ETSInc.   RDAO-3 Optically Isolated
Wiegand card reader DA Instructions

The RDAO-3 is 3 port, Wiegand reader distribution amplifier with 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 RDAO-3 Monitors the LED outputs of the access control panels and outputs an LED indication of "access granted or denied"

Reader Input
The RDAO-3 accepts one-way data standard Weigand card readers only. The RDAO-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 RDAO-3 form EACH connected access control panel or the RDAO-3 will not transmit card read data. Connect the 12vdc power, data 0, data 1 and LEDs as shown in figure 1.

LED signals
All LED inputs are normally high. The inputs to the RDAO-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 RDAO-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 RDAO-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 RDAO-3. Run up to 3 each #22 6 conductor shielded cables from the RDAO-3 to each access control panel. The shield can be used as a common.

Grounding jumper
The RDAO-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.
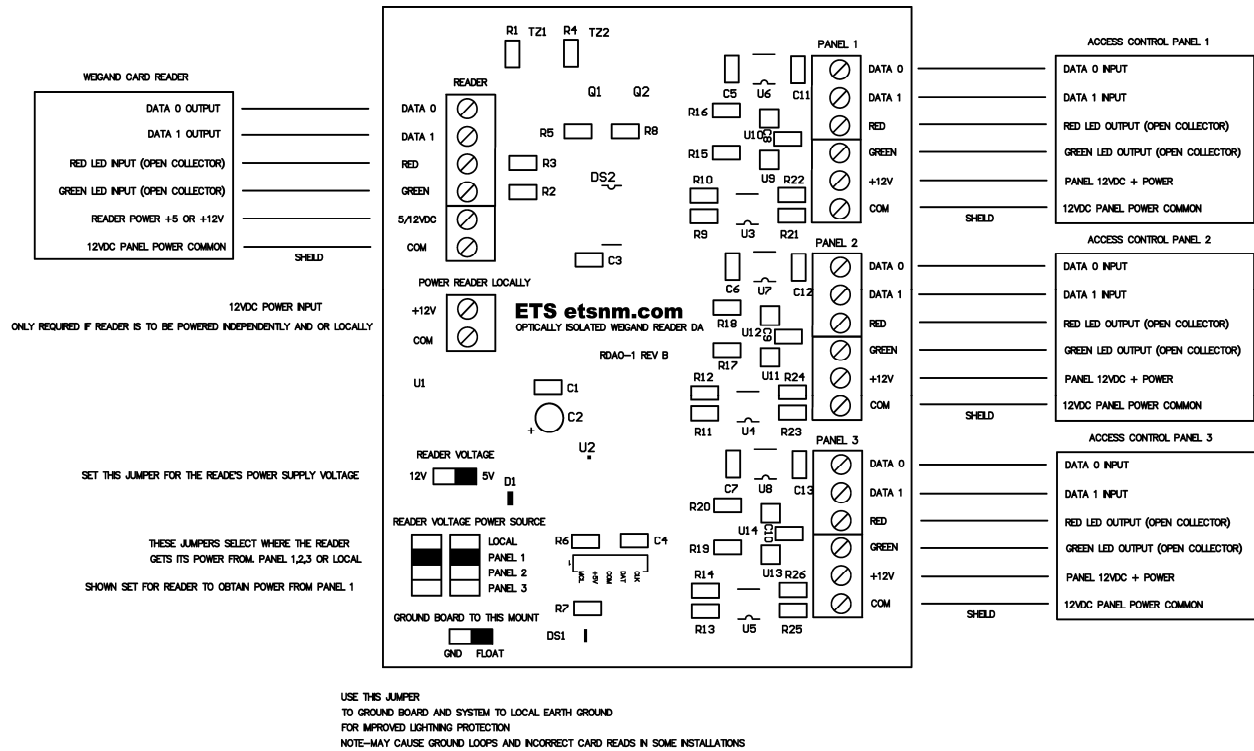
WEIGAND CARD READER

DATA 0 OUTPUT
DATA 1 OUTPUT
RED LED INPUT (OPEN COLLECTOR)
GREEN LED INPUT (OPEN COLLECTOR)
READER POWER +5 OR +12V
12VDC PANEL POWER COMMON
SHIELD

12VDC POWER INPUT
ONLY REQUIRED IF READER IS TO BE POWERED INDEPENDENTLY AND OR LOCALLY

SET THIS JUMPER FOR THE READER'S POWER SUPPLY VOLTAGE

THESE JUMPERS SELECT WHERE THE READER
GETS ITS POWER FROM. PANEL 1,2,3 OR LOCAL

SHOWN SET FOR READER TO OBTAIN POWER FROM PANEL 1

READER
DATA 0
DATA 1
RED
GREEN
5/12VDC
COM

POWER READER LOCALLY
+12V
COM

ETS etsnm.com
OPTICALLY ISOLATED WEIGAND READER DA
RDAO-1 REV B

U1

READER VOLTAGE
12V   5V

READER VOLTAGE POWER SOURCE
LOCAL
PANEL 1
PANEL 2
PANEL 3

GROUND BOARD TO THIS MOUNT
GND   FLOAT

USE THIS JUMPER
TO GROUND BOARD AND SYSTEM TO LOCAL EARTH GROUND
FOR IMPROVED LIGHTNING PROTECTION
NOTE—MAY CAUSE GROUND LOOPS AND INCORRECT CARD READS IN SOME INSTALLATIONS

R1 TZ1 R4 TZ2
Q1   Q2
R5   R8
R3
R2
DS2
C3
C1
C2
U2
D1
R6   C4
R7
DS1

PANEL 1
DATA 0
DATA 1
RED
GREEN
+12V
COM
SHIELD

PANEL 2
DATA 0
DATA 1
RED
GREEN
+12V
COM
SHIELD

PANEL 3
DATA 0
DATA 1
RED
GREEN
+12V
COM
SHIELD

ACCESS CONTROL PANEL 1
DATA 0 INPUT
DATA 1 INPUT
RED LED OUTPUT (OPEN COLLECTOR)
GREEN LED OUTPUT (OPEN COLLECTOR)
PANEL 12VDC + POWER
12VDC PANEL POWER COMMON

ACCESS CONTROL PANEL 2
DATA 0 INPUT
DATA 1 INPUT
RED LED OUTPUT (OPEN COLLECTOR)
GREEN LED OUTPUT (OPEN COLLECTOR)
PANEL 12VDC + POWER
12VDC PANEL POWER COMMON

ACCESS CONTROL PANEL 3
DATA 0 INPUT
DATA 1 INPUT
RED LED OUTPUT (OPEN COLLECTOR)
GREEN LED OUTPUT (OPEN COLLECTOR)
PANEL 12VDC + POWER
12VDC PANEL POWER COMMON

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.

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by
ETSInc.