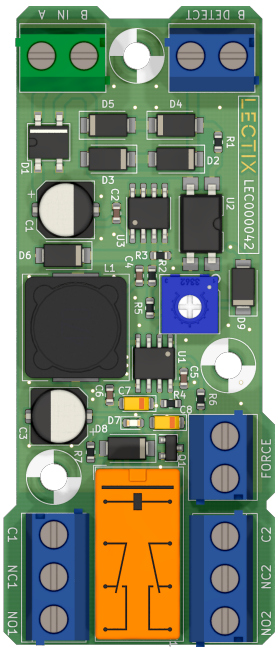
Occupancy detector (DCC)

LEC000042

> ☞ **Warning:** this manual describes the use of the module LEC000042 for an installation **in digital only**. For analog use, go to our website.

1 Overview



- Able to detect all trains in both directions, even when stationary.
- Possible adjustment of the detection threshold (from 0.2 mA to 2 mA).
- Has a relay with 2 independent changeover contacts to connect any system.
- Activation indicator light.
- Possibility to force the activation of the module by an external actuator.
- Delay on deactivation to avoid unwanted reactivations.
- 3 screw holes for easy mounting.

2 Applications

- Block system.
- Triggering a sound effect.
- Hidden station management.
- Automatisms (level crossing, ...)..
- Signage management.

3 Technical specifications

Specification	Value	Unit
Threshold of detection	0.2 - 2	mA
Consumption (inactif @20V) (actif @20V)	3.5 17	mA mA
Relay breaking capacity	1A 125V AC 2A 30V DC	-
Maximum supported current	1	A

Table 1: Specifications

4 Dimensions

The module has three mounting holes for 3 mm screws.

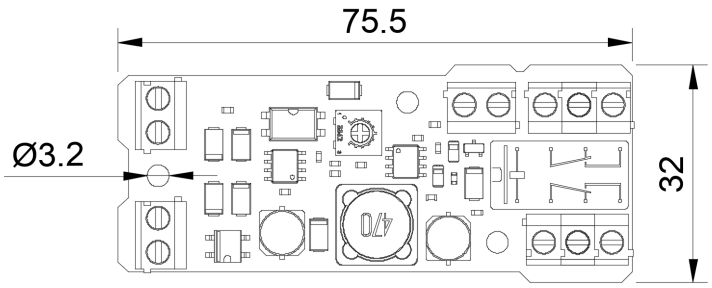


Figure 1: Dimensions of the module (all dimensions in mm).

5 Usage

In DCC, the occupancy detector LEC000042 allows to detect the occupation of a section of track and to trigger numerous automatisms or systems. The adjustable sensitivity of the module will allow you to detect without any worries your locomotives, cars with lighting, or all the graphitized axles.

5.1 Installation and wiring of the module

> ☞ **Remark:** for optimal and safe operation, the wiring of this module must be done with a wire having a minimum section of 0.2mm^2.

The module must be wired as shown in the figure 2. Note that it is important to respect the association of a rail with a letter (A or B).

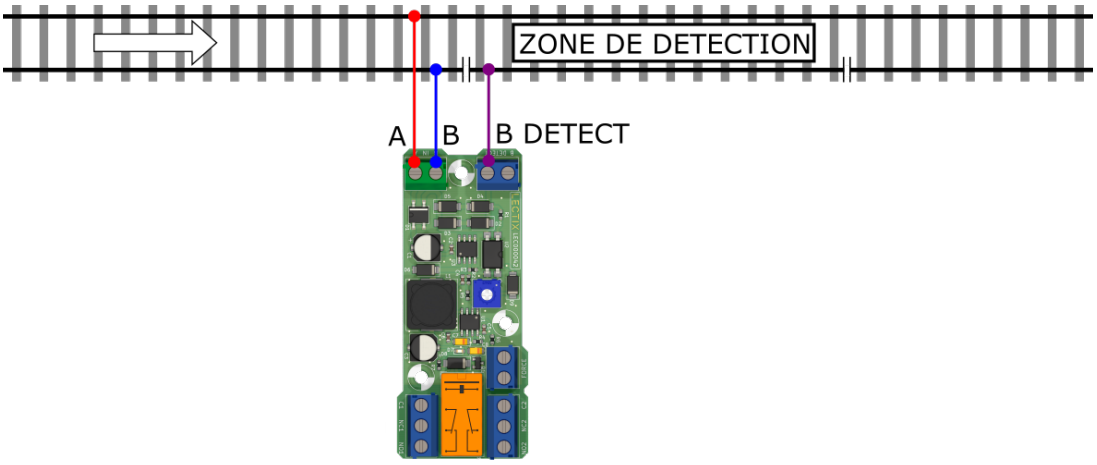


Figure 2: Module wiring diagram.

For a quick and easy installation:

1. Isolate one of the rails in your detection area.

2. Connect the power supply rails, or directly the wires coming from the DCC central unit to the green terminal block (terminals A and B).

3. Connect the insulated rail to one of the 2 B DETECT terminal.

4. Test and take advantage of all the possibilities offered by the detector's changeover contacts.

5. Fix the module with screws or hot glue.

Once the connections of the figure 2 made, you can connect a system or an automation to be activated thanks to the relay's changeover contacts (See. figure 3). You will find examples of use at the end of this manual.

(a) Relay deactivated. (b) Relay activated.

Figure 3: Description of the relay's changeover contacts.

5.2 (optional) Forcing the activation of the relay.

Some systems, such as station stop management, may require the need to force relay activation. To do this, simply connect the two FORCE terminals with a switch (See. figure 4).

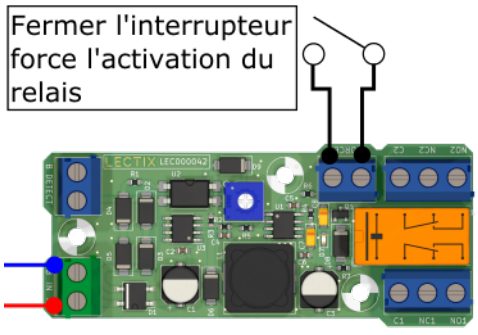


Figure 4: Forcing the activation of the relay.

5.3 (optional) Adjust the sensitivity of the detection.

The module comes pre-set to a standard detection sensitivity that should allow detection of any locomotive, even when stationary (detection of the machine's decoder consumption). If you are not satisfied with the detection level, you can adjust it as shown in the figure 5.

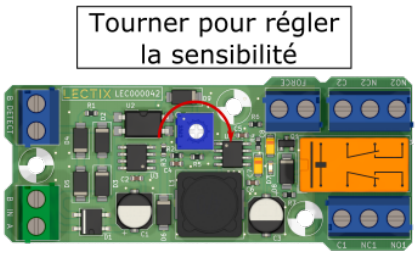


Figure 5: Setting the detection threshold.

To decrease the sensitivity, turn the potentiometer clockwise.
To increase the sensitivity, turn the potentiometer counter-clockwise.

> ☞ **Note :** The potentiometer is very fragile. **Never force it** to deteriorate or make the module inoperable.

5.4 Examples of use

The relay's contacts present on the module allow a very generic use. Here are some examples of use.

5.4.1 Connection of a two-tone light.

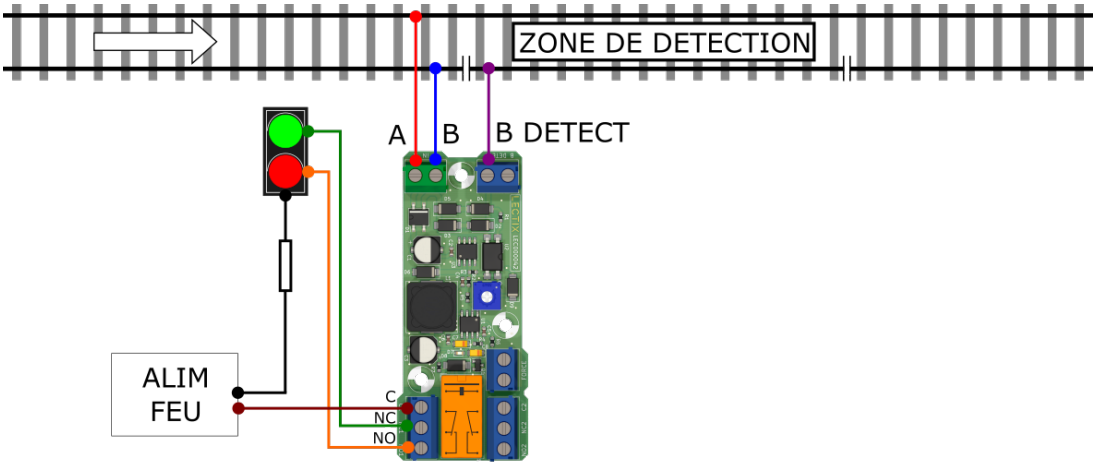


Figure 6: Connection of a two-tone light.

5.4.2 Triggering of a sound signal (horn, ...)

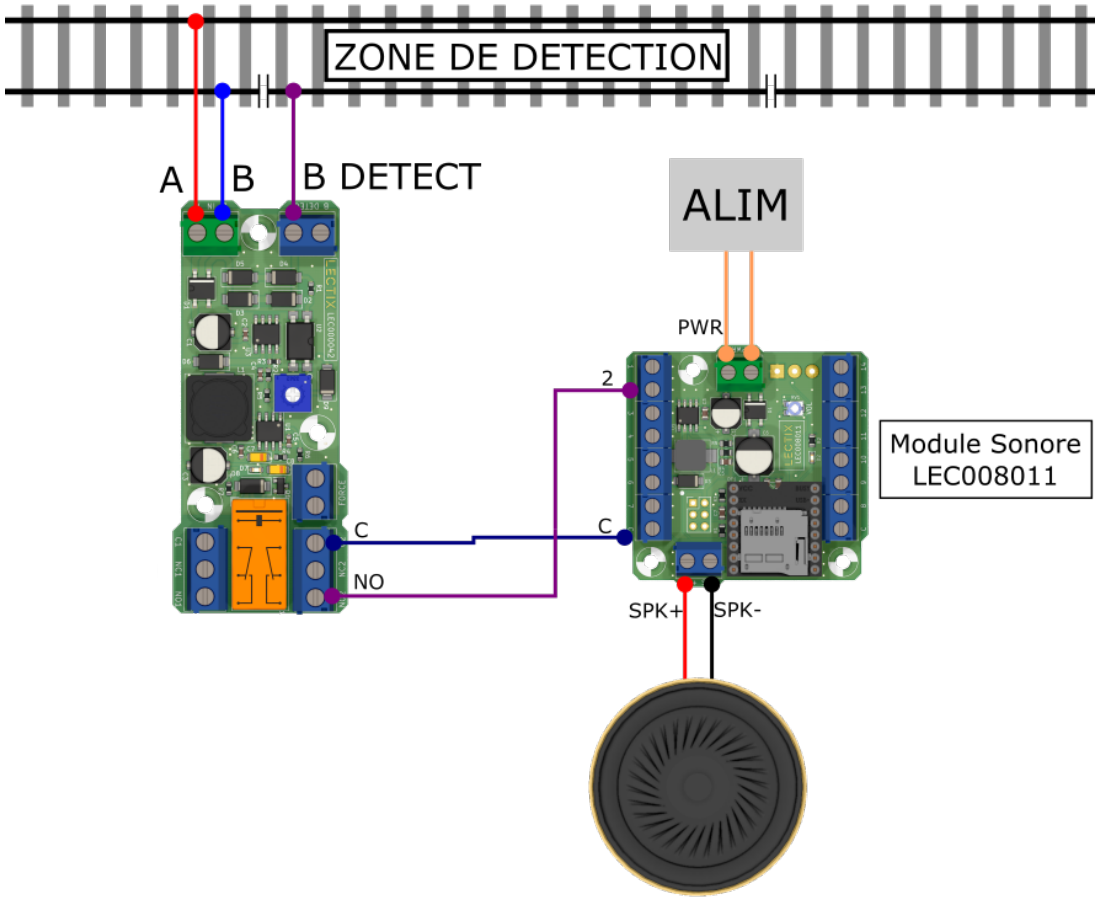


Figure 7: Triggering a sound signal.

5.4.3 Section protection with automatic stop.

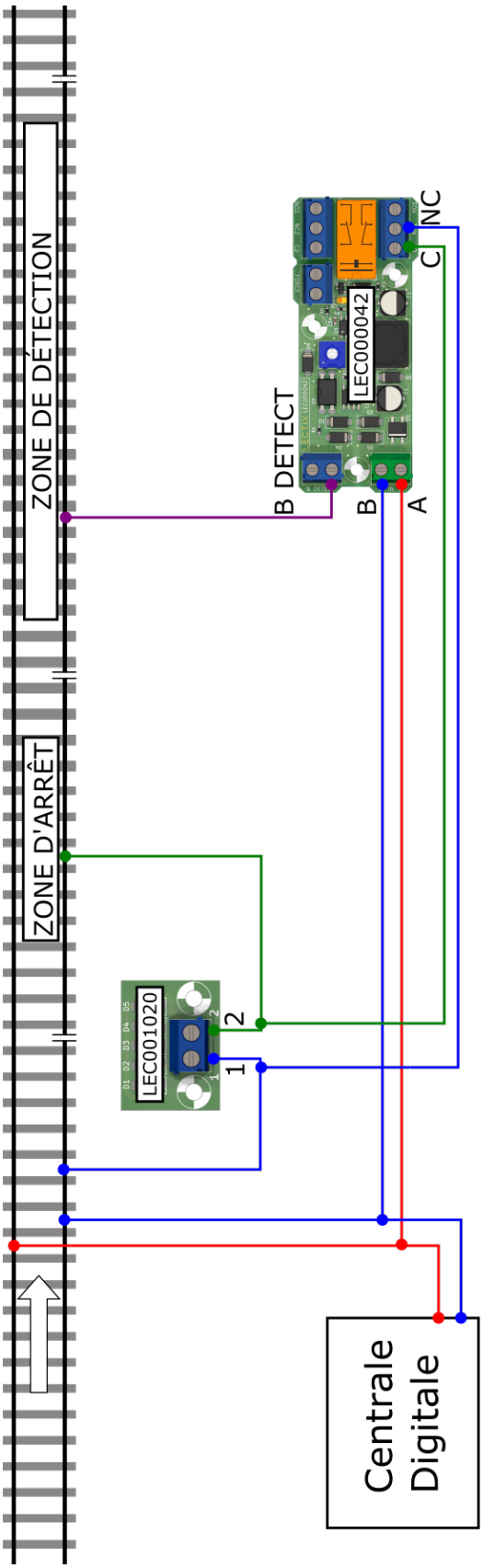


Figure 8: Section protection with automatic stop.

5.4.4 Single block with stop module LEC001020.

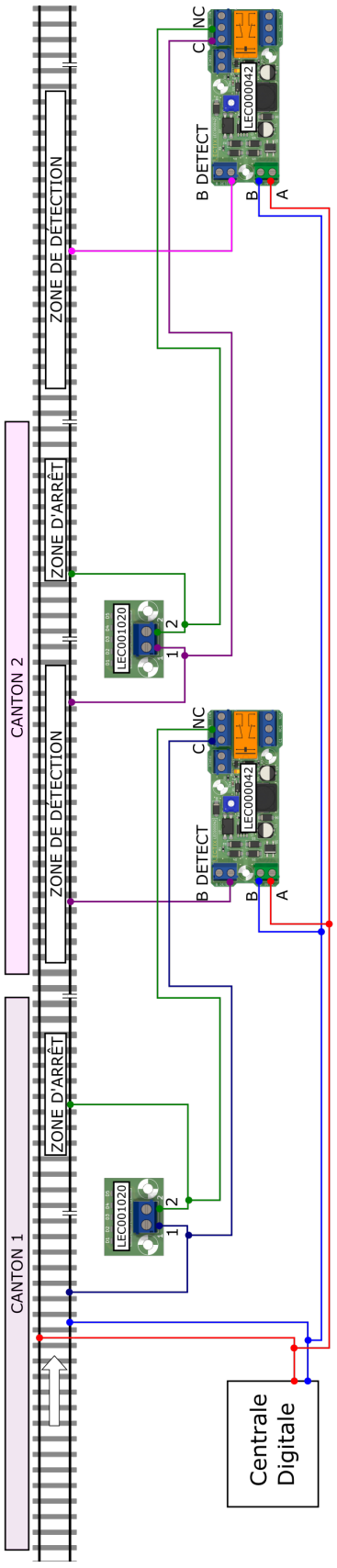


Figure 9: Single block with stop module LEC001020.

5.4.5 Addition of a two-tone light in a block-type installation.

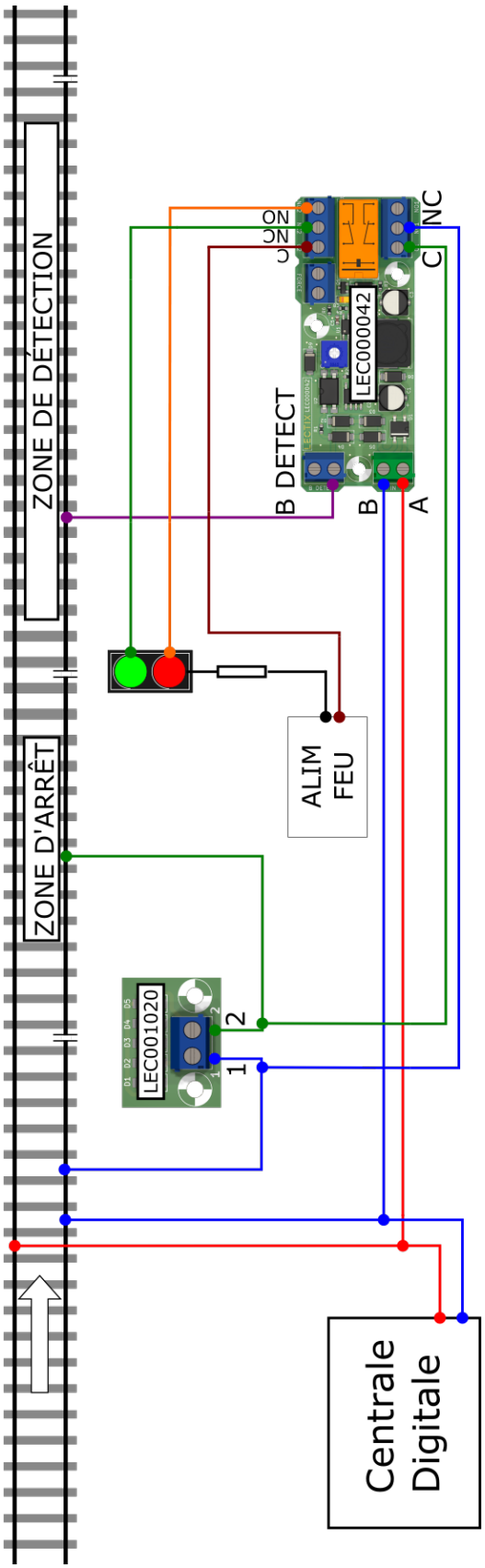


Figure 10: Addition of a two-tone light in a block-type installation.

5.4.6 Manage a switch in a detection zone.

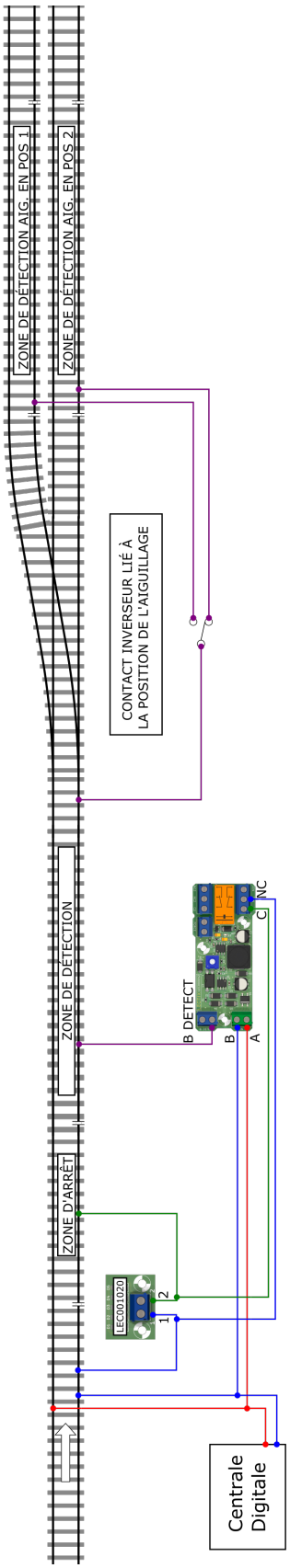


Figure 11: Manage a switch in a detection zone.

5.4.7 Managing a switch at the end of a siding.

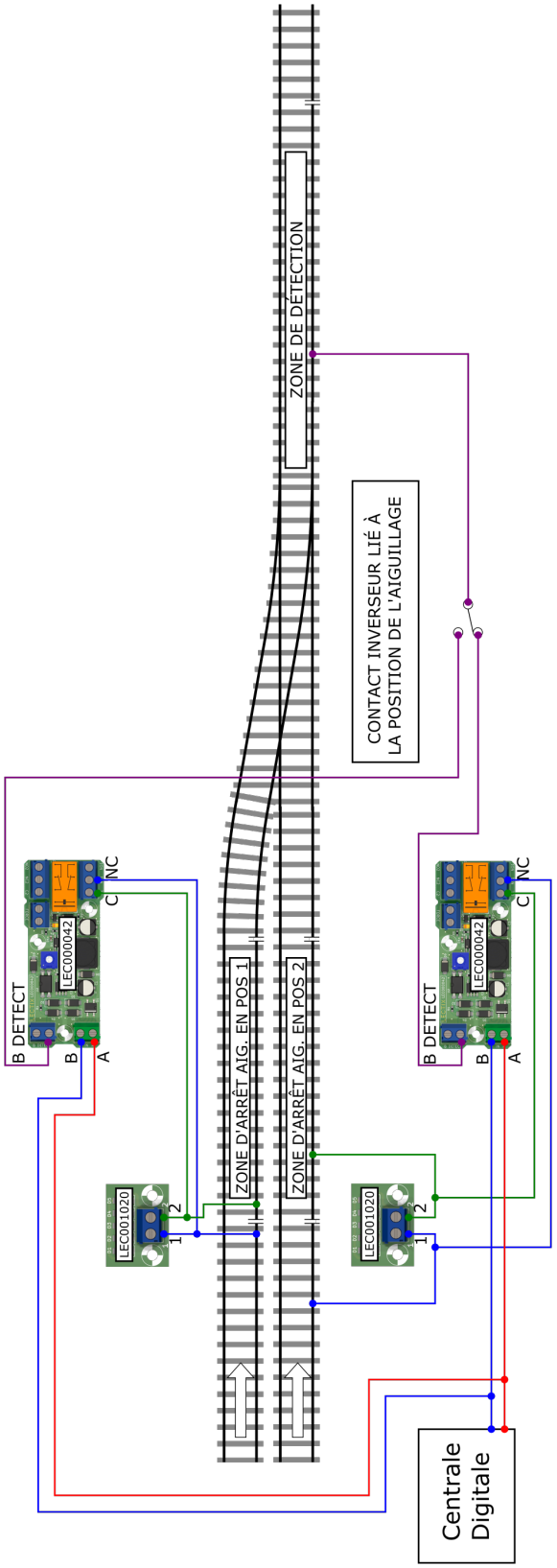


Figure 12: Managing a switch at the end of a siding.

5.4.8 Successive blocks with stop module LEC001020.

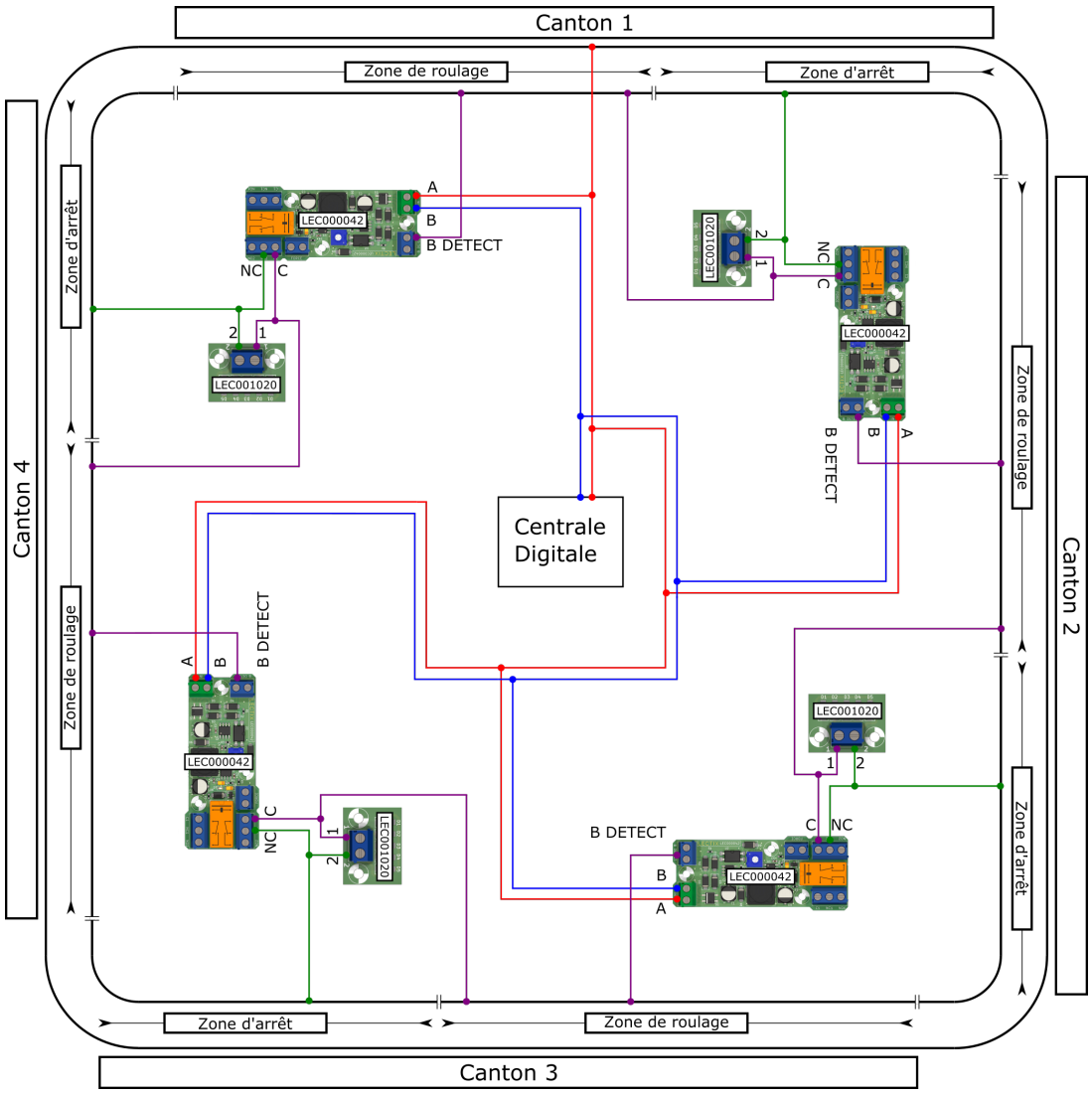


Figure 13: Successive blocks systems.

5.4.9 Successive blocks with stop module LEC001020 without rolling zones.

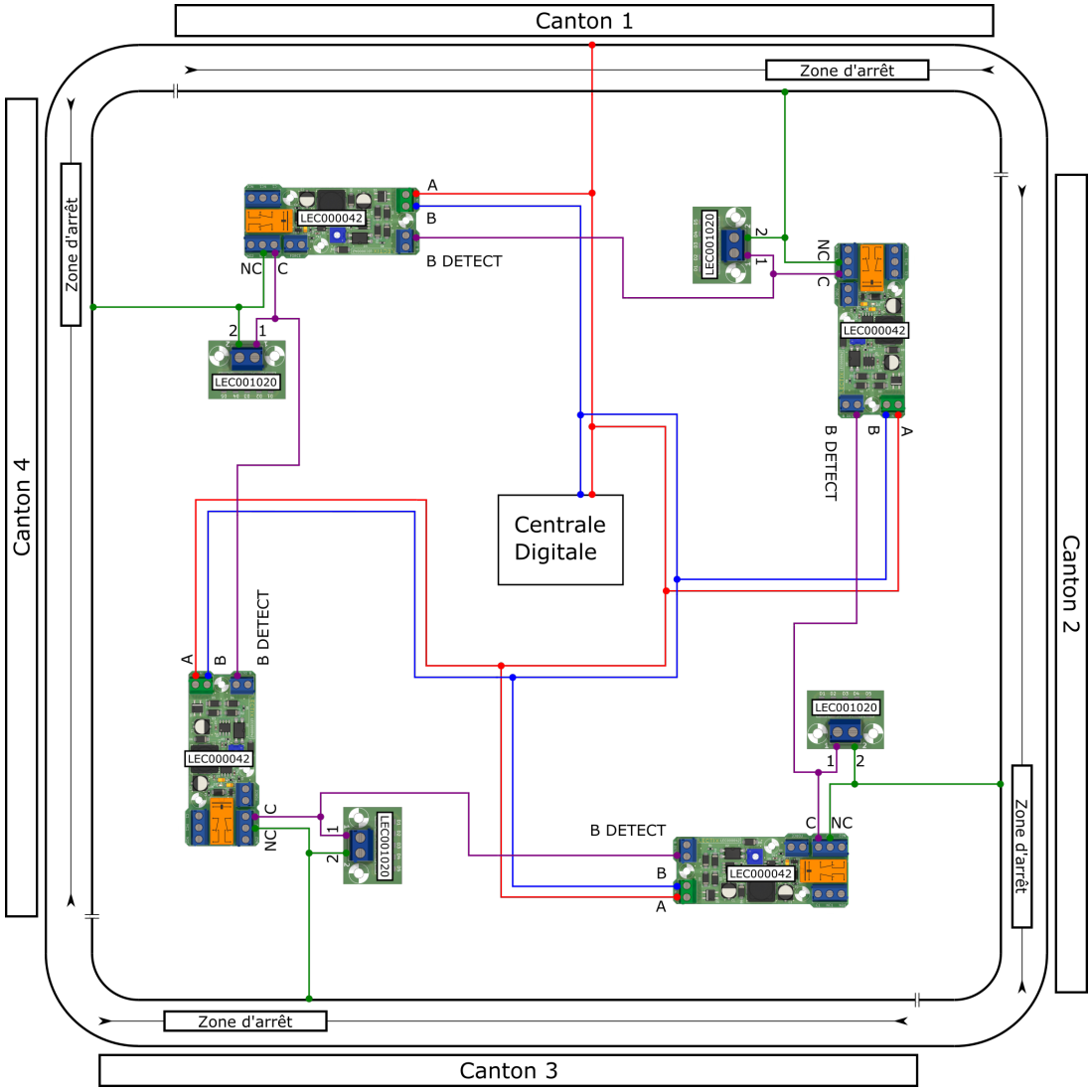


Figure 14: Chain of block systems without rolling zones.

6 Contact and support

For further information, please contact contact@lectix.fr.

Revision History

Revision	Date	Author(s)	Description
4.2.0	11.12.21	TFC	Adaptation of the manual from LEC000041
4.2.1	22.03.22	TFC	Updated Figure 9 to move townships to correct locations.
4.2.2	17.04.22	TFC	Updating the manual to provide translations.
4.2.3	17.06.22	TFC	Update of the diagrams including the braking module.