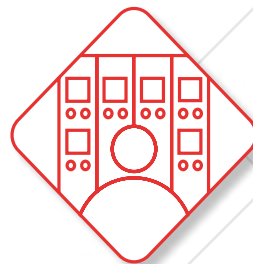


DEC3000
Portable
Datarecorder



www.pizzi-instruments.it

Instruments and Systems for Geotechnical and Structural

DEC3000

Portable

Datarecorder



Description

The DEC 3000 proposed by Pizzi Instruments, is a portable unit for measurement, acquisition and storage of data, with internal memory, keyboard and display, which offers a wide variety of possible functions and configurations.

It is able to read and acquire almost all sensors currently available on the national and international market, such as vibrating wire and analog sensors (voltage or current), potentiometers, pulse, etc. This unit offers the possibility of setting individual channels with the specific parameters of each sensor and the possibility to preconfigure measurement cycles by channel or by measurement groups.

Born of over 30 years of experience in the field of instrumentation for geotechnical and structural monitoring, our DEC 3000 is the result of a long series of projects and products that have accompanied our path, as designers and makers of instruments, in continuation of a high-tech tradition started by Officine Galileo in Florence. The control unit is also capable of measuring Mairhak and Carlson instruments, found in structures constructed many decades ago.

The DEC3000 is a perfect instrument for all applications and for all sites where a portable unit is needed. Easy to use, resistant to external agents and guaranteeing top performance, it is powered by internal batteries ensuring optimal duration for use in the field.

Operation

The procedure for automatic operation and the ability to configure and store of groups of channels has been designed with the aim of allowing the user to query a large number of sensors by connecting them to a selector switch on the unit and setting parameters typical of each sensor.

The user can then program groups of instruments individually and test them by connecting DEC3000 to the switch or multiplexer and initiating acquisition; data is then downloaded to a PC and managed by Sentinel software.

The DEC3000 is an evolution of the simple portable readout unit. The internal memory, multiple configurations and possible settings, high technology and simplicity, make it perfect for every application, from the simple reading of a few sensors to use in large measurement campaigns.

Applications

Main applications are:

- **Bridges**
- **Dams**
- **Galleries**
- **Poles**
- **Railway Lines**
- **Large structures**
- **Monuments**
- **Churches**
- **Buildings of historical and cultural heritage**

Caratteristiche e benefici

- **Designed and manufactured in our laboratories in Florence**
- **Small size**
- **Customizable**
- **Easy to use**
- **Long battery life**
- **On-site manual configuration via keypad and display**
- **Possible to view via display configurations and data collected on site**
- **Configurable via serial connection to a PC**
- **Memory capacity 15.360 readings**
- **Can be connected to selectors or multiplexer**
- **Configurable for individual channels or groups of channels**
- **Possible to set alarm thresholds for individual channels**
- **Comfortable to carry**
- **Possible to programme automatic acquisition cycles**
- **Interface and software for memory download, data management and configuration of main functions**
- **Availability of RS232 or other communication ports**
- **Availability of self-tests of the entire acquisition system**

Measuring principle

The portable datarecorder DEC 3000 is an evolution of the simple portable readout unit since it allows to carry out manual acquisition of a single instrument at a time, as well as, acquisition of data in automatic mode, and of more instruments consecutively if connected to a selector or a multiplexer.

Very low consumption allows the battery to last for long periods without the need to recharge.

For this reason the portable DEC3000 model acquisition unit is ideal to carry out long-term measurements campaigns, such as construction sites of large structures where the measures to be carried out during the day are many, the sensors are of different type and often there is no possibility to re-charge the battery of the unit.

The memory allows to set and maintain programmed the typical parameters of the sensors combining them with precise channels, then downloading all measurements taken at the end of the campaign.

Similarly it is ideal to carry out single measurements, thanks to its high reliability and measurement repeatability.

High performance and the ability to read and acquire almost all monitoring instruments make this portable acquisition unit one of the most effective and versatile instruments available on the market.

The DEC3000 is able to read all instruments produced by us and almost all instruments on the international market; including:

- **Level meters**
- **Coordinometers for plumb lines**
- **Extensometers**
- **Deformometers**
- **Tensiometric capsules**
- **Load cells**
- **Piezometers**
- **Meteorological sensors**
- **Settlement gauges**
- **Thermometers**
- **Bar Extensometers**
- **Inclinometers**
- **Flow meters**
- **Vibrating wire Sensors (350 to 6000 Hz)**
- **Others**

Technical Specifications

Memory	15.360 (number of possible measurements to be stored)
Acquisition intervals	2 min, 5 min, 20 min, 1 hour, 6 hours, 8 hours, 12 hours, 24 hours, 1 week
Absorption	5 VA max
Autonomy of battery	12 h
Display	4 rows x 20 digits – LED backlit
Keyboard	With 8 keys protected with polycarbonate film with a thickness of 175 µm
Internal Clock	Maximum error 1 min / month

Digitizer

A/D Converter	24 bit
Expandibility	Up to 479 channels by multiplexer cards at 8 external channels
Selector	Relay at 2 or 4 contacts: on: < 50mΩ; off: > 1000MΩ, 1500V insulation
Protection	From overvoltages by transzorber, on relay card for each sensor

Type of reading, accuracy and resolution

Vibrating Wire (350 – 6000 Hz)	Accuracy Measurement 0,01% - Resolution 0,01 Hz
Voltage (+/- 5 V)	Accuracy Measurement 0,003% F.S. - Resolution 152 uV
Current (4-20 mA)	Accuracy Measurement 0,02% F.S. - Resolution 0,762 uA
Potentiometer Magneto (1-10 kΩ)	Accuracy Measurement 0,001% F.S. - Resolution 0,0015%
Thermo – resistance PT100	Accuracy Measurement 0,06% F.S. - 0,06 °C
Thermo – resistance CU30	Accuracy Measurement 0,06% F.S. - 0,06 °C
Pulse counting (0-1000 imp.)	Accuracy Measurement 0,1% F.S. - 1 pulse
Potentiometer Resistive (100 Ω - 10 kΩ)	Accuracy Measurement 0,02% F.S. - Resolution 0,0015%
Resistenze (0-1 kΩ)	Accuracy Measurement 0,003% F.S. - Resolution 0,03 Ω
Resistive Bridge	Accuracy Measurement 0,003% F.S. - Resolution 0,0015%
Carlson (°C)	Accuracy Measurement 0,06% F.S. - 0,06°C
Carlson (Ratio)	Accuracy Measurement 0,003% F.S. - Resolution 0,0015%
Carlson (Ω)	Accuracy Measurement 0,003% F.S. - Resolution 0,03 Ω
NTC	Accuracy Measurement 0,06% F.S. - 0,06° C
CU15	Accuracy Measurement 0,06% F.S. - 0,06 °C
Vibrating Wire GALILEO (350 ÷ 6000 Hz)	Accuracy Measurement 0,01% F.S. ra
Vibrating Wire Mahiak	Accuracy Measurement 0,01% F.S.

Chassis

Type	Plastic material, black, watertight
Dimensions	162 x 114 x 85,6 mm
Index of Protection	Case IP66, Readout Unit IP40 (EN60529)
Weight	2,65 kg
Operation Temperature	- 40 to 85 °C
Installation	Portable

Power Supply

Voltage	12 V
Consumption	60 mA max 0,1 mA Stand by 5VA max
Connectors	On board
Internal Battery	2 Ah

Connections

Serial Port	1
Baud rates	From 75 up to 57600 baud
Serial Protocol	8 - 1 - 1 - None
Electric Standard	RS485, RS232, RS422
Types of modem	GSM, analog PSTN, Radio 2.4GHz, GPRS
Alarms	Settleable thresholds

Environmental operating conditions

Temperature	-40 +85 °C
Humidity	0 95% rel. max
Altitude	0 8000 mt

The Company

For more than 40 years we have been designing and producing precision instruments for monitoring large structures sold all over the world.

Accuracy in design, efficiency in construction, reliability in management, these are the prerogatives that every big project must have and that structural monitoring systems must guarantee



Technical assistance

If you have any requests or questions about our instruments or if you have special needs that require different solutions from the standard, please contact us. Our team will provide all the necessary information and will be very happy to work with you to study, develop and customize instruments and solutions suitable for your specific needs.

All data present in the sheets could change without notice.

Please check the release carefully and for more details contact Pizzi Instruments.

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