

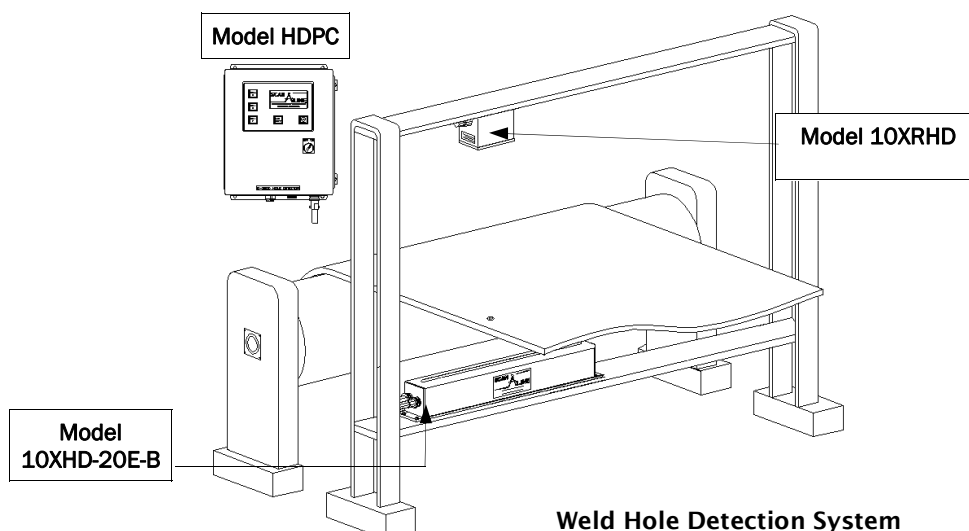
Weld Hole Detection System

The SCAN-A-LINE™ Weld Hole Detection System (WHD System) has overcome the typical problems associated with classic hole detection systems by using a high speed scanning LED light source to scan wide areas of the strip and can detect holes near the center or holes punched near the edge of the strip.

In the primary metals industry, coils are welded together to form a continuous strip to facilitate feeding into process lines, such as hot dip galvanizing or electroplating. In order to identify the weld zone and to track the weld through the process line a large hole, typically 0.250" [6.3mm] diameter and larger, is punched near the weld and a weld hole detector is used to signal the operator or process controller when the weld approaches the wind-up or other area of the process line.

The Weld Hole Detection System (WHD System) provides four relay outputs and indicator lamps on the Model HDPC for the weld hole detection and FAIL-SAFE. The time that the indicator lamp remains lit and the relay contact stays closed is approximately 1 second to permit a PLC or host computer time to see the signal. The Model HDPC supplies regulated power and full signal processing for single sensor, or up to three SCAN-A-LINE™ Model 10XHD-Series sensors of the same type and size. A fail-safe circuit will monitor the sensor power circuits and scan rate. An indicator lamp and relay contact closure signal normal system operation. This prevents missed holes due to cut cables, sensor damage, power loss or other system malfunctions.

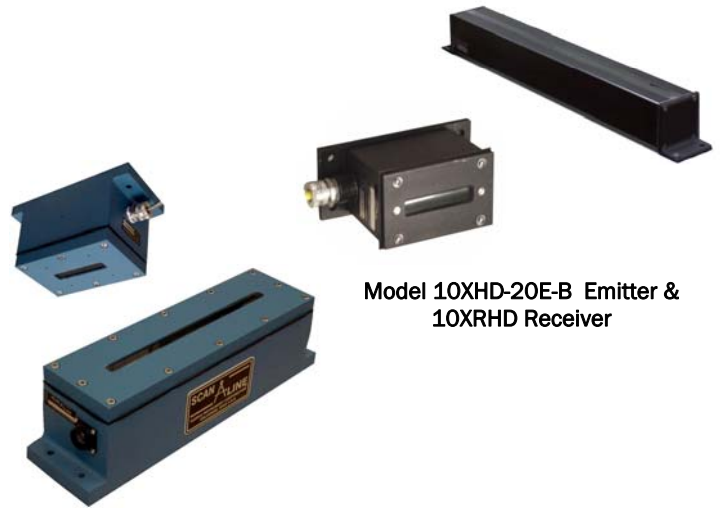
- **Analog Output:**
 - +/- 10VDC output provides a centerline when used with two sensors (Sensor A and Sensor B). When used with a three sensor system, Sensor A and Sensor B must be on the outbound sides of the strip. (Analog Resolution is 0.250" [6.3mm])
 - 0 - 10VDC output provides edge position when used with one sensor (Sensor A). (Analog Resolution is 0.250" [6.3mm])
- Hole detect event logging sent via RS-232 or RS-485 detailing, Hole event, Hole count, Sensor name, Emitter position and Footage
- **Automatic Operational Modes:**
 - Detects one or more holes with emitter completely covered by the strip.
 - Detects one or more holes with one edge of emitter not covered by the strip.
 - Detects one or more holes with both edges of emitter uncovered by the strip.
- Special FAIL-SAFE Circuitry Prevents Missed Holes
- Unique SCAN-A-LINE™ Light Emitting Diode (LED) scanning technology provides an extremely reliable light source.
- Locates Holes Near the Edge or near the Center of the Strip
- Resistant to Ambient Light Interference
- Dust, Mist and Vibration Tolerant
- Available in Standard or Ultra-Tough enclosure
- No moving parts



SCAN-A-LINE™ Weld Hole Detection System Components:

- 10XHD-Series Single to multiple Sensor System available in 10", 20", 30" and 40" lengths. Standard or Ultra-Tough enclosures.
- Hole Detection Processing Computer – Model HDPC.
- Up to 50 linear feet [15m] of cabling.

The WHD System consists of Model HDPC Hole Detection Processing Computer, the unique SCAN-A-LINE™ Model 10XHD-Series emitter(s), Model 10XRHD-Series receiver(s) and all applicable cabling to connect the receiver with the emitter and the emitter with the processing computer. The emitter-to-receiver cable length is 15' [4.4m] and the emitter-to-processing cable length is 20' [6m]. All 10XHD-Series emitters and receivers are available in standard duty and ULTRA-TOUGH™ enclosures.



Model 10XHD-20E-B Emitter & 10XRHD Receiver

Model 10XHD-10E-UT Emitter & 10XRHD-UT Receiver

Hole Detection Processing Unit – Model HDPC Features:

There are three automatically selected operational modes in the Model HDPC:

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|--------|--|
| Mode 1 | Detects one (1) or more holes with the emitter completely covered by the strip. |
| Mode 2 | Detects one (1) or more holes with one (1) edge of the emitter not covered by the strip. |
| Mode 3 | Detects one (1) or more holes with both edges of the emitter not covered by the strip. |
- Three automatically selected operational modes
 - Four relay outputs: Hole A, Hole B, Hole C and FAIL-SAFE
 - Quad Relay Extender (*Optional) : Enables relay closure time to be extended up to 10 seconds
 - ENABLE contacts to connect external switch to disable detection when no strip is present and to reset coil footage.
 - Switching Power Supply (+/-12VDC regulated for sensors and 5VDC regulated for logic circuits) and signal routing for up to three SCAN-A-LINE™ sensors.
 - Hole detect event logging sent via RS-232 or RS-485 detailing, Hole event, Hole count, Sensor name, Emitter position and Footage.
 - Same processor can be used in any hole detection location using and existing Model HDPC, HDPU Level 1, and HDPU Level 2 Processor without jumper changes or modifications.

SCAN-A-LINE™ Hole Detection – 10XHD-Series Sensor Features:

- Emitters are available in 10" , 20", 30" and 40" lengths
- Optional *ULTRA-TOUGH™* enclosures for protection in rugged environments.
- Unique SCAN-A-LINE™ Light Emitting Diode (LED) scanning technology provides an extremely reliable light source.
- High-frequency (20kHz) pulsed light source facilitates rejection of ambient light by the detector circuitry.
- SCAN-A-LINE™ 10XHD-Series sensors require minimum maintenance.



Model HDPC



Harris Instrument Corporation

155 Johnson Drive Delaware, OH 43015
Voice: 740-369-3580 Fax: 740-369-2653

info@harris-instrument.com www.harris-instrument.com