



INSTRUCTIONS MANUAL

PORTABLE DATALOGGER

FOR VIBRATING WIRE SENSORS

Model PFC-12

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Tel.: 1.450.465.1113 • 1.877.ROCTEST (Canada, USA) • 33.1.64.06.40.80 (France) • 41.91.610.1800 (Switzerland)

www.roctest.com

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1 DESCRIPTION

The portable datalogger model PFC-12 is designed to read the data from a Telemac's dual coil vibrating wire sensor. Readings can be taken in sustained mode or dampened. The temperature reading is also possible by measuring the resistance of the output coil of the sensor.

1.1 GENERAL DESCRIPTION

The PFC-12 datalogger is integrated in an impact resistant casing made of ABS plastic. Once the lid is closed, the unit is completely waterproof. Opened, the reading station is splash proof.

Included with the PFC-12 are a battery charger, a USB cable and two sets of cables in order to allow connection to various sensors. The unit is powered by a rechargeable battery. When the battery is fully charged, the unit can be used over 8 hours.

An interactive menu interface facilitates the use of the unit. A graphic backlit LCD 64 x 128 pixels displays the frequency and temperature readings simultaneously.

1.2 FRONT PANEL

Located on the front panel of the PFC-12 are a switch, connectors, and a removable module integrating a monitor and a keyboard.



Figure 1: Front panel of the PFC-12

1.2.1 CONNECTORS

The reading unit has a power button and 4 connectors:

- A power connector for connecting a battery charger
- A connector for connecting the removable module to the PFC-12
- A PC interface communication connector
- A connector for connecting the jumper cable to the vibrating wire sensor.

The two-section connecting cable allows the connection either directly to the vibrating wire sensor using alligator clips, or to a switching station via a Jaeger connector.

1.2.2 KEYBOARD

The keyboard includes :

- 4 white arrows : used to move the cursor
- 'Enter' : used to select or enter information
- 'Esc' : used to navigate the menu
- 'Shift': Press 1, 2 or even 3 times on "shift" and on the appropriate key to select letters or symbols (blue)
- 'Num Lock': used to select the digit.

2 HOW TO USE THE UNIT

Put the unit on. Wait about 30 seconds (the station performs a compilation). Make sure the removable module is connected to PFC-12.

Connect a vibrating wire sensor to the unit. Refer to the following color code:

# Jaeger Contact	Signal description
1 (Yellow)	Compensation (if available)
2 (White)	Listen coil
3 (Green)	Sustain coil
4 (Black)	Return signal of the 2 coils

This will appear on the main menu:

- Frequency readings (Hz)
- Temperature readings (in °C)
- Configuration
- Recording
- Battery voltage
- Temperature (of the unit)
- Display settings

Verify that the voltage level of the battery is sufficient. If necessary, you can connect the station to an external power source.

Do not let the battery voltage drop below 11.3 V.

If necessary, select "*Display settings*" to activate the backlight and self-closing, and to adjust the contrast (required to use the item at low temperature).

Select "*Configuration*" to choose the type of reading. The unit will display:

"Status"

- "*Sustained : ON/OFF*"
- "*One coil : ON/OFF*"
- "*Sustained : TRUE/FALSE*"
- "*Keep Sustained : TRUE/FALSE*"
- "*One coil : TRUE/FALSE*"
- "*Excitation : TRUE/FALSE*"
- "*Temperature : TRUE/FALSE*"
- "*Sound : TRUE/FALSE*"
- "*Sound VOLUME : TRUE/FALSE*"

"Sustained" : This mode allows you to read the vibrating wire in maintained mode and temperature.

“Keep Sustained”: Reads the vibrating wire in sustained mode, but no temperature reading.

“One coil”: Reads one of the coils of the sensor in dampened mode. This can be useful when the other coil is damaged. The reading is carried out with the wire connected to the coil. In the case where the listen coil is damaged, connect the sustained coil to the listen alligator clip. An asterisk appears next to 'Frequency' confirming that this reading mode has been selected.

“Excitation”: Allows to magnetise a coil by injecting a voltage pulse.

“Temperature”: Reads only the temperature reading.

“Sound”: Allows you to hear the vibration frequency of the vibrating wire.

“Sound Volume”: Allows to adjust the volume of the frequency of vibrating wire.

From the main menu, select “Save” and 'YES' to activate this mode to choose the acquisition interval from the choices offered are: 30 sec, 60 sec, 5 min, 10 min, 30 min and 60 min.

Then save. The unit will then perform a compilation. Then, you must again return to the main menu and select “Recording” and activate the recording function by selecting “YES”.

Then leave the power switch enabled to allow continuous acquisition. The screen will turn off after a while. Simply press a key on the keyboard to reactivate it.

Transferring data to a computer

Install PC200W on your computer. Configure it to indicate the COM port you use on your computer. Connect the PFC-12 to your computer and then turn it on. Click on “Connect” in PC200W. Transfer data to the computer. Use a spreadsheet like Excel to format the files generated by PC200W. Note if the data is delimited by dots or commas.

3 MAINTENANCE

To prevent permanent damage that may be caused to the battery, it is recommended not to use the PFC-12 if the charge is less than 11V. When the unit is turned off, connect it to the charger. The electronic motherboard of the device has been designed to accommodate a continuous load.

Make sure the front of the unit remains clean and dry. If you need to clean, use a soft cloth and clean water. The use of chemical cleaners or solvents is not recommended and may even damage the plastic protection.

When you close the lid of the unit, be careful not to pinch the chains of connection plugs, as this could damage the device seals.

4 TROUBLESHOOTING

Make sure to keep the unit and its sensors clean and dry, and then store them in a safe place in order to reduce the risk of damage.

4.1 UNSTABLE READING

- Check if the same problem occurs with another value. In the case of a linear sensor, check different positions.
- Check the connection between the sensor and cable.
- Check the connection between the cable and the unit.
- Check to see if the same problem occurs with other sensors (using the same reading mode). Is the environment quiet? Are there other activities that may create electrical interference or cause vibrations?
- Check the sensor. It may be damaged.

4.2 NO READING

- Check the unit's battery charge level.
- Check the connection between the sensor and cable.
- Check the connection between the cable and the unit.
- Use the "excite" command to magnetize the coil.
- Check the sensor. It may be damaged.