8 SETUP MENU - SETUP

The **SETUP** list (window) contains different windows and positions. Some of them are directly related to vibration measurements, and some - with the settings of the hardware components of the instrument. In order to open the **SETUP** list the user has to:

- press the **<Menu>** push-button,
- select from the main list, using the **<▲>**, **<▼>** (or **<◄>**, **<►>**) push-buttons, the **SETUP** text (highlight it inversely),
- press the **<ENTER>** push-button.

Display in the main list; SETUP text highlighted

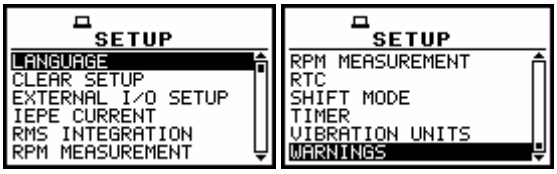
In the **SETUP** list, the following items are available:

LANGUAGE	it enables the user to set language of the user interface.
CLEAR SETUP	it enables the user to return to the default, factory setup.
EXTERNAL I/O SETUP	it enables the user to select the available functionality of the **Ext. I/O** port.
IEPE CURRENT	it enables the user to choose current IEPE supply.
RMS INTEGRATION	it enables the user to select the way of integration for the **RMS** measurement.
RPM MEASUREMENT	it enables the user to activate the **RPM** (**R**evolution **P**er **M**inute) measurement option. This position does not appear after activation of the function.
RTC	it enables the user to set the **R**eal **T**ime **C**lock.
SHIFT MODE	it enables the user to set the operating mode of the **<Shift>** and the **<Start / Stop>** push-buttons.
TIMER	it enables the user to set the Timer function.
VIBRATION UNITS	it enables the user to select the vibration units in which the results of the measurements are to be given.
WARNINGS	it enables the user to switch on or off the warnings that can be displayed during the operation of the instrument.

Pressing the **<Shift>** and **<▲>** (or **<Shift>** and **<◄>**) push-buttons results in a movement to the first position of the opened list and pressing the **<Shift>** and **<▼>** (or **<Shift>** and **<►>**) – results in a movement to the last position of the opened list.

In each available position any change is performed by means of the **<◄>**, **<►>** push-buttons. In order to confirm the selection the **<ENTER>** push-button has to be pressed. After this confirmation, the opened window or list is closed.

In order to ignore any changes made in the opened window or list the user has to press the **<ESC>** push-button.



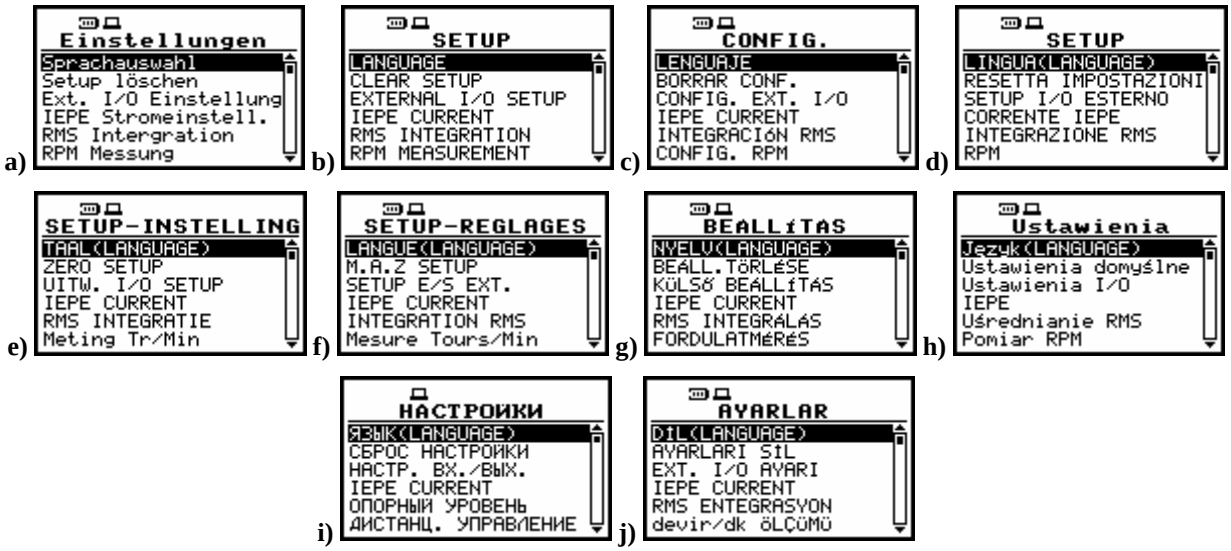
SETUP window

8.1 Setting the language of the user interface - LANGUAGE

The **LANGUAGE** enables one to select the language of the user interface. In order to enter the list one has to press the **<ENTER>** push-button on the inversely displayed **LANGUAGE** text of the **SETUP** list. The selection is made by placing a special character by means of the **<◄>**, **<►>** push-buttons in the line with the selected language. Pressing the **<Shift>** and **<▲>** (or **<Shift>** and **<◄>**) push-buttons results in a movement to the first position of the opened list and pressing the **<Shift>** and **<▼>** (or **<Shift>** and **<►>**) – results in a movement to the last position of the opened list.

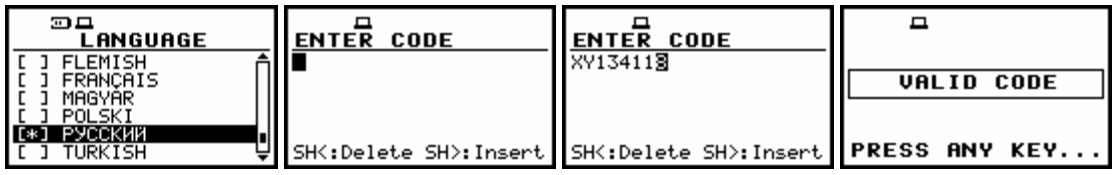
The selection is confirmed and the list is closed after pressing the **<ENTER>** push-button. The list is closed without any confirmation after pressing the **<ESC>** push-button.

SETUP window with LANGUAGE text highlighted and all available languages



Displays with available language versions of the user interface: german (a), english (b), spanish (c), italian (d) flemish (e), french (f), hungarian (g), polish (h), russian (i), turkish (j)

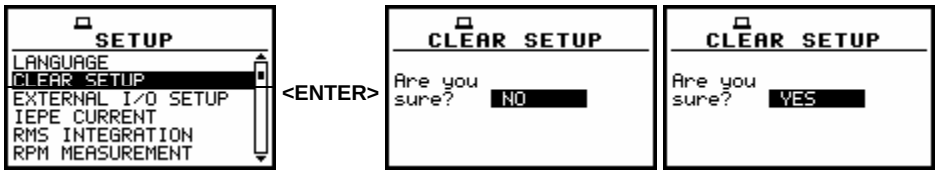
For activation of the Russian version of the user interface, the special code has to be entered.



Displays during the entering of the access code to the Russian version of the user interface

8.2 Return to the factory settings - CLEAR SETUP

The **CLEAR SETUP** enables the user to return to the default setup of the instrument. In order to enter the position the user has to select the **CLEAR SETUP** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◄>**, **<►>**) push-buttons and press the **<ENTER>**.

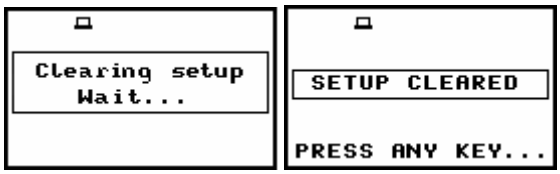


SETUP with CLEAR SETUP text selected and the request for the confirmation for CLEAR SETUP execution

After entering this position, the request for the confirmation is displayed. The proper answer for the request is selected by means of the **<◄>**, **<►>** push-buttons. The instrument returns to the default setup after pressing the **<ENTER>** push-button in the case when the answer **YES** was chosen.

During the clearing process the message **Clearing setup Wait ...** is displayed. Then the **SETUP CLEARED** message is displayed after the return to the default settings and the instrument waits for the user's reaction.

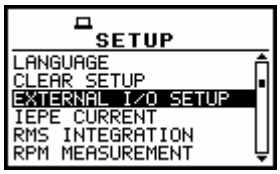
The window is closed and the instrument returns to the **SETUP** list after pressing any push-button with an exception of the **<Shift>** and the **<Alt>** one.



Displays during and after the execution of CLEAR SETUP function

8.3 Setting parameters of the I/O port - EXTERNAL I/O SETUP

The **EXTERNAL I/O SETUP** enables the user to select the available functionality of the **I/O** port. In order to enter the window the user has to select the **EXTERNAL I/O SETUP** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◄>**, **<►>**) push-buttons and press the **<ENTER>** one.



SETUP window; EXTERNAL I/O SETUP text highlighted

In order to select a value in a position of the window the **<◄>**, **<►>** should be pressed. The position is changed after pressing the **<▲>**, **<▼>** push-buttons. In order to confirm the selection the **<ENTER>** push-button has to be pressed. Such pressing closes the window. After pressing the **<ESC>** push-button the sub-list is also closed but all changes, which were made, are ignored.

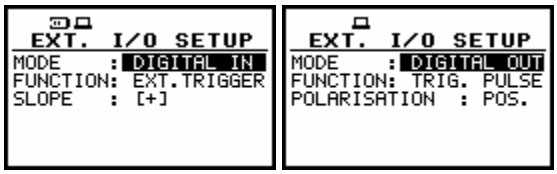
8.3.1 Mode selection of the I/O port - MODE

In the **MODE**, it is possible to select the function of the instrument's socket named as **I/O**. This socket can be used as

- the input of the digital signal used as an external trigger to start the measurements (**DIGITAL IN**) in the "slave" instrument,
- the digital output (**DIGITAL OUT**) used for triggering other "slave" instrument from the "master" one,

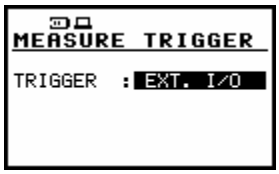
The more detailed description of the **I/O** socket is given in App. C.

To select the mode, the user has to use the **<◄>**, **<►>** push-buttons in the line with the **MODE** text. The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** (with the confirmation of all changes made there) or **<ESC>** push-buttons (ignoring all changes).



EXT. I/O SETUP windows; MODE selection

In the case of **DIGITAL IN** selection the signal appearing on the **I/O** socket will be treated as the external trigger if the **EXT. I/O** is chosen in the **MEASURE TRIGGER** window (*path: MENU / INPUT / TRIGGER SETUP / MEASURE TRIGGER / TRIGGER / EXT. I/O*)



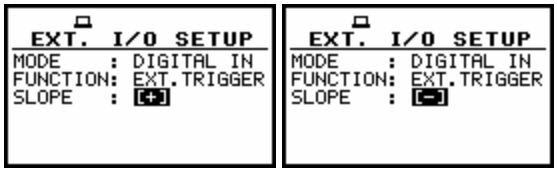
MEASURE TRIGGER windows; EXT. I/O selection

8.3.2 Digital output function of the I/O socket - FUNCTION

The **I/O** socket is used as the external trigger (**EXT.TRIGGER**) in the **DIGITAL IN** mode or as the source of trigger pulse (**TRIG. PULSE**) which starts the measurement in another “slave” instrument linked to the “master” one.

8.3.3 Selection of the slope - SLOPE [+] / SLOPE [-]

In the **SLOPE** position the user can select the active slope of trigger pulse as the **[+]** or **[–]** option. In the case when **[+]** is selected the measurement will be triggered when the slope is rising and in the case when **[–]** is selected the measurement will be triggered when the slope is falling.

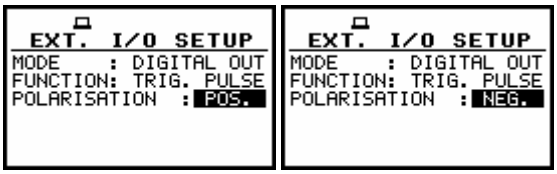


EXT. I/O window; SLOPE selection

8.3.4 Polarisation selection of the digital output signal - POLARISATION

In the **POLARISATION**, it is possible to select which polarisation of the signal (negative or positive) will be valid.

In order to select the polarisation the user has to use the **<◄>**, **<►>** push-buttons in the active line with the **POLARISATION** text. The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** (with the confirmation of all changes made there) or **<ESC>** push-buttons (ignoring all changes).



EXT. I/O SETUP windows; POLARISATION selection

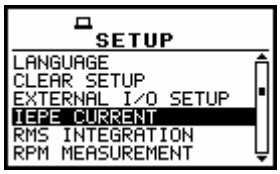
8.4 Selection of the current IEPE supply - IEPE CURRENT

The **IEPE CURRENT** influence directly Slew Rate (SR) of the IEPE transducer preamplifier. The only disadvantage of higher value of **IEPE CURRENT** is shorter battery operating time. The **1.5 mA IEPE CURRENT** is completely enough for almost all standard applications. The higher values (**3.0 mA** and **4.5 mA**) should be used in the case of long cable connection between instrument and transducer, in the case of very high level of measured signal or in the case of special IEPE trasducers which require higher **IEPE CURRENT** value or in the case of applying cable with unusually high own capacity per meter.

Usually, in the case of the **SC 26** type cable, the **IEPE CURRENT** value should be:

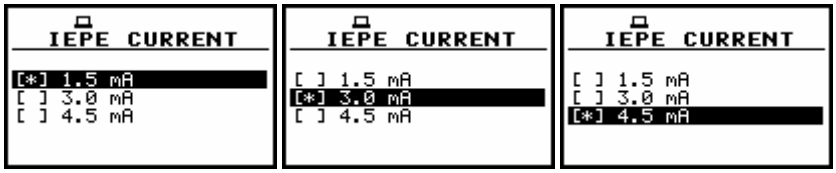
- **1.5 mA** when
  - the level is below 130 dB and the cable should not be longer than 15 meters
  - the level is above 130 dB and the cable should not be longer than 15 meters
- **3.0 mA** and **4.5 mA** should be used in other cases

In order to enter the window the user has to select the **IEPE CURRENT** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons and press the **<ENTER>** one.



SETUP window; IEPE CURRENT text highlighted

The selection of the option is made by placing a special character in the required position by means of the **<◀>**, **<▶>** (or **<▲>**, **<▼>**) push-buttons. The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** (with the confirmation of a change made in the position) or **<ESC>** push-buttons (ignoring a change made in the position).

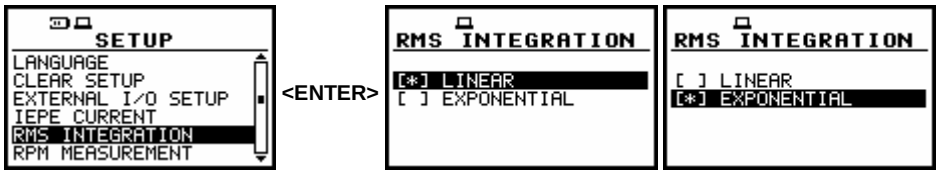


IEPE CURRENT windows; IEPE supply selection

8.5 Detector's type selection in the RMS calculations - RMS INTEGRATION

The **RMS INTEGRATION** enables the user to select the detector type for the calculations of the **RMS** function.

In order to enter the position the user has to select the **RMS INTEGRATION** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons and press the **<ENTER>**.



SETUP window with RMS INTEGRATION text highlighted and options of RMS INTEGRATION

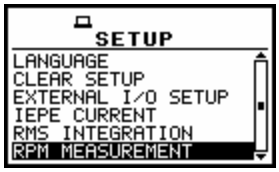
Two options are available: **LINEAR** and **EXPONENTIAL**. The required parameter can be selected by means of the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons. The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** (with the confirmation of a change made in the position) or **<ESC>** push-buttons (ignoring a change made in the position).

The formulae used for the **RMS** calculation are given in Appendix D. Setting **LINEAR** is required for getting the true RMS value of the measured signal. When this option is selected the value of the **RMS** function does not depend on the detector time constant: 100ms, 125ms, 200ms, 500ms, 1.0s, 2.0s, 5.0s, 10.0s. In this case, the indicator **Lin.** (or **L**) is displayed in the different modes of the result presentation.

Setting **EXPONENTIAL** enables the user to fulfil the requirements of another standard for the **RMS** measurements. When this option is selected the value of the **RMS** function depends on the detector time constant (the results are displayed **with** the indicator of the detectors selected in the profiles (*path: MENU / INPUT / PROFILE x / DETECTOR:* 100ms, 125ms, 200ms, 500ms, 1.0s, 2.0s, 5.0s, 10.0s).

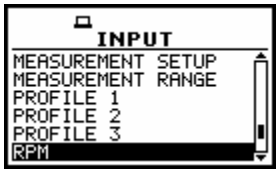
8.6 Activation of RPM measurement function - RPM MEASUREMENT

The **RPM MEASUREMENT** (**RPM - R**evolutions **P**er **M**inute) position enables the user to activate the **RPM** measurement function, which is not included in the standard set of the instrument. It can be bought together with the instrument or can be purchased by the user in the future. In the latter case, after selecting the **RPM MEASUREMENT** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons, and pressing **<ENTER>**, the user has to introduce special code for activation of the function. After successful activation the **RPM MEASUREMENT**, this text does not appear on the **SETUP** list any more (**RMP** position appears then in the **INPUT** list) and the instrument never more asks for the code.



SETUP window; RPM MEASUREMENT text highlighted

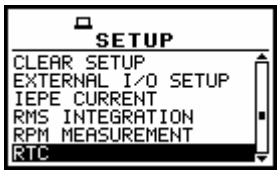
Displays during the entering of the access code to a function



INPUT window after activation of RPM MEASUREMENT function

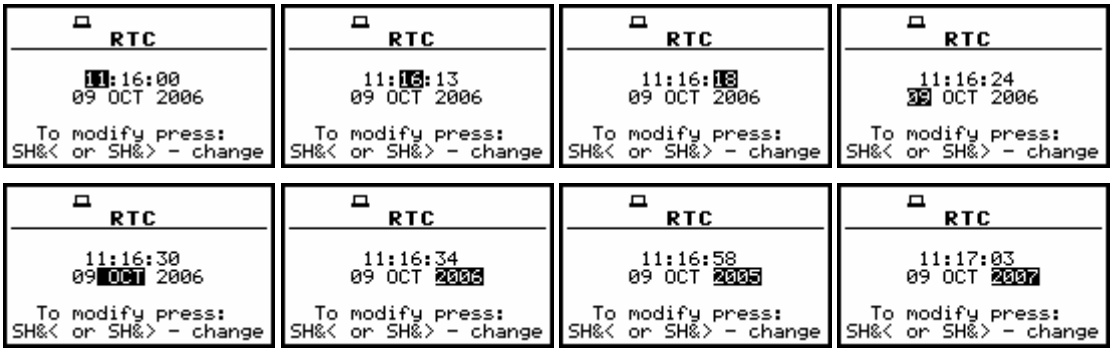
8.7 Programming the instrument's internal Real Time Clock - RTC

The **RTC** enables one to programme the internal **Real Time Clock**. This clock is displayed in the different places depending on the selected presentation mode. In order to enter the position the user has to select the **RTC** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons and press the **<ENTER>** one.



SETUP window; RTC text highlighted

The selection of the setting parameter (hour, minute, second, day, month and year) is performed using the **<◀>**, **<▶>** push-buttons and the change of its value – using the **<◀>**, **<▶>** push-buttons pressed together with the **<Shift>**.



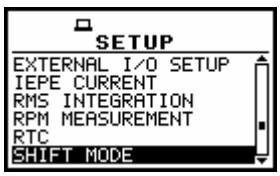
RTC windows with the different parameters to be set

Notice: *The new value of a parameter is confirmed after each pressing of the* **<◀>** or **<▶>** *together with the* ***<Shift>*** *push-buttons (new value is selected without any confirmation from the* ***<ENTER>*** *push-button).*

The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** or **<ESC>** push-button.

8.8 Selection of few push-buttons mode - SHIFT MODE

The **SHIFT MODE** enables the user to programme the operation mode of the **<Shift>**, **<Alt>** and **<Start / Stop>** push-buttons.



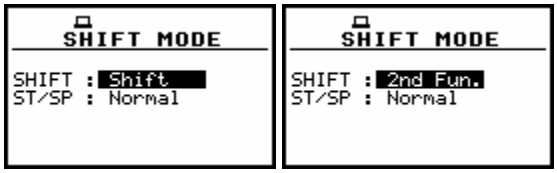
SETUP window; SHIFT MODE text highlighted

In order to enter the position the user has to select the **SHIFT MODE** text in the **SETUP** list, using the **<▲>**, **<▼>** (or **<◄>**, **<►>**) push-buttons and press the **<ENTER>** one. The selection of a parameter in both positions is done by means of the **<◄>**, **<►>** push-buttons and confirmed by the **<ENTER>** one. Any changes made in the window are not confirmed in the case of pressing the **<ESC>** push-button but the window is closed.

8.8.1 <Shift> / <Alt> push-button working mode selection - SHIFT

In the **SHIFT**, the user can choose between **2nd Fun.** and **Shift**. When the **Shift** text is selected, the **<Shift>** and **<Alt>** push-buttons operates as in the keyboard of a computer – in order to achieve the desired result, the second push-button has to be pressed in conjunction with the **<Shift>** / **<Alt>** one. When the **2nd Fun.** text is selected the **<Shift>/<Alt>** push-button operates in the sequence with the other one.

In order to select a desired mode of the **<Shift>** push-button the **<◄>**, **<►>** should be pressed. In order to confirm the selection the **<ENTER>** push-button has to be pressed. Such pressing closes the window. After pressing the **<ESC>** push-button the window is also closed but all changes, which were made, are ignored.



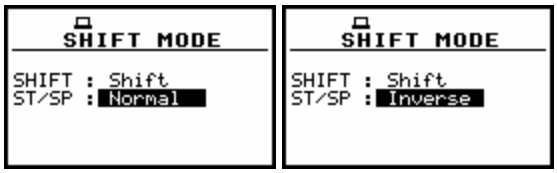
SHIFT MODE windows; available SHIFT settings

8.8.2 <Start / Stop> push-button working mode selection - ST/SP

In the **ST/SP** the user can choose between **Normal** and **Inverse**. When the **Normal** text is selected the instrument reacts on each of the **<Start / Stop>** push-button pressing, starting or stopping the measurements.

When the **Inverse** text is selected the **<Start / Stop>** push-button operates in conjunction or in a sequence with the **<Shift>** one. The measurements are started or stopped after pressing both push-buttons.

In order to select a desired mode of the **<Start / Stop>** push-button the **<◄>**, **<►>** should be pressed. In order to confirm the selection the **<ENTER>** push-button has to be pressed. Such pressing closes the window. After pressing the **<ESC>** push-button the window is also closed but all changes, which were made, are ignored.



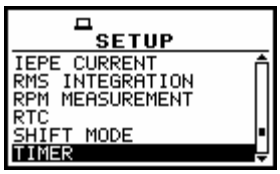
SHIFT MODE windows; available ST/SP settings

8.9 Programming the instrument's internal timer - TIMER

The instrument can be switched on by itself in the programmed time and it can perform the measurements using the setup, which was used before its switching off.

The selection of the parameter to be set is performed using the **<▲>**, **<▼>** and the change of its value – using the **<◄>**, **<►>** push-buttons pressed together with the **<Shift>**.

In order to enter the position the user has to select the **TIMER** text in the **SETUP** window (using the **<▲>**, **<▼>** or **<◄>**, **<►>** push-buttons) and press the **<ENTER>** one.



SETUP window; TIMER text highlighted

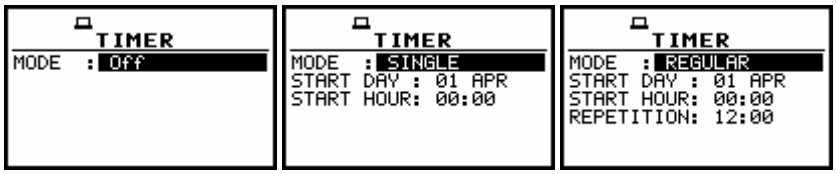
8.9.1 Selecting the mode of the timer function - MODE

The **MODE** of the timer function is selected pressing the **<◄>**, **<►>** push-buttons when the **MODE** text is displayed inversely in the **TIMER** window.

The timer can be switched off – **Off**, switched on only once – **SINGLE**, switched on many times regularly – **REGULAR** with the period between two consecutive measurements set in the **REPETITION** line

The selected value has to be confirmed by pressing the **<ENTER>** push-button, which causes the simultaneous return to the **SETUP** window. All settings are ignored after the return to the **SETUP** window by pressing the **<ESC>** push-button.

In the case the timer function is active (**SINGLE** or **REGULAR**) the clock icon starts blinking up to switching timer function off or up to finishing programmed measurements.

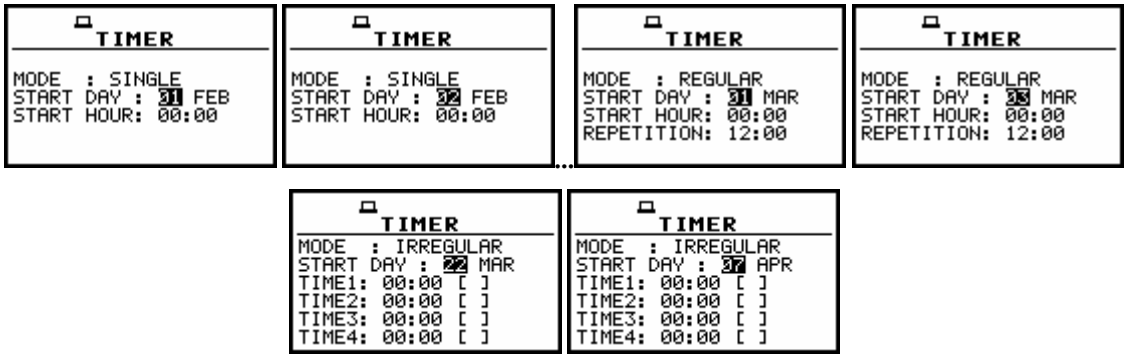


TIMER windows; mode selection

8.9.2 Setting day of the instrument's switch on - START DAY

The **START DAY** determines the date of the measurement start. The timer can be programmed up to one month ahead and during the date setting the current state of the **R**eal **T**ime **C**lock is taken into account.

The required date can be selected pressing the **<◄>**, **<►>** push-buttons when the **START DAY** text is displayed inversely in the **TIMER** window.



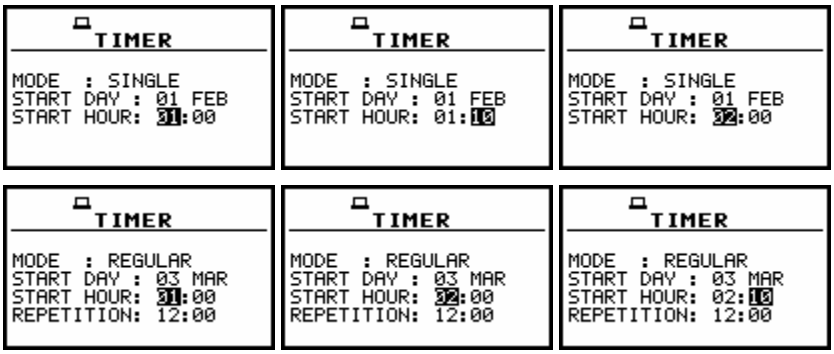
TIMER windows; setting day of the instrument's switch on

The selected value has to be confirmed by pressing the **<ENTER>** push-button, which causes the simultaneous return to the **SETUP** window. All settings are ignored after the return to the **SETUP** window by pressing the **<ESC>** push-button.

8.9.3 Setting hour of the instrument's switch on - START HOUR

The **START HOUR** determines hour of the measurement start. The required hour can be selected pressing the **<◄>**, **<►>** push-buttons when the **START HOUR** text is displayed inversely in the **TIMER** window.

In order to set minutes, one has to enter their position pressing the **<▲>**, **<▼>** push-buttons and then pressing the **<◄>**, **<►>** push-buttons to select the proper value. The selected value has to be confirmed by pressing the **<ENTER>** push-button, which causes the simultaneous return to the **SETUP** window. All settings are ignored after the return to the **SETUP** window by pressing the **<ESC>** push-button.

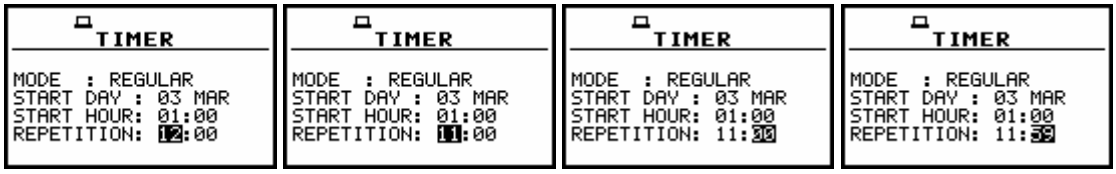


TIMER windows; setting hour and minute of the instrument's switch on

8.9.4 Selecting the period between two consecutive measurements - REPETITION

The **REPETITION** enables to repeat measurement after selected time (it is counted from **START HOUR**). This parameter can be programmed from **00:00** up to **99:59**.

In order to set the proper value one has to select hours or minutes pressing the **<▲>**, **<▼>** push-buttons and then, pressing the **<◄>**, **<►>** push-buttons, to select the proper value. The selected value has to be confirmed by pressing the **<ENTER>** push-button, which causes the simultaneous return to the **SETUP** window. All settings are ignored after the return to the **SETUP** window by pressing the **<ESC>** push-button.

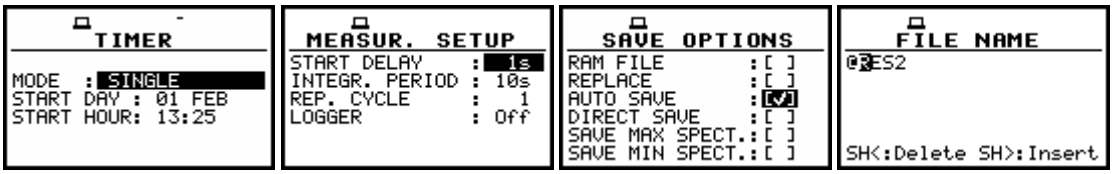


TIMER windows; setting REPETITION parameter

8.9.5 Description of the exemplary timer function execution

The **TIMER** function is used to programme the instrument's switch on at the given time and perform the measurements with the parameters set in the **INPUT** window. Let us assume that the user wants to switch on the instrument the 1st of February, at 13:25, measure vibration during 10 seconds without using logger and save the results in a file @RES2.

In order to do this, the user has to set the parameters of the **TIMER** function (*path: MENU / SETUP / TIMER*), the measurement parameters (*path: MENU / INPUT / MEASUREMENT SETUP*), activate the **AUTO SAVE** function (*path: MENU / FILE / SAVE OPTIONS*), name the file (the **FILE NAME** window is opened after switching on the **AUTO SAVE** function) and finally – switch off the instrument.

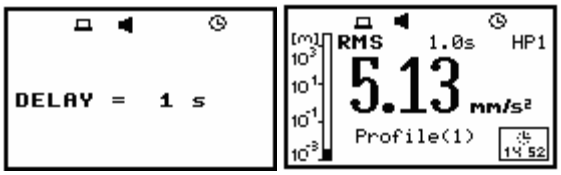


Exemplary settings made for the desired execution of the TIMER function

The instrument will be switched on the 1st of February at 13:25 and will be warmed up for the period of 60 seconds decrementing by one second the counter visible on the display.

Counting down during the warming up of the instrument after switching it on

After warming up the instrument and the preset **DELAY** time, the measurements are performed for a period of ten seconds. Then, the results are saved in the file which name was given or accepted (the proper information is displayed) and finally – the instrument is switched off.

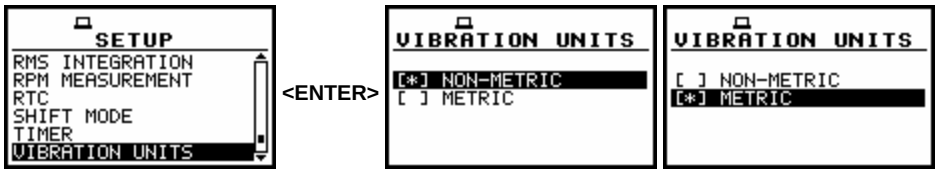


Displays during the executing of TIMER function (timer icon is active)

> ***Notice: The instrument's TIMER function can be used for multiply measurements*** *(at the programmed day and time with the selected repetition). The first switch on of the instrument* ***must*** *be within one month ahead.*

8.10 Selection of the vibration units - VIBRATION UNITS

The **VIBRATION UNITS** enables the user to select the units for the vibration measurements. In order to enter the position the user has to select the **VIBRATION UNITS** text in the **SETUP** window, using the **<▲>**, **<▼>** (or **<◀>**, **<▶>**) push-buttons and press the **<ENTER>**.

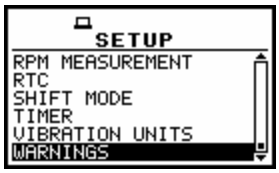


SETUP window with VIBRATION UNITS text highlighted and available positions

It is possible to select the **NON-METRIC** units (e.g. g, ips, mil etc.) or **METRIC** units (e.g. m/s^2, m/s, m etc.). The selection is done by means of the **<◄>**, **<►>** push-buttons. In order to confirm the selection the **<ENTER>** push-button has to be pressed. Such pressing closes the window. After pressing the **<ESC>** push-button the window is also closed but all changes, which were made, are ignored.

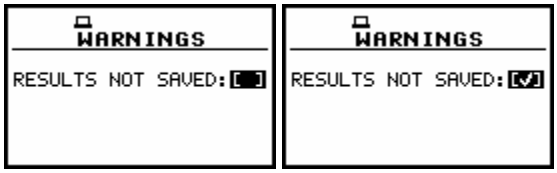
8.11 Warnings selection - WARNINGS

The **WARNINGS** enables the user to activate the **RESULTS NOT SAVED** warning message, which will be displayed in the case when the measurement results has not been saved. In order to enter the window the user has to select the **WARNINGS** textin the **SETUP** list, using the **<▲>**, **<▼>** (or **<◄>**, **<►>**) push-buttons and press the **<ENTER>**. This window contains only one position.



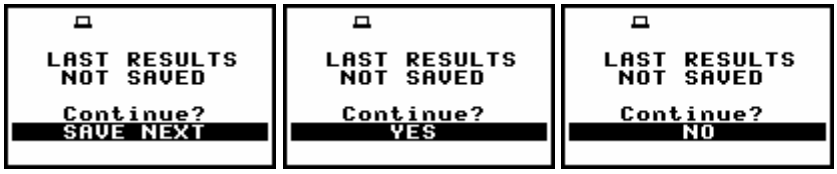
SETUP window; WARNINGS text highlighted

In order to switch on the displaying of the message the user has to place, by means of the **<◄>**, **<►>** push-buttons, the special character in the warning's position. The window is closed and the instrument returns to the **SETUP** list after pressing the **<ENTER>** (with the confirmation of a change made in the position) or **<ESC>** push-button (ignoring a change made in the position).



WARNINGS windows; RESULTS NOT SAVED selected

When the position is set to be active the special warning can be displayed after pressing the **<Start / Stop>** push-button. It will be happened in a case when the result of the previous measurement was not saved in a file of the instrument.



Displays with LAST RESULTS NOT SAVE warning

The question **Continue?** appears with the warning message. The default value of the **CONTINUE** position is **SAVE NEXT**. After pressing the **<ENTER>** push-button the instrument saves last results with the name number increased by one. Using the **<◄>**, **<►>** push-buttons one can change the value of the **CONTINUE** position to **YES** or **NO**.

If **YES** is chosen (to confirm the change the **<ENTER>** should be pressed), the instrument returns to the active mode of result presentation starting the new measurement process.

If **NO** is chosen (to confirm the change the **<ENTER>** should be pressed),the instrument returns to the active mode of measurement result's presentation without starting the new measurement process.