## List of Parts
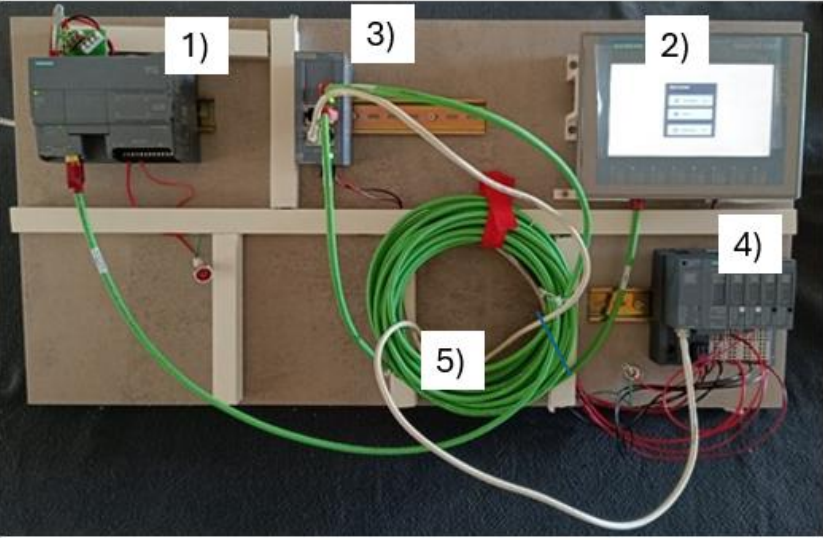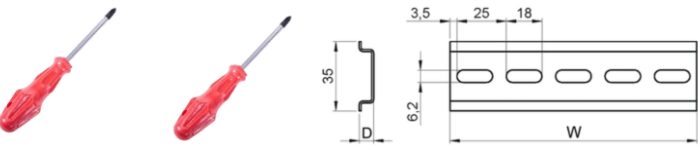


1. n.1 Siemens PLC of type 1215C;
2. n.1 Siemens HMI of type Comfort Basic;
3. n.1 Hub switch Simatic;
4. n.1 SIMATIC ET 200SP;
5. n.2 Ethernet cable for PLC/PC communication;

## 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 4: Connect the parts 1, 2, 3 and 4, following the Fig.2
4. Step 5: Connect the parts 1 following the Fig.3
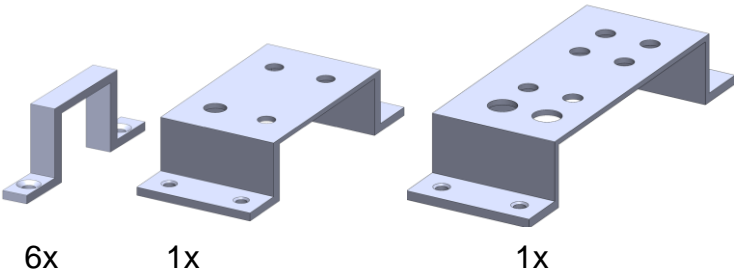5. Step 6: Connect the part 4, following the Fig.4



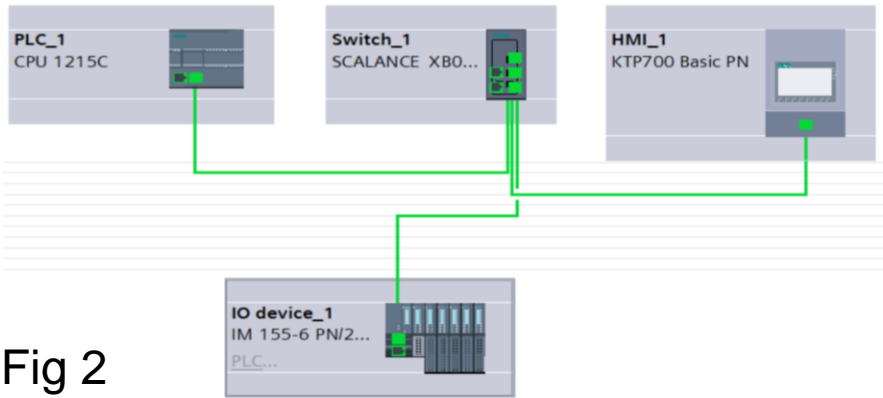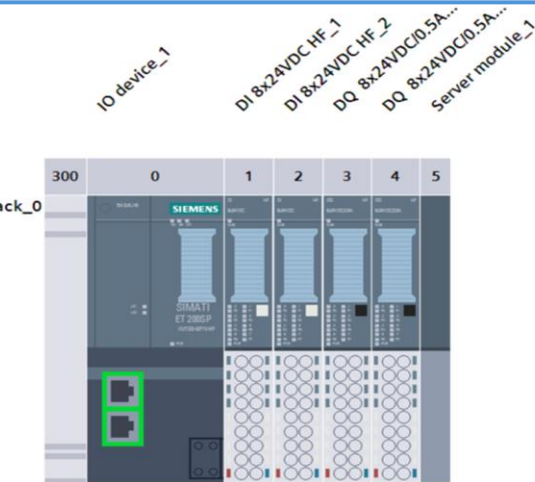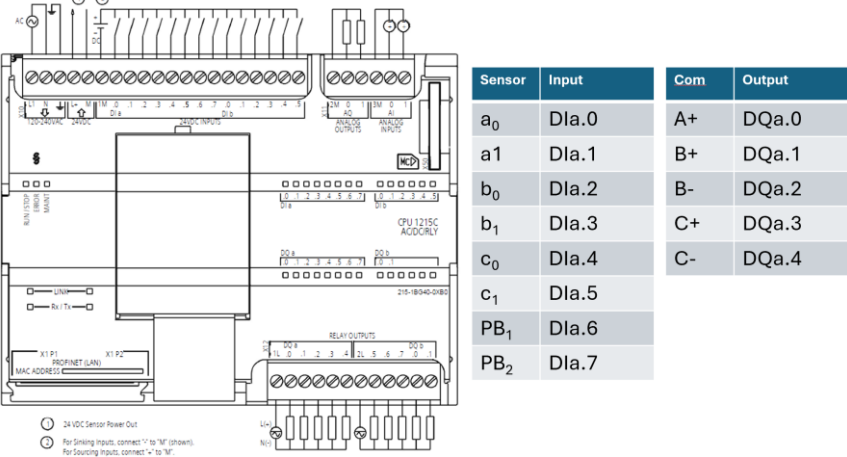6x       1x            1x

Fig 1



Fig 2



| Sensor | Input | Com | Output |
|--------|-------|-----|--------|
| $a_0$ | DIa.0 | A+ | DQa.0 |
| a1 | DIa.1 | B+ | DQa.1 |
| $b_0$ | DIa.2 | B- | DQa.2 |
| $b_1$ | DIa.3 | C+ | DQa.3 |
| $c_0$ | DIa.4 | C- | DQa.4 |
| $c_1$ | DIa.5 | | |
| $PB_1$ | DIa.6 | | |
| $PB_2$ | DIa.7 | | |



Fig 4

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