![radiy logo]

Radiy delivers a digital I&C platform that is robust, flexible, and scalable. It provides state-of-the-art functions, services, and safeguards for applications in industry.

The RadICS B product line consists of a Logic Module, basic input/output modules, and specialty modules all housed in a chassis.

The Resistance Input Module (RIM) serves as a high-density resistance sensor acquisition module. It provides for 16 independent, highly reliable, and galvanically isolated inputs with built-in filtering and calibration to be used by the Logic Module. The RIM also performs robust and continuous self-diagnostics to ensure the safety and integrity of each input and module function.

Resistance Input Module
(RIM)

➤ High density 16 channel resistance inputs with built-in hardware redundancy and self-diagnostics for highly reliable operation, filtering, calibration, and random hardware failure detection.

➤ FPGA for analog input processing, self-Diagnostics and microcontroller for power control and fail-safe functional behavior as a watchdog.

➤ IEC 61508 SIL 2 certification in single and multiple channel configurations.

➤ Robust self-diagnostics ensure higher reliability and early fault detection with safety-focused fault management.

➤ Segregation of input processing, self-diagnostics, and watchdog functions assure safety-critical functionality.

➤ Galvanic isolation for signal inputs with robust and dedicated communication links to Logic Module for secure data transfer.

➤ Inherent on-board diversity features eliminate common cause failure vulnerabilities.

➤ FPGA technology ensures resilience to obsolescence.

20 Years of Proven Innovation for the Global Nuclear Industry

Resistance Input Module Technical Specifications

Input Signal Range	0 to 400 Ohm
Supported Sensor Types	1. 2-, 3- and 4-wire connection schemes support. 2. Raw resistance (Ohms) measurement (to support any specific sensor type with external conversion into temperature performed in Logic Module). 3. 5 pre-defined RTD sensor types support with adjustable R0 (up to 100 Ohms) and R -> t conversion performed internally by module. **Supported RTD types:** - Platinum (α=0.00385 per °C) – corresponds to IEC 751 - Platinum (α=0.00391 per °C) - Copper (α=0.00428 per °C) - Copper (α=0.00426 per °C) - Nickel (α=0.00617 per °C)
Overall Accuracy	0.1% of full scale
Input Channel Isolation	all input channels are galvanic-isolated up to 250 V RMS AC or 250 VDC field-to-Chassis and channel-to-channel
Overvoltage Protection	±24 VAC/VDC continuous
Information Package Exchange Cycle	5 milliseconds
Diagnostic Package Exchange Cycle	5 milliseconds
LVDS Line Speed	100 megabit/second
LVDS Line Protocol	proprietary protocol with integrity checking (CRC), galvanic-isolated Tx / Rx
Self-Diagnostic Functions	diverse watchdog unit, checksum analysis, active diagnostics with internal fault detection, hardware error detection, functionally diverse continuous self-diagnostic tests, power supply fault detection
Power Supply / Consumption	2 independent inputs – 24 (18 – 36) VDC / 0.85 amp
Indications	bicolour status LED indicator (STATUS) OLED indicator for providing current operational mode, service information, and error codes
Operating Temperature	4.4 to 60 °C (32 to 140 °F)
Operating Humidity	10 to 90% relative humidity, non-condensing

For more than 20 years Radiy has provided advanced instrumentation and control (I&C) solutions for nuclear power plant modernization and new build projects in the global market. Radiy's main I&C product, the RadICS I&C Platform, was developed specifically for use in nuclear power plants. It is the only FPGA-based I&C platform with a SIL 3 certification in a single channel configuration. Radics, a wholly owned LLC, provides delivery services for the RadICS I&C Platform for international markets to meet local regulatory requirements. Radiy also offers industrial control systems, electrical equipment, and reverse engineering services.