

PREMIUM-V* RFID card reader** *Special design for vehicle mounting*



The PREMIUM-V-*** type is a contactless reader device in the frequency range of 125 kHz or 13,56 MHz. This reader will support either 125 kHz EM4x02 transponders and compatibles or 13.56 MHz Mifare® transponders and output the serial number code in any of many user selectable formats.

Due to the fully potted housing, the reader can be installed in all kinds of harsh environments..

An integrated DIP-switch allows easy selection of 1 of 13 possible output formats.

A three-colour LED indication and audible tone enhance user feedback. Both beeper and LED's can be controlled by the host system.

The specially designed version Vehicle reader has some extra features added to facilitate installation in a vehicle.

Specifications :

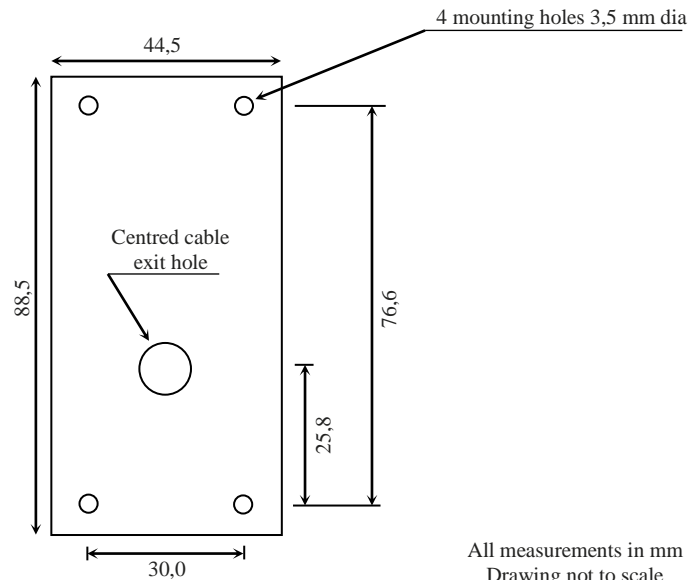
- Power supply : DC +5,0V to 13,6V
- Power consumption : Typ. 100mA
- Transmitting Radio Frequency :
 - PREMIUM-V-EM : 125 kHz
 - PREMIUM-V-MF : 13,56 MHz
- Supported transponders :
 - PREMIUM-V-EM : 125 kHz EM4x02 or compatibles
 - PREMIUM-V-MF : Mifare® Classic 1k/4k, Ultralight, DESFire, PLUS S, PLUS X

Contactless interface as per specification: ISO/IEC 14443 Type A
NFC Passive mode (ISO 18092/NFC passive mode, initiator, selected tag types only e.g. NTAG203, NTAG213)
- Typ. read range (@ 12V): ISO card with 50mm coil : 50 mm
- Typ. read range (@ 5.0V): ISO card with 50mm coil : 30 mm
- Indications : 3 LEDs (Green/Red/Yellow) + Buzzer
Buzzer emits a 60ms beep at 4 kHz when a transponder is read. In addition buzzer operates while BUZZER input is pulled low
- External devices : Possibility to connect external buzzer
- Data Output format : DIP-switch selectable :
 - Wiegand (58-bit, 42-bit, 34-bit and 26-bit)
 - Clock & Data (13, 10, 9 or 8 characters)
 - RS232 (9600, 4800 or 2400 Bd) (EIA level)
 - TTL (9600, 4800 or 2400 Bd)
- Transmission : Single transmission
- Connections : 10-wire cable (1 m length)
- Weight : 90g
- Operating Temperature : -20°C ~ +60°C
- Mounting : Mullion or wall mount (Extra mounting plate is supplied with each reader)
- Dimensions : 89 x 45 x 16 mm (dimensions mounting plate : 89 x 45 x 7 mm)

Special features for vehicle mounting :

- Multiple read data comparison before output : Data is read 3 times from the tag and compared for identical data output. Only when data is identical 3 times in a row, data is outputted, thus preventing data output from captured noise
- Data checksum verification to ensure read data is received correctly
- Possibility to connect external LED and buzzer for user feedback in loud environments
- Possibility to enable/disable card reading by host controller

Physical dimensions and mounting details :



If the mounting plate is used the reader cable may be brought out of one of four exit points on the mounting plate: top, bottom, left or right. This enables the cable to be run on the surface of the wall.
If no mounting plate is used, a minimum hole size of 6,5 mm must be drilled in the wall at the cable exit position as shown above to allow the cable to exit perpendicular to the reader.

The optional mounting plate may also be used when mounting the reader on a metal surface to reduce the negative effects of metal on the read range.

Connections :

Colour	Name	Function
BLACK	0V	Connect 0V from power supply.
RED	+VDC	Connect +5V - +13.6V from power supply
GREEN	READER ENABLE	Enables reader when pulled low and turn Green LED on. As long as Green wire is not pulled low, reader will be in sleep mode, RF-filed switched off and Red LED will be on.
BLUE	BUZZER	Controls Buzzer. Turns buzzer (internal or external) on when pulled low and Green wire is pulled low.
ORANGE	BUZZER+YEL-LED	Controls Buzzer and Yellow LED. Turns buzzer (internal or external) on when pulled low and Green wire is pulled low.
YELLOW	YEL-LED	Controls Yellow LED (LED on when pulled low and Green wire is pulled low)
BROWN	DATA / DATA1	Outputs RFID tag code in selected format
WHITE	CLOCK / DATA0 / TTL-TX	Outputs RFID tag code in selected format
PURPLE	RS-232 TX	Output RS-232
GREY	CARD PRESENT / EXTERNAL BUZZER	Pulses low when an RFID tag is detected. Possible to connect external buzzer (open collector output). It stays low while the module output is active.

Note : LED and BUZZER inputs are active low. The input is internally pulled high and may be pulled low by an open collector transistor or driven low by the output of a 5V CMOS or TTL gate.

Output mode selection:

The 6-way switch is used to select the output format and LED mode. The required setting is selected from the following tables:

Output mode table

SW1	SW2	SW3	SW4	Output mode
ON	ON	ON	ON	Inhibit – Turn off coil
ON	ON	ON	OFF	Tuning mode
ON	ON	OFF	ON	Not used
ON	ON	OFF	OFF	Not used
ON	OFF	ON	ON	RS232 – 9600,n,8,1 – variable length
ON	OFF	ON	OFF	RS232 – 2400,n,8,2 – fixed length
ON	OFF	OFF	ON	RS232 – 4800,n,8,2 – fixed length
ON	OFF	OFF	OFF	RS232 – 9600,n,8,1 – fixed length
OFF	ON	ON	ON	Clock/Data 8 characters
OFF	ON	ON	OFF	Clock/Data 9 characters
OFF	ON	OFF	ON	Clock/Data 10 characters
OFF	ON	OFF	OFF	Clock/Data 13 characters
OFF	OFF	ON	ON	Wiegand 58 bits
OFF	OFF	ON	OFF	Wiegand 26 bits
OFF	OFF	OFF	ON	Wiegand 34 bits
OFF	OFF	OFF	OFF	Wiegand 42 bits

LED and BUZZER mode table

SW5	SW6	Function when transponder is detected
OFF	OFF	Internal Beeper + Yellow LED on for 375ms
ON	OFF	External Beeper + Yellow LED on for 375ms
OFF	ON	Internal beeper + Yellow LED controlled by inputs
ON	ON	External beeper + Yellow LED controlled by inputs

Note :

In LED Mode 2, both RED and GREEN leds are controlled by the GRN-LED input. When the GRN-LED input is floating or pulled high, the RED led is on and the GREEN led is off. When the GRN-LED input is pulled low (connected to 0V) the GREEN led is on and the RED led is off. The YELLOW led is always off.

Antenna tuning :

Under the front cover is a variable capacitor, which may need to be adjusted to re-tune the antenna in different environments. To tune the antenna, put DIP-switches SW1 to 4 in the tuning mode and place a current meter on the power supply line +VDC (red wire). Turn the variable capacitor until a current of 90 mA is measured. Then test the read range with a user tag.

Power Connections :

The reader has an internal low dropout 5V regulator and so for maximum performance the input voltage must be smooth DC between 5.5V and 13.6V. The reading distance is unchanged for input voltages between 5.5V and 13.6V. For input voltages below 5.5V the read range drops off slightly as given in the specifications earlier. If 5V is supplied to the reader this should be noise-free to achieve maximum possible read ranges.

Declaration of Conformity :

ProxTech International bvba hereby confirms that the product PREMIUM-V-** is in accordance with the essential demands and other relevant stipulations of the directive 1999/5/EG.
A copy of the Declaration of Conformity can be obtained upon simple request by e-mail on info@proxtech.com.