FSLP Sensor Data Sheet
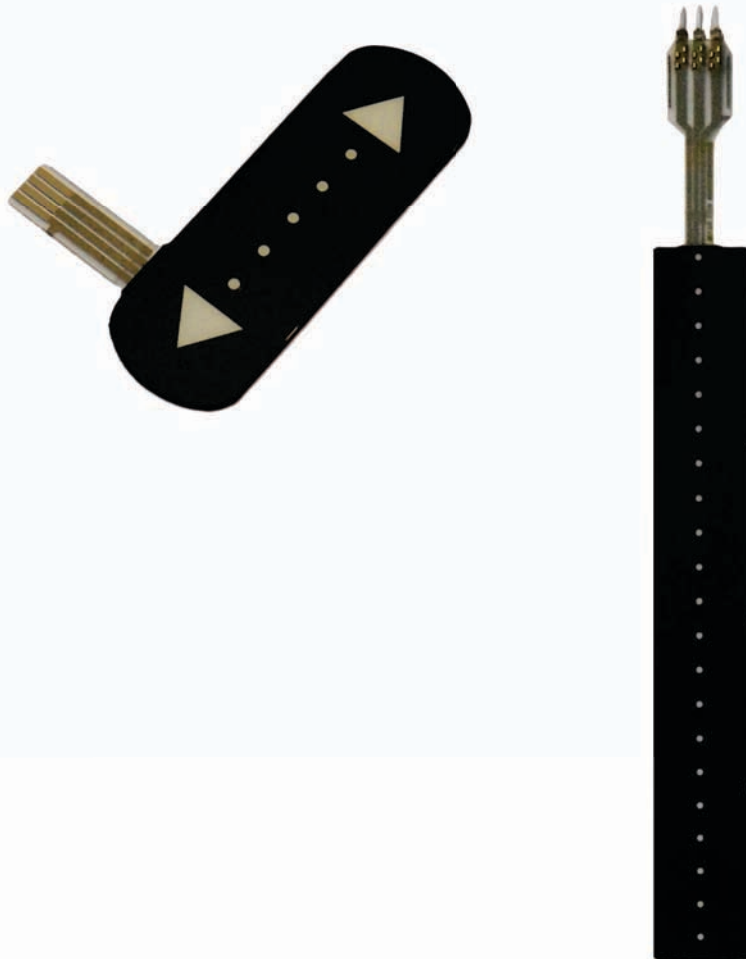## Force Sensing Linear Potentiometer

Description

Features and Benefits
- Rugged design - Over 1M touch activations over entire sensor area with no degradation observed.
- Measures position along a circular path
- Easy to integrate

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

P/N: 94-00019 Rev. E

Device Characteristics

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% (Single Batch)
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% log $_{10}$(time)

Operating Temperature Performance**
  Cold: -40ºC after 1 hour
  Hot: +85ºC after 1 hour
  Hot Humid: +85ºC 95RH after 1 hour
	
	-5% average resistance change
	-15% average resistance change
	+10% average resistance change

Storage Temperature Performance**
  Cold: -25ºC after 120 hours
  Hot: +85ºC after 120 hours
  Hot Humid: +85ºC 95RH after 240 hours
	
	-10% average resistance change
	-5% average resistance change
	+30% average resistance change

Tap Durability
  1 Million actuations, 500g,
  4Hz Ø 1.2mm Derlin 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.

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.
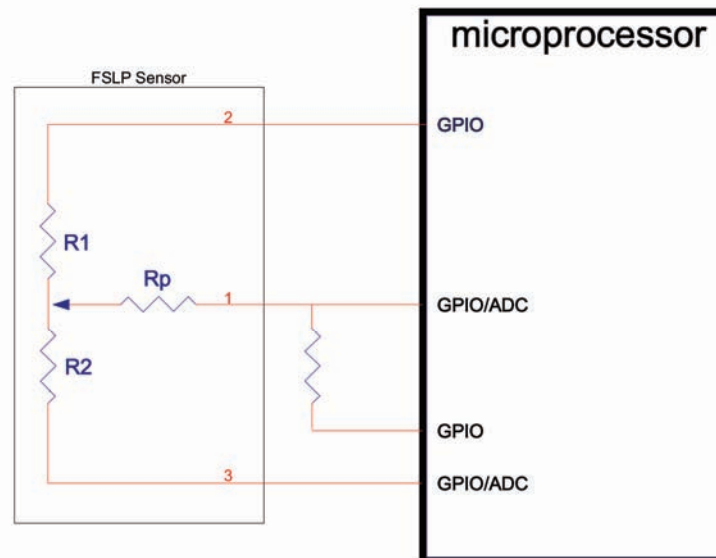
PINOUT		
STANDARD FSLP	10 cm FSLP	
PIN #	PIN #	REFERENCE
1	3	SENSE LINE (SL)
2	1	DRIVE LINE 1 (D1)
3	2	DRIVE LINE 2 (D2)
4	4	NOT CONNECTED (NC)

FSLP Sensor Part Number

FSLP Sensor, 34-00003

• Black top layer with white graphic

Sensor Mechanical Data

0.34±0.04 (STIFFENER)

T=0.61±0.06

A

A

39.3±0.10

36.3 (ACTIVE AREA)

14.0

5.0

9.8 (ACTIVE AREA)

13.5±0.10

GRAPHIC SUBS
GRAPHIC ADH
FR4 SUBS
SPACER ADH
PET SUBS
REAR ADH

STIFFENER ADH
STIFFENER SUBS

SECTION A-A
LAYER STACK-UP
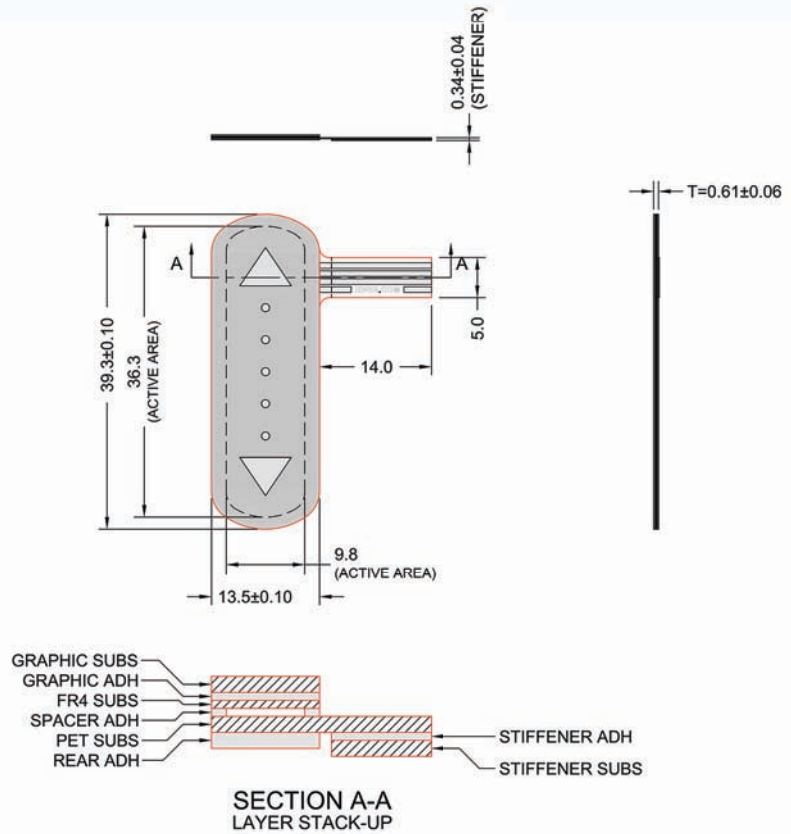
Exploded View

Orderable Part Numbers

Hardware Development Kit, 54-00019

This Hardware Development Kit includes:
• FSLP Demo Board (Qty. 1)
• FSLP Sensor (Qty. 10)
• FSLP 10cm Sensor (Qty.10)
• 4 Pin Connector (Qty. 5)
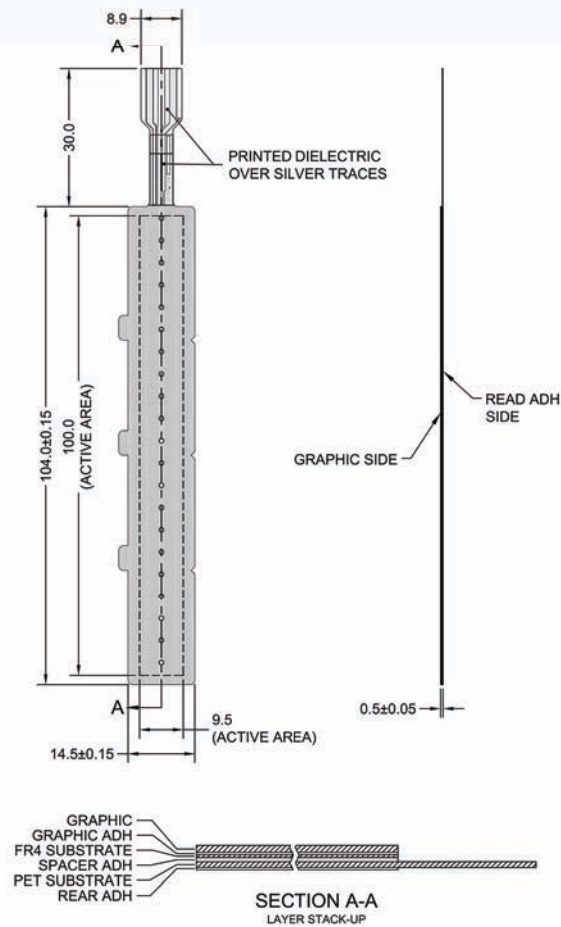• USB Flash drive with product literature
  (Qty. 1)

FSLP 10cm Sensor with Female Contacts, PN 34-00022
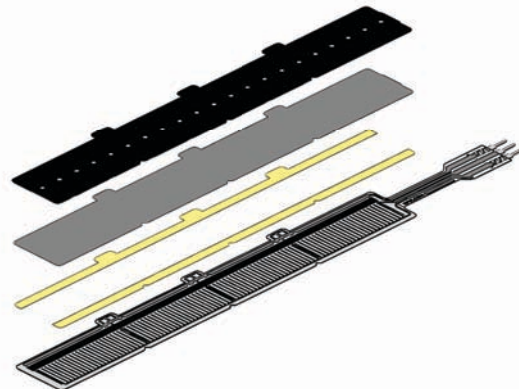
FSLP 10cm Sensor with Solder Tabs, PN 34-00024

FSLP 10cm Sensor with Female Contacts & Housing, PN 34-00025

FSLP 10cm Sensor with FFC Tail, PN 34-0034

Sensor Mechanical Data

Exploded View

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