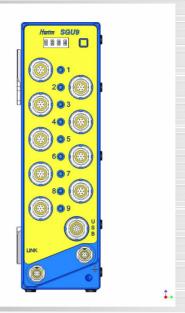
ZODIAC DATA SYSTEMS GMBH HS-310-0140

preliminary first draft Technical Specification HEIM DATaRec^a 4 SGU9



General

The HEIM DATaRec 4 SGU9 Module is a 9 channel strain gauge data acquisition system.

The module can operate as a standalone front-end (PC connection via USB 2.0) or linked together with additional HEIM DATaRec 4 Modules to a multi channel system via HeimLink.

Each input channel is galvanical isolated completely independent and consists of amplifier, 24 bit A/D converter and anti aliasing filter. A special module feature is that one of the input channels can be set to RPM mode.

The HEIM DATaRec 4 represents leading edge technology.

9 channel strain gauge module

Number of channels

Sampling frequency (Fs) up to 25 kHz, settable in steps of 10

Hz. Each module can work with a dedicated sampling frequency, which

is a binary divider of the overall

system FS

Bandwidth max. 10 KHz (settable) Sampling ratio 2.5; no mirroring effect >90 dB at 2 V_{peak} range Dynamic range (SFDR)

Analogue to digital

Converter

Coupling Bridge type

Data resolution 32 bit or 16 bit

THD <-90 dB at 2 V_{peak} range

<0.2° Phase accuracy

DC accuracy 1mV range TBD ±0.1 % or ±1 mV

Input impedance 5 ΜΩ

Signal level 1 mV_{peak} to 10 V_{peak}

settable in steps 10 mV, 20 mV, 100 mV, 200 mV, 500 mV, 1 V, 2 V,

5 V, 10 V DC full, half 120 - 1 ΚΩBridge resistor

Bridge supply voltage 0.5 V to 10 V in steps of 100 mV

14 bit D/A converter Auto offset capability

9 * LEMO (7pol 1B) or Connector 3 * D-Sub 44 pin

70.1 x 184 x 124.5mm (w x h x d) **Dimensions**

including fixing system

Weight **TBD**

conduction cooled Cooling Power consumption 25 W typical Power input range 17 - 28 V DC Input DC power low power detection

Communication HeimLink, USB 2.0 and RS232

Functions

Integrated calibration unit 3 ppm reference calibration Galvanic isolation ves per channel

Max. isolation voltages power input (48 V)

digital / analogue part (48 V) Input channel voltage safety ± 35 V

RPM channel one channel is useable as RPM input RPM sampling frequency 16 x Fs (max. 3.2 MHz) 16 bit mode

32 x Fs (max. 6.4 MHz) 32 bit mode threshold level 0 - 100% of the

selected amplifier step

Environmental specifications

Vibration Shock 10 g

Temperature IEC 60068-2-14-Nb

operational

Storage

Link chain system

Standalone module -20 °C - 70 °C -30 °C - 70 °C1)

-10 °C - 55 °C

-20 °C - 55 °C1)

-40 °C - 85 °C

Humidity 0 - 93% relative, non-condensing **EMI** DIN EN61000 / DIN EN61326²⁾

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Notes

Performance varies depending on the installation environment. The shown values were measured using an appropriately designed test system including the HEIM DATaRec 4 power supplies under nominal conditions of temperature, voltage, etc..

Performance is significantly influenced by storage medium type, host computer performance and load, used acquisition software, signal module configuration, power supplies and cabling.

- special start-up procedure required
- for operation in industrial environment (according to DIN EN 61326) earthing of the module and / or shielded cable is necessary to prevent influences by external electromagnetic distortions.

Internal Note

- 1) Bandbreite kann im stand alone Betrieb bis 12 KHZ
- ²⁾ (TBD)

Applications



Miniature system
Single module system with direct link to the PC via USB 2.0



Compact system
Centralized acquisition system with up to 768 channels



GSS base system, up to six internal Signal Modules

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Distributed data acquisition system Remotely located modules (up to 768 channels)



Distributed multi channel system
Remotely located groups of modules (up to 768 channels)



Decentralized system Base system, module extender and external storage



