# **ZODIAC DATA SYSTEMS GMBH** HS310-0030

# Technical Specification HEIM DATaRec<sup>a</sup> 4 CHG6



## General

The HEIM DATaRec 4 CHG6 Module is a 6 channel charge 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 completely independent and consists of amplifier, 24 bit A/D converter and anti aliasing filter.

The HEIM DATaRec 4 represents leading edge technology.

A special module feature is that one of the input channels can be set to RPM mode.

### Charge sensor module

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Number of channels	6
Sampling frequency (Fs)	500 Hz – 200 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	DC to max. 80 kHz (settable)
Sampling ratio	2.5; no mirroring effect
Dynamic range (SFDR)	>90 dB at 1 nC range
Analogue to digital	24 bit
converter	
Data resolution	16 bit or 32 bit
THD	<-95 dB at 5 nC range
Phase accuracy	<0.2° at 20 kHz bandwidth
	(without optional low pass filter)
Accuracy	±0.1 % or ±1 pC
Input impedance	10 <sup>13</sup> Ω
Signal level	2 pC peak to 10.000 pC peak
	settable in steps
Coupling	AC (-3dB at 1 or 0.4 Hz selectable
	≥ 200 pC <sub>peak</sub> / 1.0 Hz < 200 pC)
Optional filter version	
HS310-0030/1	
Analogue low pass filter	500 Hz, 1 kHz, 2 kHz or 5 kHz
Connector	6 x Micro Dot

### Dimensions

Weight Cooling Power consumption

Power input range Input DC Power Communication

37.1 x 184 x 124.5 mm (w x h x d) including fixing system 940 g typical conduction cooled 11 W typical 12.6 W typical with filter option 17 - 28 V DC low power detection HeimLink, USB 2.0 and RS232

### **Functions**

Integrated calibration unit	1 ppm reference calibration	
Galvanic isolation	yes	
Max. isolation voltages	power input (48 V)	
	digital / analogue part (48 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	
Mode	single ended	
Joint mode	yes	
Environmental specifications		

Vibration	5 g
Shock	10 g
Temperature	IEC 60068-2-14-Nb
operational	
Standalone module	-20 °C - 70 °C
	-30 °C - 70 °C <sup>1)</sup>
Link chain system	-10 °C - 55 °C
	-20 °C - 55 °C <sup>1)</sup>
Storage	-40 °C - 85 °C
Humidity	0 - 93% relative, non-condensing
EMI	DIN EN61000 / DIN EN61326 <sup>2)</sup>

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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.

### **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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for operation in industrial equirement

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.



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



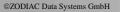
Distributed multi channel system Remotely located groups of modules (up to 768 channels)



Decentralized system Base system, module extender and external storage







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