

Sensing solutions and custom capabilities

European leader in advanced
technology solutions



Acal BFi offer a unique blend of leading-edge products, technical support and design integration



Acal BFi offer a unique combination of design expertise and leading-edge technologies from our comprehensive range of sensors. We work with World-class suppliers, and act as your technical partner to design, consult and integrate the best sensor solution for any application.

Key markets and applications

IoT: Our comprehensive range of innovative sensors are capable of measuring almost any physical parameter in a wide range of applications, from harsh environment and industrial connectivity to HVAC and smart home. For more details on our full IoT capabilities, please visit www.acalbfi.com/IoT

Environmental, HVAC, safety and air-quality monitoring: With our extensive portfolio of temperature, humidity, pressure, CO₂, VOC and particle sensors combined with application-specific evaluation boards, our sensors are capable of accurately measuring any of these parameters in any environment.

Oil, gas and marine: From heavy-duty pressure sensors to MEMS-tilt and vibration sensors operating at temperatures up to 175°C, our sensors can be seen in applications from down-hole drilling tools to remotely operated vehicles.

Medical: High accuracy and reliability is key in applications such as ventilation, sleep apnea, blood transfusion and patient monitoring. Our world-leading suppliers in pressure, temperature and MEMS-based accelerometers are a corner stone of any design.

Automotive and transportation: Working with customers in applications such as public transportation door systems to battery temperature monitoring in hybrid vehicles, our sensors are designed to work in the most demanding environments.

Consumer goods: Our sensors feature in some of the best-known, worldwide brands across many applications such as high-end coffee machines, domestic and commercial ovens, refrigeration, boilers and water metering.

Defence and navigation: Where the very highest performance and precision accuracy is required in mission-critical applications, you can rely on our gyros, accelerometers and tilt sensors.

Key sensor technologies

Custom thermistors and probes

- Wide range of customised thermistor R/T curves
- The ability to design custom R/T curves to meet specific requirements
- Custom temperature probes
- Engineering support in application design
- High stability and reliability
- Thermocouples and probes with platinum sensors also available



Environmental – suitable for indoor, outdoor and automotive applications

Gas sensors

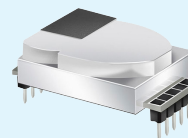
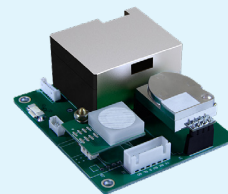
- Wall-mounted, duct-mounted, handheld and PCB-mounted versions for domestic and industrial applications
- No calibration required
- High-accuracy, wide-measurement range
- VOC, CO, CO₂, and air-quality monitoring

Dust and particle sensors

- Detect dust and cigarette smoke
- Ideal for indoor asthma trigger and detection
- Particle detection as small as 0.3µm
- PM1.0, PM2.5 and PM10 sensors
- Easy maintenance and installation

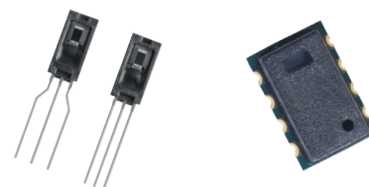
Combination sensors

- RH and temperature
- Dust, CO₂, VOC, RH and temperature



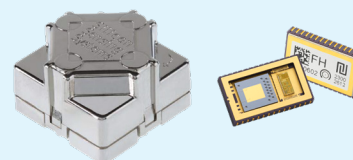
Humidity sensors

- Leaded and SMD variants
- Small size and low weight
- Low power
- Analogue and digital output variants
- Fast response time



Gyro / angular rate

- High-performance MEMS inertial sensors
- Best-in-class bias stability and angular random walk
- Low-power, digital gyroscopes for wearable devices
- Packaged, multi-axis inertial solutions



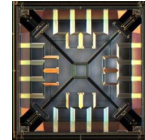
Vibration, tilt and acceleration

- High-performance MEMS capacitive accelerometers
- Long-term stability in harsh environments
- High temperature range from -40 to 175 °C
- Lowest noise and non-linearity
- High stability under shock and vibration



Accelerometers

- Low-power, digital-output, miniature LGA packages
- MEMS-based, 2 and 3-axis, measuring tilt, motion and shock
- Ideal for wearable, consumer and automotive applications
- Unique thermal technology allows accuracy and reliability in high-vibration environments



Airflow

- Flow and differential pressure
- Amplified and unamplified



Position

- Linear position sensors
- Rotary position sensors
- Cable extension transducers
- Non-contacting, Hall-Effect rotary position sensors



Pressure

- Board-mount through to heavy duty industrial solutions
- Amplified and unamplified
- Analogue and digital output
- Absolute, differential and gauge pressure
- Wide range of port and termination styles



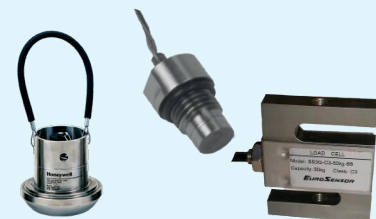
Temperature

- Thermistor elements and thermistor sensors
- Clip sensors
- Platinum sensors
- Thermocouples
- Overmoulded temperature probes, waterproof to IP68
- Ideal for demanding, harsh-environment applications that require precision and the very best performance



Test and measurement

- Pressure transducers
- Load cells
- Torque
- Accelerometers
- Instruments



acal bfi

ACEINNA
POWERFUL SENSING SOLUTIONS

Amphenol
Advanced Sensors

ASC
Advanced Sensors Calibration

CUBIC

Honeywell

IXTHUS
Instrumentation

MEMSIC

SAFRAN
Colibrys

SGX
SENSORTECH

SHIBURA

SHINYEI

SILICON
SENSING

TEWA

TML
Tokyo Sokki Kenkyujo

tronics

UE

VARIOHM
EUROSENSOR

*Pan European availability except: ASC - UK and DE; Memsic - BE, DE, NL, IT and SE; TML - FR and IT; United Electric - NL only.

Bespoke sensing and connectivity solutions

From customer-specific combinations of environmental sensors to a complete custom-designed sensing solution with wireless connectivity, we have the expertise to design and build a complete solution to your specific application needs.

Wireless connectivity

- Bluetooth
- Wi-Fi
- LoRa
- RF

Sensor combinations

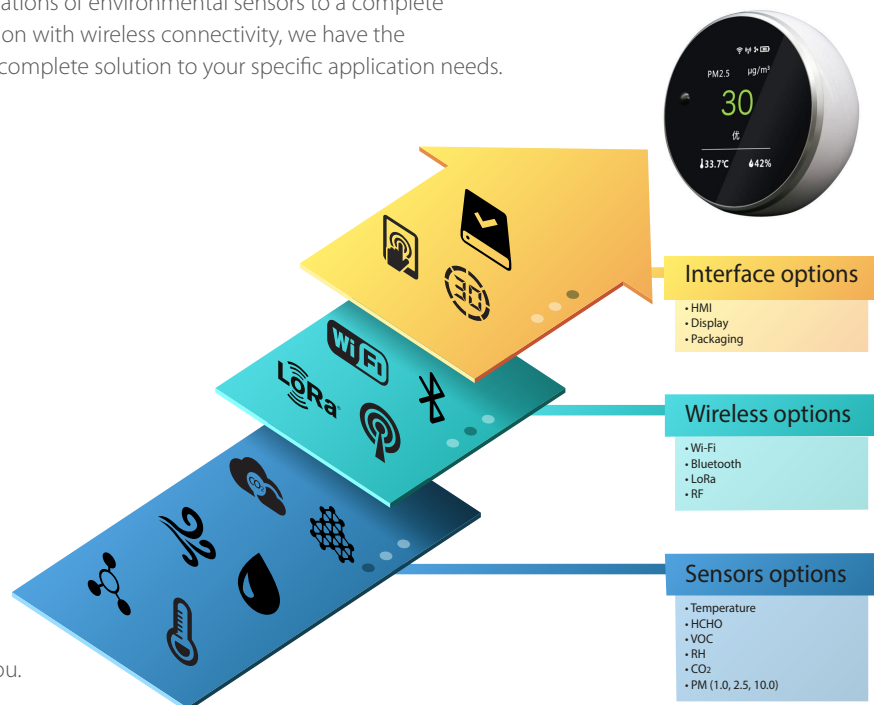
- CO₂
- VOC
- RH and temperature
- Air quality
- Dust / particle

Display / controller

Tell us what you need and we can build it into a solution for you.

Enclosures

We can work with your design team to supply a finished product with an enclosure to suit your application.



Experts in temperature sensing

High-accuracy, zero-defect thermistors for harsh environments

Shibaura are a world-leading supplier of NTC thermistors, producing over 300 million annually. Their unique design and fully automated, zero-defect manufacturing process means Shibaura thermistors work consistently without failure or deterioration in harsh conditions and extreme temperatures.

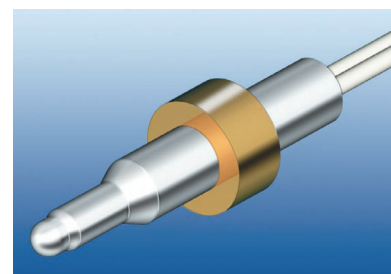
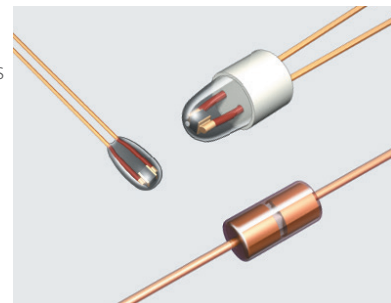
Unique design provides unmatched performance

Shibaura NTC thermistors are the first and only to feature gold contacts in addition to waterproof glass coatings. This unique design results in almost no drift in the resistance over time, while allowing the thermistors to be used in permanent operating temperatures from -60 to 1000°C, and in applications that are prone to frequent thermal cycles and high levels of humidity.

Thermistor sensors for the most demanding applications

These superior quality thermistor sensors are suitable for applications that:

- may be prone to wear from frequently changing humidity levels and thermal conditions, such as air-conditioning systems
- require permanent working temperatures between 180 and 500°C (and above 1000°C temporarily)
- have frequent thermal cycles with a wide temperature range, such as engines, electric motors, kettles, boilers, and power resistors
- need high stability, and
- require self-heated thermistors.



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