




Description		Evaluation	
Function to be checked using simulation box and wiring of the I/O Terminal for the station		Done	Max. Points
Preparation: Connect the simulation box to the I/O terminal (Output 0 – 7: signal 1 or 0); (Input 0 – 7: signal 1 or 0)			


Connector I/O	Comment			
T1 (IN)	1 signal indicates			
DI 0	DI 0: Gripper unit is in magazine position	YES		
DI 1	DI 1: Gripper unit is in slide 1 position	YES		
DI 2	DI 2: Gripper unit is in storage position	YES		
DI 3	DI 3: Gripper is up	YES		
DI 4	DI 4: Gripper is down	YES		
DI 5	DI 5: Workpiece in Gripper is not black	YES		
DI 6	DI 6: Workpiece is in magazine pickup position	YES		
DI 7	not used			

Connector I/O	Comment			
T1 (OUT)	1 signal set			
DO 0	DO 0: Gripper unit to right hand side (slide positions)	YES		
DO 1	DO 1: Gripper unit to left hand side (magazine)	YES		
DO 2	DO 2: Move Gripper down	YES		
DO 3	DO 3: Open Gripper	YES		
DO 4	DO 4: Ejecting arm push out workpiece	YES		
DO 5	DO 5: Signal lamp GREEN	YES		
DO 6	DO 6: Signal lamp YELLOW	YES		
DO 7	DO 7: Signal lamp RED	YES		

SimuBox total T1		
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I/O total		6
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Description / checked using PLC		Evaluation	
<div><div><div>1. Function Operation mode and signals</div><div>2. Function of the production in general</div><div>3. Function Quality of production and signals</div></div><div></div></div>		Done	Max. Points
Preparation: Connect the PLC board with the I/O terminal and the control panel, switch key to the position AUTO, start the PLC, no programming cable and no communication between PC and PLC, valve for air opened, handling Gripper unit between magazine and slide 1 position. Magazine is empty.			
You will get time to check that before the evaluation!			

1. Function Operation mode and signals	Done	Max. Points
RED signal lamp ON** and RESET lamp ON	½ mfe aspect	
Switch key to the position MAN (Handling Station) and back to AUTO then YELLOW signal lamp ON**	YES	
Press RESET button (Handling Station) then system moves to initial position	YES	
If the system is in the initial position then RESET lamp OFF	YES	
Switch key to the position MAN (Handling Station) and back to AUTO then GREEN signal lamp ON** and START lamp ON	½ mfe aspect	
**At any time only one lamp of the signal column is ON	YES	
PLC board Operation mode total		1,8

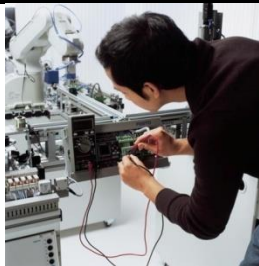
2. Function of the production in general (Evaluation only if PLC module 3 hasn't 100%)	Done	Max. Points
Competitor selects one workpiece for the evaluation and puts it into the magazine. Start with the Handling Station in initial position.		
Press the START button (Handling Station) then distribute workpiece out of the magazine	YES	
Transport workpiece to the slide 1 or 2 and place workpiece correctly on the slide 1 or 2	½ mfe aspect	
Handling unit moves to initial position	YES	
PLC board production in general total		3,2



3. Function Quality of production and signals		Done	Max. Points
Put 3 workpieces into the magazine of the Handling Station*. Start from the initial positions. Attention: When the function stops with one of the workpieces in the station then the evaluation is finished. (no manual help allowed)			
GREEN signal lamp ON** and START lamp ON	½ mfe aspect	no eval. In T1	
A: Press the START button (HS) then START lamp OFF	⅓ mfe colour	no eval. In T1	
GREEN signal lamp flashing with 2 Hz.	⅓ mfe colour	no eval. In T1	
Distribute workpiece out of the magazine	⅓ mfe colour	no eval. In T1	
If a workpiece is black: (STOP function check possible)			
Transport workpiece to the slide 2 and Q2 signal lamp flashing with 2 Hz	½ mfe aspect	no eval. In T1	
Workpiece placed on slide 2 and after placing Q2 signal lamp OFF ==> B:	½ mfe aspect	no eval. In T1	
If a workpiece is silver: (STOP function check possible)			
Transport workpiece to the slide 1 and Q1 signal lamp flashing with 2 Hz	½ mfe aspect	no eval. In T1	
Workpiece placed on slide 1 and after placing Q1 signal lamp OFF ==> B:	½ mfe aspect	no eval. In T1	
If a workpiece is red: (STOP function check possible)			
Transport workpiece to the slide 1 and Q1 signal lamp flashing with 2 Hz	½ mfe aspect	no eval. In T1	
Workpiece placed on slide 1 and after placing Q1 signal lamp OFF ==> B:	½ mfe aspect	no eval. In T1	
B: After each process the stations move to initial positions	⅓ mfe colour	no eval. In T1	
If the system is in initial position then Start lamp ON	⅓ mfe colour	no eval. In T1	
GREEN signal lamp ON**	⅓ mfe colour	no eval. In T1	
Continue with A:	⅓ mfe colour	no eval. In T1	
STOP funktion check:			
Press the STOP button when the the task: "transport workpiece to the slide ..." is active in any of the three tested workpieces			
Then stop the process (no movement on the e-drive) and START lamp ON	½ mfe aspect	no eval. In T1	
Press the START button (HS) then Start lamp OFF and continue the transport	½ mfe aspect	no eval. In T1	
**At any time only one lamp of the signal column is ON	YES	no eval. In T1	
PLC board Function Quality of production and signals total			

* Red, black or silver work piece will be chosen by the evaluation team



Description		Evaluation	Maximum evaluation
Professional practice / Judgment 			
Judgment topic			
*	1. Cleanliness of the workplace and the station while approval		
	Excellent: 3P; Professional: 2P; Optimization / rework necessary: 1P; not acceptable: 0P		
*	2. Routing of tubes and cables on profiles and on the profile plate		
	Excellent: 3P; Professional: 2P; Optimization / rework necessary: 1P; not acceptable: 0P		
*	3. Mechanical and pneumatical implementation		
	Excellent: 3P; Professional: 2P; Optimization / rework necessary: 1P; not acceptable: 0P		
*	4. Electrical installation and wiring of the components		
	Excellent: 3P; Professional: 2P; Optimization / rework necessary: 1P; not acceptable: 0P		
*	5. Special cases announced by experts and the overall impression		
*	Excellent: 3P; Professional: 2P; Optimization / rework necessary: 1P; not acceptable: 0P		
Professional Practice total			4

Description / Total evaluation Project 1:	Evaluation	Maximum evaluation
Operation based on simulation box		6
Operation based on PLC board: Function Operation mode and signals		1,8
Operation based on PLC board: Function of the production in general		3,2
Operation based on PLC board: Function Quality of production and signals	not in Task 1	0
Professional practice / Judgment		4
Points for time evaluation	not in Task 1	0
Total points		15