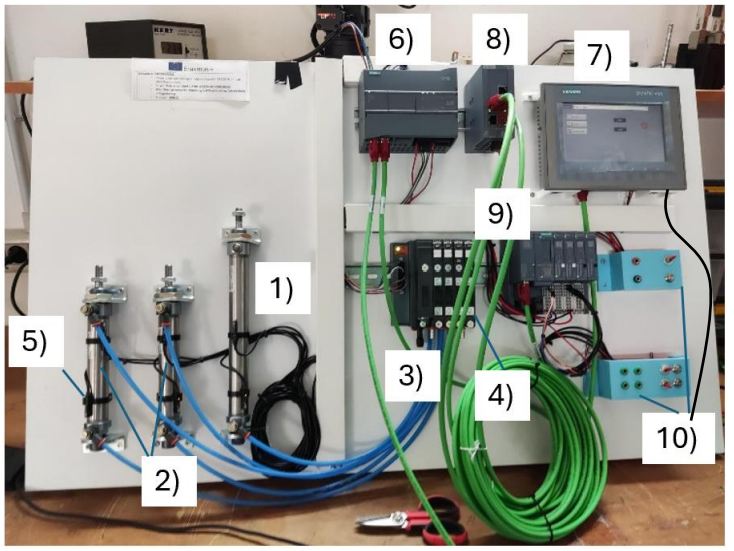
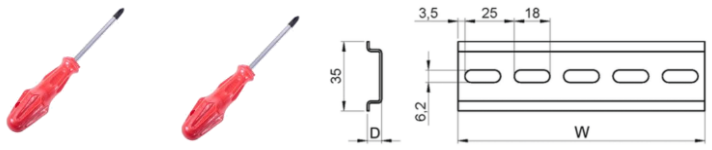
List of Parts



1. n.1 Single acting pneumatic cylinder;
2. n.2 Double acting pneumatic cylinder
3. n.3 5/2 (five ways, two positions) pneumatic valve with electrical actuation
4. n.1 2x3/2 (double three ways/two positions) pneumatic valve with electrical actuation
5. n.6 magnetic reed (sensor for the end-stroke cylinder acquisition)
6. n.1 Siemens PLC of type 1215C
7. n.1 Siemens HMI of type Comfort Basic
8. n.1 Hub switch Simatic
9. n.1 SIMATIC ET 200SP
10. n.2 3D printed parts; push-button, power supply and IN-Out devices
11. Planar board
12. n.5 Pneumatic Flow regulator

List of Tools



1. n.2 Screw driver, Philips and FlatHead;
2. n.32 Screw
3. n.3 Din 35mm guide (W=25 cm)

Procedure

1. Step 1: Screw the 3D printed parts (Fig 1) in their desidered position onto the board;
2. Step 2: Screw all the parts in their desidered position onto the board;
3. Step 3: Install the flow regulator to the cylinder and connect the pneumatic valves following the Fig. 2;
4. Step 4: Connect the parts 6, 7, 8 and 9, following the Fig.3
5. Step 5: Connect the parts 6 following the Fig.4
6. Step 6: Connect the part 9, following the Fig.5

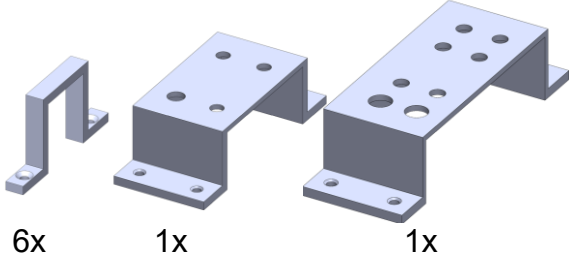


Fig 1

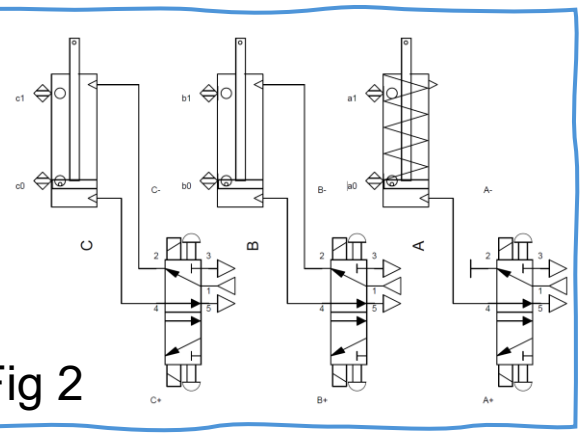


Fig 2

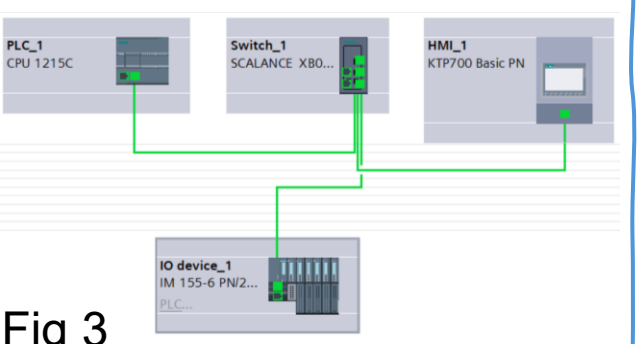
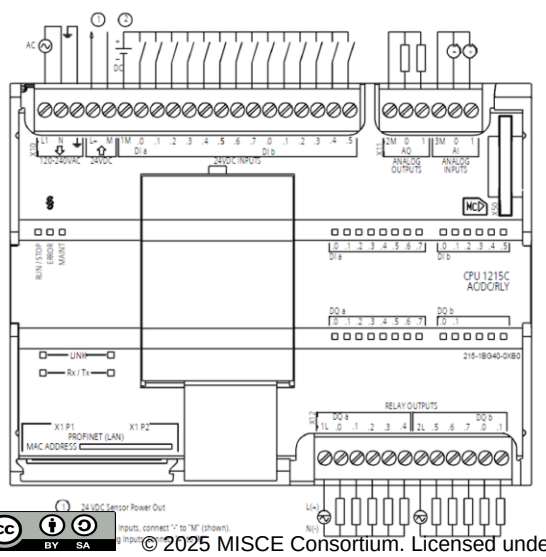


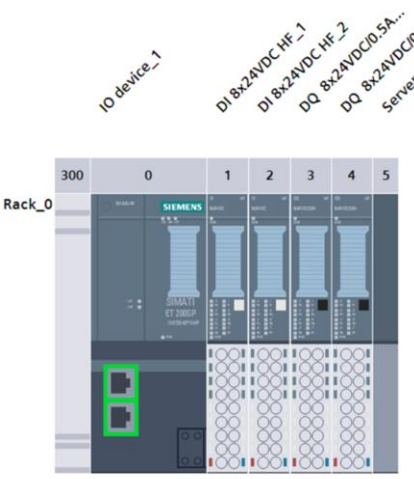
Fig 3



Sensor	Input
a_0	DIa.0
a1	DIa.1
b_0	DIa.2
b_1	DIa.3
c_0	DIa.4
c_1	DIa.5
PB_1	DIa.6
PB_2	DIa.7

Com	Output
A+	DQa.0
B+	DQa.1
B-	DQa.2
C+	DQa.3
C-	DQa.4

Fig 4



Button	Input
PB_1	DI1.0
PB_2	DI1.1
PB_3	DI1.2
PB_4	DI1.3

Fig 5