# WREM 63

*Standard reader with WIEGAND output*

*User's guide*

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*(Date of release: 2019/06/03, valid for FW version 0.11)*

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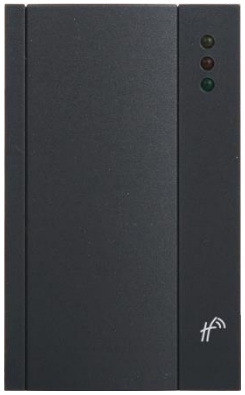
# 2 Product description

The standard *WREM 63* [1)] readers (125 kHz readers with WIEGAND data output) are designed for connection to controllers or WIEGAND interfaces of the *APS* access control systems or for general use. Readers feature configurable WIEGAND protocol data output, which is suitable for use in most of third party systems.

The reader module is designed both for outdoor and indoor use.



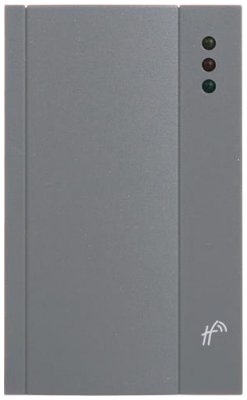
*Pic. 1: WREM 63 BK reader*

## 2.1 WREM 63 BK reader

The WREM 63 BK readers are delivered in installation boxes in matt black color (*pic. 1*).

## 2.2 WREM 63 GR reader

The WREM 63 GR readers are delivered in installation boxes in dark grey color (*pic. 2*).



*Pic. 2: WREM 63 GR reader*

[1)] Commercial designation of available versions is described in *table 1*.

# 3 Technical parameters

## 3.1 Product version

| Product version | Product designation | Color | Catalogue number | Module features [2)] | |
|---|---|---|---|---|---|
| | | | | TF | EM |
| | WREM 63 BK | *Matt black* | 51463001 | ✓ | ✓ |
| | WREM 63 GR | *Dark grey* | 51463201 | ✓ | ✓ |

*Table 1: Product version*

[2)] *TF* – TECHFASS factory ID media reading; *EM* – EM Marin ID media reading;

## 3.2 Technical features

| | | | |
|---|---|---|---|
| Technical features | Supply voltage | | 8 ÷ 15 VDC |
| | Current demand | Typical | 65 mA |
| | | Maximal | 80 mA |
| | Version with keypad | | N/A |
| | ID technology, typical reading range | EM Marin | 8 cm (with ISO card) |
| | Memory | Cards | 748 ID, 2 programming cards |
| | | Time schedules | 64 |
| | Inputs | | 1x buzzer control<br>1x yellow / green LED control |
| | Outputs | | 1x tamper (OC) |
| | Indicators | | 3x LED<br>1x PIEZO |
| | Tamper protection | Against tearing-off | Reed contact |
| | | Opening the cover | Opto-electronic |
| | Data output | | WIEGAND (configurable without SW) |

*Table 2: Technical features*

## 3.3 Special accessories

| | | | |
|---|---|---|---|
| | MAG | 51900200 | Magnet for reed contact |

*Table 3: Special accessories*

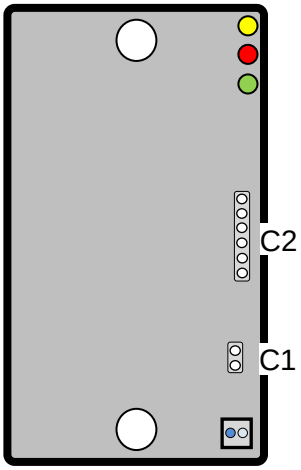
## 3.4 Mechanical design

| | | | |
|---|---|---|---|
| Mechanical design | Weight | | 0.15 kg |
| | Operating Temperature | | -25 ÷ 60 °C |
| | Humidity | | Max 95%, non-condensing |
| | Housing | | IP 54 |
| | Pigtail | | 0.5 m |
| | Color | WREM 63 BK | Matt black |
| | | WREM 63 GR | Dark grey |
| | Dimensions | | 55x90x25 mm |

*Table 4: Mechanical design*

# 4 Installation

## 4.1 Connectors description




*Pic. 3: Reader connectors*

| Connectors | Connector | Purpose |
|---|---|---|
| | C1 | Connector for configuration device connection |
| | C2 | Service connector |

*Table 5: Connectors description*

## 4.2 Wiring description

| Wiring description | Color | Meaning |
|---|---|---|
| | Pink | + 8 ÷ + 15 VDC |
| | Blue | 0 V |
| | Green | WIEGAND data 0 |
| | White | WIEGAND data 1 |
| | Brown | Yellow / green LED control, 0 V active |
| | Yellow | Buzzer control, 0 V active |
| | Grey | Low power transistor output (+5 V in any alarm state) |

*Table 6: Wiring description*

## 4.3 Indicators description

| Indication | | |
|---|---|---|
| | Red LED | Reader powered |
| | Green LED | ID media reading, can be controlled by the input status (0V = active) |
| | Yellow LED | Can be controlled by the input status (0V = active) |
| | Buzzer | Controlled by the input status (0V = active) |

*Table 7: Indicators description*

## 4.4 Installation instructions

The reader module uses passive RF/ID technology, which is sensitive to RF noise sources. Noise sources are generally of two types: radiating or conducting.

Conducted noise enters the reader via wires from the power supply or the host. Sometimes, switching power supplies generate enough noise to cause reader malfunction, it is recommended to use linear system power supplies.

Radiated noise is transmitted through the air. It can be caused by computer monitors or other electrical equipment generating electromagnetic fields.

Consequently, a short distance between the reader modules themselves can cause reading malfunctions – for correct operation it is necessary to keep a minimum distance of 50 cm. Various metallic constructions may have a negative influence on this distance; if there are any doubts, it is recommended to perform a practical test before final mounting.

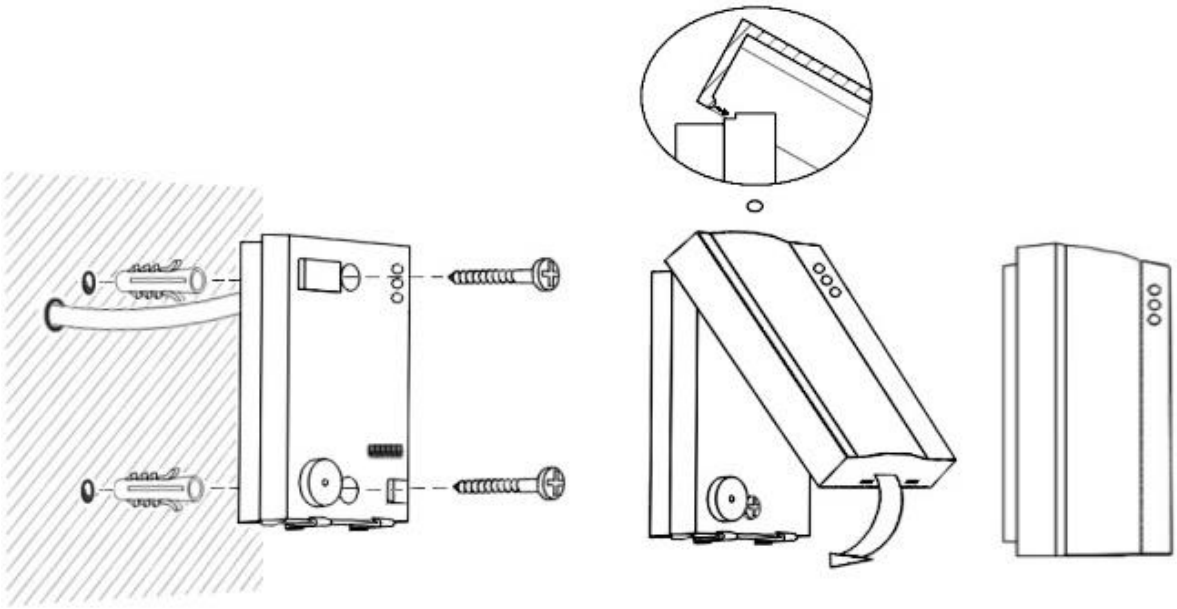
Nearby metal surfaces may cause a decrease in reading distance and speed. This is caused by the combined effects of parasitic capacitance and conductance.

| |
|---|
| Mutual disturbance of a couple of TECHFASS devices (standard 125 kHz system reader module + Wiegand output reader) can be avoided by setting up the reading synchronization (see reader configuration chapter). The synchronization is ensured by periodic sending of a special signal via Wiegand interface from the Wiegand output reader to the standard system reader module. There is no need to connect any other wires or make any special configuration on the TECHFASS system reader module. |

## 4.5 Mounting and removal of the reader

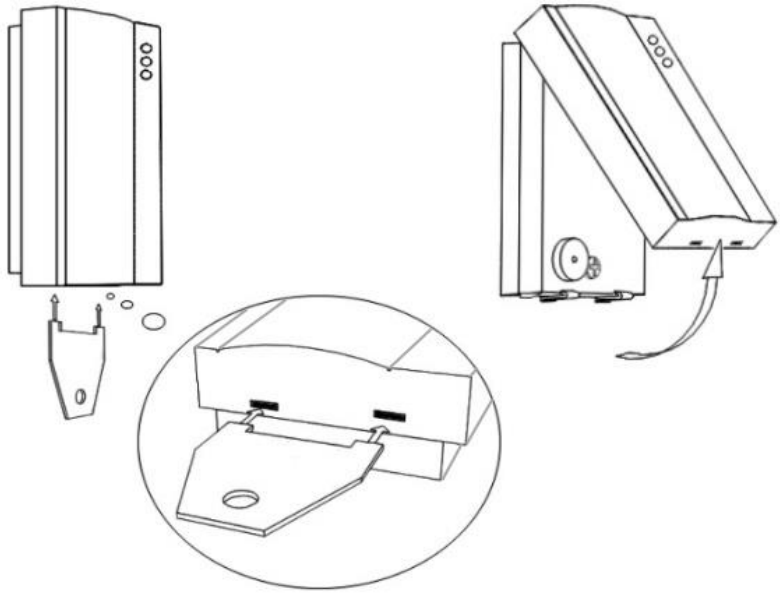
First fasten the base directly to the wall using two relevant fasteners, see *Pic. 4*. Then set the housing on the upper part of the base and rotate the housing until the both parts snaps down.

It is recommended to place an installation box for connection of incoming cables on the other side of the wall or in highly secured area (with in/out readers).



Pic. 4: Mounting of the reader module

Release the clamps using the enclosed key before dismounting the housing, see Pic. 5.



*Pic. 5: Removal of the reader module*

# 5 Reader setting and functioning

## 5.1 Operating test and control

After powering up the reader, it indicates preset *setting* (see *table 8*) by parallel *beeping* and *red LED flashing*. *Number* of beeps and flashes indicates the selected *setting type*. After that the *red LED* is active permanently. Reading a card is indicated with a flash of the *green LED* and a *single beep*. The card code is sent using the *WIEGAND output* in preset format. The *yellow / green LED* and *beeper* are active when putting the *0 V* signal to the relevant controlling inputs.

| Reader configuration modes | Beeps count | WIEGAND protocol | LED control | Synchronization |
|---|---|---|---|---|
| | 1x | 42 bits | Yellow | No |
| | 2x | 42 bits | Green | No |
| | 3x | 42 bits | Yellow | Yes |
| | 4x | 42 bits | Green | Yes |
| | 5x | 26 bits | Yellow | No |
| | 6x | 26 bits | Green | No |
| | 7x | 32 bits | Yellow | No |
| | 8x | 32 bits | Green | No |
| | 9x | 44 bits | Yellow | No |
| | 10x | 44 bits | Green | No |

*Table 8: Reader configuration modes*

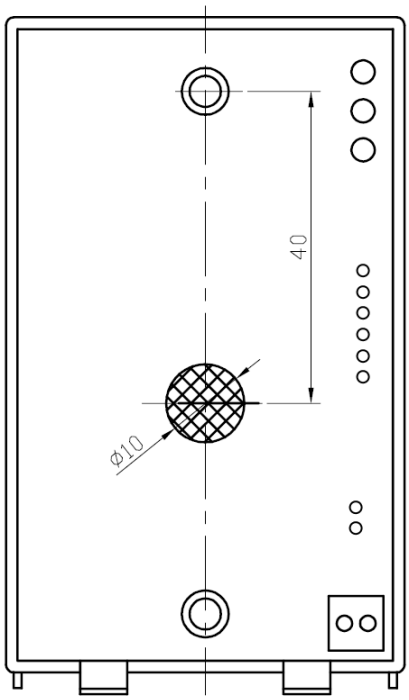
Note: WIEGAND 26bit (24 bits of code + start and end parity bit); WIEGAND 42bit (40 bits of code + start and end parity bit); WIEGAND 32bit (32 bits of code); WIEGAND 44bit (40 bits of code + 4 XOR parity bits); Yellow/green LED – selection of LED controlled by bringing 0 V signal to relevant input; Synchronization – cancels mutual disturbance of TECHFASS devices (standard 125 kHz system reader module + Wiegand output reader)

## 5.2 Changing reader configuration

For the change of the *reader configuration* connect the configuration device to the *C1 connector* (*pic. 3*). After the reader is restarted, the configuration mode is entered – it is indicated by *slow beeping* and *flashing* with *red LED*. The configuration is accomplished by *removing the device after the required number of beeps* (flashes), the meaning of the beeps count corresponds with the specifications from *table 8*. If the time for the configuration expires, the device must be removed and the reader restarted – in that case the configuration is not changed. After finishing the configuration *do not put the device back* to the connector!

# 6 Placing a magnet for tearing-off indication

Drill a ∅ 10 mm hole 12 mm deep in a wall behind the reader module at designated place (*Pic. 6*). Insert a magnet (ordering number 51900200) and attach it in the hole with appropriate mastic to ensure the top surface of the magnet matches with the wall surface. Mount the reader module in formerly prepared holes mounted with plugs.




*Pic. 6: Magnet placement*