

## AS 8500/AS8501 Key features

The AS8500 / AS8501 product family for high precision data acquisition systems is dedicated to the measurement of small voltages close to ground (for both polarities above or below ground).

The highlights are:

- High resolution (16 to 21 bit)
- Low noise (0.1  $\mu\text{V}$  RMS for 0-5Hz)
- High linearity (< 0.1%)
- No offset
- Sampling rates from 2 Hz up to max. 16 kHz
- Fast dual channel measurement (quasi synchronous)
- High flexibility due to many special features
- Single 5V supply

Multiple input channels, configurable as:

- 4 single ended channels
- or 2 fully differential inputs
- with or without programmable pre-amplifier
- programmable current sources

Choices for full scale input range versus ground:  $\pm 7.5\text{mV}$ ,  $\pm 15\text{mV}$ ,  $\pm 30\text{mV}$ ,  $\pm 120\text{ mV}$  or  $\pm 800/300\text{ mV}$

Bidirectional serial interface to  $\mu\text{C}$  similar to SPI.

Basic application targets:

- Current measurement through low ohmic shunt (100  $\mu\text{Ohm}$  range)
- Resistive or thermocouple temperature sensing
- General purpose sensor interface for half- or full bridge sensors
- True resistance measurement through  $\Delta U$  by  $\Delta I$  measurement
- Compensation of EMF voltages by biased and unbiased sequential measurements
- Error compensation by comparing a sensing device with a reference device through different input channels but using same measurement path to eliminate mismatch of preamplifiers and filters