General

The HEIM DATaRec 4 DIC6 Module is a 6 channel voltage / ICP™ 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 two of the input channels can be set to RPM mode.

6 channel voltage and ICP™ input 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)	>96 dB at 2 V_{peak} range in16 bit mode >102 at 2 V_{peak} range in 32 bit mode with filter option > 90 dB at 2 V_{peak} range 3 kHz signal
Analogue to digital Converter	24 bit
Data resolution	16 bit or 32 bit
THD	<-90 dB at 2 V_{peak} range
Phase accuracy	<0.2 ° at 20 kHz bandwidth (without optional filter)
AC accuracy	
Up to 50 kHz	±0.05% or ±1 mV typical max. 0.1%
50 kHz – 80 kHz	max. 0.2%
DC accuracy	±0.1% or ±1 mV
Input impedance	1 MΩ (DIC6L differential mode) 500 kΩ (DIC6B single ended)

Signal Level	±10 mV_{peak} to ±10 V_{peak} settable in steps
Coupling	DC, AC (-3dB at 2 Hz)
ICP™ power	22 V DC, 4 mA constant current
Optional Filter version	
HS310-0011/1	DIC6B
HS310-0016/1	DIC6L
Analogue high pass filter	22 Hz
Analogue low pass filter	500 Hz, 1 kHz or 4 kHz
Connector	6 x BNC DIC6B 6 x LEMO DIC6L
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	10 W typical 11.6 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)
Input channel voltage safety	± 35 V
TEDS sensor identification	IEEE 1451.4 standard for all 6 channels
RPM channel	two channel are 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

Technical Specification HEIM DATaRec® 4 DIC6B / DIC6L 0.2 Hz

Mode	DIC6B: single ended
	DIC6L: differential / 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 [1]
Link chain system	-10 °C - 55 °C
	-20 °C - 55 °C [1]
Storage	-40 °C - 85 °C
Humidity	0 - 93% relative, non-condensing
EMI	DIN EN61000 / DIN EN61326 [2]

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

Compact system
Centralized acquisition system with up to 768 channels

GSS base system, up to six internal Signal Modules