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Proximity reader converter from Wiegand and RS232 to Modbus TCP SLAVE

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Use this documentation with the product:
Bridge-IP V4 with firmware: Modbus

Website: http://www.symcod.com/

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INTRODUCTION
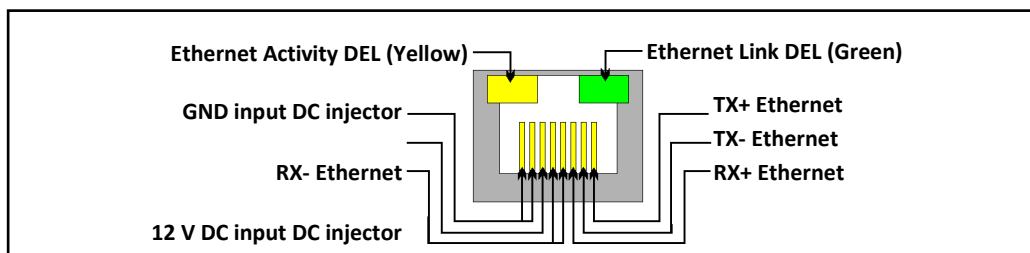

Our converter Modbus TCP Slave allows to communicate with any kind of RS232 (Serial Port) or WIEGAND proximity reader. It works with most manufacturers such as; RFIDEAS, HID, Indala, ioProx, Awid, Chubb, Posiin Paradox, Em Marin, CDVI, Verex, Desfire, Casi-ruco, Keri, Mifare, ISO 14443a, ISO 1443b, ISO 15693 iClass and several others. It supports 26-bit to 64-bit proximity cards. Can also be used as a gateway to communicate with an RS232 device such as; Scale, barcode reader or any other device generating ASCII text string.

# CONNECTORS DESCRIPTION

RS-232 Male Serial Port Connector

- 2- Received Data (RX) RS-232
- 3- Transmit Data (TX) RS-232
- 5- Ground (Gnd)
- 4-6 Internal Loopback
- 7-8 Internal Loopback
- 9- Output 5 Volt

Connecteur Ethernet

Ethernet Activity DEL (Yellow) — Ethernet Link DEL (Green)

GND input DC injector — TX+ Ethernet

— TX- Ethernet

RX- Ethernet — RX+ Ethernet

12 V DC input DC injector
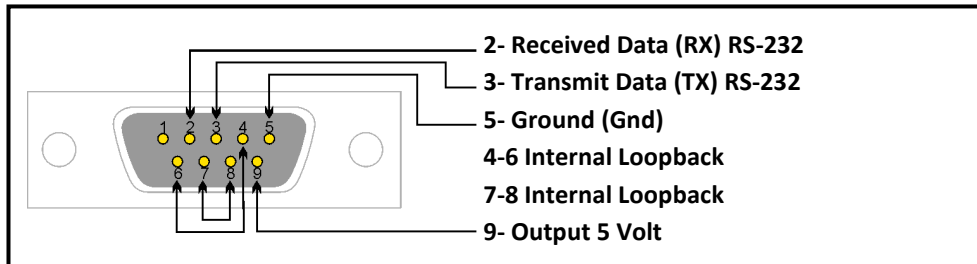
The IP Bridge communicates through an Ethernet 100BaseT network. The connector is a standard RJ-45 type. There are 2 LED's, the green one shows the active link with the network and the yellow one shows the activity. The IP Bridge can be powered by an individual power supply, a single or 16 ports DC-Injector (use only SYMCOD DC-Injector). As all the standard 100BaseT Ethernet devices, it uses a UTP CAT5 cable. A maximum length of 300 feet (91.44 meters) is allowed between the HUB or the SWITCH and the Bridge/IP.

Power connector polarity
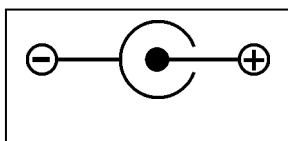
The power connector allows you to provide power to the IP Bridge. The input is 8VDC to 24 VDC with protected polarity. The connector is a 712RAPC Switch craft type and accepts 2.5mm plugs, positive center.

JS3 and JS4 connectors (Wiegand input)
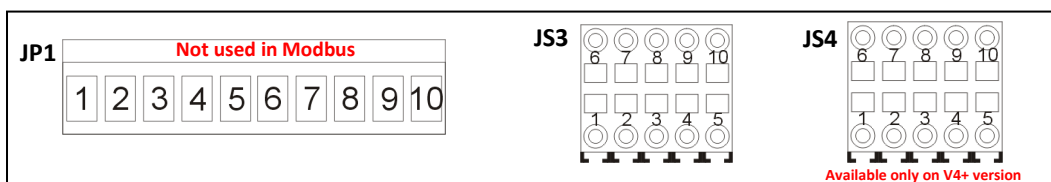
- The JP1 connector is not used in Modbus
- The JS4 connector is only available on the V4+ version

JS3 and JS4 connectors *(JS4 connector is only available on the V4+ version)*
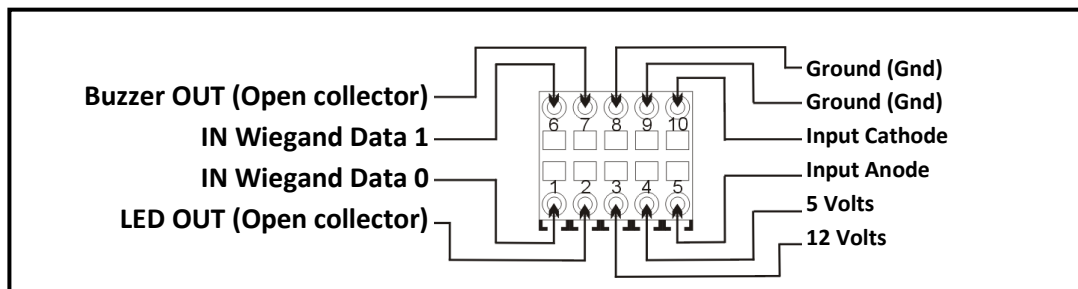

JS3 and JS4 Wiegand input connectors

The Wiegand inputs (JS3 and JS4) are provided for connecting proximity readers.

Discriminator: If 2 cards are swipe simultaneously, the discriminator will only consider the first card.

The input will provide a 12V tension on both JS3 and JS4 connectors, which is usually enough for any Wiegand type devices. The 12 VDC output is not regulated, so the output tension is equal to the one on the IP Bridge input power.
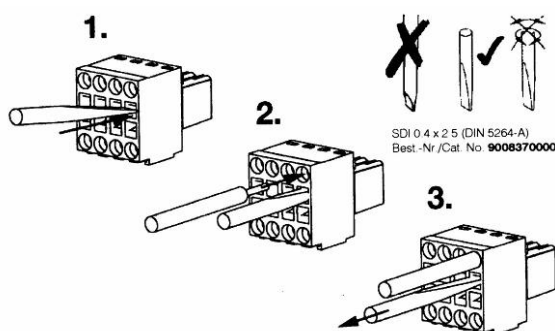
How to use the connectors JS3, JS4

1. Insert a small flat screwdriver in the opening (square) of the corresponding wire.
2. Insert the wire into the round opening.
3. Remove the screwdriver and pull lightly the wire to make sure that it is properly attach.

CONFIGURATION USING « BOARD CONFIG » SOFTWARE

This product requires version 1.3U or + (available at www.symcod.com)

Wiegand 1 and 2 input configuration:
The input Wiegand 1 and 2 are configured with the field "WIEGAND CONFIG":

Syntax: **^6^^NbDigits^^Lenght^^Start^**

NbDigits = This parameter is not used in Modbus
Length = Number of bits to read to make the code
Start = Position of the beginning of the first bit

In most cases you can use the automatic configuration that detects the number of bits *(maximum 64 bits)***:**
AUTOMATIC DATA WITH PARITY *(the most common)***:** ^6^^99^^99^^2^
AUTOMATIC DATA WITHOUT PARITY: ^6^^99^^99^^0^

You can also use custom configurations, examples:

CHUBBSECURITY 36 Bits : ^6^^7^^20^^16^
HID 38 Bits : ^6^^5^^16^^21^
STANDARD 26 Bits : ^6^^8^^24^^2^

Modbus TCP Slave Communication
with proximity reader RS232 or Wiegand

Bridge-IP V4 Modbus

- You must use the Modbus 03 command *"HOLDING REGISTER"* to receive the data.
- The IP address must be set with the Board Config software.
- The Modbus port is 502.

Registres (Holding Register)	Description	Format	Reset after reading
0001 to 0004	RS232 data field #01	Integer unsigned	Yes
0005 to 0008	RS232 data field #01	Integer unsigned	No
0009	Number of reading field #01	Integer unsigned	No
0010 to 0013	RS232 data field #02	Integer unsigned	Yes
0014 to 0017	RS232 data field #02	Integer unsigned	No
0018	Number of reading field #02	Integer unsigned	No
0019 to 0022	RS232 data field #03	Integer unsigned	Yes
0023 to 0026	RS232 data field #03	Integer unsigned	No
0027	Number of reading field #03	Integer unsigned	No
0028 to 0031	Wiegand entry # 01 data	Integer unsigned	Yes
0032 to 0035	Wiegand entry # 01 data	Integer unsigned	No
0036	Number of reading Wiegand #01	Integer unsigned	No
0037 to 0040	Wiegand entry # 02 data	Integer unsigned	Yes
0041 to 0044	Wiegand entry # 02 data	Integer unsigned	No
0045	Number of reading Wiegand #02	Integer unsigned	No

- Modbus registers start at address 0001
- All registers are in unsigned Integer format
- • "Reset after reading" means that the register will automatically reset to zero after reading the data by the Modbus Master. This feature allows you to know if it is a new card but unfortunately this method does not work with all Master Modbus. If this method is not supported by your Master you must then use the "Number of reading" registers to detect the reading of a new card.
- The Wiegand # 02 entry is only available on the V4 + version
- The data received by the RS232 serial port must be in decimal format. If multiple data are present, they must be separated by one or more characters of your choice. By default the end character is a [CR] (ASCII character 13) but it is not mandatory. No data configuration is necessary, our converter detects and automatically adapts to the syntax of your card reader.

Example :
- If you read a 26-bit proximity card on the Wiegand # 01 entry
   - Example card: 123:12345
     - The Facility code 123 *(site code)* will be in register 0030 and in 0034
     - The Card Number 12345 will be in register 0031 and in 0035
- If you read a 26-bit proximity card connected to the RS232 Serial Port
   - Example card: 123:12345
     - The Facility code 123 *(site code)* will be in register 0004 and in 0008
     - The Card Number 12345 will be in register 0013 and in 0017

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