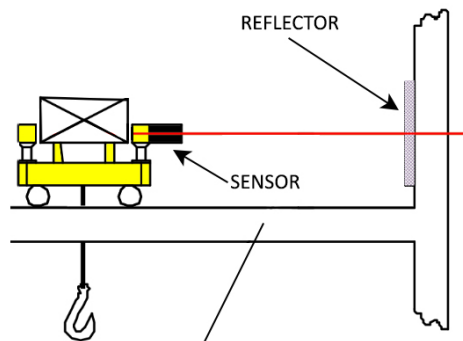
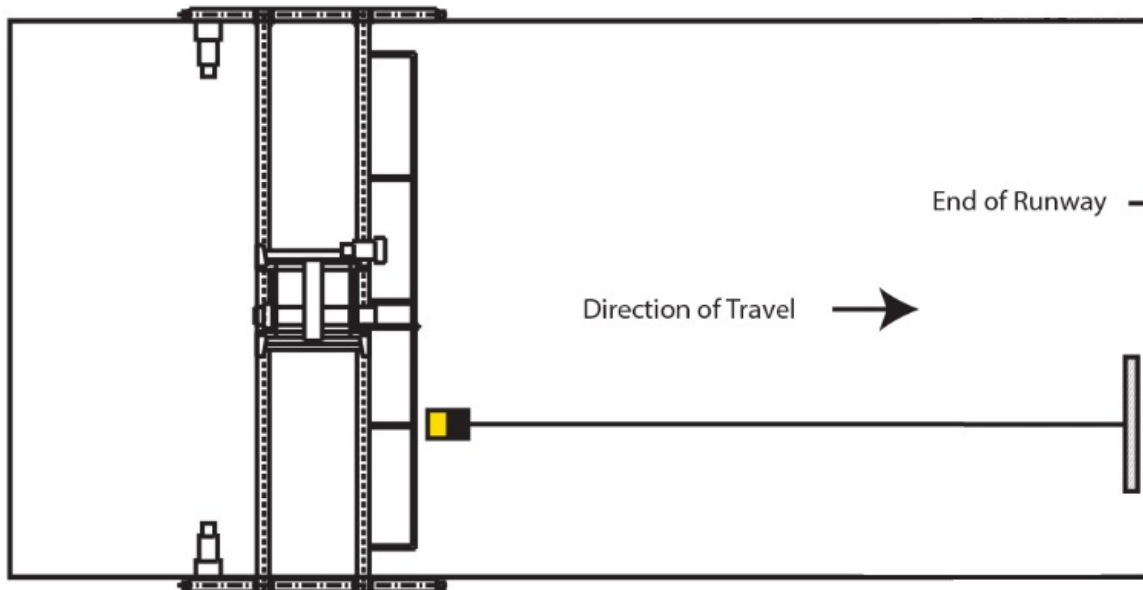




LaserGuard2 Collision Avoidance System

SYSTEM INCLUDES:

- 1 Laser Support Unit
- 1 Class 1 Laser (detection range 8in – 150ft.)
- 1 2ft. x 2ft. Reflector
- 1 Mounting Bracket
- 1 Sensor Cable (length is dependent on model)



FOR "BRIDGE-TO-WALL" APPLICATIONS,
THE CENTER OF THE SENSOR BEAM MUST BE AT
THE SAME HEIGHT AS THE CENTER OF THE TARGET.

All data subject to change without notice.

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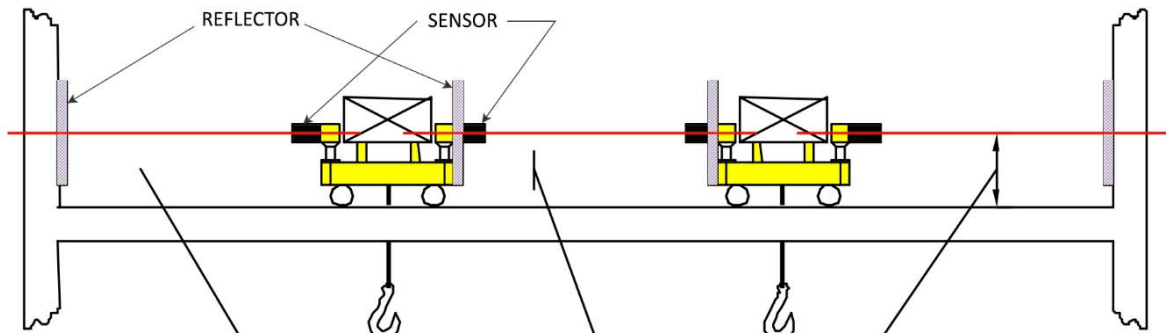
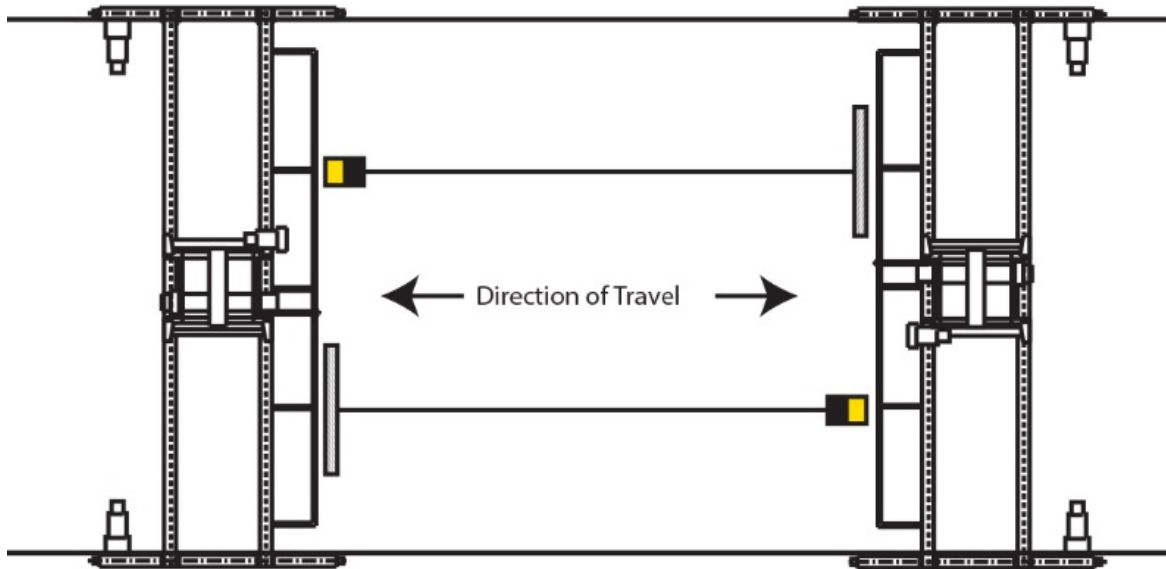
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LaserGuard 2 Crane to Crane Avoidance System

TWO SYSTEMS REQUIRED; EACH SYSTEM INCLUDES:

- 1 Laser Support Unit
- 1 Class 1 Laser (detection range 8in – 150ft.)
- 1 2ft. x 2ft. Reflector
- 1 Mounting Bracket
- 1 Sensor Cable (length is dependent on model)



FOR BOTH BRIDGE-TO-WALL AND BRIDGE-TO-BRIDGE APPLICATIONS, THE CENTER OF THE SENSOR BEAM MUST BE AT THE SAME HEIGHT AS THE CENTER OF THE TARGET.

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The sensor has three range detector settings and one fault contact:

- Warning
- Slowdown
- Stop
- Fault

NOTE: The function of the LaserGuard2 relay contacts is similar to that of end-of-travel limit switches. Test all motions under worst case scenarios before putting the crane into operation.

LaserGuard2 Application Guidelines

Contactor Control

Bridge and trolley motions using reversing contactors for control rely on the crane's mechanical brakes for stopping. Therefore, the buffer zone (minimum distance to mating crane or obstruction) should be sized to allow for future brake wear.

Adjustable Frequency Crane Control

Because adjustable frequency drives (AFDs) have various programmable stopping options, consideration should be given to these various means when setting up the LaserGuard2 system.

Using the AFD Limit Switch Inputs

Most modern AFDs include programmable limit switch input terminals for each direction of travel (Upper Limit 1 & Upper Limit 2). When the bridge reaches a Slowdown sensing distance, the crane decelerates to a programmed slowdown speed. When the bridge reaches the Stop sensing distance, the drive will "decelerate at stop command" or provide "immediate stop at stop command" (see definitions below), depending on how the drive is programmed.

Decelerate at Stop Command

Upon receiving a Stop command from the LaserGuard2 system, the output frequency of the AFD decreases to near zero at the programmed deceleration ramp, and the brake is commanded to set.

Immediate Stop at Stop Command

Upon receiving a Stop command from the LaserGuard2 system, the AFD base blocks the main output transistor. This electrically disconnects the motor from the AFD, and through the brake interlock, commands the brake to set. In this mode, the crane functions similar to a contactor control and relies on the crane's mechanical brakes for stopping. Therefore, the buffer zone (minimum distance to mating crane or obstruction) should be sized to allow for future brake wear.

Using the AFD External Fault Input

Most AFDs have a programmable output that can be designated for an external fault. When the LaserGuard2 experiences a fault, the crane will stop immediately to the programmed deceleration time.

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MATERIAL HANDLING

Material Handling
LaserGuard2 Collision Avoidance System
Application Bulletin #LaserGuard2

NOTE: It may be necessary to re-calibrate the LaserGuard2 system whenever the deceleration time is changed. Test all motions under worst case scenarios before putting the crane into operation.

Contact Magnetek Material Handling for applications involving other types of controls or options.

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