



# Invexs 190 readers

Mifare DESfire dual technology mullion readers

Install Manual

## GENERAL

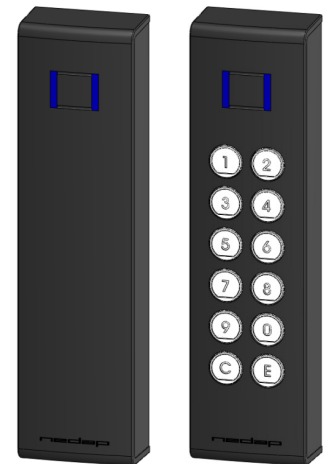
The Invexs 190 reader series is capable of reading (simultaneously) Mifare and DESFire credentials due to its dual reader technology. The Invexs 190 is designed to be used on door pillars (mullion) and suitable for outside and inside use. A model with keypad is also available.

The Invexs output must be set to RS485 protocol (encrypted).

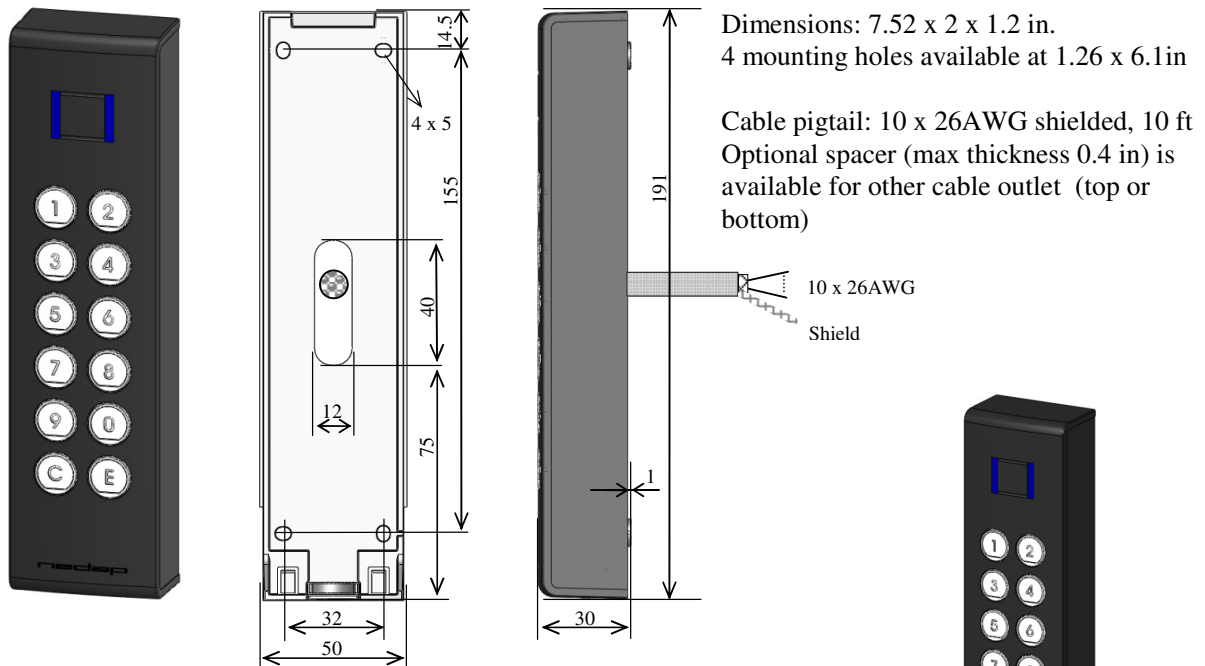
Functionality and output are determined by the configuration of the Invexs reader. The configuration is defined using the programm *AEreco*, and deployed by the *configuration* card or via *AEmon*.

Three LEDs (red, green, blue) and beeper are included. LEDs around the keypad ciphers light up only in case a PIN code is requested.

The pigtail cable can be lead directly backwards or when using the additional spacer (art. nr . 9949887) to the top or bottom.



## DIMENSIONS



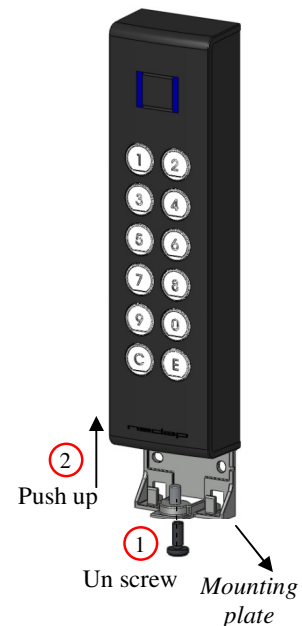
Note: drawing dimensions are in mm

## MOUNTING PROCEDURE INVEXS

For mounting the Invexs 190, the mounting plate must be placed on the wall first.

For removing the mounting plate from the Invexs 190, unscrew the screw (1) (Torx, M5) at the bottom of the Invexs and push the Invexs 190 slightly up (2). The plate can be mounted using the 4 holes.

Place the cable to the correct position and replace the Invexs 190.



## CONNECTIONS

Invexs is **not** hot-swappable, so when making or changing connections, power must be switched **Off**.

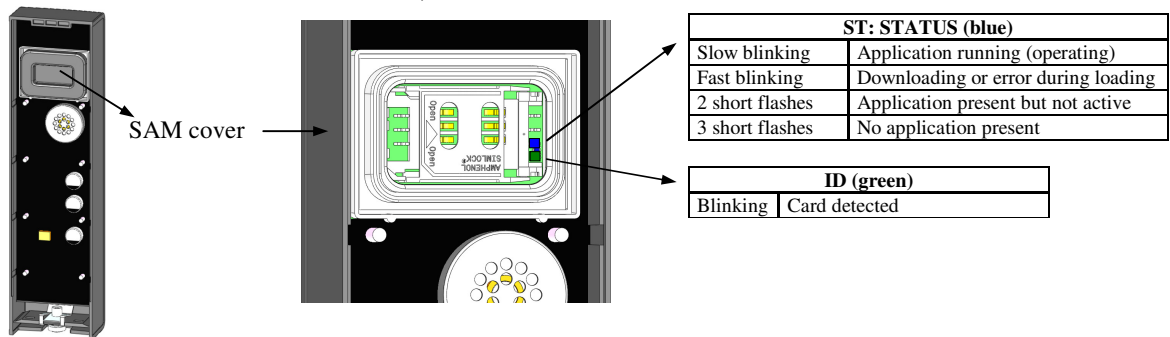
Wire	Colour	Function
1	Red	Power in (12-30VDC)
2	Black	Power Ground
3	Grey	RS485 A (-)
4	Violet	RS485 B (+)
5	Green	Do not connect Reserved for future use
6	White	
7	Yellow	
8	Pink	
9	Blue	
10	Brown	
11	Shield / Metal	EM shield (connected to power ground)

### Remark:

Cable shield (wire 11) **must** be connected to the metal case of the external device

## LED INDICATORS INSIDE / BACKSIDE

There are two LED's available: Blue for Status (of application), Green for Identification (both visible behind the SAM cover at the back side)



## LED INDICATORS FRONT

At the front a three colour LED is positioned at the middle of the Invexs  
Depending of the used configuration the function of these LEDs can differ:

- **Green LED:** Card is been authorised (UL led)
- **Red LED:** Card is not authorised (NA led), controller is stand-by
- **Blue LED:**
  - Blinks fast: No configuration is available at this Invexs (present *Configuration card* or load *Configuration* first).
  - Continuously ON: Determined by configuration: E.g. Reader stand-by.  
(Blue LED is activated if UL is OFF and NA is more than 1 sec OFF)

**Remark:** Function of LEDs and Beeper is controlled by used application settings of Invexs.

## FIRMWARE

Pay attention that the firmware loaded in the Invexs together with the Invexs type and configuration determines functionality and protocols.

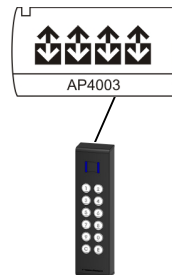
Default (from factory) the Invexs handles the credentials on several ways simultaneously:

Mifare cards (CSN) as: RS485NR, RF data

**Remark:** The Invexs 190 requires dedicated firmware (**not** identical to the Invexs 170 firmware)

## SYSTEM CONFIGURATIONS (how to connect Invexs readers)

### AEOS RS485 interface



To AP4x03 readers with RS485 special encrypted protocol. (LED's, Beeper, Keys and Display are controlled over the RS485 communication)

**Remark:** Configurations can be determined by the Aereco (loaded by AEmon or configuration card).

## BEEPER INDICATIONS

Beeper is also used for indication of loading the configuration:

- High sound beep ('happy sound'): Configuration is loaded correct, second high sound beep indicates that this configuration can be used with this Invexs
- Low sound beep ('unhappy sound'): Configuration is not correct loaded or no configuration available at startup

## FCC and IC CERTIFICATIONS

This device complies with part 15 of the FCC Rules and to RSS210 of Industry Canada.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Cet appareil se conforme aux normes RSS 210 exemptés de license du Industry Canada.

L'opération est soumis aux deux conditions suivantes:

- (1) cet appareil ne doit causer aucune interférence, et
- (2) cet appareil doit accepter n'importe quelle interférence, y inclus interférence qui peut causer une opération non pas voulu de cet appareil.

Les changements ou modifications n'ayant pas été expressément approuvés par la partie responsable de la conformité peuvent faire perdre à l'utilisateur l'autorisation de faire fonctionner le matériel.

### SPECIFICATIONS Invexs 190 Product numbers see table below:

Invexs 190 Reader		Invexs 190 Reader + Keypad		Credentials
Invexs M190	9945512	Invexs MK190	9948422	Mifare
Invexs MD190	9948406	Invexs MDK190	9948457	Mifare + DESFire

Dimensions: 7.52 x 2 x 1.2 in  
 Protection: IP65  
 Power Supply: 12VDC – 30VDC

Weight: ± 0.78 lb  
 Power consumption:  
 M/MD190: 60mA@12VDC, 35mA@24VDC  
 MK/MDK190: 90mA@12VDC, 45mA@24VDC

Environment: Temperature: Operating and Storage: -31°F to +150°F  
 Relative humidity: 10 – 93% non condensing

Communication: RS485 (Encrypted AEOS protocol to AP4x03, (firmware APx003rs485NR).

Indicators: UL (green) NA (red) ,MD (blue)

Antennas (internal): 13.56 MHz, Mifare compatible

Detection distance Mifare card: 1.5 in

R&TTE: Hereby, Nedap N.V., declares that these products comply with the essential requirements and provisions of the **Directive 1999/5/EC** of the European Parliament and of the council of March 9, 1999 on Radio equipment and Telecommunications Terminal Equipment and the mutual recognition of their conformity and with the provisions of Annex IV (Conformity Assessment procedure referred to in article 10).

### CABLE SPECIFICATIONS

10 wire shielded cable of approx. 10 ft length included (pig tail). Extensions can be made:

RS485: 22AWG twisted pairs, shielded, max cable length: 3280 ft, cable capacity <= 33pF/ft.  
 Power: 22AWG twisted pairs, shielded, max cable length: 160 ft.

**MORE INFORMATION:** For more detailed information contact your local Nedap supplier or check the internet site.