

# Model LCPU

## Loop Control Processing Unit

## Overview

The SCAN-A-LINE™ Loop Detection Processing Unit - Model LCPU from Harris Instrument Corporation is specifically designed for accumulator loop systems. Built for operation in loop accumulators up to forty feet [12.2m] long to provide up to  $\pm 20$  inches [508mm] position control range with a forty-inch [101.6cm] Hole Detection - 10XHD-Series sensor configured with a 10X-Series Long Range Receiver - Model 10XRA-LRR. Note that when the active control range is smaller than  $\pm 20$  inches [508mm], a ten, twenty or thirty inch [254mm, 508mm, or 762mm] sensor may be used. The Model LCPU provides all necessary power and signal processing for one Hole Detection Sensor with Long Range Receiver - Model 10XAHD-LRR.

The FAIL-SAFE circuitry in the Model LCPU monitors sensor scan rate and system power supplies to alert the operator to a sensor system malfunction *before* an incorrect control signal causes an accumulator overflow. The FAIL-SAFE circuitry contains normally-open (NO) and normally-closed (NC) relay contacts. Excess error limits are also available as NO relay contacts closures on the bargraph display. The analog outputs from the Model LCPU are one unipolar (0 to 10VDC) and one bipolar (-10VDC to +10VDC). The unipolar analog will read +5VDC when the emitter is half-blocked by the accumulator loop and +10VDC when the emitter is fully covered. The bipolar will read -10VDC when the emitter is uncovered by the loop and +10VDC when the emitter is fully covered.

### Display

A vertical bargraph display mounted on the front panel (may be remotely mounted with BGA50/V Option) displays the loop position, FAIL-SAFE status and positive or negative excess error limits. Two normally-open (NO) relay contacts are provided for excess error limits. The bargraph display may be mounted remotely with the BGA50/V Option.

### Options

- **220 Volt AC Operation (220 Option):** No-charge option for 220VAC installation.
- **Remote Display (BGA50/V Option):** Remote mounting of the vertical bargraph display. Includes sample cable and mounting instructions.
- **Line Receiver Option:** To drive Emitter to Processor cables longer than 50 linear feet.



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## Features

- **Sensor Compatibility:** Model 10XHD-Series
- **Two FAIL-SAFE Relay Outputs:** One Normally-Open (NO) and One Normally-Closed (NC).
- **Limits Relay Outputs:** Via BGA Option, Normally-Open (NO).
- **Position Analog Outputs:** Bipolar ( $\pm 10$ VDC) & Unipolar (0-10VDC).
- **105VAC to 120VAC (220VAC available) Linear Power Supply** ( $\pm 12$ VDC regulated for sensor and 5VDC regulated for logic circuits) and signal routing for one Model 10XAHD Sensor.
- **Enclosure Dimensions:** NEMA-style Steel 12" [305mm] x 14" [356mm] x 6" [152mm].



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