

Model HDPC

for Weld Hole and Small Hole Detection Systems

Overview

The SCAN-A-LINE™ Hole Detection Processing Computer – Model HDPC is a universal signal processor for all Scan-A-Line™ 10XHD-Series, 10XHD2000-Series and SHD-4000-Series Hole Detection Sensors. The Model HDPC is equipped to supply regulated power and full signal processing for single sensor, or up to three Scan-A-Line™ Hole Detection Sensors. The Model HDPC is programmed to determine the operational mode for each sensor automatically and thereby eliminates all needs for shuttering or manual system configuration. In addition to alarm relay outputs for each channel, the Model HDPC produces a digital report of hole location relative to the sensor scan and position along the length of the coil. The digital report is sent via RS-232 or RS-485 to a host computer or PLC.

When sensor 'A', 'B', or 'C' detects a 'hole event', the Model HDPC alarm function will close a normally open relay contact for that channel, and light the red Hole A, Hole B or Hole C detect lamp on the front panel. The alarm condition will remain set for approximately one (1) second to permit a PLC or host computer time to see the signal. During this alarm time, another hole cannot be detected on the same channel, however the other two channels are monitored and will also report hole events. When a 'hole event' occurs, a serial message is generated and sent to the RS-232 or RS-485 port. The serial message contains the Sensor ID (A, B, or C), the number of holes detected during the alarm scan, the 'X' position in the sensor's scan where the first hole occurred, and the 'Y' position along the web. A rotary encoder with a resolution of 128 pulses per revolution is required to produce the strip 'Y' position report.

The system operation is monitored by a Fail Safe circuit to insure that the sensors are receiving proper power and scanning sync signals. In the event that there is a power supply failure, short circuit on a sensor cable or defective sensor scan, the Normally Closed contact of the Fail Safe Relay will open and the Fail Safe green indicator lamp on the front panel will go out. This will insure proper operation at all times and cause an alarm condition if power is removed from the sensor.

Automatic Operational Modes

The Model HDPC provides three, automatic modes of operation. These modes are:

- Mode One:** Detects ONE (1) or more holes with emitter completely covered by strip.
- Mode Two:** Detects ONE (1) or more holes with ONE (1) edge of emitter not covered by strip.
- Mode Three:** Detects ONE (1) or more holes with both edges of emitter uncovered.



Benefits

- Eliminates the need for multiple processors in system configurations that use two or three sensors.
- Same Processor can be used in any hole detection location, without jumper changes or any modifications.
- One spare will work anywhere a Model HDPU or SHDPU (single or dual processor) is installed.
- Expanded capabilities of serial position reporting will aid in physically locating holes in a wound coil when required by QA procedures.
- Analog strip position information is available.



Model HDPC

Features

- **Sensor Compatibility:** 10XHD-Series Sensors
10XHD2000-Series
SHD-4000-Series Sensors
- **Four Relay Outputs:** Hole A, Hole B, Hole C and FAIL-SAFE
- **ENABLE contacts** to connect external switch to disable detection when no strip is present and to reset coil footage.
- **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.
- **Switching Power Supply** (\pm 12VDC regulated for sensors and 5VDC regulated for logic circuits) and signal routing for up to three SCAN-A-LINE™ sensors.
- **Model HDPC Enclosure Dimensions:** 12" [305mm] wide x 14" [356mm] tall x 6" [152mm] deep.

Options

- **Quad Relay Extender Option:** Enables relay closure time to be extended up to 10 seconds

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