

DATA SHEET

SCIEL READER R

High range active RFID reader with integrated relay

Ref. SCIBT27B



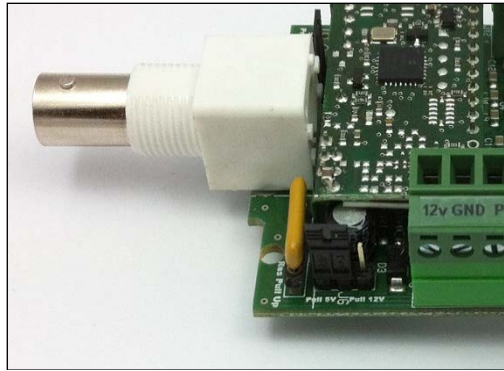
- ⦿ **« Hand-Free »:** automatic contactless reading system without any operation on our Active RFID Tags
- ⦿ **Adjustable receiving range**
- ⦿ **Supported protocols for Access Control:** output' selection compliant with Wiegand 26 bits or Clock & Data protocols
- ⦿ **RS232, RS485 or USB communication ports**
- ⦿ **Internal relay with dry contact – user-definable activation mode**
- ⦿ **Configuration and management with ERM software running on PC**
- ⦿ **EMC:** this product complies with the standard I-ETS 300-683 on the electromagnetic emissions.

Specifications		
External Power Supply	12 VDC (7VDC to 18VDC)	
Average Current	20 mA or 34 mA if relay activated	
Frequency	433,92 MHz +/- 150KHz	
Receiving Range	Adjustable	
Access Control Protocol	Wiegand 26 bits	Data Clock
	D0 - D1	Data – Clock
	26 bits	10 or 13 characters
RS232 Interface	TX, RX and GND signals on internal connector – Selection by jumper	
RS485 Interface	Half ou Full Duplex. TX and RX signals on internal connector	
USB Interface	Internal connector USB 1.1	
Commands	1 NO/NF dry contact: 0.5 A @ 125 VAC / 1 A @ 24 VDC Stand-alone mode: activated upon detection of one ID code and remains closed if one or more codes are within the reception area. On-line mode: activated by software command Software Configuration by “ERM” Configuration Tool	
Connectors and Fixing system	Screw connectors on board – Cable through Gland connector – 4 internal mounting holes	
Antenna connector	Female BNC Connector for 433MHz external antenna	
Settings	ERM Configuration tool provided for PC running over Windows XP, VISTA, Windows 7	
DEL Indicator	Power, Relay activation	
Casing	Painted Aluminium : 95 x 54 x 35 mm - IP65 Waterproof	
Operating Temperature	-20°C to +60°C	
Standards	EN 301 489 – 3 : 2002 V1.4.1 ; EN 300 220 – 2007 : V2.1.2 ; CE Mark ; RoHS Certified	

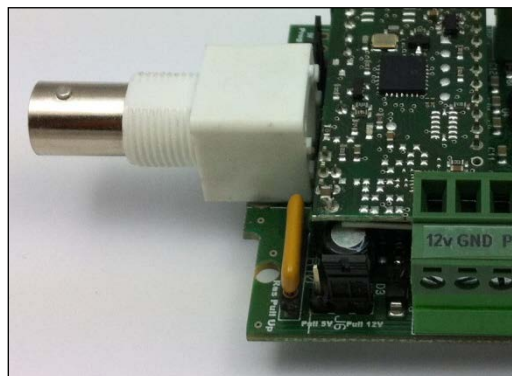
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1.2 Jumper J1: pull-up in D&C or Wiegand mode

The jumper J1 can be used to configure the voltage of pull up resistors.



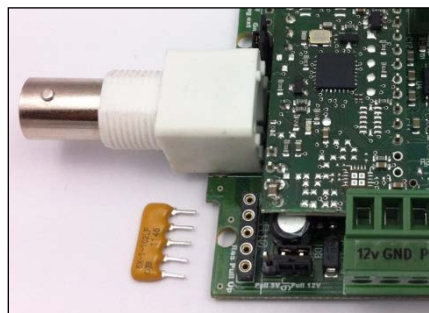
Picture: pull up's jumper in 5VDC mode



Picture: pull up's jumper in 12VDC mode

We strongly recommend that the pull-up resistors be soldered at the controller's level for a distance higher than 1 or 2 meters.

To remove manually the pull-up resistors R10 from the reader, mounted by default, please refer to the picture below.



Picture: R10 pull-up resistors

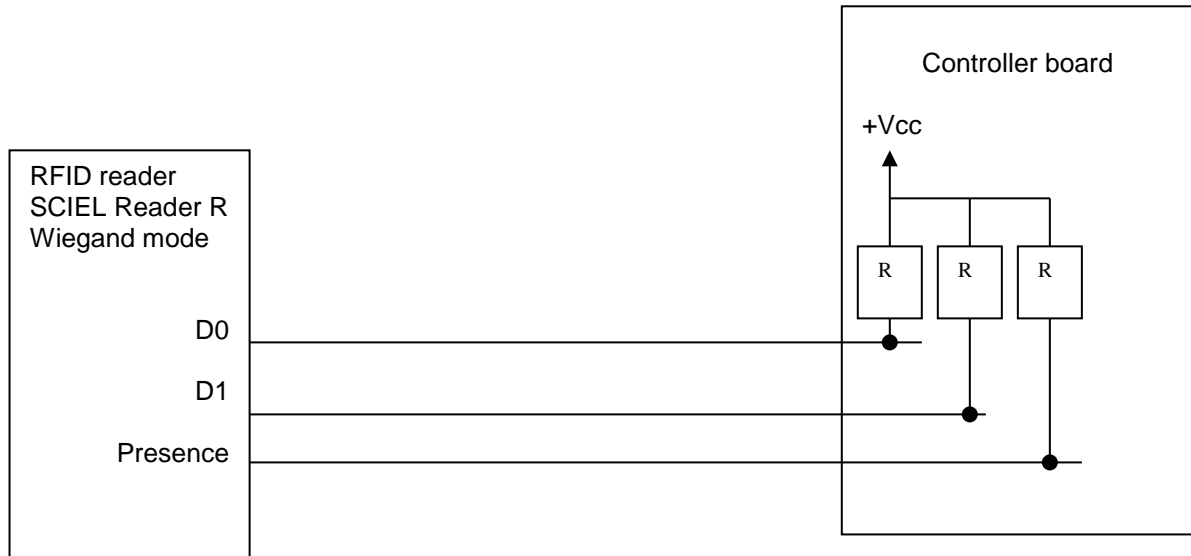


Figure 2 : Example of Wiegand wiring with Pull Up resistors at the controller level

1.3 Jumper J2: internal relay command

The J2 jumper is used to configure the command of relay.

1.3.1 Stand-alone mode

When the reader is configured in the CONTEXTUAL mode and when the option Direct Command of Relay is activated, the detection of a defined quantity of tags in the detection field will activate automatically the relay.

When the last tag is out of the detection area and when the "leadtime before indicating the tag is of out of range" is exceeded (by default, defined at 6s), the relay is deactivated.



The relay can be managed by this way only with the CONTEXTUAL mode AND the Direct Command of Relay activated.



Picture: Jumper J2 in stand-alone mode

1.3.2 Operating mode by software command « OK »

A specific software command can be used to activate the relay during 4 seconds roughly when this command is sent to the reader through the serial link (USB, RS485, RS232).

To maintain the relay as activated, the software command has to be transmitted in a quicker recurrence than the initial closing timing (4s not adjustable).

Please refer to our Software Datasheet MCHD: READER COMMUNICATION PROTOCOL AND SETUP COMMAND LIST.



The relay can be managed by this way only with the ON-LINE mode AND the Direct Command of Relay deactivated.



Picture: Jumper J2 in stand-alone mode

1.3.3 Presence Mode

The reader has to be configured in the CONTEXTUAL mode or in the ON-LINE mode AND the direct command of relay has to be deactivated.

Any detection of a tag in the detection field will activate the relay. The contact will be maintained closed until the tag's ID code will be received (around 100 to 200ms depending of the configured mode, WIEGAND or DATA&CLOCK respectively).



The relay can be managed by this way only with the ON-LINE mode or the CONTEXTUAL mode AND the output interface configured as RS232 + WIEGAND or RS232 + DATA&CLOCK.



Picture: jumper J2 in PRESENCE mode

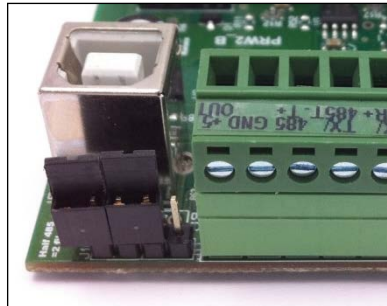
1.4 Connector B: RS232, RS485 (422)

The reader contains a second connector B used for the serial link RS232 or RS485 Full Duplex.

Connector B's pin	RS232 mode	RS485 (RS422) mode
485 R-		RX -
Rx / 485 R+	RX	RX +
Tx / 485 T-	TX	TX -
485 T+		TX +
GND	GND	GND
+5 OUT	+5VDC (30mA) output	+5VDC (30mA) output

1.5 Jumper J3: RS232 or RS485 (422) mode





The jumper J3 is used to configure the serial link.



Picture: jumper J3 in RS232 Full Duplex mode

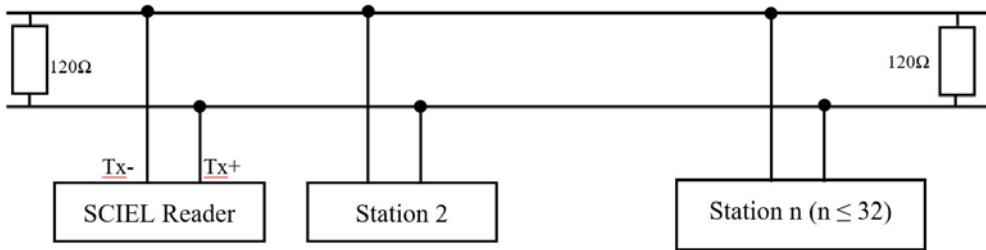


The table below shows the different configurations available in RS232, RS485 and RS422 mode:

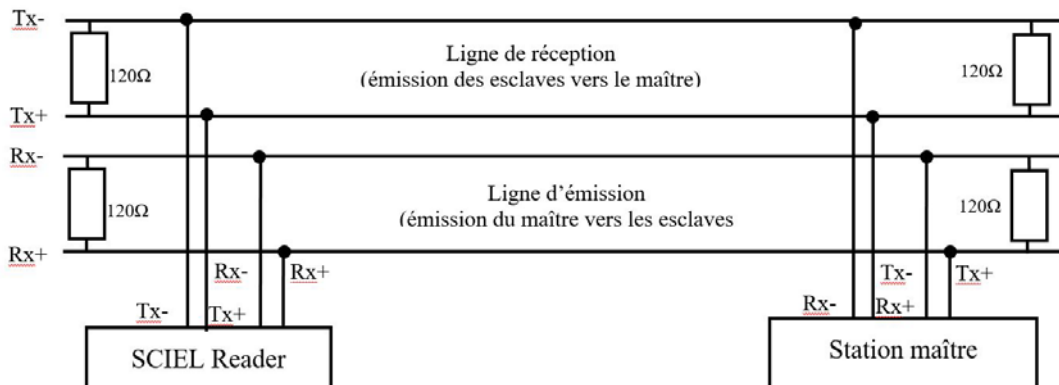
Jumper J3	Configuration
 Half 485 485 ON	RS232: Full duplex mode
 Half 485 485 ON	RS485: Half duplex mode, 4 wires
 Half 485 485 ON	RS422: Full duplex mode
 Half 485 485 ON	RS422: Half duplex mode + activate the « Half duplex » option (Command [CB0101] on ETER software) RS485: Half duplex mode, 2 wires

1.6 RS485 Network architecture on 2 wires and 4 wires

Cable network, 2 wires:



Cable network, 4 wires:

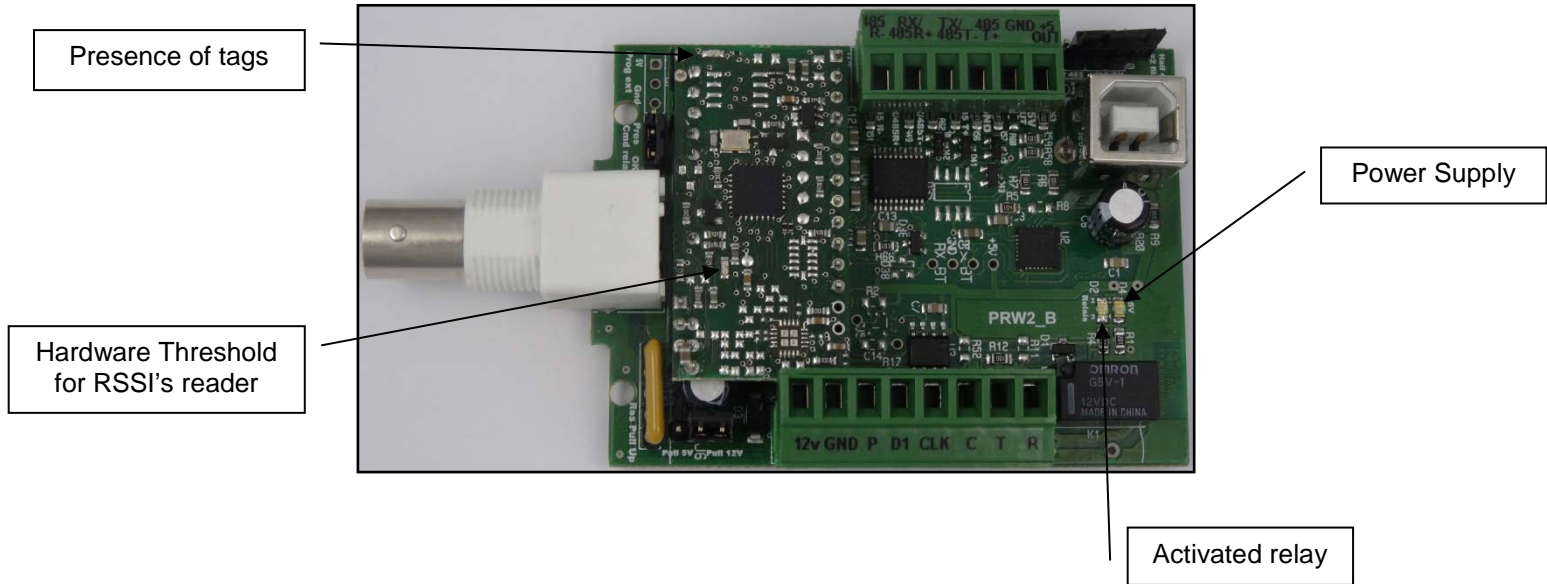


The 120Ω termination resistances are mandatory to complete the line impedance matching, they allow maximum control of signal reflection.

1.7 USB connector

The reader has an internal USB connector for the USB link and the direct power supply. An USB driver is available in our DOWNLOAD area to emulate the USB port as a RS232 communication port.

1.8 DEL Indicators



2 Reader's operating mode

2.1 Configuration Command List

Please refer to our Software Datasheet MCHD: READER COMMUNICATION PROTOCOL AND SETUP COMMAND LIST.

Furthermore, our Terminal software ETER is available to communicate in a serial mode with our reader. This software is available in our DOWNLOAD area.

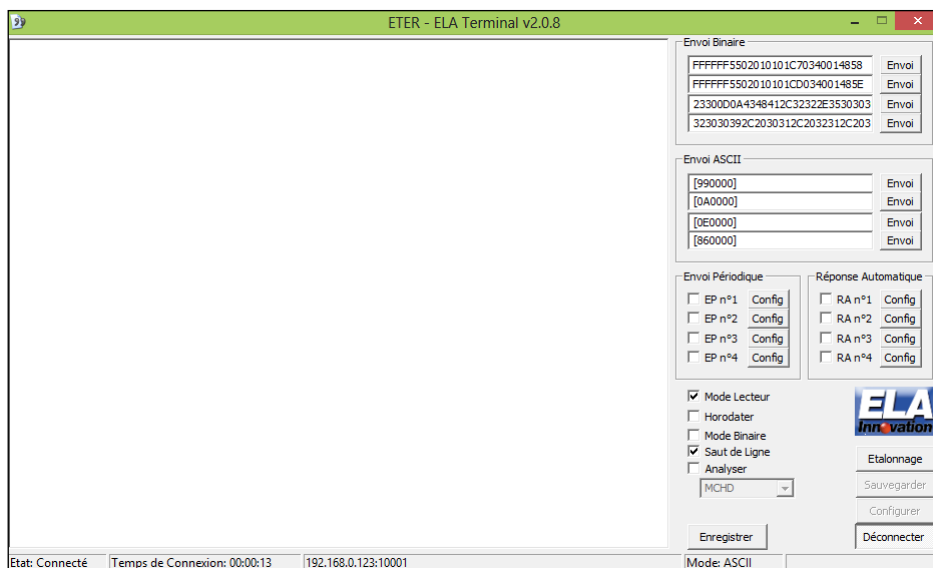


Image : ETER's main page

2.2 Configuration by software

Our configuration software tool, ERM, is available to configure our SCIEL READER R devices.

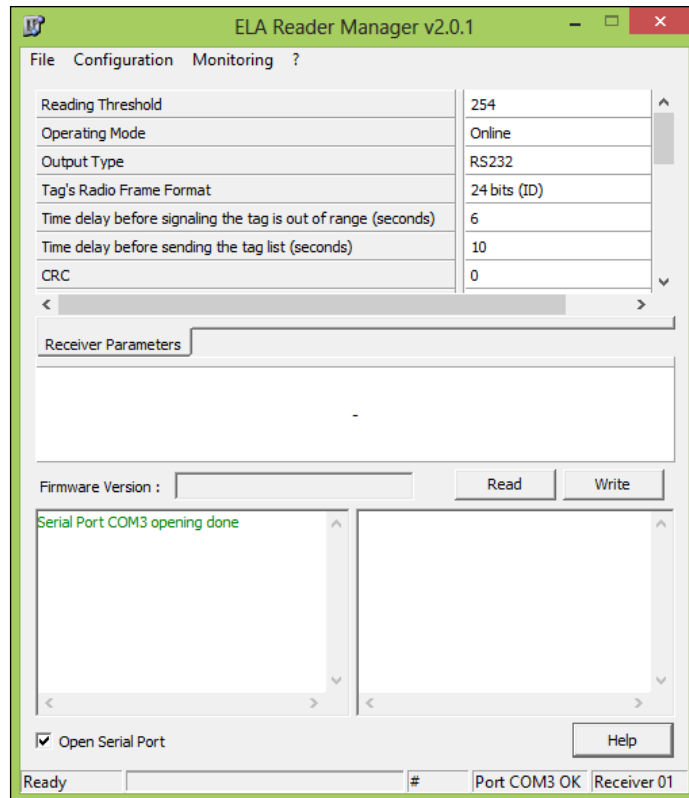
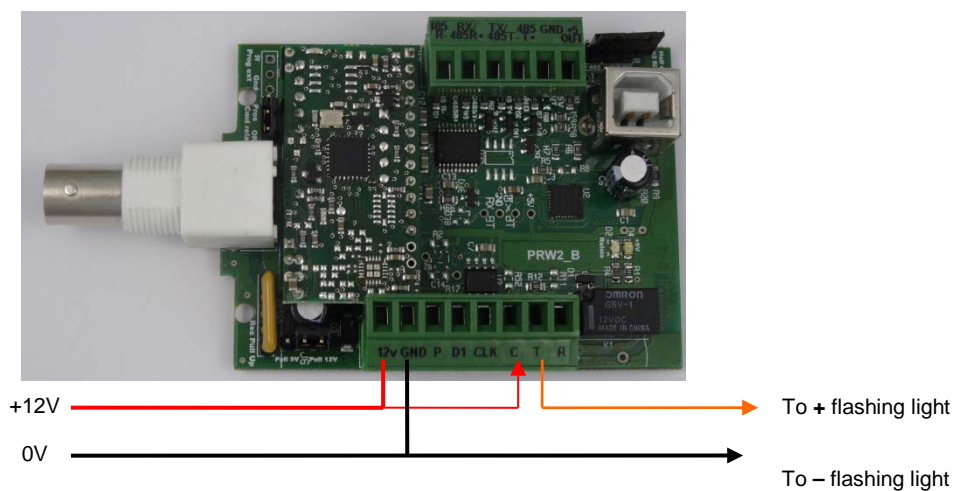


Image : ERM's main page

3 Example of accessory's wiring

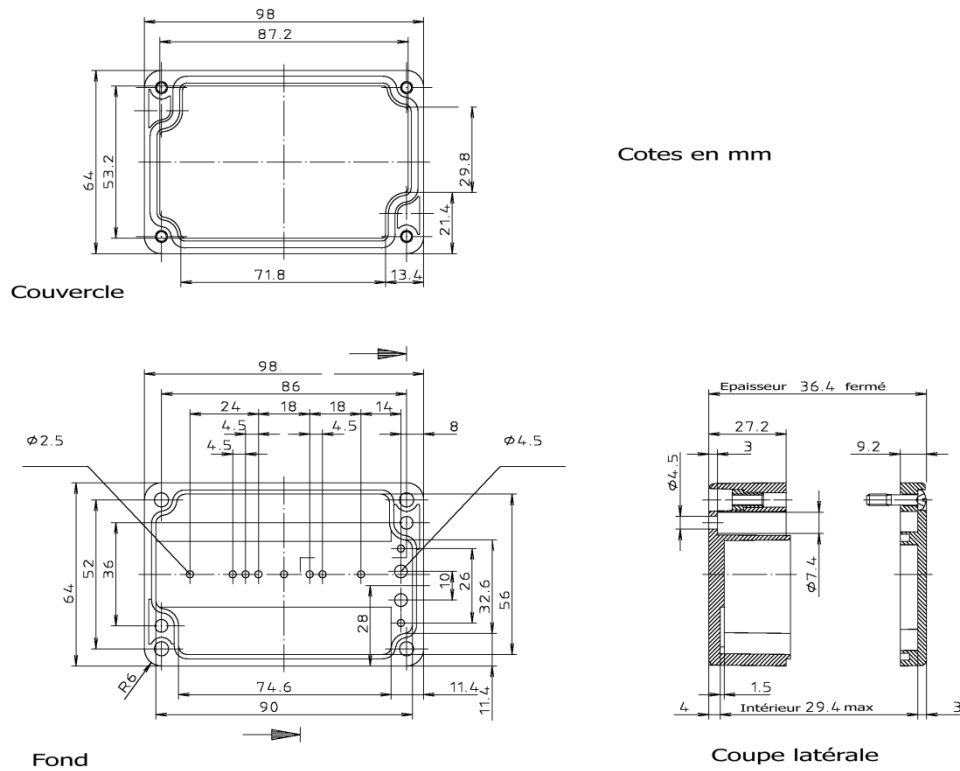


For 12Vdc device.

The light is turned on if at least 1 tag is detected in the defined detection area.

To invert the light's state, you have to connect the light to R pin instead of T pin.

4 Mechanical specifications



5 References and versions

Model	Reference P/N	Specifications
SCIEL Reader R	SCIBT27B	12 VDC 433.92 Mhz
SCIEL Reader RU	SCIBT36	12 VDC 433.92 Mhz – USB cable directly mounted on the board
SCIEL Reader RM	SCIOM27	12 VDC 433.92 Mhz – Complete OEM board w/o housing
SCIEL Reader R24	SCIBT34B	24 VDC 433.92 Mhz
Sciel Reader RM24	SCIOM34B	24 VDC 433.92 Mhz - Complete OEM board w/o housing
Sciel Reader R24H	SCIBT88	24 VDC 868.35 Mhz

6 Standards

- EN 301 489 – 3 : 2002 V1.4.1 ; EN 300 220 – 2007 : V2.1.2
- CE Mark
- RoHS Certified