ZODIAC DATA SYSTEMS GmbH
HS310-0120

Technical Specification
DATaRec â 4 DIC24

General

The HEIM DATaRec 4 DIC24 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 techonology.
A special module feature is that one 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)	>90 dB at 2 V_{peak} range
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°
AC accuracy	±0.1 % or ±1 mV
Input impedance	1 MΩ
Signal level	±10 mV_{peak} to ± 10 V_{peak} settable in steps
Coupling	AC (-3dB at 0.75 Hz typical)
ICP™ power	22V DC, 4 mA constant current
Connector	1 * 50 pin D-Sub
Dimensions	48.1 x 184 x 124.5 mm (w x h x d) including fixing system
Weight	1100 g typical
Cooling	conduction cooled
Power consumption	15 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	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 24 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

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)]

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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.

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.

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

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

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