

DIC24X (Code 3631)

24 Channel ICP®/Voltage Data Acquisition System of the DATaRec 4 Series



Overview

DIC24X is a high-performance and versatile data acquisition system equipped with 24 input channels, which can be operated as an independent front-end in connection with a notebook/computer or can be used together with other modules in a DATaRec 4 system. DIC24X provides 24 Line-/ICP® inputs with a sampling frequency of 50 kHz per channel. Six inputs are equipped with switchable DC coupling and can be used for classical dynamic measurement, e.g. sound and vibration, and also for more static measurements like brake pressure or steering angle.

Moreover, four channels are equipped with switchable high pass and low pass filters. Two channels are configurable as RPM channels with a 32x module sampling frequency and thus can be optimally used for the high-precision recording of motor rotation speed and vehicle speed.

In the front-end mode, the DIC24X is fed by the power supply PWD (or PWH9) and is connected to the computer via USB.

Furthermore, DIC24X is easily integrated into a DATaRec 4 system for use in combination with other modules.

Features

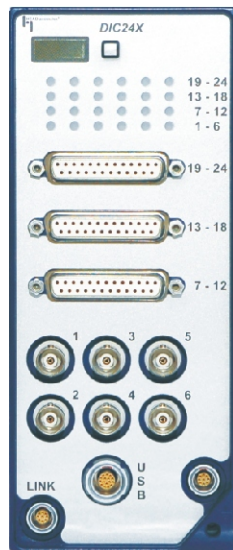
- Data acquisition system with 24 ICP®/voltage channels
- 6 channels with switchable DC coupling
- Max. 50 kHz sampling frequency per channel
- 4 channels with switchable high pass and low pass filters (22 Hz, 500 Hz, 1 kHz, 4 kHz)
- 2 RPM channels (32 x module sampling frequency)
- Connection of TEDS sensors
- Integrated amplifier
- 24 bit A/D converter
- Anti-aliasing filter
- Operation as a front-end system (connection to the PC via USB)
- Usable as a part of a DATaRec 4 system (connection to a LINK module via LINK interface)

Scope of Supply

- DIC24X (Code 3631)
24 channel ICP®/voltage data acquisition system
- CLU IV.2 (code 3673-2) LEMO 17-pin > USB plug, connection cable input module to PC (w/o link module), 2 m (78.74")

Accessories (optional)

- PWD (Code 3651)
9 - 36 V DC power supply for the DATaRec 4 series
- PWH9 (Code 3652)
12 - 36 V DC power adapter for the DATaRec 4 series
- CDB II.1 (Code 3556)
Breakout cable 6 x BNC > D-sub 25-pin
- LBR I.01 (code 3670-01)
Link connection cable between 2 modules, for compact systems
- DSM (Code 3690)
Seat Mount for DATaRec 4 systems



- Display**
Status display
- Channel LEDs**
- 25-pin D-Sub**
3 x 6 AC
(breakout cable 6 x BNC > D-sub 25-pin)
- BNC**
Switchable channels:
AC/DC (6)/
filter (4) / RPM (2)
- USB**
- LINK connections**
Connection to other modules
Power supply

Software (required)

- HEAD Recorder (Code 4630)
Programmable recording software

Software (optional)

- ArtemiS (Code 4600)
Multi channel analysis software

Technical data DIC24X

Number of channels:	24
Sampling frequency (Fs):	350 Hz to 50 kHz, selectable in steps of 10 Hz. Each module can work with a dedicated sampling frequency, which is the binary divider of the overall system Fs
Bandwidth:	0.4 x sampling frequency
Dynamic range:	102 dB at 2 V _{peak} range 32 bit
Analog to digital converter:	24 bit
Data resolution	16 bit or 32 bit mode without analog filter
Phase accuracy:	<0.2° without analog filter
AC accuracy:	±0.1 % or ±1 mV
DC accuracy:	±0.1 % or ±1 mV
Analog filter, number of channels: 4	
High pass filter:	22 Hz
Low pass filter:	500 Hz, 1 kHz or 4 kHz
Input impedance:	1 MOhm
Signal level:	±10 mV _{peak} to ±10 V _{peak} selectable in steps
Coupling:	18 x AC (-3dB at 1.5 Hz) 6 x DC/AC (-3db at 1.5 Hz)
ICP® power:	22 V DC, 4 mA constant current
Connector:	3 x 25 pin D-Sub, 6 BNC
Dimensions (W x H x D):	70.1 x 184 x 124.5 mm (2.6" x 7.2" x 4.9") incl. attachment system
Weight:	< 2000 g typical (4.41 lb)
Cooling	conduction cooled
Power consumption:	18 W typical
Power input range:	17 - 28 V DC
Input DC power:	low power detection
Integrated calibration unit:	1 ppm reference calibration
Galvanic isolation:	yes
Max. isolation voltage:	Power input 48 V
digital / analog 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 bit mode: 16 x Fs (max. 0.8 MHz) 32 bit mode: 32 x Fs (max. 1.6 MHz)
Threshold level (RPM channels):	0 - 100 % of the selected amplifier step
Mode:	single ended
Vibration resistance:	5 g
Shock resistance:	10 g
Temperature operational	
Stand-alone module:	-30° C to +70° C (-224° F to 158° F)
Link chain system:	-20° C to +55° C (-4° F to 131° F)
Storage:	-40° C to +85° C (-40° F to 185° F)
Humidity:	0 - 93 % relative, non-condensing