G3 : Je rédige et archive différents documents professionnels (e-mails, supports de présentations, comptes rendus, rapports ...) établis dans différentes langues (Français, Anglais, Espagnol, Chinois, etc ...)

Différentes preuves permettant de validé cette compétences :

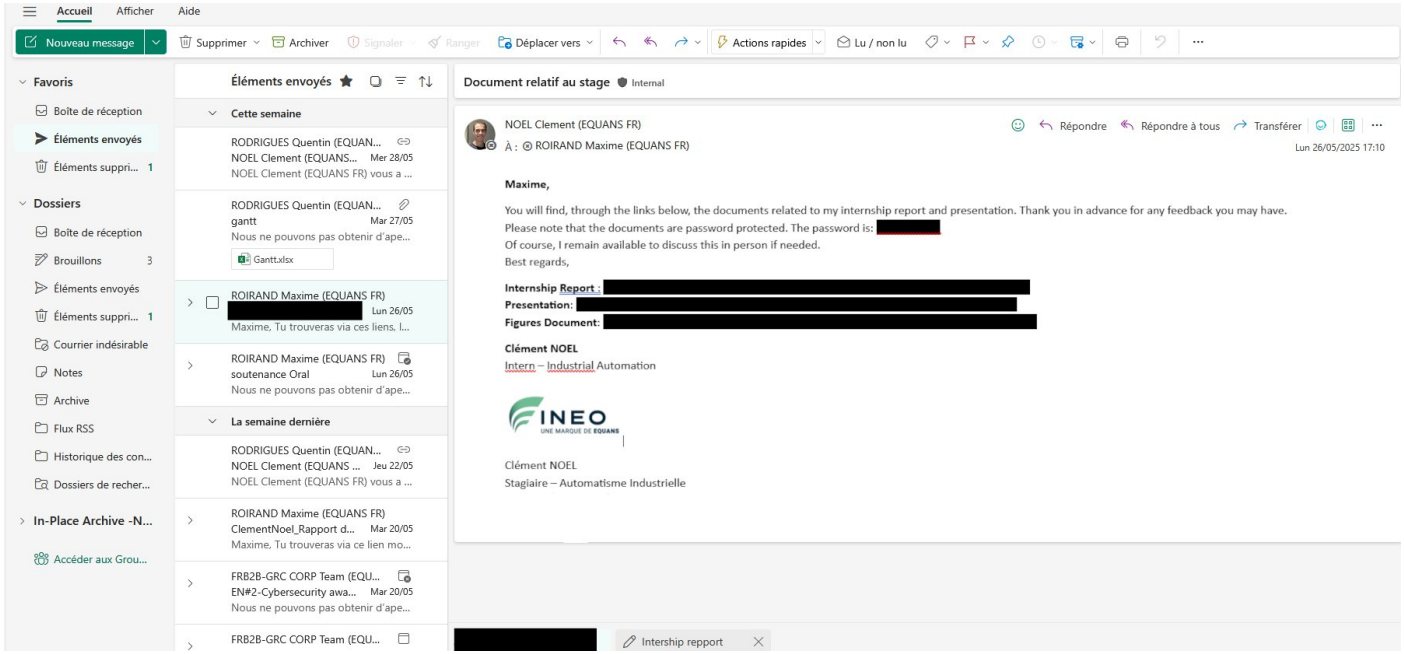
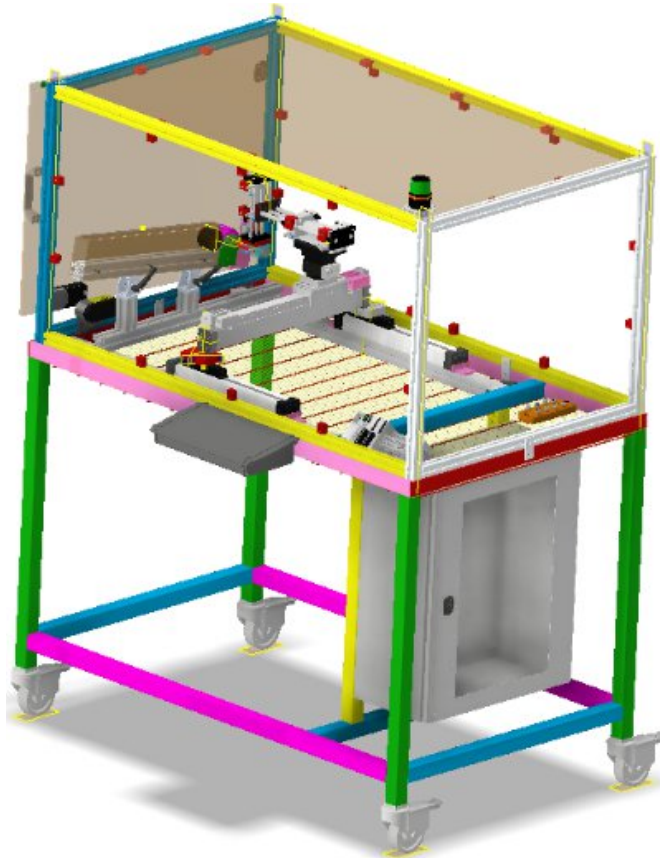


Fig1 : Mail en anglais envoyé à mon maître de stage dans le cadre des échanges sur mon rapport de stage.

Dans le cadre de mon BTS, j’ai dû rédiger ma présentation de fin de projet de deuxième année en anglais :

2022 Project

Napkin Ring Sorting Machine



Machine Overview

Function 5-6 (Communication)

System Functions		Description	PC	PO	Etudiants Marmande
Making the system mobile All students participate in the design of the lower chassis	Function 1 Bringing parts and entering the transfer area Chassis	Chargeur pièce Ouverture fermeture Pince Avancer Pince	Electric/tire diagram Sensor Layout Cabling Programming	Lower Chassis Define Product Charger	Alexis Antoine
	Function 2 Moving the Gripper	-Vérin guidé (horizontalement et verticalement) 2 ILS OTB	Electric/tire diagram Sensor Layout Cabling Programming	Drawing the two cylinders Gripper (gripper, jaw) OTB (Implementation)	Nicolas
	Function 3 Move gantry to sorting area	Deux vérins parallèles 2 ILS 1 Distributeur	Electric/tire diagram Sensor Layout Cabling Programming	Drawing two rodless cylinders	Romain
	Function 4 Turn the clamp and sort the workpiece	1 vérin rotatif		Drawing Rotary Clamp	
	Function 5 Secure the operation of the system And Process Data Upper Chassis	Carter API + Switch + com IHM Remplacement de toutes les entrées par des cellules IO link	Electrical scheme Sensor Layout Cabling Sistema Study Implementation of security features Network configuration Programming	Upper frame (profiles, polycarbonate, doors)	Nathan
	Function 6 Communicate	HMI + ARU + light column + Installation of elements on the console	Electrical scheme Layout of the elements Cabling Sistema Study Network configuration Programming	Assembly (Ihm, light column, lectern)	Clément

MOE/MOS

230V alternatif

ELEC

6 bars

AIR

Chargeur

Unsorted napkin ring

Napkin ring sorting

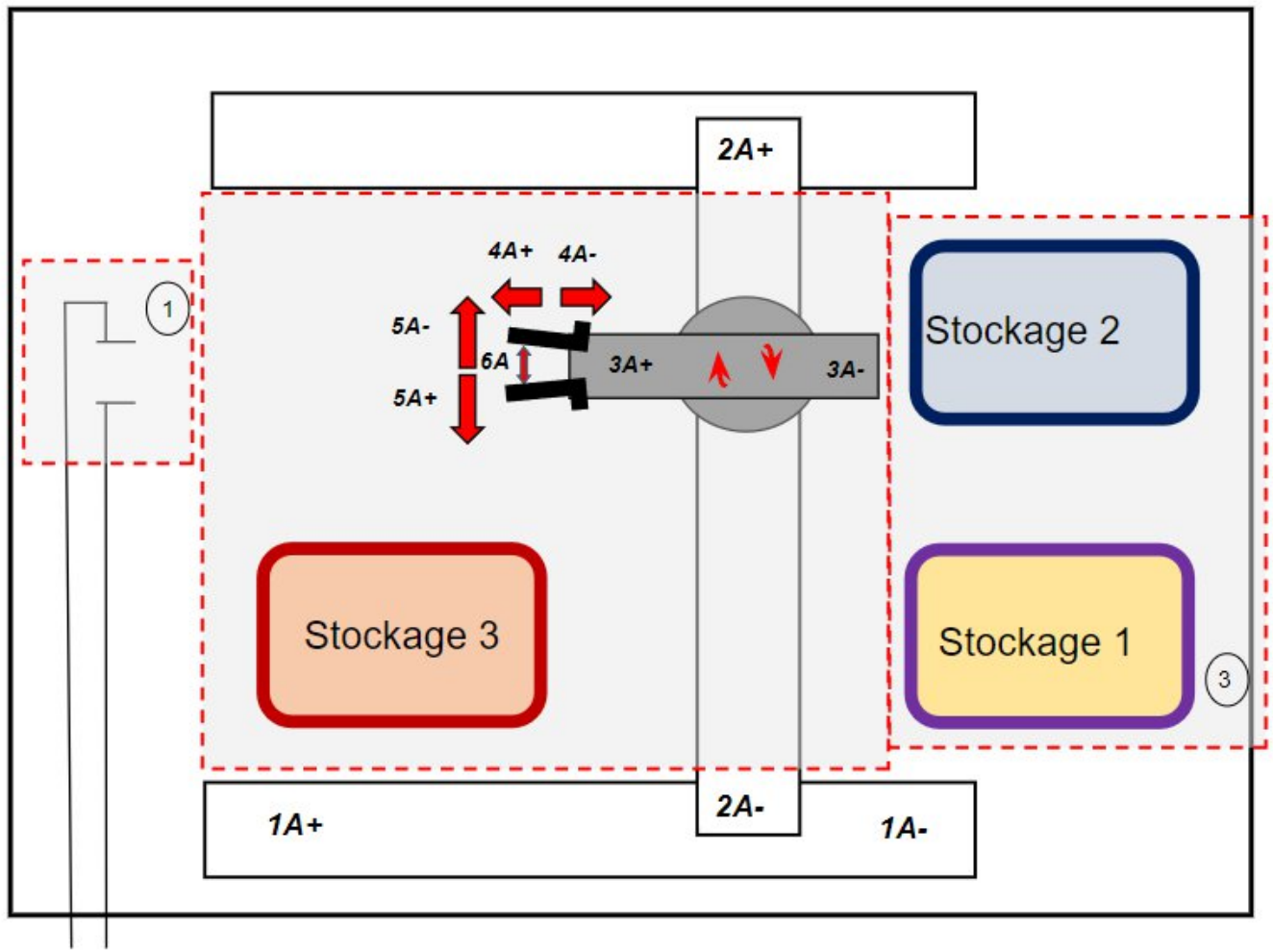
BAC 1

BAC 2

Dechets

Sorted napkin ring

Projet Langon : Tri de rond de serviette.



ZONE :

1 - Attente prise.

2 - Zone de transfert.

3 - Dépose.

ACTIONNEUR :

1A- Déplacer axe sur Y-

1A+ Déplacer axe sur Y+

2A+ Déplacer axe sur X+

2A- Déplacer sur X-

3A+ Tourner pince (radian)

3A-Tourner pince (horaire)

4A+ Avancer Pince

4A- Reculer Pince

5A+ Monter pince

5A- Descendre pince

6A Fermer Pince

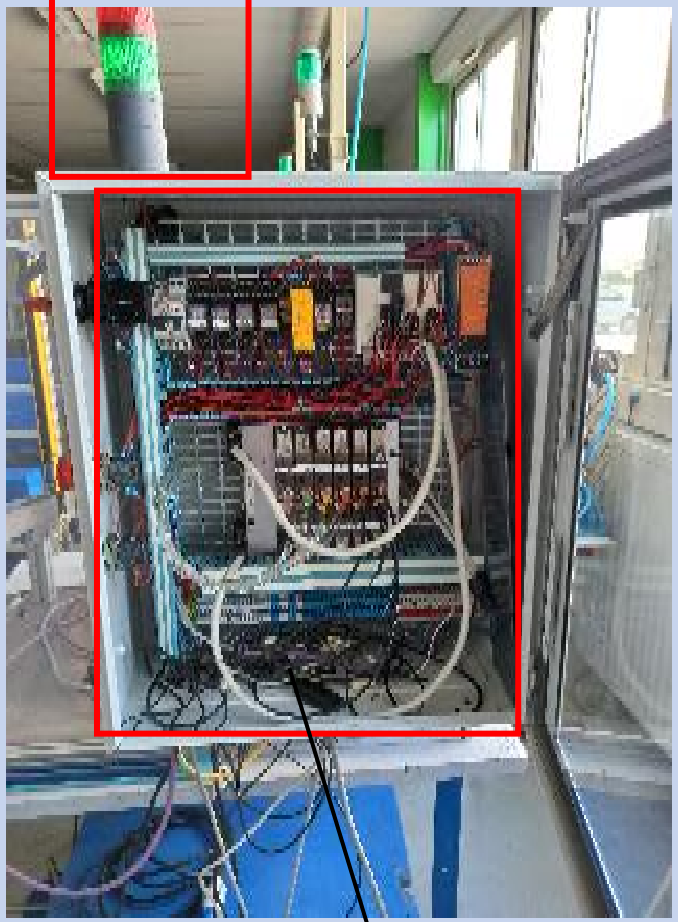
STOCKAGE :

1 : Rond de serviette type 1
2 : Rond de serviette type 2
3 : Déchet et non valable

État du système à sa réception en octobre 2021.

Armoire 1 (Elec et pneumatique)

Unwired column and customer-desired change (column change)



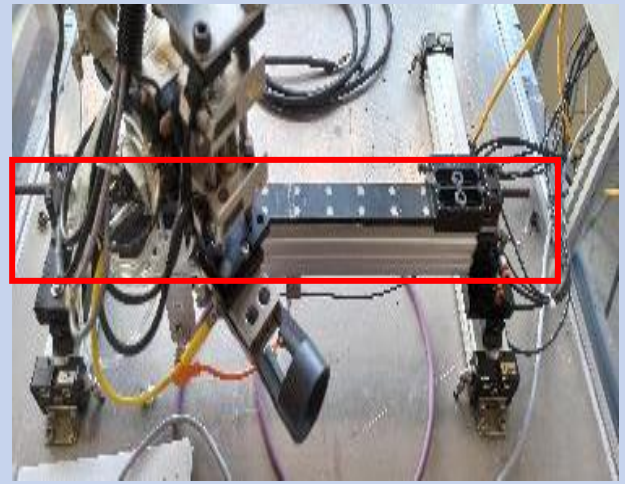
Safety wiring not wired (ARU), link between the M221 and the faulty HMI (refurbishment required)

Armoire 2 (Elément de communication)

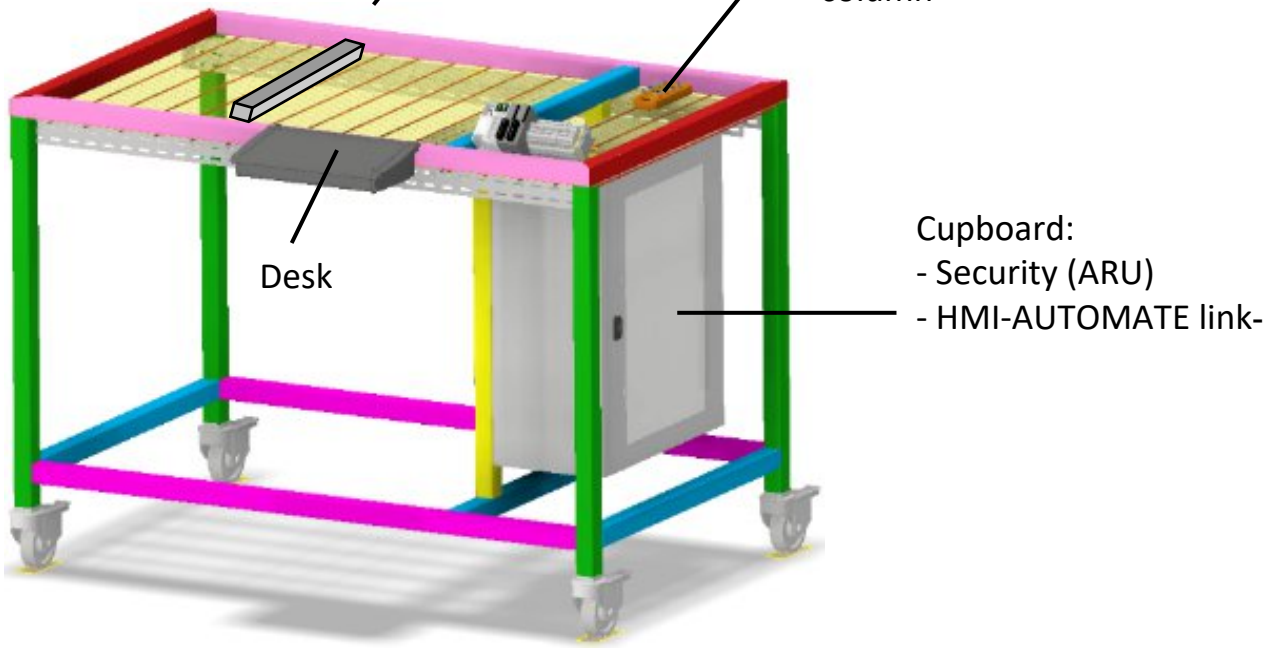
Retrofitted to the secondary cabinet (-Removal of the secondary cabinet for wiring facilitation -Reprogramming of the ihm)

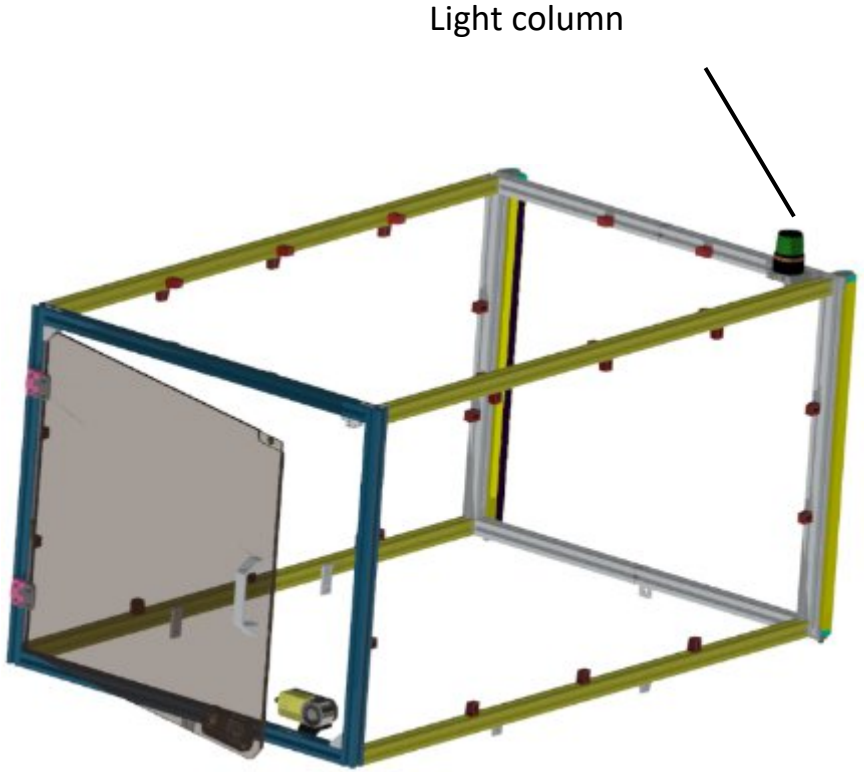
Zone Opérative

Unwired Actuator (Refurbishment Request)



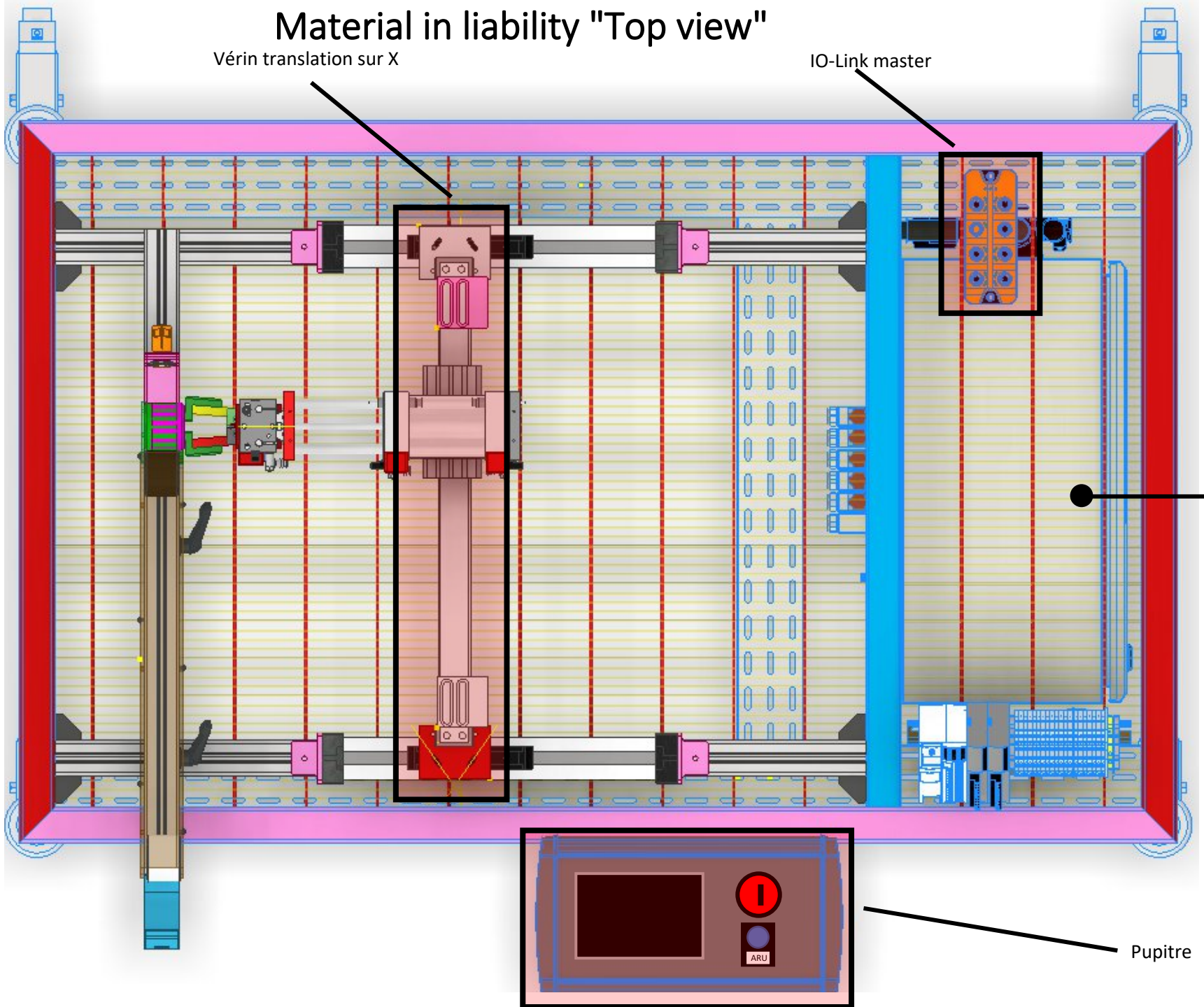
Matériels en responsabilité





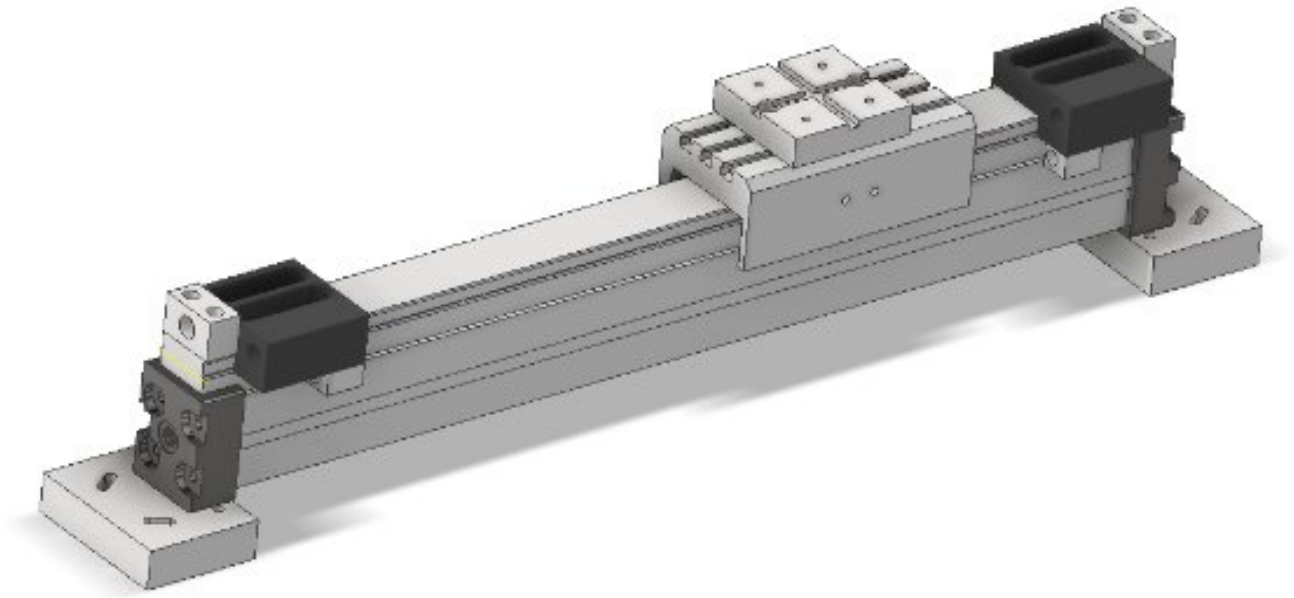
- Machine « industrielle » à but éducatif qui a pour fonction de trier des pieces par couleurs (rond de

Material in liability "Top view"

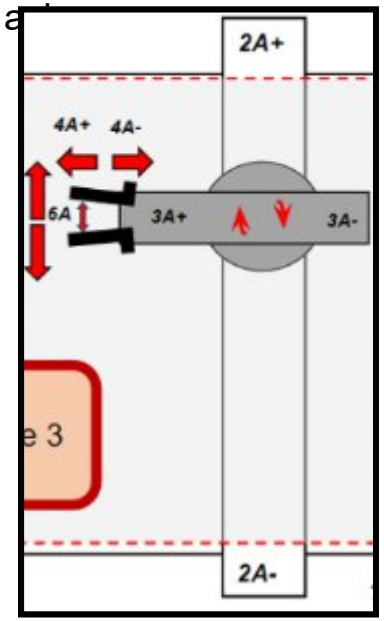
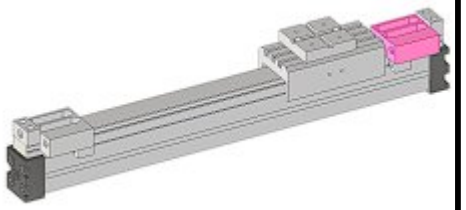
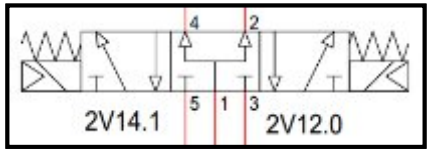
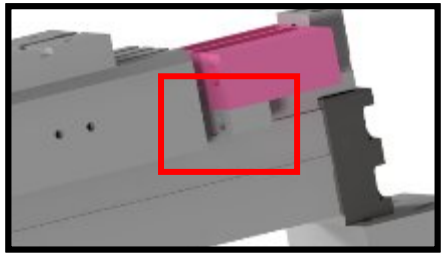


The Actuator :

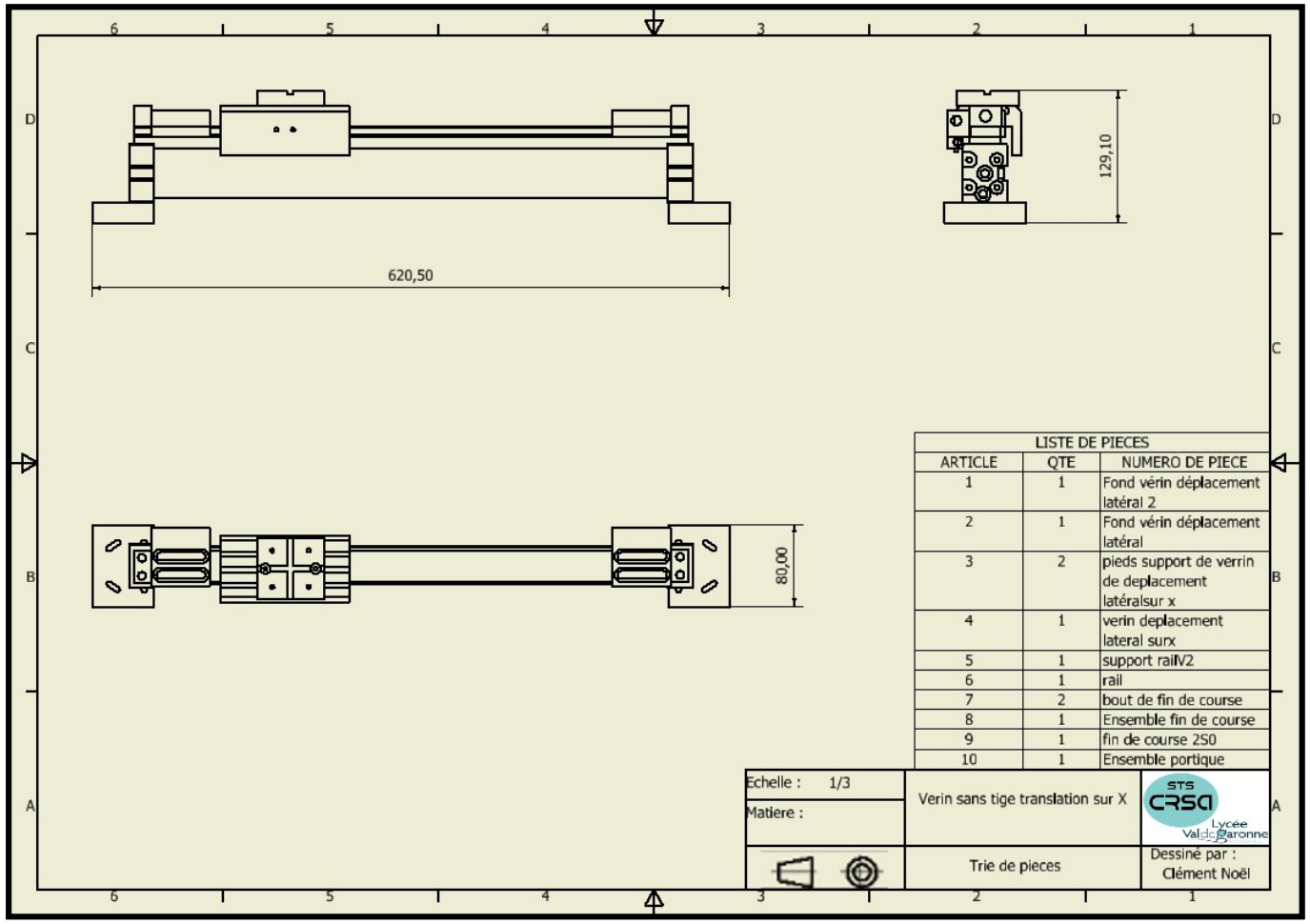
LE VERIN « TRANSLATION SUR X »



Functional Analysis Table

Function	Effector	Actuator	Pre-actuator	Sensor
Move the Clamp Holder + Clamp on the X&&& a 	The bits of La Pince  *REFERENCE :*	Rodless cylinder, double acting, X-translation  *REFERENCE* 3F1AN001AP-0260	Electro-pneumatically operated mono-stable 5-3 valve with pressure centre  *REFERENCE :*	Inductive sensor "Allows you to know the position of the cylinder"  *REFERENCE :* *inconnue*

Vérin « Translation sur l'axe X »



LISTE DE PIECES		
ARTICLE	QTE	NUMERO DE PIECE
1	1	Fond vérin déplacement latéral 2
2	1	Fond vérin déplacement latéral
3	2	pieds support de verrin de deplacement latéralsur x
4	1	verin deplacement lateral surx
5	1	support railV2
6	1	rail
7	2	bout de fin de course
8	1	Ensemble fin de course
9	1	fin de course 2S0
10	1	Ensemble portique

Echelle : 1/3
Matiere :
Verin sans tige translation sur X
Trie de pieces
Dessiné par : Clément Noël

Reference : 3FAN Porteur
Pneumatic course de 260 mm

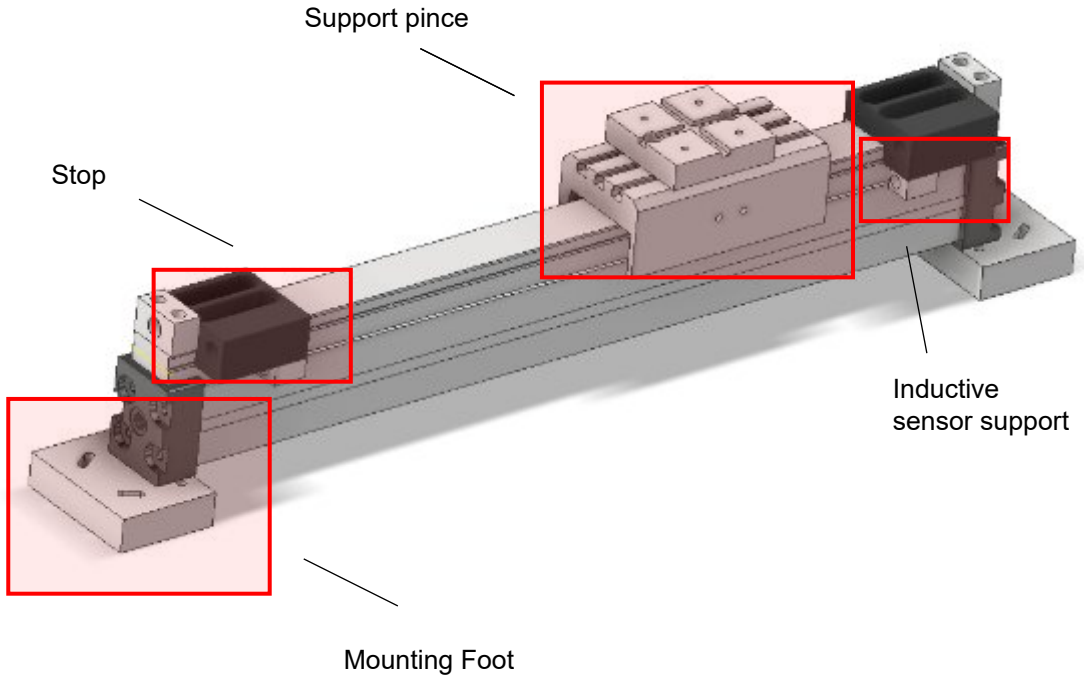
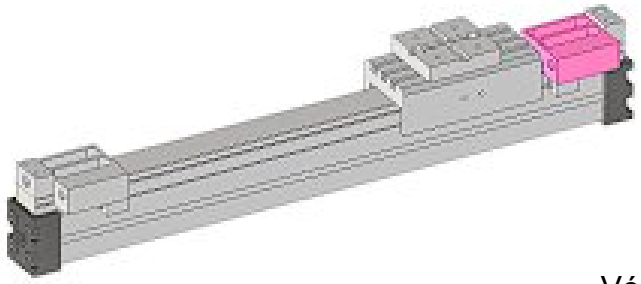
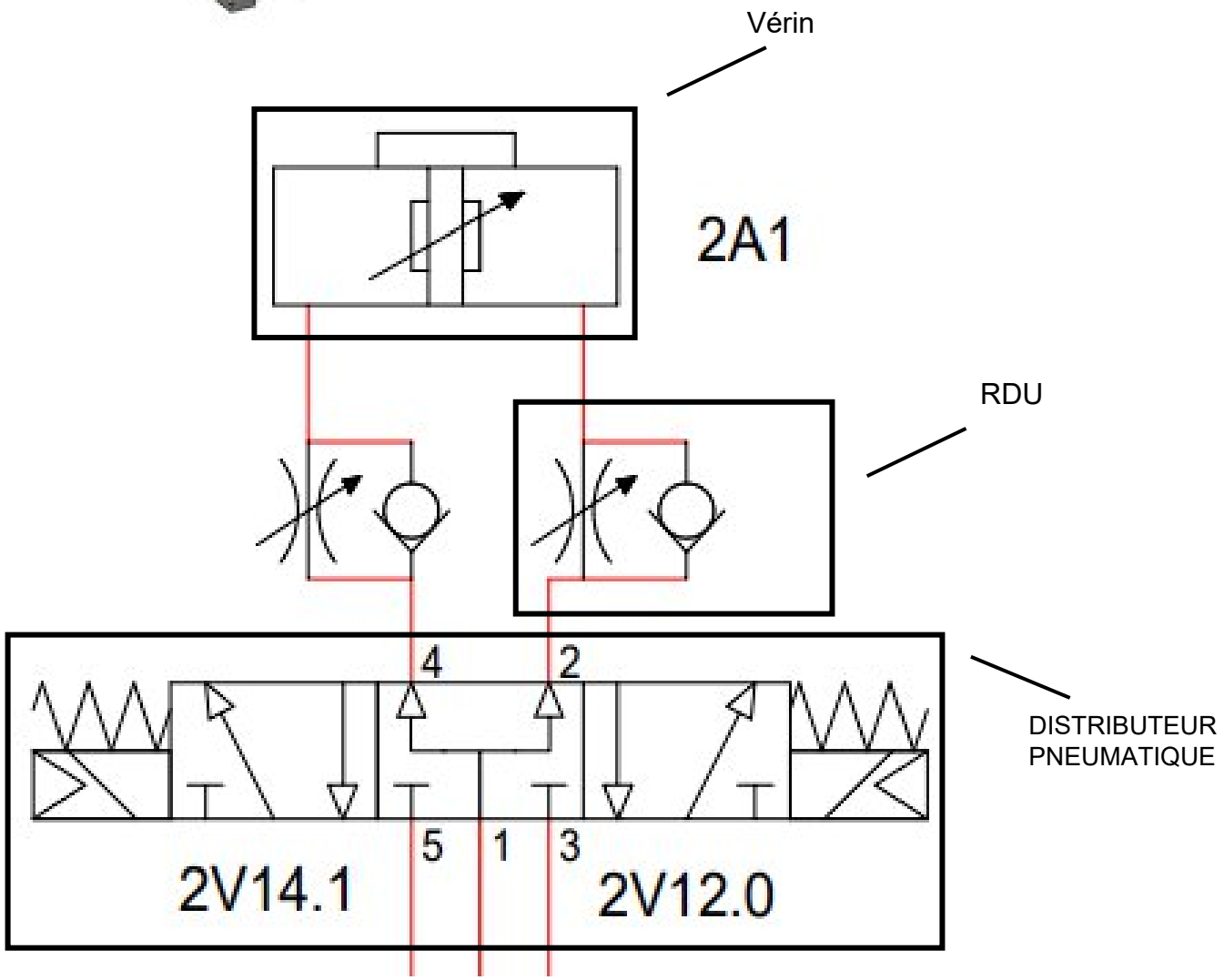


Schéma pneumatique

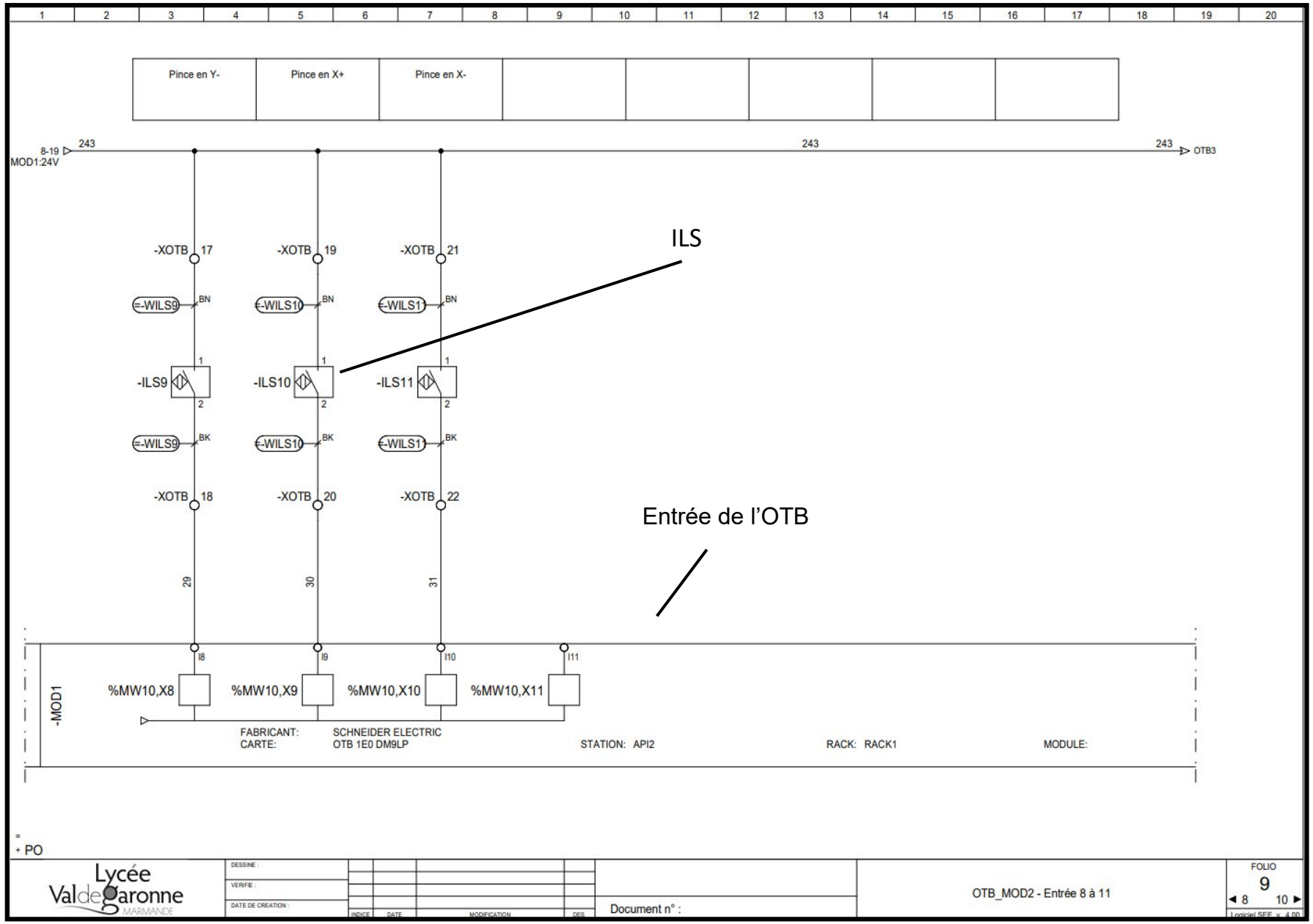


Double-acting single-rod cylinder on X-shift



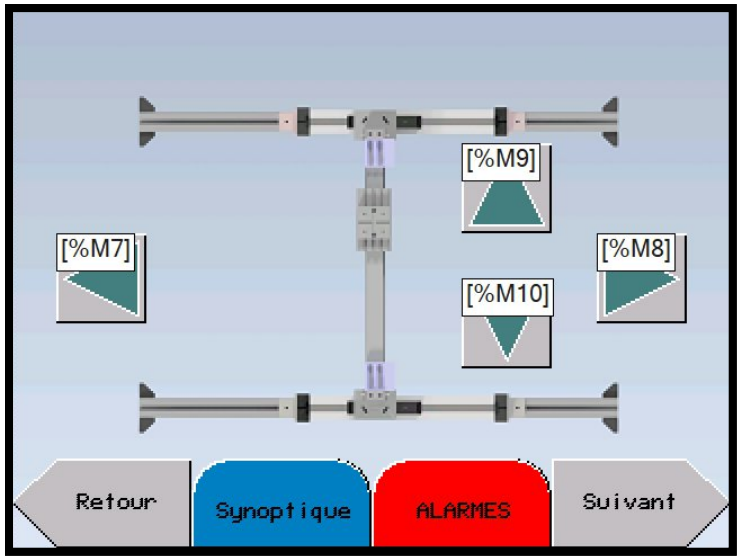
Pressure-powered cylinder constant air (6bars)
The positions are reported by the inductive sensors
The speed management of the rectilinear translation movement is regulated by RDUs. to the exhaust.

Schéma Electrique



Synoptique vérin sur axe X partie 1

Press the buttons on the HMI to perform an action.



Communication en modBUS TCP
Between HMI and PLC

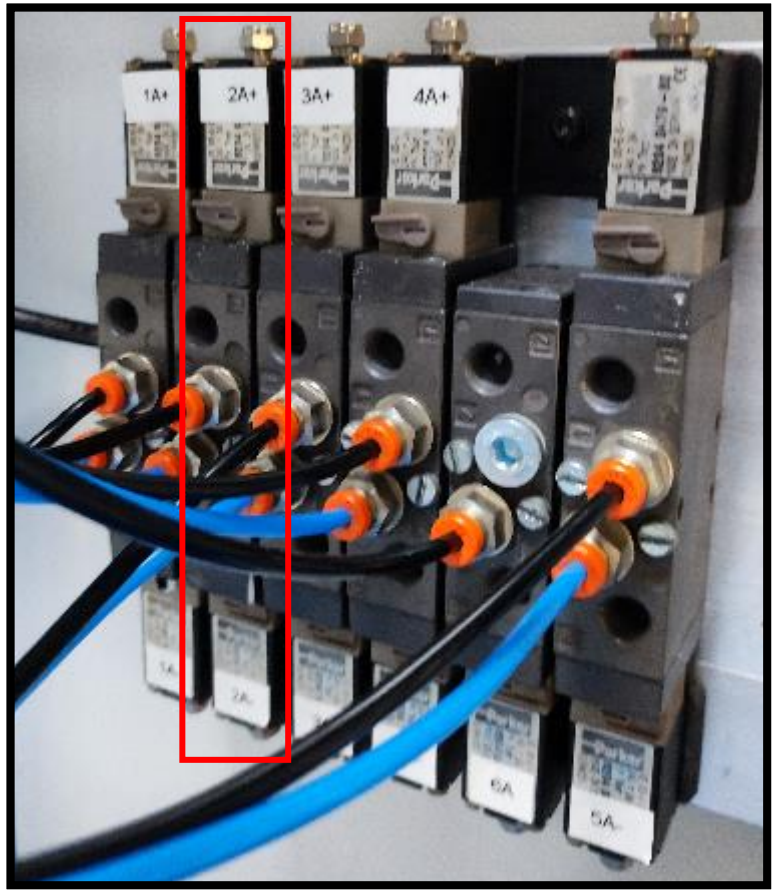
Sends a word to the OTB to enable the output.

Communication between API and OTB

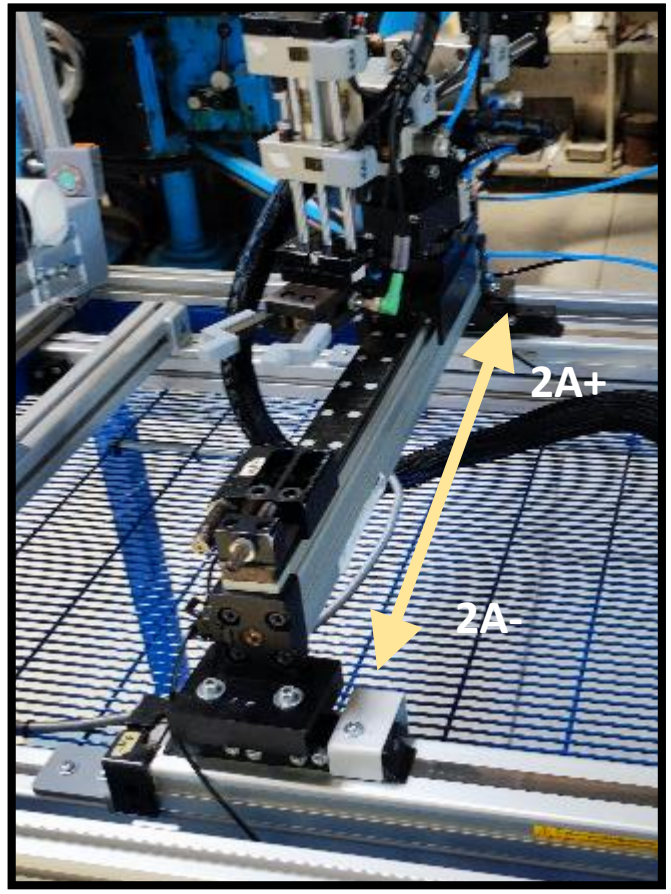
59	Monter_pince	BOOL	Externe	EquipementMo...	%M1
60	Month	INT	Externe	EquipementMo...	%MW53
61	piece_blanche	BOOL	Externe	EquipementMo...	%M17
62	piece_noir	BOOL	Externe	EquipementMo...	%M18
63	pince_en_x_moin_ihm	BOOL	Externe	EquipementMo...	%M10
64	Pince_en_x_plus_ihm	BOOL	Externe	EquipementMo...	%M9
65	Pince_en_y_moin_ihm	BOOL	Externe	EquipementMo...	%M8
66	Pince_en_y_plus_ihm	BOOL	Externe	EquipementMo...	%M7

Synoptique vérin sur axe X partie 2

The OTB serves as a remote input/output for the PLC and also controls the pneumatic ILO,
To activate the 2A+ or 2A coil - it activates the output 3 or 4, (RelayOUT)



The 5-3 mono-stable/pressure center valveelectro-pneumatically controlled



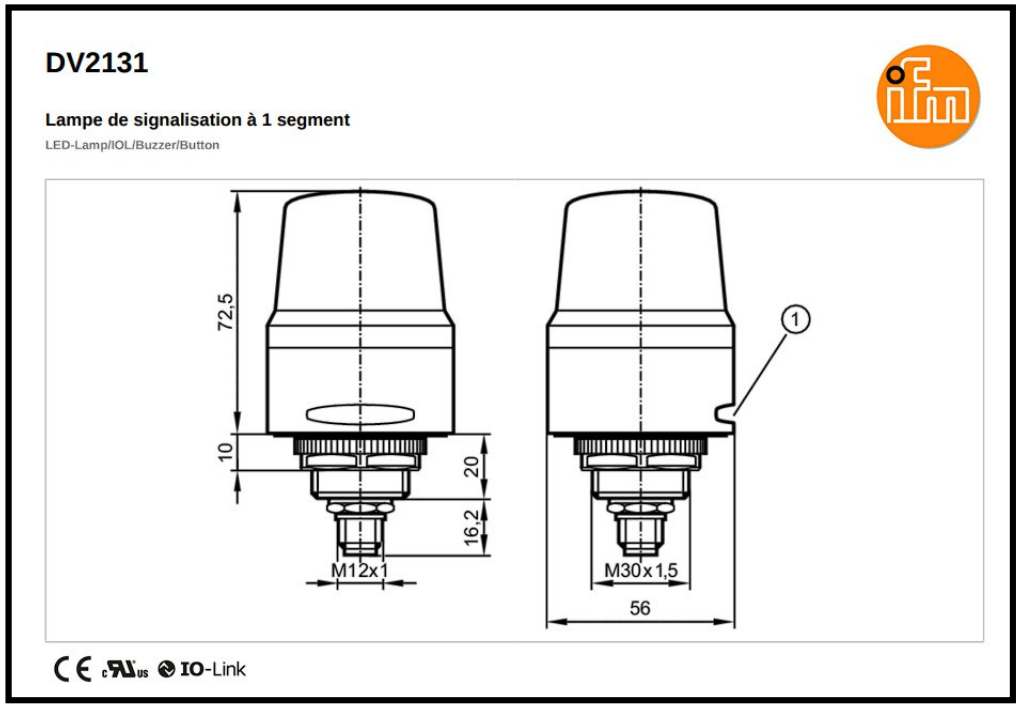
The cylinder supports the movement of the gripper support (and the gripper) on the X-axis

THE COLUMN LIGHT

Old Solution:

Solution adopted:

1-Segment Signal Lamp (DV2131)



Rated voltage: 24 V DC average power consumption 90mA

Network Architecture

PC
IP: Changes depending on the material

Logiciel EcoStructure Machine Expert Basic

Modbus TCP (RJ45)

IHM Magelis
IP: 192.168.0.2
Réf :HMIS5T

Switch
Réf : FLSWITCH1000

OTB Schneider
IP: 192.168.0.4
Réf: OTB1E0DM9LP

SUB-D 15

Distributeur

Vérin

Maître IO Link
IP: 192.168.0.250
Réf: AL1340

- Light Column (X1)
  Laser Sensor (X3)
  Pressure sensor (X4)

Automate Schneider
IP: 192.168.0.3
Réf: TM211ME16R

synoptique colonne lumineuse

Alimentation 24 V continue /4A

Passage par le SWITH

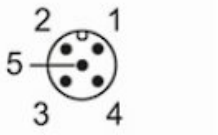
Cable IO-Link

X1 : Colonne lumineuse

M221

Colonne lumineuse avec buzzer DV 2131

Connecteur: M12



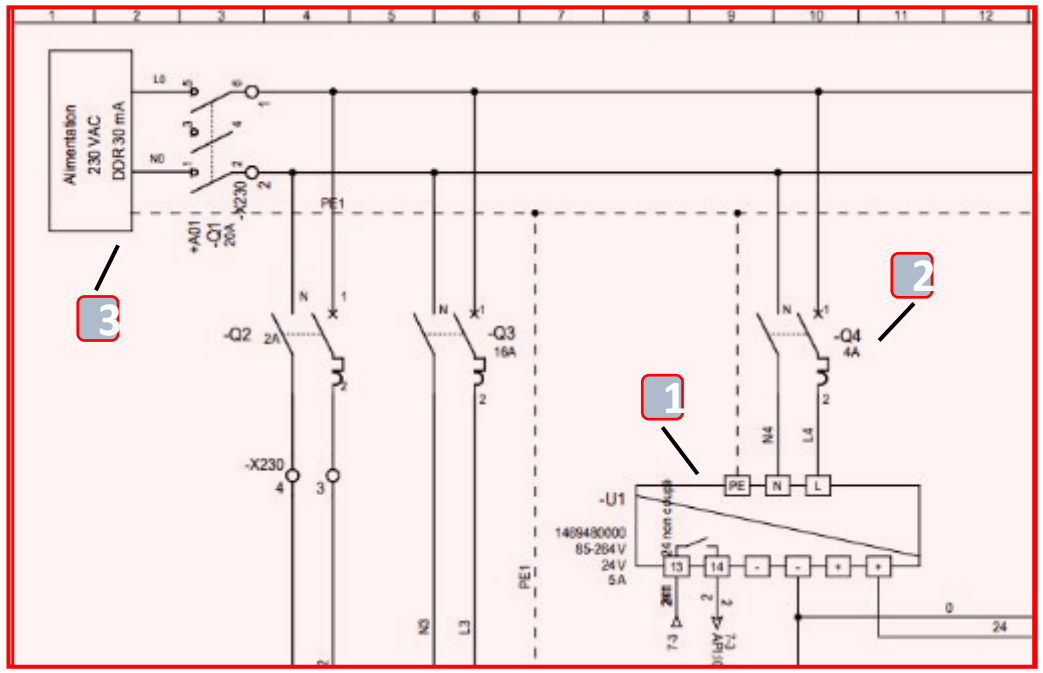
IO-Link	
1	UB+
2	non utilisé
3	UB-
4	IO-Link
5	non utilisé

IO-Link Master DL-MB-8P-IP67
Connectique: 8 Ports avec 16 entrées
Type : Modbus TCP IP
Transmission: 10Mbs
Connecter grâce à un câble Y

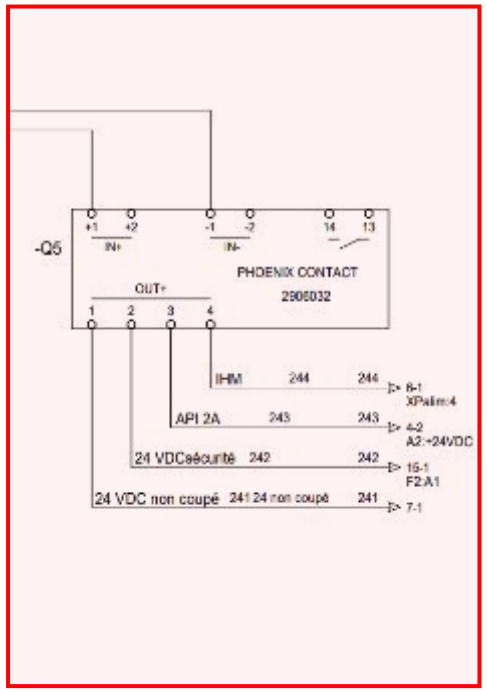
*For the configuration of the column, you must first have configured the IO-Link master on LRDevice.

Remonter du schémas électrique depuis la colonne lumineuse

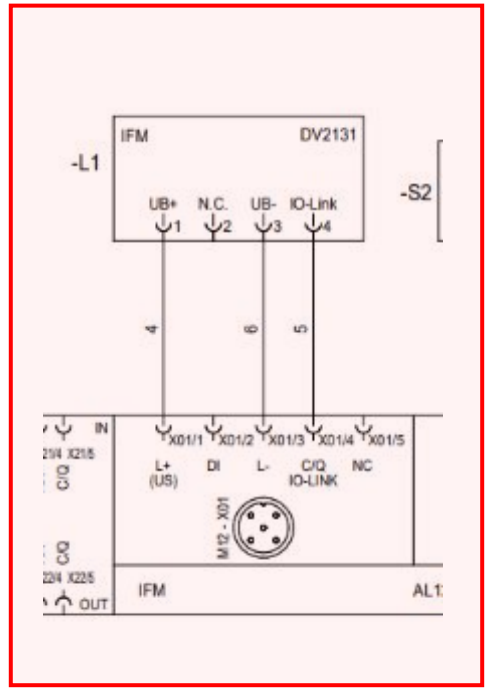
Upstream of the electronic circuit breaker there are:
230/24V transformer;
The 4A Q4 circuit breaker;
The inter-disconnector.



IO-link master Protected by electronic circuit breaker



Light column on X3 of the IO Link master



The electronic circuit breaker is set to the 24V/4A position

The light tower is plugged into the IO-Link port rated X3

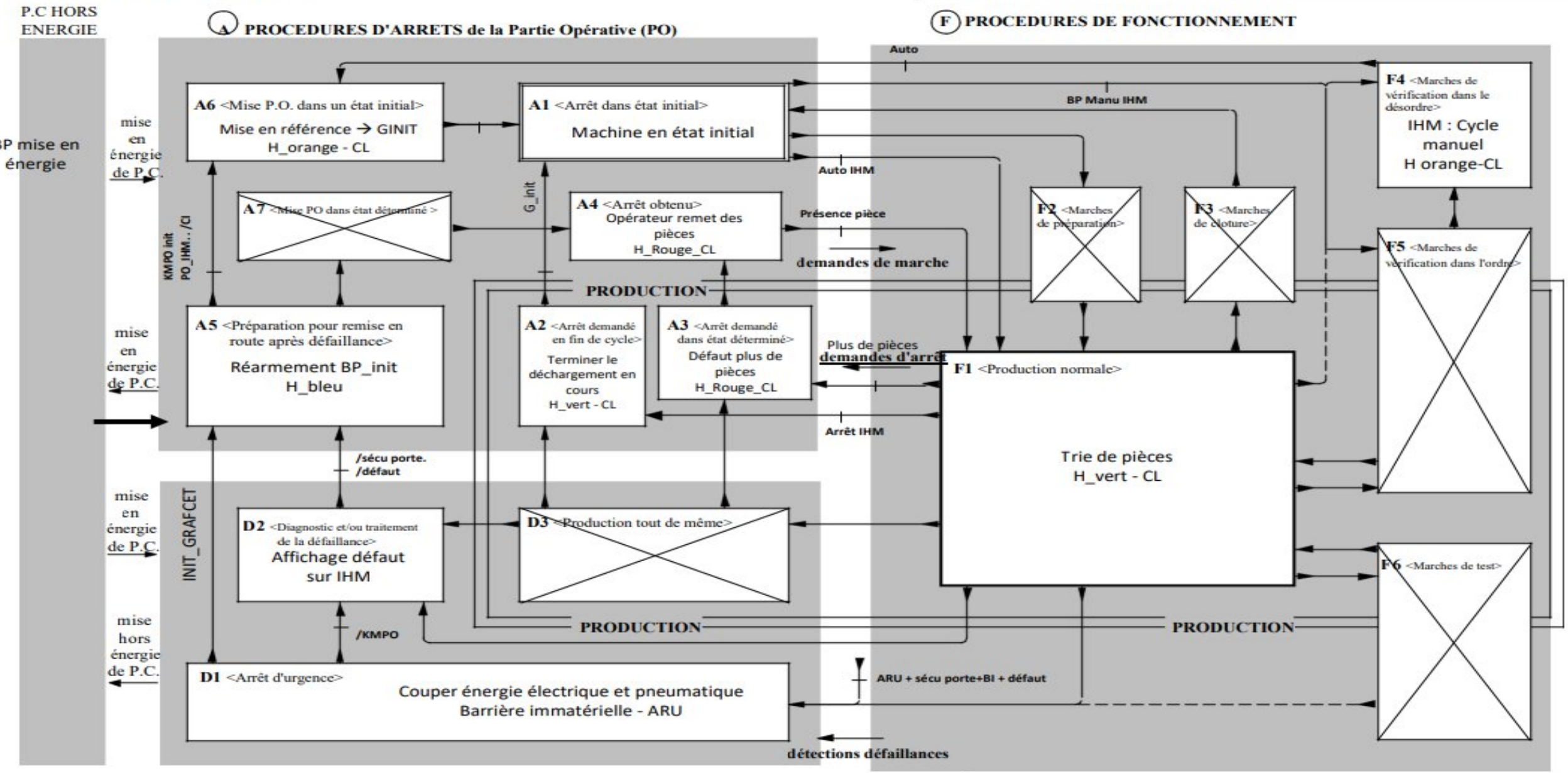
GMMA Guide des Modes de Marches et d'Arrêts

LEGENDE

P.O. = Partie Opérative
P.C. = Partie Commande

Références de l'équipement

Trie de pièces_PS



Configuration sur LRDEVICE

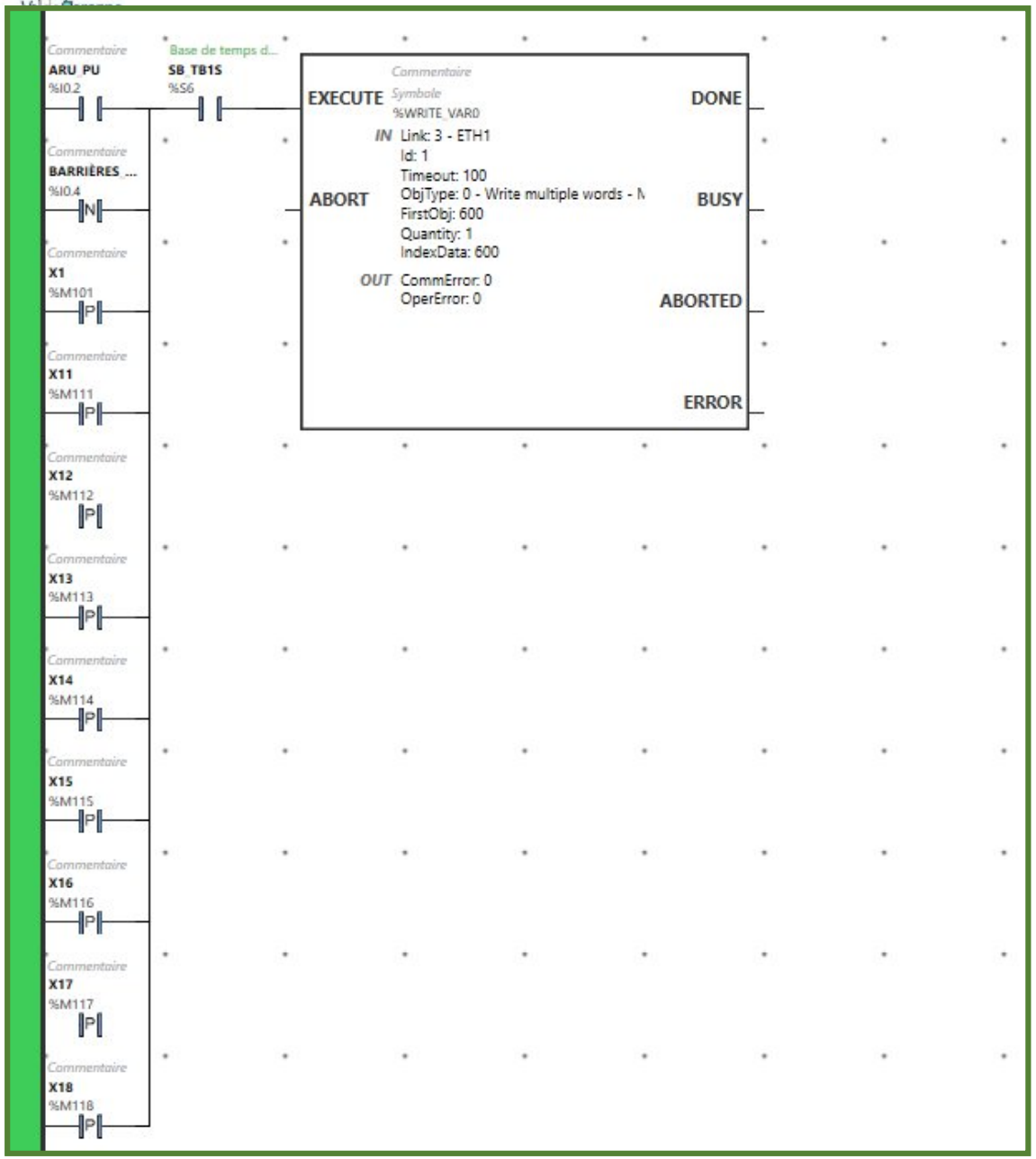
Les caractéristiques des segments LED sont définis comme suit :

Octet 0 Bit 3	Octet 0 Bit 2	Octet 0 Bit 1	Octet 0 Bit 0	Couleur
0	0	0	0	éteint
0	0	0	1	rouge
0	0	1	0	vert
0	0	1	1	orange
0	1	0	0	bleu
0	1	0	1	violet
0	1	1	0	turquoise
0	1	1	1	blanc
1	0	0	0	jaune

Octet 0 Bit 6	Octet 0 Bit 5	Octet 0 Bit 4	Fréquence
0	0	0	allumée en permanence
0	0	1	clignotement lent
0	1	0	clignotement moyen
0	1	1	clignotement rapide
1	0	0	flash lent
1	0	1	flash moyen
1	1	0	flash rapide

Before setting up the machine, we chose the colours:
CL Orange: "Manu Mode" / 35(10)
Solid Green: "Auto Mode" / 2(10)
Green CL: "init" / 34(10)
Rouge CL: "judgment in court" / 33(10)
CL blue: "operator intervention" / 36(10) = 00100100(2)

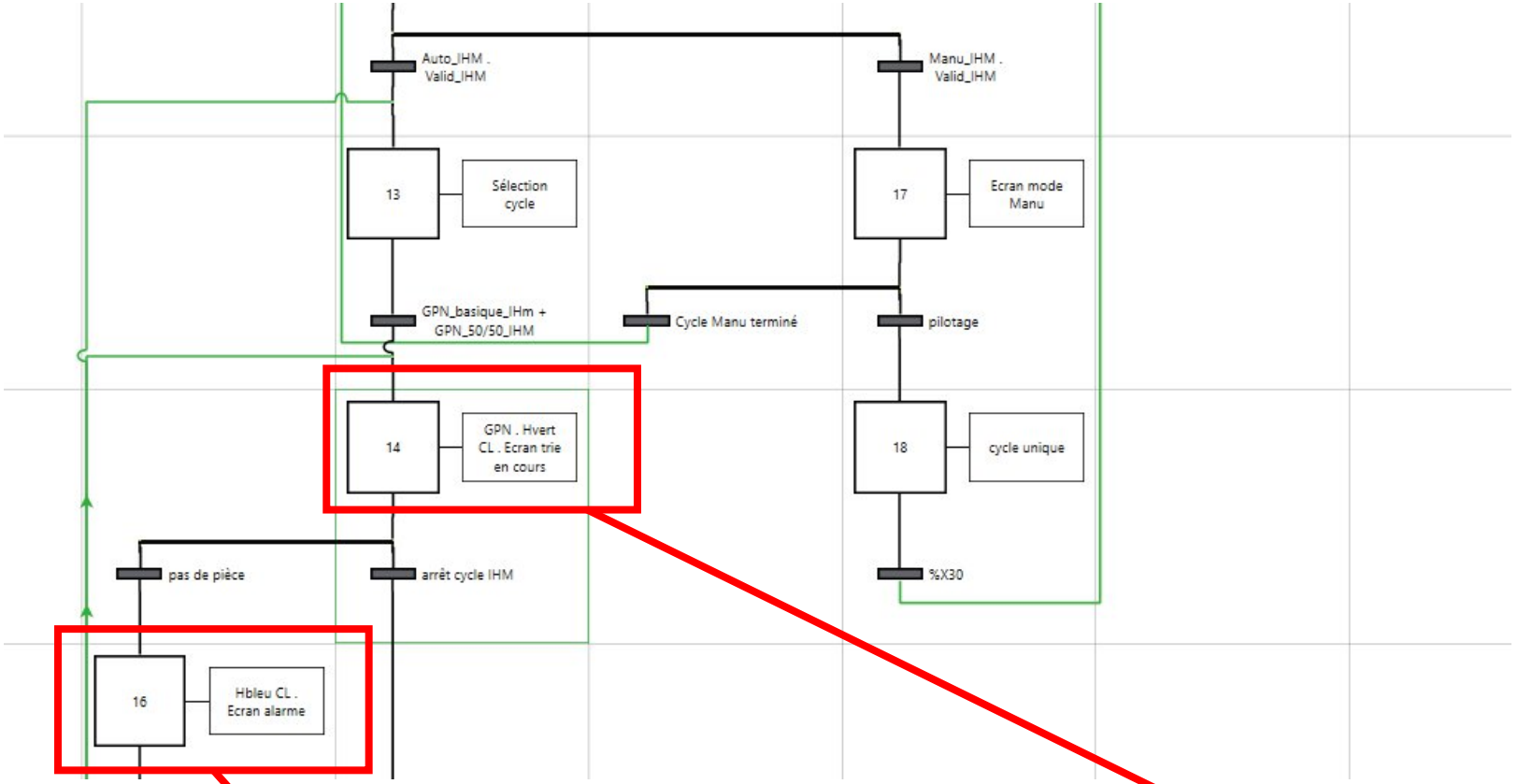
La colonne lumineuse et So- machine basic



Bloc compares. (DRO)
This block that allows the light column to know which color/sound to display/emit.
The light column reads the word MW600
And in relation to the bit values that will be written, the column will display such and such a color (fixed or flashing)/a sound (with a configurable frequency)

Bit value that changes with respect to the chosen bytes

Lien grafcet-colonne lumineuse



Step X14 = write to the 600 register the value 2(10)

Step X16 = write to the register 600 a value of 36 in base 10 (decimal)

Finalité

The M221 with respect to the steps of the graph will send a value in binary...

… By the switch in modbus TCP...

The IO-Link master will convert the value to decimal and write it to the 600 register

Word transfer via IO-Link cabling

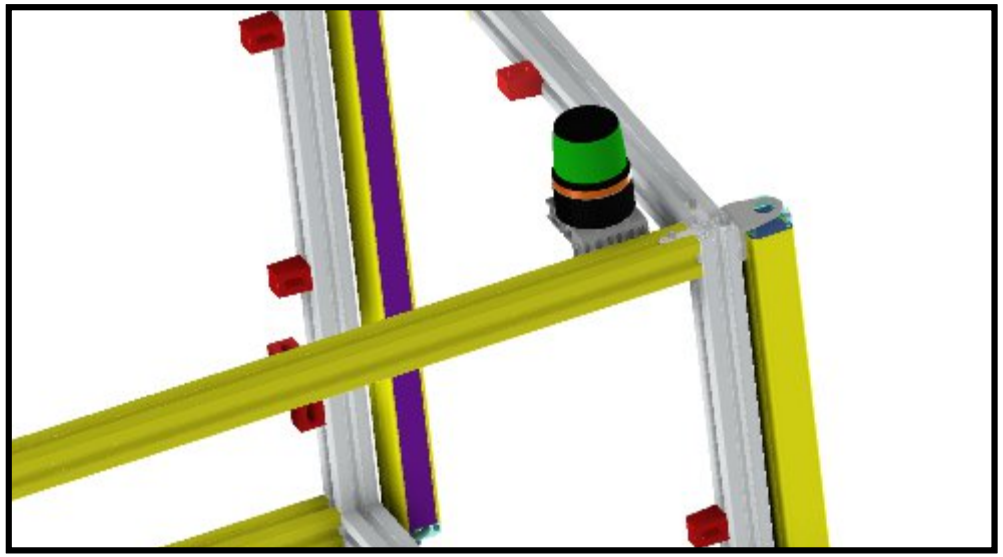
The light column will read the value on the register 600 and wil display the desired color

Solution Fixation de la colonne lumineuse

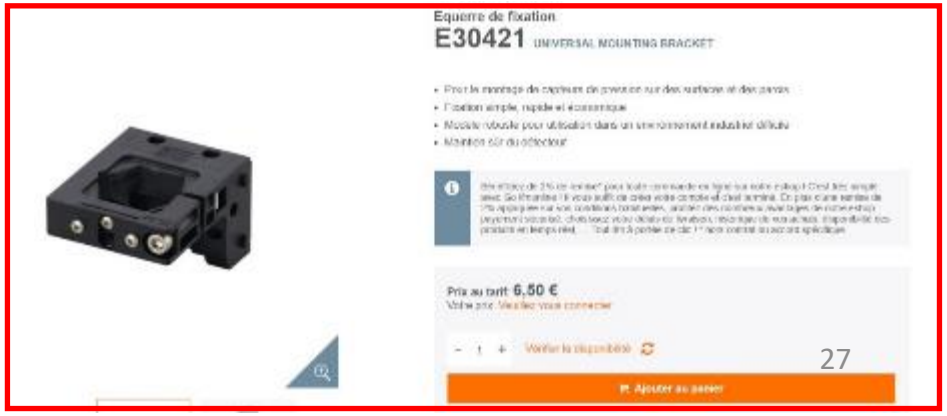
The fixing of the light column is done by a right-angled hook from IFM.
The support between the fixing and the profile is held in place by means of a screw, two nuts and washers.

BOSH profile 30X30

Column light DV2131



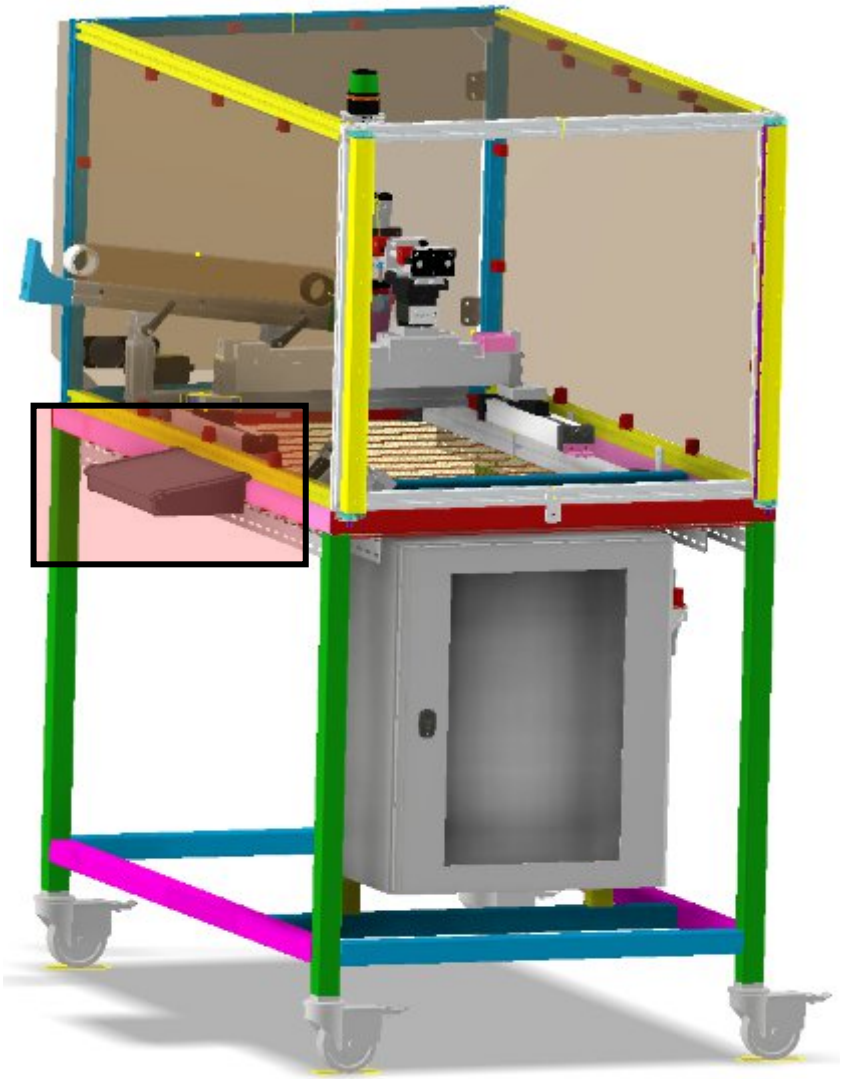
Mounting bracket (E30421)



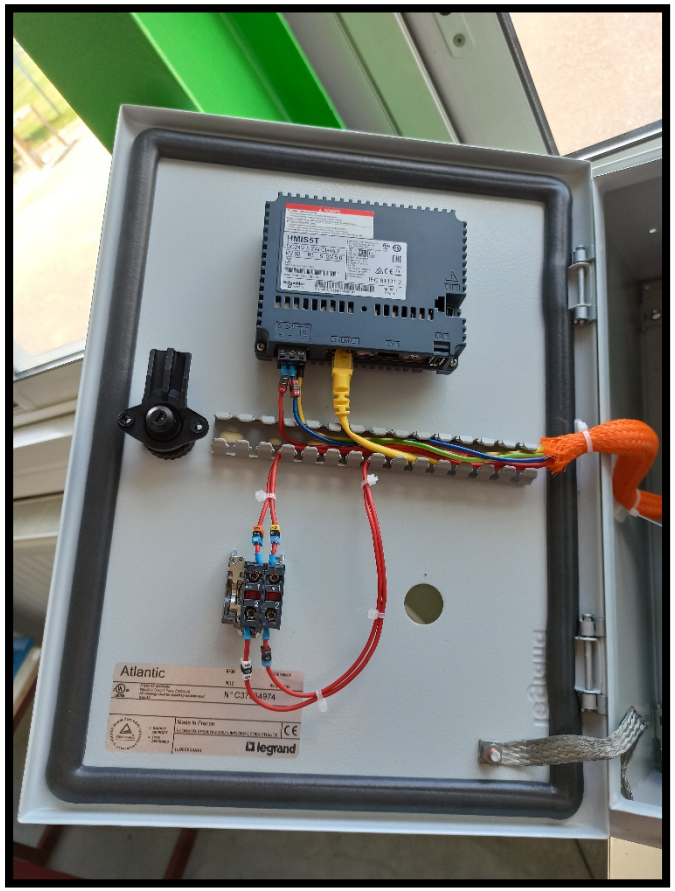
Le pupitre

Positionnement du pupitre sur châssis

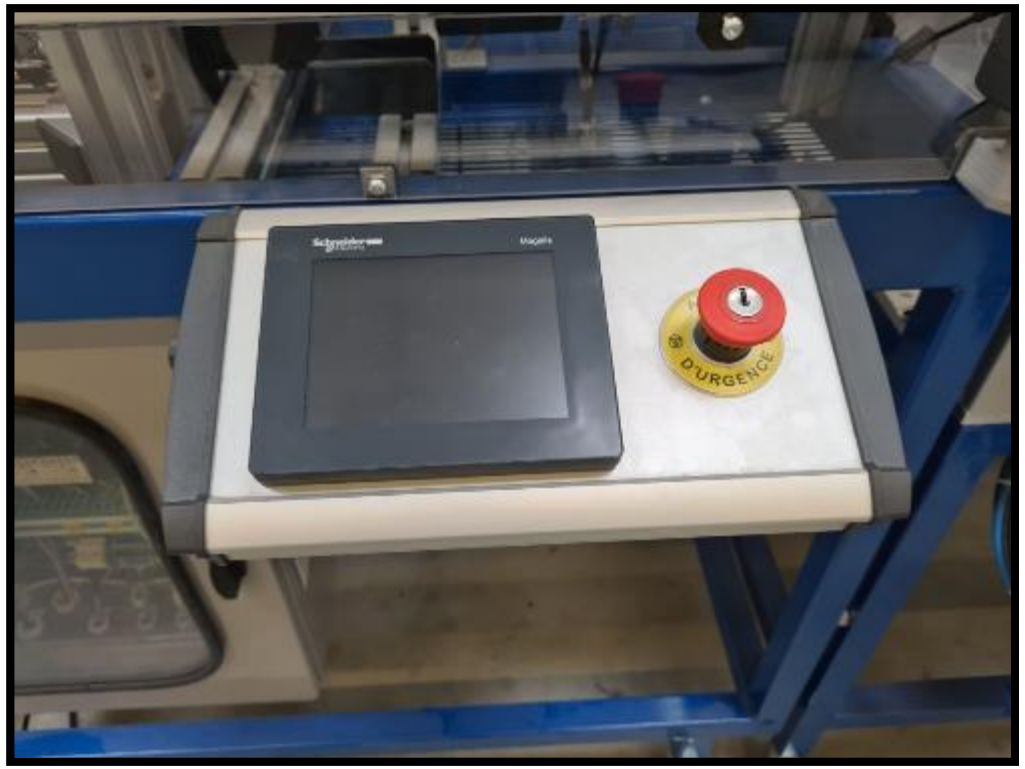
The console was positioned so that the operator will have a view of the entire machine:
Operative part;
Light column;
OTB;
IO-Link Master



Changement pupitre avec arrêt d'urgence + BT INIT PO

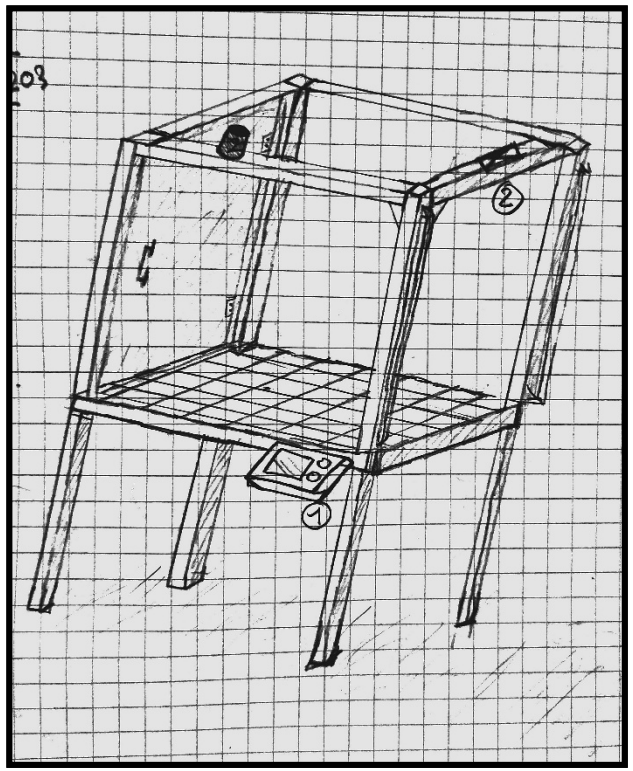


solution existante

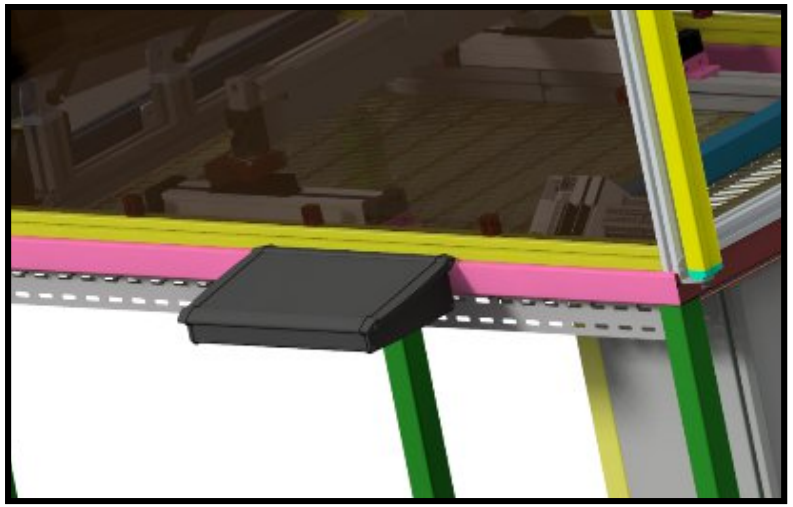


solution envisagée
(à hauteur de bassin, accessible à tous)
+ BT INIT PO

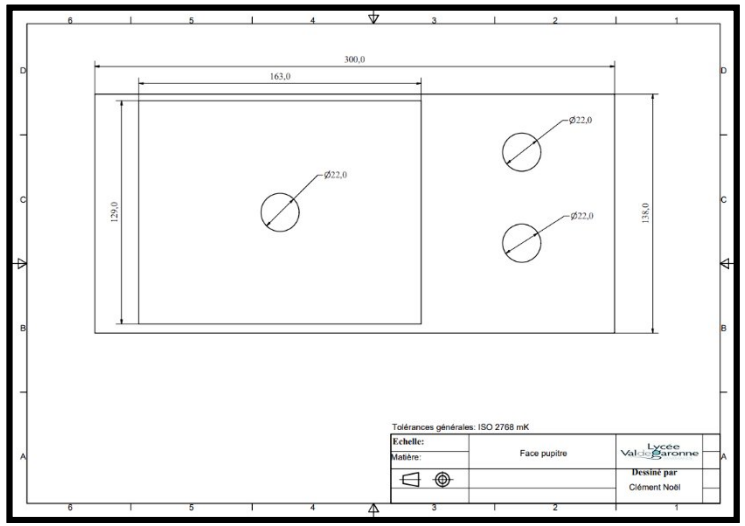
FIXATION DU PUPITRE



Reflection of the fastening system and its location.

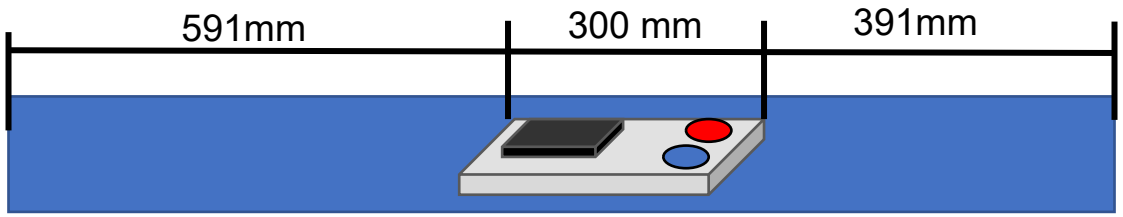


Implementing the Console in CAD



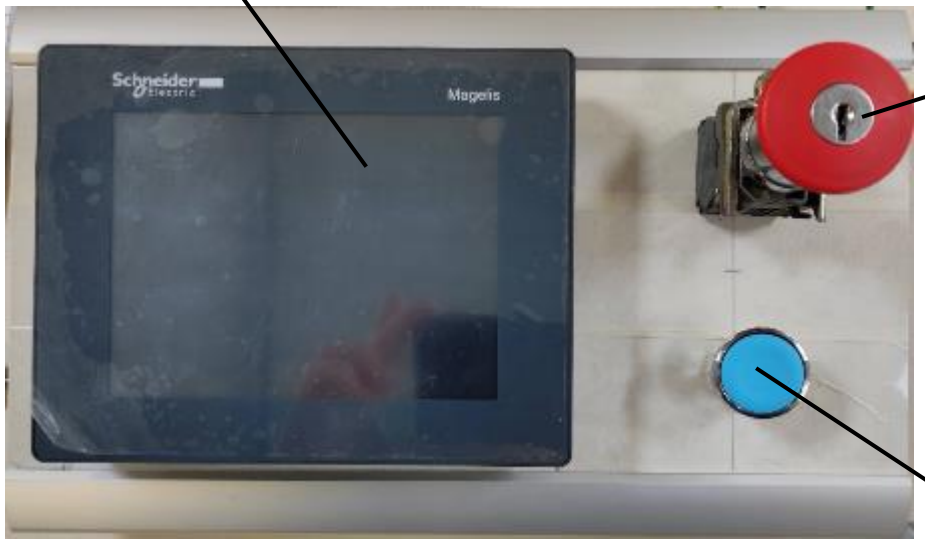
Positioning the holes

Dimensioning and verification of its size on the chassis

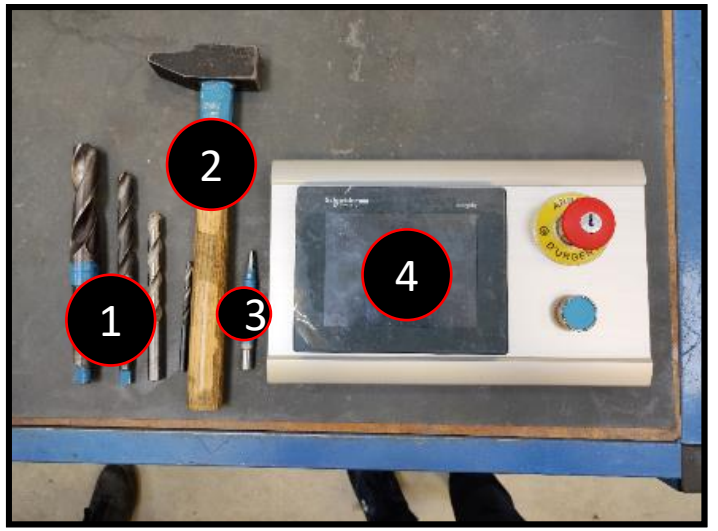


Travail sur le pupitre

Encombrement du pupitre



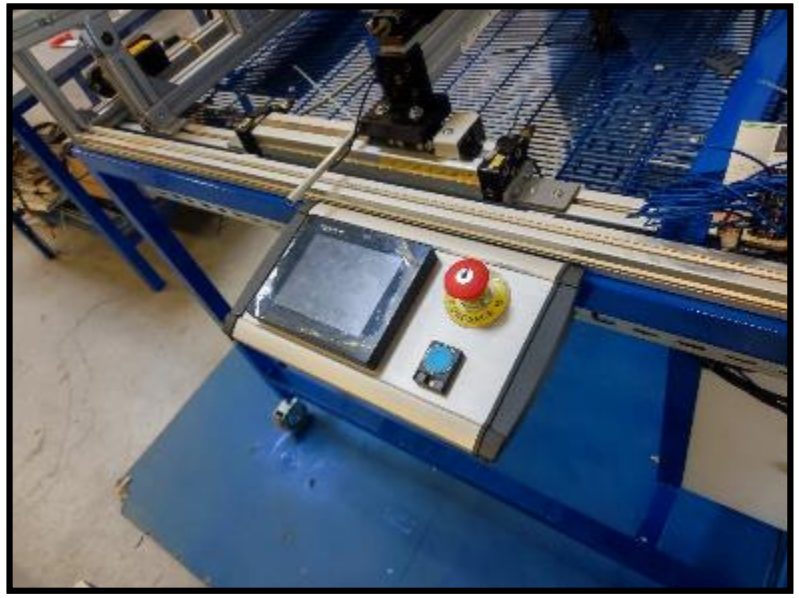
Sizing of the lectern



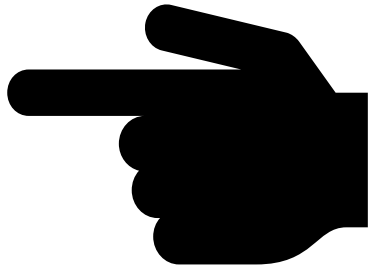
1- Drill bit
2- Hammer
3- Needle
4- Music stand

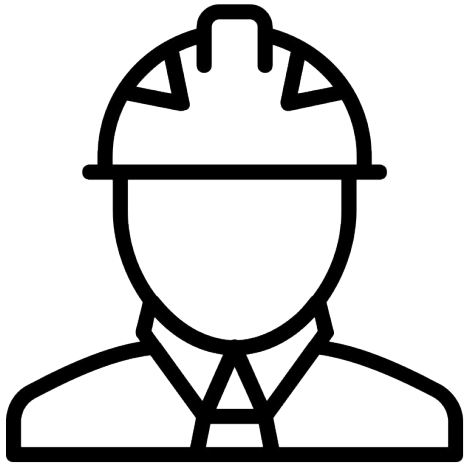
Perçage

Fixing to the frame after painting.



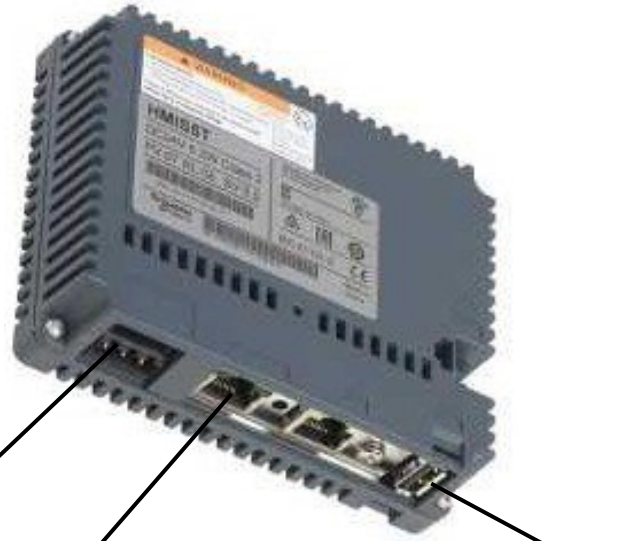
The human-machine interface





L’IHM

The HMI allows the operator to visually communicate information that is essential for the maintenance of the machine and its operation during the cycle.

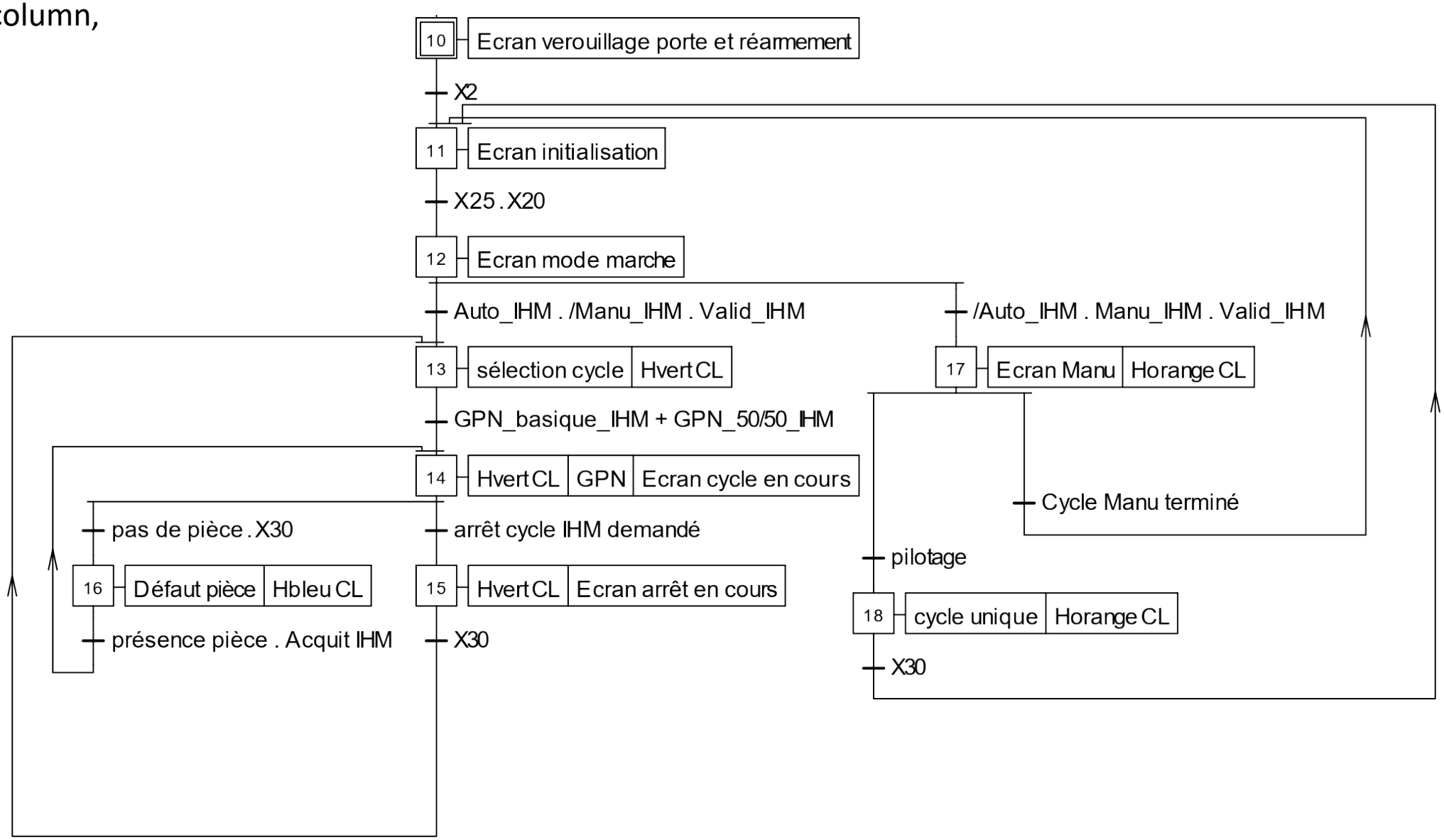


5'' TFT display

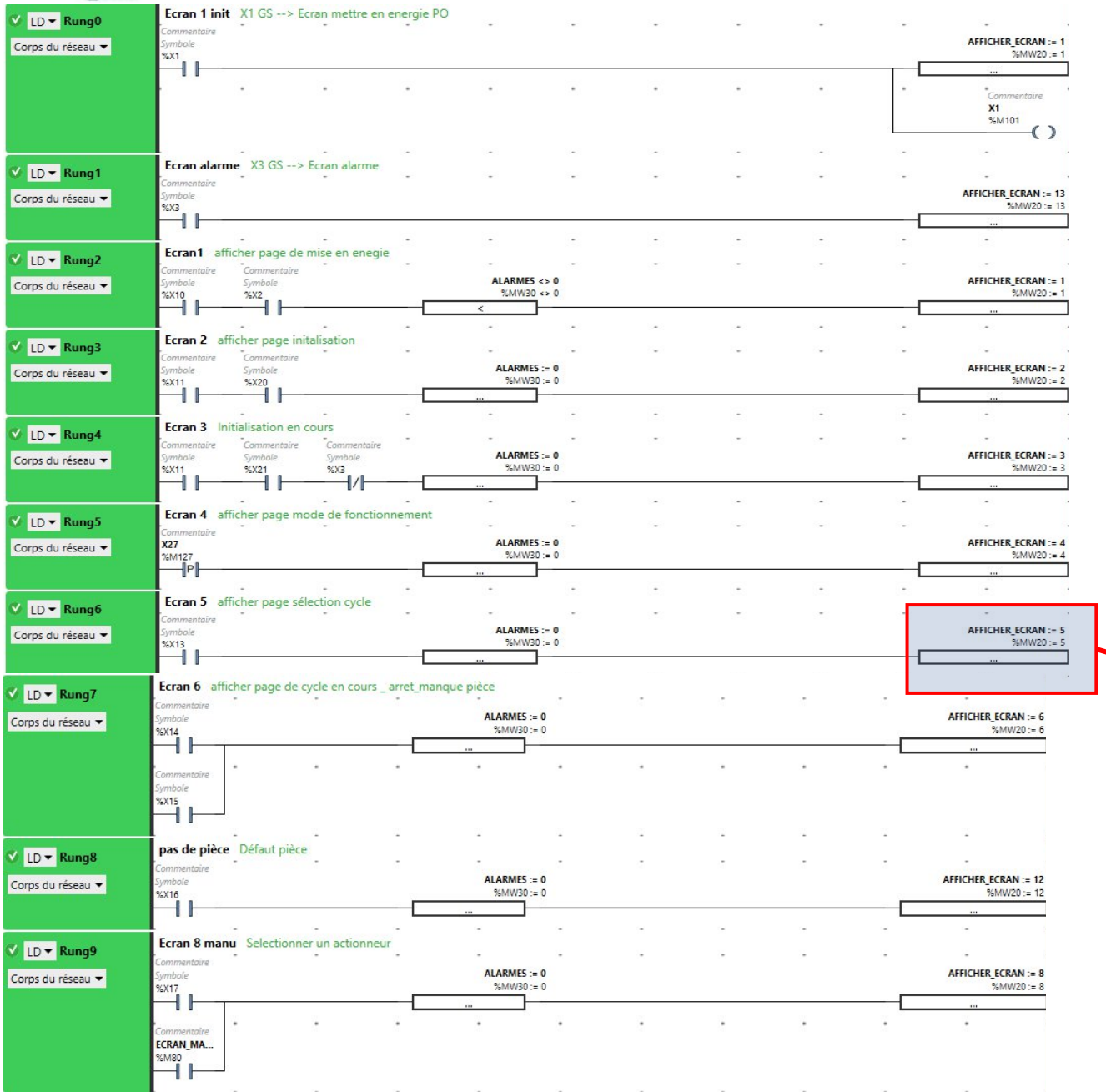
The HMI program is managed by Vijeo-Designer, a proprietary software owned by Schneider

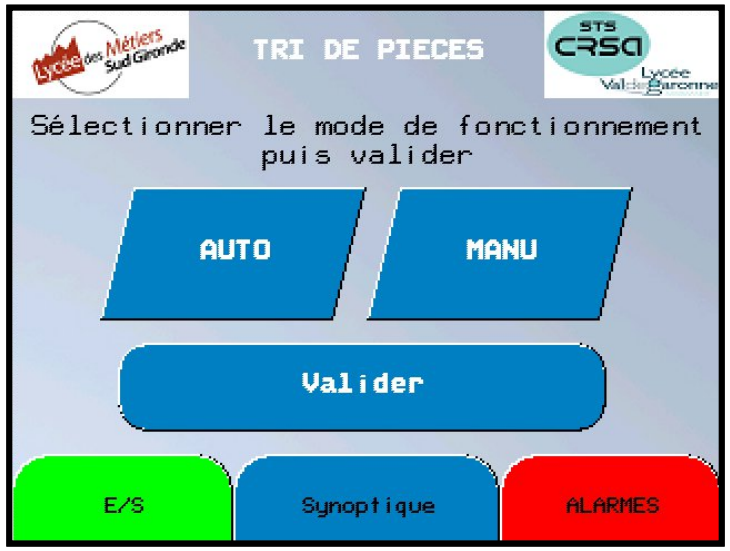
Vijeo Designer allows you to create operator dialogue applications for operating automation.

Step graph of screens and light column,



Valeur d'appel écran





Ecran 5

Curepanel ID

The Ihm continuously reads the %MW20 register,
Ex: If on the %MW20 register the value is 5.
The HMI will display page 5.

Horloge

%SW50 à %SW53

Table of 4 words %MW:
-Day
-Hours
-Minutes
-Seconds

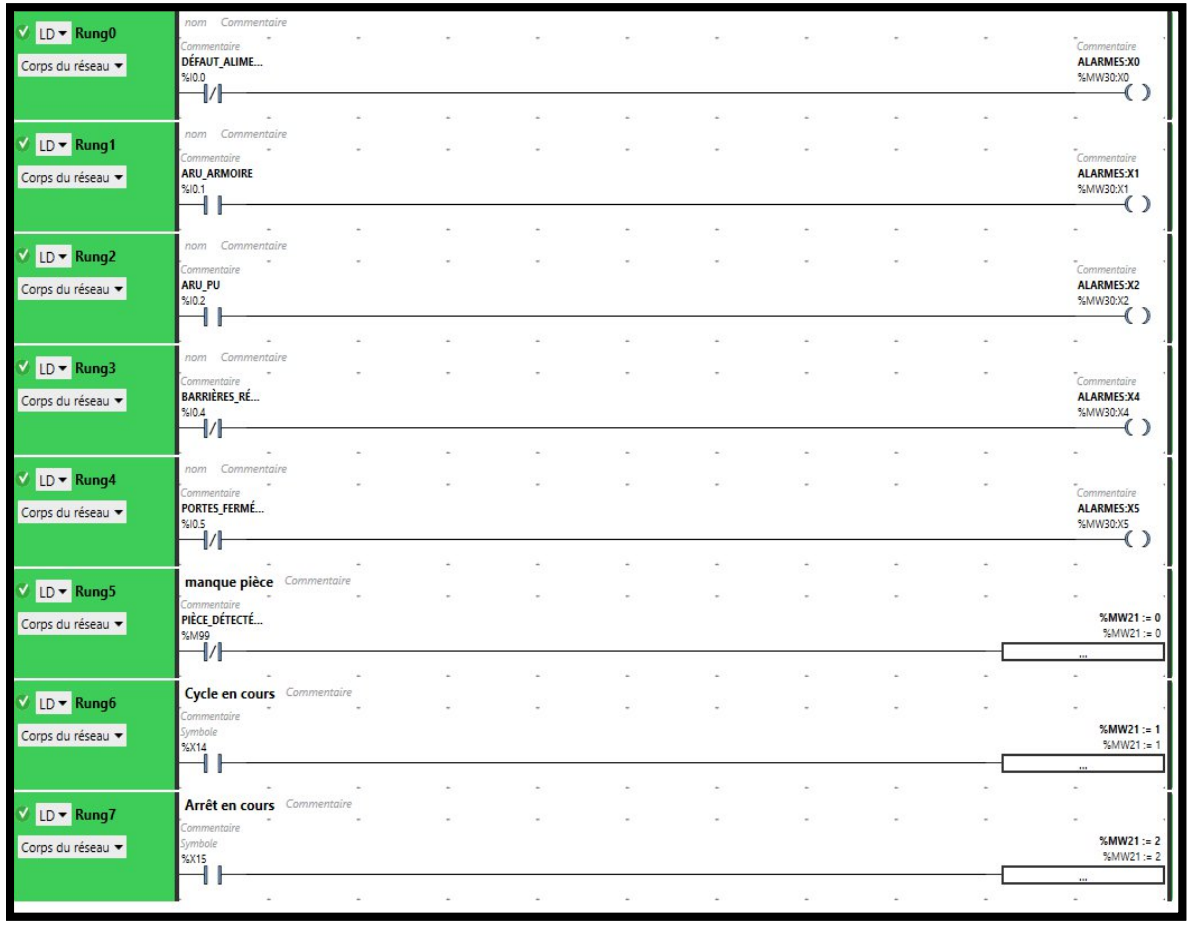
Liaison Modbus TCP/IP

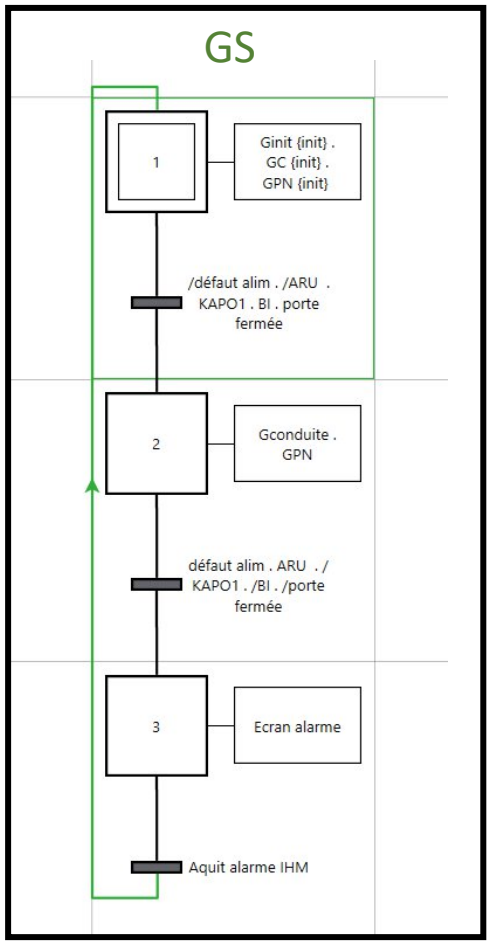
Dialogue table

6	_Day	DINT	Interne
7	_DayoftheWeek	DINT	Interne
8	_DIOPort	Structure	Interne
9	_FileTransferStatus	DINT	Interne
10	_Form	Structure	Interne
11	_Hour	DINT	Interne
12	_InputStatus	DINT	Interne
13	_LastErrorString	STRING	Interne
14	_Maintenance	DINT	Interne
15	_Minutes	DINT	Interne
16	_Month	DINT	Interne
17	_RemoteViewer	Structure	Interne
18	_Seconds	DINT	Interne

Retour d'alarme

	Variable	Groupe d'alarm...	Source de don...	Adresse du péri...	Message
1	Defaut_porte...	GroupeAlarmes1	Externe	%MW30:X5	Porte ouverte
2	Défaut_alime...	GroupeAlarmes1	Externe	%MW30:X0	Défaut alimentation 24 V
3	Défaut_ARU_...	GroupeAlarmes1	Externe	%MW30:X1	Défaut ARU armoire
4	Défaut_ARU_...	GroupeAlarmes1	Externe	%MW30:X2	Défaut ARU Pupitre
5	Défaut_Blmat	GroupeAlarmes1	Externe	%MW30:X4	Défaut Barrières immatérielles



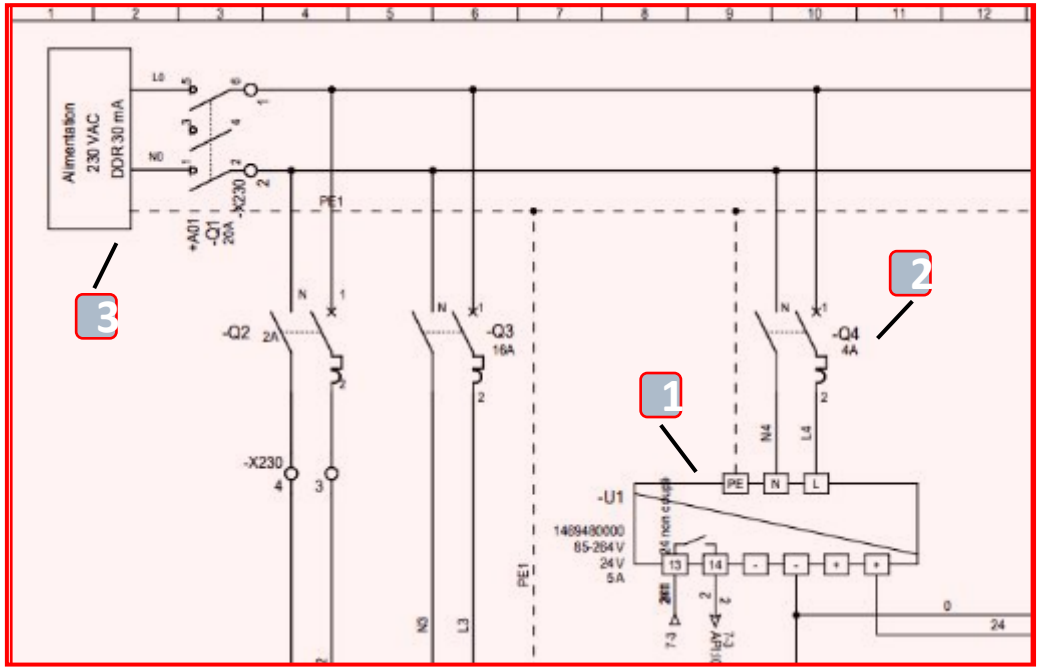


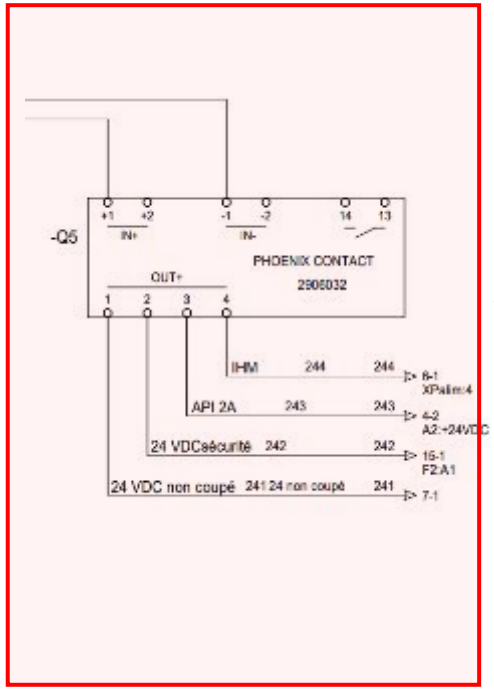
If the word %MW30X2 is activated

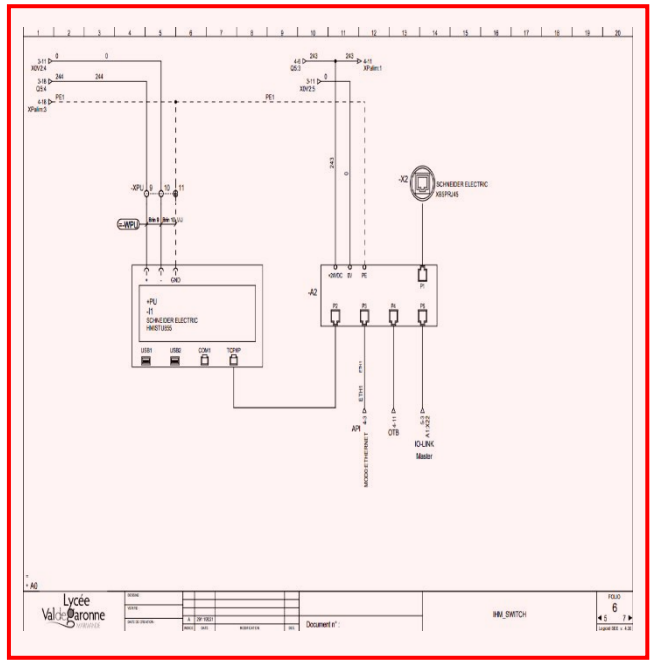
The HMI comes to the alarm screen and displays a sentence configured in advance:
EX: X2: Default ARU lectern

Câblage IHM

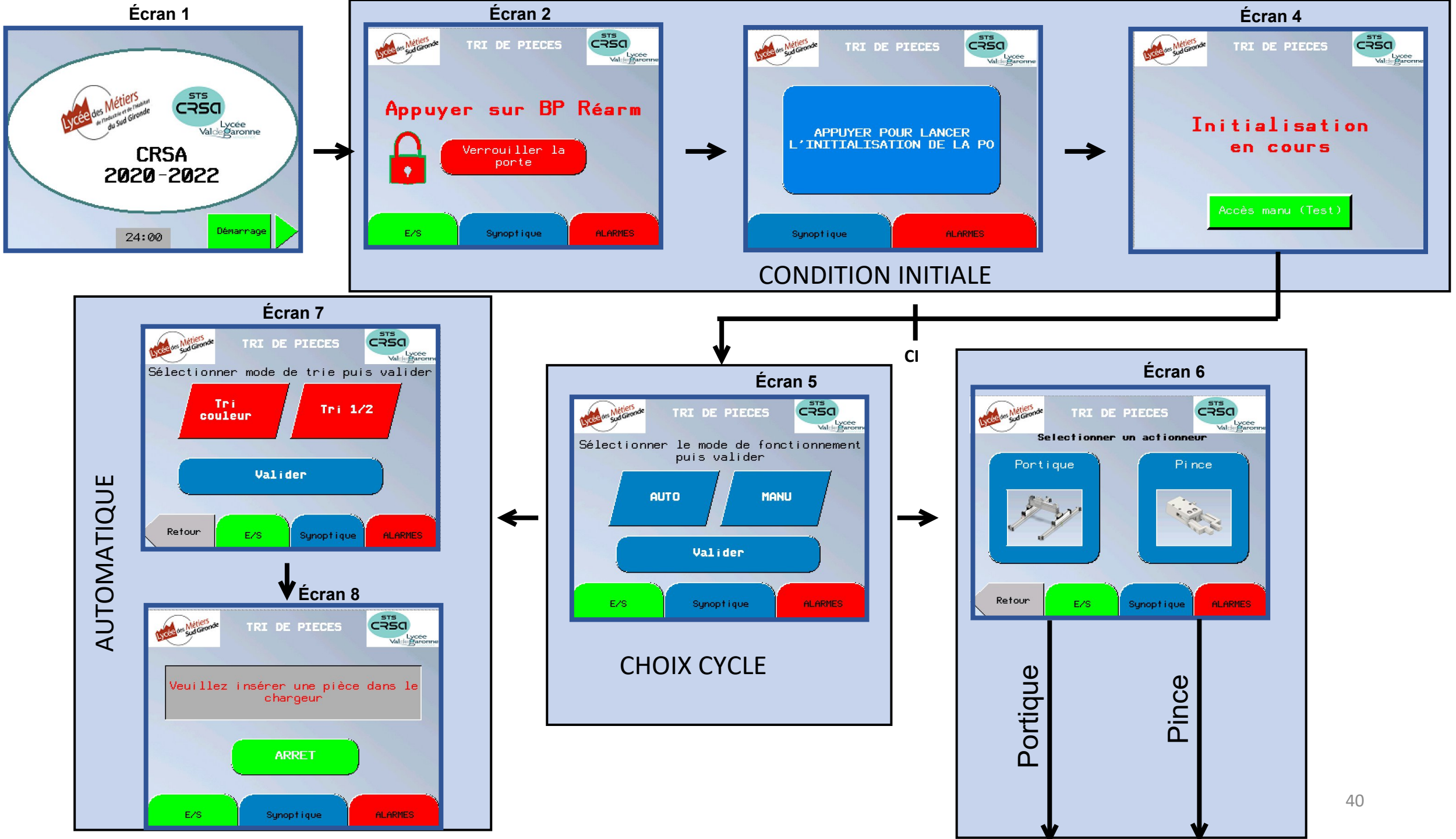
Upstream of the electronic circuit breaker there are:
230/24V transformer;
The 4A Q4 circuit breaker;
The inter-disconnector.

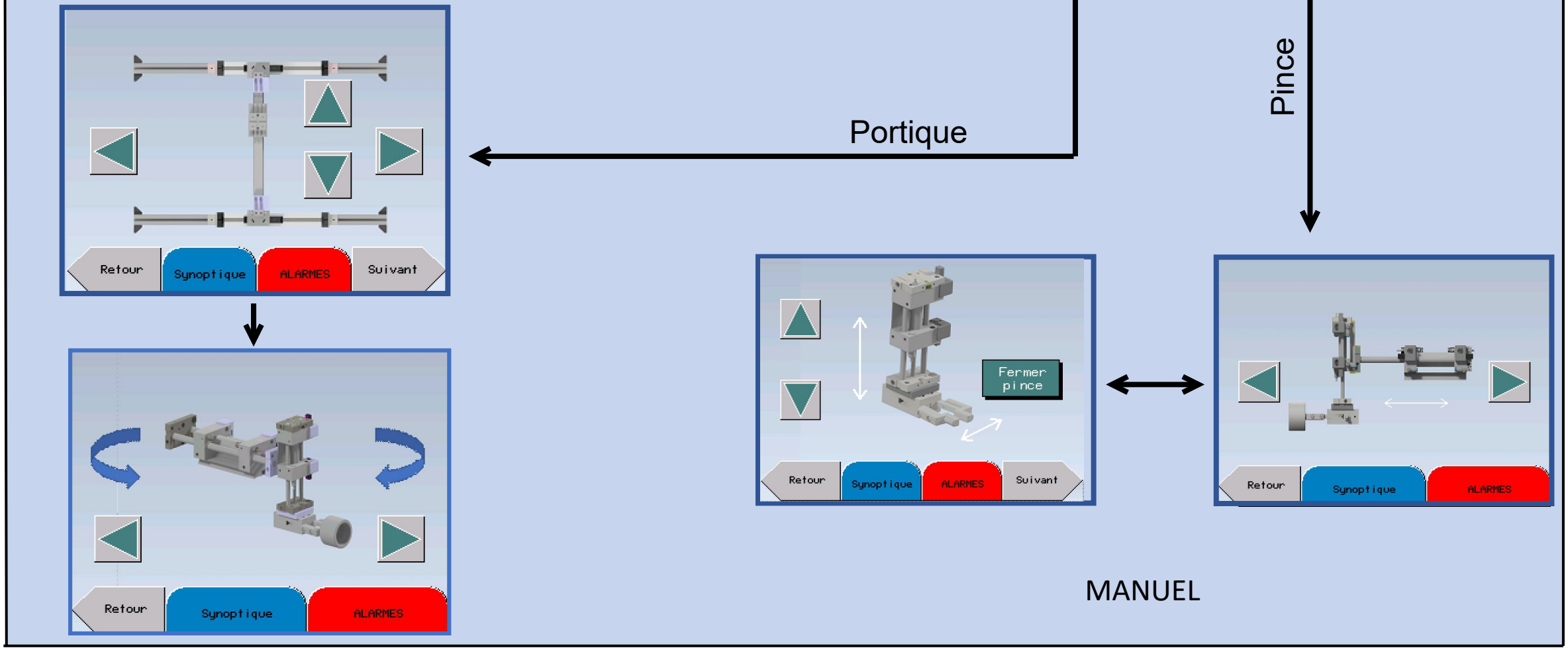






The electronic circuit breaker is set to the 24V/4A position

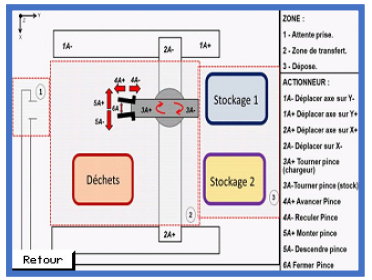

Écran 1
CRSA
2020-2022
24:00
Démarrage
Écran 2
TRI DE PIECES
Appuyer sur BP Réarm
Verrouiller la porte
E/S
Synoptique
ALARMES
TRI DE PIECES
APPUYER POUR LANCER L'INITIALISATION DE LA PO
Synoptique
ALARMES
Écran 4
TRI DE PIECES
Initialisation en cours
Accès manu (Test)
CONDITION INITIALE
CI
Écran 5
TRI DE PIECES
Sélectionner le mode de fonctionnement puis valider
AUTO
MANU
Valider
E/S
Synoptique
ALARMES
CHOIX CYCLE
Écran 6
TRI DE PIECES
Selectionner un actionneur
Portique
Pince
Retour
E/S
Synoptique
ALARMES
Portique
Pince
AUTOMATIQUE
Écran 7
TRI DE PIECES
Sélectionner mode de trie puis valider
Tri couleur
Tri 1/2
Valider
Retour
E/S
Synoptique
ALARMES
Écran 8
TRI DE PIECES
Veuillez insérer une pièce dans le chargeur
ARRET
E/S
Synoptique
ALARMES



Arrêt

Alarme

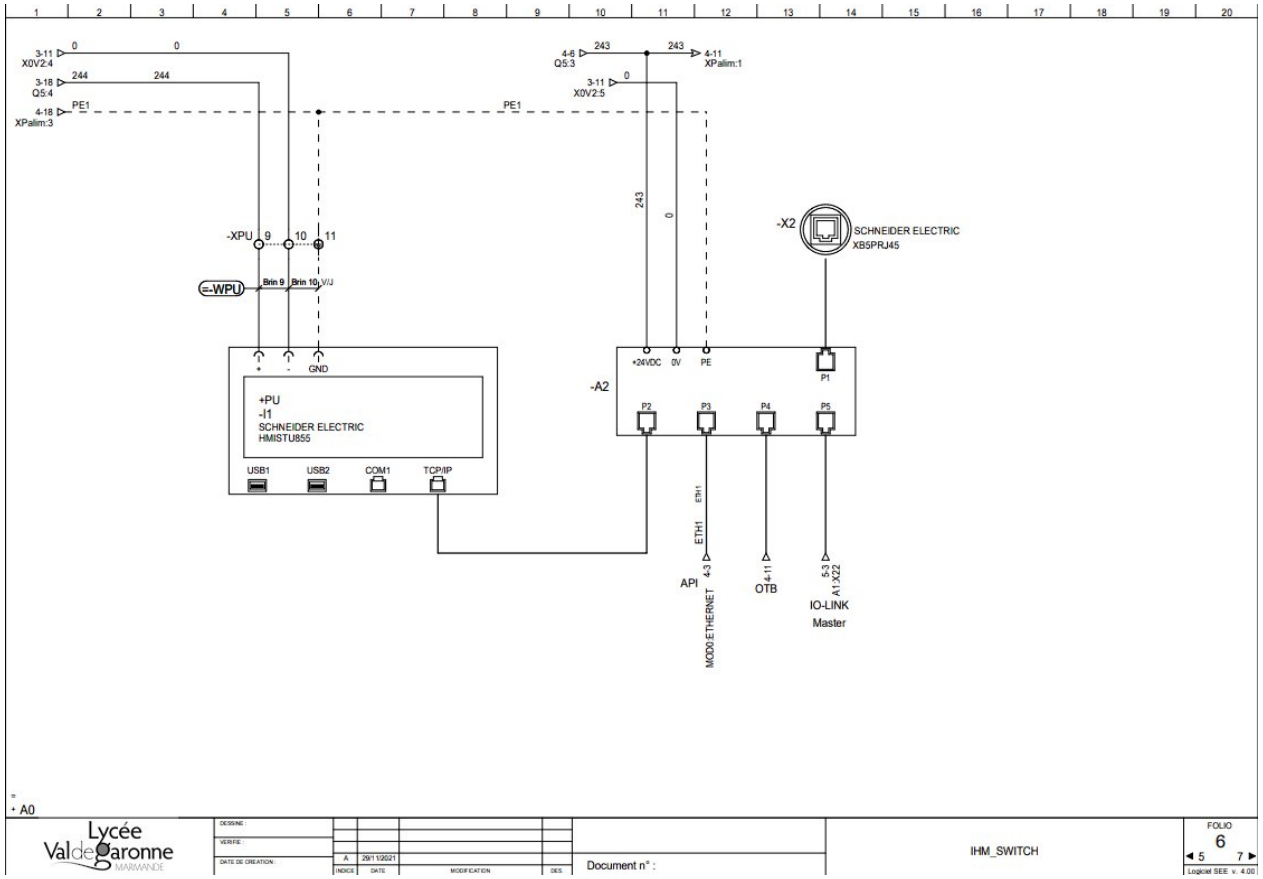
Synoptique

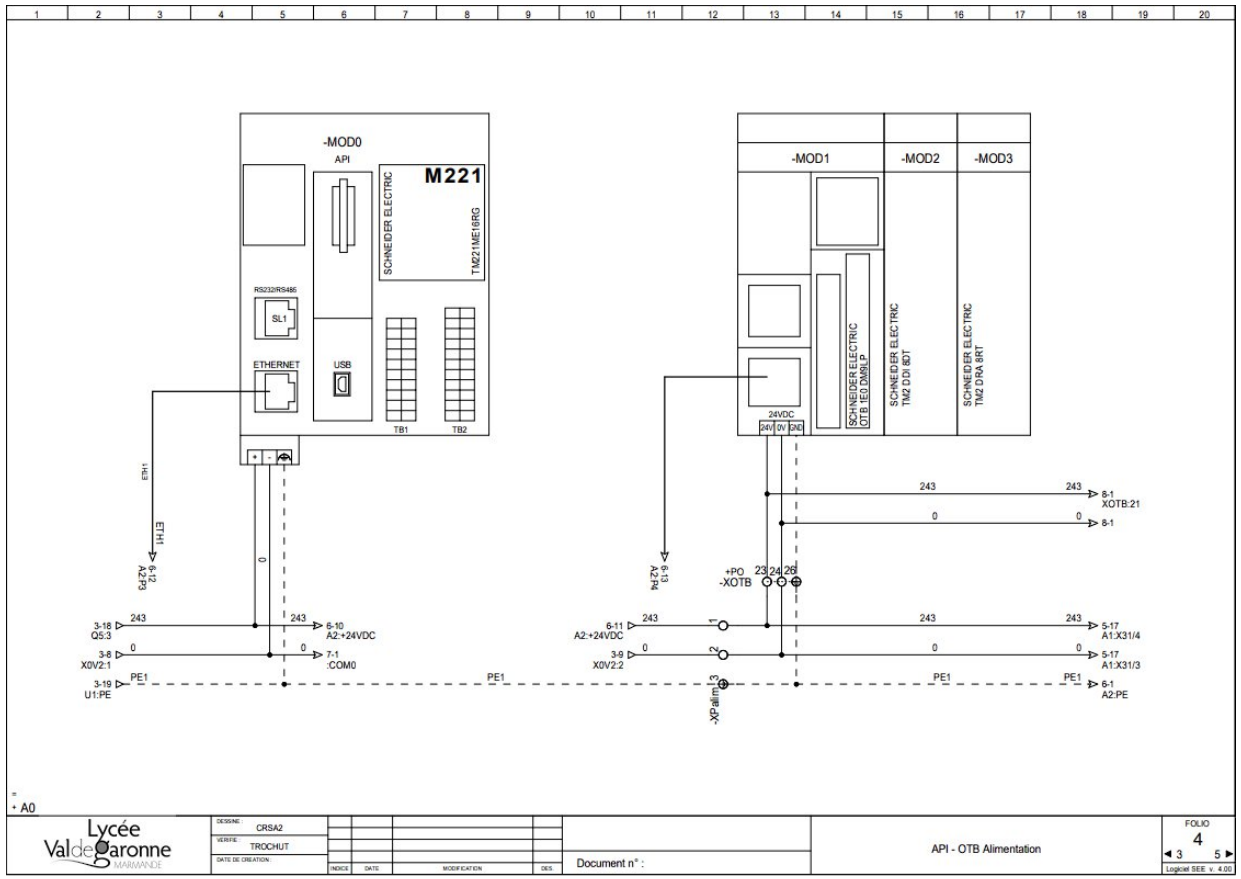


Voyant

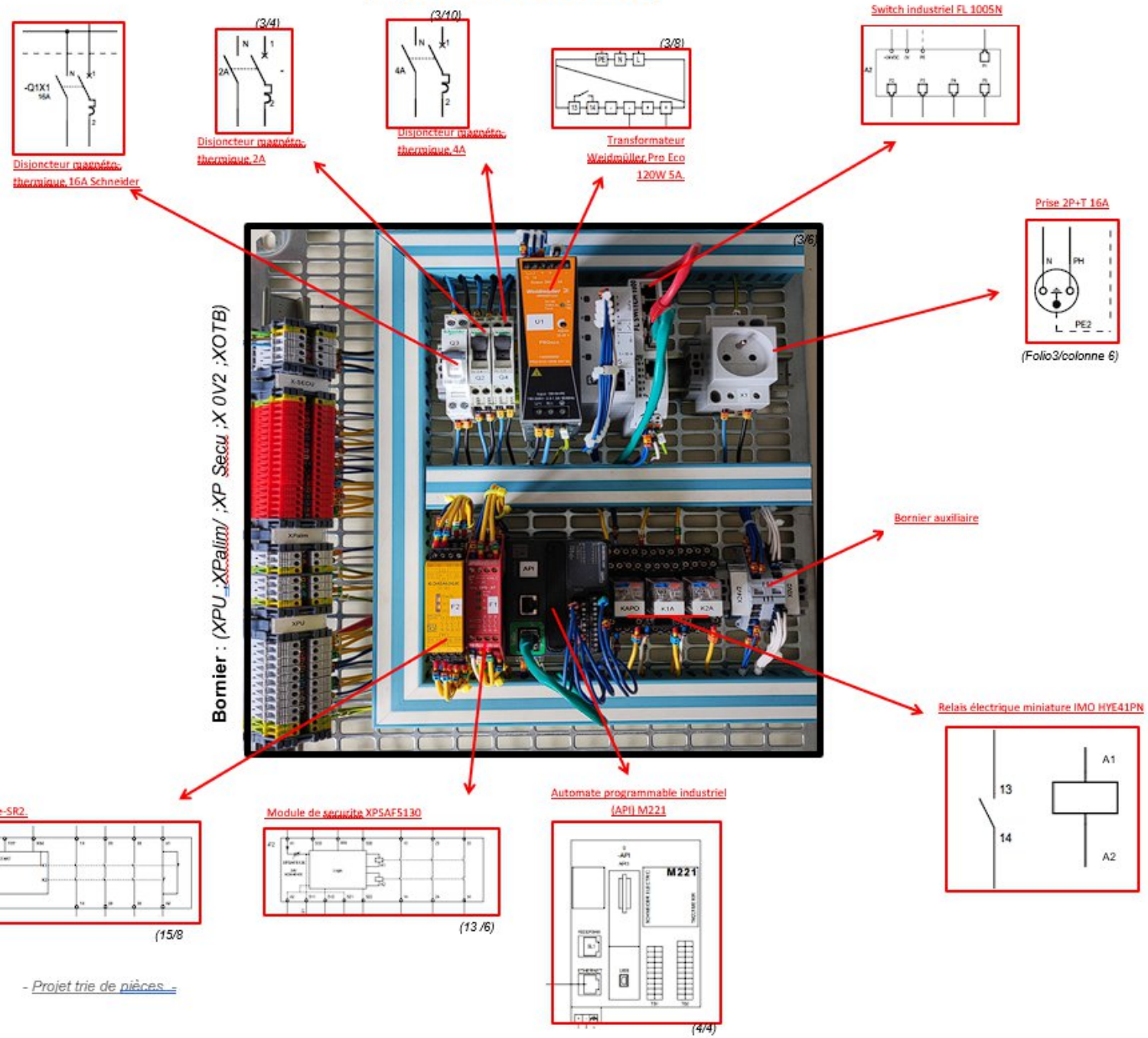
Connection between the HMI and the m221 controller made through the switch.

"Discussions" between PLC and HMI by pack of 16-bit words every 1S





Implémentation Armoire



Remercîment a l’équipe pédagogique

To Mr. Trochut for assisting us in our electrical wiring and programming management;
To Mr. Arne for helping us with the CAD/CAD part and tuning the mechanics;
To Mr. Thierry for teaching us how to handle tools and machine tools;
And to the Plastics Processing Teacher for printing all our parts that we had designed, in 3D printer,
And finally a big thank you to all the people who allowed us to spend 2 years of BTS in the best possible conditions.