

Controlling Smart Fieldmeter[®] Digital (SFD) from PC through serial link

SFD can be controlled from the serial port similar way as from the soft keys and/or from the IR remote. If SFD connected to a PC (using the serial cable and/or the optical coupler cascaded with the serial cable) then any Terminal Emulator program (like Hyperterminal) can control SFD and can get status/measurement information. Each message should be terminated by "<CR>" (ASC-II 13, known as Carriage Return or Enter code).

All control can be executed from PC through serial link same way as from the front-panel soft keys (to test it start a Hyperterminal program on a PC. Set the serial port setting to 4.8Kbaud, No parity, 2 Stop bits.).

Each 7 soft key can be pushed from a terminal program by typing: Kx<CR>.

Where the first character is an upper case K. The second character is a number from 1 to 7 (1=Upper Left key, 2=Middle Left key, 3=Upper Right key, 4=Middle Right key, 5=Lower Left key, 6=Lower Right key, 7=Lower Middle key — Menu key).

The third character is the Carriage Return (or Enter key) on the keyboard.

Logging to PC through Serial Port can be enabled by the "PC1<CR>" command, while it can be disabled by the "PC0<CR>" command (there is a special PC log command: PC2<CR> - see it later).

If the PC Log enabled then the PC Log can be canceled any time with typing CTRL_C (Hold the Control key and type C). This command is equivalent by setting the Sleep/PC line to PC on the DSP/Key Setup screen.

When PC Log is enabled then each measurement value is pushed (sent) to the terminal as an ASC-II string (always 9 characters, the measurement with units and terminated by CR, like: " 7.49 V/m <CR>"). The measurement frequency depends of the measurement mode. If MAN selected then every time when the [MAN] button pushed otherwise in every 100msec, 300msec, 1sec, 3sec, 10sec, 30sec, 1min, 6min, 30min, accordingly.

The measurement mode can be selected with the Pmy<CR> command (where y=0 for MAN mode, 3 for 100msec, 4 for 300 msec, 5 for 1 sec, 6 for 3 sec, 7 for 10 sec, 8 for 30 sec, 9 for 1 min, A for 6 min, B for 30 min measurement mode).

Anytime the current measurement value can be requested by the "GM<CR>" command. The format is same as in the PC Log mode: 3 numbers with a properly positioned decimal point followed by 4 ASC-II characters Unit description, like: "mV/m".

If the PC Log is enabled by the PC2<CR> command then not only the measured data, but the SFD screen status is also sent to the PC. In that case all screen change is pushed out to the terminal as a lowercase letter followed by a <CR> ("a"= LOGO screen, "bN"= MAIN MENU Screen - where N is a number from 0 to 4 which is the cursor position on

the MENU Screen, “c”= MEASURE Screen, “d”= TIME SET Screen, “e”= DATE SET Screen, “f”= VIEW MODE Screen, “h”= LOG Screen, “j”=NO MC Screen, “k”= MC WP Screen, “l”= FILE ERROR Screen, “m”= SETUP Screen, “n”= PROBE Screen, “o”= Dsp/Key Screen, “p”= BATTERY Screen, “q”= ALARM Screen, “r”= ABOUT Screen, “s”= RESET Screen, “t”= FILE READ Screen, “u”= BIG NUMBER Screen, “v”= FILE POINT READ Screen, “w”= No FILE Screen,). Therefore which screen is on the SFD can be known from a remote location all the time (if PC log is enabled by PC2 command).

The Battery Time can be requested by the “BT<CR>” command.

The Unit operation time Time can be requested by the “UT<CR>” command.

If a message through the serial port is not understood by the Serial Message Parser then it sends back a “?<CR>” string. Otherwise it interprets the message. If the message requests parameter from SFD then SFD will send back the parameter (e.g., BT<CR> sends back the battery time string - like 12:33<CR>). If no parameter to reply to the message then a “ ” (space character) will be sent back to the PC after each message was understood and executed by SFD.

Summary of serial port commands

V<CR>	//get Version number of SFD
GM<CR>	//Get Measurement value with Unit
RM<CR>	//Read Measurement value in engineering notation
BT<CR>	//get Battery Time
UT<CR>	//get Unit operation Time
Kn<CR>	//Send soft key to SFD (n=1..7)
Px<CR>	//set Probe type (x=1..4)
Pmy<CR>	//set Probe mode (y=0..9, a,b)
PCz<CR>	//set PC log mode (z=0,1,2)