



### 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

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 converter	24 bit
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 <sub>peak</sub> to 10.000 pC <sub>peak</sub> 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

37.1 x 184 x 124.5 mm (w x h x d) including fixing system

### Weight

940 g typical

### Cooling

conduction cooled

### Power consumption

11 W typical  
 12.6 W typical with filter option

### Power input range

17 - 28 V DC

### Input DC Power

low power detection

### Communication

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 operational	IEC 60068-2-14-Nb
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>

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

## 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.

- 1) special start-up procedure required
- 2) 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.

## Applications



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



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



Compact system  
Centralized acquisition system with up to 768 channels



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



GSS base system, up to six internal Signal Modules



Decentralized system  
Base system, module extender and external storage

### MH-Gesellschaft für Hardware / Software mbH

Schloss Lechenich / Schlossstraße 18 D-50374 Erfstadt  
Tel.: +49 2235 60 95 – Fax: +49 2235 60 97  
[info@mh-gmbh.de](mailto:info@mh-gmbh.de) - <http://www.mh-gmbh.de>

### ZODIAC Data Systems GmbH

Friedrich-Ebert-Strasse / TechnologiePark – D-51429 Bergisch Gladbach  
Tel.: +49 2204 84 41 00 – Fax: +49 2204 84 41 99  
[info.heim@zodiacaerospace.com](mailto:info.heim@zodiacaerospace.com) – <http://www.zodiac-data-systems.com>

