

LakeShore FastHall station HMS-TT

- 1. Log onto the computer connected to the LakeShore FastHall station.
- 2. Turn the power on from the button shown below. The system will run initialization and the touch panel on the front of the controller box will be active.



3. Prepare samples by mounting them under the four spring pins. Shown below: it is recommended to read the Van der Pauw method for Hall effect measurement, [1] attached link in the learning material section at the end of the manual.





- 4. Run the software "MeasureLINK" **Heredet Son** the desktop. Wait for the connection between the FastHall station and the computer.
- 5. Activate the tab for permanent magnet once the software is opened.



6. Next, click on "Sequence".





7. Next, go to "Measurements" - "M91 FastHall" - "FastHall Measurement".



8. The setup page comes out and makes necessary edits. If not sure, use the default settings. Once finished, start the measurement by clicking on the "Start" button.

Stop Edit Sectings	Autom Messurements Loops Cont Insert Steps	Data X Cut The Past	e Hoto e Into ard Move	Export CSV ? Export Script Help Tools Help	M91 FastHall Measuren	nent
itep 2 Finish	Devices M91 Instrument M91	Field Controller: Pr	rmanentMagnet *			
	Sample Geometry		Measurement Setup		External Data	
	Sample geometry	Van der Pauw sam *	Measurement mode:	Standard resistance *	Save external data?	Ø
	L _p = perimeter		Sample thickness:	0 m	Default data folder:	nd Dam market Manual
		1	Blanking time:	2 ms	Base file name:	on Documents Measuret
	2	4 9	Preferred units:	Cgs Si	Save strategy:	Create unique *
	The second secon	A DESCRIPTION OF THE OWNER, NAME	and a distant strength of the strength of the strength of the Linguist	CARL CONTRACTOR OF THE REAL PROPERTY OF	and the second sec	
	-	· .				
	Contact Check (Optin	t nized)	Resistivity		Hall	
	Contact Check (Optin Include contact check?	nized)	Resistivity Include resistivity?	Ø	Hall Include Hall?	
	Contact Check (Optin Indude contact check? Optimize?	nized) IS IS	Resistivity Include resistivity Excitation value	Ø (Auto (optimized)	Hall Include Hall Sample mode: Excidence subm	S Feet Mall • Auto (optimized)
	Contact Check (Optin Indude contact check? Optimize? Current:	t nized) V 0 100 mA	Resistivity Include resistivity/ Excitation value Voltage range:	Auto (optimized)	Hall Include Hall" Sample mode: Excitation volve: Coache field control?	C Teat Mail * Auto Ingelinecciii C
	Contact Check (Optin Include contact check? Optimize? Current: Viotage	t nized) V 100 mA 10 V	Resistivity Include resistivity/ Excitation value. Voltager range: Current range: Marenam number of samples:	Auto (optimized) Auto * Auto * 30	Hall Include Hall [®] Sample mode: Excitation volum: (nade field control [®] Magnetic field:	Sel Fest Hell * Auto (optimizeri) Sel 10 KG
	Contact Check (Optin Indude cortact check? Optimize? Current: Votage Number of points:	100 mA 100 mA 10 V 111 0.9999	Resistivity Include resistivity/ Excitation value: Voltage range: Current range: Maximum rumber of samples: Di Use current range SNR	Auto (aptimized) Auto (aptimized) Auto • 30 30	Hall Include Hall Sample mode Exclusion volve Enable field control? Magnetic field Additional field wait time	G Feet Hold Auto inperimental G 10 kcs 0 s
	Contact Check (Optin Include contact check? Optimize? Current: Votage Number of points: Mainmum R ² i	100 mA 10 v 110 10 v 11 11 0 v	Resistivity Include resistivity? Excitation value: Voltage range Current range Maximum number of samples: 20 Use cuttom target SNR	Auto (optimized) Auto (optimized) Auto • 30 30	Hall Include Hall Sample mode: Exclusion when Encenie field control? Magnetie field: Additional field wait time: Voltage rangen	G Fact Matt * Autor lognineteetti G 10 kds Autor * Autor *
	Contact Check (Optin Include contact check? Optimize? Current: Voltage Number of points: Meinmum R ² :	100 mA	Resistivity Include resistivity? Excitation value: Voltage range: Current range: Maximum number of samples: 21 Use custom target SNR:	Auto (optimized) Auto (aptimized) Auto * 30 30	Hall Include Hall? Sample mode Exclusion when? Enclusion when? Enclusion field control? Magnetic Felds Addebcoal field wait time: Vellage image Current range:	That that " Autor logismic of 0 10 kG 0 Auto * Auto * Auto 10
	Contact Check (Optin Include contact check? Optimize? Current: Voltage Number of points: Meinnum R ² :	100 mA 100 mA 10 V 11 0.0999	Resistivity Include resistivity? Excitation value: Voltage range: Current range: Maxemain number of samples: 2 Use custom target SNR:	Auto (optimized) Auto (optimized) Auto * 30 30	Hall Include Hall' Sample mode Exclusion volum: Enclusion volum: Enclusion volum: Adaptional field wait time: Voltage range Current range: Maaimum number of samplere Wallismon mamber of samplere Wall the coutom target XMR	✓ First Hall • Autoropyimized ✓ 10 kG 0 1 Autor • Autor • 30 30 30

9. The system will start measurement and a window will come out and ask for "Applying a permanent magnet with field of +10 kG". Slide the permanent magnet in until it fits into the sample chamber. Then confirm the action by clicking on "OK". The measurement will continue with the magnetic field applied condition.



- 10. Once done, all results will come out at the current window. Make sure to remove the permanent magnet back to its original position. All results will be automatically saved. Copy the images or CSV data if needed. Then close the software and turn off the power.
- 11. Fill in your name, date, time in, and time out on the logbook.

Learning materials

[1] <u>LakeShore FastHall station HMS-TT Manual</u> with Van der Pauw method explained. https://drive.google.com/file/d/1bh2sFMxIYYzJzqtY1wevOEZf4EARZFft/view?usp=sharing