Using the ECA100/ECA101 With a Thread Detection Probe

The ECA100 or ECA101, in combination with a Thread Detection probe, can detect the presence/absence of threads in a hole in ferrous materials.

Consult the ECA100 or ECA101 User Guide for basic connection and operating instructions.

Setup/Calibration

Overview

The ECA100/ECA101 is adjusted for 1 VDC when inserted in an unthreaded hole, and approximately 4 VDC when inserted in a threaded hole. The output switch threshold voltage is then adjusted to near 2 VDC. This assures that the output switch will be in different conditions (open/closed) for unthreaded and threaded holes.

The procedure will require a threaded and unthreaded sample for the calibration and a voltmeter connected to the ECA100/ECA101 analog output voltage.

Procedure

1. Calibrate ZERO and GAIN
    a. Insert the probe into an uthreaded hole.
    b. Adjust the ZERO control on the ECA101 driver for 0.0 VDC output.
    c. Insert the probe into a threaded hole. Adjust the GAIN control on the ECA101 driver for 3 VDC output.
    d. The ZERO (unthreaded) adjustment will shift when GAIN is adjusted
    Repeat steps 1 and 2 and readjust as necessary.
2. Adjust Switched Output
    a. Insert the probe into the threaded hole.
    b. Temporariliy adjust the ZERO control for 2 VDC output
    c. Adjust the SWITCH control to the point where the LED just switches from Green to Red.
    d. Readjust the ZERO control for 4 VDC output
3. Setup Complete

The Switched Output will be closed when the probe is inserted in a threaded hole, and it will be open when inserted in an unthreaded hole.

Mechancial Considerations

The probe must be reasonably well centered within the hole under test. Off-center positioning introduces small errors in the ECA100/ECA101 output voltage which could errantly trigger the switched output.

For details, please consult the Lion Precision TechNote *LT02-0015 ThreadSense Probe Centering Errors* at www.lionprecision.com > click on Technical Library.

M015-4552 Rev 03

Using the ECA100/ECA101 With a Thread Detection Probe

The ECA100 or ECA101, in combination with a Thread Detection probe, can detect the presence/absence of threads in a hole in ferrous materials.

Consult the ECA100 or ECA101 User Guide for basic connection and operating instructions.

Setup/Calibration

Overview

The ECA100/ECA101 is adjusted for 1 VDC when inserted in an unthreaded hole, and approximately 4 VDC when inserted in a threaded hole. The output switch threshold voltage is then adjusted to near 2 VDC. This assures that the output switch will be in different conditions (open/closed) for unthreaded and threaded holes.

The procedure will require a threaded and unthreaded sample for the calibration and a voltmeter connected to the ECA100/ECA101 analog output voltage.

Procedure

4. Calibrate ZERO and GAIN
    a. Insert the probe into an uthreaded hole.
    b. Adjust the ZERO control on the ECA101 driver for 0.0 VDC output.
    c. Insert the probe into a threaded hole. Adjust the GAIN control on the ECA101 driver for 3 VDC output.
    d. The ZERO (unthreaded) adjustment will shift when GAIN is adjusted
    Repeat steps 1 and 2 and readjust as necessary.
5. Adjust Switched Output
    a. Insert the probe into the threaded hole.
    b. Temporariliy adjust the ZERO control for 2 VDC output
    c. Adjust the SWITCH control to the point where the LED just switches from Green to Red.
    d. Readjust the ZERO control for 4 VDC output
6. Setup Complete

The Switched Output will be closed when the probe is inserted in a threaded hole, and it will be open when inserted in an unthreaded hole.

Mechancial Considerations

The probe must be reasonably well centered within the hole under test. Off-center positioning introduces small errors in the ECA100/ECA101 output voltage which could errantly trigger the switched output.

For details, please consult the Lion Precision TechNote *LT02-0015 ThreadSense Probe Centering Errors* at www.lionprecision.com > click on Technical Library.

Lion Precision© 2012