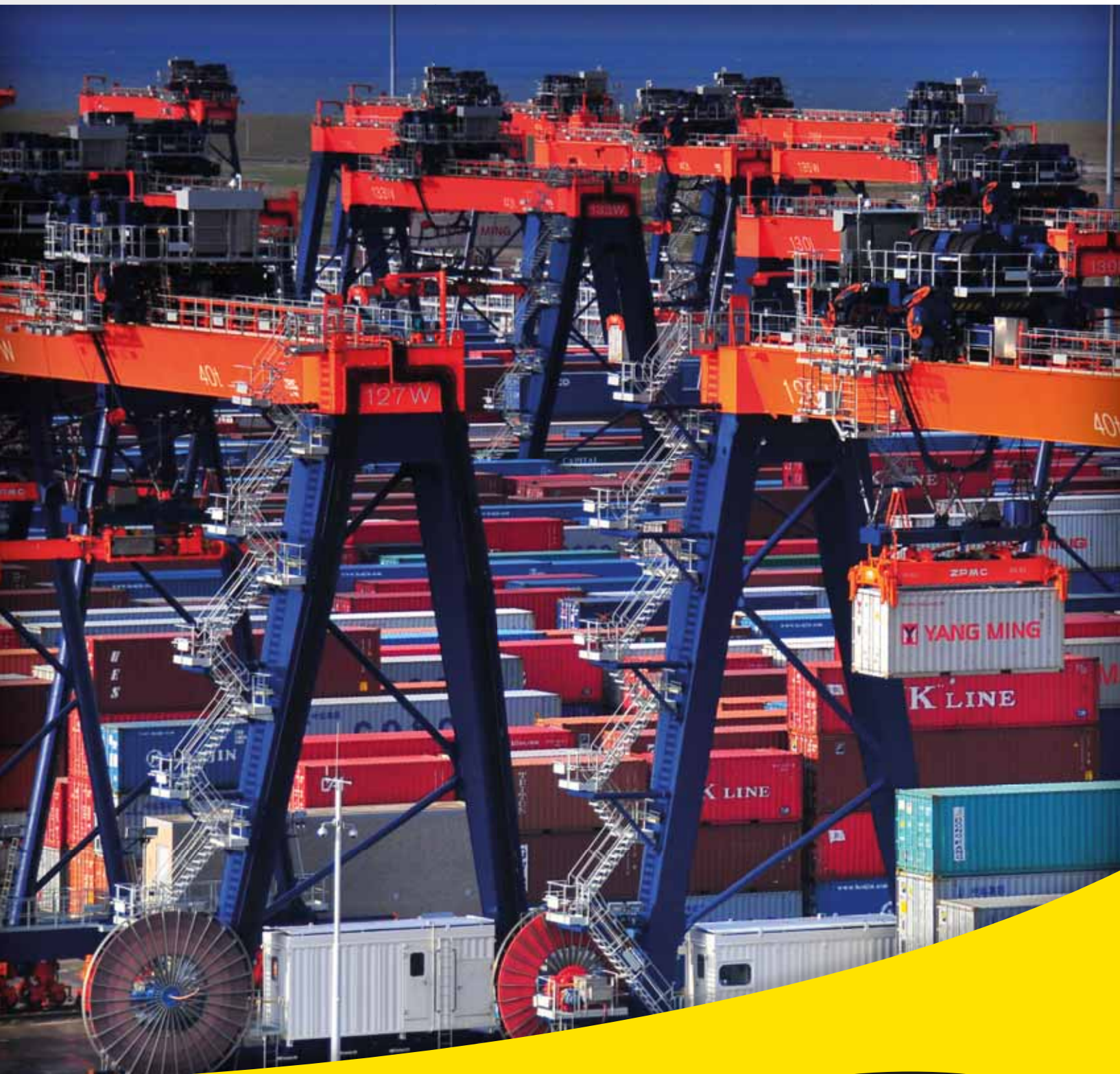


Collision Avoidance Sensing Solutions



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.



No PC
required



Easy
configuration



IP67



Extreme
temperatures



Snow & Fog



Heavy Rain &
Humidity



Strong Wind



Sunlight
Immune

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...



Sensors

- Presence/Absence Detection
- Foreground & Background Suppression
- GO/NO GO Inspection
- Gating and Triggering
- Parts Counting
- Level and Distance Measurement
- Positioning
- Contrast and Colour Sensing
- Vehicle Detection (Radar, Ultrasonic & Magnetic Technology)



Vision

- Vision Sensors with Onboard User Interface
- Pattern Recognition
- Traceability (Barcode, Datamatrix and Text Reading)
- OCR/OCV
- Complex Part Inspection
- Part Orientation
- Assembly Verification
- Colour Inspections



Wireless I/O

- Slip Ring Replacement
- Tank Farm Monitoring
- Livestock Environmental Monitoring
- Water and Wastewater Treatment
- HVAC Remote Monitoring
- Traffic Monitoring & Control
- Remote Sensing in Process Automation
- Cable Replacement
- ATEX Approved Solutions



Lighting & Indicators

- Bin & Part Picking
- Error/Mistake Proofing
- Pick-to-Light & Put-to-Light
- Operator Guidance
- Call for Parts
- Incorrect Pick Signal
- Remote Start/Stop Indication
- Work Station Lighting
- Mobile Equipment Work Lights
- Production Machine and Cabinet Lighting



Machine Safety

- Safety Light Screens
- Ergonomic Two-Hand Control Devices
- Safety Modules
- Emergency Stop Devices
- Safety Interlocking
- Laser Scanners for Safety Applications
- Programmable Safety Controllers
- Enabling Devices

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