

DATASHEET

# **FORCE SENSITIVE CAPACITOR**

FSC-Series

Deformable force sensitive capacitors



[leaptechnology.com](http://leaptechnology.com)

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# **FSC – FORCE SENSITIVE CAPACITORS**

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## PRODUCT DESCRIPTION

The LEAP Technology force sensitive capacitors (FSCs) are designed using proprietary processes, allowing human-scale forces to be reliably and repeatably detected.

Unlike other force sensitive components, the FSCs from LEAP are both highly repeatable and deformable. This allows relatively simple sensor forms to conform to complex shapes and surfaces whilst maintaining performance.

The device is available in two standard variants each with a range of sizes. One of which contains electronics, converting the capacitance directly to a voltage signal, and the other being a bare strain gauge (capacitor) which can be measured by the LEAP WE Series measurement electronics.

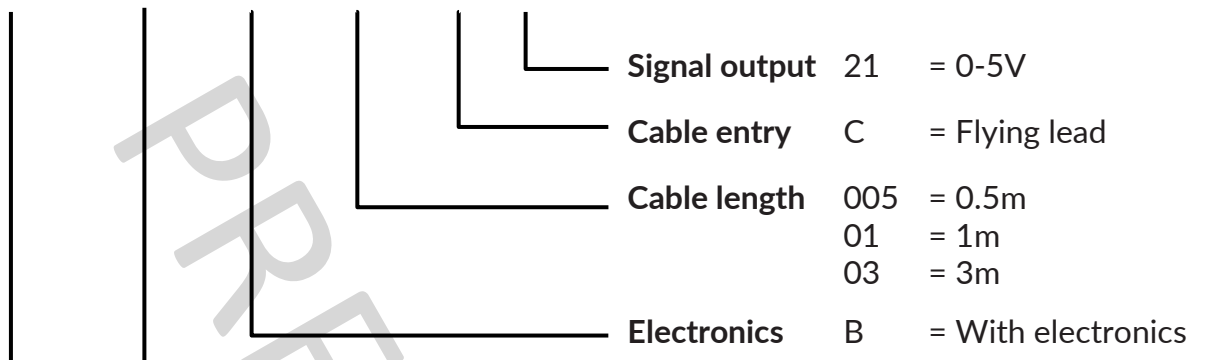
## APPLICATION EXAMPLES

- Ergonomics, grip force etc.
- Roll to roll manufacturing
- Packaging
- Compression garments
- Smart wootwear
- Prosthetics
- Sports equipment



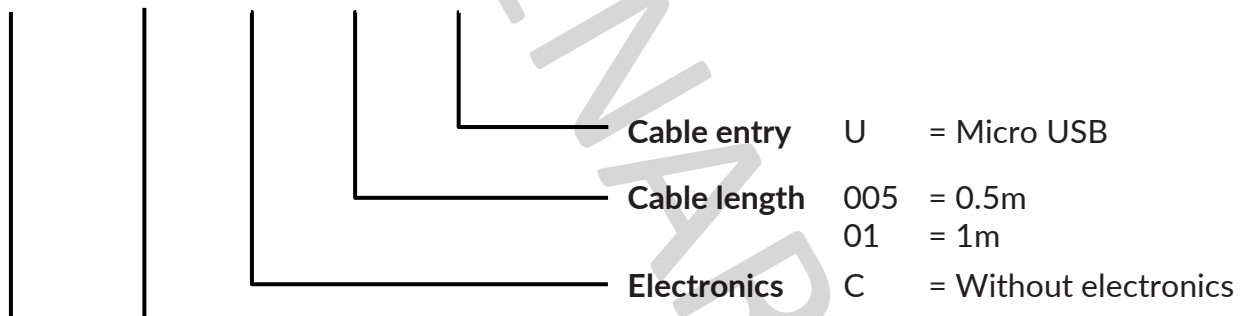
# PART NUMBER

FSC□□-□□□-B-□□□-C-21



		Nominal max force (dN)		
		1	10	150
Sensing Dia (mm)	16	●	●	
	25		●	●

FSC□□-□□□-C-□□□-U



		Nominal max force (dN)		
		1	10	150
Sensing Dia (mm)	16	●	●	
	25		●	●

Order FSC\_\_-\_\_\_-C as spare sensors for connection to the WE series measurement electronics

# FEATURES AND OPTIONS

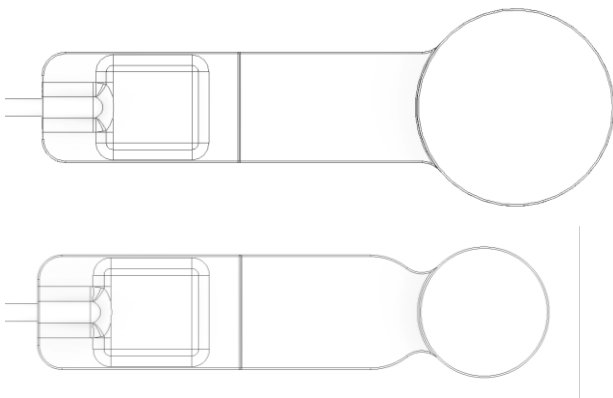
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## FSC

- Low profile
- High resolution
- Can be deformed to fit application
- No sharp edges

## FSC with built in electronics

- Flexible voltage supply
- Easy to use analogue output
- 1000Hz update frequency
- Custom non-linear programming available on request
- Integrated bandpass noise filter



## Customisation and options:

- User configurable capacitance range represented by the 0-5V signal
- Other shapes and sizes
- High temperature version (up to 200°C)
- Material samples for adhesive or integration testing

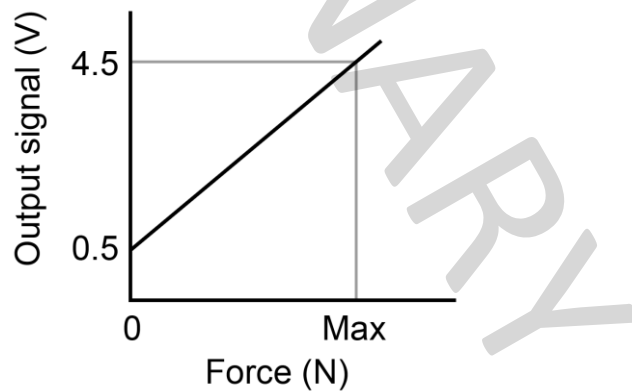
# SPECIFICATIONS

## Mechanical

	FSC16-1	FSC16-10	FSC25-10	FSC25-150
Nominal maximum force (N)	10	100	100	1500
Operating temperature	0 to 70°C			
Protection rating	Equivalent to IP67			
Weight, not including cable (g)	10	8	15	10
Force sensitive area thickness (mm)	TBC			

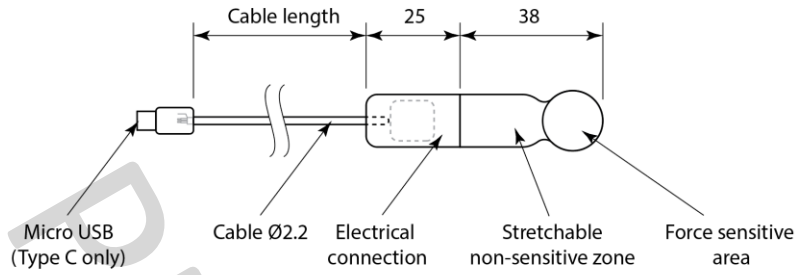
## Electrical (Embedded electronics version only)

	FSC16-1	FSC16-10	FSC25-10	FSC25-150
Sensitivity (V/N)	0.4	0.04	0.04	0.027
Temperature factor	-0.15% / °C			
Output signal	0 to 5V			
Update rate	1000Hz			
Supply voltage	2.25 to 5.25 V			
Power consumption	0.175W			

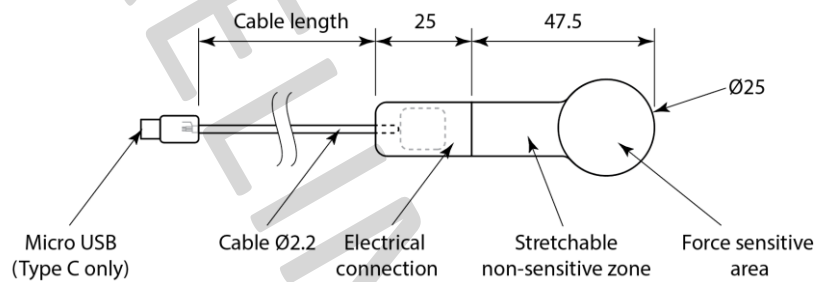


# PRODUCT DIMENSIONS

## FSC-16



## FSC-25



All dimensions in mm and nominal

# ELECTRICAL CONNECTIONS

## FSC□□-□□□-B

- 2.5 to 5.25V (supply) - White
- GND (supply) - Yellow
- $A_{GND}$  (signal) - Blue
- $A_{OUT}$  (signal) - Green
- Screen - Uninsulated

## FSC□□-□□□-C

Micro USB for connection to LEAP WE series electronics

Note:

Signal cable length and environment can affect signal quality. We advise experimentation.

# CONTACT US

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