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Date	04/03/20	

With all elements that compose the distance sensor test bench and its programs, you will be able to check if the distance sensor measures the right distances.

Before, the realisation of the test bench had to be realised, thanks to the step by step procedure document.

Time required for the assembly of the test bench : 4h (explained on step by step procedure document)

Time required for the program tests : 1h

Time to realise one test of the sensor : 10min

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DOCUMENT HISTORY			
INDEX	DATE	MODIFICATIONS	VISA
A	12/02/20	Document creation	
B	04/03/20	First edit	

Programs recovery

To make the test bench operational, it is necessary to program an arduino card as the one that is connected to the test bench on the step by step procedure. The results of the test will be displayed on the arduino terminal of the laptop.

Be sure to have an arduino program installed on your laptop, and that you can connect your arduino card on it.

We have three programs to realise the sensor test :

- “code_capteur_temp” to check if the temperature is good to realise a good test
- “code_moteur” to make the DC test bench motor move correctly
- “CODE_capteur_distance” to display if the test is successful or failed

These three programs are working with an arduino card because we already test it. With all the programs recovered, first the temperature program has to be executed. Then, the DC motor program will be executed to permit the test program to display the results.

Tests procedure

TEST NUMBER ONE																				
Date : xx/xx/xxxx		(insert testers name)																		
Title : TEST FOR THE TEMPERATURE		Object : To check the temperature before the sensor test.																		
PROGRAM INSTALLATION :																				
Software used : <ul style="list-style-type: none"> Arduino program 		Version : non important																		
Operating mode :																				
Steps	Demarche	Why ?	Expected response	OK ?																
1	Enter the "code_captur_temp" program on the arduino program and compile it.	To check if the program is accepted and will work.	"Compilation done" + no warning and error.	<input type="checkbox"/>																
2	Televerse the program on the arduino card by an usb cable.	To send the program at the arduino to runs it.	"Televerse complete" + no warning and error.	<input type="checkbox"/>																
3	Open the arduino terminal and check if the informations sent by the temperature are displayed.	To display the result on a laptop.	"Temperature is ..."	<input type="checkbox"/>																
TEST RESULTS :																				
Check it with the displayed result :																				
If it works : <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Result</td> <td style="padding: 5px;">OK ?</td> </tr> <tr> <td style="padding: 5px;">Temperature = 20 ± 2°C</td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>		Result	OK ?	Temperature = 20 ± 2°C	<input type="checkbox"/>	If it's failed : <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Result</td> <td style="padding: 5px;">Recommandation</td> <td style="padding: 5px;">OK ?</td> </tr> <tr> <td style="padding: 5px;">Temperature < 20</td> <td style="padding: 5px;">increase room temperature</td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 5px;">Temperature > 20</td> <td style="padding: 5px;">decrease room temperature</td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 5px;">No temperature</td> <td style="padding: 5px;">Check the wiring of the entire test bench.</td> <td style="text-align: center; padding: 5px;"><input type="checkbox"/></td> </tr> </table>			Result	Recommandation	OK ?	Temperature < 20	increase room temperature	<input type="checkbox"/>	Temperature > 20	decrease room temperature	<input type="checkbox"/>	No temperature	Check the wiring of the entire test bench.	<input type="checkbox"/>
Result	OK ?																			
Temperature = 20 ± 2°C	<input type="checkbox"/>																			
Result	Recommandation	OK ?																		
Temperature < 20	increase room temperature	<input type="checkbox"/>																		
Temperature > 20	decrease room temperature	<input type="checkbox"/>																		
No temperature	Check the wiring of the entire test bench.	<input type="checkbox"/>																		
To conclude : <i>indicate if the test is successful or failed.</i>																				

TEST NUMBER TWO

Date : xx/xx/xxxx

(insert testers name)

Title : TEST FOR THE DC MOTOR

Object : To check if the DC motor works on the entire test bench.

PROGRAM INSTALLATION :

Software used :

- Arduino program

Version :

non important

Operating mode :

Steps	Demarche	Why ?	Expected response	OK ?
1	Enter the "code_moteur" program on the arduino program and compile it.	To check if the program is accepted and will work.	"Compilation done" + no warning and error.	
2	Televerse the program on the arduino card by an usb cable.	To send the program at the arduino to runs it.	"Televerse complete" + no warning and error.	
3	Check if the motor makes all treadmill moves on the entire test bench.	To be sure that the DC motor will be efficient for the sensor test.	It moves for the entire test bench.	

TEST RESULTS :

Check it with the displayed result :

If it works :

Result	OK ?
Moves on the entire test bench.	

If it's failed :

Result	Recommandation	OK ?
No move	Re-compile and re-televerse the program after checking if the arduino card is well detected by the arduino program. Check the wiring of the entire test bench.	

To conclude : *indicate if the test is successful or failed.*

TEST NUMBER TREE

Date : xx/xx/xxxx

(insert testers name)

Title : TEST FOR THE DISTANCE SENSOR

Object : To check if the sensor measures the real distances.

PROGRAM INSTALLATION :

Software used :

- Arduino program

Version :

non important

Operating mode :

Steps	Demarche	Why ?	Expected response	OK ?
1	Enter the "CODE_captur_distance" program on the arduino program and compile it.	To check if the program is accepted and will work.	"Compilation done" + no warning and error.	
2	Televerse the program on the arduino card by an usb cable.	To send the program at the arduino to runs it.	"Televerse complete" + no warning and error.	
3	Check if the sensor does its measures correctly.	To be sure that the sensor is operational.	" distance :... cm"	

TEST RESULTS :

Check it with the displayed result :

If it works :		If it's failed :		
Result	OK ?	Result	Recommandation	OK ?
When the conveyor belt is close to the sensor : 5cm .		No measure	Re-compile and re-televerse the program after checking if the arduino card is well detected by the arduino program.	
When the conveyor belt is far from the sensor : 40 cm .		Wrong measures	Check the wiring of the entire test bench.	

To conclude : *indicate if the test is successful or failed.*