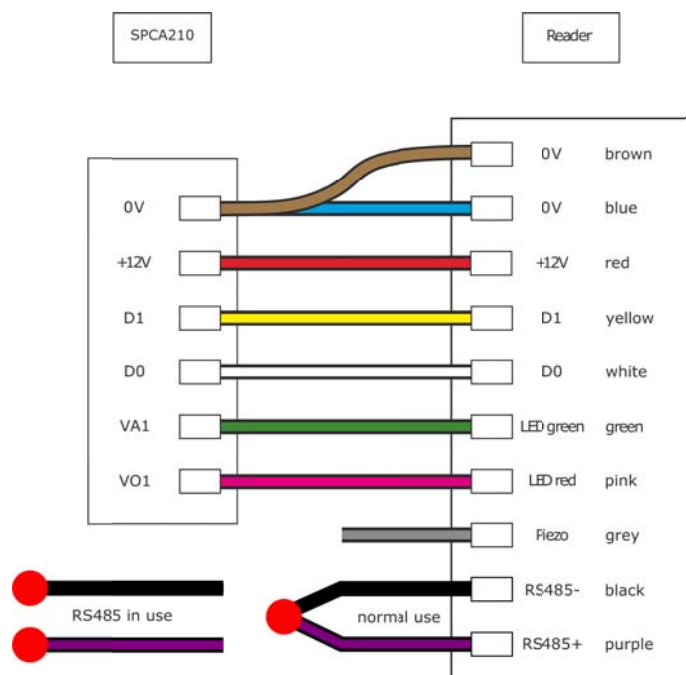
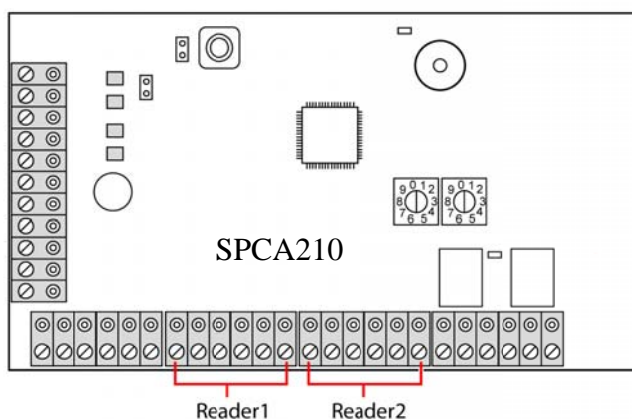
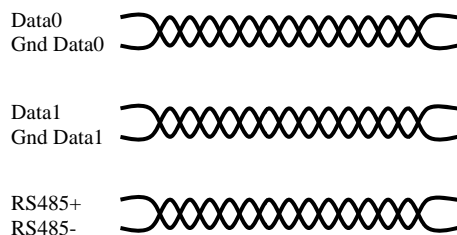


## Cabling the SESAM-Mifare-readers Classic - HMD-LWA-AES/CDA2 and HMD-TKWA-AES/CDA2 – VdS G 115050 to the Vanderbilt 2 door expander SPCA210

Alignment	Colour Code	Signal	Description on SPCA 210
Data	white yellow	Data0 Data1	D0 D1
Power supply	blue brown red	GND GND (Data0/Data1) +12V	0V 0V 12V
Signal	green pink grey	LED green LED red Piezo Buzzer	VA1 VO1
	black purple	RS485- RS485+	<i>For reader firmware update only</i> <i>During regular operation Terminal 9+10 must be connected</i>

Supply/voltage min/max: +12V/+24V, standby-/operating current: 26/40 mA, operating temperature: -15°C ~ +65°C

- A standard shielded telephone cable with 5 wire pairs is used to connect the reader unit to the controller.
- The cable must be extended like figured below:



Please choose the reader profile 5 type in the SPC6300 configuration program.



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## Mifare reader with optional 128 bit AES encryption

In delivery status the reader works in operation mode unencrypted. The UID data of the 13,56 MHz card types Mifare Classic 1K, Classic 4K, ultralight, ultralight C, light, mini, DESFire EV1 and ISO14443-A can be read by the reader.

As an option the reader can be set into encryption operation mode. The data of the provided Mifare DESFire EV1 cards can then be read encrypted. In this operation mode the reader reads just Sesam-encrypted Mifare DESFire EV1 cards.

The encryption functionality is available for Mifare DESFire EV1 cards provided by Sesam.

White printable cards can be ordered under item number: HMD-TK-WS-S

Key fobs can be ordered under item number: HMD-TS-SW-S

With the enclosed **Reader Security Card** the 128 bit AES encryption between reader and Mifare DESFire EV1 cards can be activated and deactivated.

For checking the operation mode the <b>Reader Security Card</b> has to be presented at the reader as follows (even under regular operation):		
Presenting the RSC at the reader	Signalling	Meaning
short (approx. 0,5 sec.)	1 x yellow short	
	1 x green/audible long	reader works unencrypted
	3 x red/audible short	reader works encrypted

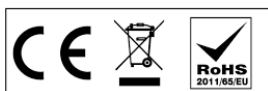
To switch from operation mode unencrypted into encrypted and reverse please proceed as follows:		
Presenting the RSC at the reader	Signalling	Meaning
long (approx. 3 sec.)	green	start configuration mode
long	1 x green/audible long	reader works unencrypted
	3 x red/audible short	reader works encrypted

## Reader firmware update

For executing a firmware update on the reader the RS485 interface of the reader is used. Therefore Sesam provides a separate terminal program. To connect the RS485 reader interface to a PC a RS485 converter is necessary.

To execute a firmware update on the reader please proceed as follows:		
Presenting the RSC at the reader	Signalling	Meaning
long	green	start configuration mode
during firmware transfer:	fast green LED blink	firmware transfer under progress
	all signals off	reader booting process
	3 x yellow/audible short	firmware transfer successful
	1 x yellow/audible long	ready for operation

**The configuration mode is automatically terminated after at least 5 minutes with no input.**



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**Instructions for use:**

The faulty detection of a card/key fob is indicated by 3 short red/audible signals. In this case no UID is sent to the controller!

Possible causes:     - During “encrypted operation mode”: No Sesam Mifare DESFire EV1 card/key fob  
                              - Card/key fob was presented too short

If the reader isn't connected to a controller the faulty detection is indicated through a long yellow/audible signal (approx. 1,2 sec. )

**Instructions for security card RSC:**

The security card RSC should be stored in a safe and protected place.

The RSC is securely connected to the related reader and protects the reader against tampering.

The RSC functionality includes the enabling and disabling of the encrypted operation mode, setting the different operating modes and can enable the firmware update functionality.

