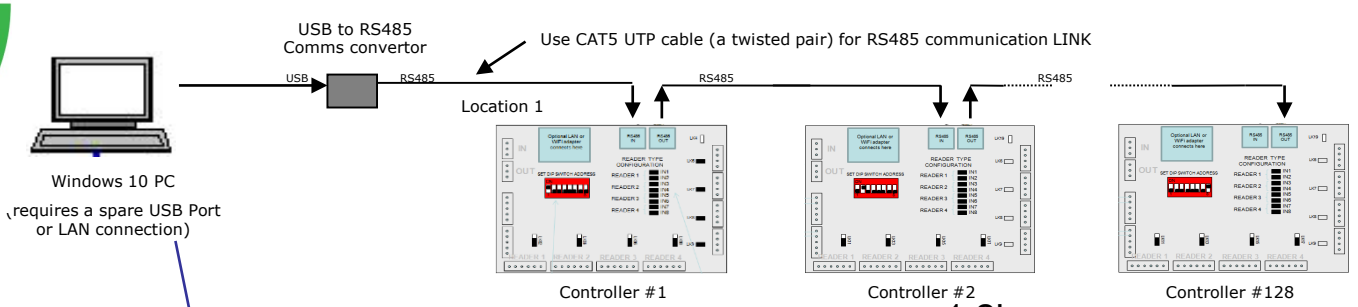
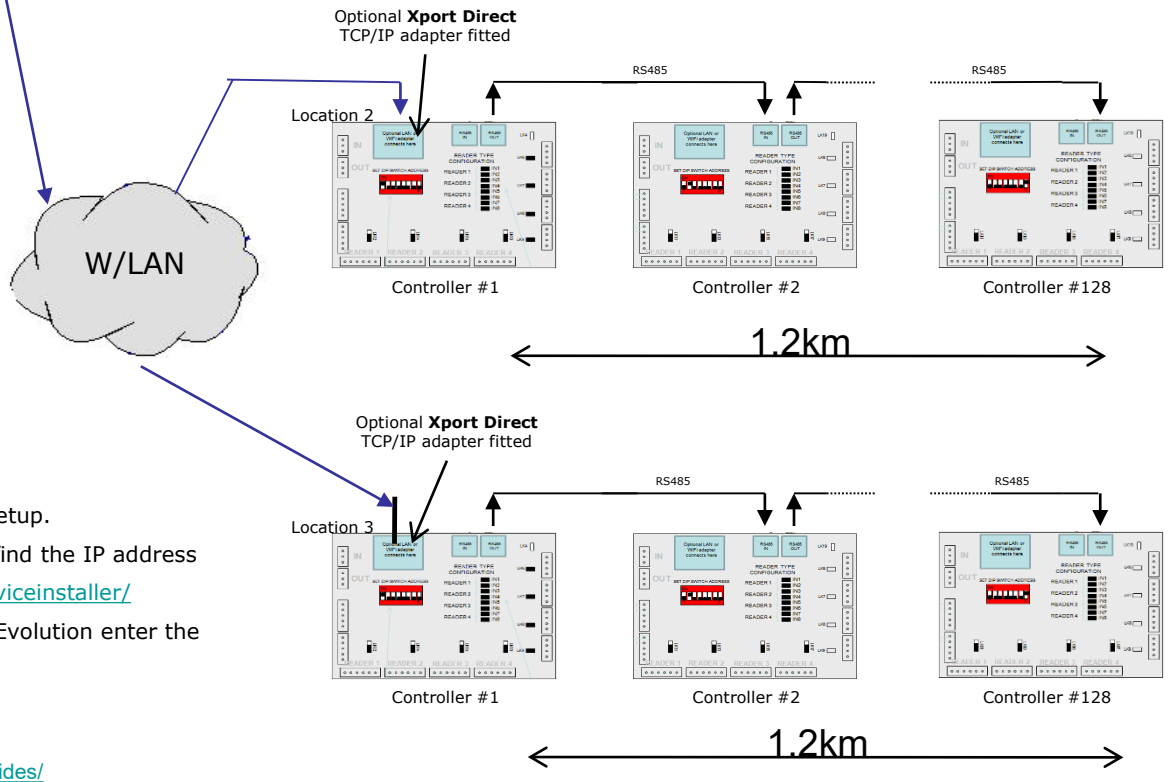
CS Technologies Evolution System Connection Overview

Direct Serial Communication



TCP/IP Communication



Download Free Evolution Software

http://www.cstech.biz/softwarelink.php

In Evolution go to **Hardware/Locations**

- For **Direct Serial** connections a COM port is setup.
- For **TCP/IP** use Lantronix Device Installer to find the IP address

  https://www.lantronix.com/products/deviceinstaller/

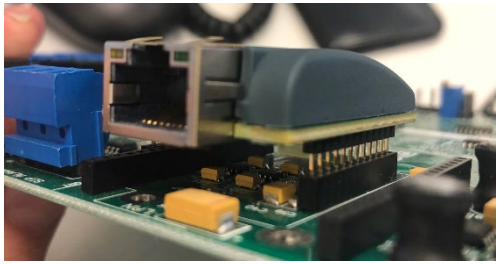
Assign the device a static IP address and then in Evolution enter the IP address for the location.

Additional guides can be found here:

http://www.cstech.biz/downloads/Evolution/Install%20Guides/

XPort Direct LAN Connection

1. Turn the Power off the EVO2/4 Board.
2. Insert the Xport Direct TCP/IP adapter (RJ45 connector points out of the board).
   See image - ensure all pins line up and are fit correctly into the rail socket.
2. Connect your LAN cable to the Xport Direct adapter .
3. Power on the EVO2/4 controller.
4. Find the IP address



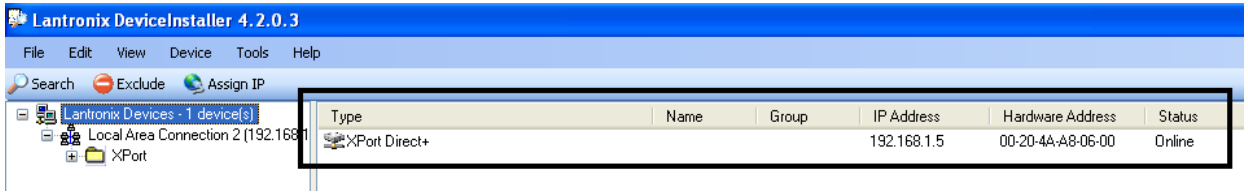
By default the **Xport Direct** is set to Auto DHCP.

It will automatically try to connect to the network and should be assigned an IP address by the network.

To finding the IP address of the Xport Direct Download, install the **Lantonix Device Installer** application on your PC.

https://www.lantronix.com/products/deviceinstaller/

Once installed run the software will find the XPort Direct (see image below).



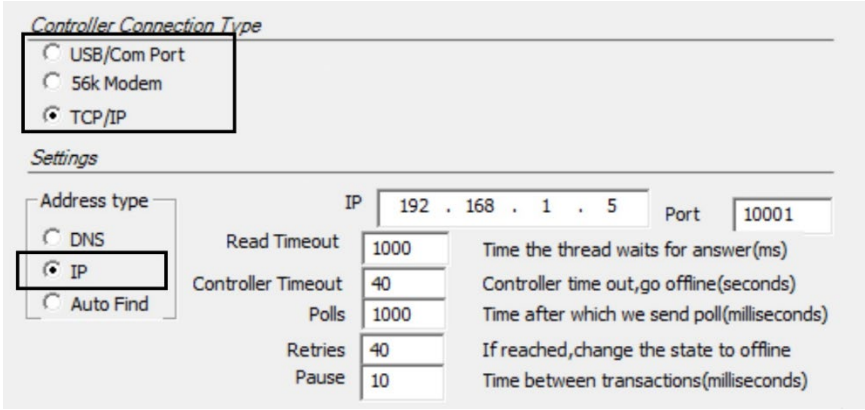
5. It is highly recommended that you 'assign' a static IP address to the Xport Direct.

- Click on the found XPort Direct and then press the '**Assign IP**' button on the screen.

-> You now know the IP address of the device and can add this into Evolution.

6. In the Evolution go to the **Hardware/Locations** and select connection type as **TCP/IP** and select the address type as **IP**.

Enter the IP address and Evolution will now attempt to connect to the device.



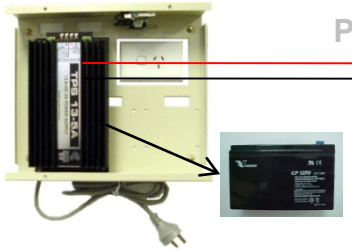
Power Notes:
- Recommended cabling – Figure 8
- Do not use plug pack power supplies.
- Recommend 13.8 Volt 2A power supply with battery backup. (Can power several controllers)
- Check all devices current usage.

Typically: Board 400mA, Strike 200mA, Maglock 1000mA, Reader 20mA.
- There are two power terminals. Connect the power supply to the 'IN' terminal. The 'OUT' power terminal can be used as a power 'output'.

From previous controller or Comms Convertor

To next controller

Comms Cabling Notes:
- Recommended cable type – CAT5
- Daisy Chain configuration
- Maximum distance is 1.2km from PC to last controller
- RJ45 connector. Use a 'straight through' network cable
- These connection are not for TCP/IP connection
- Pin 1 = A, Pin 2 = B, Pin 3+.4 = GND
- If connecting to terminal connection – A connects to A, B connects to B and GND connects to GND on the next controller.
- LK19 is a termination link. It should be put on the last controller in the daisy chain.



POWER
+12 V
GND
+12 V
GND
IN
OUT
RS485 IN
RS485 OUT
Optional LAN adapter connects here
RS485 IN
RS485 OUT
LK19
READER TYPE CONFIGURATION
LK6
SET DIP SWITCH ADDRESS
ON
1
8
READER 1 IN1 IN2
READER 2 IN3 IN4
READER 3 IN5 IN6
READER 4 IN7 IN8
LK7
LK8
LK9
NC1 COM1 NO1 GND RELAY 1
NC2 COM2 NO2 GND RELAY 2
NC3 COM3 NO3 GND RELAY 3
NC4 COM4 NO4 GND RELAY 4

EXIT REQUEST
GND
D1_RQE
D2_RQE
D3_RQE
D4_RQE

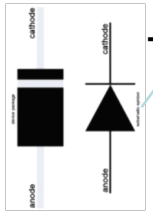
DOOR MONITORING
GND
D1_REED
D2_REED
D3_REED
D4_REED

LK11
LK13
LK15
LK17
READER 1
READER 2
READER 3
READER 4
GND IN1 IN2 LED1 +5V +12V
GND IN3 IN4 LED2 +5V +12V
GND IN5 IN6 LED3 +5V +12V
GND IN7 IN8 LED4 +5V +12V

Exit Request Button and Door Monitoring inputs
- Must be a dry contact (no voltage)
- Connect one wire to Ground and the other wire to the specific input.

Ground (Black)
Data0 (Green)
Data1 (White)
Green Led (Orange)
Power (Red) +12 volts

WIEGAND



+
GND

Relay Cabling Notes:
- Recommended cable type – Figure 8
- Must fit a diode at the lock
- NC = Normally Closed Circuit (To Common)
- NO = Normally Open Circuit (To Common)
- Relays can be reversed (energised) by software for fail safe operation.
- Put LK6-9 on to put +12 volts on each relay common pin.

Reader Cabling notes:
- Maximum 100 meters from controller
- Recommended cable type – 6 core shielded
- Do not wire 2 readers into the 1 reader port

Set Board address ID
- Set the ID in binary (1 to 128)
- Each controller must have a unique ID
- It does not matter what the number order is as\long as no two controllers have the same number.

Configure the board for the number of readers:
- 1 Reader Only: Put links IN1,2 – ON, IN3-8 – OFF
- 2 Readers Only: Put links IN1-4 – ON, IN5-8 – OFF
- 3 Readers Only: Put links IN1-6 – ON, IN7-8 – OFF
- 4 Readers Only: Put links IN1-8 – ON

Power Notes:
- Recommended cabling – Figure 8
- Do not use plug pack power supplies.
- Recommend 13.8 Volt 2A power supply with battery backup. (Can power several controllers)
- Check all devices current usage.

Typically: Board 400mA, Strike 200mA, Maglock 1000mA, Reader 20mA.
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From previous controller or Comms Convertor

To next controller

Comms Cabling Notes:
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- Daisy Chain configuration
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- Pin 1 = A, Pin 2 = B, Pin 3+.4 = GND
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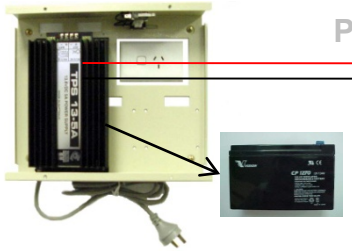
- LK19 is a termination link. It should be put on the last controller in the daisy chain.



POWER
+12 V
GND
+12 V
GND
IN
OUT
Optional LAN adapter connects here
RS485 IN
RS485 OUT
LK19
SET DIP SWITCH ADDRESS
ON
1
8
READER TYPE CONFIGURATION
READER 1 IN1 IN2
READER 2 IN3 IN4
READER 3 IN5 IN6
READER 4 IN7 IN8
LK6
LK7
LK8
LK9
NC1 COM1 NO1 GND RELAY 1
NC2 COM2 NO2 GND RELAY 2
NC3 COM3 NO3 GND RELAY 3
NC4 COM4 NO4 GND RELAY 4

EXIT REQUEST
GND
D1_RQE
D2_RQE
D3_RQE
D4_RQE

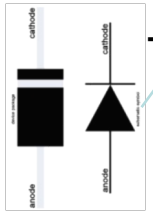
DOOR MONITORING
GND
D1_REED
D2_REED
D3_REED
D4_REED

LK11 LK13 LK15 LK17
READER 1 READER 2 READER 3 READER 4
GND IN1 IN2 LED1 +5V +12V
GND IN3 IN4 LED2 +5V +12V
GND IN5 IN6 LED3 +5V +12V
GND IN7 IN8 LED4 +5V +12V

Exit Request Button and Door Monitoring inputs
- Must be a dry contact (no voltage)
- Connect one wire to Ground and the other wire to the specific input.

Ground (Black)
Data (White)
Green Led (Blue)
Power (Red) +5 volts

SILKEY



+
GND

Relay Cabling Notes:
- Recommended cable type – Figure 8
- Must fit a diode at the lock
- NC = Normally Closed Circuit (To Common)
- NO = Normally Open Circuit (To Common)
- Relays can be reversed (energised) by software for fail safe operation.
- Put LK6-9 on to put +12 volts on each relay common pin.

Reader Cabling notes:
- Maximum 100 meters from controller
- Recommended cable type CAT5 (non shielded cable)
- Do not wire 2 readers into the 1 reader port

Set Board address ID
- Set the ID in binary (1 to 128)
- Each controller must have a unique ID
- It does not matter what the number order is as\long as no two controllers have the same number.

Configure the board for the number of readers:
- 1 Reader Only: Put links IN1-8 = OFF
- 2 Readers Only: Put links IN1-8 = OFF
- 3 Readers Only: Put links IN1-8 = OFF
- 4 Readers Only: Put links IN1-8 = OFF

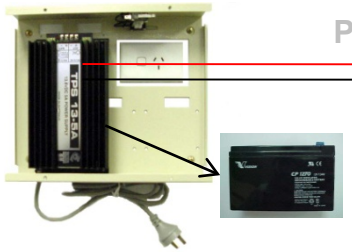
Power Notes:
- Recommended cabling – Figure 8
- Do not use plug pack power supplies.
- Recommend 13.8 Volt 2A power supply with battery backup. (Can power several controllers)
- Check all devices current usage.

Typically: Board 400mA, Strike 200mA, Maglock 1000mA, Reader 20mA.
- There are two power terminals. Connect the power supply to the 'IN' terminal. The 'OUT' power terminal can be used as a power 'output'.

From previous controller or Comms Convertor

To next controller

Comms Cabling Notes:
- Recommended cable type – CAT5
- Daisy Chain configuration
- Maximum distance is 1.2km from PC to last controller
- RJ45 connector. Use a 'straight through' network cable
- These connection are not for TCP/IP connection
- Pin 1 = A, Pin 2 = B, Pin 3+.4 = GND
- If connecting to terminal connection – A connects to A, B connects to B and GND connects to GND on the next controller.
- LK19 is a termination link. It should be put on the last controller in the daisy chain.



POWER

+12 V
GND

+12 V
GND

IN

OUT

Optional LAN or WiFi adapter connects here

RS485 IN

RS485 OUT

LK19

SET DIP SWITCH ADDRESS

ON 1 8

READER TYPE CONFIGURATION

READER 1	IN1	■
	IN2	□
READER 2	IN3	■
	IN4	□
READER 3	IN5	■
	IN6	□
READER 4	IN7	■
	IN8	□

LK6 LK7 LK8 LK9

NC1 COM1 NO1 GND — RELAY 1

NC2 COM2 NO2 GND — RELAY 2

NC3 COM3 NO3 GND — RELAY 3

NC4 COM4 NO4 GND — RELAY 4

EXIT REQUEST

GND
D1_RQE
D2_RQE
D3_RQE
D4_RQE

DOOR MONITORING

GND
D1_REED
D2_REED
D3_REED
D4_REED

LK11 LK13 LK15 LK17

READER 1 READER 2 READER 3 READER 4

GND IN1 IN2 LED1 +5V +12V

GND IN3 IN4 LED2 +5V +12V

GND IN5 IN6 LED3 +5V +12V

GND IN7 IN8 LED4 +5V +12V

Exit Request Button and Door Monitoring inputs
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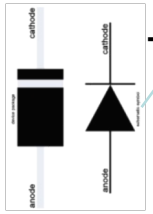

+

GND

Ground (Black)

Data (White)

Green Led (Blue)

Power (Red) +12 volts

PRESCO

Relay Cabling Notes:
- Recommended cable type – Figure 8
- Must fit a diode at the lock
- NC = Normally Closed Circuit (To Common)
- NO = Normally Open Circuit (To Common)
- Relays can be reversed (energised) by software for fail safe operation.
- Put LK6-9 on to put +12 volts on each relay common pin.

Reader Cabling notes:
- Maximum 500 meters from controller
- Recommended cable type – 4 core shielded or non shielded
- Do not wire 2 readers into the 1 reader port

Set Board address ID
- Set the ID in binary (1 to 128)
- Each controller must have a unique ID
- It does not matter what the number order is as\long as no two controllers have the same number.

Configure the board for the number of readers:
- 1 Reader Only: Put links IN1 – ON, IN2-8 – OFF
- 2 Readers Only: Put links IN1,3 – ON, IN2,4-8 – OFF
- 3 Readers Only: Put links IN1,3,5 – ON, IN2,4,6-8 – OFF
- 4 Readers Only: Put links IN1,3,5,7 – ON, IN2,4,6,8 - OFF

Power Notes:
- Recommended cabling – Figure 8
- Do not use plug pack power supplies.
- Recommend 13.8 Volt 2A power supply with battery backup. (Can power several controllers)
- Check all devices current usage.

Typically: Board 400mA, Strike 200mA, Maglock 1000mA, Reader 20mA.
- There are two power terminals. Connect the power supply to the 'IN' terminal. The 'OUT' power terminal can be used as a power 'output'.

From previous controller or Comms Convertor

To next controller

Comms Cabling Notes:
- Recommended cable type – CAT5
- Daisy Chain configuration
- Maximum distance is 1.2km from PC to last controller
- RJ45 connector. Use a 'straight through' network cable
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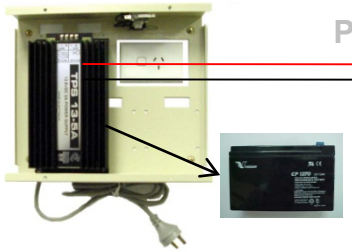
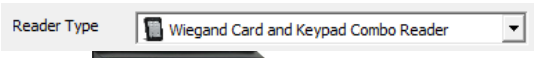


POWER
+12 V
GND
+12 V
GND
IN
OUT
Optional LAN or WiFi adapter connects here
RS485 IN
RS485 OUT
LK19
READER TYPE CONFIGURATION
SET DIP SWITCH ADDRESS
ON
1
8
READER 1
READER 2
READER 3
READER 4
IN1
IN2
IN3
IN4
IN5
IN6
IN7
IN8
LK6
LK7
LK8
LK9
NC1
COM1
NO1
GND
RELAY 1
NC2
COM2
NO2
GND
RELAY 2
NC3
COM3
NO3
GND
RELAY 3
NC4
COM4
NO4
GND
RELAY 4
PRESS TO EXIT
EXIT REQUEST
GND
D1_RQE
D2_RQE
D3_RQE
D4_RQE
DOOR MONITORING
GND
D1_REED
D2_REED
D3_REED
D4_REED
LK11
LK13
LK15
LK17
READER 1
READER 2
READER 3
READER 4
GND IN1 IN2 LED1 +5V +12V
GND IN3 IN4 LED2 +5V +12V
GND IN5 IN6 LED3 +5V +12V
GND IN7 IN8 LED4 +5V +12V
RS485 IN
RS485 OUT

Exit Request Button and Door Monitoring inputs
- Must be a dry contact (no voltage)
- Connect one wire to Ground and the other wire to the specific input.

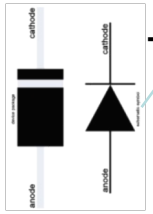


Ground (Black)
Data0 (Green)
Data1 (White)
Green Led (Yellow)
Power (Red) +12 volts

PRESCO PTKR

Reader Cabling notes:
- Maximum 100 meters from controller
- Recommended cable type – 6 core shielded
- Do not wire 2 readers into the 1 reader port

Reader Configuration – MUST Set PTKR for 4 bit Wiegand Burst mode (with * and # keys enabled):-
1. Remove power from the PTKR keypad.
2. Connect the Orange wire to 0V.
3. Reapply power.
4. Once the Presco logo LED starts to double flash green you are in program mode.
5. Press * 032 101 #
6. Press * 999 # to exit program mode.
7. Disconnect Orange wire.



+

GND

Relay Cabling Notes:
- Recommended cable type – Figure 8
- Must fit a diode at the lock
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- Put LK6-9 on to put +12 volts on each relay common pin.

Configure the board for the number of readers:
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- 3 Readers Only: Put links IN1-6 – ON, IN7-8 – OFF
- 4 Readers Only: Put links IN1-8 – ON

Power Notes:
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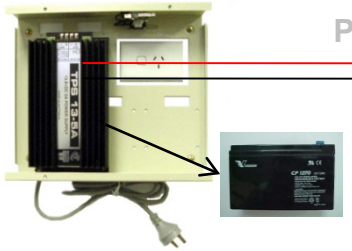

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READER 4 IN7 IN8
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LK7
LK8
LK9
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NC2 COM2 NO2 GND RELAY 2
NC3 COM3 NO3 GND RELAY 3
NC4 COM4 NO4 GND RELAY 4

EXIT REQUEST
GND
D1_RQE
D2_RQE
D3_RQE
D4_RQE

DOOR MONITORING
GND
D1_REED
D2_REED
D3_REED
D4_REED

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LK13
LK15
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READER 1
READER 2
READER 3
READER 4
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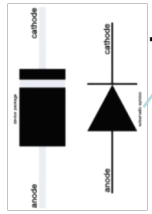
GND IN3 IN4 LED2 +5V +12V
GND IN5 IN6 LED3 +5V +12V
GND IN7 IN8 LED4 +5V +12V

Exit Request Button and Door Monitoring inputs
- Must be a dry contact (no voltage)
- Connect one wire to Ground and the other wire to the specific input.

Ground (Green)
Clock (Red)
Data (Brown)
Led (Orange)
Power (Yellow) +5 volts

CLOCK + DATA



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- 3 Readers Only: Put links IN1,3,5 – ON, IN2,4,6-8 – OFF
- 4 Readers Only: Put links IN1,3,5,7 – ON, IN2,4,6,8 - OFF