

Operation Manual FAQ (Frequently Asked Questions)

Notes:

This Operation Manual FAQ (Frequently Asked Questions) contains typical questions asked by the users, and answers to them. This is a live document that we will update as long as we update and develop the Smart Fieldmeter(R) Digital meter, model RFP-05. We recommend reading all questions and answers, because there is a lot of repetition in functions that we explain in greater details in the beginning, but keep more concise down the road.

Q1: How do I check that meter is set for correct probe type and serial number and how do I set it, if necessary?

A1: Measure display shows the probe type (Probe 1, 2, 3, 4) at the top line (unless it has been taken out from View Mode display).

- To set the probe, press <MENU>, then by using <↑>, <↓> keys select Setup and press <ENTER>, select Probe and press <ENTER>. Now press <PRB> and select the probe number that you have. Probe type and serial number should match your probe exactly. You will also see the date of the last calibration.
- If your meter has no probes listed in his memory, then you need to load the probe calibration data from the MMC/SD memory card that has been shipped with that probe. Plug in that card and scroll again through the list of the probe numbers by pressing the <PRB> key. When you have the probe number, matching the one on the card, display will show: *Calibrate?* Confirm that by pressing <CAL> key. Now transferred the calibration data from memory card to the memory of the meter.

Q2: How do I reset the meter to its original state if necessary?

A2: Press <MENU>, then select Setup from Main Menu, press <ENTER>, then select Reset from Setup Menu. Press <ENTER>.

- You will see the question: *Reset Defaults?* Press <ENTER> for Yes.
- You will see the Logo screen. Press <MENU> and then <NORD>.
- You will see the red warning: *Probe not selected.*
- Select the probe from the menu (see A1). Its type (1, 2, 3 or 4) and serial number should match your probe. When you select your probe press <MENU> and you are back in business.

Q3: How do set the display time off?

A3: Display can be automatically turned off to save the battery. This time can be selected from 1 sec. to 9 min. If exactly 9 min time is selected, display will stay on all the time. Default time off is 30 sec.

- To change it, press <Menu>, select Setup, press <ENTER>, select DSP/Key (Display/Keys), press <ENTER>, select On Time and then by pressing the <←>, <→> keys select the desired time off. To finish the setting, press <MENU> and then <NORD>.

- We recommend that you explored all parameters in the Dsp/Key menu you may need them in your work.

Q4: How do set the units of measurement?

A4: Meter can display the readings either in field units (like, V/m) or in power flux units (like, mW/cm²). Other unit multipliers are displayed automatically. To select the right units, toggle the <UNIT> key on a Measure display. The cm² is displayed as "square".

Q5: What are the alarm settings: On and OnB? How to set the Alarm threshold?

A5: On main screen the <ALARM> button toggles between alarm-off, alarm-on (with buzzer) and alarm-on (with screen blink) settings. The blinking screen is helpful when working in a noisy environment when alarm sound may be not loud enough, but blinking screen is more noticeable.

First select the right units (see A4). Alarm setup is in the Setup menu. Select Alarm and press <ENTER>. You will see the Alarm Set menu. By using the <←>, <→> keys, select the decimal points that you want to adjust and change the digits with <↑>, <↓> keys.

Now in Measure display press <ALARM> key ones or twice, to activate sound alarm or sound and visual alarm respectively. Push the same key one more time to turn alarm off.

Q6: How do perform the data logging? What are the modes of the blinking red LED, specifically in the data logging?

A6: Before you start data logging you need to select the logging interval. In Measure screen press <MODE> key to select desired time interval from 100/300 msec. to 30 min. If you need manual data logging, select MAN. If you need averaging, you must turn it on before you start the logging. Press <AVG> key on the Measure screen.

- Press <MENU> to go to Main Menu display. Select Log Control and press <ENTER>. Now you can change the File Name by using the same keys <←>, <→> to select the digit position and then <↑>, <↓> to change the digits. If you do nothing - meter will assign the next consecutive number every time when you do recording - no data will be lost.

Sometimes the arrow key menu is not visible on display, but buttons are still functioning.

- You can also change the total number of points NofPoints in your data-logging file. Default number is 32000.

- Then press <LOG> key. If memory card is out you will see the message: *Error: No MMC card!* If card is present, meter will start recording, shows the Measure display with red dot near <LOG> key.

- To stop data logging press <LOG> key to see the Log Control display, then press <LOG> key again to stop the process. Don't be surprised that <LOG> key changes place on different displays - this is the nature of dynamic key allocation.

- Red LED is always blinking when init is "alive" and it goes off when unit goes to "sleep" mode to save the battery. When you turn on the LOG function and unit collects the data, LED is blinking. After ON time elapses, display turns off but LED keeps blinking, indicating that unit still collects the data. But if ON time elapses when no logging happens, then unit goes to sleep and LED goes off to save the battery... You don't need the unit anyway!

Q7: Can I use charger while performing the measurements?

A7: For typical field measuring applications - no. Meter should be always powered from the battery while doing the measurements. This is important for two reasons: charger wire, connected to the mains affects the RF fields around the probe and AC mains can be the source of RF conducted currents.

Q8: Is it possible to install RF filters between probe and meter?

A8: No. Probes convert the RF signal into DC. Output of the probe is DC. Frequency response of the probes doesn't depend on the presence or the length of the cable between probe and meter. In order to be able to perform the selective frequency field strength measurements, Omnifield Antenna® OFA-S should be used.

Q9: What is the file format when you record data onto PC?

A9: Format is a two-column text file read by Excel or Word.

Q10: Can I see both current and averaged reading on the display?

A10: Yes. When <AVG> key is pressed, the display shows averaged reading in small font near the key and current reading in large font in the center of the display. This is the display Normal mode. When <MAXD> key is pressed display shows the averaged reading in large font.

Q11: I have problems with battery charging. What's wrong?

A11: Meter will charge only good quality NiMHd rechargeable batteries. If batteries are too old, defective or out of range for normal operation - meter will not charge them.

Orange LED will show the "error" by blinking with 50% duty cycle after initial 30 sec. of testing.

If the same type of error is displayed at the end of the charging cycle, this means that fast charge was terminated by the timeout not by the normal -dV/dT algorithm. This also indicates a poor batteries quality.

To ensure the safe and reliable operation in any case of the "error" signal rechargeable batteries must be immediately replaced with new ones.

If after charging meter doesn't turn on - plug and unplug the charger. This will produce the full reset, waking the meter up.

At any time the rechargeable batteries may be replaced with AA alkaline ones. It is safe - meter will not charge them if charger is plugged in.

Q12: What is battery Unit Time?

A12: Unit Time is an equivalent time that elapsed since battery was last time charged (provided that operator pushed the <CLR> button on Battery Setup screen after charging the battery). This time is calculated by the microprocessor based on the unit operation modes and allows more accurate estimate of the battery use.

To calibrate the system, for every new battery operator should charge unit fully, push <CLR> button and set Display Time to 9min (to keep display permanently ON) and then - measure the battery operation time. This number will be in the range of 20-40 hours, depending on the battery type and condition.

The remaining time is this number minus Unit Time.

Q13: How do I reset the probe linearity calibration factors if necessary?

A13: The need for that may arise if for some reason (very unlikely) meter "forgets" the correct probe linearity calibration factors. Because meter updates probe calibration file from the SD card only if the date of the calibration file on SD card is LATER than calibration date of the particular probe, operator needs to change the date to some date in the past (earlier than the purchase date of the meter, at least).

Press <MENU>, then by using <↑>, <↓> keys select Setup and press <ENTER>, select Set Date and press <ENTER>. Now - change the date and then use procedure described in A1.

After update of the probe calibration - reset the date to the correct one.

Q14: How do I use a graphical display?

A14: Graphical display is a convenient feature to view the varying signal levels in a real time. Perform the following steps:

On main screen toggle the <MODE> switch to select the desired sampling rate from 300 msec. up to 30 min.

Press <MENU> and then <GRPD> in the right corner at the bottom of the screen. You will see the sampling dots where color represent a different level range (see User's Manual, sec. 3.3).

To see the whole dynamic range of the signal press <CLR> button - to restart the sampling at the highest signal level.

Q15: What is GPS in Setup-DSP/Key menu?

A15: There is an accessory GPS receiver that allows data logging with time/location information stamped. The menu allows this function to be enabled, but in order to have this feature the GPS accessory must be obtained.

Q16: How is Autozero function operating during data logging?

A16: There is an AUZ Time parameter in Setup-Dsp/Key menu. This time value determines how often will be the Automatic Zero offset compensation executed. This Automatic Zero offset compensation is disabled during LOG when the Log time is less than **1 sec**. The AUZ Time can be set from 9:00 to 0:30 and 0:00. If AUZ Time set to 0:00 then this option is disabled. The Auto Zero offset compensation still can be executed manually from the Main Menu screen by pushing the AUTZ button even if the timer is disabled.

There is also an automatic data saving function: AutoSave. AUZ Time secondary function is controlling the AutoSave time (equal to 4*AUZ Time). If this time elapses then the Log file is automatically saved on the Flash Card (to avoid accidental data loss, e.g.: the Flash card is ejected unintentionally). If AUZ Time=0 then AutoSave time=4 minutes. If AUZ Time=3:30 then AutoSave mode is disabled."

In the data logging file time samplings during the Autozero routine are marked with "Autozero" (and not 0.00 mV as it may be expected) to avoid incorrect data recording during autozero routine.

Q17: Why sometimes in data logging file the last two numbers at the bottom of the file (Max and Avg) do not correlate with Max (or Avg) data recorded in the body of the file?

A17: In data logging file the body data are the instantaneous or RMS averaged data (in Avg mode) logged with user selected time interval T (300 ms-30 min). This time interval T is much longer than the meter sampling interval 10 ms and, therefore, it is possible that maximum sampled field occurred between the logging moments and it was not recorded into regular file logged data (but still detected and shown as Max number at the bottom of the file). Averaging logs happen also with time interval T and when file logging stops, the last incomplete time interval average value is shown at the bottom. It may be, for example, much higher (or much lower) than any of the recorded values if at the end of the logging session field went up (or down). If your test requires the data to be averaged with correct time interval (like, 6 min, for example), the bottom Avg value should be disregarded.