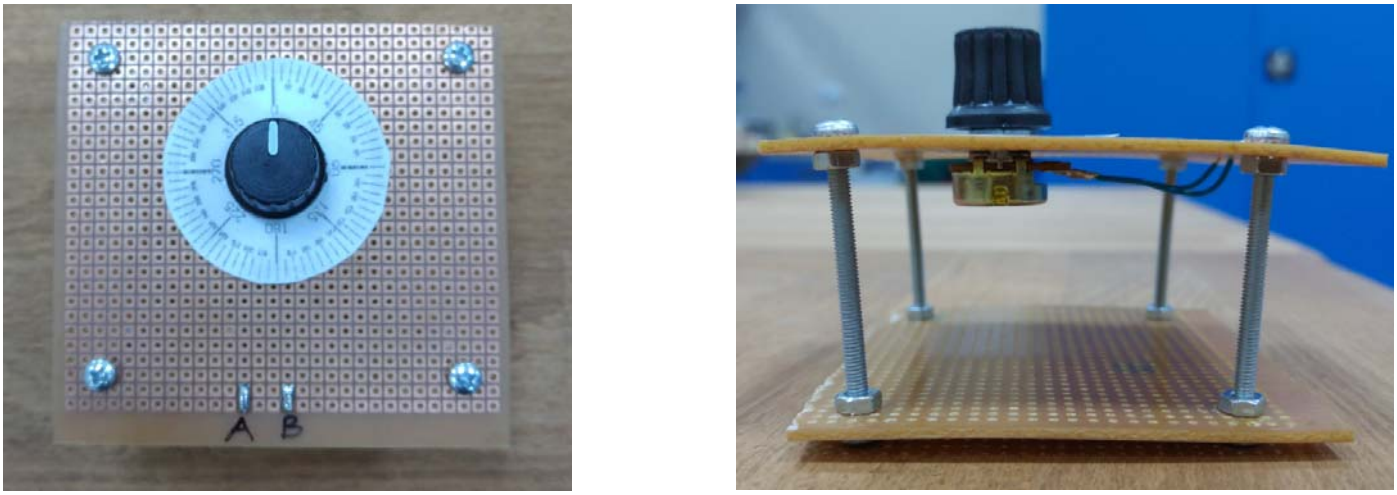
Date & Time	Student Nr.	Name	Surname	Group
28.03.2016 Monday 15:30	130412002	Gürhan	GENÇ	1
	130412016	Semih	SAVAŞ	1
	130412018	Gürkan	YILDIRIM	1
	130412026	Orhan	ERYAMAN	1
	130412020	Ertan	ARAS	2
	130412023	Tunahan	KÖSE	2
	130412027	Mirza Fatih	ATCI	2
	140412029	Mehmet	DUDU	2
	130412005	Eyüp	YILDIRIM	3
	140412018	Betül	YILDIRIM	3
	140412045	Hesham	MoQABA	3
	140412046	Basheer	AAL	3
	130412012	Adem	CANDEMİR	4
	140412016	Esra	UÇAR	4
	140412021	Esra	ATALAY	4
	140412028	Tuana	KOÇ	4
28.03.2016 Monday 15:55	140412005	Kenan	GÖKGÖZ	5
	140412014	Ahmet	KANIARI	5
	140412033	Onur	SARIASLAN	5
	140412044	Orhan	ODABAŞI	5
	140412009	İsmail	YILDIRIM	6
	140412020	Mehmet	AKBULUT	6
	140412022	Baver	POLAT	6
	140412027	Hacer İlayda	DOĞAN	6
	140412001	Goncagül	KARAYAMAN	7
	140412011	Ömer Burak	BAKAR	7
	140412023	Begüm	KAVAK	7
	140412042	Bekir	SÖNMEZ	7
	140412013	Umut	ÜNLÜ	8
	140412035	Alper	ŞEKER	8
	140412036	Tuğba	YILMAZ	8
	140412047	MontassarBEN	GHEZALA	8
28.03.2016 Monday 16:20	140412003	Yunus	DURMUŞ	9
	140412024	Gökmen	TÜRKMEN	9
	140412030	Saran	SAPMAZ	9
	140412041	Mehmet	ÖZALP	9
	130412031	Alptuğ	GÜL	10
	130412032	Merve	AKTUĞ	10
	130412033	Hüseyin	ÖZŞEKER	10
	130412036	Merve	AKGÖL	10
	140412002	Hayrunisa	ÖZMERMER	11
	140412006	Ünal	ÖZKURT	11
	140412007	İsmail	DOĞRAMACI	11
	140412019	Necip Fırat	HELVACIOĞLU	11
	140412012	Sertaç	KARAKOÇ	12
	140412026	Sezer	YAKIT	12
	140412031	Umut	ÇİFTÇİOGULLAR	12
	150412009	Alpay	TOPRAK	12
29.03.2016 Tuesday 09.45	130412025	Seydi Ahmet	KARIŞ	13
	130412028	Sergen	AKTEN	13
	130412039	Muammer Eray	KALELİOĞLU	13
	140412017	Yusuf	ÇAKMAK	13
	140412025	Emre	HÜNKAR	14
	140412032	Sümeyye	KÖK	14
	140412034	Zeynep	KİRİŞÇİ	14
	140412037	Ferhat	UZUN	14
	140412038	Kubilay	ÇALLI	15
	140412039	Olcay	UZEL	15
	140412040	Beytullah	KARAHAN	15
	140412043	Mehmet Anıl	AnAVCI	15
	150412014	Ege	ALEMDAR	

***Experiments will be made in "Mekatronik Mühendisliği, Eğitim Laboratuvarı" next to Class F2-04.

Analysis of a Potentiometric Protractor

Tools

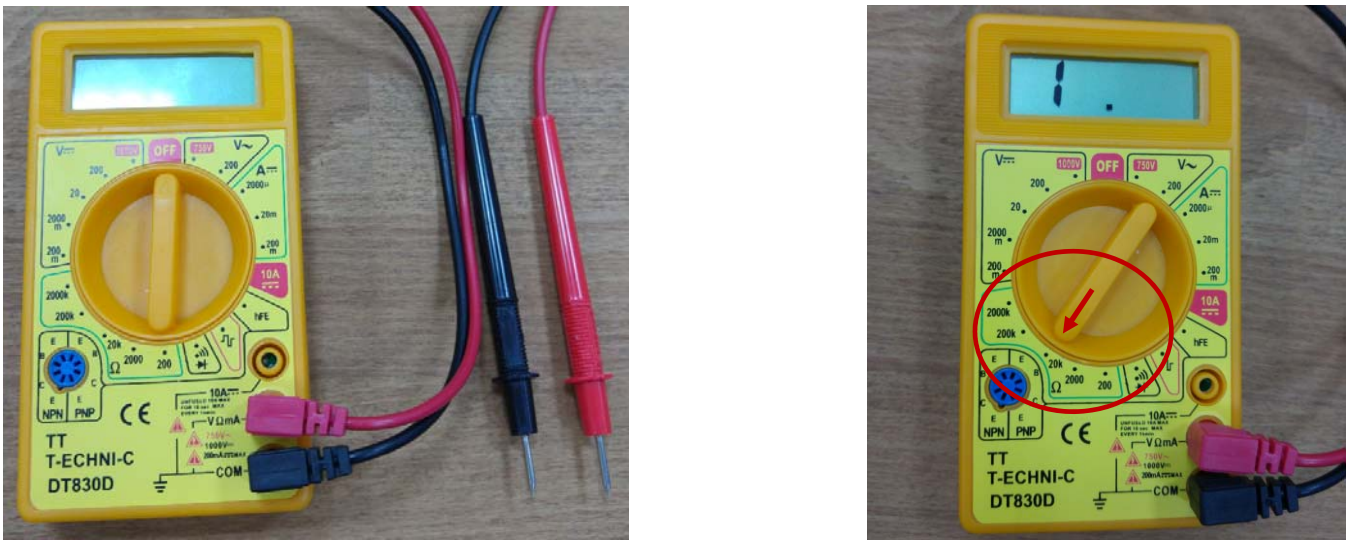
Potentiometric protractor is a device to measure angular displacement. It consist of a potentiometer mounted on a board and a protractor. Its input is angle in degrees and the output is corresponding resistance value in ohms. Note that, the potentiometric protractor can be used to measure angles less than 300 degrees due to the structural limitations. The input is applied by turning the knob and the output is measured from terminals A and B. As shown in Figure 1.



(a) (b)

Figure 2. Potentiometric protractor. a) top view, b) side view.

Multimeter is an electronic measuring instrument that can combine several measurement functions in a unit. Ohmmeter function will be used in the scope of this experiment. Red probe is connected to "V/Ω/mA" terminal and black probe is connected to "com" terminal as shown in Figure 2a. In order to measure resistance, switch is configured to ohmmeter section (marked with Ω) as shown in Figure 2b. Ohmmeter section includes a resistance value range. Before measurement, suitable resistance value is selected from value range in ohmmeter section.



(a) (b)

Figure 2. a) connection of probes, b) configuration of ohmmeter.

Analysis of a Potentiometric Protractor

Instructions

1. Configure multimeter settings and connections to measure resistance of approximately 10K.
2. Connect "com" terminal of multimeter to "B" terminal of potentiometric protractor.
3. Connect "V/Ω/mA" terminal to "A" terminal of potentiometric protractor.
4. Determine input range of measurement gauge.

Min.	Max.

5. Determine output range of instrument.

	Min.	Max.
Angle		
Ω		

6. Find the linear mathematical model of instrument.

7. According to mathematical model, what is sensitivity and offset of gage?

Sensitivity	Offset

8. Measure offset of the instrument.

Offset

9. Make five angular measurement in the range of instrument (5 angle input and 5 resistance value).

Angle	Ω

Analysis of a Potentiometric Protractor

Tasks

Prepare a report, include:

Introduction

1. A photo of your offset measurement,
2. Briefly describe purpose of the experiment,

Method

3. Briefly describe your measurement set up,

Results

4. Redo tables and add necessary table headings.
5. Compare and comment about model and reality differences.
6. Using the measurement taken at step 9, calculate the nonlinearity of gauge and comment about validity of linear model.

**You can access report format from website lcetin.github.io*

Experiment No. – Experiment Name

Name-Surname :	**Date :**
Signature :	**Group :**

1. Introduction (*Calibri-Bold-12 punto-Justified)

Your descriptions about purpose of the experiment... (*Calibri-12 punto-Justified)
Figures and tables must be centered.
All figures and tables must have a caption.
Figure captions should be given after figure and centered.
Table captions should be given before table and aligned to the left.

2. Method (*Calibri-Bold-12 punto-Justified)

Your descriptions about method and setup of the experiment. You can use photos of experimental setup taken during the experiment... (*Calibri-12 punto-Justified)
Figures and tables must be centered.
All figures and tables must have a caption.
Figure captions should be given after figure and centered.
Table captions should be given before table and aligned to the left.

3. Results (*Calibri-Bold-12 punto-Justified)

Results must be clearly indicated in this part. If it is necessarry, results should be expressed with figures and tables. (*Calibri-12 punto-Justified)
Figures and tables must be centered.
All figures and tables must have a caption.
Figure captions should be given after figure and centered.
Table captions should be given before table and aligned to the left.