INTERLINK
E L E C T R O N I C S®

Sensor Technologies

Features and Benefits

- Rugged design - Over 1M touch activations over entire sensor area with no degradation observed.

- Measures position and pressure simultaneously

- Easy to integrate

- Low power consumption

Contact Us

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## FSLP Sensor for Position and Force Applications

Description
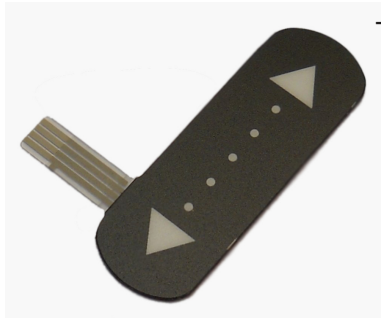
The Force Sensing Linear Potentiometer (FSLP) Sensor is Interlink's solution for capturing position and force simultaneously in compact applications. The sensor's tough, moisture resistant surface can be used with a finger, stylus, or glove; even in harsh environments.

The Force Sensing Linear Potentiometer (FSLP) simplifies input design, saves critical room, and helps save battery life. A battery operated demo is available. Call us for more information 805-484-8855.

Sensor Construction
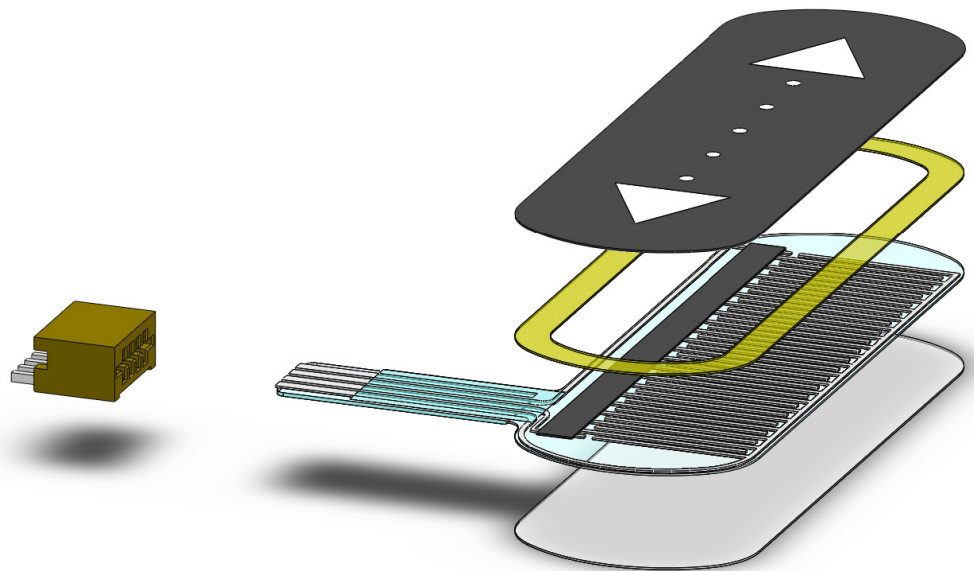
The Force Sensing Linear Potentiometer (FSLP) Sensor is constructed of five layers:

- A protective graphic layer with adhesive
- A top force sensing layer with Interlink's proprietary force sensing resistor printed ink (FSR)
- A membrane switch spacer layer
- A printed silver conductor layer
- A rear adhesive layer

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Device Characteristics

Parameter	Value
Actuation Force*	~0.2N min
Force Sensitivity Range*	~0.2N - 20N
Force Resolution	Continuous (analog)
Force Repeatability Single Part	+/- 2%
Force Repeatability Part to Part	+/- 6%
Non-Actuated Resistance	>10 Mohms
Hysteresis**	+10% Average $(R_{F+} - R_{F-})/R_{F+}$
Device Rise Time	< 3 microseconds
Long Term Drift** 1kg load, 35 days	< 5% log10 (time)
Operating Temperature Performance** Cold: -40C after 1 hour	-5% average resistance change
Hot: +85C after 1 hour	-15% average resistance change
Hot Humid: +85C 95RH after 1 hour	+10% average resistance change
Storage Temperature Performance** Cold: -25C after 120 hours	-10% average resistance change
Hot: +85C after 120 hours	-5% average resistance change
Hot Humid: +85C 95RH after 240 hours	+30% average resistance change
Tap Durability 1 Million actuations, 500g, 4Hz Ø 1.2mm Delrin Stylus	Fully functional during and after durability testing
Standing Load Durability** 2.5kg for 24 hours	-5% average resistance change
Linearity:	Voltage on sense line is proportional to actuation position to within +/-3% over active area.
EMI	Generates No EMI
ESD	Not ESD sensitive
UL:	All materials UL grade 94 V-1 or better
RoHS:	Compliant

Specifications are derived from measurements taken at 1000 grams, and are given as (one standard deviation / mean), unless otherwise noted.

*Typical value. Force dependent on actuation interface, mechanics, and measurement electronics

**Performance values are for the force sensing portion of the sensor. The position sensing component is minimally affected by environmental and durability factors.
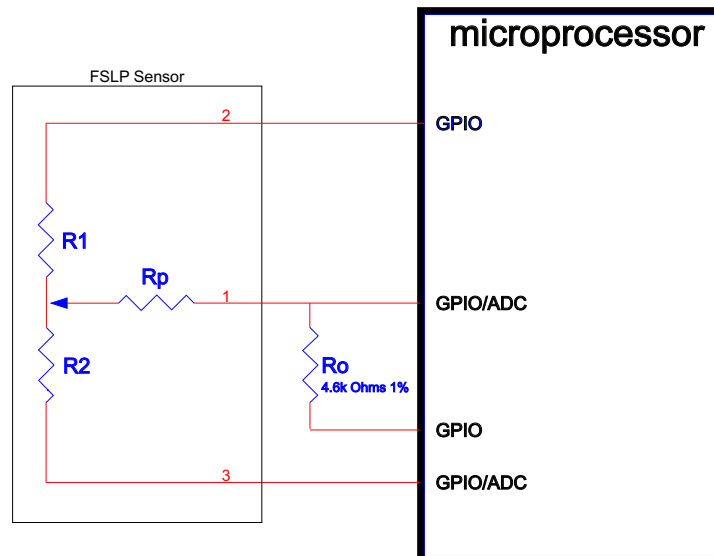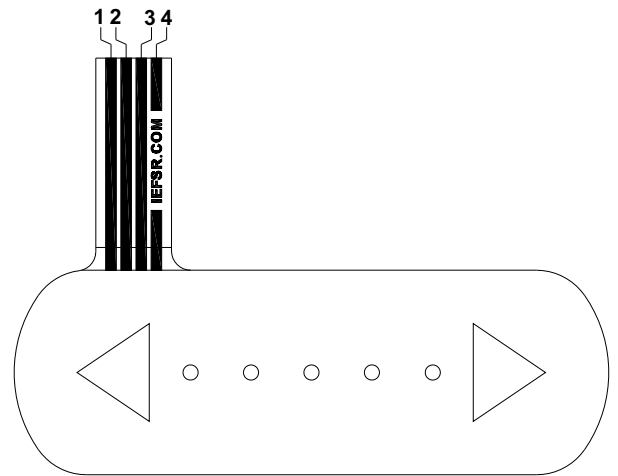
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Connector Information

Recommended tail connector:
JST 4-pin SMT connector
(JST PN# 04FM-1.0SP-1.0-TF)
or equivalent.

Application Information

The Interlink Electronics FSLP Sensor can measure position and pressure. The connection to the measuring microprocessor is very simple and requires only one external component. The microprocessor will need two general purpose IO (GPIO) pins and two GPIO/analog-to-digital converter (ADC) pins. The GPIOs should be able to go into high-impedance mode (>1MΩ) and the ADCs should be able to measure from 0 to Vcc.

PINOUT	
PIN #	REF
1	SENSE LINE (SL)
2	DRIVE LINE 1 (D1)
3	DRIVE LINE 2 (D2)
4	NOT CONNECTED (NC)

Additional application and integration details are found in the FSLP Integration Guide, which is downloadable from www.interlinkelectronics.com/Support

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FSLP Sensor
Part Number:

FSLP Sensor, 34-00003
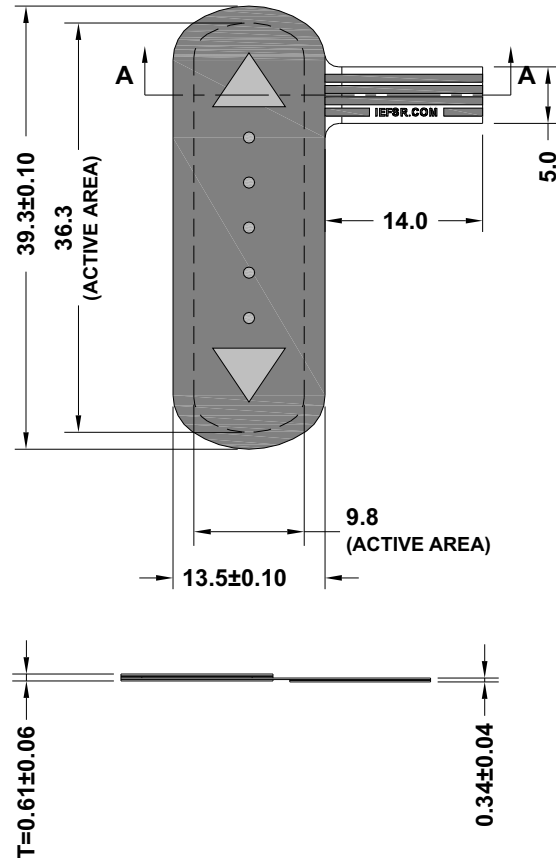
• Black top layer and white graphics

Other Available
Part Numbers:

Hardware Development Kit, 54-00019

This hardware development kit includes:

• FSLP Demo board (Qty. 1 Each)

• FSLP Sensor (Qty. 10 Each)

• 4 Pin Connector (Qty. 5 Each)

• FSLP Integration Guide

• FSLP Sensor Data Sheet

Sensor Mechanical Data

Cross Section Diagram

SECTION A-A
LAYER STACK-UP