



This product, formerly sold by ams AG, and before that optionally by either Applied Sensors GmbH, acam-messelectronic GmbH or Cambridge CMOS Sensors, is now owned and sold by

SciSense

The technical content of this document under ams / Applied Sensors / acam-messelectronic / Cambridge CMOS Sensors is still valid.

Contact information

Headquarters:

Sciosense B.V.

High Tech Campus 10

5656 AE Eindhoven

The Netherlands

info@sciosense.com

www.sciosense.com

Checking Torque with high Precision

www.ams.com/PS09



PS09 – Soc for Weighing and Force Measurement

- 28-bit converter plus microcontroller integrated
- Perfectly suited for battery-driven applications
- Extreme low total system current (down to 15 μ A including strain gauge)
- Ultra-low self-heating of the sensor
- Digital gain and offset correction of the load cell

Sensing
is life.

General Description

The PS09 is a system on chip for ultra low power and high resolution applications. It was designed especially for weight scales but fits also to any kind of force, pressure or torque measurements based on metal strain gauges. It takes full advantage of the digital measuring principle of PICO STRAIN. Thus, it combines the performance of a 28-bit converter with a 24-bit microprocessor.

PS09 allows to build scales with up to 150,000 stable peak-peak divisions at 2 mV/V. On the other hand, sophisticated power management can reduce the total system current, e.g. 40 μ A with 3 Hz and 14 bits at 2 mV/V. Special features like the capacitive inputs for buttons or sliders that need only 1 μ A operating current round out the functionality.

Features

- RMS noise 11nV SINC5, 5Hz
- Up to 80.000 peak-peak divisions (2mV/V strain)
- Scalable update rate from <1 to 10.000Hz
- Resolution: 28-bit ENOB (RMS)
- 24-bit internal microprocessor with 8kB OTP
- 4-wire serial SPI interface
- Current consumption of \sim 7 μ A in low current configuration
- Power supply voltage: 2.1V to 3.6V

Applications

- Force sensors
- Pressure sensors
- Scales
- Digital load cells
- Torque wrenches
- Legal for trade scales
- Counting scales

Benefits

- Small and compact solution for weighing applications
- Converter and microcontroller in one chip
- Perfectly suited for building digital load cells and consumer scales
- Extreme low total system current (down to 15 μ A including strain gages)
- Very low self heating of the sensor
- Gain and offset correction of the load cell

PS09 Block Diagram

