



General

The HEIM DATaRec[®] 4 DIC24 Plus module is a 24 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.

24 channel Voltage/ICP[®] module

Number of channels	24
Sampling frequency (Fs)	350 Hz to 50 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. 20 kHz (settable)
Sampling ratio	2.5; no mirroring effect
Dynamic range (SFDR)	102 dB typical at 2V _{peak} range 32 bit without analogue filter
Analogue to digital converter	24 bit
Data resolution	16 bit or 32 bit mode
Phase accuracy	<0.2° without analogue filter
AC accuracy	±0.1 % or ±1 mV
DC accuracy	±0.1 % or ±1 mV
Input impedance	1 MΩ
Signal level	±10 mV _{peak} to ±10 V _{peak} settable in 10 steps
Coupling	18 x AC (-3dB at 1.5 Hz), ICP [®] 6 x DC/AC (-3db at 1.5 Hz), ICP [®]
ICP [®] power	22 V DC, 4 mA constant current

Analogue filter	
Number of channels	4
High pass filter	22 Hz
Low pass filter	500 Hz, 1 kHz or 4 kHz
Connector	3 * 25 pin D-Sub, 6 BNC
Dimensions	70.1 x 184 x 124.5 mm (w x h x d) including fixing system
Weight	2000 g typical
Cooling	conduction cooled
Power consumption	15 W typical
Power input range	17 - 28 V DC
Input DC power	low power detection
Communication	built-in USB 2.0, RS232 and high speed Link interfaces

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 24 channels
RPM channel	channel 5 and 6 switchable
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

Technical Specification HEIM DATaRec[®] 4 DIC24 Plus

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 EN61000-6-4 / DIN EN61326-1 ²⁾

If the ICP[®] is activated on one channel then the 10 V input range for the whole module will be automatically disabled.

Notes

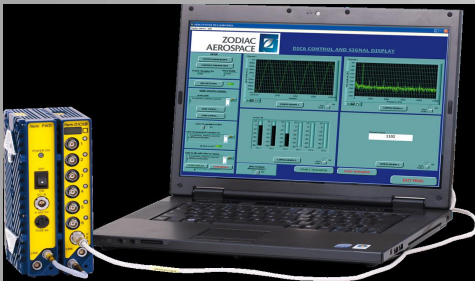
Performance varies depending on the installation environment. The shown values were measured using an appropriately designed test system including the HEIM DATaRec[®] 4 power supplies under nominal conditions of temperature, voltage, etc..

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

1. LOW NUMBER OF CHANNELS



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

2. COMPACT SYSTEM



Central measuring system with a maximum of 384 channels. Can operate without PC, via pre-programmed link module, in standalone, logging, modes

3. DISTRIBUTED DATA ACQUISITION SYSTEM



Distributed data acquisition system with a cable length up to 100 meters and a maximum of 384 channels

4. MULTI-CHANNEL SYSTEM



Distributed measurement system with more than 700 channels

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Document No.: 54704101

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