



PART NUMBER: RTK0ESXB10C00001BJ

Renesas Solution Starter Kit for RX23E-A

Using the evaluation board (RSSK RX23E-A) equipped with RX23E-A and peripheral circuits for sensor measurement, and software that can be downloaded from the web, you can start analog characteristic evaluation immediately after purchasing the kit. By using this kit, it is possible to shorten the development period and bring it to market quickly.

About RX23E-A

RX23E-A is a group from the RX MCU family with integrated high-precision analog front-end. Thanks to low noise and low drift of analog front-end features, the high-precision sensor measurement can be achieved with computation performance, system control, and communication in one chip. Refer to the RX23E-A product page for more detail.

RSSK Configuration and Evaluation Circuit

The kit consists of an evaluation board with the RX23E-A and peripheral circuits for sensor measurement, a K-type thermocouple, and is provided with the GUI and sample programs. These ready-to-use tools enable users to start evaluation of the A/D converter without hardware modification or software development.

The kit can be utilized to evaluate the measurements of thermocouples, RTD, and strain gauges, which are typical sensors in industrial equipment. Our evaluation of K-type thermocouples using the RSSK shows that the measured temperature error is within $\pm 0.6^{\circ}\text{C}$ under environments between -40°C and 85°C and the effective resolution is 19.4 bit, which means temperature deviation is equivalent to 0.0015°C at rms value. The measured temperature error, which is within the sensor error, validates the evaluation board as a reference design.

Refer to application notes for more details of each sensor measurement evaluation.



Components

- Evaluation board
- Thermocouple (Type-K)
- PC tool program (*1)
- User's Manual (*1)
- Quick Start Guide (*1)
- Circuit diagram (*1, included in user's manual)
- Board diagram (*1, included in user's manual)

*1. Download from website. The PC tool program comes with the latest versions of sample programs.

Features

- Equipped with RX23E-A with written evaluation software
- Equipped with peripheral circuits required for sensor measurement
- Reference junction compensation circuit required for thermocouple measurement
- Compatible with 2-wire/3-wire/4-wire resistance temperature detectors
- Supports bridge sensor measurement such as strain gauges
- Easy evaluation with a GUI-based PC tool program
- AFE parameters can be changed
- AD conversion result display function (time waveform, histogram)
- Digital filter frequency characteristic display
- K-type thermocouple included
- Providing sample programs for thermocouple measurement, resistance temperature detector measurement, and strain gauge measurement (GUI and sample programs are downloaded from the web)
- E1, E2, E2-Lite emulator can be directly connected (*E1, E2 and E2-Lite emulators are sold separately)
- Software development is possible only by USB power supply.
- A plug-in terminal block for analog input and a miniature size dedicated thermocouple connector.
- RS485, CAN driver IC installed



Applications

Industrial Sensor Solutions