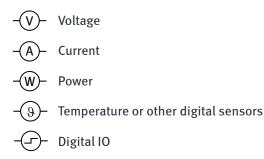# SEA 9210
Health Status Module

- **SEA 9210 Health Status module provides 5 different types of measurement and control functions**
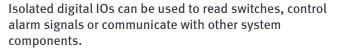
SEA 9210 Health Status Module

The module is designed to provide diagnostic supervision of an autonomous CompactRIO™ system and to monitor environment including power supply and backup battery.

Measurements:

- (V) Voltage
- (A) Current
- (W) Power
- (θ) Temperature or other digital sensors
- (⊓) Digital IO

The system current as well as the charge battery current can continuously be measured to monitor available power resources and to provide additional early warning functionality.
Supply voltage as well as the ambient temperature with up to 3 sensors can be measured through high speed full user configurable FPGA IOs.

Isolated digital IOs can be used to read switches, control alarm signals or communicate with other system components.

Highlights:

- Multiple signal types (analog, digital, direct FPGA) in one module
- Monitoring of system current and supply voltage with accurate 16 bit resolution
- Measuring of ambient temperatures and other digital sensors
- Isolated digital IOs for additional control and monitoring functions

Service

S.E.A. Datentechnik GmbH develops soft- and hardware for the CompactRIO platform and supplies customized control and measurement systems. We also offer OEM solutions and integration support with CompactRIO products and all other National Instruments specific products.

For further information about solutions, accessories, and prices please contact us or visit our home page:

www.sea-gmbh.com

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Technical Data

1	**Power Measurement**	**# of voltage channels** **# of current channels**	**2** **2**
	Isolated floating differential analog inputs for DC power measurement (Voltage, Current, Power) Current measurement via shunts, ranges e.g. 1 A, 2 A, 5 A, 10 A	Maximum resolution	16 bit
		Maximum sample rate	890 S/s
		Input impedance	830 kΩ
1.1	Power Measurement 1		
	AI0 (V) Voltage measurement	Voltage range	0 to 36 V
	AI1 (I) Current measurement with a shunt	Voltage range	± 80 mV
1.2	Power Measurement 2		
	AI2 (V) Voltage measurement	Voltage range	0 to 36 V
	AI3 (I) Current measurement with a shunt	Voltage range	± 80 mV
2	**Voltage Measurement**	**# of voltage channels**	**1**
	Isolated floating differential analog inputs for DC voltage measurement	Maximum resolution	16 bit
		Maximum sample rate	1100 S/s
		Input impedance	830 kΩ
2.1	Voltage Measurement 1		
	AI3 (V) Voltage measurement	Voltage range	0 to 36 V
3	**Digital Input**	**# of digital input channels**	**4**
	Isolated digital inputs with AC/DC photo coupler circuits	Maximum sample rate	18 kHz
		Maximum input voltage	30 V
		On-State	≥ 4.9 V
4	**Digital Output**	**# of digital output channels**	**4**
	Isolated digital outputs with separated solid state relays (Photo MOS Circuits)	Maximum switching rate	50 Hz
		Maximum switching voltage	48 VDC/AC$_{peak}$
		Maximum switching current	1000 mA
		On resistance	149 mΩ
5	**Digital Sensor IO**	**# of digital output channels** **# of digital input channels**	**3** **3**
	Isolated high speed digital inputs and outputs with direct FPGA access for sensor connectivity	Input circuit	5 V (CMOS)
		Output circuit	5 V (CMOS)
		Propagation delay	max. 50 ns
		Maximum rate	10 MHz
6	**Digital Temperature Measurement***	**# of channels**	**3**
	Isolated digital inputs for digital temperature sensors *) Temperature inputs are shared with digital sensor inputs	Sensor support	e.g. TSIC 306
		Temperature range	-50 to +150 degC
7	**Isolated Sensor Supply**	**voltage**	**5 V or 3.3 V (selectable)**
	Supply voltage for digital sensors	Maximum current	25 mA

8	**Common Specification**	
	Dimensions	90 x 23 x 70 mm
	Weight	ca. 143 g
	Operating temperature range	-40 to +70 degC
	Software support	FPGA driver for LabVIEW 2011 or higher

Software

Convenient LabVIEW FPGA driver software is included and gives full access to all functions of the module. Programming examples show how the module can be integrated into the user application.

More....

With the optional available wireless modules SEA 9751 or SEA 9754 the alarm signals or the measurement values itself can be transmitted via mobile networks to the operator.