



Technology Update
RS485 & Wiegand Interface info

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Culemborg, June 2024

The FM3281 series has two models that support RS485 and Wiegand interface.

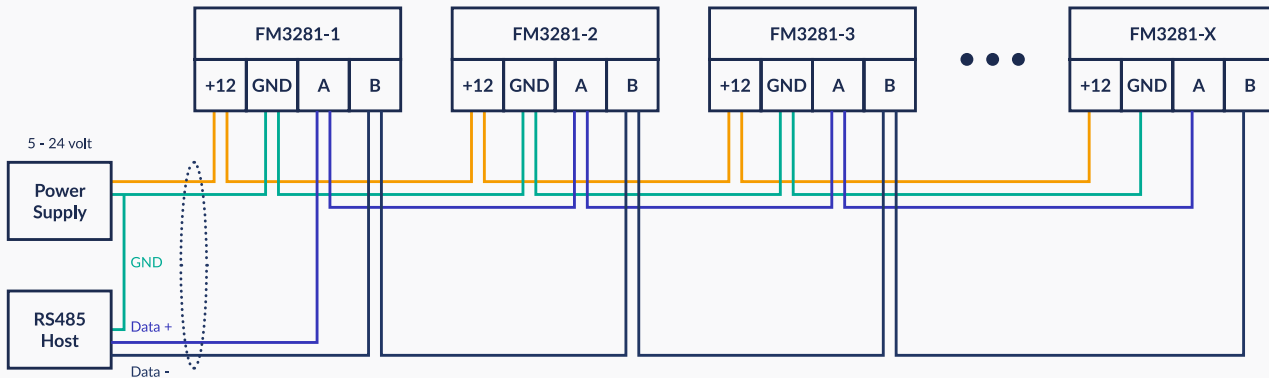
- | NLS-FM3281-50
- | NLS-FM3281-NFC-50

This document explains both interfaces.

a) RS485

The RS485 interface is a serial communication interface that allows **multiple** FM3281 scanners to be connected to **one** cable. The host must have an RS485 port or card to connect this line of scanners.

An advantage of the RS485 interface is that you can power the scanners via the same data cable. This makes an RS485 single cable solution cost-effective because the scanners don't need a dedicated power supply per device. The total cable length can be a maximum of 1200 meters. The quality and diameter of the cable strongly influence the length.

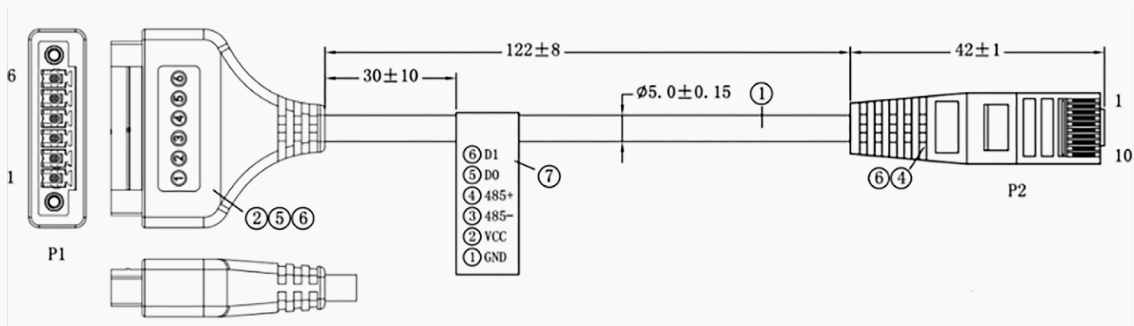


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Each NLS-FM3281-50 and NLS-FM3281-NFC-50 device has a RJ45 to screw connector converter for bare wire connection (RS485-Wiegand) in the box (CBL-0233R). This 22 cm long cable makes it very easy to set up an RS485 or Wiegand network because you can screw the bare wires into the connector.

We have a complete description of the RS485 software protocol on our public website in the documents section of the FM3281 series.



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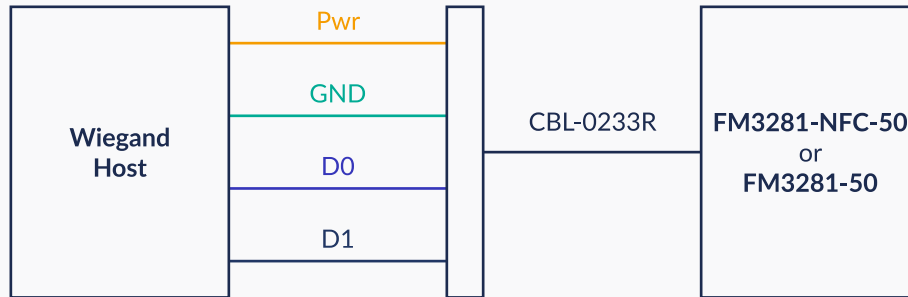
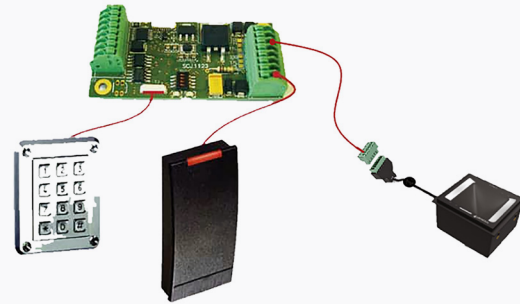
b) Wiegand

The Wiegand interface is a communication protocol commonly used in access control systems. It was initially developed to connect card readers to access control panels, but its use has expanded to various security and identification applications. Some customers who used a Wiegand card reader and want to switch to barcode or NFC access can replace their swipe card readers with the FM3281 and keep their Wiegand host controller.

A Wiegand device is connected to its host one-to-one.

The maximum cable length is 150 meter.

Example of a Wiegand setup :



Resume

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- | RS-485 and Wiegand interface are specific interfaces used in access control and security environments.
- | Newland supplies a CBL-0233R inside the NLS-FM3281-50 and NLS-FM3281-NFC-50 box, to make it easy to connect RS485 or Wiegand cables.
- | In the box is also the standard USB-A cable allowing to configure the FM3281 via USB.
- | The host in a RS485 or Wiegand solution is most of the time a controller board. Standard PC's do not have an RS2485 or Wiegand interface port.



Please let us know if you have any questions or concerns regarding these changes.

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