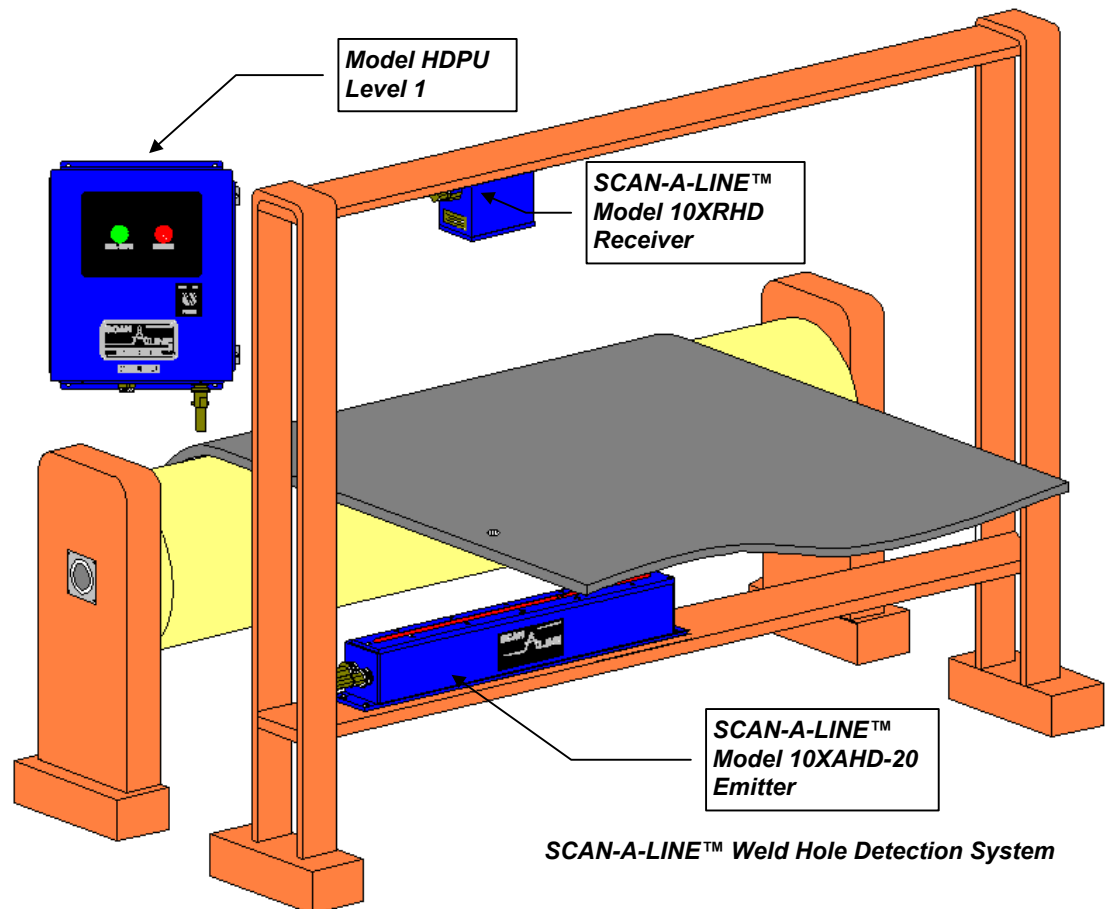


Weld Hole Detection System



SCAN-A-LINE™ Weld Hole Detection System

In the primary metals industry, coils of material are welded together to form a constant strip to facilitate feeding into a continuous process, such as hot dip galvanizing or electroplating. It is imperative that no material from the welded zone be supplied to the customer.

However, since the welds are ground smooth and plated (or coated) over, they often become invisible. For this reason, most manufacturers will punch marker holes at the weld location. A hole detector is then used to locate the weld hole.

Over the years, photo-electric sensors have been used to detect these marker holes. The difficulty with these simple detectors is their lack of reliability. If a strip moves slightly off-center, the marker hole may pass unnoticed. Current incandescent and fluorescent based light sources may burn out.

Many older detectors are not fast enough for modern high-speed operations. The faster lines operate, the more difficult hole detection becomes. More elaborate and expensive systems have evolved that employ multiple detectors. Some systems employ high speed television cameras. Many of these systems have proven to be unreliable and expensive.

The SCAN-A-LINE™ Hole Detection System (HD System) overcomes the typical problems associated with classic hole detection systems. The HD System consists of the Hole Detector Processing Unit (Model HDPU) and the unique SCAN-A-LINE™ Model 10XAHD sensor.

- **Special FAIL-SAFE Circuitry Prevents Missed Holes**
- **Multi-Mode Operation**
- **SCAN-A-LINE™ Solid State Reliability**
- **NO MOVING PARTS**
- **Low Maintenance**
- **Resistant to Ambient Light Interference**
- **Dust, Mist and Vibration Tolerant**
- **Easy to Install and Simple to Maintain**
- **No Light Sources to Replace**
- **Low Voltage System**

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

- ✓ 10XHD-Series Single- or Dual-Sensor System.
- ✓ Hole Detection Processing Unit – Model HDPU.
- ✓ Up to 50 linear feet [6.1m] of cabling.

The Weld Hole Detection System (HD System) provides customer ready relay contact closures and indicator lamps in the Model HDPU for the weld hole detection's. The time that the indicator lamp remains lit and the relay contact stays closed is customer adjustable from 0.05 seconds to 10.00 seconds. A fail-safe circuit monitors 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 or other system malfunctions.

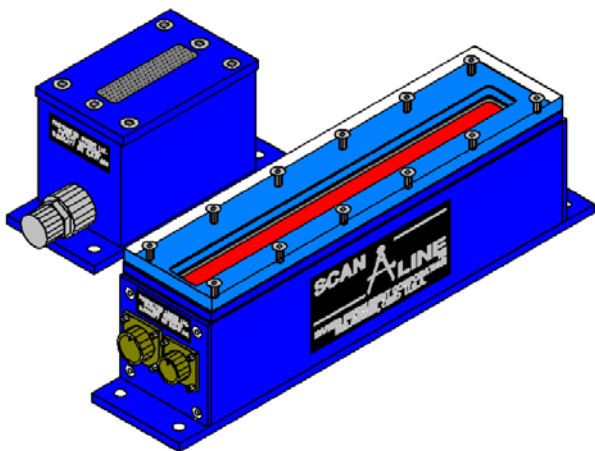
Hole Detection Processing Unit – Model HDPU Features:

There are five modes of operation in the Model HDPU:

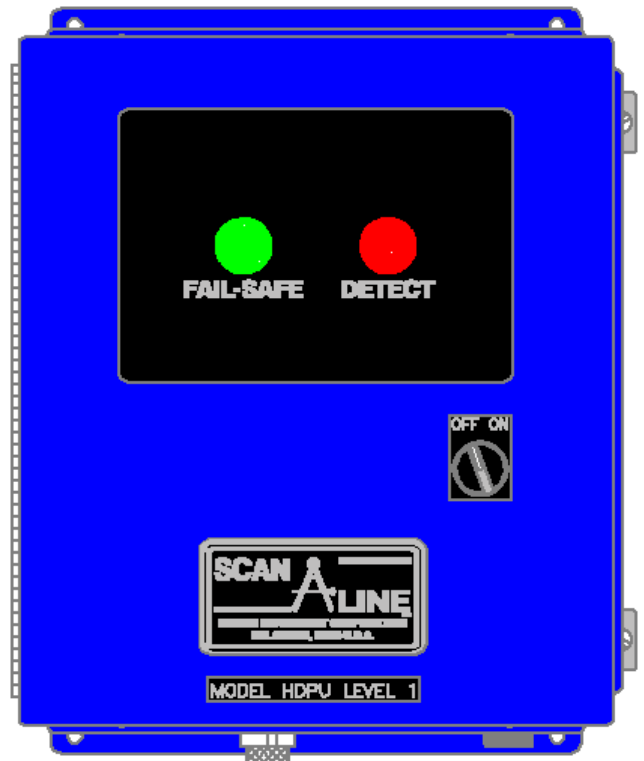
- Mode 1** *Detects one hole when strip completely covers emitter.*
- Mode 2** *Detects one hole when one end of emitter is not covered by strip.*
- Mode 3** *Detects two holes when strip completely covers emitter.*
- Mode 4** *Detects two holes when one end of emitter is not covered by strip.*

There are two configurations of the Model HDPU:

- Level 1** *Utilizes one 10XHD-Series sensor.*
- Level 2** *Utilizes two 10XHD-Series sensor.*



10XHD-Series Sensor – Model 10XAHD-10



Model HDPU Level 1

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

- ✓ Unique SCAN-A-LINE™ Light Emitting Diode (LED) scanning technology provides the reliability of a 275-year mean-time-between-failure (MTBF) light source.
- ✓ High-frequency (20kHz) pulsed light source facilitates rejection of ambient light by the detector circuitry.
- ✓ Emitters are available in 10" [254mm] increments from 10" to 40" [254mm to 1016mm].
- ✓ SCAN-A-LINE™ 10XHD-Series sensors require minimum maintenance.
- ✓ Optional *ULTRA-TOUGH™* enclosures for sensors – the ultimate in crash protection.

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