





# RSS

## Resistive Sensor Simulation Board with 10 Galvanically Isolated Channels

### Application Scope

The Resistive Sensor Simulation (RSS) subsystem is designed to simulate resistive sensors such as PT100, PT500, NTC or potentiometers. The ADS-2 can directly control the resistor value. Additional settings will enable the use of different scales such as temperature or pressure scales. The transformation of the input scale to the actual resistor value is performed by the ADS-2 driver and the controller of the RSS system.

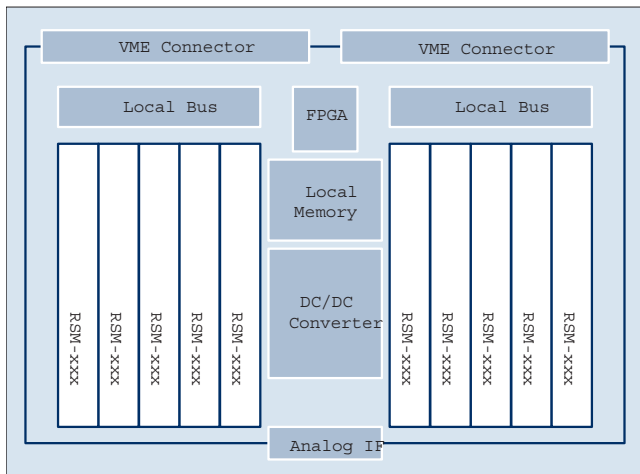
### Functional Description

Each physical channel of the RSS is fully galvanically isolated from the other channels, and it is located on a piggy-pack specifically matched to the required application. The permissible common range is +/-10V. The following resistive simulator modules (RSM) are currently available: PT100 (RSM-PT100); PT500 (RSM-PT500); PT1000 (RSM-PT1000); NTC (RSM-NTC); Variable Resistor 20K (RSM-R20K). Two RSM-R20K can be configured to one potentiometer. Up to ten RSMs are mounted on a 6U VME carrier. The RSM-carrier (RSM-C) provides a serial interface and a VME bus interface as well as analog connectors.

For each sensor a specific resistor matrix is used to match the required resistor parameters. The resolution of the matrix is 24 bits uncalibrated and 16 bits calibrated.

One serial controller can control up to 16 RSM-C for a total of 160 channels. For high speed and/or low channel count applications the RSM-C can be used without the serial controller directly in a VME environment.

### RSS Board Layout



### Technical Data

#### Resistor Specification

##### Range

- PT100: -80 ... +500°C
- PT500: - 140 ... +320°C
- PT1000: -75 ... +91°C
- NTC: -65 ... +140°C

##### Resolution

- PT100: ±1,0°C
- PT500: ±0,2°C
- PT1000: ±0,1°C
- NTC: ±0,1°C

##### Update Rate

- 3 msec for 10 channels
- 10 msec for 100 channels

#### Electrical Characteristics

##### Current

- PT100: max 20mA
- PT1000: 500 µA; max 5,5V
- NTC: max 1mA

##### External Voltage

- 0 ... 10V; GND relative to VME GND

##### Frequency

- DC ... 1kHz

#### Mechanical Data

- Length: 200 mm (6 HE/U)
- Width: 160 mm

#### Environmental Data

- Operating Temperature:
  - 20°C - 40°C (specified accuracy)
  - 0°C - 70°C (degraded accuracy)
- Storage Temperature: -40°C - +85°C
- Humidity: 0 - 90% non-condensing

#### Ordering Information

Type	Order Number
RSM-C	701012
RSM-PT100	702016
RSM-PT500	701010
RSM-PT1000	702011
RSM-NTC	702012
RSM-R20K	702027

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