



Pressure Sensors  
Humidity Sensors  
Temperature Sensors  
Tilt Sensors  
Magnetic Sensors



# Experts in analog and digital pressure sensors



**AMSYS** concentrates its activities on sensor technology alone, offering a wide range of OEM products for pressure sensors with the required competence. It is company strategy to enable customers in all areas in the field of sensors to find an optimal solution for their particular applications. To be able to offer such sensors **AMSYS** focuses as distributor on the cooperation with a few but advanced high-technology companies.

Because of the company's technical expertise and the close engineering contact to the suppliers customer specific solutions can be provided.

## A convincing portfolio

The **AMSYS** product portfolio ranges from simple pressure measurement cells over dual in-line sensors to different compensated and amplified SMD-mountable sensors which only have to be mounted in customer-specific packages. Beside the wide range of OEM products ready-to-use pressure sensors in small outside suitable packages and special pressure transmitters are available.

Various pressure ranges are offered, from ultra low 0.5kPa to high pressure 60MPa range for different pressure measurement modes (absolute, relative, differential and bidirectional differential). Different sensors are available with the classical analogue output (voltage or current) or with digital interfaces like I<sup>2</sup>C or SPI or even as combination between an analogue and digital output. Beside the sensors with a linear output **AMSYS** offers pressure switches in combination with an analog output.

**AMSYS** has also supplied select OEM products in the field of MEAS Specialties Inc. since 2010, including the inclinometer series. Humidity sensors, temperature sensors and magnetic encoders complete the product range of micromechanical sensors.



# AMS 5812 – Pressure Sensor with analog and digital output



## DESCRIPTION

**AMS 5812** pressure sensors are a series of high-precision OEM sensors available in the range from 5mbar to 7bar with a voltage output (0.5...4.5V resp.  $\pm 2.5V$ ) a digital I<sup>2</sup>C-interface. The sensors are calibrated and compensated in the temperature range from -25 to +85 °C and they are supplied with 5.0Volt. Additionally to the pressure signal at the digital output the temperature information is also available as a 15bit word.

Great measurement accuracy and high long term stability are the result of high quality piezoresistive measuring elements in combination with a state-of-the-art signal conditioning unit in the form of a mixed-signal CMOS-ASIC. A 15x 15 mm ceramic carrier and a ceramic cap provide the sensor with its high mechanical stability.

**AMS 5812** comes as a Dual-In-Line Package (DIP) for assembly on printed circuit boards. The electrical connection is made via the DIP solder pins; pressure is connected via two vertical metal tubes.

The **AMS 5812** series is available for the following pressure measuring methods in the stated pressure ranges:

Differenzial/Relativ pressure: 0.075; 0.15; 0.3; 0.8; 1.5; 3; 5; 15; 30; 60; 100 psi

Bidirectional differential pressure:  $\pm 0.075$ ;  $\pm 0.15$ ;  $\pm 0.3$ ;  $\pm 0.8$ ;  $\pm 1.5$ ;  $\pm 3$ ;  $\pm 5$ ;  $\pm 15$  psi

Absolute/barometric pressure: 11–17.5; 15; 30 psi

Pressure sensors with interim values are available on customer request.

## FEATURES

- High accuracy in a wide temperature range
- Differential/relative, bidirectional and absolute (barometric) versions
- Positive and negative pressure measurement
- High overpressure range
- I<sup>2</sup>C interface with individual addressing
- Ratiometrical analog output
- Temperature output via I<sup>2</sup>C
- CMOS signal processing technology
- RoHS and REACH suitable

## APPLICATIONS

- Respiration systems and general medical measuring engineering
- Gas flow and dynamic pressure measurement
- Barometric pressure measurement
- Heating, Ventilation and Air Conditioning (HVAC)

## DIMENSIONS

**AMS 5812:** 15.24x 15.24x 16.7mm<sup>3</sup>

# AMS 5915 – Pressure Sensor with digital output



## DESCRIPTION

**AMS 5915** pressure sensors are a series of high-precision OEM sensors available in the range from 5mbar to 10bar with a digital I<sup>2</sup>C-interface. The sensors are calibrated and compensated in the temperature range from -25 to +85 °C and they are supplied with 3.3Volt. Additionally to the pressure signal at the digital output the temperature information is also available as a 15bit word.

Great measurement accuracy and high long term stability are the result of high quality piezoresistive measuring elements in combination with a state-of-the-art signal conditioning unit in the form of a mixed-signal CMOS-ASIC. A 15x 15mm ceramic carrier and a ceramic cap provide the sensor with its high mechanical stability.

**AMS 5915** comes as a Dual-In-Line Package (DIP) for assembly on printed circuit boards. The electrical connection is made via the DIP solder pins; pressure is connected via two vertical metal tubes.

The **AMS 5915** series is available for the following pressure measuring methods in the stated pressure ranges:

Differential/Relative pressure: 0–5; 0–10; 0–20; 0–50; 0–100; 0–200; 0–350; 0–1000; 0–2000; 0–4000; 0–7000; 0–10000mbar

Bidirectional differential pressure: ±5; ±10; ±20; ±50; ±100; ±200; ±350; ±1000mbar

Absolute/barometric pressure: 0–1000 / 700–1200mbar

Pressure sensors with interim values are available on customer request.

## FEATURES

- High accuracy in a wide temperature range
- Differential/relative, bidirectional and absolute (barometric) versions
- Positive and negative pressure measurement
- High overpressure range
- I<sup>2</sup>C interface with individual addressing
- Temperature output via I<sup>2</sup>C
- RoHS and REACH suitable

## APPLICATIONS

- Respiration systems and general medical measuring engineering
- Gas flow and dynamic pressure measurement
- Barometric pressure measurement
- Heating, Ventilation and Air Conditioning (HVAC)

## DIMENSIONS

**AMS 5915:** 15.24x 15.24x 16.7mm<sup>3</sup>

# AMS 5105 – Pressure Sensor with switching outputs



## DESCRIPTION

The pressure sensors/switch-devices of the **AMS 5105** series are high-precise OEM pressure sensors with two independent, logical switching outputs and an analog voltage output. The analog output changes synchronously with the changing of the supply voltage (ratiometric) and can be used for the adjustment or for the control of the switching point. The two switching outputs are configurable by software. The switching behaviour, barrier and the hysteresis can be adjusted independently, whereby NC-, NO- and window functions can be realised. The sensors are calibrated, amplified and temperature compensated in the range from -25 to +85 °C.

The **AMS 5105** are provided in a Dual-In-Line Package (DIP) for PCB assembling. The electric connection is carried out by DIP soldering pins, the pressure connection by two vertical metallic adapters.

The **AMS 5105** series is available for the following pressure measuring methods in the stated pressure ranges:

Differential/Relative pressure: 0–5; 0–10; 0–20; 0–50; 0–100; 0–200; 0–350; 0–1000; 0–2000; 0–4000; 0–7000 mbar

Bidirectional differential pressure:  $\pm 5$ ;  $\pm 10$ ;  $\pm 20$ ;  $\pm 50$ ;  $\pm 100$ ;  $\pm 200$ ;  $\pm 350$ ;  $\pm 1000$  mbar

Absolute/barometric pressure: 0–1000 and 0–2000 mbar / 700–1200 mbar

Pressure ranges with interim values are available on customer request.

## FEATURES

- High precision in a wide temperature range
- Analog output (ratiometric with supply voltage)
- Two independent, programmable switching outputs
- Adjustable barriers and hysteresis
- Gage, differential and absolute versions
- Positive and negative pressure measuring
- High overpressure range
- RoHS and REACH suitable

## APPLICATIONS

- Pressure controller and switches
- Pressure controller with alert feature
- Vacuum control
- Level indication
- Ambivalence and anticoincidence switches
- Heating, Ventilation and Air Conditioning (HVAC)

## DIMENSIONS

**AMS 5105:** 15.24x 15.24x 16.7 mm<sup>3</sup>

# MS5611 – High Precision Micro Barometer



## DESCRIPTION

The **MS5611** is a miniaturized high precision pressure sensor module which includes a high linear silicon measurement element (pressure die) and an ultra low power 24bit A/D-Interface IC for signal conditioning. The module converts the measured pressure and temperature signal in each case into a 24bit data word. For calibration and compensation 6 coefficients are stored in the EEPROM of the sensor modules. With the help of these internal coefficients the very precise and individual correction of pressure and temperature measurement can be carried out by an external microprocessor using a simple program. The **MS5611** needs no additional components and feature ultra low power consumption, low supply voltage and an automatic power down function. SPI or I<sup>2</sup>C interface allows the serial communication with the external microprocessor.

The **MS5611** has a double function. It measures absolute pressure values from 10 to 1200mbar in the temperature range between -40 and +85°C and the temperature values.

## FEATURES

- Pressure range: 10 to 1200mbar
- Resolution for pressure: up to 0.012mbar
- Resolution for temperature: typ. <0.01 °C
- Temperature range: -40 to +85 °C
- Supply voltage: 1.8 to 3.6V
- Low power: standby max. 0,14 µA
- I<sup>2</sup>C and SPI interface
- High precision due to individual correction procedure
- ESD protected
- No external components
- RoHS and REACH suitable

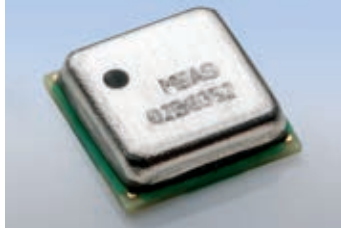
## APPLICATIONS

- Mobile altimeter
- Mobile barometric systems
- Personal navigation and location devices
- Meteorological stations
- Adventure or multi-mode watches
- GPS receiver
- Aircraft equipment (variometer, data logger)
- Intelligent clothing

## DIMENSIONS

**MS 5611:** 5x3x1 mm<sup>3</sup> (QFN-package)

# MS5637 – Precision Micro Barometer Module



## DESCRIPTION

The **MS5637** is an ultra-compact micro altimeter. It is optimized for altimeter and barometer applications in Smart-phones and Tablet PCs. The altitude resolution at sea level is 16cm. The sensor module includes a high-linearity pressure sensor and an ultra-low power 24 bit  $\Delta\Sigma$  ADC with internal factory-calibrated coefficients. It provides a precise digital 24-bit pressure and temperature value and different operation modes that allow the user to optimize for conversion speed and current consumption. A high-resolution temperature output allows the implementation of an altimeter/thermometer function without any additional sensor.

The **MS5637** can be interfaced to any microcontroller with I<sup>2</sup>C-bus interface. The communication protocol is simple, without the need of programming internal registers in the device. Small dimensions of 3x3x0.9 mm<sup>3</sup> allow the integration in mobile devices.

## FEATURES

- High resolution pressure:  
24 bit  $\approx$  0.016mbar
- Resolution temperature:  
typ.  $<$ 0.01 °C
- Pressure range: 300 to 1200mbar
- Extended pressure range:  
10–2000mbar
- Temperature range: -40–85 °C
- Supply voltage: 1,8 to 3,6V
- Low power (stand by: max. 0,14  $\mu$ A)
- Excellent long term stability
- I<sup>2</sup>C-Interface
- High precision through individually  
correction procedure
- QFN package (3x3x0.9mm<sup>3</sup>)
- No external components
- RoHS und REACH suitable

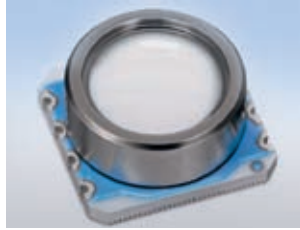
## APPLICATIONS

- Mobile Altimeter
- Personal navigation- and personal  
location devices
- Adventure and multi mode watches
- GPS Receivers
- Mobile phone
- Aircraft equipment (variometers und  
dataloggers
- Intelligent clothing

## DIMENSIONS

**MS 5637:** 3x3x0.9mm<sup>3</sup> (QFN-package)

# MS5803-XXBA – Miniature Sensor Module



## DESCRIPTION

The **MS5803** belongs to a new generation of high resolution altimeter sensors with SPI and I<sup>2</sup>C interface. The sensor module includes a high linear pressure measuring element and an ultra low power 24 bit ADC (ASIC). For the calibration and compensation individual correction coefficients are stored in the internal EEPROM. With the help of those coefficients an external processor can correct the measured pressure and temperature values using a simple program. The **MS5803** provides therefore individually compensated digital 24 bit pressure and temperature output. Different operation modes are offered that enable the user to minimize the current consumption.

Gel coating on the membrane protects the measuring cell against moisture and soil and a stainless steel cap facilitates the O-ring assembly. The pressure sensing element and the ASIC are mounted on a solid ceramic substrate, which allows assembling by reflow process.

## FEATURES

- Different pressure ranges
- High resolution of 0.012 mbar (adjustable)
- Fast conversion down to 1 ms (adjustable)
- Integrated temperature sensor
- Temperature resolution typ. <0.01 °C
- Low power: 1 µA (Standby < 0.15 µA)
- Supply voltage 1.8 to 3.6V
- Temperature range: -40 to + 85 °C
- I<sup>2</sup>C and SPI interface up to 20 Mhz
- No external components
- Excellent long term stability
- Dimensions: 6.2x6.4 mm ceramic carrier
- RoHS and REACH suitable

## APPLICATIONS

- Mobile and stationary altimeter
- Barometric systems for weather control systems
- Adventure, multi-mode watches
- Density control
- Diving computers and watches
- Mobile water depth measuring devices
- Pneumatic applications (valve timing and compressor control)
- Aircraft equipment (variometer and data logger)
- Vacuum measurement

## PRESSURE RANGES

**MS5803-01BA:** 10–1,300 mbar

**MS5803-02BA:** 300–2,000 mbar

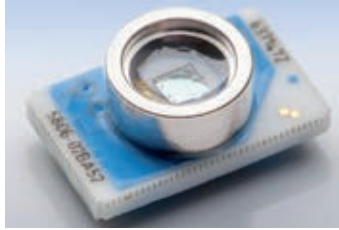
**MS5803-05BA:** 0–6 bar

**MS5803-14BA:** 0–14 bar

**MS5803-30BA:** 0–30 bar



# MS5806 – Gel Protected Barometer Module



## DESCRIPTION

The **MS5806-02BA** is a new generation of high resolution altimeter sensors from MEAS Switzerland with SPI and I<sup>2</sup>C bus interface. It is optimized for altimeters and variometers with an altitude resolution of 20cm. The sensor module includes a high linearity pressure sensor and an ultra low power 24bit  $\Delta\Sigma$  ADC with internal factory calibrated coefficients. It provides a precise digital 24bit pressure and temperature value and different operation modes that allow the user to optimize for conversion speed and current consumption. A high resolution temperature output allows the implementation of an altimeter/thermometer function without any additional sensor.

The **MS5806-02BA** can be interfaced to virtually any microcontroller. The communication protocol is simple, without the need of programming internal registers in the device. The gel protection and antimagnetic stainless steel cap allows the use in 100m water resistant altimeter/compass watches.

## FEATURES

- High resolution of 0.024mbar (adjustable)
- Extended pressure range: 10 to 2,000 mbar
- Operating pressure range: 300 to 1,100 mbar
- Operating temperature range: -40 to +85 °C
- Fast conversion down to 0.5ms (adjustable)
- Integrated temperature sensor
- No external components
- I<sup>2</sup>C and SPI interface up to 20 MHz
- Supply voltage 1.8 to 3.6V
- Low power, 1.0 $\mu$ A (standby < 0.15 $\mu$ A)
- Excellent long term stability
- RoHS and REACH suitable

## APPLICATIONS

- Mobile altimeter
- Mobile barometric systems
- Personal navigation and location devices
- GPS receivers
- Meteorological stations
- Aircraft equipment (variometer, data logger)
- Bike computers
- Adventure or multi-mode watches

## DIMENSIONS

**MS5806:** 6.4x4.0x2.8mm<sup>3</sup>

# MS5805 – Gel Protected Miniature Barometer Module



## DESCRIPTION

The **MS5805-02BA** is a new generation of high-resolution altimeter sensors from MEAS Switzerland with I<sup>2</sup>C bus interface. It is optimized for altimeters and variometers with an altitude resolution of 20 cm. The sensor module includes a high-linearity pressure sensor and an ultra low power 24 bit  $\Delta\Sigma$  ADC with internal factory-calibrated coefficients. It provides a precise digital pressure and temperature value and different operation modes that allow the user to optimize for conversion speed and current consumption. Because of the 24-bit ADC a resolution of 0.02 mbar (altitude resolution of 16 cm) can be achieved in the pressure range of 300–1200 mbar. A high-resolution temperature output allows the implementation of an altimeter/ thermometer function without any additional sensor.

The **MS5805-02BA** can be interfaced to virtually any microcontroller. The communication protocol is simple, without the need of programming internal registers in the device. The sensor modules feature a very low current consumption of 1.25 mA during conversion (max. 16 msec) and below 0.15  $\mu$ A in standby mode. Due to the minimum power supply and the wide supply voltage range (1.8 – 3.6V) the modules are especially suitable for mobile applications.

## FEATURES

- High resolution of 0.02 mbar (adjustable)
- Extended pressure range: 10 to 2,000 mbar
- Operating temperature range: -40 to +85 °C
- Fast conversion down to 0.5 ms (adjustable)
- Integrated temperature sensor
- No external components
- I<sup>2</sup>C interface
- Supply voltage 1.8 to 3.6 V
- Low power, 0.6  $\mu$ A (standby < 0.15  $\mu$ A)
- Waterproof because of gel protection
- Sealing designed for 2.5x1 mm O-ring
- RoHS and REACH suitable

## APPLICATIONS

- Mobile altimeter/barometer systems
- Weather stations
- Bike computers
- Adventure or multi-mode watches
- Variometers
- Dataloggers

## DIMENSIONS

**MS5805:** 4.5x4.5x3.5mm<sup>3</sup>

# SM9541 – Respiratory Low Pressure Sensor



## DESCRIPTION

The **SM9541** Series is a digital, low pressure MEMS sensor family offering state-of-the-art pressure transducer technology and CMOS mixed signal processing technology to produce a digital, fully conditioned, multi-order pressure and temperature compensated sensor in JEDEC standard SOIC-16 with a dual vertical porting option. It is available in both compound gauge or differential pressure configurations. With the dual porting, a vacuum-gauge measurement is possible to minimize altitude errors due to changes in ambient pressure.

Combining the pressure sensor with a signal-conditioning ASIC in a single package simplifies the use of advanced silicon micro-machined pressure sensors. The pressure sensor can be mounted directly on a standard printed circuit board and a high level, calibrated pressure signal can be acquired from the digital interface. This eliminates the need for additional circuitry, such as a compensation network or microcontroller containing a customer correction algorithm.

## FEATURES

- Calibrated pressure available through I<sup>2</sup>C-digital Interface
- Bidirectional and differential pressure configurations
- Insensitive to mounting orientation
- SO-16 package for surface mount
- Compensated temperature range: -5 to 65 °C
- Excellent long term stability
- RoHS and REACH suitable

## APPLICATIONS

- Medical instrumentation (Sleep apnea, CPAP, negative pressure wound therapy)
- Respirators and ventilators
- Gas flow instrumentation
- Pneumatic gages
- Airflow measurements
- Sports equipment

## PRESSURE RANGES

Differential: -0,5–10, -1–20, -5–40, -5–100, -20–140 mbar

Bidirectional: ±10, ±20, ±40, ±100 mbar

## DIMENSIONS

**SM9541:** 10x10x9.3 mm<sup>3</sup>

# MS8607 – Triple Sensor: Humidity, Pressure and Temperature Module



## DESCRIPTION

The **MS8607-02BA01** includes two sensors with distinctive MEMS technologies to measure pressure, humidity and temperature. The first sensor is a piezoresistive sensor providing pressure and temperature, and the second is a capacitive-type sensor providing relative humidity. Each sensor is interfaced to a  $\Sigma\Delta$  ADC integrated circuit for digital conversion where the **MS8607-02BA01** converts the uncompensated analog output voltages to a 24-bit digital value for the pressure and temperature measurements, and a 16-bit digital value for the relative humidity measurement.

This sensor requires 8 pads for operation, uses I<sup>2</sup>C communication and operates at a 1.8 – 3.6V supply voltage. With an operating pressure range of 10 to 2000mBar, it has a pressure accuracy of  $\pm 2.0$ mBar (@25°C, 300...1200mBar) and pressure resolution of 0.016mBar. Operating at a humidity range of 0 – 100% R.H., it has a humidity accuracy of  $\pm 3.0$ % R.H. (@25°C, 20...80% R.H.) and humidity resolution of 0.04% R.H. In regards to temperature, this sensor operates at -40°C to +85°C with a temperature accuracy of  $\pm 2.0$ °C (-20°C...+85°C) and temperature resolution of 0.002°C.

The module **MS8607** features a very low standby current consumption of max. 0.24 $\mu$ A. It provides different operation modes that allow optimizing for speed and current consumption, therefore it can be adjusted to the individual application. The **MS8607** is packaged in a QFN-package (5.0x3.0x1.0mm<sup>3</sup>).

## FEATURES

- Resolution pressure: 24bit  $\approx$  0.0016 mbar
- Resolution humidity: 0.04%RH
- Resolution temperature: 0.002°C
- Pressure range: 10 to 1200mbar
- Humidity range: 0–100%RH
- Temperature range: -40 to 85°C
- Supply voltage: 1.5 – 3.6V
- Low power (stand by: max. 0.24 $\mu$ A)
- Excellent long term stability
- I<sup>2</sup>C-Interface
- High precision through individually compensated coefficients
- RoHS-compatible and Pb free
- No external components needed

## APPLICATIONS

- Smart phones and tablet PCs
- HVAC applications
- Weather stations
- Adventure and multi mode watches
- Printers
- Dryers

## DIMENSIONS

**MS8607:** 5 x 3 x 1 mm<sup>3</sup> QFN-package

# HTU21D – Digital Humidity/Temperature Sensor



## DESCRIPTION

The new digital sensor **HTU21D** is a fully self contained capacitive humidity sensor combined with a bandgap temperature sensor. Every product is individually calibrated, compensated and finally tested. The **HTU21D** sensors are dedicated humidity and temperature plug and play sensors for OEM applications where reliable and accurate measurements are needed. **HTU21D** sensors are characterized by a 0 – 100% RH-range and by an extended temperature range. The humidity and temperature digital outputs are in an I<sup>2</sup>C format and suitable for all micro-controllers. The resolution of **HTU21D** sensor can be changed by command (8/12bit up to 12/14bit for RH/T), whereby the measurement time and the current consumption can be modified. With the very low power consumption the sensors are dedicated for battery powered applications. Furthermore, low battery can be detected and a checksum improves communication reliability. Humidity and temperature response time as well as the recovering time (from condensing humidity) are in the range of a few seconds. Lot identification is printed on the sensor and an electronic identification code is stored on the chip – which can be read out by command. Embedded in a reflow solderable Dual Flat No leads (DFN) package of 3x3mm foot print with 0.9mm height the combined humidity and temperature sensor is designed for high volume and cost sensitive applications with tight space constraints. Improvements and the miniaturization of the sensor made the performance-to-price ratio better. Optional PTFE filter/membrane (F) protects the **HTU21D** against dust as well as against contamination by particles.

## FEATURES

- Wide humidity range 0–100% RH
- Wide temperature range -40–125 °C
- Digital I<sup>2</sup>C- interface
- Humidity accuracy ±2% RH typical
- Temperature accuracy: ±0.3 °C typical
- 1.5 – 3.6Volt operation
- Adjustable resolution
- Instantaneous desaturation after long periods in saturation phase
- Compatible with automatized assembly (reflow) processes,
- Electronical identification code
- Low power dissipation typ. 2.7 µW
- Small dimensions (DFN-package)
- RoHS and REACH suitable

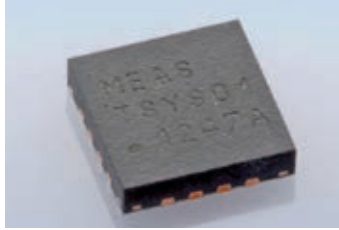
## APPLICATIONS

- Automotive (passenger compartment)
- Home Appliances
- Medical Equipment
- Printers and copiers
- Humidifiers and HVAC systems
- Building Automation
- Weather monitoring
- Security systems
- Multimedia – smartphone, tablet
- Intelligent clothing

## DIMENSIONS

**HTU21D:** 3.0x3.0x0.9 mm<sup>3</sup> (DFN-package)

## TSYS01 – Digital Temperature Sensor



### DESCRIPTION

The **TSYS01** is a single chip, versatile, new technology temperature sensor. The **TSYS01** provides factory calibrated temperature information. It includes a temperature sensing chip, a 24 bit- $\Sigma$ -ADC and an EEPROM. The digital 24 bit temperature value and the internal factory set calibration values lead to highly accurate temperature information accompanied by high measurement resolution.

The **TSYS01** can be interfaced to any microcontroller by an I<sup>2</sup>C or SPI interface. This microcontroller just has to calculate the temperature result based on the ADC values and the calibration parameters with the help of a simple algorithm.

The **TSYS01** impresses by its high accuracy of  $\pm 0.1^{\circ}\text{C}$ , with the accuracy and the temperature range adjustable to the customer's needs. Additionally the **TSYS01** features a very low power consumption ( $< 12.5\mu\text{A}$  ; Standby:  $< 0.14\mu\text{A}$ ) and low self heating. Because of its small dimensions and supply voltage of 3.3V the temperature sensor is particularly suitable for mobile, battery bound applications.

### FEATURES

- High Accuracy : $\pm 0.1^{\circ}\text{C}$
- Very Small Size (QFN16 package)
- High resolution 24 bit
- Operating temperature -40 bis +125  $^{\circ}\text{C}$
- Supply voltage: 2.2V-2.6V
- Multiple Interfaces I<sup>2</sup>C, SPI
- Adjustment of High Accuracy, Temperature Range on Request
- Low Current Consumption
- Low Self Heating
- RoHS and REACH suitable

### APPLICATIONS

- Industrial Control,
- Replacement of Thermistors and NTCs
- Heating / Cooling Systems
- HVAC
- Chemical and biological process control

### DIMENSIONS

**TSYS01:** 4.00x4.00x0.85 mm<sup>3</sup>

# KMA36 – Universal Magnetic Encoder



## DESCRIPTION

The **KMA36** is a universal magnetic encoder for precise rotational or linear measurement. These position sensors feature a system-on-chip technology that combines a magneto resistive element along with analog to digital converter and signal processing in a standard small package.

By using Anisotropic Magneto Resistive (AMR) technology, the **KMA36** is able to determine contactlessly the absolute angle of an external magnet over 360°, as well as the incremental position on a magnetic pole strip with 5 mm pole length. Its sleep and low power mode as well as automatic wake-up make the **KMA36** ideal for many battery applications. Position data can be transmitted using a PWM or I<sup>2</sup>C interface. Using the programmable parameters, the user can have access to a wide range of configuration to ensure the maximum of functionalities.

## FEATURES

- Contactless absolute 360° (180°) angle measurement
- Incremental mode and linear mode
- Standard I<sup>2</sup>C Interface (100kHz)
- Programmable resolution up to 13 bit (0.04 degree)
- Very low hysteresis
- High accuracy mode
- Programmable parameters
- Low power mode
- Operating temperature -25 to +85 °C
- Sleep and automatic wake-up over I<sup>2</sup>C
- Programmable zero position
- Device address hardware configurable
- Small package (TSSOP20)
- RoHS and REACH suitable

## APPLICATIONS

- Position control
- Angle and distance measurement
- Potentiometer
- Proportional valve
- Motor motion control
- Handling machine
- Machine tools
- Robotics

## DIMENSIONS

**KMA36:** 6.5x4.4x1.2 mm<sup>3</sup>

# AMS 4711/12– Ready-to-use Pressure Transmitter



## DESCRIPTION

**AMS 471x** is a series of miniaturized pressure transmitters ready for use. **AMS 471x** comes in a robust and compact plastic package (IP67) and is designed for fast screw assembly in a harsh industrial environment. The sensors are qualified for all pressure measuring methods like absolute, gage and differential pressure measuring and they cover a wide pressure range (5mbar to 2bar). High accuracy and a very low total error in the temperature range from -25 to +85°C can be achieved due to an integrated digital signal processor with EEPROM.

One process of **AMS 471x** production is the calibration as well as the compensation of temperature dependent drift of offset and span. No additional adjustment on the part of the customer is necessary. As output signal 0 to 5V alternatively 4 to 20mA is available.

The **AMS 471x** series is available for the following pressure measuring methods in the stated pressure ranges:

Differential/Relative pressure: 0–5; 0–10; 0–20; 0–50; 0–100; 0–200; 0–350; 0–1000; 0–2000 mbar

Bidirectional differential pressure: ±5; ±10; ±20; ±50; ±100; ±200; ±350; ±1000 mbar

Absolute/barometric pressure: 0–1000 und 0–2000 mbar / 700–1200 mbar

Pressure sensors with interim values are available on customer request.

## FEATURES

- High accuracy in measurement
- Low total error
- 0 to 5V-Output signal (AMS 4711)
- 4 to 20mA- Output signal (AMS 4712)
- Differential/relative, bidirectional and absolute (barometric) versions
- Positive and negative pressure measurement
- Range of supply voltage up to 36V
- Cable connection
- Maintenance-free
- Simplest installation, quick start of operation
- RoHS compatible and Pb free

## APPLICATIONS

- Monitoring of industrial filters/ventilators
- Vacuum measuring
- Monitoring of Heating, Ventilation and Air Conditioning (HVAC)
- Barometric measurement
- Medical applications
- Liquid level measurement

## DIMENSIONS

**AMS 4711/12:** 36.4x35x13.5 mm<sup>3</sup>



## D5100 – Wet/Wet-Pressure Transmitter



### DESCRIPTION

The **D5100** is a media resistant differential pressure transducer (wet/wet pressure transducer) used in demanding environments. It can be especially applied for wet/wet applications whereas the pressure can be measured in all liquids and gases compatible with 316L stainless steel. The rugged **D5100** can withstand up to 50g shock/20g vibration and features a -40 °C to +125 °C operating temperature range.

The amplified model of the **D5100** series exceeds the latest heavy industrial CE requirements including surge protection and reverse polarity protection.

The transducers are offered in a multitude of electrical and mechanical versions.

#### **D5100** Output signals:

Amplified: 0.5 – 4,5V (ratiometrical), 0 –10V and current output of 4 –20mA

Not amplified: 80mV (1 psi), 100 mV ( $\geq 5$  psi)

#### **D5100** Connetctors:

Amplified: Cable, Packard Metripak, Bendix-connetctor, Min-Hirschmann (DIN 43650)

Not amplified: Cable

#### **D5100** Pressure ports:

¼-19 BSP male, ¼-18NPT male, ¼-19 BSPP Female, ¼-18 NPT Female

### FEATURES

- Non-linearity:  $\pm 0.1\%$
- Wide pressure range
- Stainless steel construction withstands 50g shock/20g vibration
- Temperature range: -40 °C to +125 °C
- Excellent stability
- Variety of mechanical and electrical Connections
- CE Certified (amplified version only)
- RoHS and REACH suitable

### APPLICATIONS

- Process controls
- Filter performance monitoring
- Corrosive Fluids and Gas Measurement Systems
- Tank level measurement
- Flow measurement

### PRESSURE RANGES

0–1, 0–5, 0–15, 0–30, 0–50, 0–100, 0–300, 0–500psi.

## DOG2 – Dual Axis Inclinometer (12bit)



### DESCRIPTION

The dual axis inclinometer **DOG2** is designed for the measurement ranges of  $\pm 25^\circ$ ,  $\pm 45^\circ$  and  $\pm 90^\circ$ . In order to achieve the best possible performance, the most modern MEMS technology and advanced processor technology were combined in the **DOG2**. Nevertheless each inclinometer is individually calibrated and compensated during production, so that 0.5–4.5V are available as output signal.

At room temperature ( $+25^\circ\text{C}$ ) the **DOG2** shows a total error of max.  $0.15^\circ$ ; in the temperature range between  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  typically  $0.5^\circ$ . Because of the high oversampling rate of the 12bit A/D converter precise measurements with a high resolution (at  $\pm 25^\circ$  with  $\pm 0.012^\circ$ ) are possible even at frequencies up to 100Hz.

Classified with IP-67 the **DOG2** with its plastic housing consisting of PA6.6 is resistant against oils, fuel and lubricants and is therefore suitable for applications in harsh environment. The operating temperature range is  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$ ; the sensor stands shock stress of 10.000g. The AMP Superseal 1.5 connector provides a reliable electrical connection for supply voltages of 8 to 30VDC.

An USB-version for prototype testing and measuring is available.

### FEATURES

- Accuracy typically:  $0.5^\circ$  at  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  and  $0.15^\circ$  at  $+25^\circ\text{C}$
- 8–30V supply voltage (5V on request)
- 12bit resolution
- up to 100Hz refresh rate
- $-40^\circ\text{C}$  to  $+85^\circ\text{C}$  temperature range
- Digital signal processing includes filter (e.g. vibration damping) and temperature compensation
- RoHS and REACH suitable

### APPLICATIONS

- Platform leveling
- Truck and off-road vehicle cabin or tool leveling
- Crane boom leveling
- Tilt alarm, e.g. digger
- Antenna leveling
- Inclination dependent engine control
- Solar panel elevation control

# Benefit from the AMSYS-Pros!

- Wide product range in the area of pressure sensors with the focus on OEM sensors
- **AMSYS**-portfolio covers all pressure measuring methods (absolute, barometric, relative, differential and bidirectional differential pressure)
- The portfolio ranges from simple pressure measurement cell over the SMD-mountable sensors to ready-to-use pressure transmitters
- **AMSYS** offers analogue and digital pressure sensors in all standard output versions
- **AMSYS** offers media compatible pressure transmitters in a wide pressure range
- Modification of standard pressure sensors according to costumers needs
- **AMSYS** offers new solutions in the following fields:
  - High precision tilt sensors (OEM products and transmitters)
  - OEM magnetic encoders for rotational or linear measurement
  - Precise OEM temperature sensors
  - Miniaturized OEM humidity/temperature sensors with digital output
- Professional technical consulting by **AMSYS**-employees
- All products are RoHS and REACH suitable



## Our Partners

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PRESSURE SENSORS

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