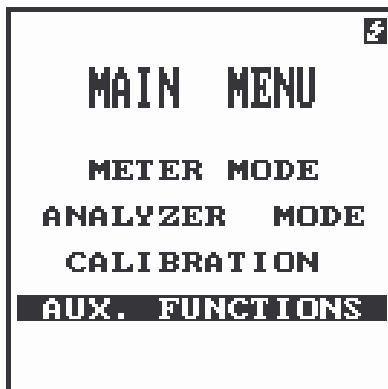


7. AUXILIARY FUNCTIONS MODE

In this mode the important parameters of the instrument can be programmed and / or set. A few additional functions supporting the work with the unit (i.e. **ERA. FILES**) are also available.

In order to enter this mode the user has to select in the **MAIN MENU** using the <▲>, <▼> push-buttons the **AUX. FUNCTIONS** text and press the <ENTER> push-button.



The view of the display in the **MAIN MENU** with the **AUXILIARY FUNCTIONS MODE** selected

In the **AUXILIARY FUNCTIONS MODE** the following windows are available, which are mainly used for the specified below reasons:

- IN/OUT SETUP** - the selection of the input unit for the AES / EBU interface, setting the parameters of the RS 232 interface and the pseudo-random noise generator controlling,
- PRINTER SETUP** - setting the printing parameters,
- TIME SETTING** - setting data and time,
- BATTERY MODE** - checking the state of the internal battery,
- INFORMATION** - checking the unit serial number, the software version and the specification of the standards fulfilled by the SVAN 912AE instrument,
- BUF.SIZE** - setting the buffer size for the **ANALYZER MODE**,
- ERA. FILES** - erasing the contents of the internal memory of the instrument (so-called RAM disk),
- SETUP MODE** - setting the way in which the instrument's internal parameters are transferred to the SVAN 912AE,
- MIC. POL** - selection of the polarisation voltage for the microphone,
- SHIFT MODE** - selection of the mode for the <SHIFT> push-button,
- TOTAL LINE** - selection of the first line in the FFT spectrum meaning,
- METRIC UNITS** - selection of the units for the vibration measurements.



The view of the display in the **AUXILIARY FUNCTIONS MODE** – the main windows

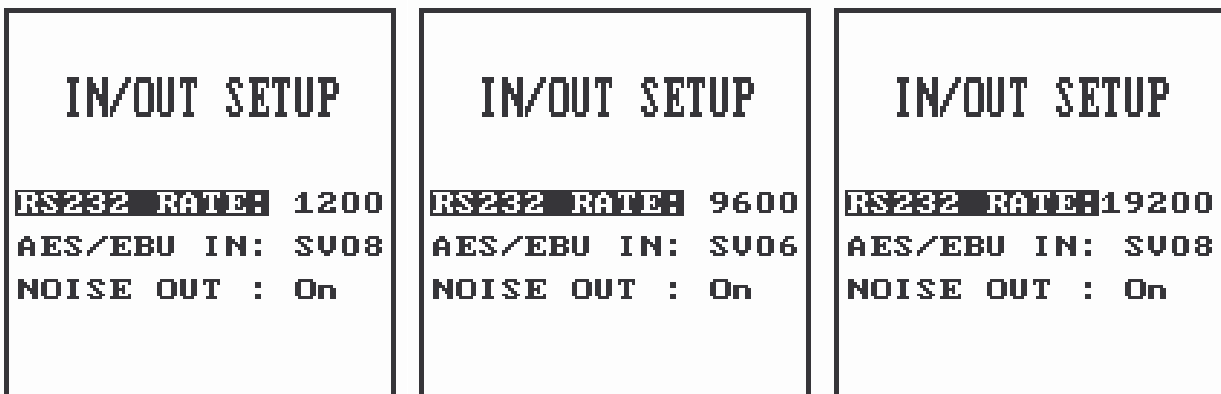
7.1. INPUT / OUTUT SETUP

The **IN/OUT SETUP** window consists of three sub-windows: **RS232 RATE**, **AES/EBU IN** and **NOISE OUT**.

RS232 RATE sub-window

This sub-window enables one to programme the transmission speed of the serial interface. The transmissions are performed asynchronously. The speed can be selected from the given below values:

- 1200 bits / sec,
- 2400 bits / s,
- 4800 bits / s,
- 9600 bits / s,
- 19200 bits / s,
- 38400 bits / s.



The view of the display in the IN/OUT SETUP window, the RS 232 RATE selection

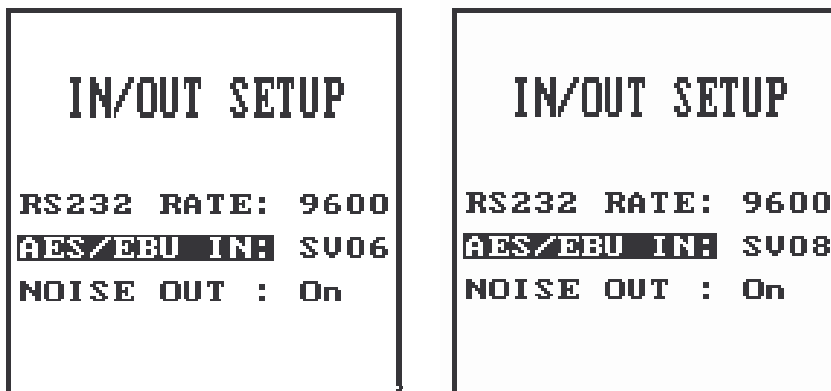


Notice: The default settings of the transmission parameters are as follows: **8 - bit DATA** format, **PARITY - None** and **STOP bit - 1**.

AES/EBU IN sub-window

This sub-window enables the user to select the input unit for the **AES / EBU** interface. Two possibilities are available:

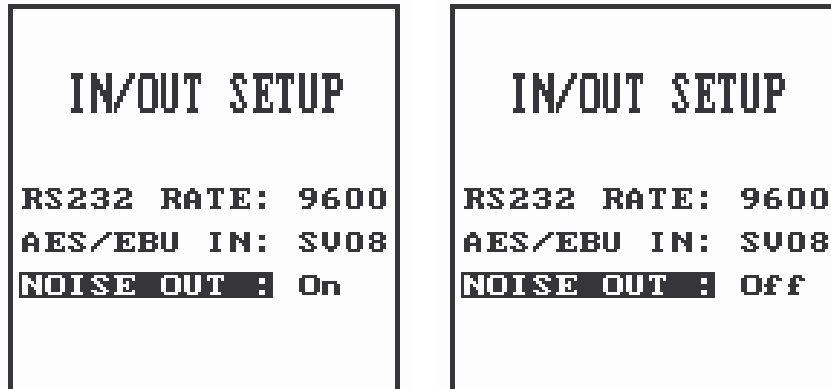
- four channel **SV 06A** module,
- four channel **SV 08A** module.



The view of the display in the IN/OUT SETUP window, the AES/EBU IN selection

NOISE OUT sub-window

This sub-window enables the user to switch on (**On**) or off (**Off**) the internal pseudo-random noise generator.



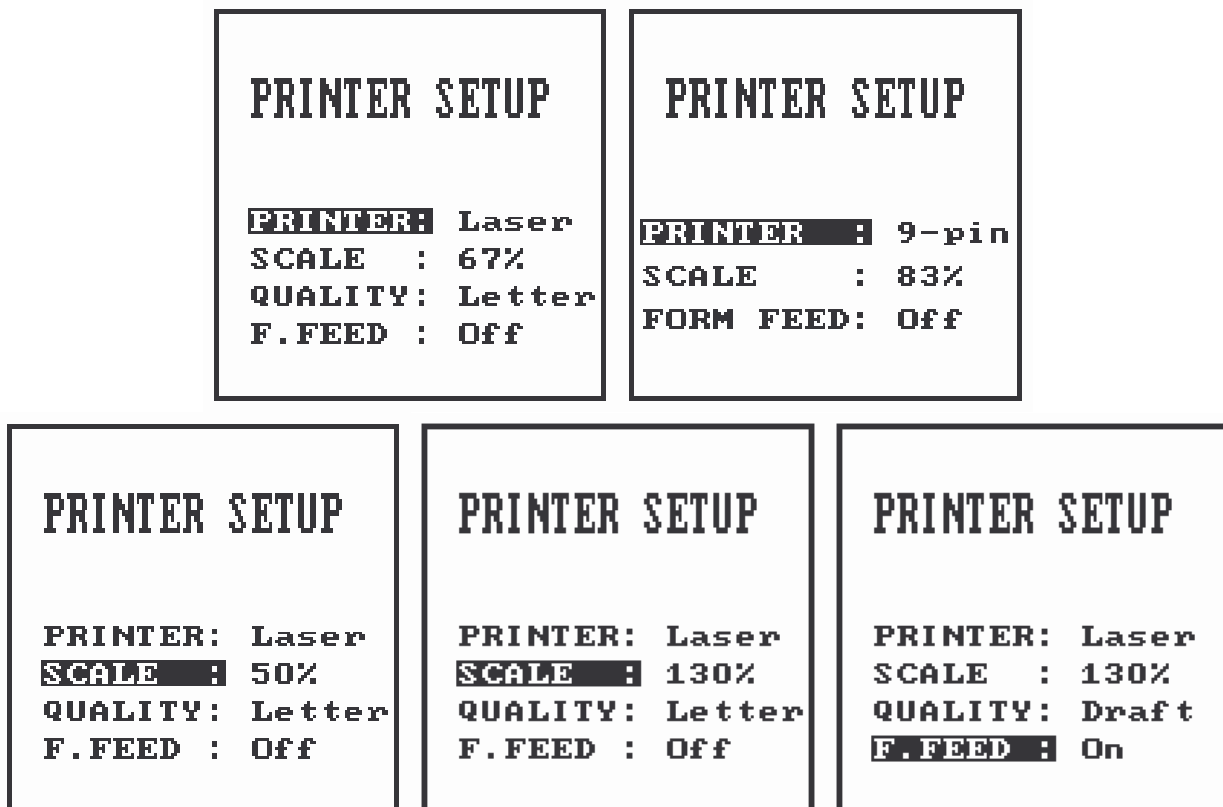
The view of the display in the IN/OUT SETUP window, the NOISE OUT switching on and off



Notice: The selection can be made with the <◀>, <▶> push-buttons.

7.2. Printer interface

The **PRINTER SETUP** window enables the user to choose the proper driver of the printer (**dot** or **laser**) and the scale of the display hard copy (**83 %** for the dot printer and **133 %**, **100 %**, **67 %** and **50 %** for the laser or ink jet one). Additionally, the **FORM FEED** (the paper control command) in the printer can be switched on (**On**) or off (**Off**).



The view of the display in the PRINTER SETUP window

The printing quality can be selected in the case of the laser printer. Two options are available: **QUALITY: Letter** or **QUALITY: Draft**.

7.3. Data & time setting

The **DATE & TIME SETTING MODE** window enables the user to set the data and the time of the internal clock of the instrument. It can be done by the modification of the inversely lighted field in the opened window.

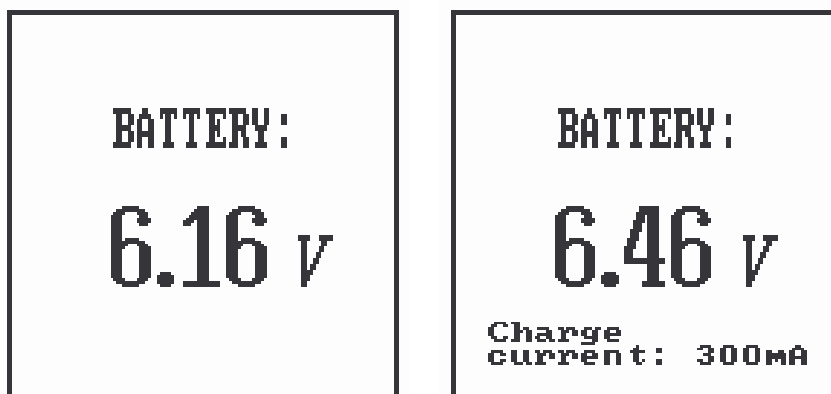
The selection of the field, which has to be modified, can be done using the <◀>, <▶> push-buttons. The change of the contents of the selected field is performed with the <▲>, <▼> push-buttons.



The view of the display in the **DATE & TIME SETTING MODE** window

7.4. Battery

This window enables the user to estimate the state of the instrument's internal power supply. The measured voltage in the range from 5 V to 6.9 V ($\pm 0.2V$) is shown on the display in the **BATTERY** window. The battery is fully charged when the voltage is equal approx. **6.25 V**. This value should be evaluated in the instrument working without the external power supply and with the backlight switched off. It is worth to remark, that the estimation of the battery's state should not be done directly after the disconnection of the external power supply. The voltage on the battery during the charging process increases the nominal value so it can be the source of the estimation error.



The view of the display in the **BATTERY** window without and with the external supply unit

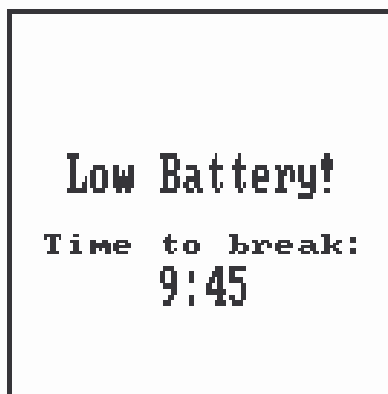


Notice: *The battery voltage is not the linear function of the stored charge.*

The state in which the internal battery is nearly exhausted (approx. **5.6 V**) is additionally signalled by the **LOW BATTERY** text. This text appears every 5 seconds for the period of 1 second in any mode of the instrument. In the same window, the count down of the time, which rests to the power off of the instrument, is displayed. After the first appearing of the **LOW BATTERY** text the user has only **10 minutes** to the end of the work of the instrument (the count down counter is placed under the **Time to break** text). After this time the instrument will be automatically switched off (after crossing the critical level of the battery voltage). In this case it is necessary to connect the external power supply in order to continue the measurements and to recharge the internal battery.



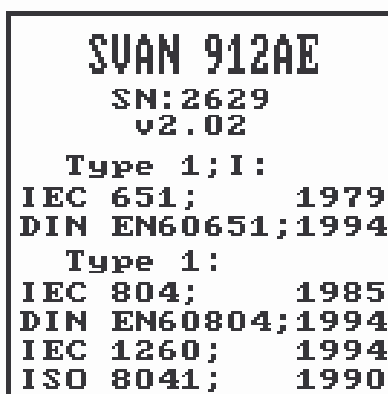
Notice: *IT IS INDISPENSABLE TO CHARGE FULLY THE INTERNAL BATTERY AT LEAST ONCE A MONTH, EVEN IF THE INSTRUMENT IS NOT USED IN THIS TIME. The dramatic reduction of the internal battery lifetime causes keeping it in the discharged state (in the boundary case it can be damaged). The loss of the measurement and SETUP data stored in the internal memory and the settings of the real time clock of the instrument is the consequence of the battery discharging.*



The view of the display after the detection of the **LOW BATTERY** state

7.5. Specification of the standards fulfilled by the instrument

This window contains the serial number of the unit and the number of the software version as well as the specification of the standards, which are fulfilled by the instrument.



The view of the display with the serial number, the software version and the specification of the standards

7.6. Erase of the files

This sub-window enables the user to erase all files from the internal memory of the instrument. The following options are available:

- the erasing is switched off (No),
- all files from the METER MODE ought to be erased (Meter),
- all files from the ANALYZER MODE ought to be erased (Ana.),
- all SETUP files ought to be erased (Setup),
- all files stored in the "RAM-disk" ought to be erased (All).

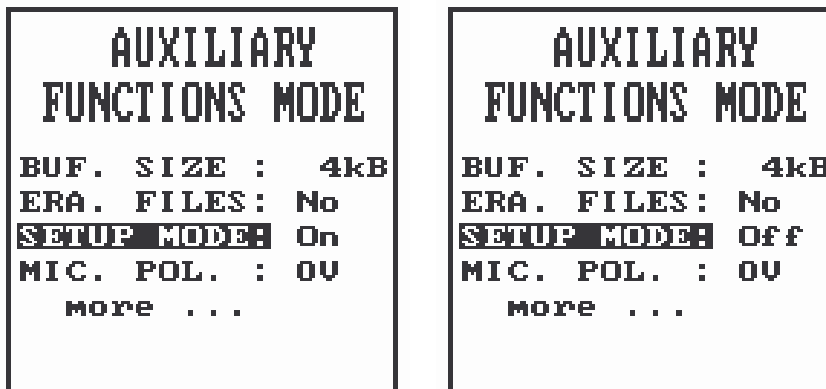
The <ENTER> push-button has to be pressed after the proper selection in order to erase the selected group of files.



The view of the display in the ERA. FILES sub-window

7.7. SETUP mode

This sub-window enables the user to switch on (On) or off (Off) the mode in which the SETUP file is automatically loaded as the initial setting of the instrument. In the case of the **SETUP MODE: Off** in the **METER MODE** or **ANALYZER MODE** the SELF SETUP is set.



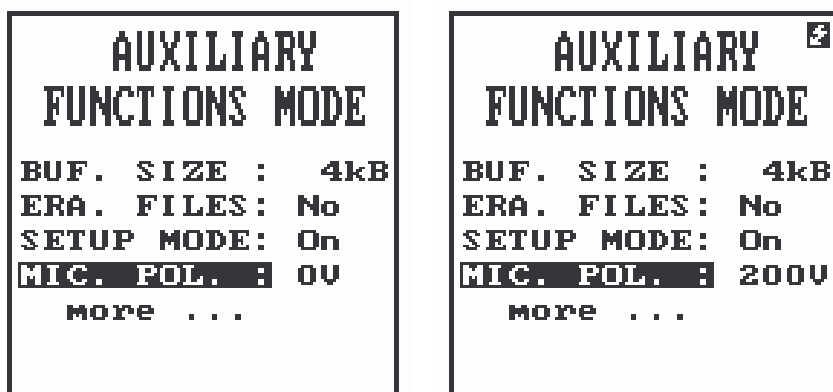
The view of the display in the AUXILIARY FUNCTIONS MODE with the SETUP MODE selected



Notice: In the case of the damage of the contents of the RAM - disk the automatically loaded SETUP can cause the functional disorder of the instrument! In this case, after POWER ON the user has to set SETUP MODE: Off. After the erasing of the contents of the memory the user has to store once again the desired SETUP.

7.8. Polarisation voltage setting of the condenser microphone

In this sub-window there is the possibility of setting the value of the voltage necessary for the polarisation of the condenser microphone on **0 V** or **200 V**.



The view of the display in the AUXILIARY FUNCTIONS MODE with the MIC. POL. selected

7.9. Data buffer size setting

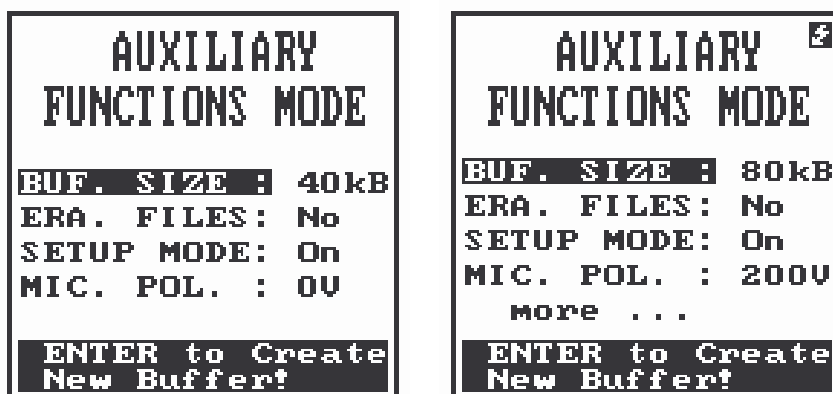
This sub-window enables the user to change data buffer size for storing successive spectra, which are the analysis results in the **ANALYZER MODE** (with the **AVERAG. : On**).

Under the **more...** text in the **AUXILIARY FUNCTIONS MODE** window the message **ENTER to Create New Buffer!** is displayed in the case when the **BUF. SIZE** sub-window is entered. The requested buffer size can be set by pressing **<◀>**, **<▶>** push-buttons.

Minimal buffer size (the default size) **is 4 kB.**

Maximal buffer size is 400 kB.

The declared buffer size has the influence on the size of the RAM disk. From the other hand the number of files stored in the RAM disk can limit the maximal buffer size.

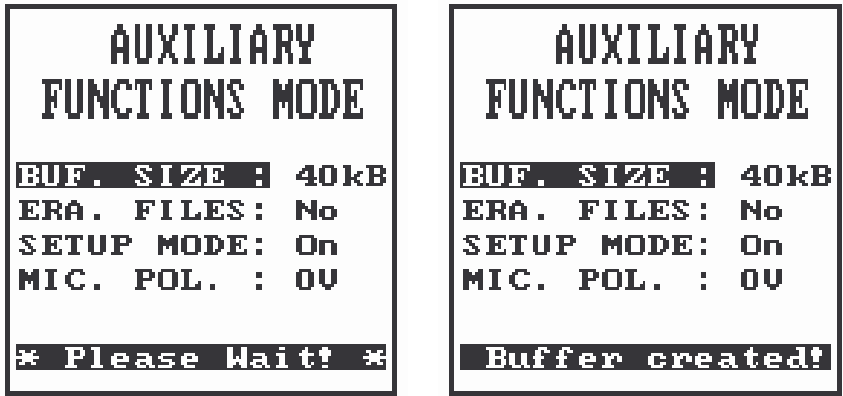


The view of the display in the AUXILIARY FUNCTIONS MODE with the BUF. SIZE sub-window selected

The **<ENTER>** push-button pressing confirms the operation of the buffer size setting. The **Buffer created!** message is displayed after the successful end of the operation.



Notice: The buffer size setting operation deletes its previous contents. The contents of the buffer are also deleted by new measurement start and after loading a file from RAM disk to the buffer.



The view of the display during and after new data buffer creation

The exit from the **BUF. SIZE** sub-window without new buffer creation (data in the buffer rest unchanged in this case) or after new buffer creation can be done by pressing the <ESC>, <^>, <v> push-buttons.

7.10. Shift mode

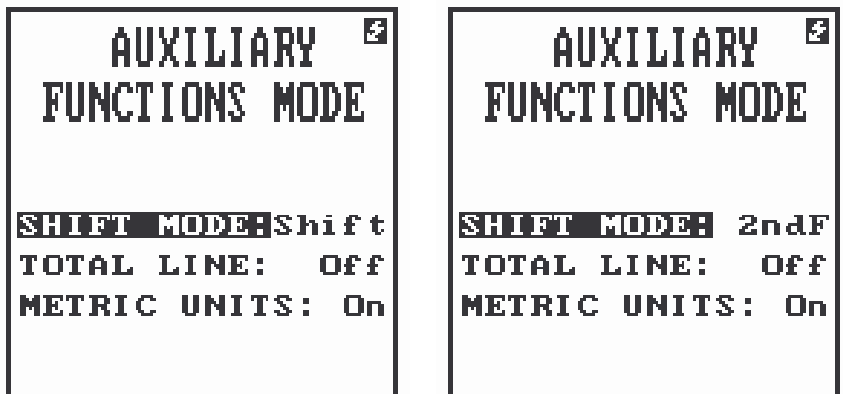
This sub-window controls the operation mode of the <SHIFT> push-button. There are two possibilities:

2ndF (second function mode)

- in this mode the <SHIFT> push-button must be pressed before the second one (in sequence). This mode is dedicated for "one hand" operation with the instrument.

Shift (shift mode)

- in this mode the <SHIFT> push-button must be pressed in parallel with the second one.



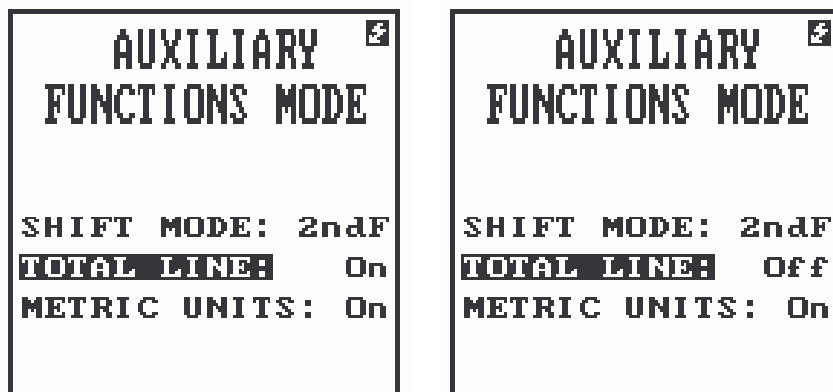
The view of the display in the AUXILIARY FUNCTIONS MODE with the SHIFT MODE selected

7.11. The meaning of the first line in the FFT spectrum

This sub-window enables the user to select the meaning of the first displayed on the screen line in the FFT spectrum. The selection:

On - means that the first line in the displayed spectrum contains the RMS value calculated from all samples which were taken to the spectrum transformation (so-called Total RMS).

Off - means that the first line in the displayed spectrum contains the value corresponding to the frequency of 0 Hz (the constant component calculated by the FFT algorithm).



The view of the display in the AUXILIARY FUNCTIONS MODE with the TOTAL LINE selected

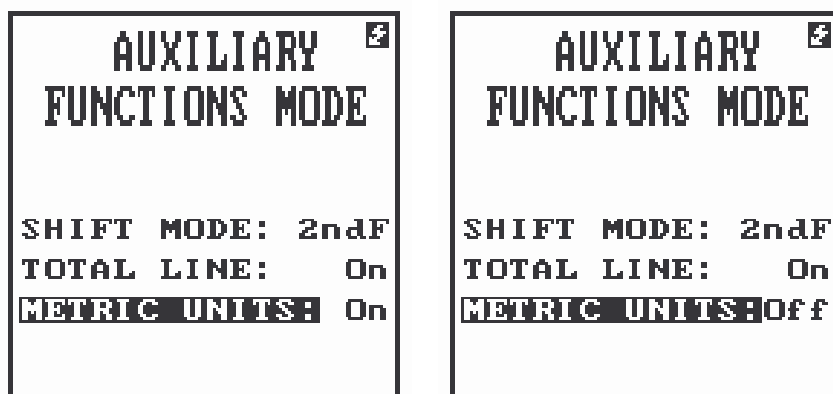
7.12. Metric Units mode

This sub-window enables the user to select the units for the vibration measurements. When Metric Units are selected (**METRIC UNITS: On**) the vibration measurement results are presented in:

ms⁻², ms⁻¹ and **m**

When non-Metric Units are selected (**METRIC UNITS: Off**) the vibration measurement results are presented in:

g, ips (inch/s) and **mil** (mils)



The view of the display in the AUXILIARY FUNCTIONS MODE with the METRIC UNITS selection

The requested units can be set by pressing the <◀>, <▶> push-buttons.

When the non-metric units are used in the vibration measurements the Nominal Ranges of the sub-ranges are defined as follows:

- for the vibration acceleration measurement (with the **Val** function):
 - 324E-4 g** corresponds to 316 mms^{-2} (110 dB),
 - 324E-3 g** corresponds to 3.16 ms^{-2} (130 dB),
 - 3.24 g** corresponds to 31.6 ms^{-2} (150 dB),
 - 32.4 g** corresponds to 316 ms^{-2} (170 dB),

- for the vibration velocity measurement (with the **Vel1** filter):
 - 1.24 ips** corresponds to 31.6 mms^{-1} (150 dB),
 - 12.4 ips** corresponds to 316 mms^{-1} (170 dB),
 - 124 ips** corresponds to 3.16 ms^{-1} (190 dB),
 - 1.24E3 ips** corresponds to 31.6 ms^{-1} (210 dB),
- for the vibration velocity measurement (with the **Vel3** filter):
 - 0.394 ips** corresponds to 0.01 m/s (140 dB),
 - 3.94 ips** corresponds to 0.1 m/s (160 dB),
 - 39.4 ips** corresponds to 1 m/s (180 dB),
 - 394 ips** corresponds to 10 m/s (200 dB),
- for the vibration velocity measurement (with the **Vel10** or **MF-Vel** filter):
 - 0.124 ips** corresponds to 0.01 m/s (130 dB),
 - 1.24 ips** corresponds to 0.1 m/s (150 dB),
 - 12.4 ips** corresponds to 1 m/s (170 dB),
 - 124 ips** corresponds to 10 m/s (190 dB),
- for the vibration displacement measurement (with the **Dil1** filter):
 - 394 mil** corresponds to 10.0 mm (200 dB),
 - 3.94E3 mil** corresponds to 100 mm (220 dB),
 - 39.4E3 mil** corresponds to 1.0 m (240 dB),
 - 394E3 mil** corresponds to 10 m (260 dB),
- for the vibration displacement measurement (with the **Dil3** filter):
 - 39.4 mil** corresponds to 1.0 mm (180 dB),
 - 394 mil** corresponds to 10.0 mm (200 dB),
 - 3.94E3 mil** corresponds to 100 mm (220 dB),
 - 39.4E3 mil** corresponds to 1.0 m (240 dB),
- for the vibration displacement measurement (with the **Dil10** filter):
 - 3.94 mil** corresponds to 0.1 mm (160 dB),
 - 39.4 mil** corresponds to 1.0 mm (180 dB),
 - 394 mil** corresponds to 10 mm (200 dB),
 - 3.94E3 mil** corresponds to 100 mm (220 dB).



**Notice: The maximal values measured on the given sub-range are equal:
 $3.16 * \text{''Nominal Range''}$ (for the sinusoidal RMS signal).**