

Skill name

Electrical Installation

Criteria	Mark
A Safety (electrical and personal)	10.00
B Commissioning and function	25.00
C Circuit design	10.00
D Measurements	5.00
E Installation of equipment and wire-ways	15.00
F Wiring and termination	15.00
G Installation testing	10.00
H Programming	10.00

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
A1	Health and Safety	O	Day 1 Health and Safety. No breach of the Health and Safety req	
		O	Day 2 Health and Safety. No breach of the Health and Safety req	
		O	Day 3 Health and Safety. No Breach of the Health and Safety req	
		O	Day 4 Health and Safety. No Breach of the Health and Safety req	
A2	Module 1:	O	Correct testing of earth continuity resistance	
		O	Correct testing of insulation resistance	
		O	All covers closed and not damaged before supply connected	

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
B1	Module 1: Commissioning	O	Test report OK, Safe to power up, Power On	
		O	Second attempt	
		O	Third attempt	
B2	Module 1: Function (Manual Function)	O	Switch Actuator, ABB Channel 1 On = P3 On	
		O	Switch Actuator, ABB Channel 2 On = P2 On	
		O	Switch Actuator, ABB Channel 3 On = P1 On	
		O	Switch Actuator, Jung Channel A1 On = L5 On	
		O	Switch Actuator, Jung Channel A2 On = L6 On	
		O	Switch Actuator, Jung Channel A3 On = L1 On	
		O	Switch Actuator, Jung Channel A4 On = L2 & L3 On	
		O	SW3 on Binary In	
		O	Shutter Actuator, Channel A - Shutter up	
		O	Shutter Actuator, Channel B - Shutter down	
		O	Dimming Actuator = L4	
		O	B2 (Green PB) - Open Door Command	
		O	B4 (Green PB) - Open Door Command	
		O	LS1 (Top Limit Switch) - Stop Open Command	
		O	B3 (Red PB) - Close Door Command	
		O	B5 (Red PB) - Close Door Command	
		O	LS2 (Bottom Limit Switch) - Stop Close Command	
		O	10 Second Close Delay after opening	
		O	B1 (Emergency PB) - Door is stopped with No operation available	
		O	Motor Overload - Door is stopped with No operation available until	
		O	H2 & H5 - Indicate the door is opening	
		O	H4 & H7 - Indicate the door is closing	
		O	H1 - Indicates the panel is energised	
		O	H3 - Indicates a motor overload	
		O	H6 - Flashes at 2Hz while the door is moving	
		O	Motor Overload Set Correctly	

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
C1	Module 1: Circuit Design	<input type="radio"/> Correct layout on B1 front door <input type="radio"/> Correct colours used for the Neutral and Earth cables <input type="radio"/> Correctly wired 24v control circuit in B1 <input type="radio"/> Correct use of cable colour for the power supply cable. <input type="radio"/> Correct Polarity at the power socket P1 <input type="radio"/> Correct cable type to the motor (Armoured Cable) <input type="radio"/> Correct cable size to B1 (5 x 2.5mm ²) <input type="radio"/> Correct cable size for the Power Supply (5 x 4mm ²) <input type="radio"/> Correct cable size to the Lamps (3 x 1.5mm ²) <input type="radio"/> Correct cable size to the sockets (3 x 2.5mm ²)		
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
D1	Module 1: Measurements	<input type="radio"/> Measurement 1 correct <input type="radio"/> Measurement 2 correct <input type="radio"/> Measurement 3 correct <input type="radio"/> Measurement 4 correct <input type="radio"/> Measurement 5 correct <input type="radio"/> Measurement 6 correct <input type="radio"/> Measurement 7 correct <input type="radio"/> Measurement 8 correct <input type="radio"/> Measurement 9 correct <input type="radio"/> Measurement 10 correct		

Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
E1	Module 1: Installation of equipment and wire-ways	<div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>O</div><div>J</div></div>	<div><div>Item 1: Level / Plumb Correct</div><div>Item 2: Level / Plumb Correct</div><div>Item 3: Level / Plumb Correct</div><div>Item 4: Level / Plumb Correct</div><div>Item 5: Level / Plumb Correct</div><div>Item 6: Level / Plumb Correct</div><div>Item 7: Level / Plumb Correct</div><div>Item 8: Level / Plumb Correct</div><div>Item 9: All cable glands are correct and secure</div><div>Item 10: All saddles for the same length of pipe are level</div><div>Item 11: All saddles for the same length of pipe are level</div><div>PVC conduit. Conduits have even bend radius and no distortion</div></div> <div><div>J</div><div>Clipping of flexible, PVC and armoured cable.</div></div> <div><div>J</div><div>PVC trunking. Bends and angles are neat, no gaps</div></div>	<div><div>0</div><div>1</div><div>2</div><div>3</div></div> <div><div>0</div><div>1</div><div>2</div><div>3</div></div> <div><div>0</div><div>1</div><div>2</div><div>3</div></div>
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score

F1	Module 1: Wiring and termination	O	All conductors securely terminated with no bare copper showing.	
		O	Item 2: P1	
		O	Item 3: P2	
		O	Item 5: L1	
		O	Item 6: L2	
		O	Item 10: L6	
		O	Item 11: B1	
		O	Item 15: SW3	
		O	Item 16: SW4	
		O	Item 17: LS1	
		O	Item 18: LS2	
		J	Neatness of cables on metal cable tray	0 1 2 3
		J	General neatness of wiring in A1	0 1 2 3
		J	General neatness of wiring in B1	0 1 2 3
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
G1	Module 3: Installation testing	O	Fault 1: Found Correctly	
		O	Fault 2: Found Correctly	
		O	Fault 3: Found Correctly	
		O	Fault 4: Found Correctly	

		<div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div>	<div>Fault 5: Found Correctly</div> <div>Fault 6: Found Correctly</div> <div>Fault 7: Found Correctly</div> <div>Fault 8: Found Correctly</div> <div>Fault 9: Found Correctly</div> <div>Fault 10: Found Correctly</div>	
Sub Criteria ID	Sub Criteria Name or Description	Aspect Type O = Obj S = Sub J = Judg	Aspect - Description	Judg Score
H1	Module 2: Programming	<div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div><div><div></div></div></div>	<div>Correct operation of Function 1</div> <div>Correct operation of Function 2</div> <div>Correct operation of Function 3</div> <div>Correct operation of Function 4</div> <div>Correct operation of Function 5</div> <div>Correct operation of Function 6</div> <div>Correct operation of Function 7</div> <div>Correct operation of Function 8</div> <div>Correct operation of Function 9</div> <div>Correct operation of Function 10</div> <div>Correct operation of Function 11</div> <div>Correct operation of Function 12</div> <div>Correct operation of Function 13</div> <div>Correct operation of Function 14</div> <div>Correct operation of Function 15</div> <div>Correct operation of Function 16</div> <div>Correct operation of Function 17</div> <div>Correct operation of Function 18</div> <div>Correct operation of Function 19</div> <div>Correct operation of Function 20</div>	

Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
Mark lossed on the second occasion per day		1	1.75
Mark lossed on the second occasion per day		1	1.75
Mark lossed on the second occasion per day		1	1.75
Mark lossed on the second occasion per day		1	1.75
		6	1.00
		6	1.00
Any covers missing will lose points		6	1.00

Criterion A Total Mark 10.00

Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
First attempt ok		6	2.00
No second attempt needed		6	2.00
No second or third attempt needed		6	2.00
KNX		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
All buttons correct 1.0, 2 x buttons correct 0.5, 1 x button c		5	1.00
		5	0.50
		5	0.50
		5	0.50
LOGO: Motor 1 Turns Right (Clockwise when viewed from		3	0.50
Motor 1 Turns Right (Clockwise when viewed from the sha		3	0.50
Motor 1 Turns Left (Counter Clockwise when viewed from		3	0.50
Motor 1 Turns Left (Counter Clockwise when viewed from		3	0.50
		3	0.50
		3	0.50
		3	1.50
		3	1.00
		3	2.00
2 x Lamps correct 1.0, 1 x Lamp correct 0.5		3	1.00
2 x Lamps correct 1.0, 1 x Lamp correct 0.5		3	1.00
		3	0.50
		3	0.50
2Hz Flash 1.5, other frequency 0.5		3	1.50
		3	1.00

Criterion B Total Mark 25.00

Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
As per layout diagram Neutral = Black/Light Blue, Earth = green/yellow B1 control circuit 24v		2	1.00
		2	1.50
		2	1.00
		2	1.50
		4	0.50
		4	0.50
		4	1.00
		4	1.00
		4	1.00
		4	1.00
Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
10 of a possible 25 measurements selected by lottery.		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50
		5	0.50

Criterion C Total Mark 10.00

Criterion D Total Mark 5.00

No copper visible when viewed at 90 degrees and No cuts		5	1.75
		5	0.75
		5	0.75
		5	0.75
		5	0.75
		5	0.75
Deduct 1 mark for the first error and 0.5 for the second error		5	1.50
		5	0.75
		5	0.75
		5	0.75
		5	0.75
		5	1.00
Below industry standard or No attempt: Cables untidy, cables not tied			
Meets industry standard: Cables tidy, not all cable ties and not all cables tied			
Exceeds industry standard: Cables tidy, neatly stacked or bundled			
Demonstrates Excellence: Cables very neat, stacked perfectly			
		5	2.00
Below industry standard or No attempt: All cables not loomed			
Meets industry standard: Neutral and earth looms are tidy			
Exceeds industry standard: Neutrals and earths loomed neatly			
Demonstrates excellence: Neutrals and earths neatly loomed			
		5	2.00
Below industry standard or No attempt: Cables to B1 front panel not loomed			
Meets industry standard: Cables to B1 front panel are loomed			
Exceeds industry standard: Cables to B1 front panel neatly loomed			
Demonstrates excellence: Cables to B1 front panel neatly loomed			
Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
		7	1.00
		7	1.00
		7	1.00
		7	1.00

Criterion G Total Mark 10.00

		7	1.00
		7	1.00
		7	1.00
		7	1.00
		7	1.00
		7	1.00
Extra Aspect Description (Obj or Subj) OR Judgement Score Description (Judg only)	Requirement or Nominal Size (Obj Only)	WSSS Section	Max Mark
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50
		6	0.50

Criterion H Total Mark 10.00

Competition	Total Mark	100.00
-------------	------------	--------