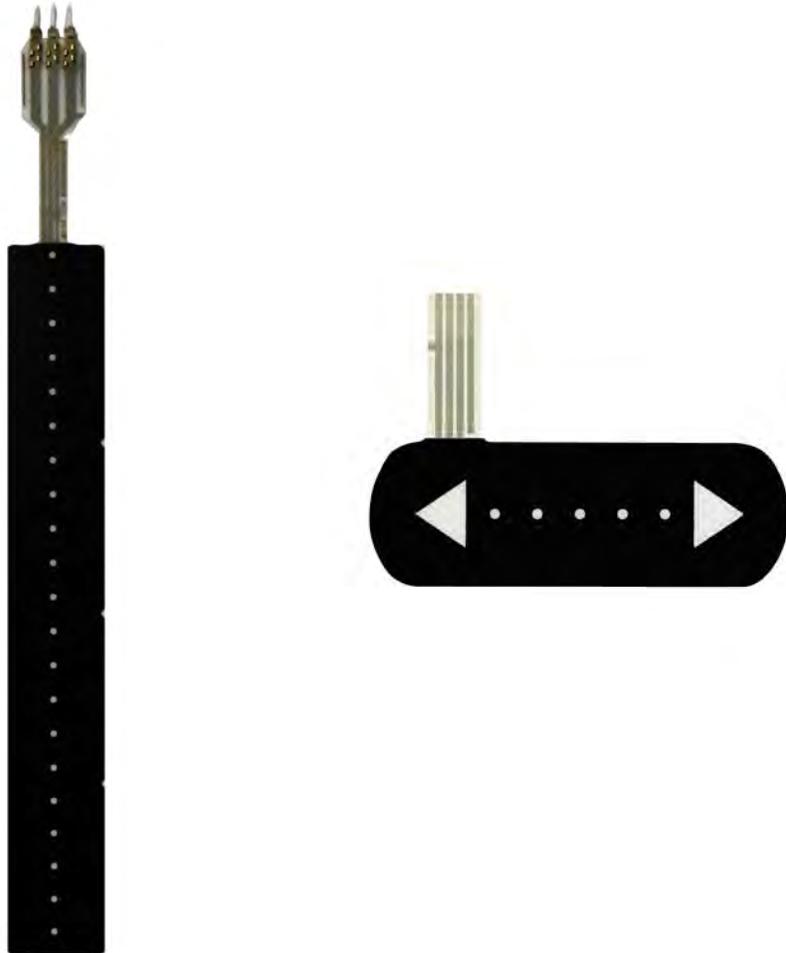# INTERLINK
E L E C T R O N I C S®

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

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 at +1 805-484-8855

P/N: PDS-10001-B

Human-Machine Interface Solutions for a Connected World

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 (RF+ - RF-)/RF+
Device Rise Time	<3 microseconds

Long Term Drift**

1kg load, 35 days	< 5% log 10(time)

Operating Temperature Performance**

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

Storage Temperature Performance**

Cold: -25ºC after 120 hours	-10% average resistance change
Hot: +85ºC after 120 hours	-5% average resistance change
Hot Humid: +85ºC 95RH after 240 hours	+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.
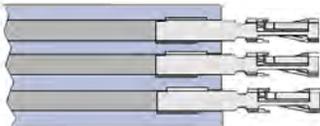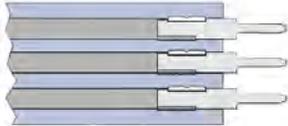
Connector Information

Recommended tail connector:
JST 4-pin SMT connector
(JST PN# 04-FM-1.0SP-1.9-TF)
or equivalent for FFC option.

Female Tin Contacts:
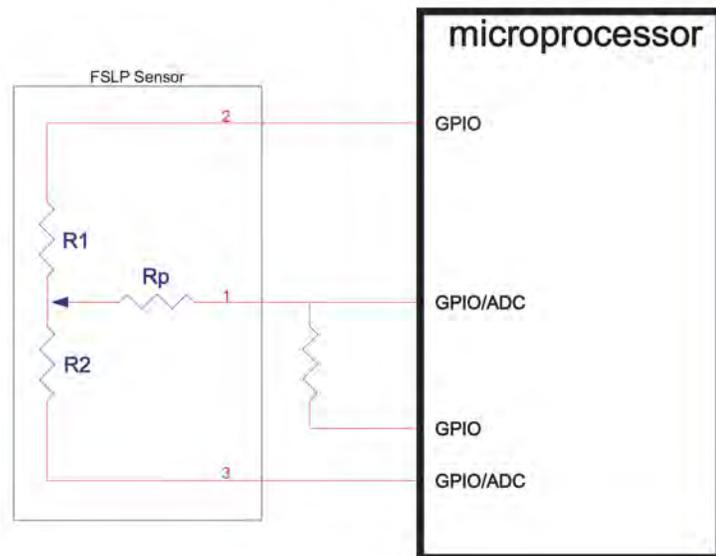PN: TE 2-487-7406-4

Solder Tabs
PN: TE 1-88997-2

Female Tin Contacts with 3
Pin Housing
PN: TE 2-487406-4
PN: TE 2-487378-2

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)

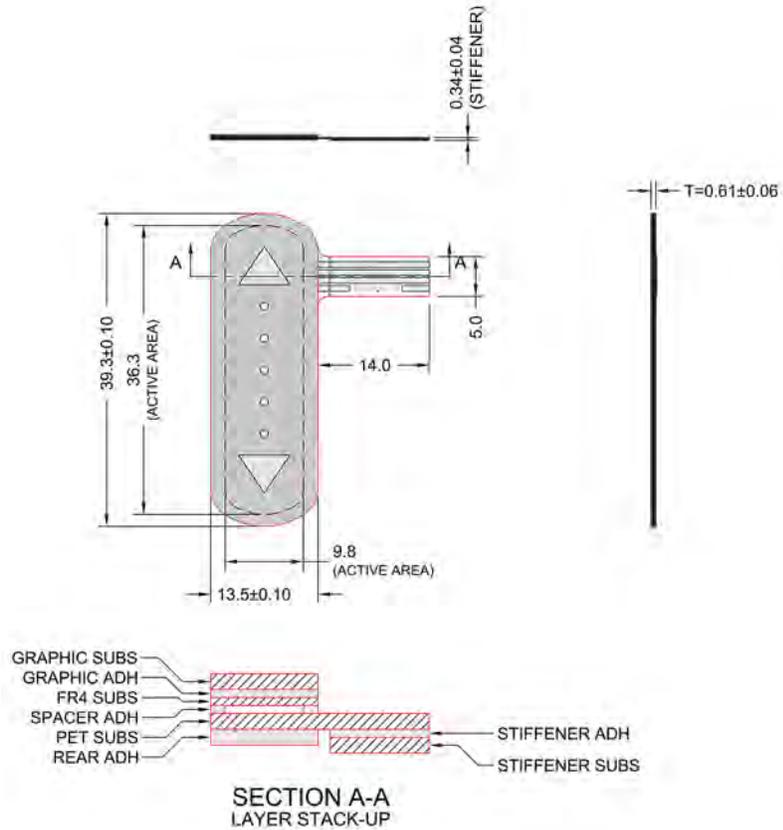# FSLP Sensor Data Sheet
Force Sensing Linear Potentiometer

FLSP Sensor for Position and Force Applications
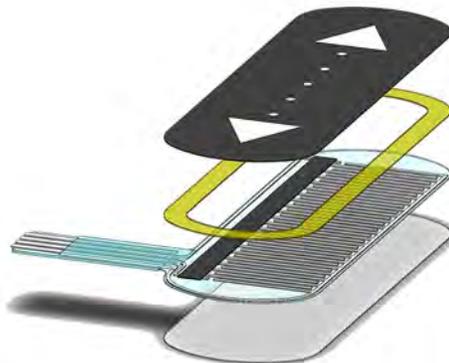
FSLP Sensor Part Number

FSLP Sensor, 34-00003
 • Black top layer with white graphic

Sensor Mechanical Data

SECTION A-A
LAYER STACK-UP

Exploded View

FLSP Sensor for Position and Force Applications

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)
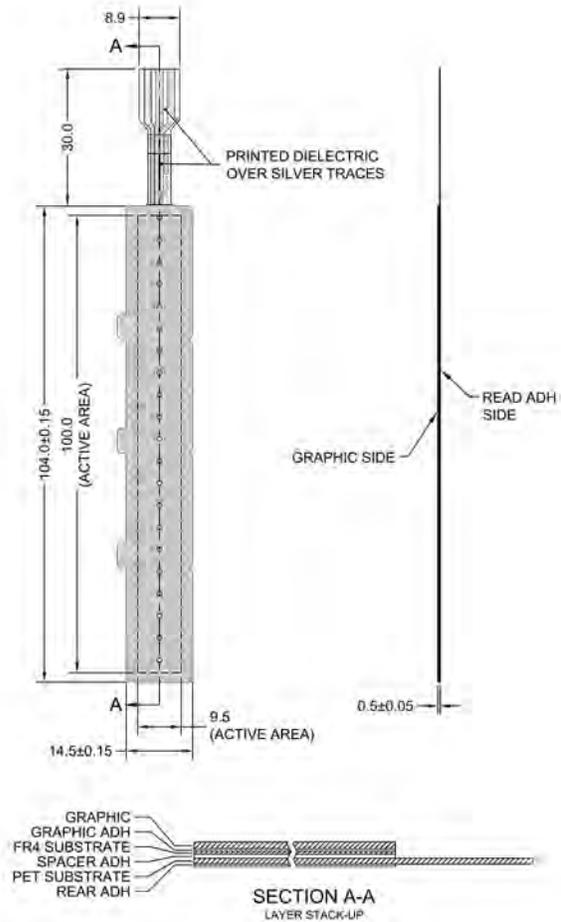- USB Flash drive with product literature (Qty. 1)

FLSP 10cm Sensor with Solder Tabs, PN 34-00022

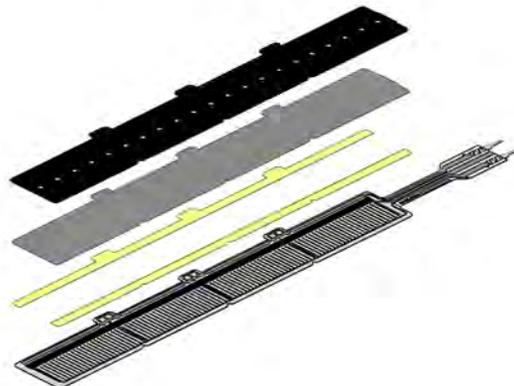**FSLP 10cm Sensor with Female Contacts**, PN 34-00023

FSLP 10cm Sensor 4-Pin Tail, PN 34-00034

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

Sensor Mechanical Data

Exploded View

Contact Us

United States Corporate Office
Interlink Electronics, Inc.
1267 Flynn Rd.
Camarillo, CA 93012, USA
Phone: +1.805.484.8855
Fax: +1.805.484.9457
InterlinkElectronics.com
Sales & Support: sales@iefsr.com