INNES

SMT210

Installation guide

INNES

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SMT210-installation-guide-016G_en

Product information

The conception and specifications of the product may change without prior notice, and this applies to hardware, embedded software and this guide. Consumable items accessories may slightly differ than herein described as INNES is depending on the evolutions of its suppliers.

This document contains confidential information; it can't be disclosed to any third parties without prior written authorization of INNES.

Safety instructions

Please read carefully the following instructions before switching the product on:

- WARNING! Correct fitting and installation is of the utmost importance. Incorrect fitting and/or installation may result in personal injury or loss. INNES disclaims all liability, of whatever kind, if the product is assembled, fitted and/or installed in an incorrect manner.
- Do not use the product near a water supply.
- Do not pour anything on the product, like flammable liquids or material.
- Do not expose the product to direct sun, near a heating source or a dust nor vibrations.
- Do not obstruct holes, to be sure that air flows freely around the product.
- Switch off the product during a storm.
- Do not open the product in any circumstances.
- Keep this guide, preciously.

Guarantee terms

INNES products are eligible for a warranty to cover genuine manufacturing defect for 3 years.

The maximum number of allowed sub-pixels defectives is 6. Image retention (also called burn in, ghosting or sticking) is not cover under Innes warranty, we advise that you follow the recommendations listed in this document. Product failure occurring as the result of factors that do not constitute genuine manufacturing defect are not covered under the terms of the warranty and any repairs of this nature would be chargeable.

For example:

Inappropriate maintenance action, a non-authorized modification, a not specified environment utilization (see 'Safety instructions'), or if the product has been damaged after an impact, a fall, a bad manipulation or a storm consequence, an insufficient protection against heat, moisture or frost.

This warranty is non-transferrable. In addition, any repairs carried out by non-authorized personnel will invalidate the warranty.

This symbol means that your end of life equipment must not be disposed of with household waste but must be deposited at a collection point for waste electrical and electronic equipment. This will benefit the environment. In this context, a system for collecting and recycling has been implemented by the European Union

1 Getting started

This installation guide explains how to install SMT210 on your computer network. The guide related to the Screen Composer settings for your SMT210 device is available on the CD-ROM (delivered with the device) or on www.innes.pro :

Screen Composer with Gekkota eLinux G3 - getting started manual xxxx_en.pdf

1.1. Recommandations and warnings

- **How to prevent LCD screen marking:**
  - o In order to avoid LCD screen marking, set the device screen in standby at least 8 hours a day.

- **Power supply:**
  - o The SMT210 is designed to work with a specific power plug delivered with the SMT210 pack. It has to be plugged on an electrical outlet compliant with NF C 15-100 standard.
  - o In case the power cord is damaged, please order a new one to sales@innes.fr.
  - o In case SMT210 is powered by PoE supply, the supply device need to be « Limited Power Source (LPS) » (refer to EN60950-1: 2006).
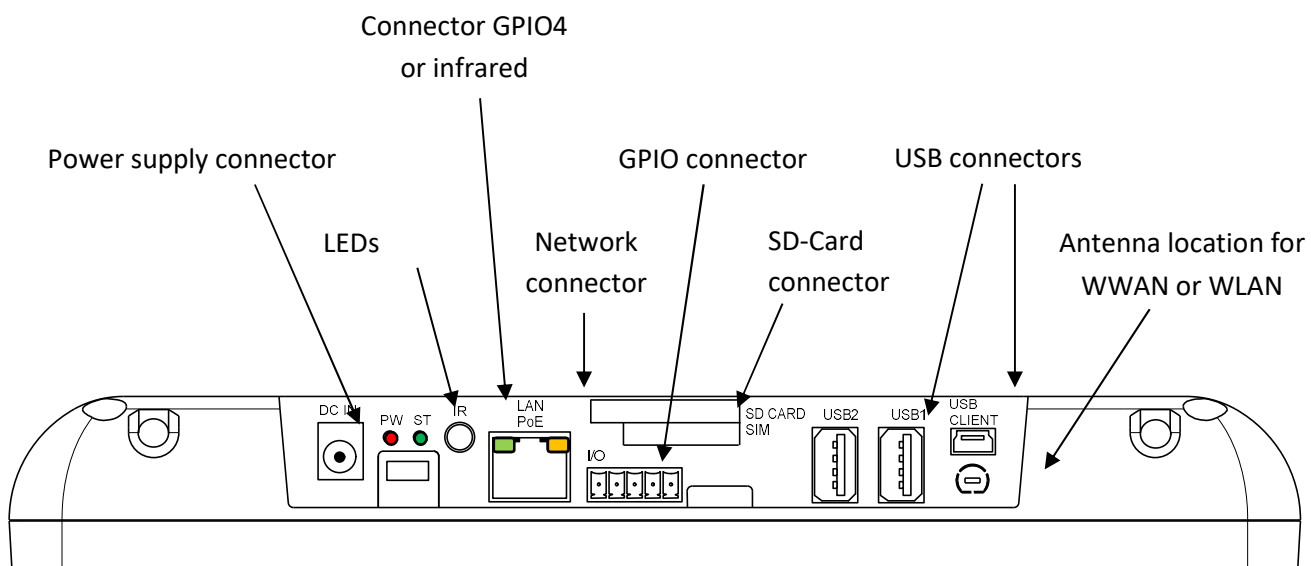
1.1 Packing list

Articles	Model – function
Device	SMT210 with Gekkota embedded software
Power supply	12V power supply (with 1.8m cable)
CD-R	Contains INNES Gekkota , INNES Screen Composer software and all the documentation
PSN	Product Serial Number is both on shipping packing and on the SMT210
Drill pattern	Drilling design

1.2 Installation

SMT210 must be used indoor.

1.3 Block diagram

258

35

176

RFID

Side leds

Speaker

Connector GPIO4
or infrared

Power supply connector

GPIO connector

USB connectors

LEDs

Network
connector

SD-Card
connector

Antenna location for
WWAN or WLAN

DC IN

PW ST

IR

LAN
PoE

I/O
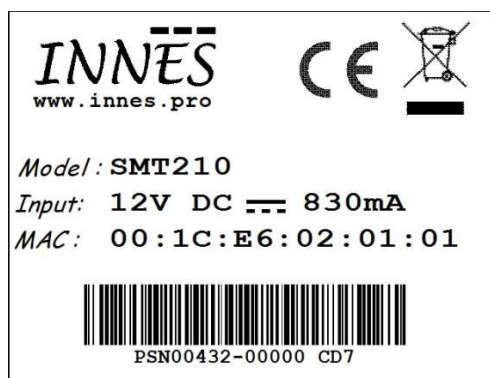
SD CARD
SIM

USB2

USB1

USB
CLIENT
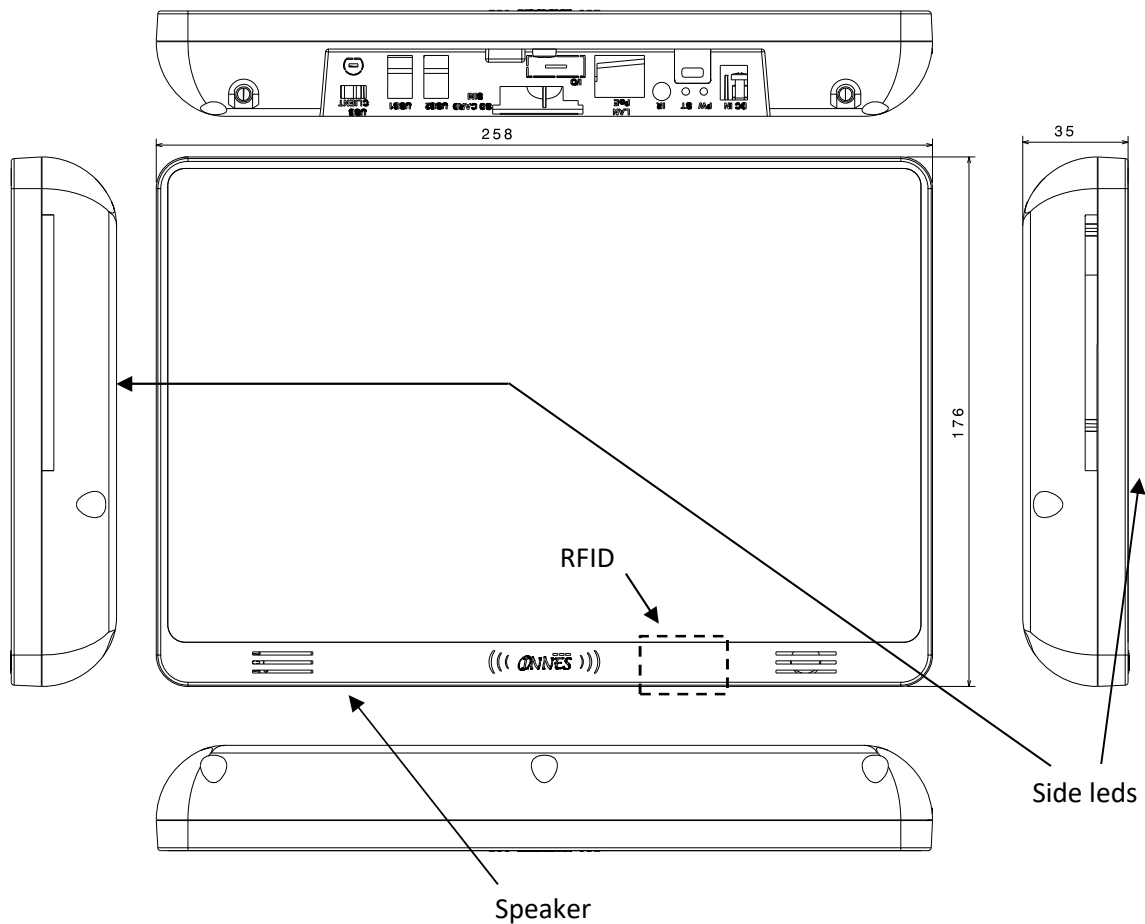
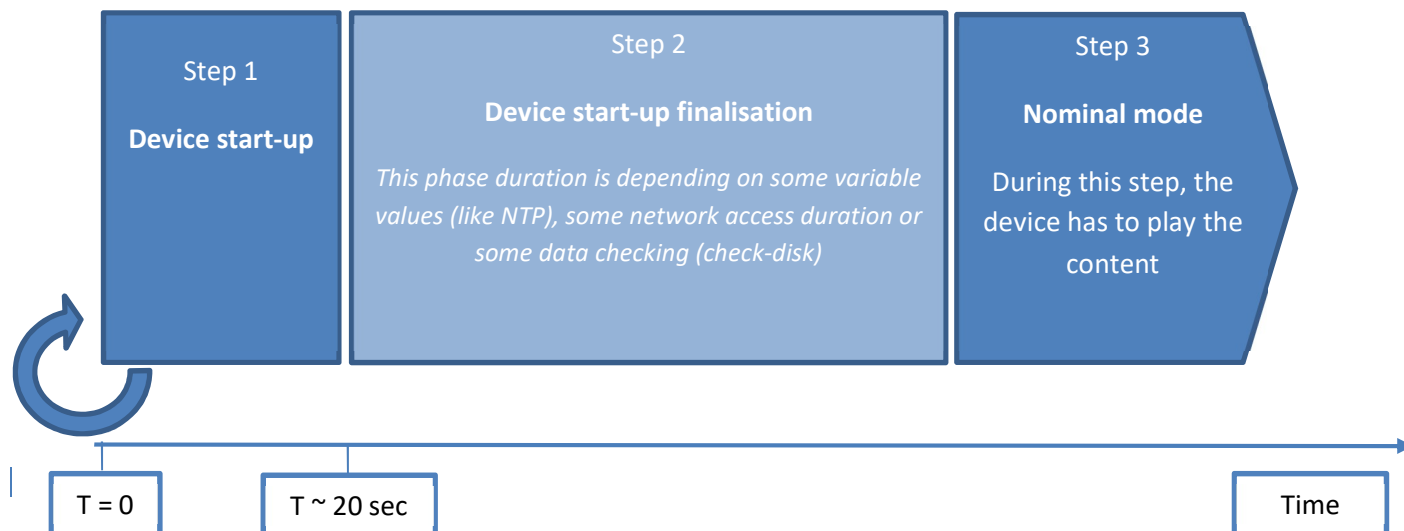# 2 Identification with serial number

The « SMT210 » device embeds « Gekkota » software.

A serial number stamp permits to identify the device.

Note: In case technical support is requested, this serial number could be required to go ahead on technical analysis.

3 Different device steps at start-up

4 LED behaviour

(version Gekkota_os 3.12.15 or above)

- LED POWER behaviour (power on device) :

LED « POWER »	State/behaviour	Information
Power	Red	OK : power supplied
	Off	Error : power supply issue (*1)

- LED LAN behaviour (power on device) :

LED « LAN »	State/behaviour	Information
LAN Link	Off	Ethernet cable is not connected to network (for example in case damaged cable, not working Ethernet plug)
	Green	Cable is connected to network
LAN Activity	Off	There is no network traffic on the Ethernet connector
	Orange blinking	The blinking frequency is indicating the data rate on Ethernet connector

- LED STATUS behaviour depending on device start-up steps:
    - Step 1 : Device start-up
    - Step 2 : Device start-up finalisation
    - Step 3 : Nominal mode

LED « STATUS »	State/behaviour	Information
Step 1 Device start-up	Green : continuous	OK
	Always Off	Error : power supply issue (*1)

LED « STATUS »	State/behaviour	Information
Step 2 Start-up finalization	Off	OK : this step duration can be from several seconds to several minutes
	Green blinking - 1 second duration flash - Periodicity: every 2 seconds	Error: boot issue. Does not go into nominal state (*1)
	Green blinking - 0,5 second duration flash - Periodicity: every seconds	Warning : Check-Disk - The device has detected memory corruption on playout storage (SD card or SSD). The media storage is being repaired. This repair step is called Check-Disk and its duration can be several minutes During this step, a message "checking the file system of data partition in progress" is displayed on screen

LED « STATUS »	State/behaviour	Information
3 – Nominal mode	Green blinking - 1 very short flash (150 ms) - Periodicity: every 4 seconds	OK
	Green blinking - 2 very short and consecutive flashs (150 ms) - Periodicity : every 4 seconds	Warning : Fail Soft Mode Level 1 - Frequent device reboot detected (for example 4 times in less than ½ hour) - Playout is purged - Message is displayed on screen «Fail Soft Mode: waiting for new content » The instability has been caused probably: - By a playout media not supported yet by system Consequently, to prevent any further reboot, the playout content has been purged. The message displayed on screen indicates that a new publication is needed to go ahead (*2)
	Green blinking - 3 very short and consecutive flashs (150 ms) - Periodicity: every 4 seconds	Warning : Fail Soft Mode Level 2 - Frequent device reboot detected (for example 4 times in less than ½ hour) - Playout is purged - Message is displayed on screen «Fail Soft Mode: waiting for new content » The instability has been caused probably by: - a playout media not supported yet by system - a user preference which has been modified Consequently, to prevent any further reboot, the playout content has been purged and user preferences (saved before unexpected reboot) have been restored. The message displayed on screen indicates that a new publication is needed to go ahead (*2)
	Off	Error (*1)

(*1) If the problem persists despite of appropriate power-supply, contact INNES technical support
(*2) If the problem persists, it is advised to find out the media not supported yet by the system and remove it from playout.

5 Connectors pin-out and electrical features

5.1 Pin-out

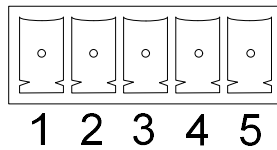| |
|---|
| **Power supply connector:** 12VDC, 830mA.

Pin-out

 |
| **Network connector:** Ethernet RJ-45. Compatible with PoE technology (Power over Ethernet). 10/1000 BaseT. It is recommended to use shielded cables |
| **GPIO connectors:**
Connector pin-out:

 |

Pin N#	Function	Type
1	PIN1	GPIO1(*)
2	PIN2	
3	GPIO2	INOUT
4	GPIO3	INOUT
5	GND	

(*) GPIO1 can only be used in output mode. Write "1" on this GPIO will closed the relay. When closed, pin1 and 2 are connected. The relay supports maximum 1A under 24VDC. The relay is NO type (Normally Open). The flow diagram is detailed in 5.4.

In case you had to buy the GPIO connector male reference, contact WURTH supplier and buy the reference 691 361 100 005

Jack 3.5mm stereo cable, for the GPIO4 connector:
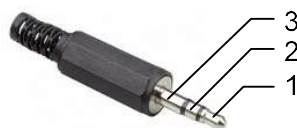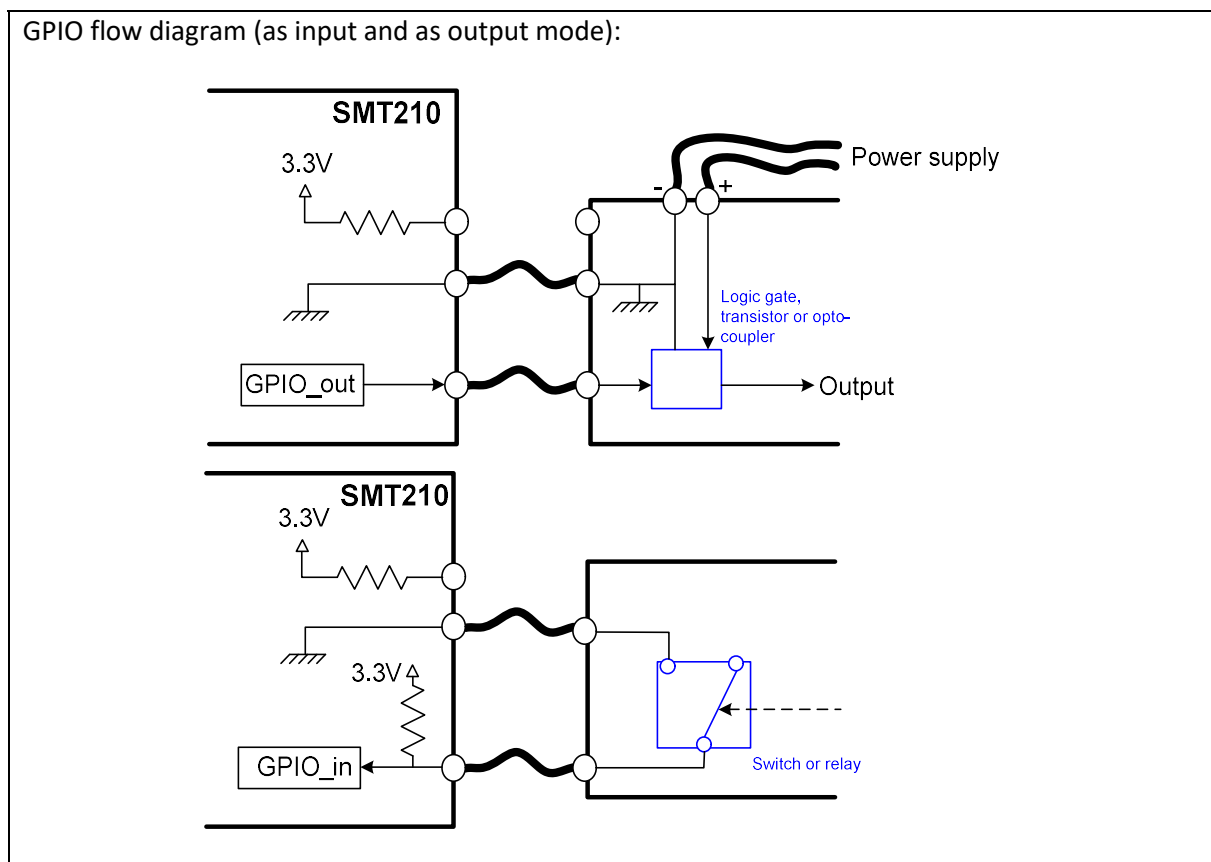

Connector pin-out:

Pin N#	Function	Type
1	3.3V	PWROUT
2	GPIO4	INOUT
3	GND	

5.2 GPIO electrical features

	Vin min	Vin max	VOH min	VOH max	IOH max	VOL max	IOL max	VIH min	VIL max
GPIO2	-0.5V	6.5V		5V		0.4V	10mA	1.17V	0.63V
GPIO3	-0.5V	6.5V		5V		0.4V	10mA	1.17V	0.63V
GPIO4	-0,5V	3.8V	3.1V (-20µA)	3.3V	-100µA	0,6V (2mA)	5mA	2.35V	0.8V

- Pin 3.3V must not be used as a power supply, but rather for voltage reference. A fuse (350mA @ 20°C) permits to cut the power in case current is more than 350mA. Then the fuse can be manually re-armed.
- The relay is open by default (write '1' on GPIO1 to close the relay [relay = ON]).
- GPIO2 and 3 have a 10 KOhms pull-up to 5V.
- GPIO4 has:
    - one 4.7 KOhms pull-up to 3.3V and
    - one 182 KOhms pull-down.
- During board (re)starting, the defaut level for GPIO1 will be 0V (open relay), GPIO2 and GPIO3 wil be 5V and GPIO4 will be 3.3V

6 How to use GPIO

6.1 GPIO Flow diagram (input or output)

GPIO flow diagram (as input and as output mode):

7 How to use the SMT210 relay

7.1 Relay : flow diagram

Relay flow diagram

GPIO1 will control opening /closing relay (write '1' : closed, '0' : open). There is no direction on relay contact. Contact connection can be for example invert on the following flow diagram (supply could be on the PIN2 instead of PIN1fRELAY)
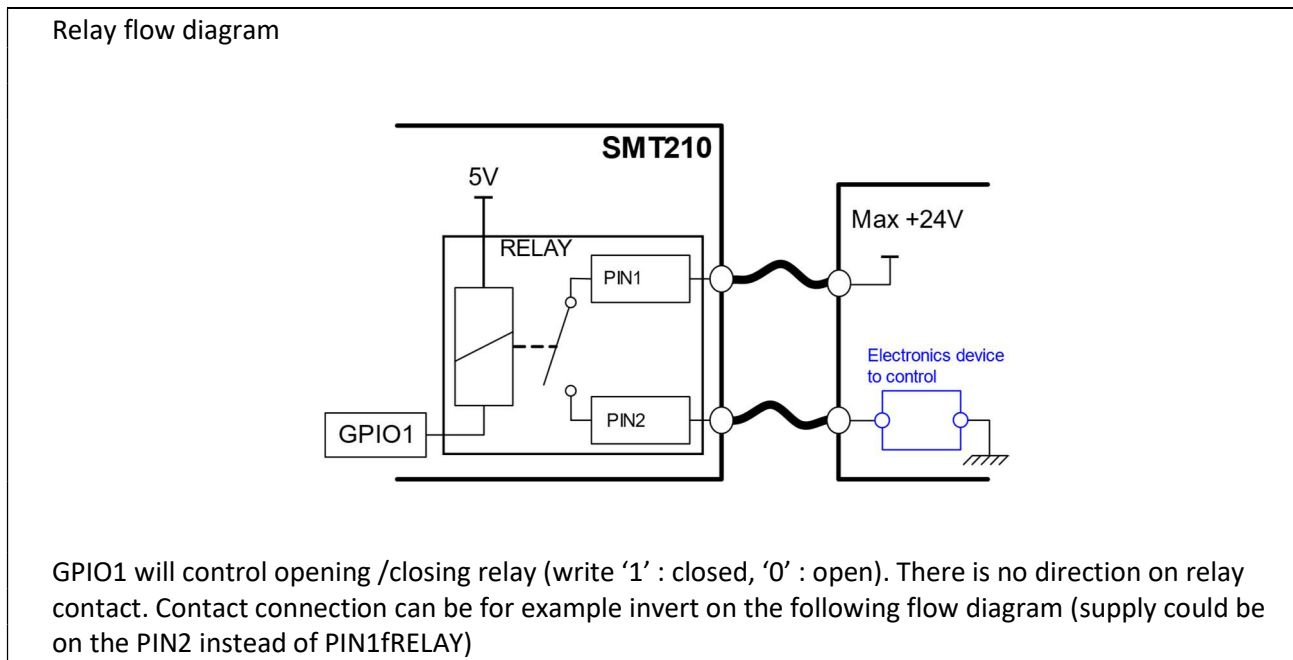
7.1.1 Application with electromagnetic strike/sucker

When SMT210 has to control electromagnetic strike/sucker (automatic door),
⇨ <mark>Before using SMT210, it is highly recommended to check that the electromagnetic strike/sucker has a freewheel diode</mark>
⇨ In any case, please refer to strike/sucker installation manual
⇨ If no freewheel diode is mounted on the electromagnetic strike/sucker as soon as it is controlled by SMT210, the user takes the responsibility to deteriorate deliberately the SMT210 device. In this case, the user is advised that the SMT210 cannot be warrantied
⇨ Example of flow diagram
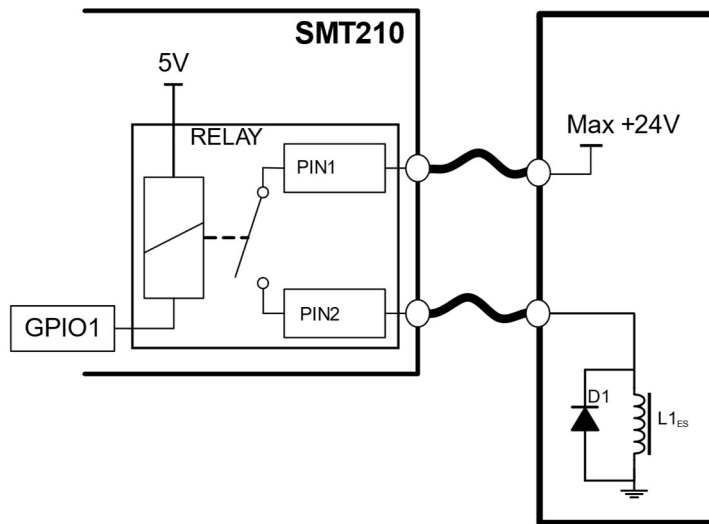
Note: this only freewheel diode (D1), mounted in parallel of the electromagnetic strike/sucker (L1) ensure electrical protection against overvoltage, several Volt which can destroy part of SMT210 when the relay is opened, making it unusable.

⇨ Example of visual flow diagram of electromagnetic strike/sucker with its freewheel diode (not contractual pictures)
   Note: it is advised to plug the freewheel diode near the electromagnetic strike/sucker as much as possible
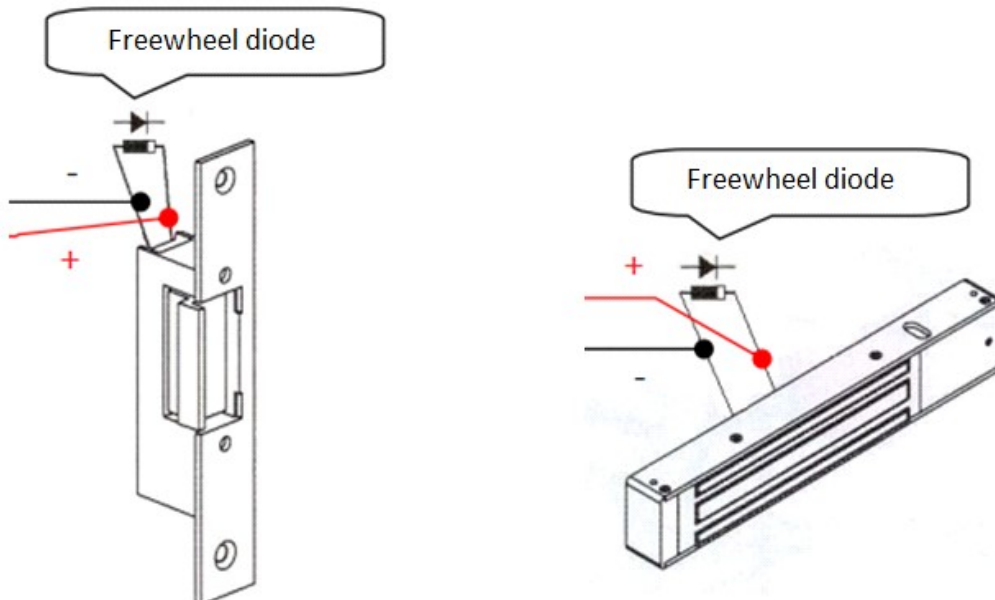
8 RFID/NFC

The SMT210 device has a RFID interface permitting to read cards with two types of technology:

- RFID
- NFC

This table just below is listing the common card manufacturers (the last column is showing whether the cards are supported or not by the device SMT210).

Tag type	Modulation frequency	Trade mark (Manufacturer)	Applicable standard	Data rate (kbps)	Supported by SMT210 ?
NFC type A	13.56 MHz	**Mifare** UltraLight* (NXP)	ISO 14443 typeA	106*, 212, 424	YES*
NFC type A	13.56 MHz	**Mifare** UltraLight C (NXP)	ISO 14443 typeA	106, 212, 424	YES
NFC type A	13.56 MHz	**Mifare** 1K/4K EV1* & mini ** (NXP)	ISO 14443 typeA	106*, 212, 424	YES*
NFC type A	13.56 MHz	**Mifare Plus** 2K/4K S/X ** (NXP)	ISO 14443 typeA	106, 212, 424	YES
NFC type A	13.56 MHz	**Mifare** DESFire D40 / EV1 2K/4K*/8K (NXP)	ISO 14443 typeA	106*, 212, 424	YES*
NFC type A	13.56 MHz	**Mifare** NTAG203*	ISO 14443 typeA	106*	YES*
NFC type A	13.56 MHz	**Jewel** (Innovision),	ISO 14443 typeA	106*	YES*
NFC type A	13.56 MHz	**Topaz 512** (BCM512)	ISO 14443 typeA	106*	YES*
NFC type A	13.56 MHz	**Kovio** (Kovio)	ISO 14443 typeA	106	TBD
NFC type A	13.56 MHz	**SLE66** (Infineon), **SmartMx** (NXP)	ISO 14443 typeA	106	TBD
NFC type B	13.56 MHz	Cartes de transport (Innovatron), **Calypso**	ISO 14443 typeB	106	YES
NFC type B	13.56 MHz	**Micropass** (Inside), **Vault** (Inside), **16RF** (ST), **SLE66** (Infineon)	ISO 14443 typeB	106	TBD
NFC type F	13.56 MHz	**Felica** (Sony)	JIS 6319, ISO 18092	212, 424	YES
RFID type V	13.56 MHz	**iclass** (Hid), **Icode** (NXP), **Tag-it** (TI), **LR** (ST)	ISO 15693	-	NO
RFID LF	125 KHz	**Hitag** (NXP), 125KHz **Prox** (HID)	ISO 18000-2, ISO11784/11785 /14223	-	NO

configurations validated at INNES
** Not fully compliant with ISO14443A*

9 Technical specifications

Type	Specifications
Model	SMT210
Supported formats	The list of supported formats are detailed on website www.innes.pro
Processor	CPU : DM3730 1 GHz
Peripherals	2x USB2 host 1x USB client 1x Jack 3.5 for GPIO (or infra-red) 1x GPIO output (controlled by a relay) 2x GPIO bi-directional 2x side LED RGB
Storage	Internal Flash Memory : 2GB SD-card 2GB
Operating System	Linux 2.6 - distribution Innes, middleware Gekkota 3.yy.zz
Software compatibility	Screen Composer
Constructor	Innes
Audio	Speaker mono integrated
Display	tactile 10.1" Resolution: 1024x600
Network	Ethernet 10/100 Base T
Extension in option	Internal WIFI HSDPA 3G+
Power supply	DC power, 12V, 830mA. Pin-out : ⊖——●——⊕ PoE (Power Over Ethernet) IEEE802.3af (Class 0, compatible Alternative A and B)
Environment	Working temperature: +0°C to +45°C Operating air moisture: Below 80°C Storage temperature: -20°C to +60°C Storage air moisture: Below 85%
Dimensions (W x H x D)	258 x 176 x 35 mm
Weight	1.0 kg
NFC interface	Modulation 13.56 MHz (please refer to table of previous chapter)
Enclosure flame rating	SMT210 black color enclosure: V0 SMT210 white color enclosure: HB
Conformity	In conformity with the following European directives: - RED 2014/53/EU - LVD 2014/35/EU - EMC 2014/30/EU

10 Appendix

10.1   Use of WIFI key WPA-PSK & WPA2-PSK on Innes devices

The use of **WPA-PSK key** imply for the Innes devices the TKIP encryption protocol :
- `pairwise=TKIP`
- `group=TKIP`
- `key=psk`

The use of **WPA2-PSK key** imply for the Innes devices the CCMP encryption protocol :
- `pairwise=CCMP`
- `group=CCMP`
- `key=psk`