ELF Meter:IDR-210

  Buttons:

    Layout:

      Normal:
        Range   Up   Log
        Left   Enter   Right
        Maximum   Down   Shift

      Shifted:
        Offset   Reserved   Reserved
        Frequency Reserved   Channel
        Alarm   Reserved   Reserved

  Functions:

    Up / Down / Left / Right:
      Menu navigation and changing options

    Enter:
      Selects menu options

    Shift:
      Switch to select secondary button functions
      'S' will be displayed in the lower right corner of the screen

    Range Selection:
      Press Range
      Press Up or Down to select a range (200 mG, 2000 mG, or Auto)
      Press Enter to switch to the selected range
      Press Left to exit without changing the range
      'R' will be displayed in the lower right corner of the screen while
        the meter is in the autoranging mode

    Channel Selection (Shift -> Right):
      Press Shift -> Right to switch to the next channel (order: x, y, z, m)
      Current channel is displayed on the screen

    Frequency Display (Shift -> Left):
      Press Shift -> Left to switch to the frequency display mode
      Press Up, Down, Left, Right, or Enter to exit frequency display mode

    Maximum:
      Press Maximum to change to the maximum reading mode
      Press Up, Down, Left, Right, or Enter to exit maximum mode
      'M' will be displayed in the lower right corner of the screen while
        the meter is in the maximum mode

    Offset (Shift -> Range):
      Press Shift -> Range to change to offset correction mode
      Press Up, Down, Left, Right, or Enter to exit offset correction mode

    Alarm (Shift -> Maximum):
      Press Shift -> Maximum to enter the alarm threshold mode
      Set the alarm threshold:
        Use the Left and Right buttons to select a digit or the units
        and use the Up and Down buttons to change the value.
        Press Enter to set the alarm threshold and activate the alarm
      'A' will be displayed in the lower right corner of the screen while
        the alarm is activated
      Press Up, Down, Left, Right, or Enter to deactivate the alarm

Log:
  Press Log to enter the data logging menu:
    Start / Stop Logging
    Logging Interval submenu
    Log Style Full / Single
    Logging Status
    View Log
    List Log
    Clear Log
  Use the Up and Down buttons to navigate through the menu
  Press Enter to select an option, toggle an option, or enter a submenu
  Press the Left button to exit the menu or submenus

  Start / Stop Logging:
    Future state is always displayed (present state is opposite of display)
    Press enter to switch to the new state
    Examples:

      Meter is not logging data
        Press Log
        Start Logging (is displayed)
        Press Enter to start logging data
        Press Left to exit to the main display

      Meter is logging data
        Press Log
        Stop Logging (is displayed)
        Press Enter to stop logging data
        Press Left to exit to the main display

    'L' will be displayed in the lower right corner of the screen while
      the meter is logging data

  Logging Interval submenu:
    Press Log to enter the data logging menu
    Press Down to navigate to the Logging Interval submenu
    Press Enter to enter the logging interval submenu
    Set the logging interval:
      Use the Left and Right buttons to select a digit or the units
      and use the Up and Down buttons to change the value.
      Press Enter to set the logging interval
    Press Left to exit to the main display

  Log Style Full / Single:

    Full Style = x, y, z, and m data (no frequency data)
    Single Style = selected channel (x, y, z, or m) with frequency data if
      x, y, or z is selected

    Press Log to enter the data logging menu
    Press Down twice to navigate to the Logging Style option
    Present state is always displayed (new state is opposite of display)
    Press enter to switch to the new state
    Examples:

      Meter is using the single log style:
        Press Log
        Press Down twice
        Log Style Full (is displayed)
        Press Enter to erase the log data and start using the full style
        Press Left to exit to the main display or Up and Down to navigate
          to the other log menu items

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      Meter is using the full log style:
         Press Log
         Press Down twice
         Log Style Single (is displayed)
         Press Enter to erase the log data and start using the single style
         Press Left to exit to the main display or Up and Down to navigate
            to the other log menu items

   Logging Status:
      Press Log
      Press Down three times
      Press Enter to display the logging status:
         R: x / y
         I: t s

         x = number of data readings that have been logged
         y = total number of memory locations available for present logging style
         t = logging interval in seconds

      Press Up, Down, Left, Right, or Enter to return to the log menu

   View Log:
      Press Log
      Press Down four times
      Press Enter to view individual log entries
      Use the Up and Down buttons to move forward or backward one log entry
      Use the Right and Left buttons to move forward or backward ten log entries
      Press Enter to return to the log menu

   List Log:
      Press Log
      Press Down five times or Up twice
      Press Enter to automatically list each log entry sequentially
      Press Up, Down, Left, Right, or Enter to return to the log menu

   Clear Log:
      Press Log
      Press Down five six or Up once
      Press Enter to erase all the logged data

RS232 Configuration:
   Start -> Programs -> Accessories -> Communications -> HyperTerminal

   Connection Description:
      Name: ELF Meter
      Click OK

   Connect To:
      Connect using:  COM1 = Serial Port A
                      COM2 = Serial Port B
      Click OK

   COMx Properties:
      Bits per second: 9600
      Data bits: 8
      Parity: None
      Stop bits: 1
      Flow control: Xon / Xoff
      Click OK


  RS232 Command Set:
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Notes:

    <bksp> = the backspace key in the upper right corner of a
              standard US keyboard
    <enter> = the enter key

    All the RS232 commands are listed in double quotes, which
    should not be included when typing the commands in HyperTerminal.
    All commands must be followed by pressing <enter>.

    Only <bksp> can be used for editing the commands while using
    the RS232 interface. The arrow keys cannot be used and may
    lock up the interface. When <bksp> is pressed, the cursor
    will move back one space, but the previous character will
    not be deleted. Just type over the existing character to
    make corrections.

    The RS232 interface defaults to the "display on" mode, which
    continuously displays the meter readings. Once the RS232
    connection is made with HyperTerminal, the user must type
    "display off<enter>" to turn off the continuous display.
    The meter will continue to display readings as the user
    types, and continues until <enter> is pressed.
"range"
  Same as pressing the Range button on the meter

"range up"
  Select the next range (order: Auto, 200 mG, 2000 mG)

"range dn"
  Select the previous range

"range ?"
  Display the present range setting:
    Automatic -> 200.0 mG
    Automatic -> 2000 mG
    Manual -> 200.0 mG
    Manual -> 2000 mG

"offset"
  Same as pressing the Offset button on the meter

"offset on"
  Enable the offset correction mode

"offset off"
  Exit the offset correction mode

"offset ?"
  Display the present state of the offset correction mode:
    offset mode on
    offset mode off

"log"
  Same as pressing the Log button on the meter

"log on"
  Enable data logging

"log off"
  Disable data logging

"log ?"
   Display present data logging state:
      logging mode on
      logging mode off

"log sty si"
   Switch to the single logging style

"log sty fu"
   Switch to the full loggging style

"log sty ?"
   Display the present logging style:
      logging style single
      logging style full

"log status"
   Displays the present log status:

      Style: s
      Reading: x of y
      Interval: t s

      s = Single or Full
      x = number of data readings that have been logged
      y = total number of memory locations available for present logging style
      t = logging interval in seconds

"log list"
   Automatically lists all the logged data

"log clear"
   Erases the logged data

"log view# "x
   Shows data entry x

"log intvl "t
   Set the log interval to t seconds

"rs232"
   Reserved

"freq"
   Same as pressing the Frequency button on the meter

"freq on"
   Enable the frequency display mode

"freq off"
   Disable the frequency display mode

"freq ?"
   Display the present state of the frequency display:
      frequency mode on
      frequency mode off

"channel"
   Same as pressing the Channel button on the meter

"channel x"
   Switch to the x channel

"channel y"
  Switch to the y channel

"channel z"
  Switch to the z channel

"channel m"
  Switch to the m channel

"channel ?"
  Display the presently selected channel:
    channel selected = x
    channel selected = y
    channel selected = z
    channel selected = m

"max"
  Same as pressing the Maximum button on the meter

"max on"
  Enable maximum mode

"max off"
  Disable maximum mode

"max reset"
  Reset maximum reading and stay in maximum mode

"max ?"
  Display present state of maximum mode:
    maximum mode on
    maximum mode off
    max x = <value>
    max y = <value>
    max z = <value>
    max m = <value>

"alarm"
  Same as pressing the Alarm button on the meter

"alarm on"
  Enable the alarm

"alarm off"
  Disable the alarm

"alarm ?"
  Display present state of the alarm mode:
    alarm mode on
    alarm mode off

"alarm set "
  Set the alarm threshold in mG.

"alarm thrs"
  Display the present alarm thresholds:
    alarm threshold x = <value> mG
    alarm threshold y = <value> mG
    alarm threshold z = <value> mG
    alarm threshold m = <value> mG

"up"

     Same as pressing the Up button on the meter

   "down"
     Same as pressing the Down button on the meter

   "left"
     Same as pressing the Left button on the meter

   "right"
     Same as pressing the Right button on the meter

   "enter"
     Same as pressing the Enter button on the meter

   "shift"
     Same as pressing the Shift button on the meter

   "display on"
     Enable continuous display of meter readings and exit command mode.

   "display of"
     Disable continuous display of meter readings and enter command mode.

   "meas f"
     Display the preset frequency measurement:
       f = <value> Hz

   "meas x"
     Display the preset x field measurement:
       x = <value> mG
       x = <value> G
       OVER RANGE

   "meas y"
     Display the preset y field measurement:
       y = <value> mG
       y = <value> G
       OVER RANGE

   "meas z"
     Display the preset z field measurement:
       z = <value> mG
       z = <value> G
       OVER RANGE

   "meas m"
     Display the preset m field measurement:
       m = <value> mG
       m = <value> G
       OVER RANGE
Capturing Data with HyperTerminal:

   With HyperTerminal running as described in the "RS232 Configuration" section:

     Transfer -> Capture Text...
       File: ELFMeterLog.txt
       Click Start

     At the RS232 command prompt in the HyperTerminal window type:
       log list

     Transfer -> Capture Text -> Stop

ELFMeterOperation.txt
Edit ELFMeterLog.txt with a text editor (WordPad, etc.) to view
the data or write a script to convert the data for post processing
with MATLAB or Excel.