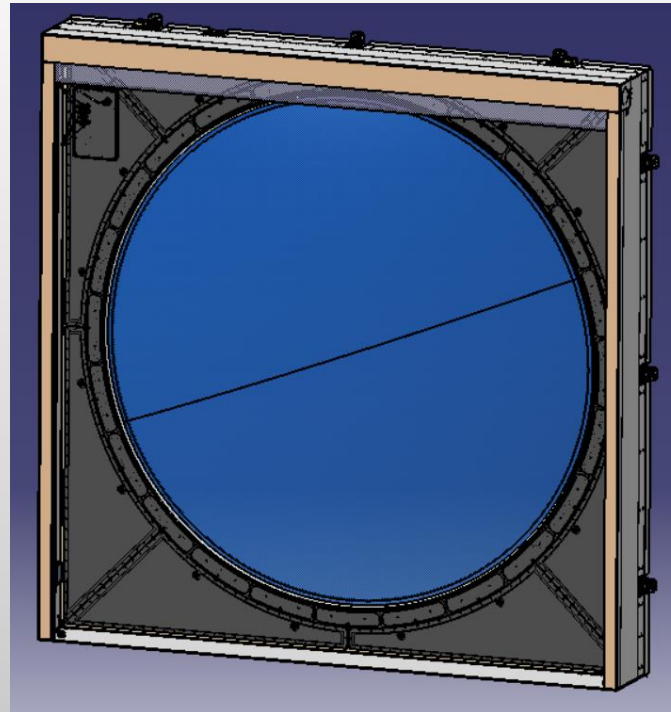
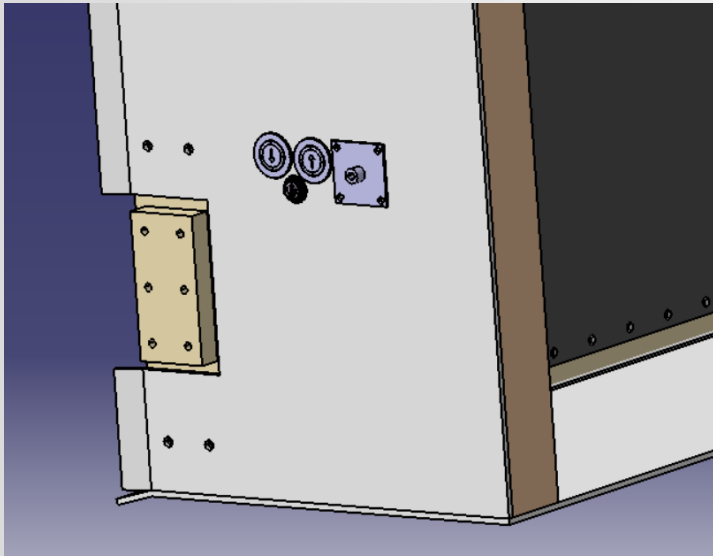


## NECTARCAM front door

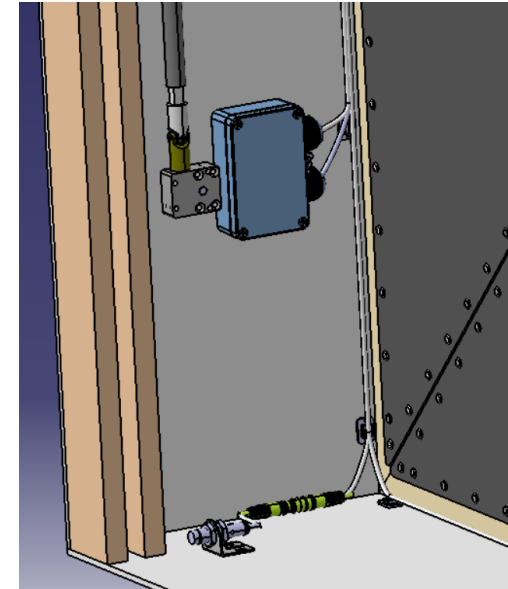
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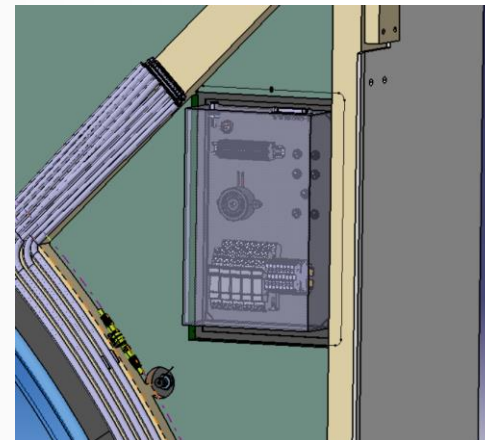
# Definition and design Shutter control panel and box



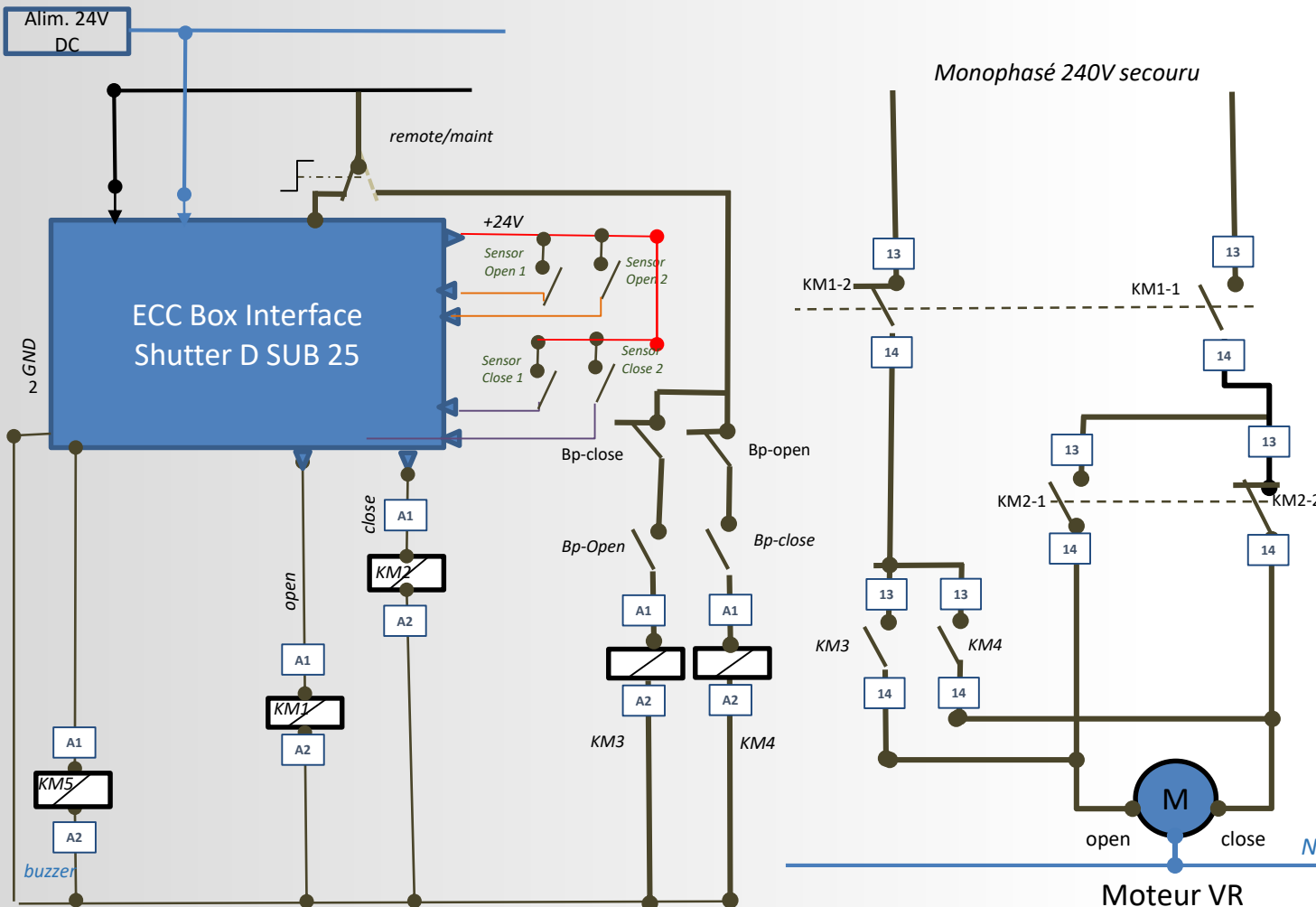
- . Key selector ECC/manual
- . Open button
- . Close button
- . Manual tool Open / Close



Shutter box



# Electrical scheme Shutter control



|         | Bpclose         |
|---------|-----------------|
|         | Bpopen          |
| In(8)   | Maint(0)/rem(1) |
|         |                 |
| In(7)   | sensorOpen1     |
| In(12)  | sensorOpen2     |
| In(20)  | sensorClose1    |
| In(24)  | sensorClose2    |
| Out(3)  | Motor on/off    |
| Out(16) | Open/close      |
|         | Close/manu      |
|         | Open/manu       |
| Out(1)  | buzzer          |

# Electrical scheme Shutter control

| Pin | Label                      | ECC IO | Characteristics | NectarCAM Usage                               |
|-----|----------------------------|--------|-----------------|-----------------------------------------------|
| 1   | <u>Shutter_Buzzer</u>      | Output | 0-24V           | Buzzer (1= buzzer)                            |
| 2   | GND                        |        |                 | GND                                           |
| 3   | Motor1_On/Off              | Output | 0-24V           | Motor on/off relay (1= ON, 0=OFF)             |
| 4   | 24V                        |        |                 | 24V                                           |
| 5   | Motor2_On/Off              | Output | 0-24V           | Not used                                      |
| 6   | GND                        |        |                 | GND                                           |
| 7   | <u>Shutter_OPEN</u>        | Input  | 0-24V           | SensorOpen1 (0 = open, 1 not open)            |
| 8   | DI_Spare7                  | Input  | 0-24V           | Maintenance (1=maintenance, 0=remote control) |
| 9   | GND                        |        |                 | GND                                           |
| 10  | 24V                        |        |                 | 24V                                           |
| 11  | Belt1_SCK                  | Output | 0-24V           | Not used                                      |
| 12  | Belt1_DOUT                 | Input  | 0-24V           | SensorOpen2 (0 = open, 1 not open)            |
| 13  | GND                        |        |                 | GND                                           |
| 14  | <u>Shutter_MasterRelay</u> | Output | 0-24V           | Not used                                      |
| 15  | GND                        |        |                 |                                               |
| 16  | Motor1_Left/Right          | Output | 0-24V           | Motor open/close (0 = open, 1= close)         |
| 17  | 24V                        |        |                 | 24V                                           |
| 18  | Motor2_Left/Right          | Output | 0-24V           | Not used                                      |
| 19  | GND                        |        |                 | GND                                           |
| 20  | <u>Shutter_Closed</u>      | Input  | 0-24V           | SensorClosed1 (1=closed, 0 = not closed)      |
| 21  | DI_Spare8                  | Input  |                 | Not used                                      |
| 22  | 24V                        |        |                 | 24V                                           |
| 23  | Belt2_SCK                  | Output | 0-24V           | Not used                                      |
| 24  | Belt2_DOUT                 | Input  | 0-24V           | SensorClosed2 (1=closed, 0 = not closed)      |
| 25  | GND                        |        |                 | GND                                           |

# Integration@CENBG



Shutter :  
Shutter integration  
Horizontal test



Front door assembly :  
Isolating panel  
LED assembly + wiring and test