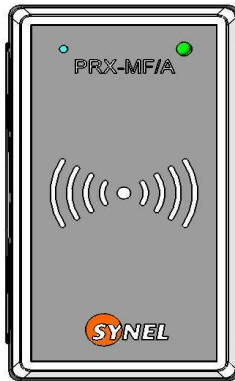
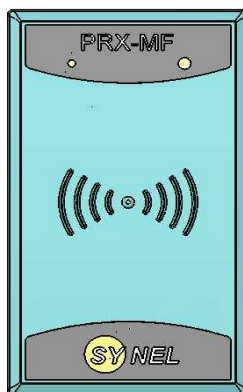


# PRX-MF & PRX-MF/A

## RFID Smart Card Mifare Reader- Installation manual



**PRX-MF/A**



**PRX-MF**

The PRX-MF and PRX-MF/A are a very high performance Mifare smart card readers featuring medium range and small dimensions. The unit will run from any voltage from 5~18 V (DC). Those readers also features good reading range at 5 Volts , making it ideally suited to a wide variety of applications, particularly in access control applications.

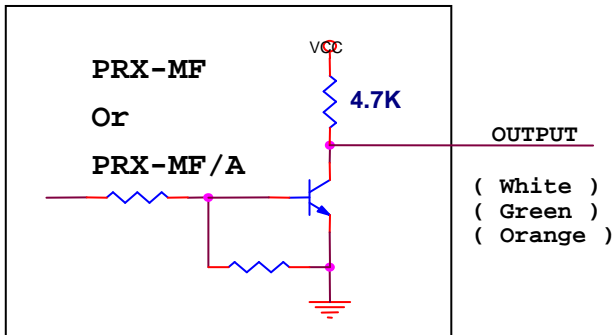
PRX-MF & PRX-MF/A function the same and the differences lay in graphic design and mounting options. Due to its physical case design, the PRX-MF can be installed into a wall in a decorative way (See physical installation instructions . If ordinary installation on wall is required PRX-MF/A (with no sharp edges) may be used instead.

<b>Power Requirements</b>	5~18 Volts regulated DC at 150 mA typical with a 12V supply. A linear regulator is recommended.
<b>Interface</b>	Wiegand 26 ,Wiegand 34 , Magstripe ABA C&D.
<b>Typical Maximum Read</b>	Range 2~5 cm at 5~18V with Mifare card (In ideal conditions).
<b>Frequency</b>	13.56MHz band (47.48dBuA/m (1.2m))
<b>Transponder</b>	<b>Read Only (For Unique Serial Number / Unique Identifier)</b> Read Only (Mifare Ultralight MF0 ICU1) Read Only (Mifare Standard MF1 ICS50) Read Only (Mifare 4k MF1 ICS70) Read Only (Mifare DESFire MF3 ICD40)
<b>Audio/Visual Indication</b>	Internal LED and Buzzer which may activated externally only.
<b>Dimensions</b>	8.3 x 4.7 x 1.6 cm
<b>Weight</b>	200g
<b>Operating Temperature</b>	-10 to 60 Deg C.
<b>Interface Cable</b>	90 cm

## Output Assignment

Red	Power	5-18 Volts
Black	Ground	0 Volt
White	Magstripe clock & Wiegand 1 ,	with internal 4k7 pull up
Green	Magstripe data & Wiegand 0 ,	with internal 4k7
Orange	Card Present Output	with internal 4k7 pull up
Yellow	Output format selection	(See next page )
Blue	External Beep.	Connect to GND 0 Volts.
Brown	LED ( External source	Connect to GND 0 Volts – activate GREEN light)

## Output stage -internal circuit configuration



## Output Format

The output format can be chosen by customer .

The available formats are : Wiegand 26 ,Wiegand 34 and Magstripe ABA Emulation.

### Wiegand 26

Red	Power +5-18V
Black	Ground 0V
White	Data 1
Green	Data 0
Yellow	Connect to White
Orange	No Connection

### Magstripe

Red	Power +5-18V
Black	Ground 0V
White	Clock (Strobe)
Green	Data
Orange	Card Present
Yellow	Connect to Orange

### Wiegand 34

Red	Power 5-18V
Black	Ground 0V
White	Data 1
Green	Data 0
Yellow	No Connection
Orange	No Connection

## Data Structure (Magstripe Emulation , ABA Track 2)

Speed : Simulated to 56 IPS (Inch per Second)

<b>10 LEADING ZEROS</b>	<b>SS</b>	<b>DATA (10 or18 DIGITS)</b>	<b>ES</b>	<b>LRC</b>	<b>10 TRAILING ZEROS</b>
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The 10 leading zeros prepare the receiving unit to accept the data. The data is 10 digits long(for Mifare Standard MF1 ICS50 · Mifare 4k MF1 ICS70) or 18 digits long (for Mifare Ultralight MF0 ICU1 · Mifare DESFire MF3 ICD40). SS is the Start Sentinel consisting of 11010.ES is the End Sentinel consisting of 1111.LRC is the Longitudinal Redundancy Check character. Lastly there are 10 trailing zeros. Magstripe 8 digits and 6 digits are available for special request .

The hexadecimal data from the card is first converted to a denary string before transmission. For example, a card containing the hexadecimal data (F77A9FF2) , will be converted to denary and sent as denary 4152008690(10 digits)

The calculation is performed as follows.

$$( 2 * 16^0 + 15 * 16^1 + 15 * 16^2 + 9 * 16^3 + 10 * 16^4 + 7 * 16^5 + 7 * 16^6 + 15 * 16^7 ) = 4152008690$$

## Data Structure (Wiegand Format-26 Bit)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
P	C				C				C				C				C				P				

## Data Structure (Wiegand Format-34 Bit)

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	31	33
P	C				C				C				C				C				C				P								

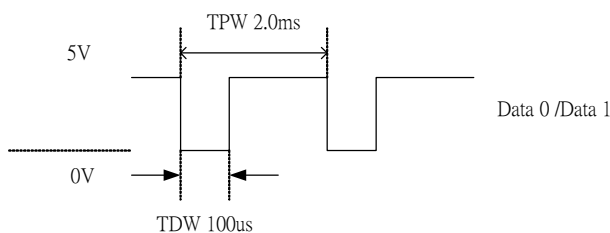
Note :

- P Parity (Even or Odd) Start Bit and Stop Bit
- C Card Data
- SYRDSSW1-W26 Site bits from Card (24 bits Card Data)
- MSB Normal 01
- LSB Normal 24
- SYRDSSW1-W32 Site bits from Card (32 bits Card Data)
- MSB Normal 01
- LSB Normal 32

### Wiegand Data Timing Specification

Pulse Interval (TPW)=2.0mS +/- 3%

Pulse Width (TDW)=100uS +/- 3%



## Installing the PRX-MF/A

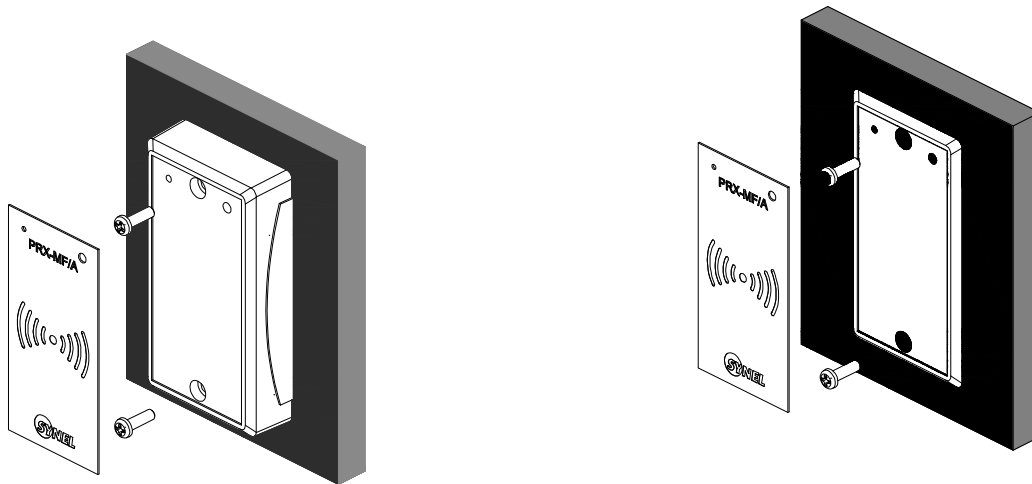
PRX-MF/A is wall-mounting type. Mounting screws and logo plate are provided. The installation location selected should be as far as possible from sources of electrical appliances: power equipment, computers, motors, pumps, etc.

The standard height from the floor should be 59" (150cm) .

To be compliant with the ADA(Americans with Disabilities Act.) , the required height should be 49"(124.5cm).

### Mounting (Refer to the drawing below)

1. Hold the unit against the wall and mark the screwing location through the screw holes.
2. Drill the two fastening holes in the wall according the required height of the reader (see previous section) and insert the attached anchors in the wall (Use 2.5~3mm drilling bit).
3. Drill the hole for the cable (Use at least 6.0mm drilling bit).
4. Connect the cable wires with suitable pin assignment.
5. Mount the unit to the wall using the attached screws.
6. Place the attached logo sticker on the front of reader.



## Installation of PRX-MF

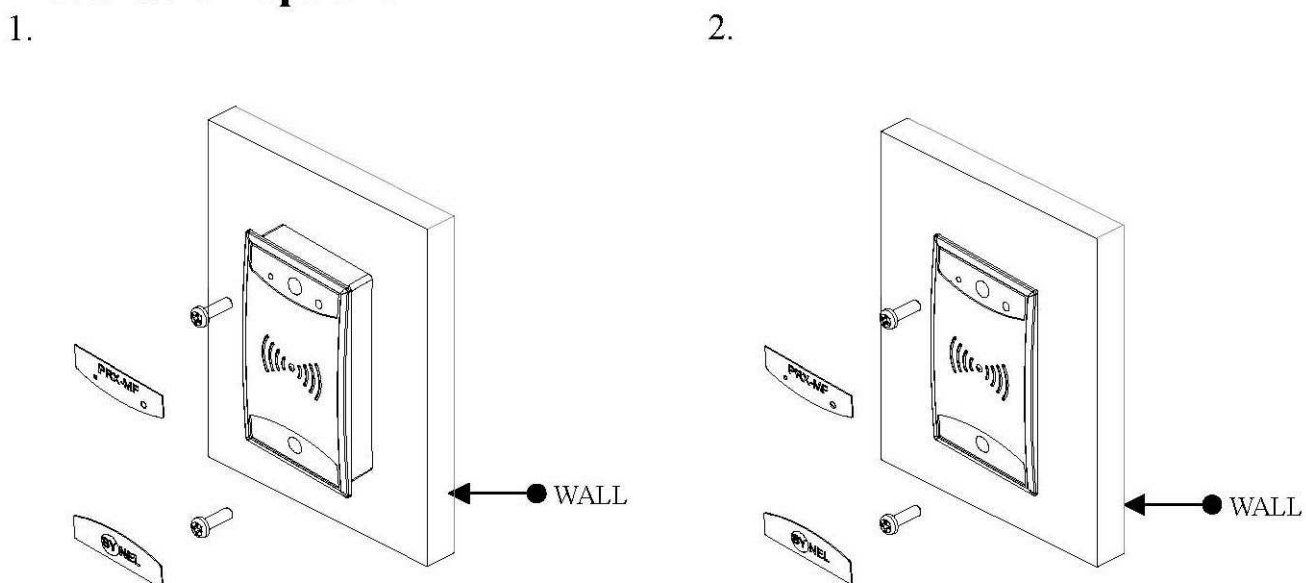
PRX-MF is wall-mounting type or surface mounting type (insertion style). Mounting screws and two logo plates(stickers) are provided. The installation location selected should be as far as possible from sources of electrical appliances: power equipment, computers, motors, pumps, etc.

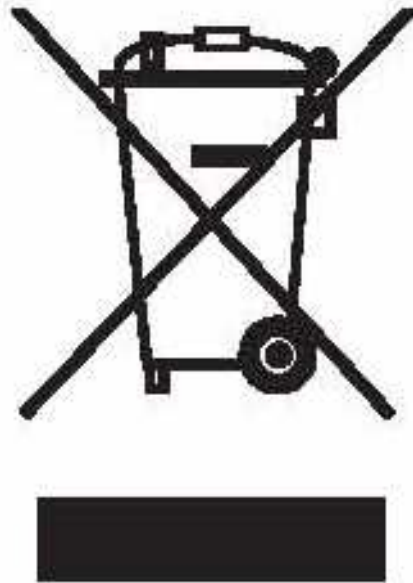
The standard height from the floor should be 59" (150cm) .

To be compliant with the ADA(Americans with Disabilities Act.) , the required height should be 49"(124.5cm).

### Mounting the PRX-MF (Refer to the drawing below)

1. When mounting on the wall ,hold the unit against the wall and mark the screwing location through the screw holes.
2. When engraved mounting is required , Make a square hole according to the back shape of the reader, insert it until it reaches and stopped by its front frame (flange).
3. Drill the two fastening holes in the wall according the required height of the reader (see previous section) and insert the attached anchors in the wall (Use a 2.5~3.0mm drilling bit).
4. Drill the hole for the cable (Use at least 6.0mm drilling bit).
5. Connect the cable wires with suitable pin assignment.
6. Mount the unit to the wall using the attached screws.
7. Place the attached logo sticker on the front of reader.





## CAUTION:

The crossed out wheeled bin label that can be found on your product indicates that this product should not be disposed of via the normal household waste stream.

To prevent possible harm to the environment or human health please separate this product from other waste streams to en-sure that it can be recycled in an environmentally sound manner.

For more details on available collection facilities please contact your local government office or the retailer where you purchased this product.

This information only applies to customers in the European Union.

For other countries, please contact your local government to investigate the possibility of recycling your product.