

MSLog v.7 for the MGX II

Quick Operating Instructions

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Introduction

This is a condensed description of the physical set-up of the logging equipment and brief overview of the logging software operation and a specific instance of instructions for two tools that can be followed generally for the majority of other similar types.

Detailed instructions are included in electronic form with the installation of MSLog. They are available either through the Help Index, which can be accessed by right clicking anywhere on the MSLog Dashboard.

The files can also be found in the folder C:\MSLog\Docs\Pdf

Once MSLog is installed on the computer it can be run in Demo mode without the logger attached. Start the software normally and when the dialog with the message, "No hardware detected. Run demo?", appears click Yes.

For more information on the MX Winch see: MX_Winch&ControllerOpMan.pdf

Installation check list

- Install the MSLog Software
 - Note that one printer must be installed on the PC whether it is used for logging or not.
- Identify the logger it is either of the following:
 - 5MCA-1000 top mount package
 - 4MGB-1000, side mount package with integral winch.
- Identify winch type, cable length and cable type
 - Standard cable lengths for the 4MGB-1000 are 200M of 1/8" single conductor or 305M of 1/10" single conductor.
 - For the 4MXA-1000 winch the standard length is 500M 1/8" single conductor
- Identify your probes
 - Newer probes are stamped with an abbreviated model number and serial number. A 2PGA-1000 would be stamped with 2PGA. (Numbers may be covered by tape. Consult the electronic user documents provided on the MSLog installation in \MSLog\docs\pdf\
- Run MSLConfig
 - Configure the Winch Type
 - Set the Wireline type
 - Set the Wireline Length
 - Set the Measuring System
 - Install Tool Selection
 - Set the Serial port in Advanced Settings (see installation instructions and USB-Serial adapter instructions if using one).
- Set the tripod over the hole and arrange and secure the logger for lowering the probe.
- Make sure the winch UP/DOWN switch is in the center, OFF position.
- Make sure the winch Speed Control Pot is in the fully Counter Clockwise Position
- Make sure the winch Power switch is OFF.

4MXA-1000 Set-up

- Connect power cables to the 5MCA-1000 and 4MXA-1000.
- Verify stable AC power source operation. **If using inverter it needs to be minimum 600W True Sine Wave model. Do not use modified sine wave inverters!**
- Connect 10 pin signal cable between 5MCA and 4MXA
- Unlatch the measuring head by pressing down on the spring loaded latch pin located on the left (operating position left) side of the measuring head level wind plate. This allows the head to swivel freely.
- Rotate the measuring head down into logging position
 - If the logging angle is too high, the measuring head assembly can be flipped over. Consult the MX Winch electronic user documents provided on the MSLog installation in \MSLog\docs\pdf\
- Lift the pinch wheel lever and guide logging cable over measuring wheel
- Rotate the Forward Guide Wheel, Cable Keeper away from the guide wheel with its knob and thread the wireline between them.
- Rotate the Cable Keeper back up to close the gap with the Guide Wheel

Warning: Before rotating the measuring head back into shipping position, remove the cable from between the Forward Guide Wheel and the Pinch Wheel. This prevents damaging the cable by bending it sharply over the first guide wheel when the head is rotated up. The wireline then can be left in a small, gentle loop and the cable head placed in the receiving tube in the interior of the winch frame.

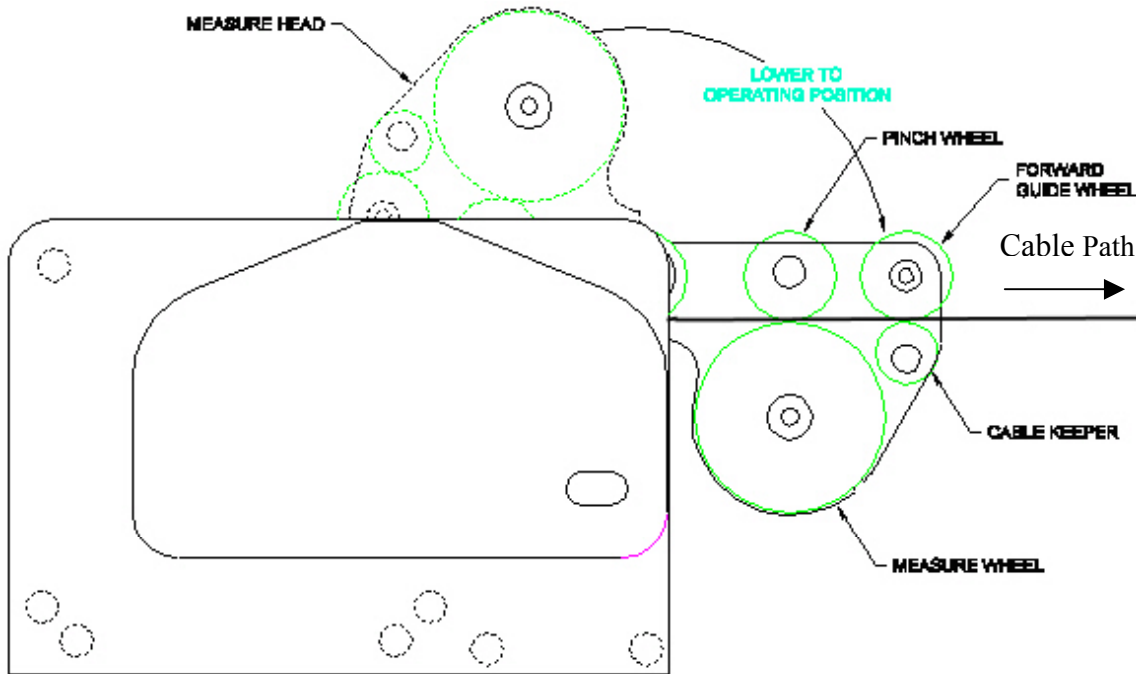


Figure 1 Measuring head operating position

In the view above, the Measuring Wheel will turn clockwise when the wireline is going down hole.

Warning: Be aware of loose clothing and keep hands and clothing away from moving parts of the winch assembly. Make sure all winch controls are off before turning on AC Power. Make sure the winch is secure before applying a load to it.

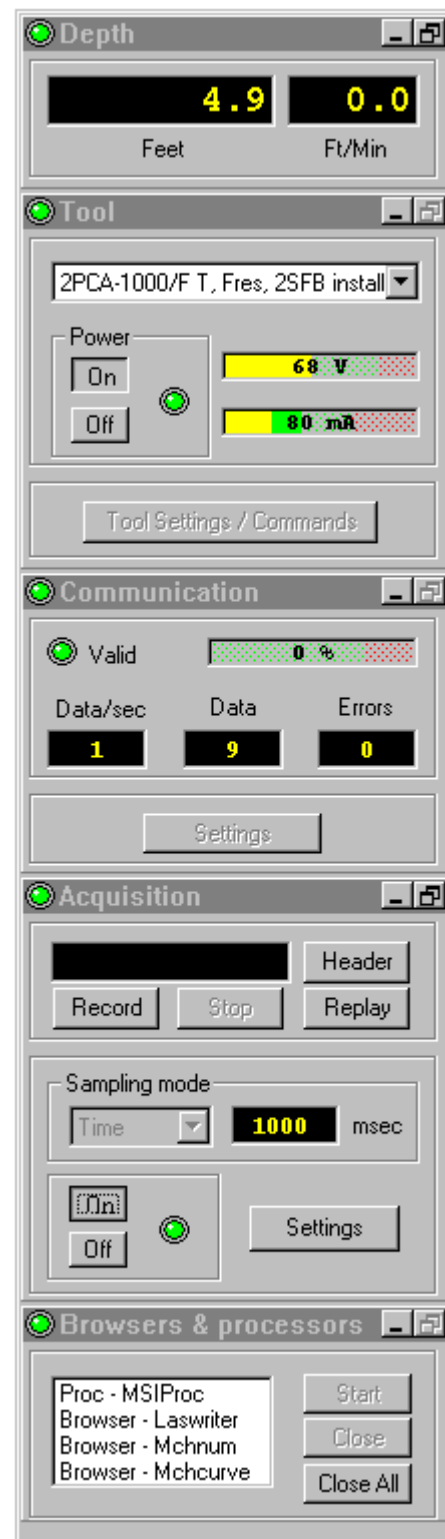
- Turn MGX II AC Power On
- Turn Winch AC Power On
 - For 4MXA winch set the top, RUN/STOP Switch to RUN
- Set Winch UP/Down Switch to Down
- Turn Speed Control Pot Clockwise and spool out enough cable to work with.
- Turn Speed Control Pot Fully Counter Clockwise to stop the winch.
- Set Winch UP/Down Switch to Center, "HOLD", Position
- Remove protector caps from the cablehead and probe top and screw probe onto the cable head.

Warning: At all times prevent kinking the logging cable to prevent damage to the insulated center conductor.

MSLog Operation

Having configured the software environment with MSLConfig and the mechanical set-up of the winch and logger you are ready to start logging. Basic steps involve:

- Start MSLog
 - The operating dashboard is shown at right. For more information see the electronic documents in \MSLog\docs\pdf or right click on the dashboard for the Help Index
 - To close MSLog right click on the dashboard and select Exit
- Selecting tool configuration file
 - Tool Panel list box
- Turning tool power on
 - Tool Panel Power, On button
- Selecting sampling mode
 - Acquisition Panel Sampling Mode list box
 - Time mode for calibration or operational testing
 - **Always log in Depth UP or Down mode**
- Selecting sampling interval
 - Acquisition Panel, Settings button
- Setting logging scales in MChCurve
 - MChCurve Edit, Log Settings
- Setting Depth scales in MchCurve
 - MChCurve Edit, Depth Settings
- Entering Header information
 - Acquisition Panel Header button
- Calibration, when required
 - MCHNum right click, uncheck Use calibration
 - MCHNum right click, click Calibration Settings..
 - Set Acquisition Panel, Sampling Mode to Time, On
- Place tool top and Cablehead joint at ground zero level
 - Winch Controls, UP/Down Switch and Speed Control Pot
- Zero tool depth
 - Depth Panel upper right corner link button
- Turn on Sampling mode (**Depth Down or Up mode**), and select **Record** data file
 - Acquisition Panel, On, Record controls



Tool operating instructions

2PGA-1000 PolyGamma, Gamma.

MSLog tool menu descriptions: 2PGA-1000 Gamma

2PGA-1000 SPR, SP



- 1) Make sure that MGXII is powered up and a serial cable is connected between the PC and the logger.
- 2) For the Windows Operating System, make sure that you quit all other applications before running MSLog. Other programs may interfere with the acquisition program.
- 3) After the Tool selection is made, press the Tool Power **On** button. When the system is initialized, you may begin logging. Gamma can be logged up or down. Normal logging speed is 3 meters/min (15 ft/min).
- 4) Be sure that the processors and browsers such as MCHProc are started as listed in Browsers and Processors panel. They may be minimized on the tool bar at the bottom of the screen. Don't start them twice.
- 5) Select the desired Acquisition **Depth Sampling mode, Down or Up**, and **press the On button to activate**. Press the Acquisition **Record** button and enter a file name to turn the recording function on before beginning logging, or no data will be recorded to disk. You may wish to observe the log on screen while going down hole to decide on the best scale for real time plotting. Use the Log Settings and Depth Settings selection of the Curve Browser to make changes to plot parameters.
- 6) When you reach the top or bottom of the logging interval, press the Acquisition **Stop** button to turn off data recording. Turn Tool Power **Off** before removing the probe from the bridle/cablehead.

2PGA-1000 PolyGamma Probe in R and SP mode with or without 2PEA-1000

- 1) Make sure that the MGXII is powered up and that a serial cable is connected between the PC and the logger.
- 2) For the Windows Operating System, make sure that you quit all other applications before running MSLog. Other programs may interfere with the serial port communications or take too much processing time away from the acquisition program.
- 3) Be sure that the mud plug is well grounded in a mud pit or in a hole dug in the soil and filled with water or firmly connected to a conductive rod driven into the soil. A good ground is essential for recording SP and Single Point Resistance logs.
- 4) Be sure that the 1 inch wide electrode, which is six inches from the top of the tool, is not covered with tape. You should tape over metal above and below the insulators, which are on either side of the electrode.
- 5) After the Tool selection is made, press the Tool Power **On** button. When the system is initialized, you may begin logging. Resistance and Spontaneous Potential can be logged up or down. Normal logging speed is 3 meters/min (15 ft/min).
- 6) Be sure that the processors and browsers such as MCHProc are started as listed in Browsers and Processors panel. They may be minimized on the tool bar at the bottom of the screen. Don't start them twice.
- 7) Select the desired Acquisition **Depth Sampling mode, Down or Up**, and **press the On button to activate**. Press the Acquisition **Record** button and enter a file name to turn the recording function on before beginning logging, or no data will be recorded to disk. You

may wish to observe the log on screen while going down hole to decide on the best scale for real time plotting. Use the Log Settings and Depth Settings selection of the Curve Browser to make changes to plot parameters.

2PCA-1000 PolyCaliper

MSLog tool menu description: 2PCA Caliper *No 2PGA. Measure point is tip of closed, short arms.*****



- 1) Make sure that the MGXII is powered up and that a serial cable is connected between the PC and the logger.
- 2) For the Windows Operating System, make sure that you quit all other applications before running MSLog. Other programs may interfere with the serial port communications or take too much processing time away from the acquisition program.
- 3) After the Tool selection is made, **UNLESS you are at the bottom of the desired logging interval DO NOT press** the Tool Power On button or the Arms will begin to open and if you travel down the hole the caliper mechanism may be damaged or the probe become stuck. Travel to the bottom of the desired interval and then press the Tool Power **On** button. Press the **Tool Settings/Commands** button and press the **Open** button. A progress bar will display until a preset time interval elapses at which time the arms should be open. Press the **Done** button. Power should be **On**.
- 4) Be sure that the processors and browsers such as MCHProc are started as listed in Browsers and Processors panel. They may be minimized on the tool bar at the bottom of the screen. Don't start them twice.
- 5) Select the desired Acquisition **Depth Sampling mode, Down or Up** , and **press the On button to activate**. Press the Acquisition **Record** button and enter a file name to turn the recording function on before beginning logging, or no data will be recorded to disk. Use the Log Settings and Depth Settings selection of the Curve Browser to make changes to plot parameters.
- 6) When you reach the top of the logging interval, press the Acquisition **Stop** button to turn off data recording. Press the **Tool Settings/Commands** button and press the **Close** button. A progress bar will display until a preset time interval elapses at which time the arms should be closed. Press the **Done** button. Power should be **Off**. Otherwise turn Tool Power **Off** before removing the probe from the cablehead.
- 7) IF YOU MUST GO BACK TO BOTTOM, CLOSE THE CALIPER ARMS BEFORE GOING DOWN. Leave the Tool Power Off.

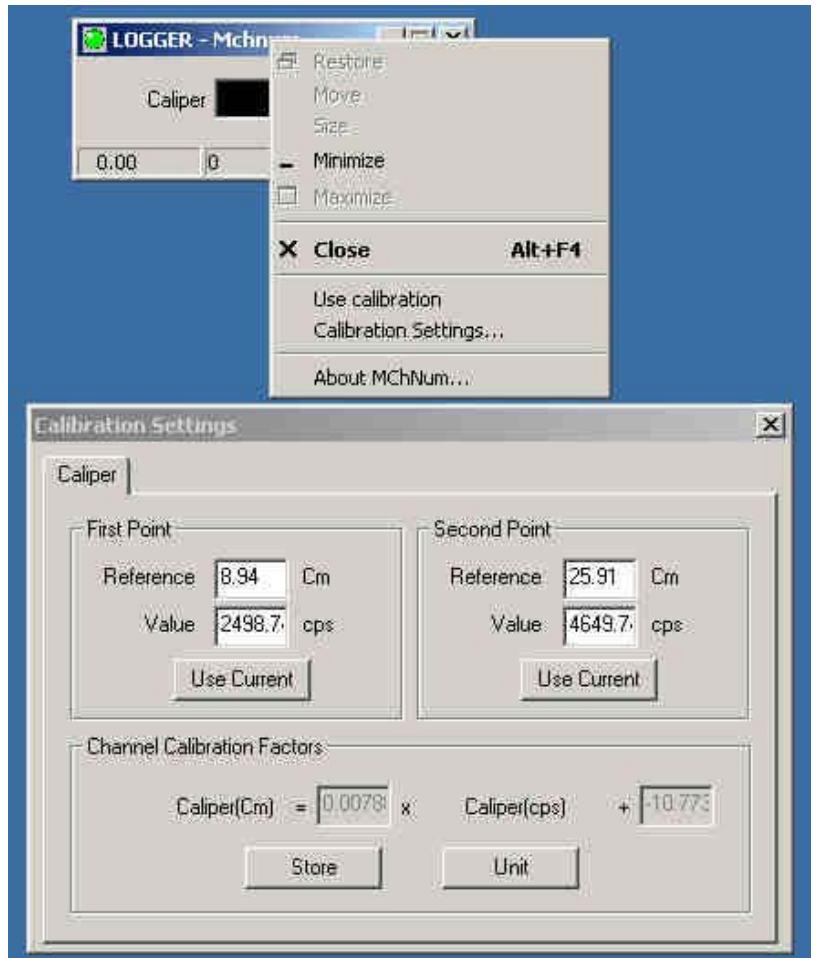
Calibrating Tools

2PCA-1000 calibrations require the use of two different diameter calibration fixtures, these can be measured casing or manufactured calibration rings.

Attach and hook up the tool as described in the tool operating procedures

Caliper Calibration with rings:

- Open the arms
- Set Time digitization On
- Right Click MCHNum and uncheck Use Calibrations
- Right Click MCHNum and click Calibration Settings
- In the First Point Reference enter the diameter in Inches or Centimeters of the small calibration standard
- Place the ring over the caliper arms
- Press Use Current in that section
- In the Second Point Reference enter the diameter in Inches or Centimeters of the large calibration standard
- Place the ring over the caliper arms
- Press Use Current in that section
- To change the label as in this case from Cm to In, click the Unit button and edit the label
- Press Store



Entering Reference and Value from previous calibrations:

If you have calibration values that have been written down from a previous calibration of the tool then procedure is to fill in the First and Second Point Reference and Value text entry boxes but do not check Use Current.

Change Units if necessary.

You may also have to convert the Reference numbers to the desired units, for instance in the above example if you want to convert the value of cm to inches then you would divide the cm reference by 2.54 to get inches: $8.94\text{cm} / 2.54 = 3.52\text{ in}$. Similarly for the Second Point. Use the original Values as the frequency from the tool corresponding to the Reference value is the same for either unit.

This method could be used for a couple of tools such as the 2PFA-1000, Fluid resistivity, Temperature tool and the 2PIA-1000 Induction conductivity tool.

2PIA-1000 field calibration without calibrator or calibration numbers

- Attach the probe to the wireline without the bottom weight
- Turn the probe on.
- Lower the tool 5 or so feet into the borehole fluid and run it in Time mode for 15-20 min allowing it to warm up and temperature stabilize.
- Set-up MCHNum as described above
- If you have calibration constants from a previous calibration enter them as described previously.
- If you have a calibration coil (this will take two people unless you have a stand);
 - Pull the tool out of the well by hand and hold into the air at least 10 feet away from any metal objects and at least 6 feet into the air.
 - Press Use Current for the First Point (Reference = 0)
 - Depending on the range select the appropriate calibration value on the calibration ring (in the example below the reference is 458 for the 0-1000 range)
 - Place the ring over the tool
 - Press Use Current under the Second Point (Reference = value on calibrator)
 - Click Store.
 - Remove calibrator and place bottom weight on tool if needed.

Calibration Settings

Cond. | Mag. Sus.

First Point

Reference mS/m

Value cps

Use Current

Second Point

Reference mS/m

Value cps

Use Current

Channel Calibration Factors

Cond.(mS/m) = x Cond.(cps) +

Store Unit

- If you have no calibration coil;
 - Pull the tool out of the well by hand and hold into the air at least 10 feet away from any metal objects and at least 6 feet into the air.
 - Press Use Current for the First Point (Reference = 0)
 - Depending on the tool range enter the full scale value in the Second Point Reference, in the example above 458 would be 1000
 - Note the First Point Value, from the example above 12703
 - Add 5000 to the First Point Value and enter the result into the Second Point so with the example above the Second Point Value would be 17703