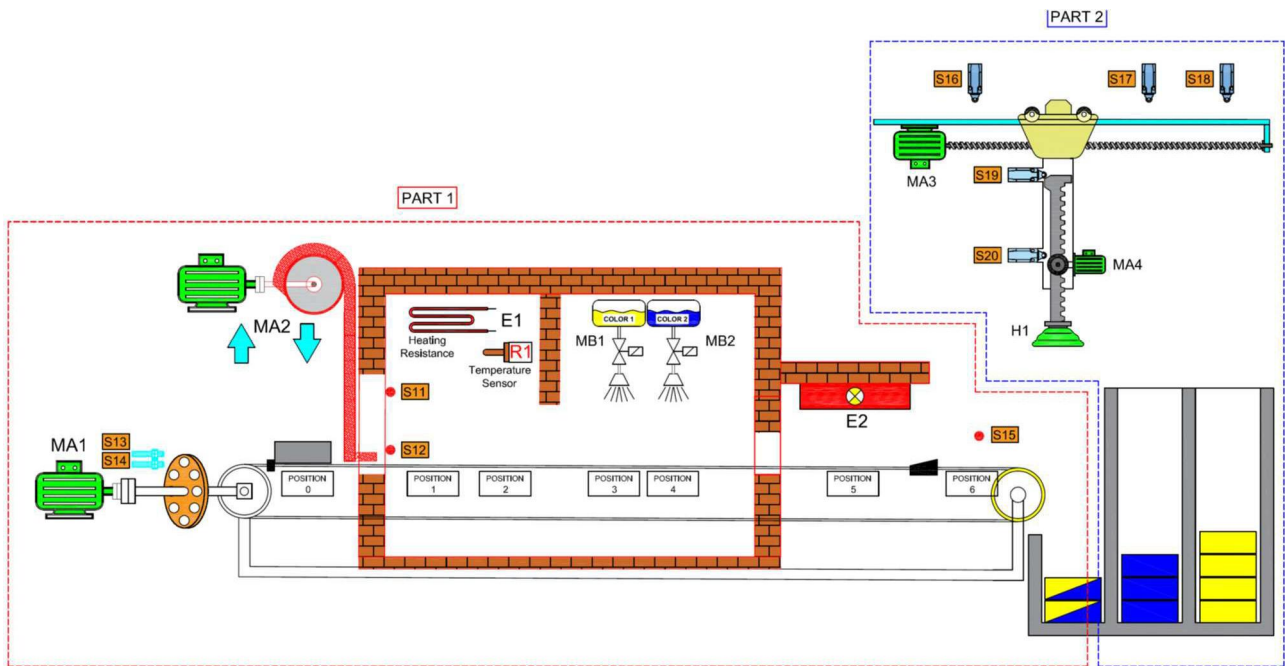


## Module 1 – Main Project

With the attached mounting layout and its electrical diagrams it is intended to simulate the operation of the following paint machine.



### Legend:

**MA1:** Belt motor

**MA2:** Door motor

**MA3:** Horizontal movement motor

**MA4:** Vertical movement motor

**MB1:** Valve for Ink Color 1

**MB2:** Valve for Ink Color 2

**E1:** Heating Resistance

**E2:** Ultraviolet Lamp

**H1:** Vacuum

**R1:** Temperature sensor

**S11:** Door Open switch

**S12:** Door Close switch

**S13:** Belt position Switch 1

**S14:** Belt position Switch 2

**S15:** Belt limit position Switch

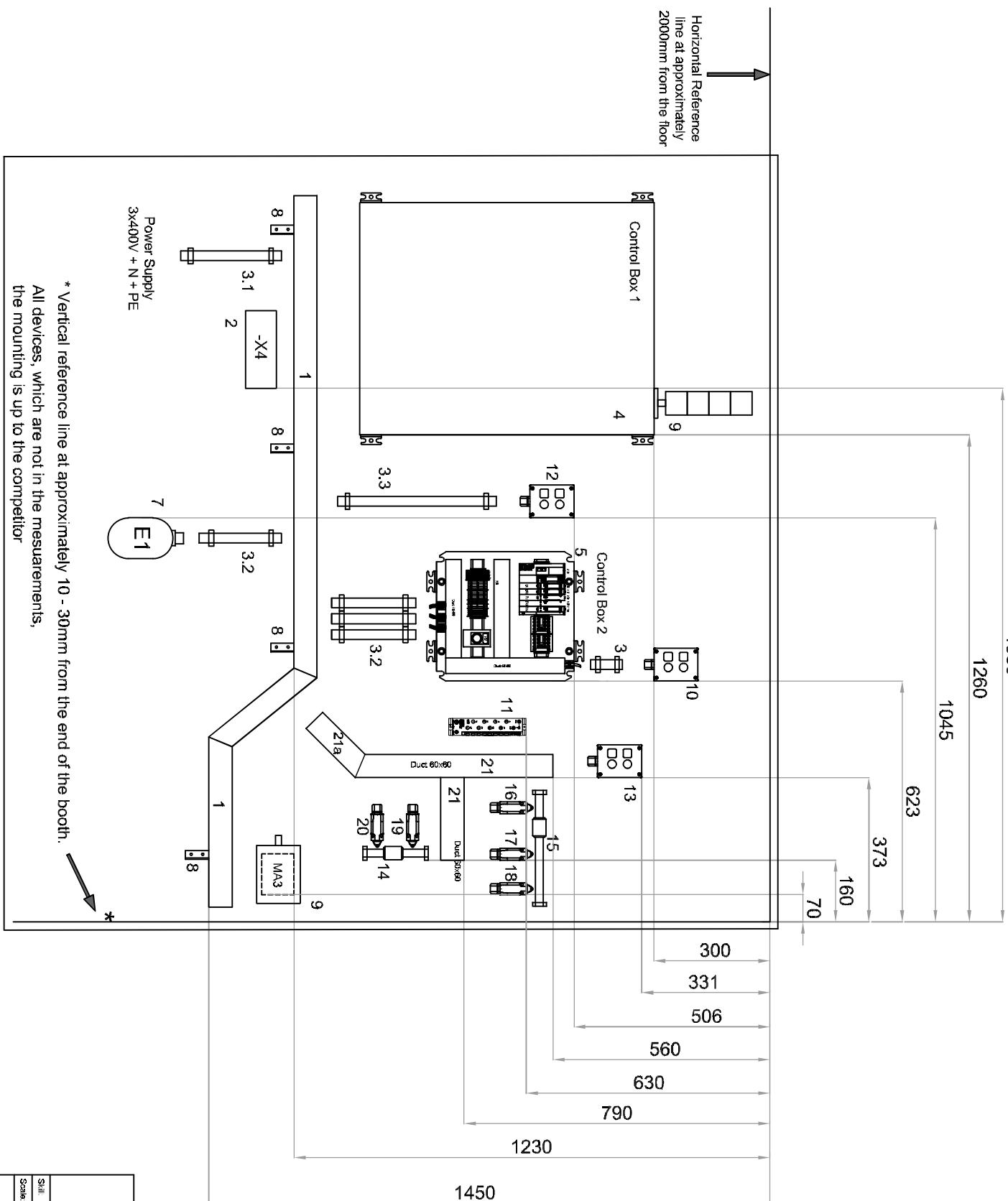
**S16:** Horizontal movement – Left position switch

**S17:** Horizontal movement – Middle position switch

**S18:** Horizontal movement – Right position switch

**S19:** Vertical movement – Upper position switch

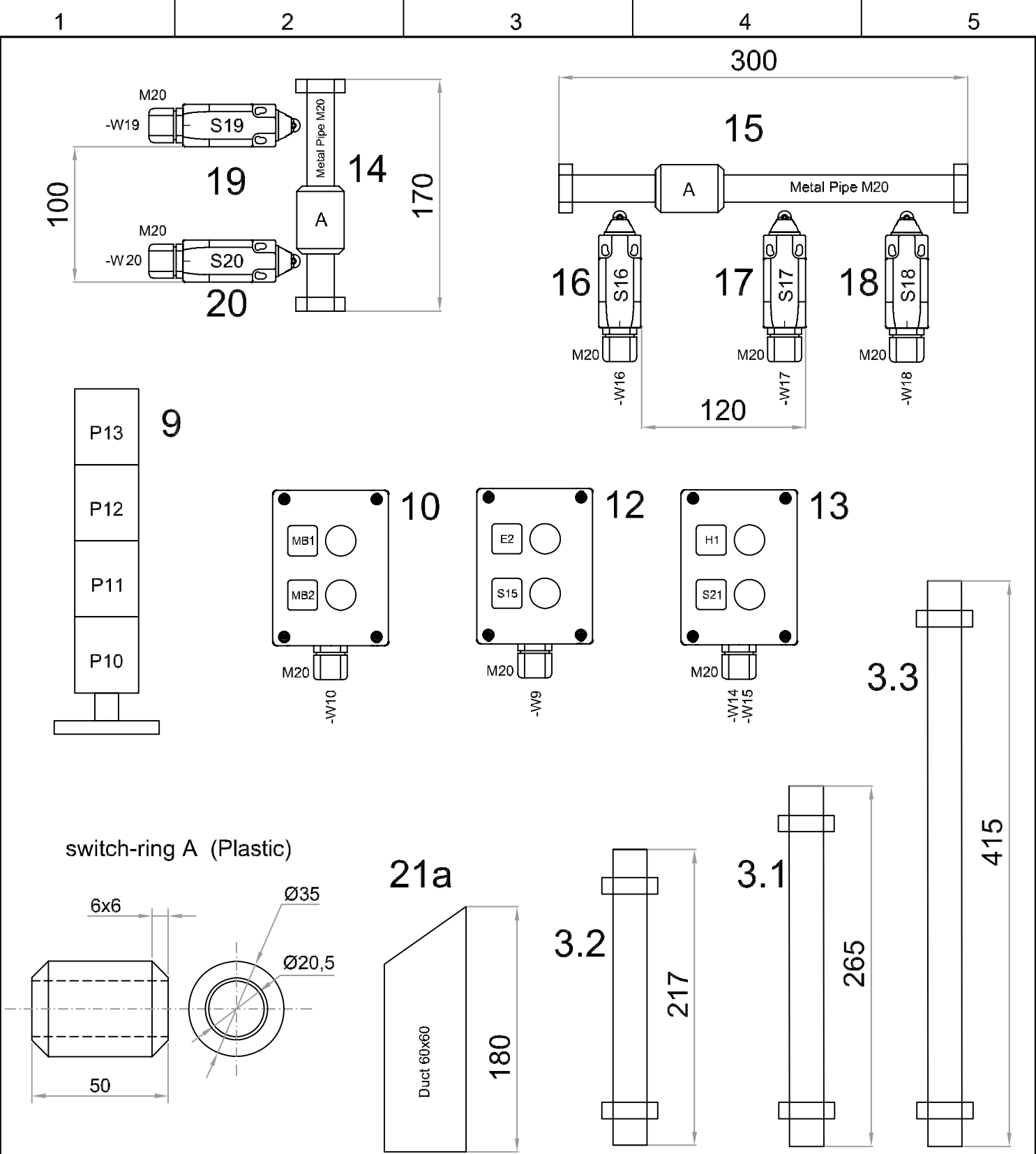
**S20:** Vertical movement – Down position switch



- 1.1 - Mesh tray
- 2 - Protective earth terminal (X4)
- 3 - Plastic tube VR20
- 3.1 - Plastic tube VR20
- 3.2 - Plastic tube VR20
- 3.3 - Plastic tube VR20
- 4 - Control Box 1 (760x600)
- 5 - Control Box 2 (only metal plate)
- 6 - Motor MA3
- 7 - Heater E1
- 8 - Wall Brackets
- 9 - Housing (P10, P11, P12, P13)
- 10 - Housing (S15, E2)
- 11 - ET200EcoPN
- 12 - Housing (MB1, MB2)
- 13 - Housing (S21, H1)
- 14 - Metal pipe ISO 20
- 15 - Metal pipe ISO 20
- 16 - Limit switch (S16)
- 17 - Limit switch (S17)
- 18 - Limit switch (S18)
- 19 - Limit switch (S19)
- 20 - Limit switch (S20)
- 21 - Duct 60x60mm
- 21a - Duct 60x60mm

WALL INSTALLATION  
NOT ALL IN SCALE

Skill: Industrial Control			
Scale: 1 / 10		Page: A3	
Description: Module 7 - Plant Project		Drawing No:	Page: 1 / 13
Rev:			



Skill: Industrial Control

Scale:

Paper: A3

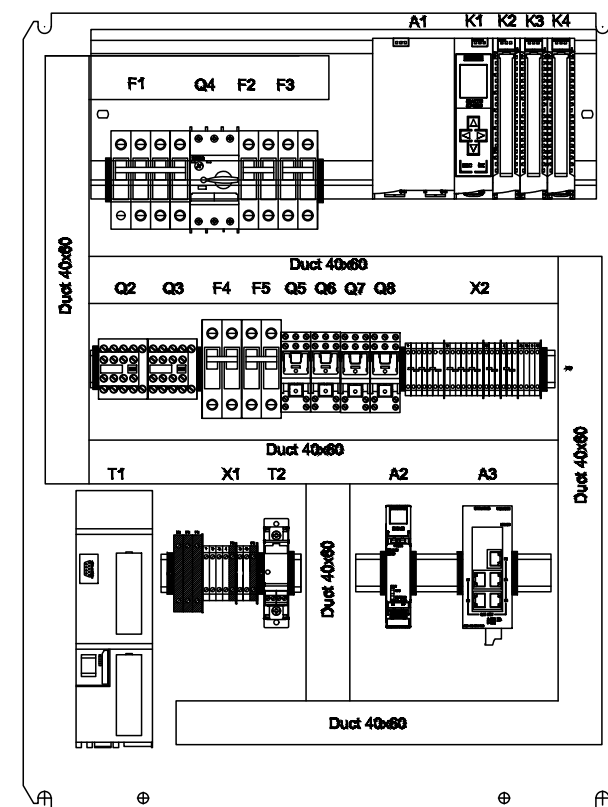
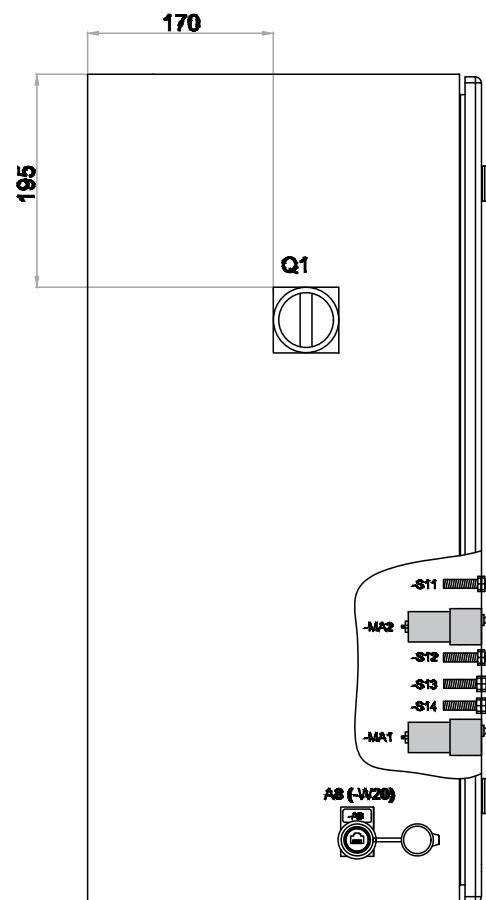
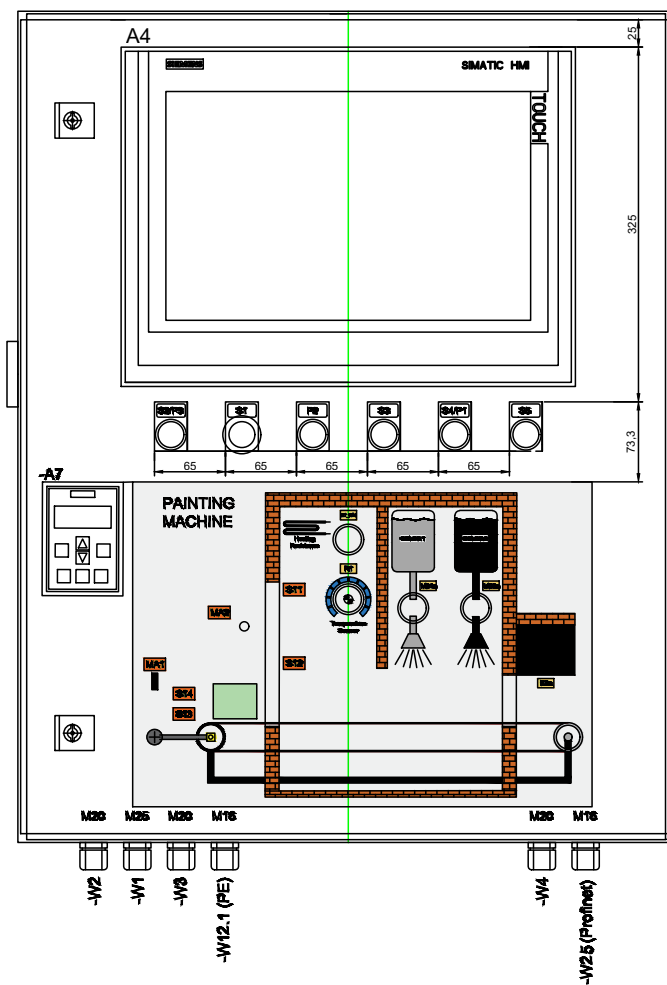
Drawing No:

Description: Module 1 - Main Project

Rev:

Page: 2 / 13

**Pos.4**



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Skill: Industrial Control

**Scale:**

Date: 20-02-2020

Paper: A3

Drawn / Design by: Adeline Santos PT

**Description: Module 1 - Main Project**

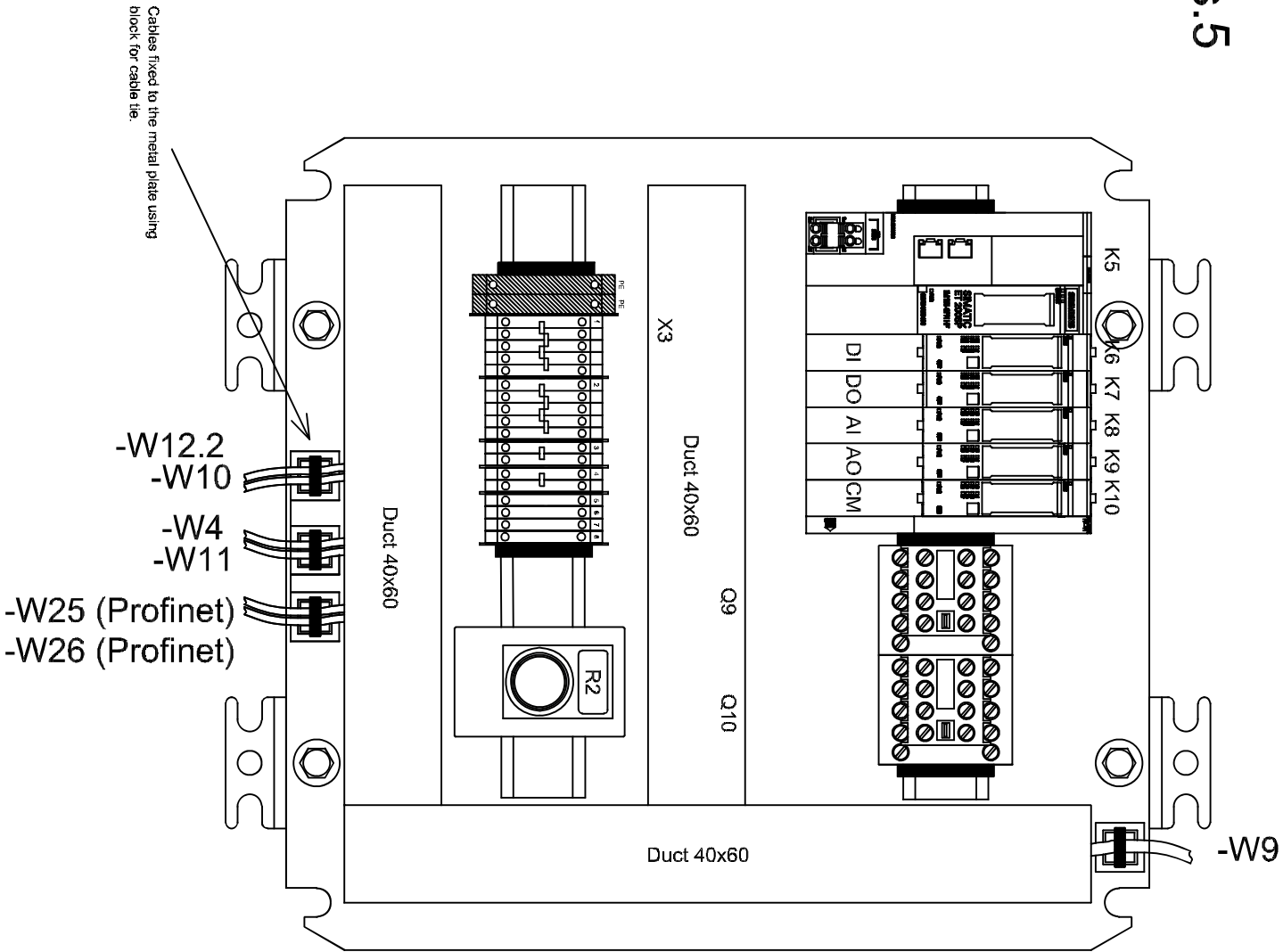
### Control Box 1

Drawing No:

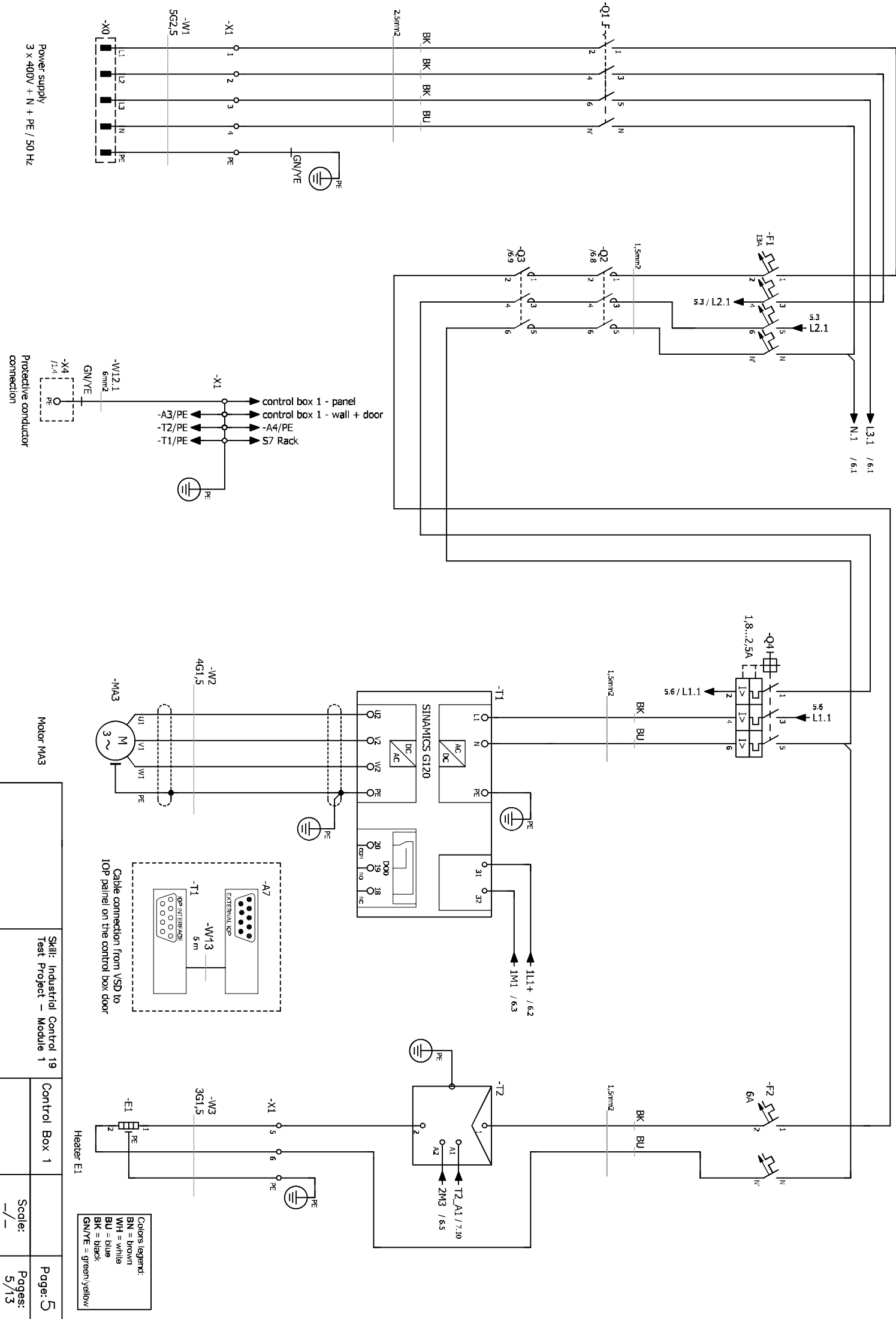
	<b>Rev:</b>
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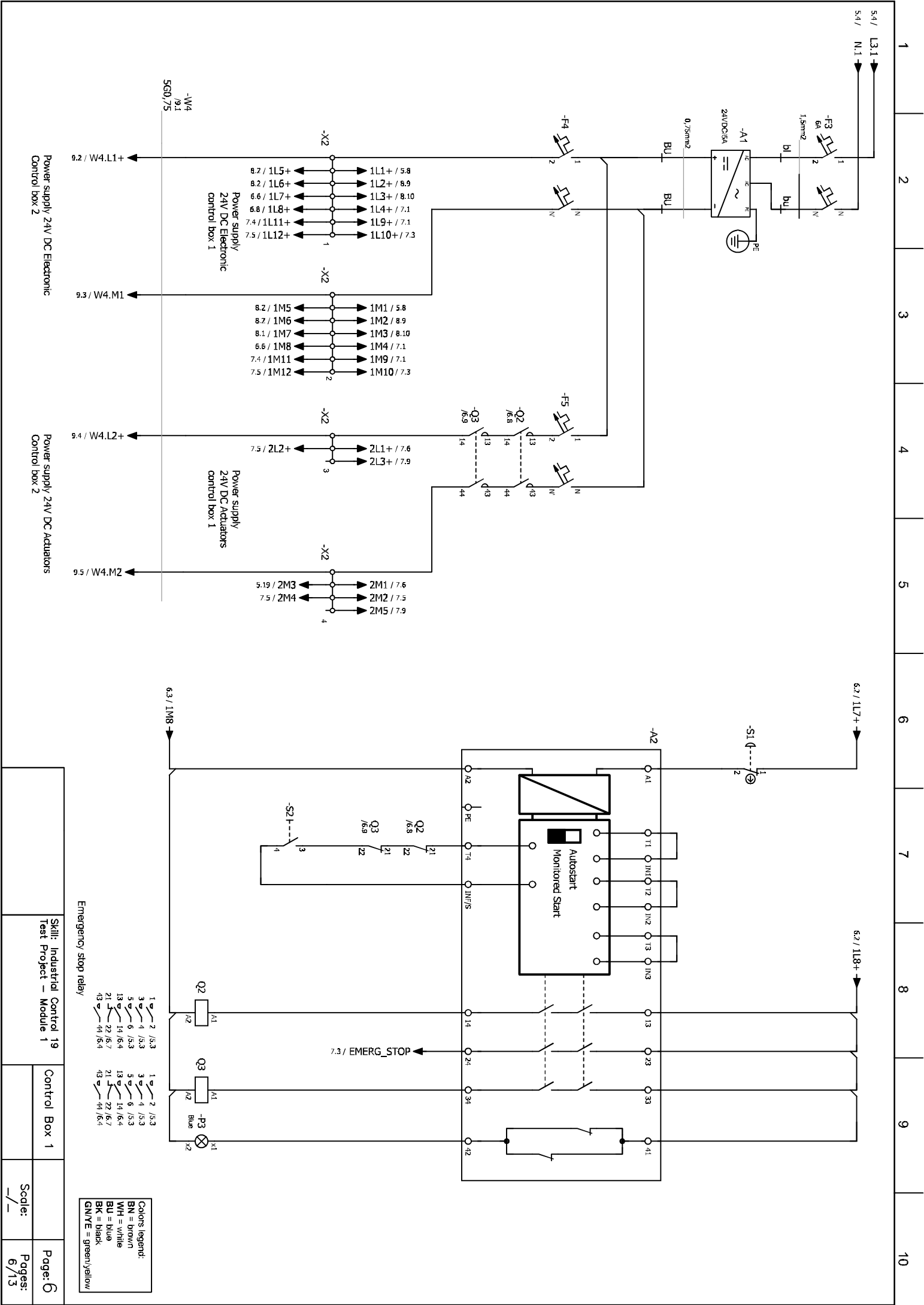
Page: 3 / 13

Pos.5



Skill: Industrial Control			Control Box 2	
Scale:		Paper: A3	Drawing No:	
Description: Module 1 - Main Project			Rev:	Page: 4 / 13



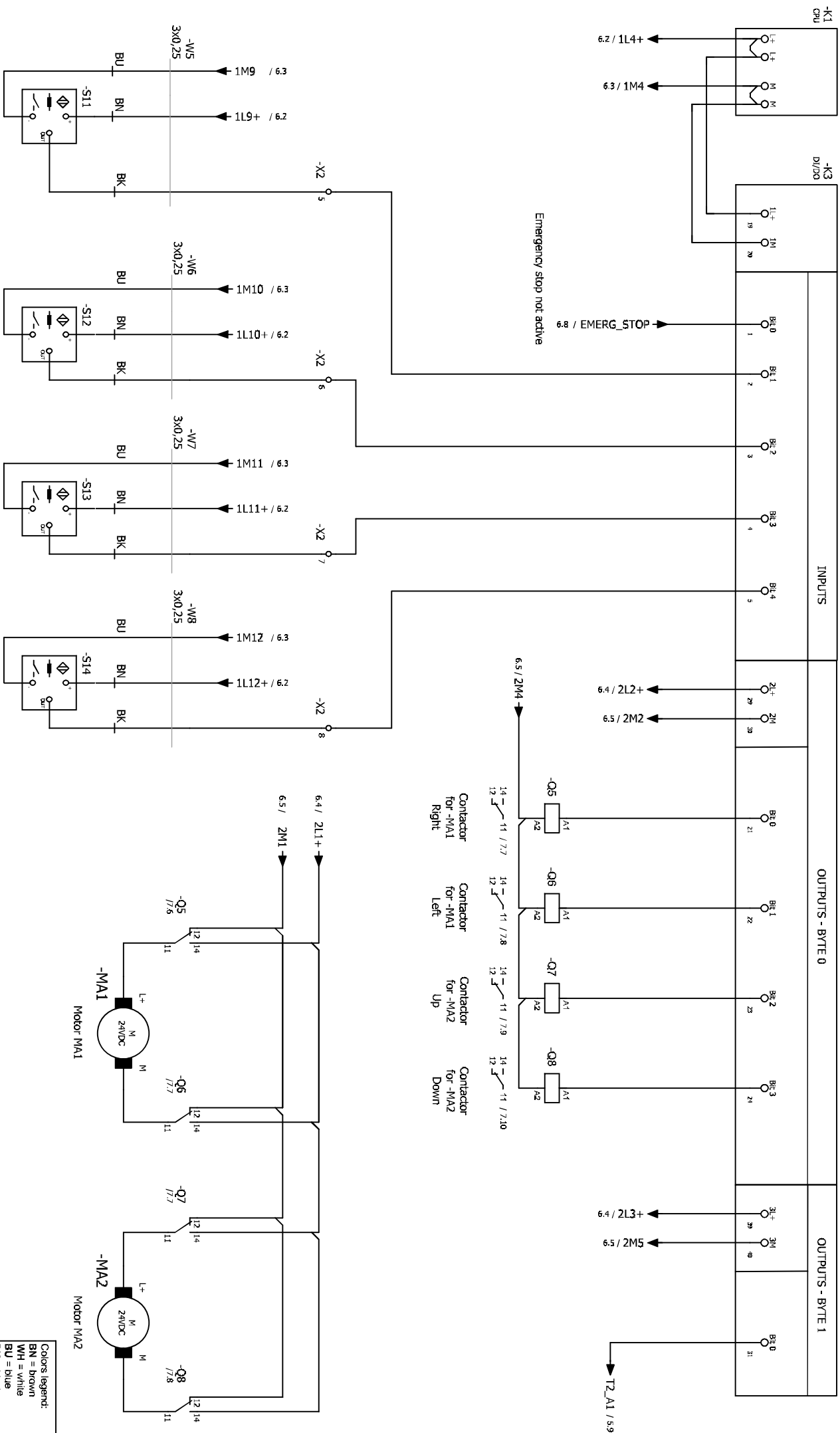


Colors legend:  
BN = brown  
WH = white  
BU = blue  
BK = black  
GNVE = green/yellow

## PLC 24VDC Supply

## PLC Digital Inputs

## PLC Digital Outputs



S11 - Inductive Sensor

S12 - Inductive Sensor

S13 - Inductive Sensor

S14 - Inductive Sensor

Skill: Industrial Control 19  
Test Project – Module 1

Control Box 1

Scale: -/-

Page: 7  
Pages: 7/13

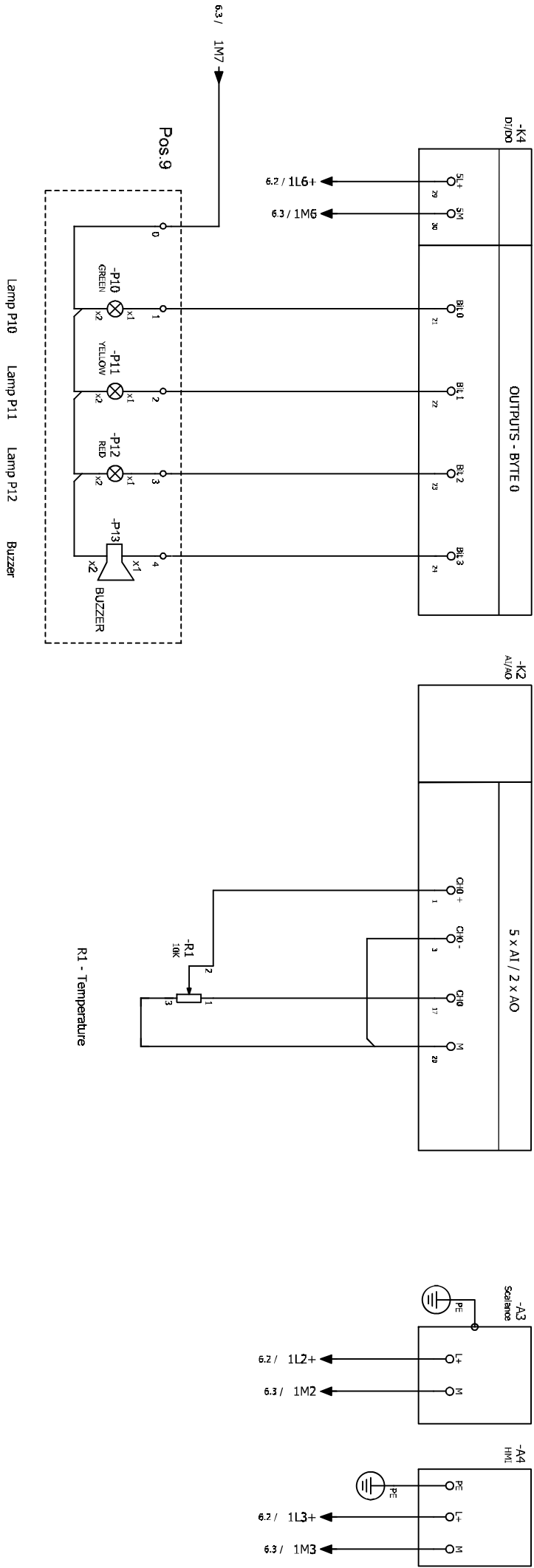


PLC Digital Outputs

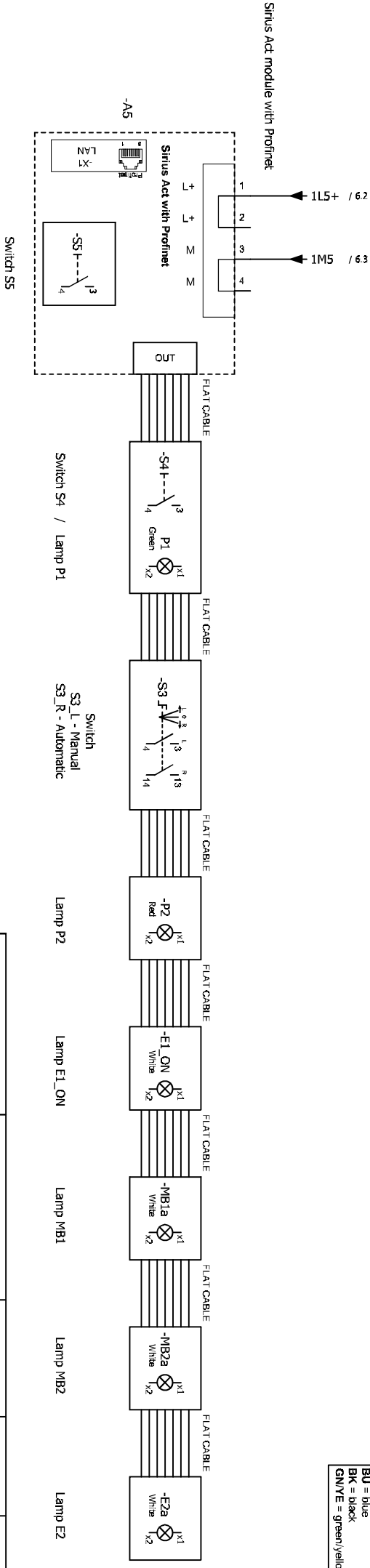
PLC Analog Outputs

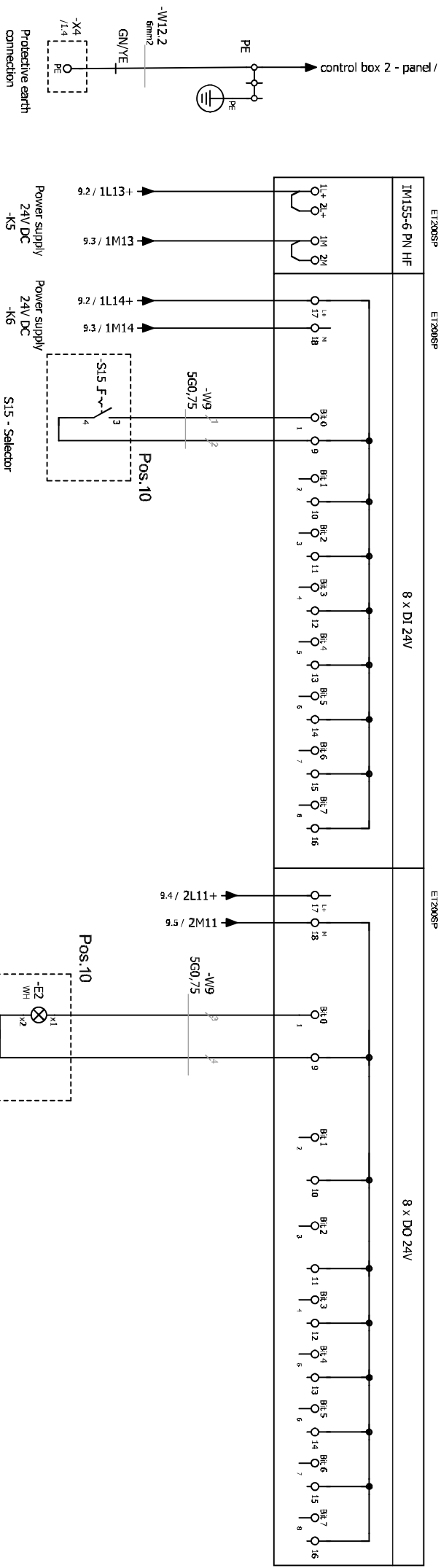
Scaleance 24VDC Supply

HMI 24VDC Supply

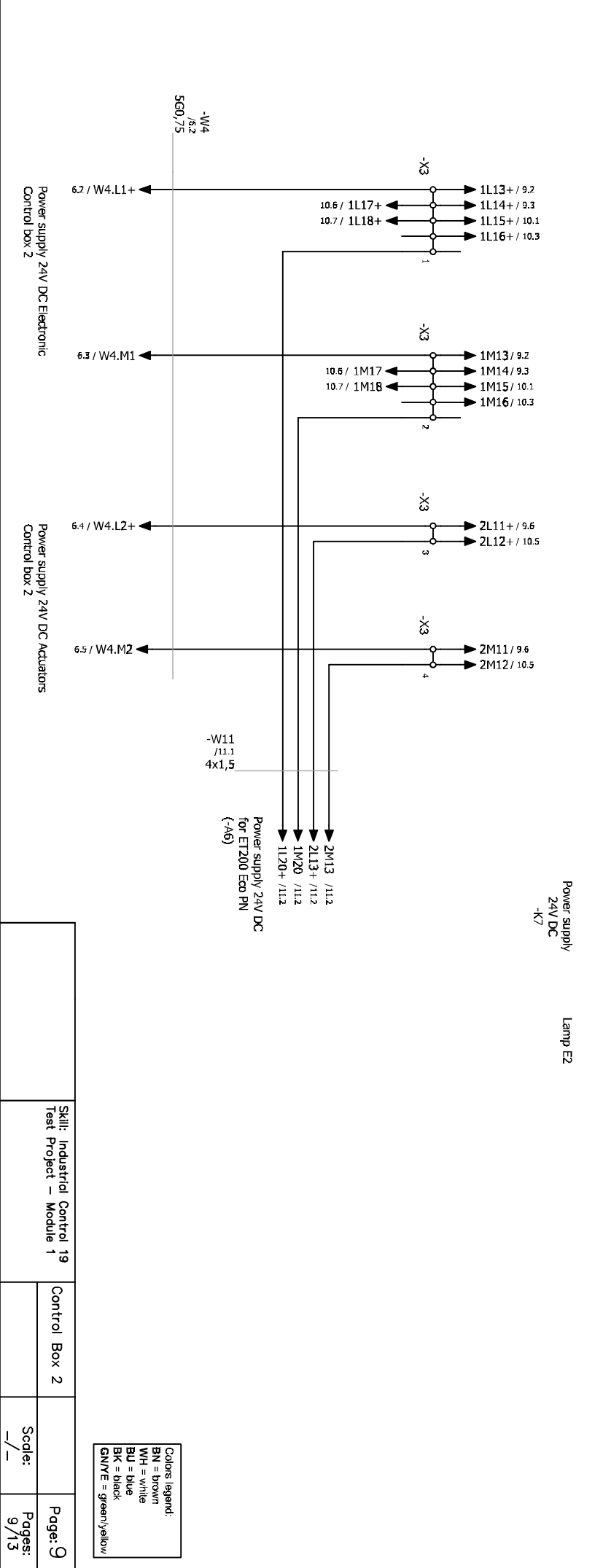


Colors legend:  
BN = brown  
WH = white  
BU = blue  
BK = black  
GNVE = green/yellow





Colors legend:  
 BN = brown  
 WH = white  
 BU = blue  
 BK = black  
 GN/YE = green/yellow



-K8  
ET200SP

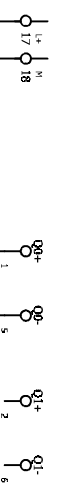
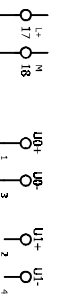
-K9  
ET200SP

-K10  
ET200SP

2 x AI-U

2 x AQ-U

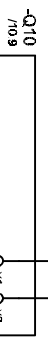
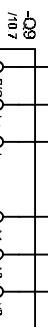
IO-Link Master



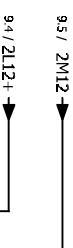
Power supply 24V DC  
-K8

Power supply 24V DC  
-K9

Power supply 24V DC  
-K10

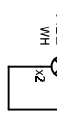
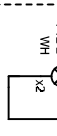
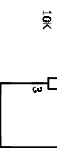


FLAT CABLE



Pos. 5

Pos. 12



Colors legend:  
BN = brown  
WH = white  
BU = blue  
BK = black  
GN/YE = green/yellow

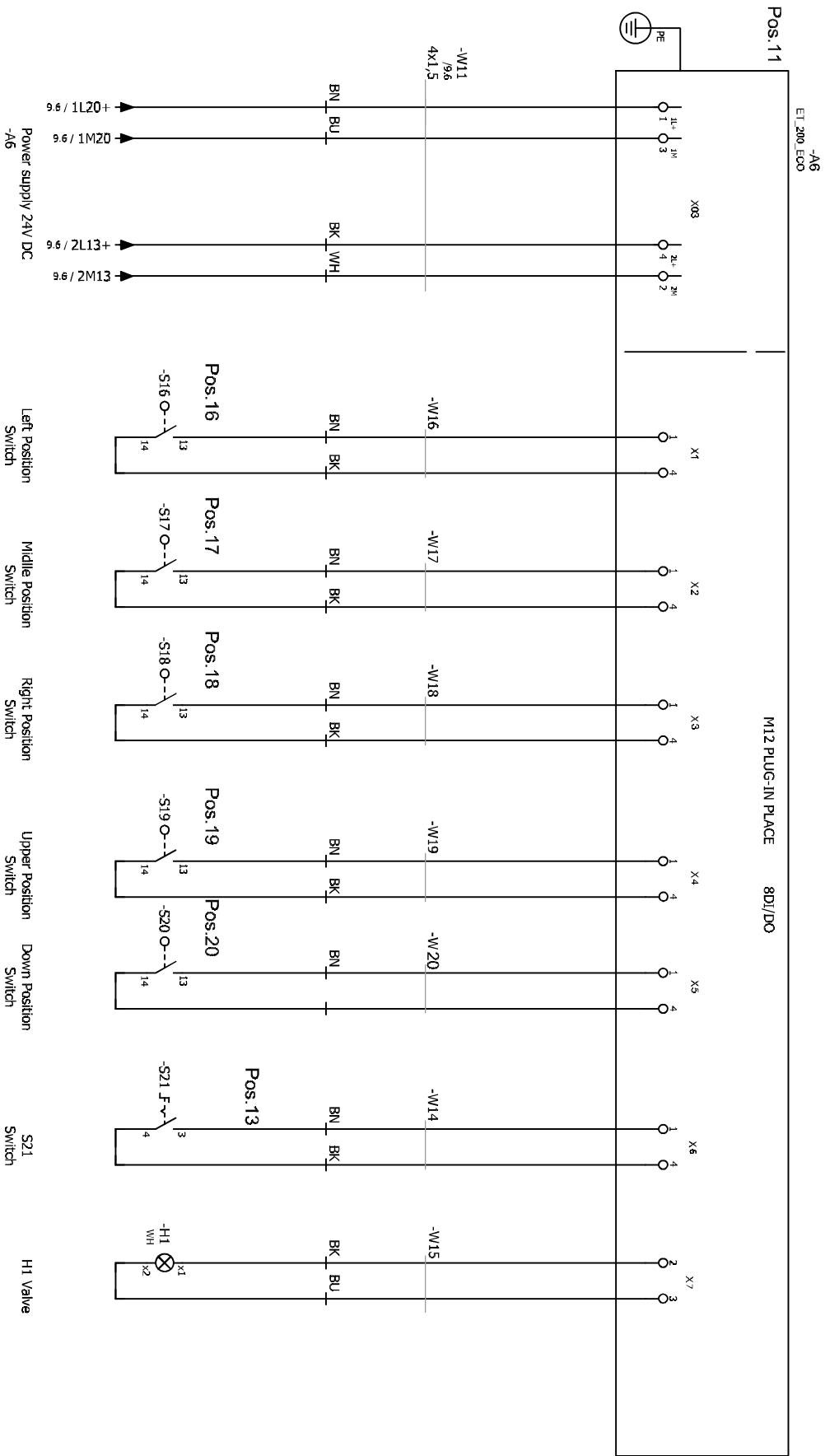
R2 - Potencíometer

Skill: Industrial Control 19  
Test Pro ect – Module 1

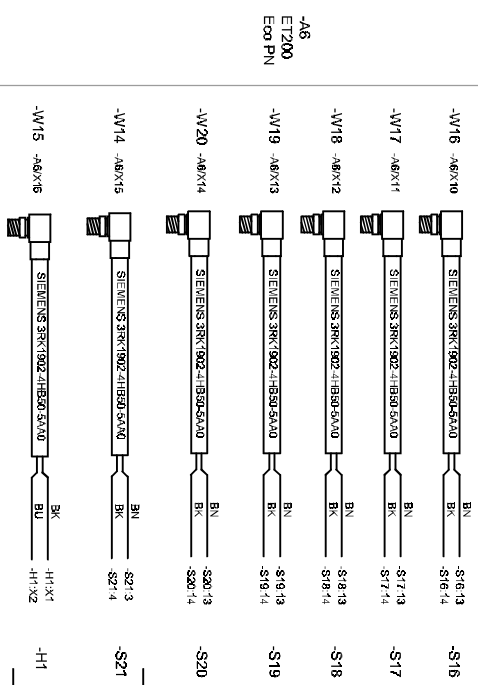
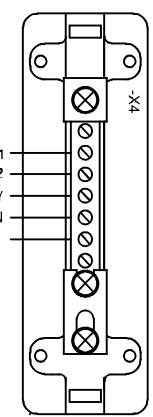
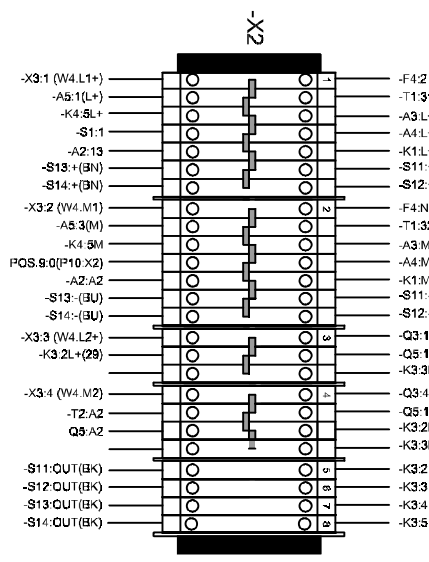
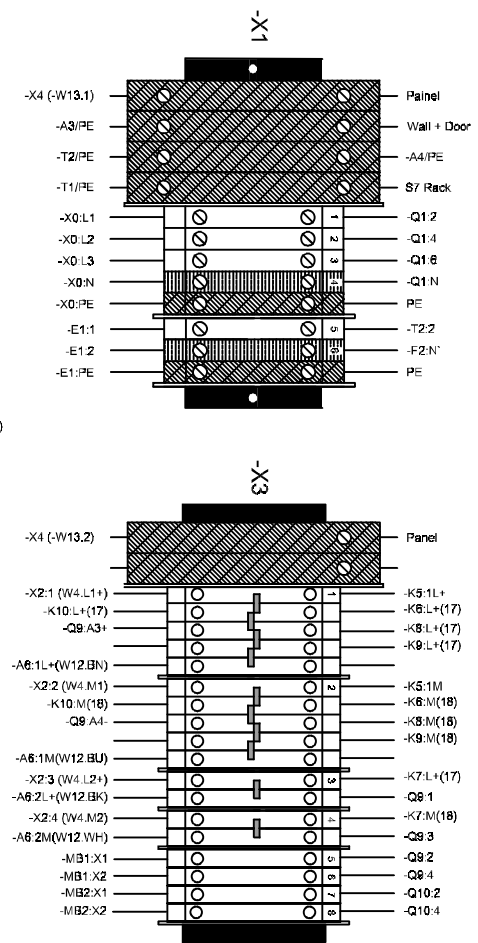
Control Box 2

Scale: -/-

Page: 10  
Pages: 10/13



Colors legend:  
BN = brown  
WH = white  
BU = blue  
BK = black  
GN/YE = green/yellow



Colors legend:  
BN = brown  
WH = white  
BU = blue  
BK = black  
GY/YE = green/yellow  
GY = Gray

CABLE NUMBER	ORIGIN	CABLE TYPE	DESTINY
--------------	--------	------------	---------

-W13	-A7		
-W11	-X3 Control Box 2	SIEMENS 6XV1801-5DH50	-A6 ET200 Eco PN X03
-W10	-X3 Control Box 2	QI FLEX CLASSIC 110 500/75 mm <sup>2</sup>	-A6 ET200 Eco PN X03
-W9	-K6 / -K7 Control Box 2	QI FLEX CLASSIC 110 500/75 mm <sup>2</sup>	-S15 / -E2 Pos. 10
-W8	-K3 Control Box 1	Sensor Cable	-S14
-W7	-K3 Control Box 1	Sensor Cable	-S13
-W6	-K3 Control Box 1	Sensor Cable	-S12
-W5	-K3 Control Box 1	Sensor Cable	-S11
-W4	-X2 Control Box 1	QI FLEX CLASSIC 110 500/75 mm <sup>2</sup>	-X3 Control Box 2
-W3	-X1 Control Box 1	QI FLEX CLASSIC 110 500/75 mm <sup>2</sup>	-E1 Heater
-W2	-T1 Control Box 1	QI FLEX CLASSIC 110 500/75 mm <sup>2</sup>	-A4 Motor
-W1	-X0 Power Supply Socket	H07VV-F 5G2.5	-X1 Control Box 1

