ETS Inc.

SRDAO-3 Smart Optically Isolated Wiegand card reader DA Instructions

The SRDAO-3 is 3 port, Smart Wiegand reader distribution amplifier with field programmable card data routing rules and optically isolated inputs and outputs for access control systems. All three ports are optically isolated from one another which prevents ground loop caused data corruption issues. The SRDAO-3 Monitors the LED outputs of the access control panels and outputs an LED indication of “access granted or denied”

Reader Input
The SRDAO-3 accepts one-way data standard Weigand card readers only. The SRDAO-3 supports one or two LED indicators. The reader power can also be configured for 12vdc or 5 vdc via an onboard jumper. See figure 1.

Power Reader Locally Input
The Reader can be powered near the site and this input is used for that purpose. The reader power source jumpers must be set for local. See figure 1.

Reader Power
The reader power can be supplied from a local power supply or by any one of the three connected access control panels. See jumper settings in figure 1.

Data outputs
Whatever data comes out of the Wiegand reader will appear at the terminals of the D0 and D1 terminals of the access control panel outputs. Connect these outputs to the access control panel reader inputs. See figure 1. Note- no card read data is stored in the RDA1.

Panel connections
Note- 12vdc power must be supplied to the SRDAO-3 form EACH connected access control panel or the SRDAO-3 will not transmit card read data. Connect the 12vdc power, data 0, data 1 and LEDs as shown in figure 1.

Configuration TTL232 port
This port is for connecting a laptop to the SRDA0-1 via the ETS USB-TTL232 cable. With a terminal emulation program, the user can enter up to 34 card length and or facility code rules.

LED signals
All LED inputs are normally high. The inputs to the SRDAO-3 from the access control panels can be 5v or 12v. When a valid card read is detected by any of the 3 “green LED” inputs going low, the SRDAO-3 will send a “green LED” signal to the Wiegand reader green LED terminal (logic low). If an invalid card read is detected by any or all of the 3 “red LED” inputs going low, the SRDAO-3will send a “red LED” signal to the Wiegand reader red LED terminal (logic low). See figure 1 For connections. You can also tie the Door release signal via a relay from each panel to the Green LED input to display a valid card read on the reader from any panel.

Cabling
Run a #22 6 conductor shielded from the Wiegand reader to the SRDAO-3. Run up to 3 each #22 6 conductor shielded cables from the SRDAO-3 to each access control panel. The shield can be used as a common.

Grounding jumper
The SRDAO-3 can be grounded locally to whichever power source is selected. This is useful if vicinity area lightning strikes are frequent and are problematic. Note- if grounds between the selected reader power source and this ground point are at different potentials, data corruption may occur.

D0 and D1 Termination jumpers
If the SRDAO-3 reader is more than 200’ away from the SSRDAO-3 or the system is in a high noise environment such as an elevator cab, we recommend using our WCD-1 at the reader and placing the jumpers in the lower position.

Programming the SRDAO-3
The technical department at ETS can pre-program card rules into the SRDAO-3 here at the factory or you can create your own rules by purchasing the ETS USB-TTL232 programming cable and running a terminal emulation program on a laptop computer. To create card rules yourself, follow the procedure below.

Download the terminal emulation program PuTTY from this site. [Download PuTTY - a free SSH and telnet client for Windows]

Power up the SRDAO-3 with 12vdc

Connect the SRDAO-3 to your PC via the USB-TTL232 cable. NOTE- **You must power up the SRDAO-3 before connecting the communication cable or you will not be able to program or run the SRDAO-3. Always unplug the comm cable when cycling SRDA-3 power. Closing and relaunching Putty may also need to be preformed during a power reset.**

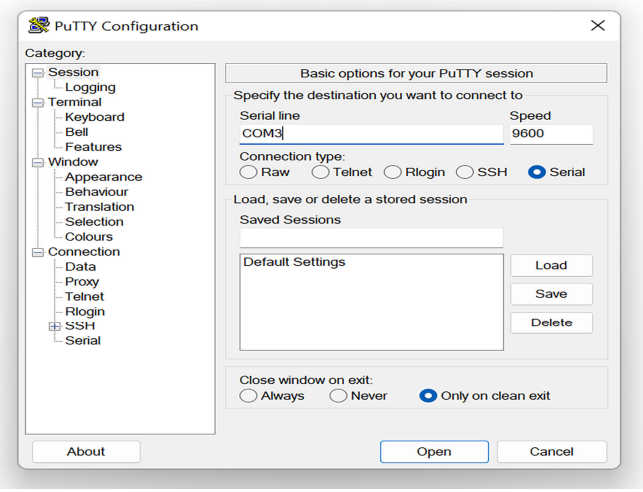
In windows, launch your device manager and expand the Ports (Com and Lpt) heading. You should see USB serial port listing and note the COM number. **Note-The COM port that the USB-TTL232 converter connects to can change between Putty program closures and launches. Always check the device manager for the converter COM number.**

TechTip- If you are unable to connect to the SRDAO-3, you can test that Putty and your USB-TTL232 converter are working correctly by placing a jumper between the TX and RX pins of the green connector (not connected to board). If everything is working, the screen will 'echo' whatever characters you type on the keyboard.

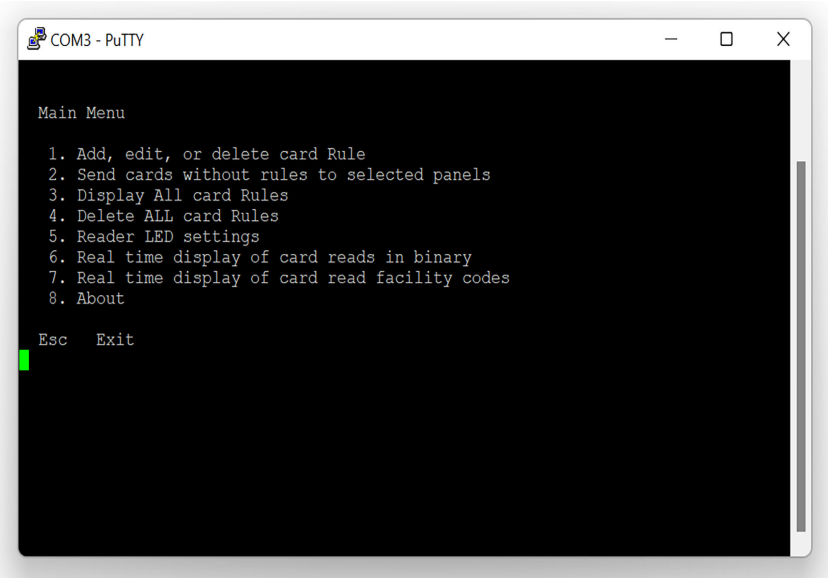
If you are having trouble establishing communication with the SRDAO-3

1. **Close Putty**
2. **Unplug the USB-TTL232 cable**
3. **Remove power to SRDAO-3**
4. **Reconnect power to SRDAO-3**
5. **Note-green light on SRDAO-3 should rapidly flash 5 times, then light solid**
6. **Reconnect USB-TTL232 cable**
7. **Relaunch Putty (make sure 9600 speed and proper COM port is selected in Putty)**

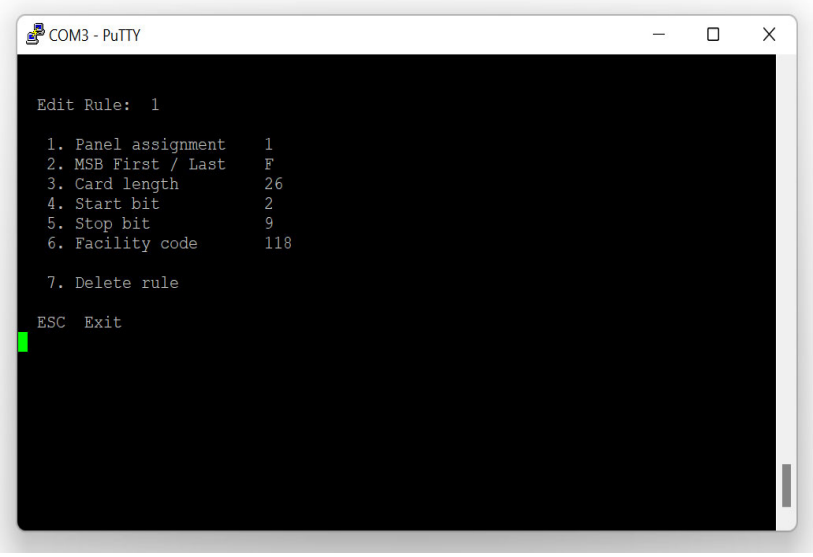
Launch putty and setup the screen like so with the COM number you identified above (note COM3 is for example):



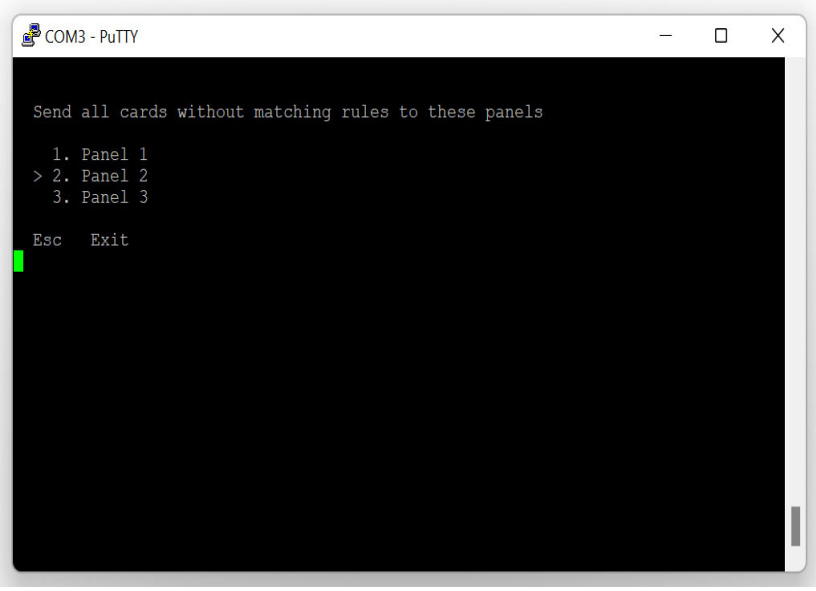
Click open and press the m or M key on your keyboard and the following should be displayed:



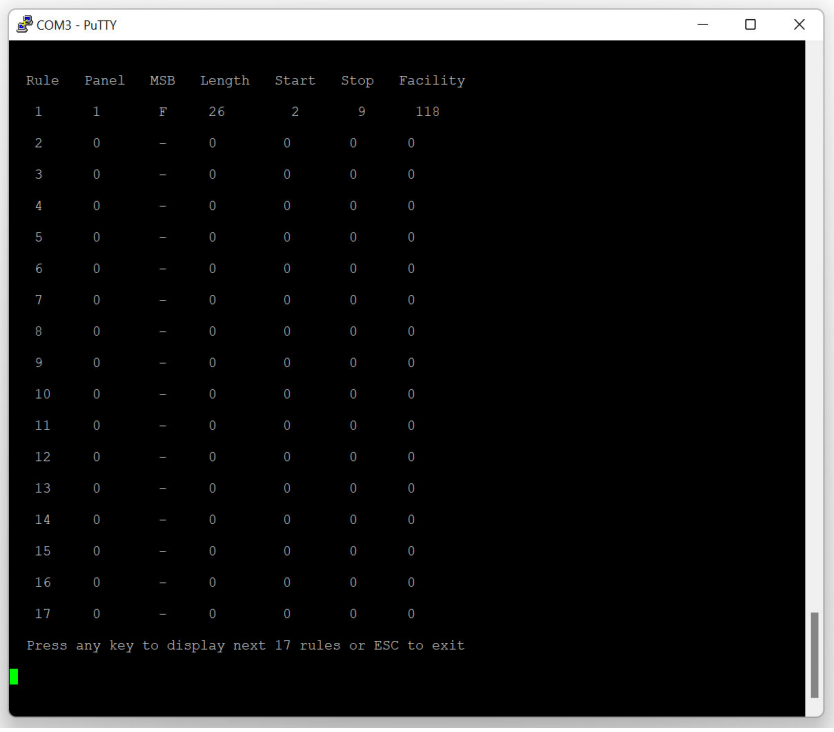
To add a card read rule press 1 then Enter the number of the rule you want to modify. Creating a rule here will allow you to route any card with a matching card bit length and/or bit facility code to a specified panel. You must know where the facility code is in the card data stream (start and stop bits). You should be able to get the information from the card manufacturer or directly from the software in the access control system you are already using. For standard 26 bit cards, facility code starts at bit 2 and ends at 9. MSB First. If you don't know the card length or the facility code, items 6 and 7 of the main menu can help you determine these values in real time.



You can send cards without rules to any of the three panel outputs in item 2 of the main menu
Press 1,2 or 3 to enable or disable routing of cards without rules. The > symbol indicates cards without rules will be sent to the corresponding panel.

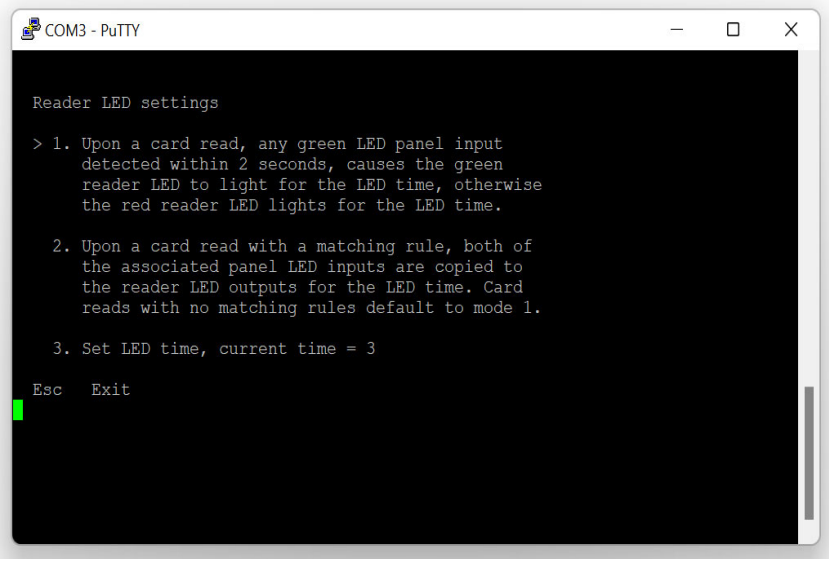


Display all stored rules by pressing 3 in the main menu

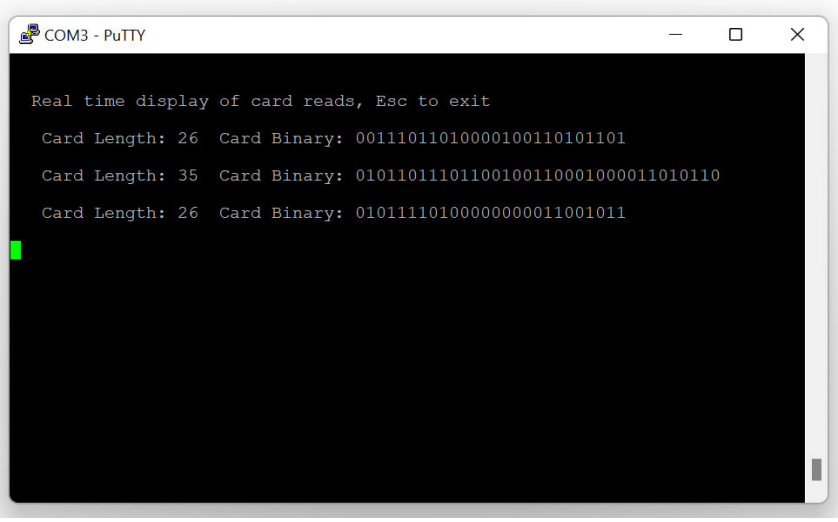


Delete all rules by pressing item 4 in the main menu. Note that cards without rules sent to selected panels will also be deleted. LED modes will not be reset.

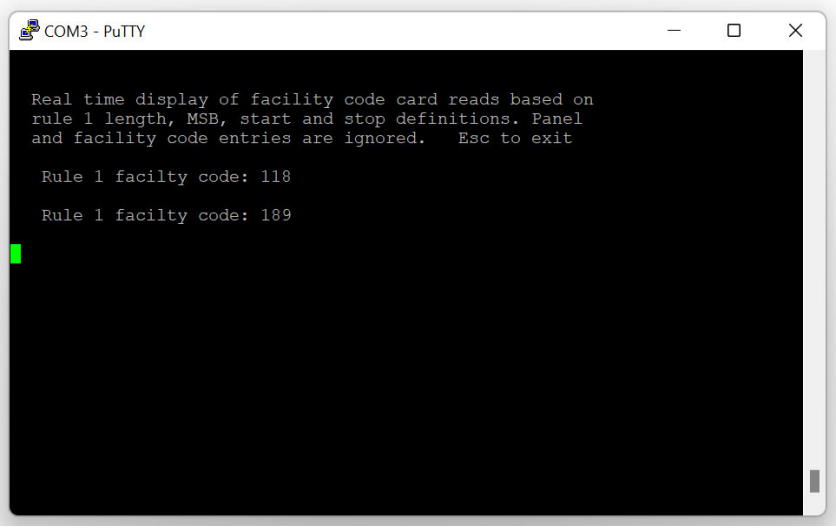
To select the way the reader LEDs light with responses (or lack of responses) from panels select item 5. The descriptions on the screen describe how the two different modes work. Pressing 1 or 2 will toggle the > symbol next to the selected mode. Set LED indication duration with item 3.



Real time display of cards is possible by pressing 6 on the main menu. The screen shows bits received and the actual binary number received.



Item 7 on the main menu can calculate the facility code of a card if start, stop, MSB and card length fields are known and defined in Rule number 1.



Press item 8 of main menu to display software version and other information.

When programming is finished, press the escape key and “running!” will be displayed on the terminal screen. The green LED will also light on the SRDAO-3 board.

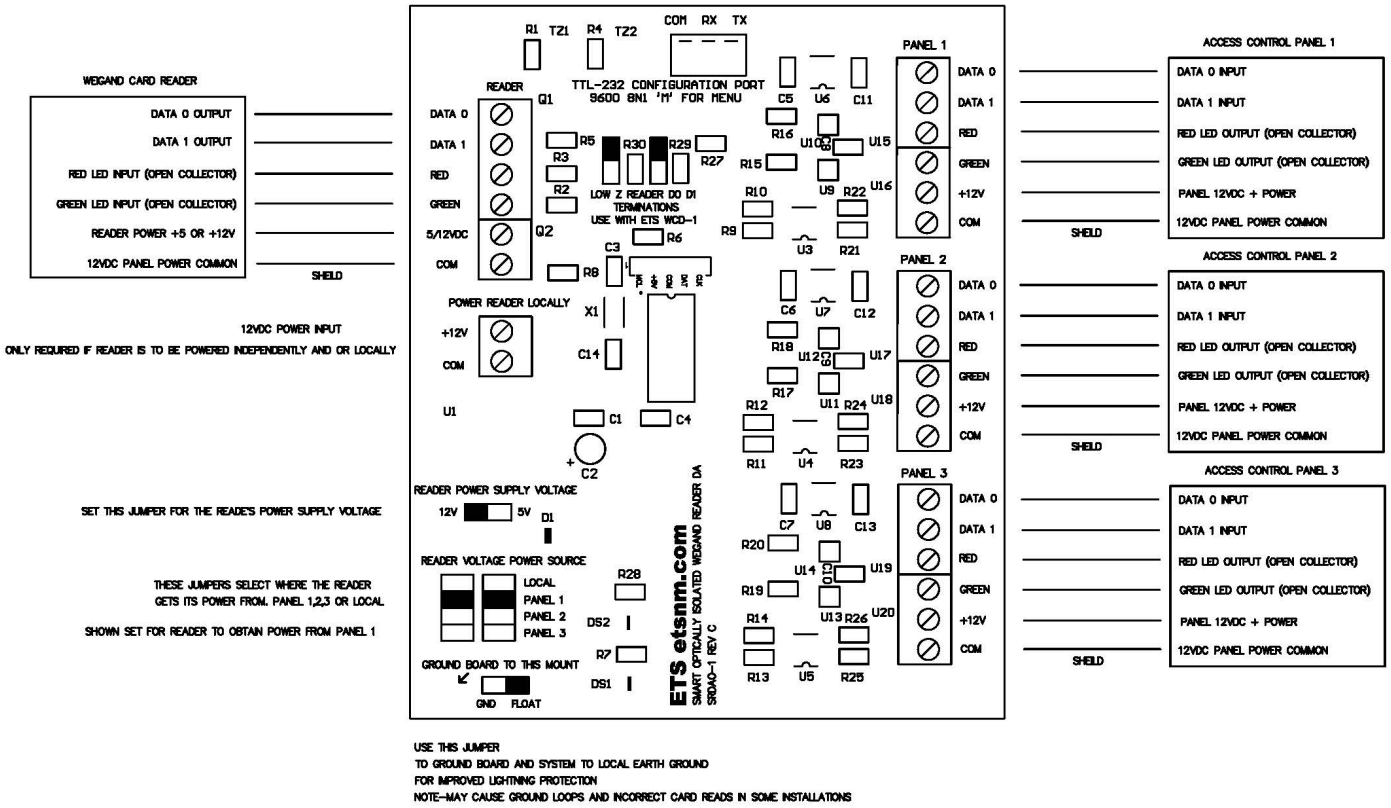


Figure 1.

Warranty

All ETS products carry a one year parts and labor warranty. This warranty does not cover damages as a result of misuse, improper handling of the unit or exposure to extreme temperatures or moisture. At its discretion, ETS reserves the right to repair or replace this unit under the conditions of the warranty. If you experience problems with your equipment call ETS at: 505-888-3923 to obtain a return authorization number. Equipment requiring repair beyond the warranty period or units that have been damaged or are not covered under the warranty can be repaired by ETS for a minimal cost under most conditions.

Made in the USA

by

ETS Inc.