

LEVEL 4 ASSESSMENT SPECIFICATION

Student name:	Robert Day	Student ID number:	
Programme:	HNC Instrumentation Engineering		
Module:	Instrumentation, Automation and Control		
Module code:	PCEE4011	Contribution to Overall Module Assessment (%):	50%
Lecturer:	Jason Pointer	Internal Verifier:	Nigel Richards
Assignment Title:	Temperature Measurement System and Signal Transmission	Word count (or equivalent):	2000
Submission deadline:	23/01/25	Return date of provisional marks & written feedback:	06/02/25
Submission method:	All written assessments, where practical and possible, must be submitted via Turnitin unless otherwise instructed by the Lecturer. (Please DO NOT put this assessment specification into Turnitin or it will match many similarities with other students' submissions.) Alternative submission method (if applicable): Late submission of the assessment will result in a late penalty mark: Work which is submitted up to 1 week late will be capped at 40% for the first attempt and will be awarded a mark of 0% for re-assessment. Late submission penalties may be lifted only if there is an approved extenuating circumstances claim. Work submitted more than 1 week late will be considered as a non-submission and will not be marked. The work may be considered as a submission for reassessment if offered by an Examining Board or if there is an approved extenuating circumstances claim.		
Academic honesty / referencing:	Academic honesty is required. In the main body of your submission you must give credit to authors on whose research and ideas your work is based. Append to your submission a reference list that indicates the books, articles, etc. that you have used, cited or quoted in order to complete this assessment.		

Module Learning Outcomes (from module syllabus)

1. Explain the principles of operation for a range of industrial measuring systems and demonstrate an understanding of the requirement for interfacing sensors with conditioning, indication and analogue/digital signal transmission circuits.
2. Select an appropriate sensor for specific operation and demonstrate an understanding of their benefits and limitations with respect to measuring and control system applications.

STUDENT FEEDBACK FORM

This section details the *extent* to which the assessment criteria are demonstrated by you, which in turn determines your mark. The marks available for each category of skill are shown. Lecturers will use the space provided to comment on the achievement of the task(s), including those areas in which you have performed well and areas that would benefit from development/improvement.

Generic Assessment Criteria	Marks available	Marks awarded
1. Engagement with Literature Skills	15	10.2
Engagement with a wide range of literature, including sources retrieved independently. Generally sound referencing, with very few inaccuracies or inconsistencies.		
2. Knowledge and Understanding Skills	40	27.7
Task 1 - 72%. Task 2 - 64%. Task 3 - 66%. Task 4 - 75%. Excellent knowledge and understanding of the basic underlying concepts and principles for each task.		
3. Cognitive and Intellectual Skills	10	5
Good evaluation of the underlying concepts and principles for tasks 2 and 3.		
4. Practical Application Skills	25	19.63
Task 1 - 82%. Task 2 - 75%. An excellent application of practical work for tasks 2 and 3, very good use of the test equipment and Multisim to obtain the required test results.		
5. Transferable Skills for Life and Professional Practice	10	7.2
Work is coherent, very fluent and is presented professionally. Excellent layout making the assignment easy to read.		

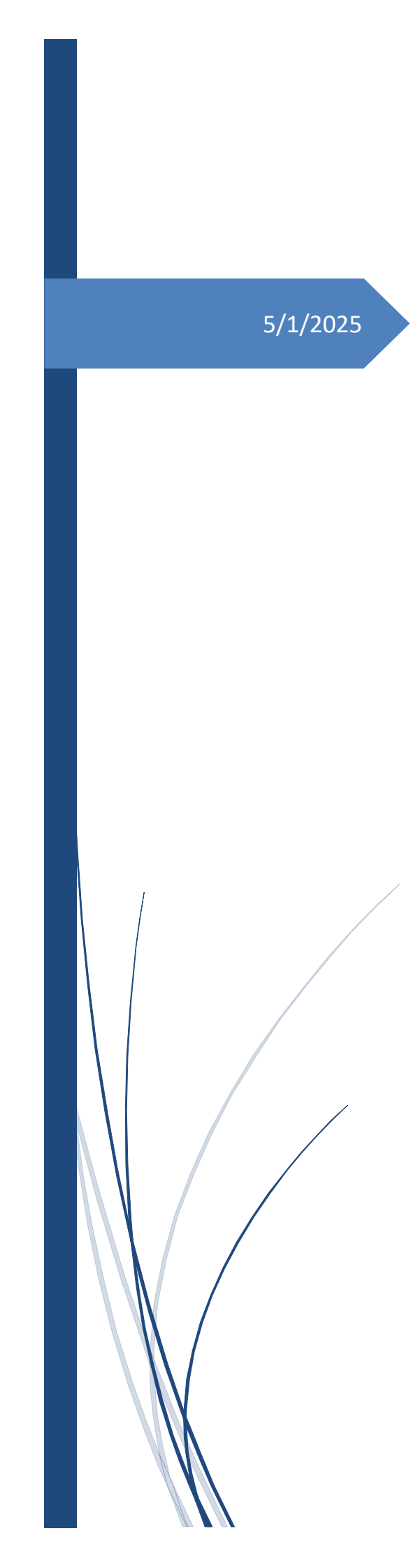
Assessment Mark (Assessment marks are subject to ratification at the Exam Board. These comments and marks are to give feedback on module work and are for guidance only until they are confirmed.)

Late Submission Penalties (tick if appropriate)

Up to 1 week late (40% Max)

Over 1 week late (0%)

70%



5/1/2025

Instrumentation, Automation & Control

PCEE4011

Student Name: Robert Day

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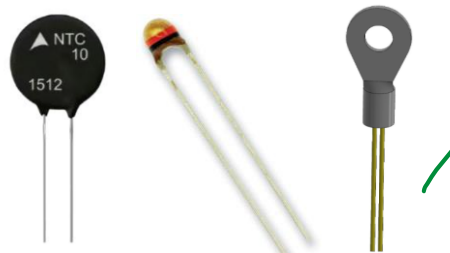
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Task 1 – Temperature sensors research

An NTC Thermistor is a temperature sensing element. NTC means “Negative Temperature Coefficient”, and this relates to the manner in which this type of Thermistor works. The resistance inside this simple device decreases as its temperature increases. This means it can be used in a circuit to sense temperature change by monitoring the differing resistance. ✓

According to (Platt and Fredrik Jansson, 2016) *“Although the term thermistor suggests that it is a thermally sensitive resistor, in fact an NTC Thermistor is a semiconductor.”* ✓

A Thermistor is made by heating metal oxides until they turn into a ceramic material. The ceramic material is then cut to size, and metal leads or legs are attached to it. The body is then encapsulated in an epoxy substance or glass. They commonly take the form as seen below: ✓



This is a very inexpensive method of production, and for this reason makes it a popular choice when concerned about cost.

According to (Platt and Fredrik Jansson, 2016) common applications for the NTC Thermistor include “air-conditioning systems, clothes washers, refrigerators, pool and spa controls, dishwashers, toasters, and other domestic devices. They are also used in laser printers, 3d printers, industrial process controls, and medical equipment. As many as 20 thermistors may be found in a modern automobile, measuring temperature in locations ranging from the transmission to the ambient air in the passenger compartment”. ✓

The main advantages of this device are its cost to make/buy, its level of sensitivity and versatility due to it being manufactured in different shapes and sizes. Some of its disadvantages include its non-linear output and the amount of drift in its accuracy when dealing with the higher end of its limited temperature range. ✓

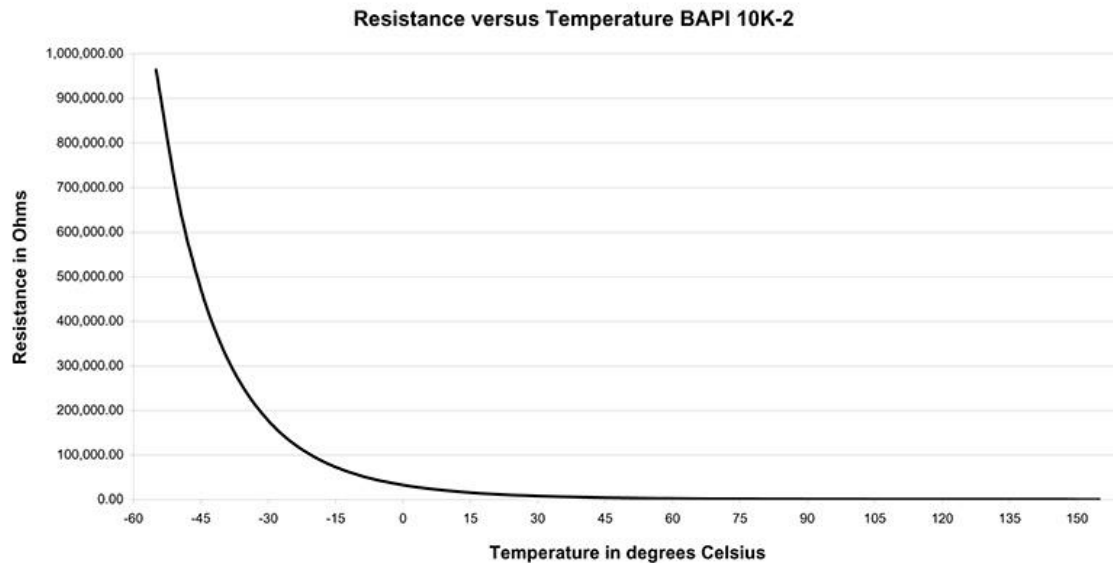


Figure 1 – Available at: https://www.bapihvac.com/application_note/thermistor-vs-rtd-temperature-measurement-accuracy-application-note/

To summarise, the NTC Thermocouple is a cost-effective temperature measuring device and is a suitable option when cost may be an issue, and for applications in a temperature range of -55°C and +200°C and where extreme accuracy is not of paramount importance.

A Platinum RTD or Resistance Temperature Detector is a temperature sensing device that works by measuring the resistance of a material (in this case Platinum) and how that changes due to a temperature change. There are several reasons why Platinum is the choice metal for this device. Platinum is a stable metal does not oxidize very easily. It has a high melting point which means it has a greater measurement range – typically -200°C to 600°C. These properties alone mean there are generally more applications that this type of sensor can be used in, when compared to the NTC Thermistor.

According to (Platt and Fredrik Jansson, 2016) *"High quality RTD sensors with a wide temperature range usually consist of platinum wire that is wound around a glass or ceramic core. Smaller sensors may be fabricated from a thin layer of platinum evaporated onto an insulating substrate. Nickel may be substituted for platinum, and has a more sensitive but less linear response."*

The RTD has a positive temperature coefficient, meaning the resistance increases with temperature rise. The linear response makes them far easier to work with and they are more stable with significantly less drift than the NTC Thermistor.

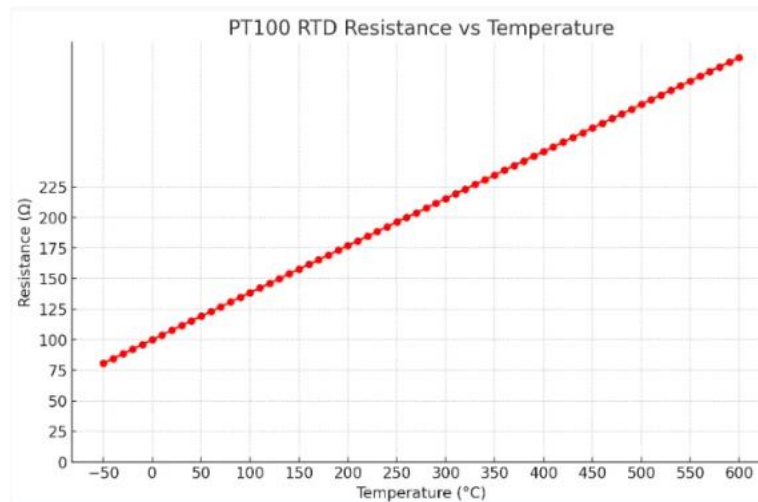


Figure 2 – Available at: <https://peaksensors.com/blog/resistance-thermometer/what-is-rtd-sensor-and-how-does-it-work/>

There are three options of RTD. The images below are 2 wire options. They work by connecting them to a measuring device using 2 wires. An electrical current is passed through the wires and RTD, the voltage drop can be measured, and this can infer the temperature recorded. This is a very good method for temperature measurement when the distance from the measuring device and the end of the RTD sensor, is small. When the distances get larger between the two, problems in terms of accuracy can arise. This is because the connecting wires actually contribute to the total resistance measured. However, this problem can be overcome by adding an additional wire – hence the 3 wire RTD. The extra wire is used to deliver the current, thus relieving the effects of increased resistance. This makes the 3 wire RTD more accurate than the 2 wire. Finally, the 4 wire RTD takes the accuracy to even higher levels because two wires carry the current, and the other two wires measure the voltage drop. This means the 4 wire RTD can tolerate greater distances than the other two, without compromising accuracy.



Platinum RTD's are more commonly found in industrial applications mainly because of its versatility, robustness and accuracy – for example the petrochemical and nuclear industries. These attributes are the main advantages of the RTD, however there are some disadvantages. The first and most obvious is the cost, and this is because of the Platinum. That makes this type of sensor one of the most expensive on the market. Whilst the RTD has a better response time and temperature range than the NTC Thermistor, Thermocouples outperform RTD's in this area. RTD's can also be more susceptible to shock and vibration than thermocouples, therefore understanding the application and environment is so important when choosing a suitable temperature measuring device. See figure 2 for a side by side technical comparison from RS Components.

Below (Figure 3) is a comparison datasheet from RS Electrical supplies to aid customers in selecting the correct temperature measurement device for their projects. The RTD is a solid performer across the board, and is therefore a common choice for a whole host of applications. The Thermocouple tends to lend itself to more specialist environments due to its greater temperature range.

 Comparison of Sensor Types 			
	Platinum Resistance Thermometer	Thermocouple	Thermistor
Sensor	Platinum-wire wound or flat-film resistor	Thermoelement, two dissimilar metals/alloys	Ceramic (metal oxides)
Accuracy (typical values)	0.1 to 1.0°C	0.5 to 5.0°C	0.1 to 1.5°C
Long term Stability	Excellent	Variable, Prone to ageing	Good
Temperature range	-200 to 650°C	-200 to 1750°C	-100 to 300°C
Thermal response	Wirewound – slow Film – faster 1-50 secs typical	Sheathed – slow Exposed tip – fast 0.1 to 10 secs typical	generally fast 0.05 to 2.5 secs typical
Excitation	Constant current required	None	None
Characteristic	PTC resistance	Thermovoltage	NTC resistance (some are PTC)
Linearity	Fairly linear	Most types non-linear	Exponential
Lead resistance effect	3 & 4 wire – low. 2 wire – high	Short cable runs satisfactory	Low
Electrical "pick-up"	Rarely susceptible	susceptible	Not susceptible
Interface	Bridge 2,3 or 4 wire	Potentiometric input. Cold junction compensation required	2 wire resistance
Vibration effects/ shock	wirewound – not suitable. Film – good	Mineral insulated types suitable	Suitable
Output/ characteristic	approx. 0.4 W/°C	From 10µV/°C to 40µV/°C depending on type	-4% / °C
Extension Leads	Copper	Compensating cable	Copper
Cost	Wirewound – more expensive Film – cheaper	Relatively low cost	Inexpensive to moderate

Comments and values shown in this chart are generalised and nominal. They are not intended to be definitive but are stated for general guidance.

Figure 3 – Available at: <https://docs.rs-online.com/24d5/0900766b815e5304.pdf>

Task 2 – Testing the sensors

A data acquisition system was used to conduct a ten minute experiment, recording temperature using an IC (Integrate Circuit) Temperature sensor and an RTD. The results of this experiment can be found in the appendix, however the following graphs have been produced from the dataset, and the findings discussed below.

Figure 4 (below) shows the temperature recorded in degrees Celsius over a 10 minute period (600 seconds) for the IC Temperature sensor (blue) and the RTD (red). Both have produced very different lines on the graph. The construction of the sensors plays a part in this because the RTD element is normally located at the base of the sensor or probe. This means the RTD is able to get closer to the heat emitting object, whereas the IC sensor is located in the connector of the electrical component. This means that the ambient air temperature can also impact the accuracy of the temperature recorded. Both of these explanations are clearly exhibited on the graph. The final temperature recorded from the RTD is roughly 78 °C, and the IC sensor 62 °C – a discrepancy of 16 °C. The IC sensor is also clearly much slower at reading the change in temperature when compared to the RTD, hence the smooth line of the IC plot and the ever-changing plot of the RTD. It is also worth noting that the sample time was every second. If this was reduced to every 5 seconds, the plot for the RTD would appear a lot smoother. ✓

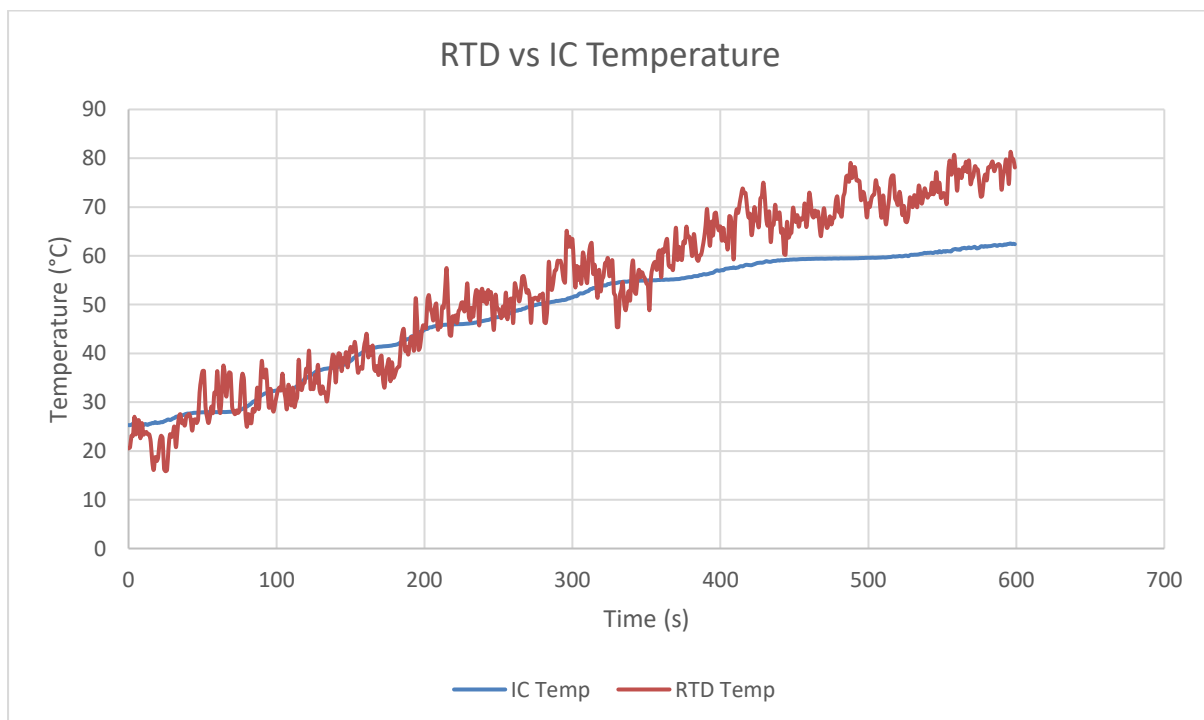


Figure 4

A second dataset was obtained using the same system, to test a Thermistor. The results of this experiment can be found in the appendix, however the following graphs have been produced from the dataset, and the findings discussed below.

Figure 5 (below) shows the temperature recorded in degrees Celsius over a 10 minute period (600 seconds) for the IC Temperature sensor (blue) and the Thermistor (red). This graph does not produce a set of results I was expecting. The IC sensor in both tests has recorded a final temperature of approximately 60 °C. However, the Thermistor, a highly sensitive device, should be able to detect the temperature with excellent accuracy. On this occasion it has only recorded a final value of approximately 43 °C – a difference of 17 °C, and a difference of 35 °C against the RTD. There could be several reasons for this. Just like any electronic device they are subject to errors or damage. Drift errors can occur in old or aging equipment, meaning the thermistors resistance has changed over time. Interference errors can occur when electromagnetic fields from other devices interfere with the thermistor's signals.

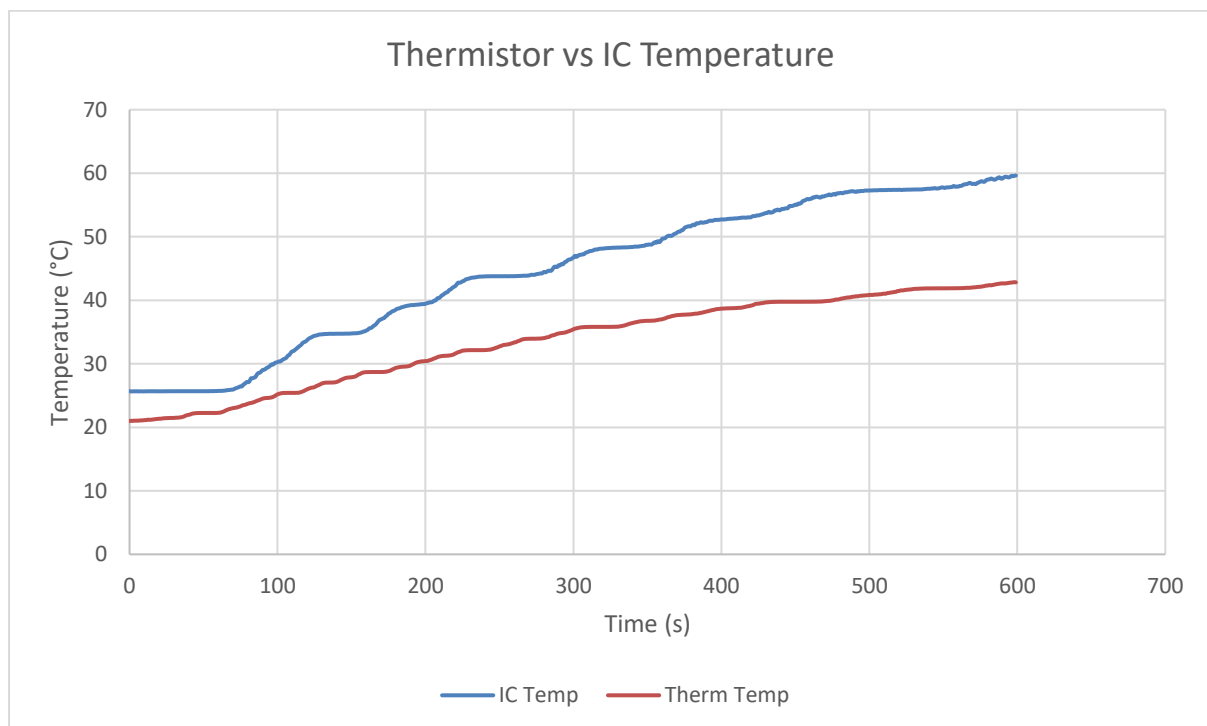


Figure 5

In figure 6 (below) the percentage error characteristic has been plotted for the RTD (Series 1 – red) vs. the Thermistor (Series 1 - blue). From the graph we can see that, the RTD is holding closer to zero than the Thermistor. Therefore we can infer from this data that the RTD has a better percentage error characteristic than the Thermistor, and for this reason, in conjunction with the other benefits outlined above, *I* have chosen the RTD to be the most suitable temperature sensor for our application.

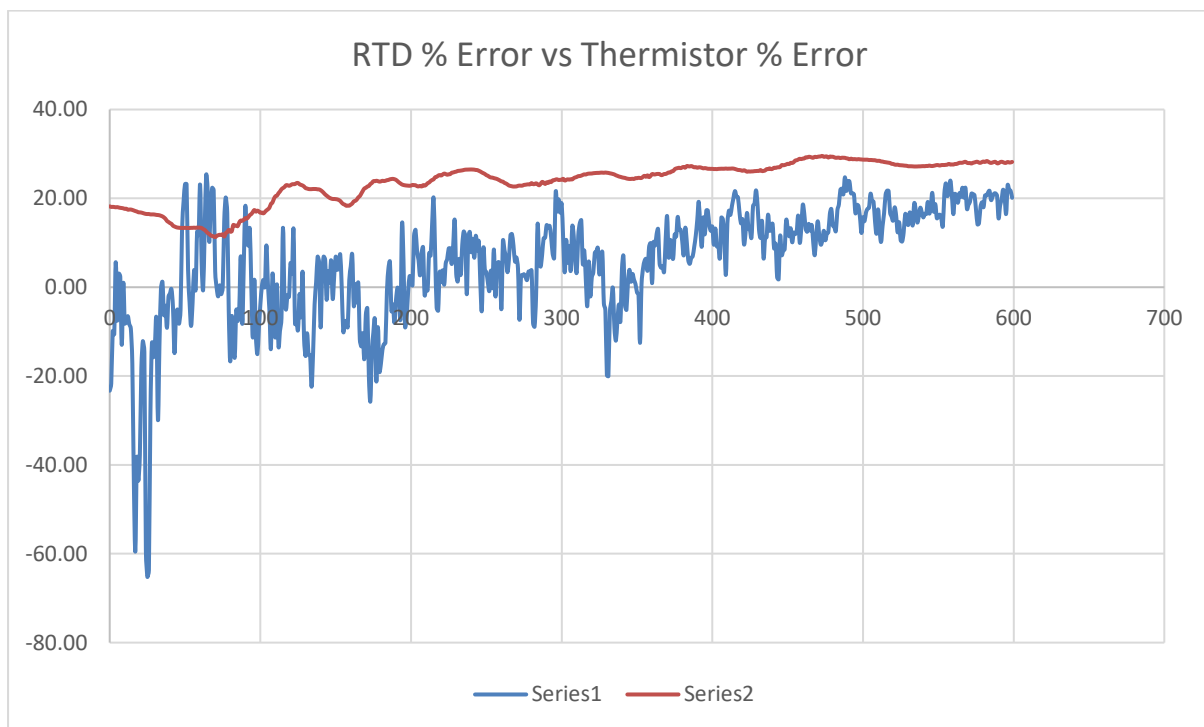


Figure 6

You could talk about response time.

Task 3 – Temperature circuit design

For the purpose of this task, the following variables were assigned: R1 = 560Ω, R2 = 560Ω, R3 = 100Ω, and a supply voltage of 10v.

Figure 7 below shows the signal processing circuit containing a Wheatstone bridge and instrumentation amplifier that I have designed on MultiSim. The circuit shows 2 multimeters connected at the Wheatstone bridge output, and the amplifier output.

The PT100 RTD should always read 100Ω at 0°C, and from the bridge multimeter we have a value very close to 0 being displayed (-923.782nV). The corresponding voltage recorded at the amplifier output is also a value very close to 0 (2.672mV).

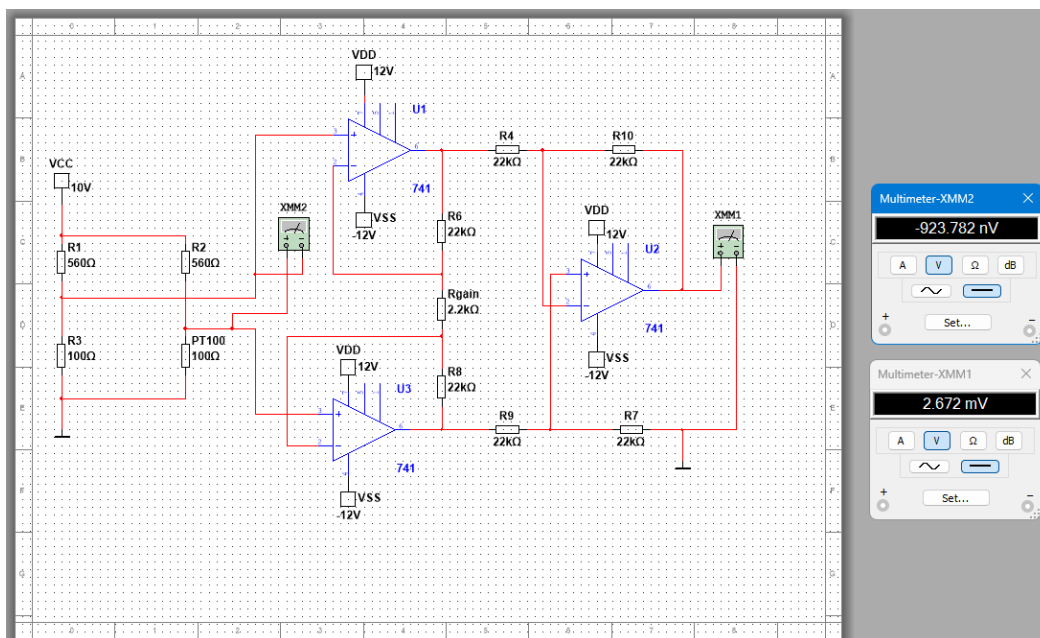


Figure 7

A calculation was required to determine the resistance values for the resistors used in the amplifier section of the circuit. The formula for an instrument amplifier is:

$$A_v = \left(1 + \frac{2R}{R_{\text{gain}}} \right)$$

'Av', the voltage gain, can be calculated using the following formula:

$$A_v = \frac{V_{\text{out}}}{V_{\text{in}}}$$

The voltage out (Vout) in this system at 100 °C, in an ideal world, would be 10V. The voltage in recorded (see table of results below) at 100 °C was 467.67mV or 0.46767V. Therefore: ✓

$$A_v = \frac{10}{0.46767} = 21.38 \quad \checkmark$$

Now we can insert 21.38 back into the formula:

$$21.38 = \left(1 + \frac{2R}{R_{\text{gain}}} \right) \quad \checkmark$$

This can be rearranged so that we can find R.

$$21.38 - 1 = \left(\frac{2R}{R_{\text{gain}}} \right) \text{ therefore: } 2R = R_{\text{gain}} \times (21.38 - 1)$$

$$\text{Therefore: } R = \left(\frac{R_{\text{gain}} \times 21.38 - 1}{2} \right) \quad \checkmark$$

$$\text{Let } R_{\text{gain}} = 2.2\text{k}\Omega, \text{ therefore: } R = \left(\frac{2.2 \times (21.38 - 1)}{2} \right) = 22.418\text{k}\Omega$$

The nearest value resistor available to this figure is a 22kΩ, therefore this was the value used in the MultiSim circuit as seen in Figures 7,8 and 9. ✓

Figure 8 (below) shows the multimeter outputs at 50 °C.

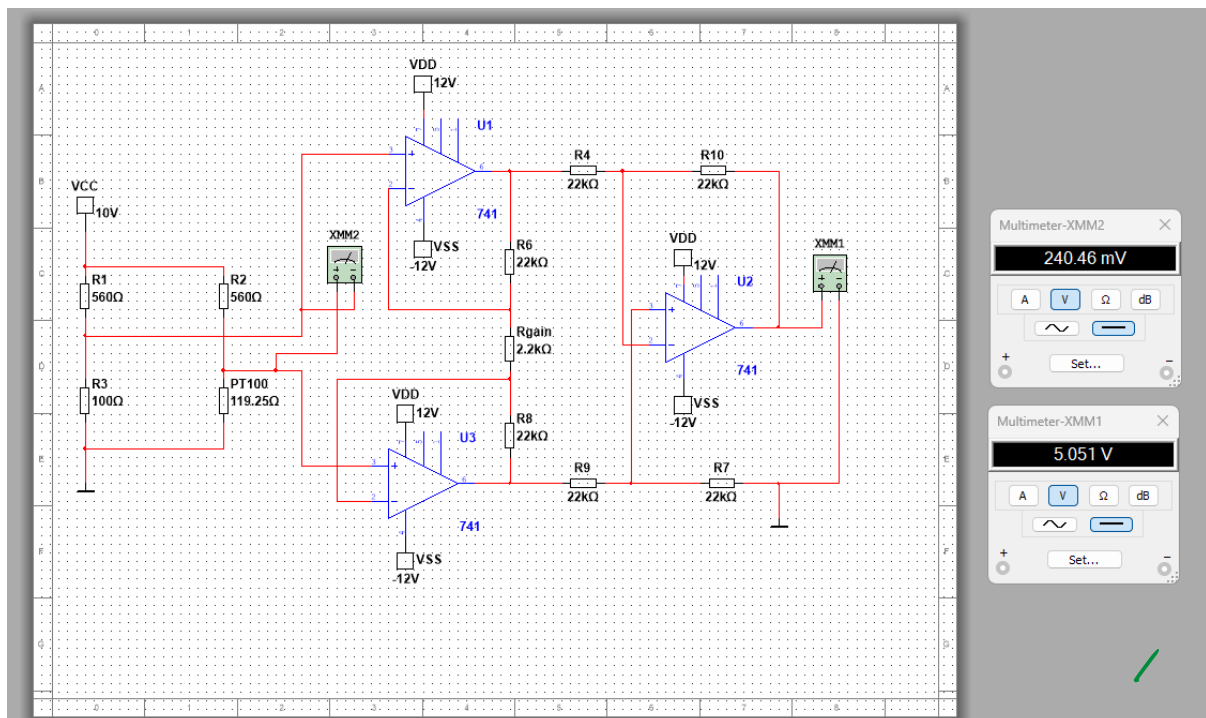


Figure 8

Figure 9 (below) shows the multimeter outputs at 100 °C.

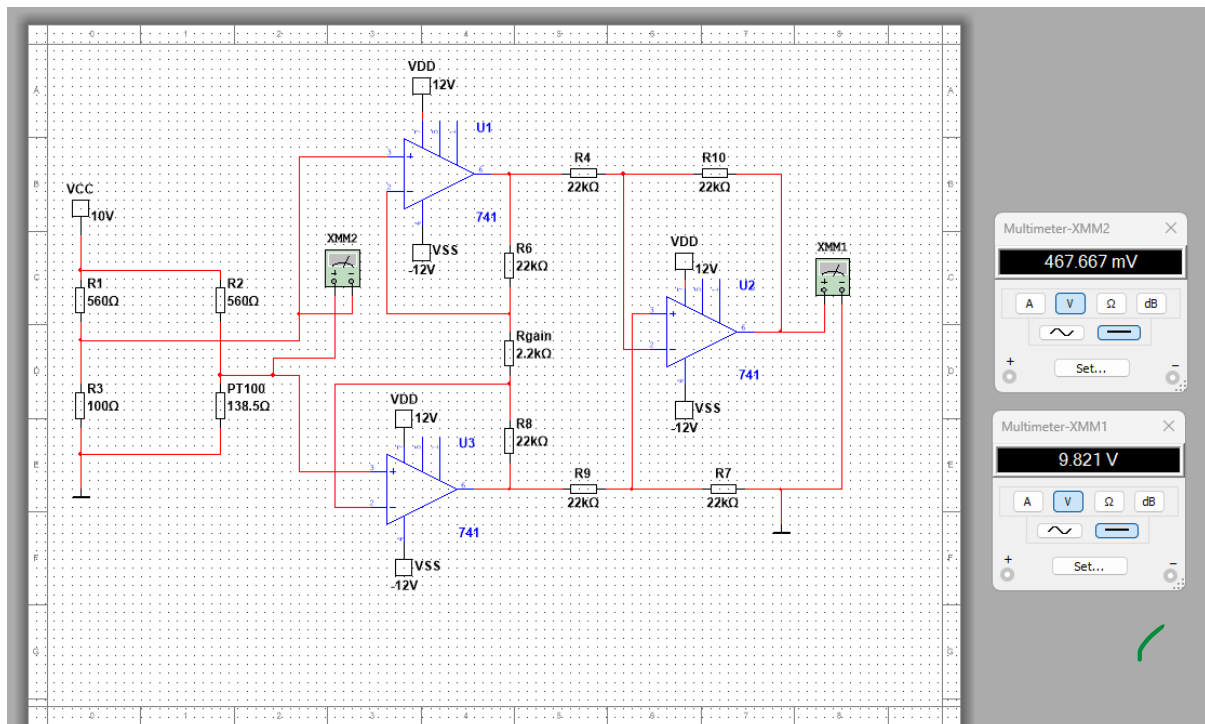


Figure 9

The data was recorded in the table below from 0 to 100 °C in the table below in 10 °C increments.

Temperature (°C)	PT 100 (Ω)	Bridge Output Voltage (mV)	Amplifier Output Voltage (V)	Amplifier Output Recorded Data Voltage (V)
0	100	0.00	0.00	0.002672
10	103.85	49.21	1.03	1.036
20	107.7	97.85	2.05	2.057
30	111.55	145.93	3.06	3.067
40	115.4	193.47	4.06	4.065
50	119.25	240.46	5.05	5.051
60	123.1	286.93	6.03	6.027
70	126.95	332.87	6.99	6.992
80	130.8	378.31	7.94	7.945
90	134.65	423.23	8.89	8.888
100	138.5 ✓	467.67 ✓	9.82 ✓	9.821 ✓

It is clear from the data that this circuit has performed very well, providing amplifier output voltages very close to what we would expect, notably 0V, 5V and 10V. There is only a very small discrepancy which in part is down to the fact we could not choose a resistor of the value calculated in our formulas. The use of a variable resistor could have easily overcome this, and would allow us to fine tune the system to give exact voltages. ✓

Could have include CMRR.

Task 4 – Signal transmission

Foundation Fieldbus

Foundation Fieldbus is a protocol (set of rules that govern how data is transmitted between devices) that was developed by FieldComm Group in 1996. It is essentially a ground level network that all instruments and devices can connect to for power, and communication.

According to (Verhappen and Pereira, 2008) *“Fieldbus is a bi-directional digital communication network that enables the connection of multiple field instruments and processes and operator stations (HMI). They carry out control functions and enable monitoring by means of supervision software. The foundation Fieldbus protocol was based on the ISO/OSI seven-layer communications model, although it does not include all layers. It can be divided into the Physical layer (dealing with instrument connection techniques) and the Communication Stack (dealing with the digital communication among the devices).”* ✓

Devices that are connected to the Fieldbus can communicate with each other and other host systems. According to (www.fieldcommgroup.org, n.d.) *“A host can be any software application: from a technician's handheld device or laptop, to a plant's process control, asset management, or safety system.”* ✓

Fieldbus offers many advantages over a traditional 4...20mA (2 wire) field installations, by massively reducing cabling, the need for multiple I/O cards, marshalling cabinets, cable trays etc. Devices can be connected in a variety of ways (see figure 10). This lends itself to faster installations, and once connected to the network, the host software or supervisory system benefits from closed-loop control, device to device communication, enhanced diagnostic facilities and remote firmware updates. ✓

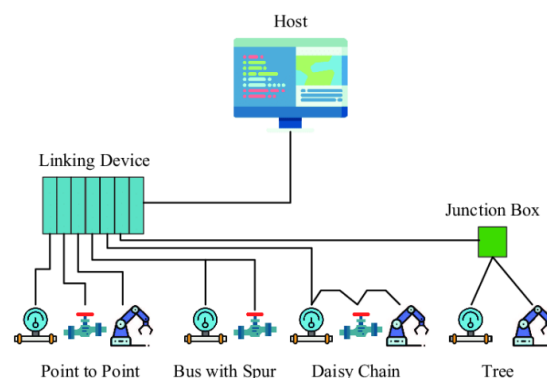


Figure 10 – Available at: https://www.researchgate.net/figure/Foundation-Fieldbus-H1-Topologies_fig1_340453361

In theory, Foundation Fieldbus can support up to 32 devices on a single pair of wires. This is called “Multidrop”, a method in which devices can be “daisy-chained” together. This eliminates the need for each device to be singularly wired back to a control room, I/O card, or marshalling cabinet. According to (Introduction to FOUNDATION fieldbus, n.d.) *“if you have 1000 devices, which would require 1000 wire pairs with traditional Technology, you only need 60 to 250 wire pairs with FOUNDATION fieldbus. That's a lot of savings in wiring (and wiring installation).”*

Fieldbus is used in nearly all major industrial process industries from oil and gas, chemical plants, the water industry, and power generation, for providing full measurement and control of instrumented systems.

Profibus

Profibus is another protocol that was developed in 1989 by a company called Profibus & Profinet International, so it actually predates Foundation Fieldbus. Like Fieldbus, it provides a means for multiple devices to communicate with each other. Both protocols are widely used in similar industries, and practices. In many ways they are extremely similar, but the biggest difference probably comes by the way of Profibus' decentralised architecture. Field devices are able to communicate with a central controller over a single bus. There is no requirement for intermediary input/output modules, which reduces unnecessary cabling. ✓

According to (instrumentationtools.com, 2023) *"Profibus employs a 'Master-Slave' communication architecture. In this setup, one or more devices act as masters, controlling communication on the bus, while other devices act as slaves, responding to requests from the master."* ✓

There are two Profibus protocols; Profibus-DP and Profibus-PA. Both protocols utilise RS-485 serial data communication on the physical layer. RS-485 is an excellent choice because it can cover long distances, is resistant to electrical noise and can support multiple devices on a single bus. It has a maximum transfer rate of 12 Mbps which is generally sufficient for fast and reliable communication between devices, although could be problematic for applications that generate large amounts of data. ✓

Profibus-PA (process automation) is a version of the protocol which was developed for use with processes that operate in potentially explosive atmospheres. The architecture allows for devices to be powered and communicate over 1 cable, whilst also be intrinsically safe because the amount of power transmitted to the field is limited to below the ignition threshold of any flammable atmospheres. ✓

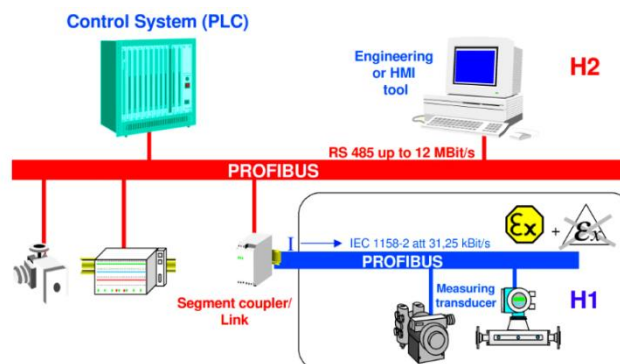


Figure 11 Available at: <https://instrumentationtools.com/profibus/>

HART

HART (Highway Addressable Remote Transducer) is another protocol. It was developed by Rosemount in the 1980's. It is known as a hybrid protocol because it bridges analogue and digital technologies. ✓

Instruments that have HART continue to use the conventional 4-20mA analogue signal to transmit the measurement variable, but the addition of HART provides other possibilities. ✓

According to (Powell and Powell, 2020) *"Its design mandate was to use the same wiring as 4-20mA and provide a path forward for more advanced features that would only be possible with two-way digital communications."* ✓

Later on, some considered the protocol as a transition from the 4-20mA technology that dominated the industry to the fully digital protocols like PROFIBUS PA and Foundation Fieldbus." ✓

HART's main benefits are the ability for remote configuration and diagnostics. HART instruments can send and receive information via control systems and hand held field devices. HART achieves this by superimposing a digital signal onto the 4-20mA signal using what's called Frequency Shift Keying (FSK). According to (Waite, 2024) *"In essence, FSK assigns distinct frequencies to the binary digits 0 and 1. This technique is a form of frequency modulation, which involves varying the frequency of a carrier wave to encode information. FSK is widely used due to its simplicity and effectiveness in noisy environments."* ✓

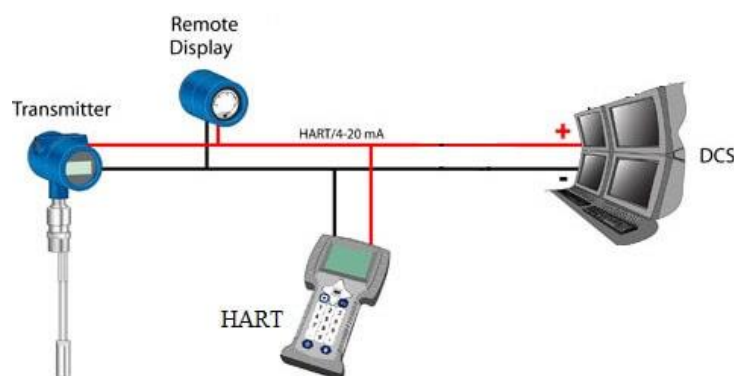


Figure 12 – Available at: <https://instrumentationtools.com/brief-notes-on-hart-communication-protocol/>

HART is used in many industrial applications, including oil and gas, water treatment, manufacturing, and mining.

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Appendix:

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
0	2.983	0.1079	25.3	20.52	-23.30	0	2.9867	2.5034	25.67	5325.494927	21.00	18.20
1	2.9828	0.108	25.28	20.78	-21.66	1	2.9866	2.5048	25.66	5319.533695	21.02	18.08
2	2.9839	0.1089	25.39	23.12	-9.83	2	2.9865	2.5041	25.65	5322.513478	21.01	18.09
3	2.9856	0.1089	25.56	23.12	-10.57	3	2.9867	2.5056	25.67	5316.130268	21.04	18.05
4	2.9849	0.1104	25.49	27.01	5.64	4	2.9866	2.506	25.66	5314.42937	21.04	18.00
5	2.9814	0.109	25.14	23.38	-7.54	5	2.9867	2.506	25.67	5314.42937	21.04	18.03
6	2.9844	0.1101	25.44	26.23	3.03	6	2.9865	2.5063	25.65	5313.154052	21.05	17.94
7	2.9862	0.1101	25.62	26.23	2.34	7	2.9866	2.5079	25.66	5306.35751	21.07	17.87
8	2.9853	0.1087	25.53	22.60	-12.98	8	2.9866	2.5086	25.66	5303.38675	21.09	17.82
9	2.9846	0.1099	25.46	25.71	0.99	9	2.9865	2.5091	25.65	5301.265793	21.10	17.76
10	2.9828	0.109	25.28	23.38	-8.14	10	2.9866	2.5114	25.66	5291.520268	21.13	17.64
11	2.9851	0.1091	25.51	23.64	-7.93	11	2.9866	2.5108	25.66	5294.060857	21.12	17.68
12	2.9845	0.1092	25.45	23.90	-6.50	12	2.9867	2.5146	25.67	5277.990933	21.19	17.45
13	2.9833	0.109	25.33	23.38	-8.36	13	2.9867	2.5142	25.67	5279.680216	21.18	17.48
14	2.9855	0.109	25.55	23.38	-9.30	14	2.9867	2.5141	25.67	5280.102621	21.18	17.49
15	2.9857	0.1084	25.57	21.82	-17.20	15	2.9867	2.5155	25.67	5274.19201	21.20	17.39
16	2.9873	0.1069	25.73	17.92	-43.57	16	2.9867	2.5173	25.67	5266.602312	21.24	17.27
17	2.9869	0.1062	25.69	16.10	-59.53	17	2.9867	2.5193	25.67	5258.182035	21.27	17.14
18	2.9892	0.1072	25.92	18.70	-38.60	18	2.9867	2.5208	25.67	5251.875595	21.30	17.04
19	2.9873	0.1069	25.73	17.92	-43.57	19	2.9866	2.5228	25.66	5243.478674	21.33	16.88
20	2.9877	0.1072	25.77	18.70	-37.80	20	2.9867	2.5237	25.67	5239.704402	21.35	16.85
21	2.9879	0.1084	25.79	21.82	-18.20	21	2.9866	2.524	25.66	5238.44691	21.35	16.80
22	2.9892	0.1089	25.92	23.12	-12.13	22	2.9867	2.526	25.67	5230.071259	21.38	16.69
23	2.9889	0.1087	25.89	22.60	-14.57	23	2.9867	2.5276	25.67	5223.380282	21.41	16.59
24	2.9907	0.1063	26.07	16.36	-59.32	24	2.9867	2.5289	25.67	5217.950097	21.43	16.50
25	2.9918	0.1061	26.18	15.84	-65.23	25	2.9867	2.5293	25.67	5216.280394	21.44	16.47
26	2.9936	0.1062	26.36	16.10	-63.69	26	2.9868	2.5298	25.68	5214.194007	21.45	16.47
27	2.9945	0.1079	26.45	20.52	-28.90	27	2.9867	2.5305	25.67	5211.274452	21.46	16.39
28	2.9934	0.109	26.34	23.38	-12.68	28	2.9868	2.5311	25.68	5208.773261	21.47	16.39
29	2.9946	0.1088	26.46	22.86	-15.76	29	2.9868	2.5311	25.68	5208.773261	21.47	16.39
30	2.9966	0.1091	26.66	23.64	-12.79	30	2.9868	2.5317	25.68	5206.273255	21.48	16.35
31	2.9975	0.1096	26.75	24.94	-7.28	31	2.9868	2.5327	25.68	5202.109212	21.50	16.28
32	3	0.108	27	20.78	-29.94	32	2.9868	2.5332	25.68	5200.028423	21.51	16.25
33	3.0005	0.1092	27.05	23.90	-13.20	33	2.9868	2.534	25.68	5196.700868	21.52	16.19

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
34	3.0012	0.1104	27.12	27.01	-0.40	34	2.9868	2.5358	25.68	5189.221547	21.55	16.07
35	3.002	0.1106	27.2	27.53	1.21	35	2.9868	2.5378	25.68	5180.923635	21.59	15.94
36	3.0031	0.1099	27.31	25.71	-6.21	36	2.9868	2.5413	25.68	5166.433715	21.65	15.71
37	3.0034	0.1101	27.34	26.23	-4.22	37	2.9868	2.5459	25.68	5147.45041	21.73	15.40
38	3.005	0.1097	27.5	25.19	-9.15	38	2.9868	2.553	25.68	5118.284371	21.85	14.92
39	3.006	0.1104	27.6	27.01	-2.17	39	2.9868	2.5565	25.68	5103.96636	21.91	14.69
40	3.0066	0.1105	27.66	27.27	-1.42	40	2.9868	2.5603	25.68	5088.465414	21.97	14.44
41	3.0066	0.1106	27.66	27.53	-0.46	41	2.9868	2.563	25.68	5077.479516	22.02	14.25
42	3.0071	0.1102	27.71	26.49	-4.59	42	2.9868	2.5691	25.68	5052.744541	22.12	13.85
43	3.0074	0.1093	27.74	24.16	-14.84	43	2.9868	2.5717	25.68	5042.23743	22.17	13.67
44	3.0081	0.1101	27.81	26.23	-6.01	44	2.9868	2.5739	25.68	5033.363379	22.21	13.52
45	3.0082	0.1102	27.82	26.49	-5.01	45	2.9868	2.5753	25.68	5027.724149	22.23	13.43
46	3.0083	0.1099	27.83	25.71	-8.23	46	2.9868	2.576	25.68	5024.906832	22.24	13.38
47	3.0086	0.1102	27.86	26.49	-5.16	47	2.9868	2.5764	25.68	5023.297625	22.25	13.36
48	3.0089	0.1123	27.89	31.95	12.70	48	2.9868	2.5766	25.68	5022.493208	22.25	13.34
49	3.0091	0.1133	27.91	34.55	19.21	49	2.9868	2.5767	25.68	5022.091047	22.26	13.34
50	3.0092	0.114	27.92	36.36	23.22	50	2.9869	2.5767	25.69	5022.091047	22.26	13.37
51	3.0093	0.114	27.93	36.36	23.19	51	2.9868	2.5767	25.68	5022.091047	22.26	13.34
52	3.0093	0.1112	27.93	29.09	3.99	52	2.9868	2.5767	25.68	5022.091047	22.26	13.34
53	3.0094	0.1104	27.94	27.01	-3.43	53	2.9868	2.5767	25.68	5022.091047	22.26	13.34
54	3.0096	0.1099	27.96	25.71	-8.73	54	2.9869	2.5767	25.69	5022.091047	22.26	13.37
55	3.0095	0.1104	27.95	27.01	-3.47	55	2.9869	2.5767	25.69	5022.091047	22.26	13.37
56	3.0096	0.1112	27.96	29.09	3.89	56	2.987	2.5767	25.7	5022.091047	22.26	13.40
57	3.0095	0.1107	27.95	27.79	-0.57	57	2.9869	2.5768	25.69	5021.688916	22.26	13.36
58	3.0096	0.1123	27.96	31.95	12.48	58	2.9871	2.5769	25.71	5021.286817	22.26	13.42
59	3.0096	0.1122	27.96	31.69	11.77	59	2.9871	2.5771	25.71	5020.482713	22.26	13.41
60	3.0096	0.114	27.96	36.36	23.11	60	2.9873	2.5782	25.73	5016.062369	22.28	13.40
61	3.0096	0.1114	27.96	29.61	5.57	61	2.9873	2.5794	25.73	5011.244475	22.30	13.32
62	3.0096	0.1107	27.96	27.79	-0.60	62	2.9873	2.5829	25.73	4997.217856	22.36	13.09
63	3.0097	0.1123	27.97	31.95	12.45	63	2.9875	2.5867	25.75	4982.031933	22.43	12.90
64	3.0098	0.1144	27.98	37.40	25.19	64	2.9877	2.5925	25.77	4958.939248	22.53	12.58
65	3.0097	0.1138	27.97	35.84	21.97	65	2.988	2.5995	25.8	4931.206001	22.65	12.21
66	3.0098	0.112	27.98	31.17	10.23	66	2.9885	2.6052	25.85	4908.733303	22.75	12.00
67	3.01	0.1131	28	34.03	17.71	67	2.9886	2.6105	25.86	4887.925685	22.84	11.68

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
68	3.0102	0.1139	28.02	36.10	22.39	68	2.9889	2.6142	25.89	4873.449621	22.90	11.54
69	3.0103	0.1138	28.03	35.84	21.80	69	2.9893	2.6177	25.93	4859.793712	22.96	11.44
70	3.0106	0.1112	28.06	29.09	3.54	70	2.9894	2.6209	25.94	4847.340227	23.02	11.26
71	3.011	0.1108	28.1	28.05	-0.17	71	2.9907	2.623	26.07	4839.18414	23.06	11.56
72	3.011	0.1106	28.1	27.53	-2.06	72	2.9916	2.6255	26.16	4829.491525	23.10	11.70
73	3.0119	0.1109	28.19	28.31	0.43	73	2.9925	2.6285	26.25	4817.884725	23.15	11.80
74	3.0123	0.1107	28.23	27.79	-1.58	74	2.9934	2.6337	26.34	4797.82891	23.24	11.76
75	3.0134	0.1109	28.34	28.31	-0.10	75	2.9945	2.6371	26.45	4784.758257	23.30	11.91
76	3.0151	0.1129	28.51	33.51	14.91	76	2.9944	2.6442	26.44	4757.572044	23.42	11.40
77	3.016	0.1138	28.6	35.84	20.21	77	2.9975	2.648	26.75	4743.081571	23.49	12.18
78	3.0179	0.1133	28.79	34.55	16.66	78	2.9987	2.6506	26.87	4733.190976	23.54	12.41
79	3.0195	0.1106	28.95	27.53	-5.15	79	3.0012	2.6555	27.12	4714.603653	23.62	12.90
80	3.021	0.1096	29.1	24.94	-16.70	80	3.001	2.6606	27.1	4695.330377	23.71	12.51
81	3.0231	0.1106	29.31	27.53	-6.46	81	3.0021	2.6647	27.21	4679.889669	23.78	12.60
82	3.025	0.11	29.5	25.97	-13.58	82	3.007	2.6671	27.7	4670.873233	23.82	13.99
83	3.0274	0.1099	29.74	25.71	-15.66	83	3.0072	2.6706	27.72	4657.753314	23.89	13.83
84	3.0306	0.111	30.06	28.57	-5.21	84	3.0081	2.6745	27.81	4643.174425	23.95	13.87
85	3.0319	0.1108	30.19	28.05	-7.62	85	3.009	2.6806	27.9	4620.456614	24.06	13.76
86	3.034	0.1112	30.4	29.09	-4.50	86	3.0128	2.6859	28.28	4600.801966	24.15	14.59
87	3.0369	0.1127	30.69	32.99	6.96	87	3.0153	2.6914	28.53	4580.487479	24.25	15.00
88	3.0393	0.111	30.93	28.57	-8.26	88	3.016	2.6954	28.6	4565.765378	24.32	14.96
89	3.0422	0.1127	31.22	32.99	5.36	89	3.018	2.7015	28.8	4543.398112	24.43	15.18
90	3.0442	0.1148	31.42	38.44	18.27	90	3.0203	2.7064	29.03	4525.503991	24.51	15.56
91	3.0458	0.1136	31.58	35.32	10.60	91	3.0206	2.7095	29.06	4514.216645	24.57	15.46
92	3.0477	0.1135	31.77	35.06	9.40	92	3.0221	2.7115	29.21	4506.948184	24.60	15.77
93	3.0483	0.1141	31.83	36.62	13.09	93	3.0239	2.7123	29.39	4504.0438	24.62	16.24
94	3.0496	0.1123	31.96	31.95	-0.04	94	3.0249	2.713	29.49	4501.50387	24.63	16.48
95	3.051	0.1111	32.1	28.83	-11.34	95	3.0269	2.7149	29.69	4494.616376	24.66	16.93
96	3.0517	0.1126	32.17	32.73	1.70	96	3.029	2.7172	29.9	4486.291771	24.70	17.38
97	3.0525	0.1112	32.25	29.09	-10.86	97	3.0287	2.7221	29.87	4468.603652	24.79	17.01
98	3.0528	0.1108	32.28	28.05	-15.07	98	3.0309	2.7283	30.09	4446.313822	24.90	17.25
99	3.0534	0.1114	32.34	29.61	-9.22	99	3.032	2.7369	30.2	4415.562863	25.05	17.05
100	3.0538	0.112	32.38	31.17	-3.89	100	3.0325	2.7443	30.25	4389.257005	25.18	16.75
101	3.054	0.1125	32.4	32.47	0.21	101	3.0338	2.7492	30.38	4371.916194	25.27	16.82

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
102	3.0544	0.1127	32.44	32.99	1.66	102	3.0338	2.7526	30.38	4359.920076	25.33	16.62
103	3.0544	0.1125	32.44	32.47	0.08	103	3.0356	2.7555	30.56	4349.711486	25.38	16.94
104	3.0547	0.1138	32.47	35.84	9.41	104	3.0371	2.7567	30.71	4345.493525	25.40	17.28
105	3.0549	0.1126	32.49	32.73	0.73	105	3.0382	2.7572	30.82	4343.737125	25.41	17.55
106	3.0549	0.1119	32.49	30.91	-5.11	106	3.0396	2.7575	30.96	4342.68359	25.42	17.90
107	3.0551	0.111	32.51	28.57	-13.79	107	3.0428	2.7575	31.28	4342.68359	25.42	18.74
108	3.0555	0.1129	32.55	33.51	2.85	108	3.044	2.7575	31.4	4342.68359	25.42	19.05
109	3.056	0.1121	32.6	31.43	-3.73	109	3.0474	2.7575	31.74	4342.68359	25.42	19.92
110	3.0566	0.1113	32.66	29.35	-11.28	110	3.0496	2.7575	31.96	4342.68359	25.42	20.47
111	3.0577	0.1127	32.77	32.99	0.66	111	3.0502	2.7575	32.02	4342.68359	25.42	20.62
112	3.0592	0.1112	32.92	29.09	-13.16	112	3.0524	2.7577	32.24	4341.981361	25.42	21.15
113	3.0609	0.1116	33.09	30.13	-9.82	113	3.0541	2.758	32.41	4340.928209	25.43	21.55
114	3.0634	0.112	33.34	31.17	-6.97	114	3.0563	2.7585	32.63	4339.173464	25.44	22.05
115	3.0652	0.1149	33.52	38.70	13.39	115	3.0581	2.7614	32.81	4329.008474	25.49	22.32
116	3.0681	0.1127	33.81	32.99	-2.49	116	3.0599	2.7648	32.99	4317.118056	25.55	22.56
117	3.0711	0.1125	34.11	32.47	-5.06	117	3.0628	2.7701	33.28	4298.641204	25.64	22.95
118	3.0736	0.113	34.36	33.77	-1.76	118	3.0641	2.7757	33.41	4279.195158	25.74	22.95
119	3.0776	0.1131	34.76	34.03	-2.16	119	3.0652	2.7826	33.52	4255.342485	25.86	22.84
120	3.079	0.1142	34.9	36.88	5.38	120	3.0672	2.789	33.72	4233.323772	25.98	22.96
121	3.0818	0.114	35.18	36.36	3.25	121	3.0693	2.7941	33.93	4215.849826	26.07	23.16
122	3.0825	0.1156	35.25	40.52	13.00	122	3.0707	2.7995	34.07	4197.417396	26.17	23.19
123	3.0843	0.1126	35.43	32.73	-8.26	123	3.0717	2.8031	34.17	4185.168563	26.23	23.23
124	3.0873	0.1128	35.73	33.25	-7.47	124	3.0731	2.8052	34.31	4178.03793	26.27	23.43
125	3.0886	0.1126	35.86	32.73	-9.57	125	3.074	2.8086	34.4	4166.515702	26.33	23.46
126	3.0912	0.1137	36.12	35.58	-1.51	126	3.0745	2.816	34.45	4141.534091	26.46	23.18
127	3.0931	0.1131	36.31	34.03	-6.71	127	3.0751	2.8215	34.51	4123.051568	26.56	23.03
128	3.0934	0.1145	36.34	37.66	3.51	128	3.0759	2.8274	34.59	4103.304803	26.67	22.90
129	3.0952	0.1126	36.52	32.73	-11.59	129	3.0762	2.8332	34.62	4083.972893	26.77	22.66
130	3.096	0.1122	36.6	31.69	-15.50	130	3.0763	2.8403	34.63	4060.415449	26.90	22.31
131	3.0969	0.1128	36.69	33.25	-10.36	131	3.0766	2.8434	34.66	4050.166702	26.96	22.22
132	3.098	0.1123	36.8	31.95	-15.19	132	3.0768	2.8465	34.68	4039.940278	27.01	22.10
133	3.0984	0.1123	36.84	31.95	-15.31	133	3.0769	2.8474	34.69	4036.975486	27.03	22.08
134	3.0988	0.1116	36.88	30.13	-22.40	134	3.077	2.8478	34.7	4035.658403	27.04	22.08
135	3.0993	0.1124	36.93	32.21	-14.66	135	3.0772	2.848	34.72	4035	27.04	22.11

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
136	3.0996	0.1137	36.96	35.58	-3.87	136	3.0772	2.8481	34.72	4034.670833	27.04	22.11
137	3.1	0.1144	37	37.40	1.08	137	3.0772	2.8483	34.72	4034.012569	27.05	22.10
138	3.1001	0.1153	37.01	39.74	6.87	138	3.0771	2.8491	34.71	4031.380436	27.06	22.03
139	3.1009	0.1151	37.09	39.22	5.43	139	3.0773	2.8504	34.73	4027.106371	27.09	22.01
140	3.1011	0.1131	37.11	34.03	-9.06	140	3.0773	2.8537	34.73	4016.274311	27.15	21.84
141	3.1018	0.1147	37.18	38.18	2.62	141	3.0773	2.8586	34.73	4000.236479	27.23	21.58
142	3.1025	0.1154	37.25	40.00	6.88	142	3.0773	2.8649	34.73	3979.697023	27.35	21.25
143	3.103	0.1153	37.3	39.74	6.14	143	3.0773	2.8719	34.73	3956.981093	27.48	20.88
144	3.104	0.114	37.4	36.36	-2.85	144	3.0773	2.877	34.73	3940.500521	27.57	20.62
145	3.1057	0.115	37.57	38.96	3.57	145	3.0774	2.8828	34.74	3921.828778	27.68	20.33
146	3.1077	0.1147	37.77	38.18	1.08	146	3.0774	2.8871	34.74	3908.03436	27.75	20.11
147	3.1083	0.1155	37.83	40.26	6.04	147	3.0775	2.8903	34.75	3897.795385	27.81	19.96
148	3.1112	0.1143	38.12	37.14	-2.63	148	3.0774	2.8917	34.74	3893.322959	27.84	19.87
149	3.1123	0.1151	38.23	39.22	2.53	149	3.0776	2.8927	34.76	3890.131019	27.86	19.86
150	3.1145	0.1159	38.45	41.30	6.90	150	3.0777	2.8938	34.77	3886.622434	27.88	19.82
151	3.1166	0.1155	38.66	40.26	3.97	151	3.0779	2.8957	34.79	3880.568429	27.91	19.77
152	3.1204	0.1157	39.04	40.78	4.26	152	3.078	2.8987	34.8	3871.025632	27.97	19.63
153	3.1222	0.1163	39.22	42.34	7.36	153	3.0781	2.9032	34.81	3856.748416	28.05	19.42
154	3.1249	0.1152	39.49	39.48	-0.02	154	3.0782	2.9111	34.82	3831.790732	28.20	19.03
155	3.1269	0.1139	39.69	36.10	-9.93	155	3.0786	2.9186	34.86	3808.22175	28.33	18.72
156	3.1275	0.1142	39.75	36.88	-7.77	156	3.0791	2.9234	34.91	3793.201067	28.42	18.58
157	3.1297	0.1143	39.97	37.14	-7.61	157	3.0796	2.9304	34.96	3771.384111	28.55	18.33
158	3.1318	0.1142	40.18	36.88	-8.94	158	3.0807	2.9342	35.07	3759.584214	28.62	18.39
159	3.1341	0.1158	40.41	41.04	1.53	159	3.0811	2.9366	35.11	3752.147381	28.67	18.35
160	3.1359	0.1164	40.59	42.60	4.71	160	3.0824	2.9375	35.24	3749.361702	28.68	18.61
161	3.1372	0.1169	40.72	43.90	7.24	161	3.0835	2.9378	35.35	3748.433522	28.69	18.84
162	3.1386	0.1151	40.86	39.22	-4.18	162	3.0857	2.9383	35.57	3746.886975	28.70	19.32
163	3.14	0.1159	41	41.30	0.72	163	3.0863	2.9385	35.63	3746.268504	28.70	19.45
164	3.1411	0.1153	41.11	39.74	-3.45	164	3.0876	2.9385	35.76	3746.268504	28.70	19.74
165	3.1418	0.116	41.18	41.56	0.91	165	3.0898	2.9385	35.98	3746.268504	28.70	20.23
166	3.1421	0.1142	41.21	36.88	-11.73	166	3.0911	2.9385	36.11	3746.268504	28.70	20.52
167	3.1421	0.114	41.21	36.36	-13.33	167	3.0937	2.9385	36.37	3746.268504	28.70	21.08
168	3.1429	0.1144	41.29	37.40	-10.39	168	3.0965	2.9385	36.65	3746.268504	28.70	21.69
169	3.1434	0.1137	41.34	35.58	-16.17	169	3.099	2.9385	36.9	3746.268504	28.70	22.22

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
170	3.1437	0.115	41.37	38.96	-6.18	170	3.0998	2.9386	36.98	3745.9593	28.70	22.38
171	3.1439	0.1152	41.39	39.48	-4.84	171	3.1012	2.9388	37.12	3745.340955	28.71	22.66
172	3.1444	0.1133	41.44	34.55	-19.96	172	3.102	2.9394	37.2	3743.486426	28.72	22.80
173	3.1446	0.1127	41.46	32.99	-25.69	173	3.1044	2.9408	37.44	3739.162133	28.74	23.23
174	3.1448	0.1139	41.48	36.10	-14.89	174	3.1061	2.9431	37.61	3732.066868	28.79	23.46
175	3.145	0.1145	41.5	37.66	-10.19	175	3.1089	2.946	37.89	3723.136456	28.84	23.88
176	3.1453	0.1149	41.53	38.70	-7.31	176	3.1097	2.9497	37.97	3711.767976	28.91	23.86
177	3.1457	0.1132	41.57	34.29	-21.25	177	3.1117	2.9559	38.17	3692.781894	29.03	23.96
178	3.1461	0.1147	41.61	38.18	-8.98	178	3.113	2.9627	38.3	3672.049819	29.15	23.88
179	3.147	0.1135	41.7	35.06	-18.92	179	3.1137	2.9678	38.37	3656.563111	29.25	23.78
180	3.1473	0.1137	41.73	35.58	-17.27	180	3.1154	2.9736	38.54	3639.015335	29.36	23.83
181	3.148	0.1141	41.8	36.62	-14.13	181	3.1166	2.9759	38.66	3632.075675	29.40	23.96
182	3.149	0.1143	41.9	37.14	-12.81	182	3.1171	2.9789	38.71	3623.040048	29.46	23.91
183	3.1508	0.1144	42.08	37.40	-12.51	183	3.118	2.9814	38.8	3615.52425	29.50	23.96
184	3.1525	0.1161	42.25	41.82	-1.03	184	3.119	2.9828	38.9	3611.320907	29.53	24.09
185	3.1528	0.117	42.28	44.16	4.25	185	3.1195	2.9836	38.95	3608.920767	29.54	24.15
186	3.1538	0.1173	42.38	44.94	5.69	186	3.1204	2.9843	39.04	3606.8217	29.56	24.29
187	3.1568	0.1156	42.68	40.52	-5.33	187	3.1209	2.9851	39.09	3604.423972	29.57	24.35
188	3.1589	0.1159	42.89	41.30	-3.85	188	3.1215	2.9867	39.15	3599.63237	29.60	24.39
189	3.1593	0.1153	42.93	39.74	-8.03	189	3.1218	2.9896	39.18	3590.960664	29.66	24.31
190	3.1608	0.1161	43.08	41.82	-3.02	190	3.1222	2.9941	39.22	3577.537824	29.74	24.17
191	3.1642	0.1167	43.42	43.38	-0.10	191	3.1225	3.0012	39.25	3556.441423	29.87	23.89
192	3.1653	0.1166	43.53	43.12	-0.96	192	3.1223	3.0065	39.23	3540.758357	29.98	23.59
193	3.1661	0.1157	43.61	40.78	-6.94	193	3.1228	3.0135	39.28	3520.129418	30.11	23.35
194	3.1689	0.1197	43.89	51.17	14.23	194	3.1229	3.0185	39.29	3505.45304	30.20	23.13
195	3.1702	0.118	44.02	46.75	5.85	195	3.1232	3.0222	39.32	3494.623784	30.27	23.01
196	3.174	0.1157	44.4	40.78	-8.88	196	3.1233	3.0241	39.33	3489.073113	30.31	22.94
197	3.1734	0.1159	44.34	41.30	-7.36	197	3.1238	3.0271	39.38	3480.323081	30.37	22.89
198	3.1751	0.1169	44.51	43.90	-1.40	198	3.1239	3.0281	39.39	3477.410257	30.38	22.86
199	3.176	0.1176	44.6	45.71	2.44	199	3.124	3.029	39.4	3474.79036	30.40	22.84
200	3.1786	0.1175	44.86	45.45	1.31	200	3.1245	3.03	39.45	3471.881188	30.42	22.89
201	3.1798	0.1174	44.98	45.19	0.48	201	3.1254	3.031	39.54	3468.973936	30.44	23.01
202	3.1802	0.1196	45.02	50.91	11.57	202	3.1259	3.0338	39.59	3460.843826	30.49	22.98
203	3.1824	0.12	45.24	51.95	12.91	203	3.1269	3.0384	39.69	3447.519747	30.58	22.95

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
204	3.1835	0.119	45.35	49.35	8.11	204	3.1267	3.0417	39.67	3437.985995	30.64	22.75
205	3.1836	0.1186	45.36	48.31	6.11	205	3.1278	3.0474	39.78	3421.567238	30.75	22.69
206	3.1851	0.118	45.51	46.75	2.66	206	3.1295	3.0519	39.95	3408.648383	30.84	22.81
207	3.1856	0.119	45.56	49.35	7.68	207	3.1299	3.0564	39.99	3395.76757	30.93	22.67
208	3.1866	0.1193	45.66	50.13	8.92	208	3.1331	3.0626	40.31	3378.082675	31.04	22.98
209	3.1869	0.1173	45.69	44.94	-1.68	209	3.1334	3.0664	40.34	3367.278894	31.12	22.86
210	3.1875	0.1177	45.75	45.97	0.49	210	3.1351	3.0692	40.51	3359.335332	31.17	23.05
211	3.1875	0.1175	45.75	45.45	-0.65	211	3.1375	3.0712	40.75	3353.670227	31.21	23.41
212	3.1881	0.1191	45.81	49.61	7.66	212	3.1388	3.0727	40.88	3349.426238	31.24	23.58
213	3.1884	0.119	45.84	49.35	7.11	213	3.1407	3.0734	41.07	3347.447127	31.25	23.90
214	3.1887	0.1206	45.87	53.51	14.27	214	3.1421	3.0739	41.21	3346.034028	31.26	24.14
215	3.1888	0.1221	45.88	57.40	20.07	215	3.1431	3.0745	41.31	3344.338917	31.27	24.29
216	3.189	0.1191	45.9	49.61	7.48	216	3.146	3.0759	41.6	3340.386228	31.30	24.76
217	3.1891	0.1169	45.91	43.90	-4.59	217	3.147	3.0778	41.7	3335.027617	31.34	24.85
218	3.1893	0.1168	45.93	43.64	-5.26	218	3.1492	3.0806	41.92	3327.142764	31.39	25.11
219	3.1894	0.1183	45.94	47.53	3.35	219	3.1509	3.0843	42.09	3316.745453	31.46	25.25
220	3.1895	0.1179	45.95	46.49	1.17	220	3.1521	3.0914	42.21	3296.863557	31.60	25.13
221	3.1897	0.1184	45.97	47.79	3.81	221	3.1547	3.0961	42.47	3283.752463	31.69	25.38
222	3.1898	0.1178	45.98	46.23	0.55	222	3.1576	3.1029	42.76	3264.853524	31.82	25.57
223	3.1899	0.1187	45.99	48.57	5.31	223	3.1577	3.1053	42.77	3258.203072	31.87	25.48
224	3.1899	0.1189	45.99	49.09	6.32	224	3.1582	3.1107	42.82	3243.277076	31.98	25.32
225	3.19	0.1194	46	50.39	8.71	225	3.1599	3.1149	42.99	3231.703747	32.06	25.43
226	3.1901	0.1194	46.01	50.39	8.69	226	3.1605	3.1165	43.05	3227.303064	32.09	25.46
227	3.1904	0.1187	46.04	48.57	5.21	227	3.1626	3.1177	43.26	3224.005517	32.11	25.76
228	3.1907	0.1196	46.07	50.91	9.51	228	3.1632	3.1186	43.32	3221.534022	32.13	25.83
229	3.1909	0.1209	46.09	54.29	15.10	229	3.164	3.119	43.4	3220.436037	32.14	25.95
230	3.1911	0.1183	46.11	47.53	2.99	230	3.1645	3.1192	43.45	3219.887151	32.14	26.02
231	3.1916	0.118	46.16	46.75	1.27	231	3.1654	3.1193	43.54	3219.612734	32.15	26.17
232	3.1919	0.119	46.19	49.35	6.40	232	3.1656	3.1193	43.56	3219.612734	32.15	26.20
233	3.1922	0.1183	46.22	47.53	2.76	233	3.1659	3.1193	43.59	3219.612734	32.15	26.25
234	3.193	0.1197	46.3	51.17	9.52	234	3.1662	3.1193	43.62	3219.612734	32.15	26.31
235	3.1933	0.1204	46.33	52.99	12.56	235	3.1667	3.1193	43.67	3219.612734	32.15	26.39
236	3.1943	0.1202	46.43	52.47	11.51	236	3.1671	3.1193	43.71	3219.612734	32.15	26.46
237	3.1944	0.1176	46.44	45.71	-1.59	237	3.1672	3.1193	43.72	3219.612734	32.15	26.47

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
238	3.1952	0.1201	46.52	52.21	10.89	238	3.1673	3.1194	43.73	3219.338334	32.15	26.49
239	3.1961	0.1205	46.61	53.25	12.46	239	3.1674	3.1195	43.74	3219.063953	32.15	26.50
240	3.1967	0.1195	46.67	50.65	7.86	240	3.1675	3.1197	43.75	3218.515242	32.15	26.51
241	3.1974	0.1202	46.74	52.47	10.92	241	3.1676	3.1205	43.76	3216.321102	32.17	26.49
242	3.1981	0.1193	46.81	50.13	6.62	242	3.1677	3.1214	43.77	3213.85404	32.19	26.46
243	3.1984	0.1204	46.84	52.99	11.60	243	3.1677	3.123	43.77	3209.471662	32.22	26.39
244	3.1993	0.1197	46.93	51.17	8.28	244	3.1678	3.124	43.78	3206.734955	32.24	26.36
245	3.2006	0.1202	47.06	52.47	10.31	245	3.1678	3.1275	43.78	3197.170264	32.31	26.21
246	3.2011	0.1183	47.11	47.53	0.89	246	3.1678	3.131	43.78	3187.626956	32.38	26.05
247	3.2029	0.1173	47.29	44.94	-5.24	247	3.1678	3.1357	43.78	3174.84517	32.47	25.84
248	3.2039	0.12	47.39	51.95	8.77	248	3.1678	3.1396	43.78	3164.26806	32.54	25.66
249	3.2041	0.119	47.41	49.35	3.93	249	3.1678	3.1434	43.78	3153.987402	32.62	25.49
250	3.2044	0.1189	47.44	49.09	3.36	250	3.1678	3.1491	43.78	3138.612937	32.73	25.23
251	3.2052	0.1185	47.52	48.05	1.11	251	3.1678	3.1524	43.78	3129.737343	32.80	25.09
252	3.2067	0.1182	47.67	47.27	-0.84	252	3.1678	3.1576	43.78	3115.789207	32.90	24.85
253	3.2075	0.1191	47.75	49.61	3.75	253	3.1678	3.1608	43.78	3107.22855	32.96	24.70
254	3.2086	0.1184	47.86	47.79	-0.14	254	3.1679	3.162	43.79	3104.02277	32.99	24.67
255	3.2101	0.1202	48.01	52.47	8.50	255	3.1678	3.164	43.78	3098.685209	33.03	24.56
256	3.2098	0.1181	47.98	47.01	-2.06	256	3.1678	3.1659	43.78	3093.620771	33.07	24.47
257	3.2111	0.1194	48.11	50.39	4.52	257	3.1679	3.1685	43.79	3086.700331	33.12	24.37
258	3.2126	0.1197	48.26	51.17	5.68	258	3.1679	3.1722	43.79	3076.871572	33.19	24.20
259	3.2148	0.1197	48.48	51.17	5.25	259	3.1679	3.1761	43.79	3066.536318	33.27	24.02
260	3.2152	0.1178	48.52	46.23	-4.94	260	3.1679	3.1805	43.79	3054.906461	33.36	23.82
261	3.2163	0.1209	48.63	54.29	10.42	261	3.168	3.1824	43.8	3049.894419	33.40	23.75
262	3.2179	0.1205	48.79	53.25	8.37	262	3.1681	3.1885	43.81	3033.8435	33.52	23.49
263	3.2175	0.1201	48.75	52.21	6.62	263	3.1682	3.1919	43.82	3024.923713	33.59	23.35
264	3.2194	0.1195	48.94	50.65	3.37	264	3.1683	3.197	43.83	3011.579606	33.69	23.14
265	3.2188	0.1201	48.88	52.21	6.37	265	3.1683	3.2022	43.83	2998.017613	33.79	22.90
266	3.2207	0.1214	49.07	55.58	11.72	266	3.1686	3.2055	43.86	2989.433786	33.86	22.80
267	3.2216	0.1215	49.16	55.84	11.97	267	3.1686	3.2073	43.86	2984.759143	33.90	22.72
268	3.2221	0.1209	49.21	54.29	9.35	268	3.1686	3.2085	43.86	2981.645629	33.92	22.66
269	3.2243	0.1202	49.43	52.47	5.79	269	3.1688	3.2089	43.88	2980.608308	33.93	22.68
270	3.2245	0.1204	49.45	52.99	6.68	270	3.169	3.2093	43.9	2979.571246	33.94	22.69
271	3.2253	0.1199	49.53	51.69	4.18	271	3.1698	3.2096	43.98	2978.793619	33.94	22.82

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
272	3.2263	0.1178	49.63	46.23	-7.35	272	3.1701	3.2096	44.01	2978.793619	33.94	22.87
273	3.2283	0.1197	49.83	51.17	2.62	273	3.17	3.2096	44	2978.793619	33.94	22.86
274	3.2284	0.1197	49.84	51.17	2.60	274	3.1702	3.2097	44.02	2978.534442	33.95	22.89
275	3.2292	0.1198	49.92	51.43	2.93	275	3.1711	3.21	44.11	2977.757009	33.95	23.03
276	3.2299	0.1197	49.99	51.17	2.30	276	3.1714	3.2104	44.14	2976.720658	33.96	23.06
277	3.2308	0.1196	50.08	50.91	1.63	277	3.1719	3.2108	44.19	2975.684565	33.97	23.13
278	3.2312	0.12	50.12	51.95	3.52	278	3.1722	3.2114	44.22	2974.130909	33.98	23.16
279	3.2314	0.1199	50.14	51.69	3.00	279	3.1725	3.2127	44.25	2970.766645	34.01	23.15
280	3.2323	0.1201	50.23	52.21	3.79	280	3.1746	3.2143	44.46	2966.629748	34.04	23.44
281	3.2325	0.1179	50.25	46.49	-8.08	281	3.1739	3.2168	44.39	2960.174086	34.09	23.20
282	3.2334	0.1178	50.34	46.23	-8.88	282	3.175	3.2205	44.5	2950.6381	34.16	23.23
283	3.2333	0.119	50.33	49.35	-1.98	283	3.1764	3.222	44.64	2946.778399	34.19	23.40
284	3.234	0.1226	50.4	58.70	14.14	284	3.1764	3.2268	44.64	2934.451469	34.29	23.18
285	3.2348	0.1208	50.48	54.03	6.56	285	3.1765	3.2324	44.65	2920.116322	34.41	22.94
286	3.2354	0.1204	50.54	52.99	4.62	286	3.1793	3.2359	44.93	2911.182051	34.48	23.26
287	3.2358	0.121	50.58	54.55	7.27	287	3.1825	3.2382	45.25	2905.321475	34.53	23.70
288	3.2364	0.1219	50.64	56.88	10.98	288	3.1829	3.2428	45.29	2893.625262	34.62	23.56
289	3.2376	0.122	50.76	57.14	11.17	289	3.1822	3.2472	45.22	2882.468588	34.71	23.24
290	3.2374	0.1227	50.74	58.96	13.94	290	3.1852	3.25	45.52	2875.384615	34.77	23.62
291	3.2379	0.1226	50.79	58.70	13.48	291	3.1849	3.2523	45.49	2869.574762	34.81	23.47
292	3.2383	0.1227	50.83	58.96	13.79	292	3.1872	3.2534	45.72	2866.799041	34.84	23.80
293	3.2392	0.1221	50.92	57.40	11.29	293	3.1867	3.2549	45.67	2863.01699	34.87	23.65
294	3.2392	0.1212	50.92	55.06	7.53	294	3.1897	3.2568	45.97	2858.231393	34.91	24.06
295	3.2397	0.121	50.97	54.55	6.55	295	3.1906	3.2598	46.06	2850.686545	34.97	24.08
296	3.2406	0.125	51.06	64.94	21.37	296	3.1927	3.2638	46.27	2840.648324	35.05	24.24
297	3.2429	0.1238	51.29	61.82	17.03	297	3.1941	3.2681	46.41	2829.884642	35.14	24.28
298	3.2426	0.1246	51.26	63.90	19.78	298	3.1943	3.2722	46.43	2819.647943	35.23	24.13
299	3.2444	0.1238	51.44	61.82	16.79	299	3.1958	3.2764	46.58	2809.188133	35.31	24.19
300	3.2448	0.1244	51.48	63.38	18.77	300	3.1973	3.2818	46.73	2795.779146	35.43	24.19
301	3.2466	0.1223	51.66	57.92	10.81	301	3.1999	3.2864	46.99	2784.391431	35.52	24.41
302	3.2472	0.1206	51.72	53.51	3.34	302	3.1982	3.2892	46.82	2777.475374	35.58	24.01
303	3.2474	0.1223	51.74	57.92	10.67	303	3.1998	3.2917	46.98	2771.310265	35.63	24.15
304	3.2504	0.1212	52.04	55.06	5.49	304	3.2014	3.2944	47.14	2764.662458	35.69	24.29
305	3.2529	0.1222	52.29	57.66	9.32	305	3.2014	3.2963	47.14	2759.990899	35.73	24.21

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
306	3.2529	0.1209	52.29	54.29	3.68	306	3.2024	3.2974	47.24	2757.288773	35.75	24.32
307	3.2529	0.1233	52.29	60.52	13.60	307	3.2023	3.2984	47.23	2754.833859	35.77	24.26
308	3.2542	0.1228	52.42	59.22	11.48	308	3.2044	3.2991	47.44	2753.116304	35.79	24.56
309	3.2559	0.1215	52.59	55.84	5.83	309	3.2054	3.2994	47.54	2752.380433	35.79	24.71
310	3.2571	0.121	52.71	54.55	3.37	310	3.2062	3.2997	47.62	2751.644695	35.80	24.82
311	3.2582	0.123	52.82	59.74	11.58	311	3.2074	3.3	47.74	2750.909091	35.81	25.00
312	3.2617	0.1239	53.17	62.08	14.35	312	3.2076	3.3001	47.76	2750.663919	35.81	25.02
313	3.2618	0.1241	53.18	62.60	15.04	313	3.2082	3.3001	47.82	2750.663919	35.81	25.12
314	3.264	0.1217	53.4	56.36	5.26	314	3.2092	3.3001	47.92	2750.663919	35.81	25.28
315	3.2637	0.1224	53.37	58.18	8.27	315	3.21	3.3001	48	2750.663919	35.81	25.40
316	3.2654	0.121	53.54	54.55	1.84	316	3.2098	3.3001	47.98	2750.663919	35.81	25.37
317	3.2661	0.1198	53.61	51.43	-4.24	317	3.2107	3.3001	48.07	2750.663919	35.81	25.51
318	3.2682	0.122	53.82	57.14	5.81	318	3.2111	3.3001	48.11	2750.663919	35.81	25.57
319	3.2679	0.1203	53.79	52.73	-2.02	319	3.2112	3.3001	48.12	2750.663919	35.81	25.59
320	3.2684	0.1212	53.84	55.06	2.22	320	3.2113	3.3001	48.13	2750.663919	35.81	25.60
321	3.2696	0.1215	53.96	55.84	3.37	321	3.2117	3.3001	48.17	2750.663919	35.81	25.66
322	3.2692	0.1225	53.92	58.44	7.74	322	3.2119	3.3001	48.19	2750.663919	35.81	25.69
323	3.2699	0.1226	53.99	58.70	8.03	323	3.2121	3.3001	48.21	2750.663919	35.81	25.72
324	3.2722	0.1229	54.22	59.48	8.84	324	3.2122	3.3002	48.22	2750.418762	35.81	25.74
325	3.2721	0.1215	54.21	55.84	2.93	325	3.2123	3.3003	48.23	2750.173621	35.81	25.75
326	3.2736	0.1222	54.36	57.66	5.73	326	3.2126	3.3003	48.26	2750.173621	35.81	25.79
327	3.2736	0.1227	54.36	58.96	7.80	327	3.2127	3.3007	48.27	2749.193201	35.82	25.79
328	3.274	0.1202	54.4	52.47	-3.68	328	3.2126	3.3009	48.26	2748.703081	35.82	25.77
329	3.2739	0.1199	54.39	51.69	-5.23	329	3.213	3.3013	48.3	2747.723018	35.83	25.81
330	3.2744	0.1175	54.44	45.45	-19.77	330	3.2128	3.3016	48.28	2746.988127	35.84	25.77
331	3.2754	0.1175	54.54	45.45	-19.99	331	3.213	3.3032	48.3	2743.070961	35.87	25.73
332	3.276	0.1199	54.6	51.69	-5.63	332	3.213	3.3052	48.3	2738.179838	35.92	25.64
333	3.2762	0.1204	54.62	52.99	-3.08	333	3.2132	3.3074	48.32	2732.806434	35.96	25.58
334	3.2767	0.121	54.67	54.55	-0.23	334	3.2132	3.3095	48.32	2727.68394	36.01	25.48
335	3.2771	0.1193	54.71	50.13	-9.14	335	3.2133	3.3123	48.33	2720.864052	36.06	25.38
336	3.277	0.1188	54.7	48.83	-12.02	336	3.2133	3.3165	48.33	2710.655812	36.15	25.19
337	3.277	0.1196	54.7	50.91	-7.45	337	3.2134	3.3197	48.34	2702.895442	36.22	25.07
338	3.2777	0.1203	54.77	52.73	-3.87	338	3.2136	3.3237	48.36	2693.215994	36.31	24.93
339	3.2781	0.1196	54.81	50.91	-7.66	339	3.2138	3.3263	48.38	2686.936837	36.36	24.84

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
340	3.2785	0.122	54.85	57.14	4.01	340	3.2139	3.3291	48.39	2680.185636	36.42	24.74
341	3.2782	0.1227	54.82	58.96	7.02	341	3.2142	3.3319	48.42	2673.445782	36.48	24.66
342	3.2783	0.1203	54.83	52.73	-3.99	342	3.2145	3.3343	48.45	2667.677773	36.53	24.60
343	3.2786	0.1201	54.86	52.21	-5.08	343	3.2144	3.3366	48.44	2662.157885	36.58	24.48
344	3.2789	0.1214	54.89	55.58	1.25	344	3.2146	3.339	48.46	2656.40611	36.63	24.41
345	3.279	0.122	54.9	57.14	3.93	345	3.215	3.3413	48.5	2650.901745	36.68	24.37
346	3.2791	0.1214	54.91	55.58	1.21	346	3.2153	3.3423	48.53	2648.510906	36.70	24.37
347	3.2792	0.1218	54.92	56.62	3.01	347	3.2158	3.3432	48.58	2646.360373	36.72	24.41
348	3.2792	0.1215	54.92	55.84	1.65	348	3.2158	3.3442	48.58	2643.97225	36.74	24.37
349	3.2793	0.1213	54.93	55.32	0.71	349	3.2172	3.345	48.72	2642.06278	36.76	24.55
350	3.2794	0.1209	54.94	54.29	-1.21	350	3.2172	3.3451	48.72	2641.824161	36.76	24.54
351	3.2796	0.1208	54.96	54.03	-1.73	351	3.2178	3.3453	48.78	2641.346964	36.77	24.63
352	3.2795	0.1188	54.95	48.83	-12.53	352	3.2176	3.3455	48.76	2640.869825	36.77	24.59
353	3.2796	0.1213	54.96	55.32	0.66	353	3.2179	3.3463	48.79	2638.961838	36.79	24.60
354	3.2797	0.1221	54.97	57.40	4.24	354	3.2197	3.3465	48.97	2638.484984	36.79	24.87
355	3.2799	0.1225	54.99	58.44	5.91	355	3.2213	3.3473	49.13	2636.578138	36.81	25.08
356	3.2798	0.1226	54.98	58.70	6.34	356	3.2205	3.3496	49.05	2631.101027	36.86	24.86
357	3.2801	0.122	55.01	57.14	3.73	357	3.223	3.3511	49.3	2627.533049	36.89	25.17
358	3.2805	0.1233	55.05	60.52	9.04	358	3.2213	3.354	49.13	2620.644007	36.95	24.79
359	3.2804	0.1235	55.04	61.04	9.83	359	3.2235	3.3551	49.35	2618.034038	36.98	25.07
360	3.2808	0.1214	55.08	55.58	0.91	360	3.2267	3.3569	49.67	2613.766868	37.01	25.48
361	3.2807	0.1236	55.07	61.30	10.16	361	3.2272	3.3604	49.72	2605.482681	37.09	25.40
362	3.2807	0.1234	55.07	60.78	9.39	362	3.2279	3.3631	49.79	2599.103803	37.15	25.39
363	3.2813	0.1241	55.13	62.60	11.93	363	3.23	3.3683	50	2586.847371	37.26	25.48
364	3.2812	0.1244	55.12	63.38	13.03	364	3.2312	3.372	50.12	2578.149466	37.34	25.50
365	3.281	0.1224	55.1	58.18	5.30	365	3.2317	3.3744	50.17	2572.517781	37.39	25.47
366	3.2814	0.1222	55.14	57.66	4.37	366	3.2311	3.3778	50.11	2564.55326	37.47	25.23
367	3.2816	0.1223	55.16	57.92	4.77	367	3.2324	3.3806	50.24	2558.006271	37.53	25.30
368	3.2816	0.122	55.16	57.14	3.47	368	3.2341	3.3824	50.41	2553.803217	37.57	25.48
369	3.2819	0.1238	55.19	61.82	10.72	369	3.2349	3.3848	50.49	2548.206098	37.62	25.49
370	3.2822	0.1253	55.22	65.71	15.97	370	3.2365	3.3866	50.65	2544.013465	37.66	25.65
371	3.2823	0.1228	55.23	59.22	6.74	371	3.238	3.3874	50.8	2542.151503	37.68	25.84
372	3.2824	0.1238	55.24	61.82	10.64	372	3.2381	3.3881	50.81	2540.523007	37.69	25.82
373	3.2831	0.1232	55.31	60.26	8.21	373	3.2402	3.3889	51.02	2538.662693	37.71	26.09

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
374	3.2839	0.1228	55.39	59.22	6.47	374	3.2407	3.3895	51.07	2537.268034	37.72	26.14
375	3.284	0.1242	55.4	62.86	11.86	375	3.2437	3.3899	51.37	2536.338535	37.73	26.55
376	3.2845	0.1241	55.45	62.60	11.42	376	3.2451	3.3905	51.51	2534.944698	37.74	26.73
377	3.2853	0.1254	55.53	65.97	15.83	377	3.2459	3.3911	51.59	2533.551355	37.76	26.81
378	3.2859	0.1246	55.59	63.90	13.00	378	3.2466	3.3916	51.66	2532.390612	37.77	26.89
379	3.2863	0.1246	55.63	63.90	12.94	379	3.2461	3.3922	51.61	2530.998172	37.78	26.80
380	3.2862	0.1239	55.62	62.08	10.40	380	3.2477	3.3934	51.77	2528.21477	37.81	26.97
381	3.2868	0.1231	55.68	60.00	7.20	381	3.2489	3.395	51.89	2524.506627	37.84	27.07
382	3.2882	0.1248	55.82	64.42	13.34	382	3.2482	3.3967	51.82	2520.570554	37.88	26.90
383	3.2884	0.124	55.84	62.34	10.42	383	3.2511	3.3974	52.11	2518.950963	37.89	27.28
384	3.2884	0.1229	55.84	59.48	6.12	384	3.251	3.3982	52.1	2517.100818	37.91	27.23
385	3.2887	0.1227	55.87	58.96	5.24	385	3.2514	3.4006	52.14	2511.555608	37.96	27.19
386	3.2905	0.1231	56.05	60.00	6.58	386	3.2527	3.4028	52.27	2506.47937	38.01	27.28
387	3.2904	0.1232	56.04	60.26	7.00	387	3.2522	3.4043	52.22	2503.02206	38.05	27.14
388	3.2916	0.1238	56.16	61.82	9.15	388	3.2521	3.4076	52.21	2495.426693	38.12	26.99
389	3.2925	0.1245	56.25	63.64	11.61	389	3.253	3.4095	52.3	2491.060273	38.16	27.04
390	3.2918	0.1255	56.18	66.23	15.18	390	3.253	3.4128	52.3	2483.488045	38.23	26.90
391	3.2923	0.1268	56.23	69.61	19.22	391	3.2542	3.4147	52.42	2479.134917	38.27	26.98
392	3.2929	0.125	56.29	64.94	13.31	392	3.2551	3.4179	52.51	2471.814272	38.35	26.97
393	3.2941	0.1239	56.41	62.08	9.13	393	3.2552	3.4205	52.52	2465.876334	38.40	26.88
394	3.2947	0.1258	56.47	67.01	15.73	394	3.2551	3.4229	52.51	2460.403167	38.46	26.76
395	3.2953	0.1247	56.53	64.16	11.89	395	3.256	3.4247	52.6	2456.303326	38.50	26.81
396	3.2973	0.1264	56.73	68.57	17.27	396	3.2566	3.4279	52.66	2449.025351	38.57	26.76
397	3.2995	0.1265	56.95	68.83	17.26	397	3.2564	3.4294	52.64	2445.618476	38.60	26.67
398	3.3002	0.1255	57.02	66.23	13.91	398	3.2567	3.4306	52.67	2442.89512	38.63	26.66
399	3.2992	0.1251	56.92	65.19	12.69	399	3.2568	3.4315	52.68	2440.853854	38.65	26.64
400	3.2999	0.1254	56.99	65.97	13.62	400	3.2573	3.4329	52.73	2437.680678	38.68	26.65
401	3.3007	0.1265	57.07	63.10	9.55	401	3.2571	3.4335	52.71	2436.321538	38.69	26.59
402	3.3003	0.1276	57.03	65.71	13.22	402	3.2573	3.4338	52.73	2435.642146	38.70	26.61
403	3.3029	0.1265	57.29	63.10	9.20	403	3.2574	3.4347	52.74	2433.604682	38.72	26.59
404	3.3036	0.1266	57.36	63.33	9.43	404	3.2579	3.4351	52.79	2432.699485	38.73	26.64
405	3.3039	0.1258	57.39	61.43	6.57	405	3.2581	3.4353	52.81	2432.246965	38.73	26.66
406	3.3044	0.1286	57.44	68.10	15.65	406	3.2583	3.4356	52.83	2431.568285	38.74	26.67
407	3.305	0.1285	57.5	67.86	15.26	407	3.2584	3.436	52.84	2430.663562	38.75	26.67

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
408	3.305	0.127	57.5	64.29	10.56	408	3.2585	3.4362	52.85	2430.21128	38.75	26.67
409	3.3064	0.1249	57.64	59.29	2.78	409	3.2589	3.4366	52.89	2429.306873	38.76	26.71
410	3.3048	0.1282	57.48	67.14	14.39	410	3.2588	3.4373	52.88	2427.724668	38.78	26.67
411	3.3056	0.1292	57.56	69.52	17.21	411	3.2591	3.4378	52.91	2426.594915	38.79	26.69
412	3.3061	0.1289	57.61	68.81	16.28	412	3.2594	3.4388	52.94	2424.336396	38.81	26.69
413	3.3079	0.1297	57.79	70.71	18.28	413	3.2597	3.439	52.97	2423.88485	38.82	26.72
414	3.3088	0.1304	57.88	72.38	20.03	414	3.2601	3.4407	53.01	2420.048827	38.85	26.71
415	3.3083	0.131	57.83	73.81	21.65	415	3.2601	3.4428	53.01	2415.315441	38.90	26.62
416	3.3098	0.1306	57.98	72.86	20.42	416	3.2601	3.4453	53.01	2409.687981	38.96	26.51
417	3.3113	0.1306	58.13	72.86	20.21	417	3.26	3.4476	53	2404.517926	39.01	26.40
418	3.3115	0.1294	58.15	70.00	16.93	418	3.2606	3.4502	53.06	2398.681816	39.07	26.37
419	3.3111	0.1285	58.11	67.86	14.36	419	3.2604	3.4509	53.04	2397.112058	39.08	26.32
420	3.3109	0.1288	58.09	68.57	15.29	420	3.2607	3.4544	53.07	2389.272811	39.16	26.21
421	3.3107	0.127	58.07	64.29	9.67	421	3.2622	3.4566	53.22	2384.353411	39.21	26.32
422	3.3119	0.1278	58.19	66.19	12.09	422	3.2625	3.4608	53.25	2374.979196	39.31	26.19
423	3.3129	0.1294	58.29	70.00	16.73	423	3.2626	3.4655	53.26	2364.515943	39.41	26.00
424	3.3141	0.1283	58.41	67.38	13.31	424	3.2636	3.4672	53.36	2360.738348	39.45	26.07
425	3.3153	0.1282	58.53	67.14	12.83	425	3.2635	3.4676	53.35	2359.85004	39.46	26.04
426	3.3156	0.1277	58.56	65.95	11.21	426	3.2642	3.4692	53.42	2356.298859	39.50	26.07
427	3.316	0.1301	58.6	71.67	18.23	427	3.2649	3.4712	53.49	2351.864485	39.54	26.08
428	3.3158	0.1303	58.58	72.14	18.80	428	3.2656	3.4721	53.56	2349.870683	39.56	26.14
429	3.3164	0.1315	58.64	75.00	21.81	429	3.2665	3.4747	53.65	2344.116614	39.62	26.15
430	3.3176	0.1303	58.76	72.14	18.55	430	3.2673	3.4765	53.73	2340.13807	39.66	26.18
431	3.319	0.1284	58.9	67.62	12.89	431	3.2675	3.4771	53.75	2338.812804	39.68	26.19
432	3.3183	0.1278	58.83	66.19	11.12	432	3.2692	3.4782	53.92	2336.384337	39.70	26.37
433	3.3178	0.129	58.78	69.05	14.87	433	3.2678	3.4791	53.78	2334.398551	39.72	26.14
434	3.3178	0.1264	58.78	62.86	6.49	434	3.2683	3.4796	53.83	2333.295781	39.73	26.19
435	3.3188	0.1278	58.88	66.19	11.04	435	3.269	3.4798	53.9	2332.854762	39.74	26.28
436	3.3195	0.1279	58.95	66.43	11.26	436	3.2714	3.4801	54.14	2332.193328	39.74	26.59
437	3.3195	0.1296	58.95	70.48	16.35	437	3.2713	3.4804	54.13	2331.532008	39.75	26.56
438	3.32	0.1284	59	67.62	12.75	438	3.2728	3.4806	54.28	2331.091191	39.75	26.76
439	3.3208	0.1286	59.08	68.10	13.24	439	3.2715	3.4807	54.15	2330.870802	39.76	26.58
440	3.3202	0.1289	59.02	68.81	14.23	440	3.2722	3.4808	54.22	2330.650425	39.76	26.67
441	3.3211	0.1272	59.11	64.76	8.73	441	3.2739	3.4808	54.39	2330.650425	39.76	26.90

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
442	3.3208	0.1275	59.08	65.48	9.77	442	3.2736	3.4809	54.36	2330.430061	39.76	26.85
443	3.321	0.1254	59.1	60.48	2.28	443	3.2745	3.4809	54.45	2330.430061	39.76	26.98
444	3.3214	0.1253	59.14	60.24	1.82	444	3.2747	3.4809	54.47	2330.430061	39.76	27.00
445	3.3218	0.1281	59.18	66.90	11.55	445	3.2752	3.4809	54.52	2330.430061	39.76	27.07
446	3.3216	0.1268	59.16	63.81	7.29	446	3.2784	3.4809	54.84	2330.430061	39.76	27.49
447	3.3222	0.1271	59.22	64.52	8.22	447	3.2781	3.4809	54.81	2330.430061	39.76	27.46
448	3.3222	0.1272	59.22	64.76	8.56	448	3.2785	3.4809	54.85	2330.430061	39.76	27.51
449	3.3225	0.1293	59.25	69.76	15.07	449	3.2794	3.4809	54.94	2330.430061	39.76	27.63
450	3.3226	0.1287	59.26	68.33	13.28	450	3.2806	3.4809	55.06	2330.430061	39.76	27.78
451	3.3224	0.1281	59.24	66.90	11.46	451	3.2801	3.4809	55.01	2330.430061	39.76	27.72
452	3.3226	0.1287	59.26	68.33	13.28	452	3.2823	3.4809	55.23	2330.430061	39.76	28.01
453	3.3229	0.1277	59.29	65.95	10.10	453	3.282	3.4809	55.2	2330.430061	39.76	27.97
454	3.3232	0.1284	59.32	67.62	12.27	454	3.2834	3.4809	55.34	2330.430061	39.76	28.15
455	3.3233	0.1283	59.33	67.38	11.95	455	3.2862	3.4809	55.62	2330.430061	39.76	28.51
456	3.3234	0.1285	59.34	67.86	12.55	456	3.2868	3.481	55.68	2330.20971	39.76	28.58
457	3.3233	0.1297	59.33	70.71	16.10	457	3.288	3.481	55.8	2330.20971	39.76	28.74
458	3.3234	0.1277	59.34	65.95	10.03	458	3.2894	3.481	55.94	2330.20971	39.76	28.92
459	3.3236	0.1287	59.36	68.33	13.13	459	3.2888	3.4811	55.88	2329.989371	39.77	28.84
460	3.3237	0.1306	59.37	72.86	18.51	460	3.2897	3.481	55.97	2330.20971	39.76	28.95
461	3.3236	0.1299	59.36	71.19	16.62	461	3.29	3.4812	56	2329.769045	39.77	28.98
462	3.3238	0.1287	59.38	68.33	13.10	462	3.2921	3.4812	56.21	2329.769045	39.77	29.25
463	3.3238	0.1285	59.38	67.86	12.49	463	3.2918	3.4814	56.18	2329.328431	39.77	29.20
464	3.324	0.1291	59.4	69.29	14.27	464	3.2931	3.4816	56.31	2328.887868	39.78	29.36
465	3.3241	0.1286	59.41	68.10	12.75	465	3.2928	3.4818	56.28	2328.447355	39.78	29.31
466	3.324	0.129	59.4	69.05	13.97	466	3.292	3.482	56.2	2328.006893	39.79	29.20
467	3.3241	0.1277	59.41	65.95	9.92	467	3.2917	3.4826	56.17	2326.685809	39.80	29.14
468	3.3242	0.1269	59.42	64.05	7.23	468	3.2934	3.4826	56.34	2326.685809	39.80	29.36
469	3.3242	0.1283	59.42	67.38	11.81	469	3.2933	3.484	56.33	2323.605052	39.83	29.29
470	3.324	0.1293	59.4	69.76	14.85	470	3.2942	3.4848	56.42	2321.84573	39.85	29.37
471	3.324	0.1282	59.4	67.14	11.53	471	3.2949	3.4856	56.49	2320.087216	39.87	29.42
472	3.3242	0.1276	59.42	65.71	9.58	472	3.2955	3.4869	56.55	2317.231352	39.90	29.44
473	3.3243	0.1279	59.43	66.43	10.54	473	3.2966	3.4872	56.66	2316.572608	39.91	29.57
474	3.3244	0.1286	59.44	68.10	12.71	474	3.2952	3.4886	56.52	2313.499971	39.94	29.34
475	3.3242	0.1279	59.42	66.43	10.55	475	3.2965	3.4907	56.65	2308.895637	39.99	29.42

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
476	3.3245	0.1284	59.45	67.62	12.08	476	3.2971	3.4919	56.71	2306.267075	40.01	29.44
477	3.3246	0.1285	59.46	67.86	12.37	477	3.2962	3.4954	56.62	2298.610746	40.09	29.19
478	3.3246	0.1299	59.46	71.19	16.48	478	3.2983	3.4961	56.83	2297.081319	40.11	29.42
479	3.3245	0.1303	59.45	72.14	17.59	479	3.2982	3.4973	56.82	2294.46087	40.14	29.36
480	3.3244	0.129	59.44	69.05	13.91	480	3.2988	3.4989	56.88	2290.969733	40.17	29.37
481	3.3248	0.1289	59.48	68.81	13.56	481	3.2989	3.5026	56.89	2282.908696	40.26	29.23
482	3.3248	0.1286	59.48	68.10	12.65	482	3.2984	3.5034	56.84	2281.168008	40.28	29.14
483	3.3247	0.1302	59.47	71.90	17.29	483	3.2995	3.5062	56.95	2275.081855	40.34	29.16
484	3.3247	0.1307	59.47	73.10	18.64	484	3.3001	3.5078	57.01	2271.608416	40.38	29.17
485	3.3248	0.132	59.48	76.19	21.93	485	3.3	3.5099	57	2267.054332	40.43	29.07
486	3.3248	0.1321	59.48	76.43	22.18	486	3.3008	3.5104	57.08	2265.97083	40.44	29.15
487	3.3249	0.1316	59.49	75.24	20.93	487	3.3011	3.5115	57.11	2263.58821	40.47	29.14
488	3.3248	0.1332	59.48	79.05	24.75	488	3.3017	3.5138	57.17	2258.61119	40.52	29.12
489	3.3249	0.1319	59.49	75.95	21.67	489	3.3014	3.5155	57.14	2254.936709	40.56	29.02
490	3.3249	0.1328	59.49	78.10	23.82	490	3.3012	3.5163	57.12	2253.208771	40.58	28.96
491	3.325	0.1328	59.5	78.10	23.81	491	3.3005	3.5183	57.05	2248.892363	40.62	28.79
492	3.3251	0.1317	59.51	75.48	21.15	492	3.3017	3.5181	57.17	2249.323783	40.62	28.95
493	3.325	0.1317	59.5	75.48	21.17	493	3.3013	3.5201	57.13	2245.011789	40.67	28.82
494	3.3254	0.1316	59.54	75.24	20.86	494	3.302	3.5218	57.2	2241.350446	40.71	28.84
495	3.3254	0.13	59.54	71.43	16.64	495	3.302	3.5222	57.2	2240.489467	40.72	28.82
496	3.3256	0.1307	59.56	73.10	18.52	496	3.3021	3.5235	57.21	2237.692635	40.75	28.78
497	3.3255	0.1306	59.55	72.86	18.26	497	3.3027	3.5241	57.27	2236.402486	40.76	28.83
498	3.3258	0.1297	59.58	70.71	15.75	498	3.3027	3.5252	57.27	2234.038352	40.79	28.78
499	3.3258	0.1285	59.58	67.86	12.20	499	3.3027	3.5259	57.27	2232.534672	40.80	28.76
500	3.3261	0.1297	59.61	70.71	15.70	500	3.3028	3.5272	57.28	2229.743706	40.83	28.71
501	3.3259	0.1294	59.59	70.00	14.87	501	3.3029	3.5276	57.29	2228.885361	40.84	28.71
502	3.326	0.1301	59.6	71.67	16.84	502	3.3029	3.5276	57.29	2228.885361	40.84	28.71
503	3.3262	0.1304	59.62	72.38	17.63	503	3.3031	3.5284	57.31	2227.169255	40.86	28.70
504	3.3259	0.1305	59.59	72.62	17.94	504	3.3031	3.5302	57.31	2223.310861	40.90	28.63
505	3.3259	0.1317	59.59	75.48	21.05	505	3.3031	3.5298	57.31	2224.167942	40.89	28.65
506	3.3261	0.1311	59.61	74.05	19.50	506	3.3033	3.531	57.33	2221.597281	40.92	28.62
507	3.3263	0.131	59.63	73.81	19.21	507	3.3034	3.5321	57.34	2219.242377	40.95	28.59
508	3.3264	0.1294	59.64	70.00	14.80	508	3.3034	3.5323	57.34	2218.81437	40.95	28.58
509	3.3266	0.1285	59.66	67.86	12.08	509	3.3034	3.5349	57.34	2213.254689	41.01	28.47

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
510	3.3269	0.1304	59.69	72.38	17.53	510	3.3035	3.5358	57.35	2211.332089	41.03	28.45
511	3.3266	0.1288	59.66	68.57	13.00	511	3.3034	3.5355	57.34	2211.972847	41.03	28.45
512	3.3267	0.1279	59.67	66.43	10.17	512	3.3036	3.5394	57.36	2203.651466	41.12	28.31
513	3.3271	0.1291	59.71	69.29	13.82	513	3.3037	3.5405	57.37	2201.307725	41.14	28.28
514	3.3274	0.1301	59.74	71.67	16.64	514	3.3037	3.5428	57.37	2196.411878	41.20	28.19
515	3.3275	0.1317	59.75	75.48	20.84	515	3.3036	3.5437	57.36	2194.497841	41.22	28.14
516	3.3282	0.1321	59.82	76.43	21.73	516	3.3038	3.5457	57.38	2190.247906	41.27	28.08
517	3.3289	0.1321	59.89	76.43	21.64	517	3.3038	3.547	57.38	2187.488018	41.30	28.03
518	3.3283	0.1302	59.83	71.90	16.79	518	3.3038	3.5486	57.38	2184.094009	41.34	27.96
519	3.3287	0.1299	59.87	71.19	15.90	519	3.3038	3.553	57.38	2174.776245	41.44	27.78
520	3.3289	0.1296	59.89	70.48	15.02	520	3.3039	3.5541	57.39	2172.450409	41.47	27.75
521	3.3296	0.1307	59.96	73.10	17.97	521	3.3038	3.557	57.38	2166.325555	41.54	27.61
522	3.3291	0.13	59.91	71.43	16.13	522	3.3036	3.5576	57.36	2165.059591	41.55	27.56
523	3.329	0.1287	59.9	68.33	12.34	523	3.3039	3.5579	57.39	2164.426769	41.56	27.59
524	3.3296	0.1295	59.96	70.24	14.63	524	3.3039	3.5603	57.39	2159.368031	41.61	27.49
525	3.3303	0.1282	60.03	67.14	10.59	525	3.3041	3.5616	57.41	2156.630728	41.65	27.46
526	3.3302	0.1281	60.02	66.90	10.29	526	3.3041	3.5622	57.41	2155.368031	41.66	27.44
527	3.3292	0.1287	59.92	68.33	12.31	527	3.3042	3.5634	57.42	2152.843913	41.69	27.40
528	3.3311	0.1302	60.11	71.90	16.40	528	3.3041	3.5641	57.41	2151.372296	41.70	27.36
529	3.3321	0.1299	60.21	71.19	15.42	529	3.3044	3.5656	57.44	2148.220776	41.74	27.33
530	3.3319	0.1294	60.19	70.00	14.01	530	3.3042	3.5672	57.42	2144.862077	41.78	27.24
531	3.3323	0.1304	60.23	72.38	16.79	531	3.3044	3.568	57.44	2143.183857	41.80	27.23
532	3.3323	0.1302	60.23	71.90	16.24	532	3.3044	3.5681	57.44	2142.974132	41.80	27.23
533	3.3325	0.1294	60.25	70.00	13.93	533	3.3044	3.5686	57.44	2141.925685	41.81	27.21
534	3.3329	0.1312	60.29	74.29	18.84	534	3.3044	3.5693	57.44	2140.458353	41.83	27.18
535	3.3338	0.1307	60.38	73.10	17.40	535	3.3045	3.5696	57.45	2139.829673	41.84	27.18
536	3.3341	0.1297	60.41	70.71	14.57	536	3.3046	3.5698	57.46	2139.410611	41.84	27.18
537	3.3348	0.1302	60.48	71.90	15.89	537	3.305	3.5704	57.5	2138.153708	41.86	27.21
538	3.3361	0.131	60.61	73.81	17.88	538	3.3051	3.5707	57.51	2137.525415	41.86	27.21
539	3.3354	0.1306	60.54	72.86	16.91	539	3.3054	3.5708	57.54	2137.316008	41.87	27.24
540	3.3361	0.1302	60.61	71.90	15.71	540	3.3055	3.5708	57.55	2137.316008	41.87	27.25
541	3.336	0.1305	60.6	72.62	16.55	541	3.3055	3.571	57.55	2136.897228	41.87	27.25
542	3.3365	0.1305	60.65	72.62	16.48	542	3.3059	3.571	57.59	2136.897228	41.87	27.30
543	3.336	0.1315	60.6	75.00	19.20	543	3.3059	3.5711	57.59	2136.687855	41.87	27.29

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
544	3.3358	0.1305	60.58	72.62	16.58	544	3.3066	3.5711	57.66	2136.687855	41.87	27.38
545	3.3374	0.1312	60.74	74.29	18.23	545	3.306	3.5712	57.6	2136.478495	41.87	27.30
546	3.3375	0.1324	60.75	77.14	21.25	546	3.3059	3.5713	57.59	2136.269146	41.88	27.28
547	3.3366	0.1307	60.66	73.10	17.01	547	3.3063	3.5712	57.63	2136.478495	41.87	27.34
548	3.3396	0.1315	60.96	75.00	18.72	548	3.307	3.5713	57.7	2136.269146	41.88	27.42
549	3.3372	0.1302	60.72	71.90	15.55	549	3.3076	3.5713	57.76	2136.269146	41.88	27.50
550	3.3384	0.1304	60.84	72.38	15.94	550	3.3074	3.5713	57.74	2136.269146	41.88	27.47
551	3.3397	0.1306	60.97	72.86	16.32	551	3.3068	3.5714	57.68	2136.059808	41.88	27.39
552	3.3383	0.1302	60.83	71.90	15.40	552	3.3076	3.5714	57.76	2136.059808	41.88	27.49
553	3.3398	0.1297	60.98	70.71	13.77	553	3.3077	3.5714	57.77	2136.059808	41.88	27.51
554	3.3393	0.1324	60.93	77.14	21.02	554	3.3078	3.5716	57.78	2135.641169	41.88	27.51
555	3.3393	0.1334	60.93	79.52	23.38	555	3.3081	3.5716	57.81	2135.641169	41.88	27.55
556	3.339	0.1322	60.9	76.67	20.57	556	3.3085	3.5717	57.85	2135.431867	41.89	27.59
557	3.3424	0.1327	61.24	77.86	21.34	557	3.3099	3.5718	57.99	2135.222577	41.89	27.76
558	3.3433	0.1339	61.33	80.71	24.02	558	3.3087	3.572	57.87	2134.804031	41.89	27.61
559	3.344	0.1325	61.4	77.38	20.65	559	3.309	3.5721	57.9	2134.594776	41.90	27.64
560	3.3427	0.1308	61.27	73.33	16.45	560	3.3088	3.5721	57.88	2134.594776	41.90	27.62
561	3.3434	0.1326	61.34	77.62	20.97	561	3.3099	3.5724	57.99	2133.967081	41.90	27.74
562	3.3423	0.1324	61.23	77.14	20.63	562	3.31	3.5726	58	2133.548676	41.91	27.74
563	3.3452	0.1319	61.52	75.95	19.00	563	3.3111	3.573	58.11	2132.712007	41.92	27.86
564	3.3456	0.1328	61.56	78.10	21.17	564	3.3123	3.5732	58.23	2132.293742	41.92	28.00
565	3.3464	0.1325	61.64	77.38	20.34	565	3.3126	3.574	58.26	2130.621153	41.94	28.01
566	3.3452	0.1333	61.52	79.29	22.41	566	3.313	3.5748	58.3	2128.949312	41.96	28.03
567	3.3459	0.1324	61.59	77.14	20.16	567	3.314	3.5748	58.4	2128.949312	41.96	28.15
568	3.3473	0.1334	61.73	79.52	22.38	568	3.3148	3.5751	58.48	2128.322564	41.97	28.23
569	3.3457	0.1314	61.57	74.76	17.65	569	3.3134	3.5761	58.34	2126.234166	41.99	28.02
570	3.3464	0.1318	61.64	75.71	18.59	570	3.3131	3.5771	58.31	2124.146935	42.02	27.94
571	3.3474	0.1321	61.74	76.43	19.22	571	3.3135	3.578	58.35	2122.269424	42.04	27.96
572	3.3484	0.1329	61.84	78.33	21.06	572	3.3128	3.5786	58.28	2121.018275	42.05	27.84
573	3.3454	0.1327	61.54	77.86	20.96	573	3.3148	3.5805	58.48	2117.05907	42.10	28.01
574	3.3456	0.1326	61.56	77.62	20.69	574	3.3155	3.5807	58.55	2116.642556	42.10	28.09
575	3.3467	0.1314	61.67	74.76	17.51	575	3.3168	3.5817	58.68	2114.560683	42.13	28.21
576	3.3493	0.1303	61.93	72.14	14.16	576	3.3174	3.5829	58.74	2112.063971	42.16	28.23
577	3.3495	0.1304	61.95	72.38	14.41	577	3.3165	3.5847	58.65	2108.322035	42.20	28.05

Time (S)	IC V	RTD V	IC Temp °C	RTD Temp °C	% Error	Time (S)	IC sensor (V)	Therm. sensor (V)	IC Temp °C	Therm. Resistance Ω	Therm. Temp °C	% Error
578	3.3483	0.1317	61.83	75.48	18.08	578	3.3168	3.5865	58.68	2104.583856	42.24	28.01
579	3.3501	0.1322	62.01	76.67	19.12	579	3.3191	3.5893	58.91	2098.776363	42.31	28.18
580	3.3488	0.1317	61.88	75.48	18.01	580	3.3201	3.5894	59.01	2098.56912	42.31	28.29
581	3.3497	0.1328	61.97	78.10	20.65	581	3.3201	3.5922	59.01	2092.771004	42.38	28.18
582	3.3498	0.1328	61.98	78.10	20.64	582	3.3215	3.5908	59.15	2095.668932	42.35	28.41
583	3.3502	0.1331	62.02	78.81	21.30	583	3.3211	3.5924	59.11	2092.357199	42.39	28.29
584	3.351	0.1333	62.1	79.29	21.68	584	3.32	3.5942	59	2088.635023	42.43	28.08
585	3.3519	0.1325	62.19	77.38	19.63	585	3.32	3.5966	59	2083.677918	42.49	27.99
586	3.3517	0.1328	62.17	78.10	20.39	586	3.3214	3.5984	59.14	2079.964429	42.53	28.08
587	3.3503	0.133	62.03	78.57	21.05	587	3.3228	3.6	59.28	2076.666667	42.57	28.19
588	3.3517	0.1331	62.17	78.81	21.11	588	3.3235	3.6015	59.35	2073.577676	42.61	28.21
589	3.3524	0.1329	62.24	78.33	20.54	589	3.3214	3.6029	59.14	2070.696939	42.64	27.90
590	3.3517	0.1309	62.17	73.57	15.50	590	3.3218	3.6032	59.18	2070.079929	42.65	27.93
591	3.3518	0.132	62.18	76.19	18.39	591	3.3235	3.6031	59.35	2070.285587	42.65	28.14
592	3.3533	0.1326	62.33	77.62	19.70	592	3.3244	3.6035	59.44	2069.463022	42.66	28.24
593	3.3525	0.1335	62.25	79.76	21.96	593	3.324	3.6046	59.4	2067.201909	42.68	28.14
594	3.3541	0.1329	62.41	78.33	20.33	594	3.3234	3.6063	59.34	2063.710174	42.73	28.00
595	3.3543	0.1314	62.43	74.76	16.49	595	3.3239	3.6076	59.39	2061.042244	42.76	28.01
596	3.3554	0.1341	62.54	81.19	22.97	596	3.3258	3.6087	59.58	2058.786267	42.78	28.19
597	3.3541	0.1336	62.41	80.00	21.99	597	3.3253	3.6098	59.53	2056.531664	42.81	28.08
598	3.3547	0.1335	62.47	79.76	21.68	598	3.3258	3.6111	59.58	2053.868904	42.84	28.09
599	3.3538	0.1328	62.38	78.10	20.12	599	3.3264	3.6101	59.64	2055.917011	42.82	28.20