



transponder and reader engineered systems



TRES900S

Reader Setup Guide

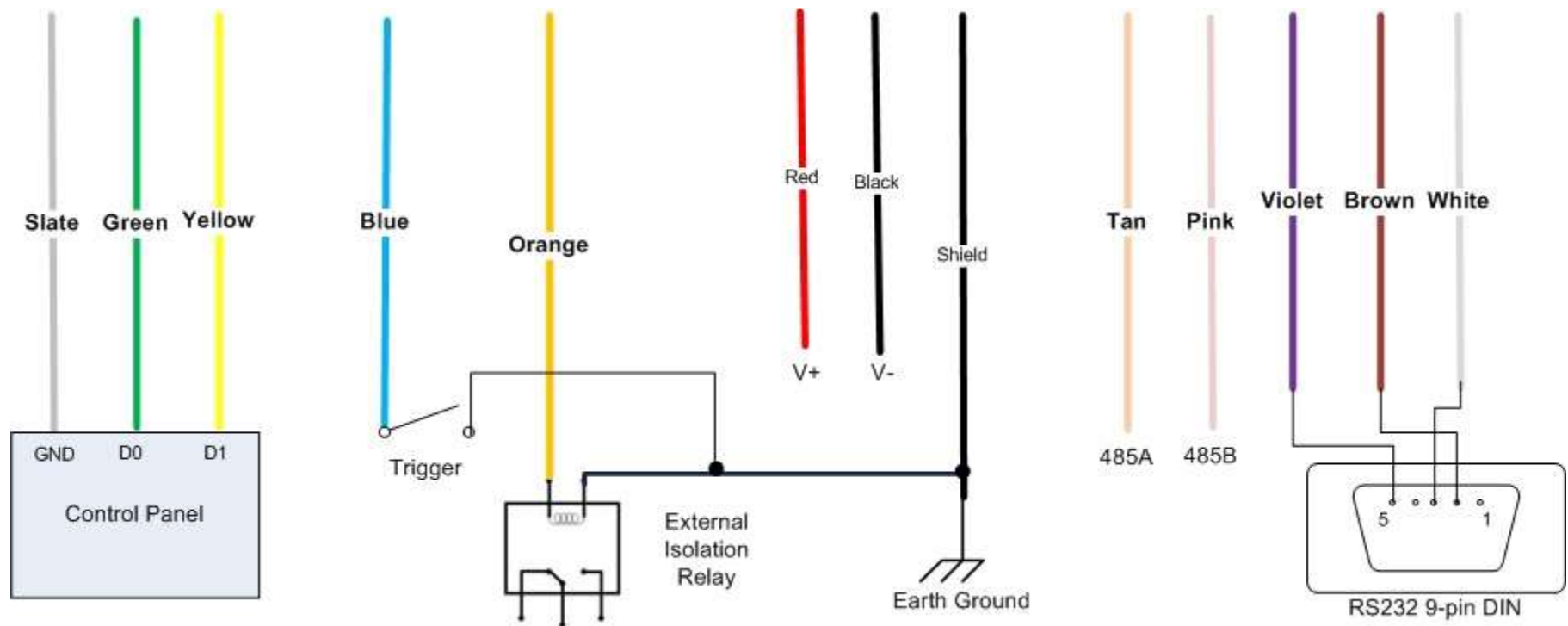
Power Requirements

The Reader needs to be powered with 10 Watts of power, TRES supplies a DC-to-DC converter and a power supply for ease of installation. The positive power and the ground connections are applied to the Reader at the terminal strip (located inside the reader to a DC-to-DC converter). The Chart below will assist you with selecting proper power supply and wire gauge for installing your new TRES900S. Check that the **RED** and **BLACK** wires are installed correctly to the supplied power supply.

10watts' Power Wire Chart in feet for TRES Readers										
voltage	8awg	10awg	12awg	14awg	16awg	18awg	20awg	22awg	24awg	26awg
5vDC@2A	458	298	183	115	71	46	29	17	11	7
12vDC@0.84A	1100	715	440	275	170	110	70	40	26	16
24vDC@0.42A	2200	1430	880	550	340	220	140	80	52	32
48vDC@0.21A	4400	2860	1760	1100	680	440	280	160	104	64

Wiring Requirements

The TRES900S is now terminated outside the reader, supplying a 6' pigtail. The diagram below will help you with wiring up the new TRES900S to your selected controller or other controlling device. The standard wiring of the Reader is described here.



Reader Setup Software

Reader Setup: Version 2.2.7

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Reader Information

Model	900S
Hardware	9
Firmware	99
Serial Number	99992

Control

Comm

☒ Serial
☐ TCP/IP

Port: COM2

Connect

Disconnected

Reader Actions

Query Reader

Set Parameters

Set Defaults

Restart Reader

RF

Radio Power: 10 dBm

Reader

Mode: Timed

Use RSSI ☒

Timed Interval: 1.0 s

Trigger Read Delay: 0.0 s

Serial Comm

Mode: ASCII

RS232

Baudrate: 115200

RS485

Baudrate: 115200

Protocol: CR/LF

Address: Generic

Wiegand

Output Mode: wiegand+serial

Output Buffer: 2.0 s

Pulse Width: 80 uS

Pulse Period: 1200 uS

IDs

Use Facility Code ☐

Facility Code: 255

Tag IDs: Edit

Relay

Enabled ☐

Hold Time: 1.0 s

Indicators

LED ☒ Audio ☐

LED Hold Time: 0.2 s

Log

Pause

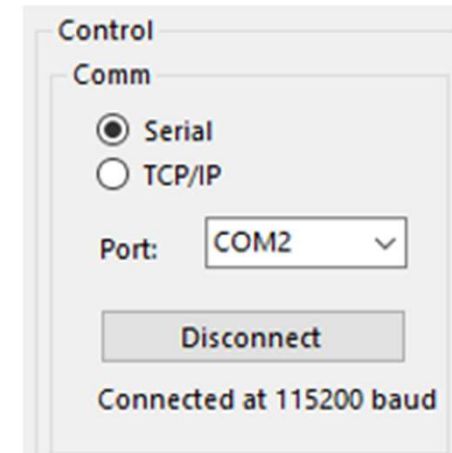
Clear

Connecting Reader to Computer

- First step is to power up your computer and locate the program named “TRES_SETUP.EXE”, but you do not need to run it at this time.
- Now connect the Reader to the computer with the RS-232 cable. Most likely a USB to RS232 device.
- Power up the Reader and make sure the power is on (an audible beep should be heard).
- Now you are ready to run the software and setup your Reader to your requirements.

Connecting to the Reader

Upon power up, the **TRES900S** will search for available COM devices. Select the appropriate **Com Port** device from the drop-down menu to connect to your computer to the reader, then press the **Connect** button, if you have the TCP/IP option, you can select it here.

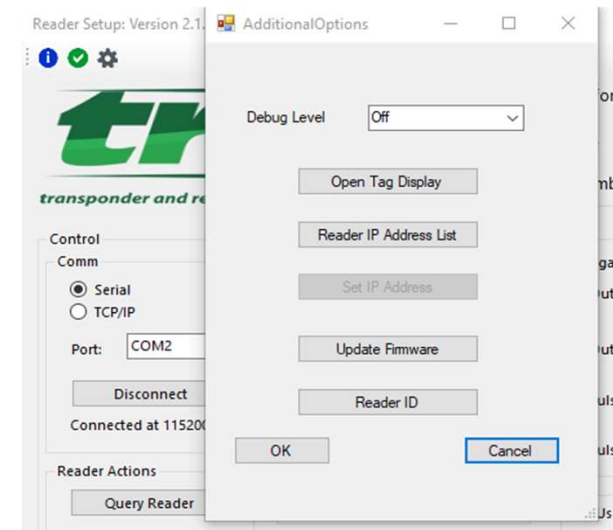


A **Query** is done during the connection process. When finished, just press the **Disconnect** button. If you plug in your serial device after starting this software, that device will not be recognized.

Upper Left Tools

In the upper left section of the **TRES900S** Setup utility you will see three (3) icon buttons, the one that looks like a gear has four (4) options:

Open Tag Display, this is a feature that will display a large window in the upper portion of the computer screen that will display a valid Wiegand number that is read by the Reader



Reader IP Address List, you can modify the IP settings for the TCP/IP option.

Set IP Address, after you modified the IP address, this will upload to reader.

Update Firmware, this allows you to update the firmware in the field. This is useful if there are changes to the product or if you have custom firmware.

Reader ID, this is where you can get the serial number on the reader, can only be modified at the factory.

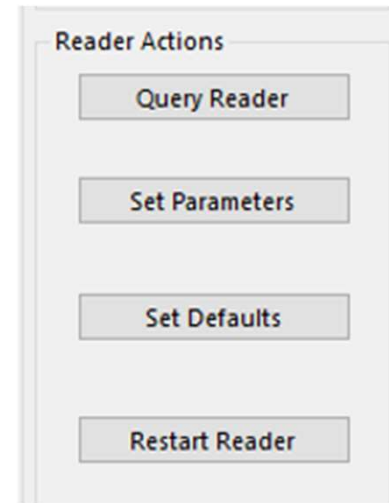
Reader Interface Actions

Query Reader, this should be done if you made changes to the reader and want to get the stored data from the reader. A Query is done automatically when you first connect to the **TRES900S** and run the setup program.

Set Parameters, this is the icon button to update the Reader settings with your changes you make. After you make your changes to the reader, you will have to press this icon button in order to send your changes to the flash memory.

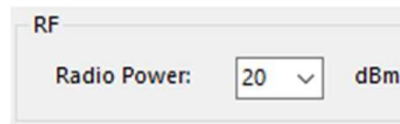
Set Defaults, in case you get lost and want to reset all setting to factory default, you would press this icon button to restore all your setting to the factory default mode.

Restart Reader, this just restarts the reader instead of having to remove power.



RF Section

This is where you would change the RF output power from between 10dBm to 30 dBm. The higher the number, the more power the unit puts out. Remember, if you push too much power out, it will act just like a stereo where when you crank it too loud, the signal gets distorted. The setting shipped from the factory would be set to maximum distance without distortion.



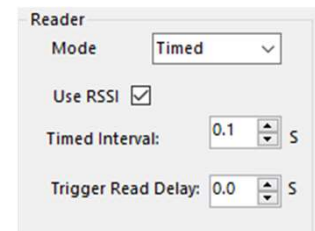
RF

Radio Power: dBm

Reader Section

This section allows you to modify how you read a tag. The explanation will follow along with describing each section.

Mode, this is where you would select Timing or Trigger mode. Timing mode is where you are constantly reading tags. Trigger mode is where the reader is not reading tags until the trigger line is triggered (shorted to ground).



The screenshot shows a 'Reader' configuration window. It has a 'Mode' dropdown menu set to 'Timed'. Below it is a 'Use RSSI' checkbox which is checked. Then there is a 'Timed Interval' field with a value of '0.1' and a unit of 'S'. Finally, there is a 'Trigger Read Delay' field with a value of '0.0' and a unit of 'S'.

Timed Interval, this is where you set the frequency of when you read tags, minimum is 100mS and maximum read interval is 5 seconds.

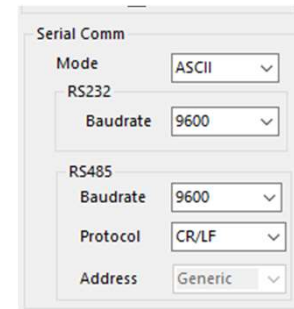
Trigger Read Delay, this is the setting to leave the reader on after the trigger is released, minimum setting is 0 seconds and maximum is 10 seconds.

Serial Comm Section

Mode, this portion allows you to select between standard **ASCII** (2 HEX char F/C and 4 char ID) or HID Serial PROX reader output from a converted Wiegand Input.

RS485, in this section you can also modify the baud rate of the RS485, just as you did with the RS232, 9600, 19200, 57600, 115200. The Protocol option allows you to select either the standard CR/LF output, or the secure OSDP option.

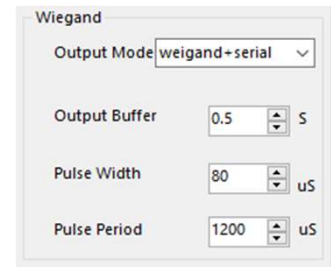
RS232, here you will select your baud rate you want to communicate thru the serial port. Selections are 9600, 19200, 57600, 115200 (default). This is usually set to the 115200 baud and most devices are automatic baud selection, this is mainly for use with your dumb terminal program like HyperTerm or CoolTerm.



The screenshot shows a 'Serial Comm' configuration window. It has two main sections: 'RS232' and 'RS485'. The 'Mode' dropdown is set to 'ASCII'. Under 'RS232', the 'Baudrate' dropdown is set to '9600'. Under 'RS485', the 'Baudrate' dropdown is set to '9600', the 'Protocol' dropdown is set to 'CR/LF', and the 'Address' dropdown is set to 'Generic'.

Wiegand Section

This is where you modify your Wiegand settings. You normally would not need to modify the Wiegand settings, but if you are running longer cable, then you may have to. To modify the Wiegand timing, go to the Wiegand Setting section of the Setup Software, then select the desired timing parameters



Output Mode, option to select both Wiegand and Serial or just serial data.

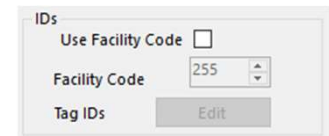
Output Buffer, this allows you to select a Wiegand buffer from 0...60 seconds. When first tag is read, this tag will be outputted, then stored into a buffer for time selected or until another valid tag is read. If another tag is read before the buffer times out, this tag data will be outputted, then stored in buffer.

Pulse Width, modify the Wiegand Pulse Width, the specification is 20...100 μ Sec

Pulse Period, modify the Wiegand Pulse Period, the specification is 200...20000 μ Sec

IDs Section

In this section of the software, you will have the ability to select a Facility Code and/or ID number(s). When you select a facility code, all other facility codes read will be ignored. If no facility code is selected, all valid IDs will be outputted.

A screenshot of a software window titled "IDs". It contains a checkbox labeled "Use Facility Code" which is currently unchecked. Below it is a "Facility Code" field with a numeric value of "255" and a small up/down arrow icon. At the bottom, there is a "Tag IDs" label and an "Edit" button.

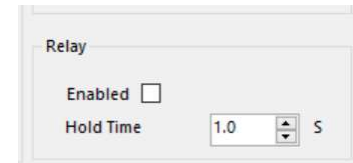
Use Facility Code, when this box is selected, a facility code will be used to output only the facility code selected. If you select the relay or LED option, then only when this facility code is read, the relay or LED will engage.

Facility Code, here you will select the facility code you want to output only. When you select between 0...255, only a tag read with this site code will be outputted.

Tag IDs, add, modify and delete ID numbers. First you select the **Add** button in the popup box and another popup box will be displayed. You can enter a single number or a range of numbers.

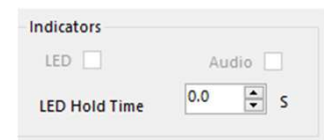
Relay and Indicator Section

Relay Enabled, when selected, you enable the use of the relay. It works off the Facility Code, if no Facility Code, then the relay contact closes on any valid TRES Wiegand tag read. If the Facility Code and/or ID range selected, the relay will close only when a valid tag with that Facility Code and ID range is received from the reader.



Hold Time, relay hold time, between 100 mS...3 seconds.

Indicators is where you turn the LED and/or Beeper ON/OFF on a valid read. Factory default is on but if you do not need to see an LED flashing or hear the Beeper beeping for a valid Wiegand read, then you can turn either of them off here.



LED Hold Time, relay hold time, between 100 mS...3 seconds.