

DATASHEET

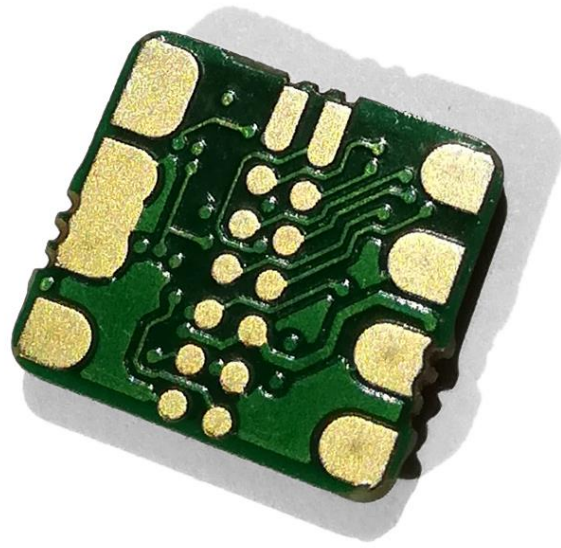
# **MINIATURE SENSOR ELECTRONICS**

ESE-Series

Miniature capacitance to voltage converter



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



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# | ESE – Capacitance to Voltage converter

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## PRODUCT DESCRIPTION

Measuring the value of capacitive stretch sensors and strain gauges can be troublesome due to their series unusual resistance characteristics. If your application requires high accuracy measurement of this kind of sensor, this device is an ideal compact and precise converter circuit. Being part of a platform design makes application specific solutions simple to develop.

The circuit is designed to convert changes in the sensor's capacitance, caused by their deformation, into an analogue voltage signal linearly representing these changes.

Using the circuit can eliminate the need for custom development of a dedicated capacitance measurement circuit for your application, reducing time to market.

The measurement range of the circuit is software configurable. This adds versatility, allowing the circuit to measure all sensors, small and large, whilst optimising the measurement accuracy.

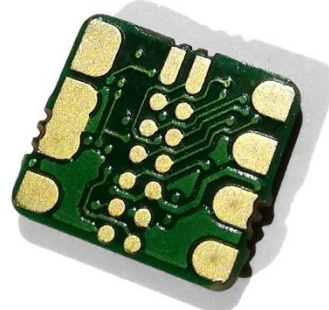
## APPLICATION EXAMPLES

- Portable sensor products
- Smart textiles
- Rubber component monitoring
- Wearable motion capture  
(Sports, wellness, rehabilitation)
- Respiration
- Robotics monitoring and control
- Structural health monitoring

# FEATURES AND OPTIONS

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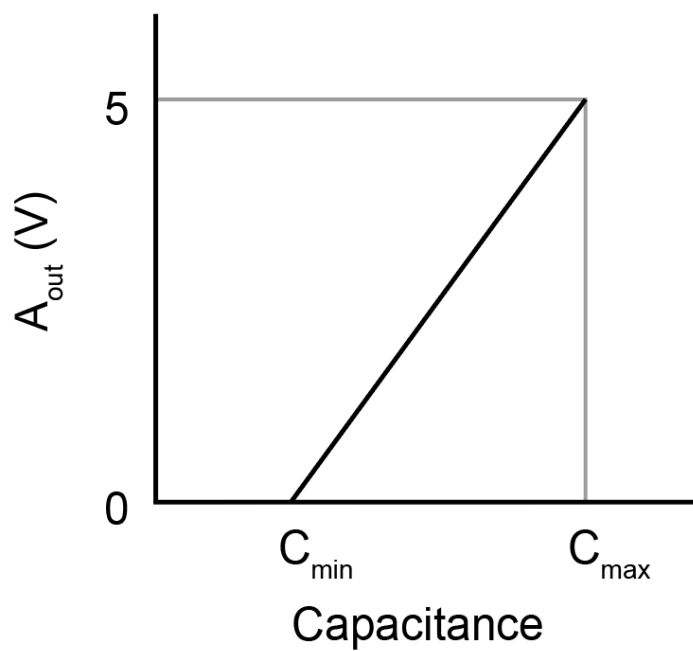
- Small size
- Can be overmoulded or incorporated into the application
- Measures a large range of sensor sizes
- Flexible voltage supply
- Can measure LEAP technology sensors as well as 3rd party capacitive sensors.
- UART controllable
- Software configurable capacitance range
- 1000Hz update frequency
- Custom non-linear programming available on request
- Integrated bandpass noise filter



# SPECIFICATIONS

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Measurement range	20 to 4200pF
Power supply	2.5 to 5.25V
Output signal	0 to 5V
Update rate	1000Hz
Operating temperature	-40 to 85°C
Protection rating	None (IP6X available on request)
Power consumption	0.175W

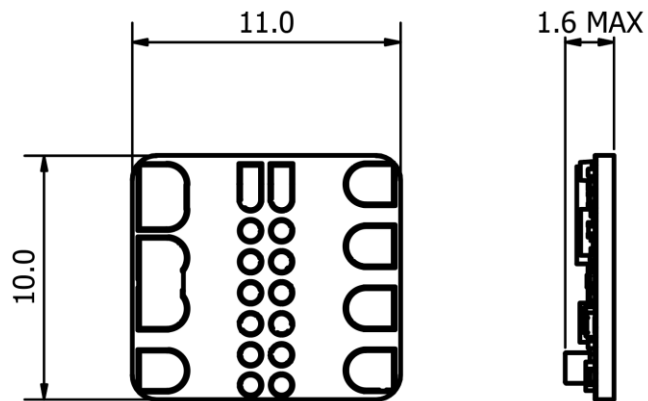


## NOTES:

- User configurable capacitance range represented by the 0-5V signal

# PRODUCT DIMENSIONS

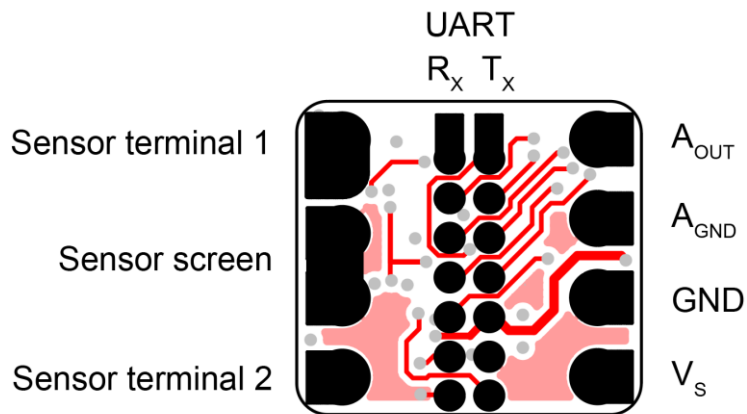
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All dimensions in mm and nominal

# ELECTRICAL CONNECTIONS

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## NOTES:

- Sensor terminals are indicated in LEAP Sensor Datasheets
- See product manual for user programmable settings through the UART
- FW customisation available on request

# CONTACT US

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leaptechnology.com

Bjerndrup Bygade 23, 6200 Aabenraa, Denmark

Phone: +45 21 78 22 31

E-mail: [contact@leaptechnology.com](mailto:contact@leaptechnology.com)

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