VANDERBILT VSRC-A Dual Reader Controller Installation Guide

-JUMPERS DEPICT THE FACTORY DEFAULT SETTINGS
-USE A POWER LIMITED UL294 LISTED ACCESS CONTROL POWER SUPPLY
-ALL INTERCONNECTED DEVICES MUST BE UL LISTED
-USE ALL UL LISTED AND/OR RECOGNIZED WIRE SUITABLE FOR THE APPLICATION

IMPORTANT WARNING

Incorrect wiring to the power connector [1] (VIN) will cause serious damage to the equipment.
Please check all wiring connections prior to turning the system on.

1 - POWER (VIN)

VIN	-	GROUND
VIN	+	VOLTAGE IN
VIN	S	SHIELD (CONNECT TO CHASSIS GROUND)

VSRC-A Power Requirements: 12-24VDC @ 2A
VSRC-A Current Consumption: 100mA max without a reader connected
Required power supply - UL294 power limited power supply capable of four hours of standby battery power

24 - VSRC-A NETWORK CONNECTION

VSRC-A SMS Controller: Ethernet
Default IP Address: 192.168.168.249
Default Subnet Mask: 255.255.255.0
Recommended wire: CAT5 or greater
It is recommended to install a data surge protector:
Ditek DTK-MRJ45C5E or UL listed equivalent between the network connection and VSRC-A

18 - READER POWER VOLTAGE SELECTOR

10-24VDC reader output voltage based on input voltage & jumper 18 settings

VIN	12V	Regulated 12 Volts DC to Reader Head (Default)
		Minimum 20VDC is required to be connected to the VSRC-A at [1] VIN, in order to properly supply regulated 12VDC to the connected reader head.
VIN	12V	Non-regulated DC Voltage Provided to Reader Head
		DC Voltage connected to the VSRC-A at [1] VIN, will not be regulated. Voltage will be directly passed through to the reader head.

Warning: Serious damage could occur if this jumper is incorrectly set. Always check the manufacturer's installation manual for reader head voltage requirements.

RS-485 PIN TERMINATORS (EOL)

EOL End Of Line Resistors	
[15] - Jumper - Channel 1	Not applicable in this Configuration
[16] - Jumper - Channel 2	Not applicable in this Configuration

All EOL jumpers shown in default position. (Jumper on pins 1 & 2)

ONBOARD READER PIN TERMINATOR (EOL)

EOL End Of Line Resistors	
[14] - Jumper - Reader 1	Sets Configuration for Reader 1
[17] - Jumper - Reader 2	Sets Configuration for Reader 2

Only supports CLK/Data and D0/D1 communications
All EOL jumpers shown in default position. (Jumper on pins 1 & 2)
Will work as CLK/Data or D0/D1 with jumpers removed (FACTORY SHIPPED WITHOUT JUMPERS)

ONBOARD READER CONNECTIONS
(Example: Proximity)
9 & 10 - READER HEAD 1

READER 1	A	(CLK) DATA 0	GREEN
READER 1	B	(DAT) DATA 1	WHITE
READER 1	-	(GND) GROUND	BLACK
READER 1	+	(PWR) POWER	RED
OUT 1/2	1	(LED) GREEN LED	ORANGE
OUT 1/2	2	(NA) NOT USED	
OUT 1/2	C	(NA) NOT USED	

(Example: Magnetic Stripe)
7 & 6 - READER HEAD 2

| READER 2	A	(CLK) DATA 0	WHITE
READER 2	B	(DAT) DATA 1	GREEN
READER 2	-	(GND) GROUND	BLACK
READER 2	+	(PWR) POWER	RED
OUT 3/4	3	(LED) GREEN LED	BROWN
OUT 3/4	4	(NA) NOT USED	
OUT 3/4	C	(NA) NOT USED	

Wiring Notes:
Maximum Distance to read head: 500FT
Cable: 5 Cond. / 18 Awg / Twisted / Stranded / Shielded
Reader Output - AVG 55mA DC peak-167mA DC

Red LED Operation:
For the Red LED on the Magnetic Stripe Reader to function properly, connect a 10K ohm resistor between the following:
As Reader 1: "+" PWR [9] and "1" (LED) [10]
As Reader 2: "+" PWR [7] and "3" (LED) [6]

(Shown on hardware drawing)

For further information, please refer to manufacturer installation guides.
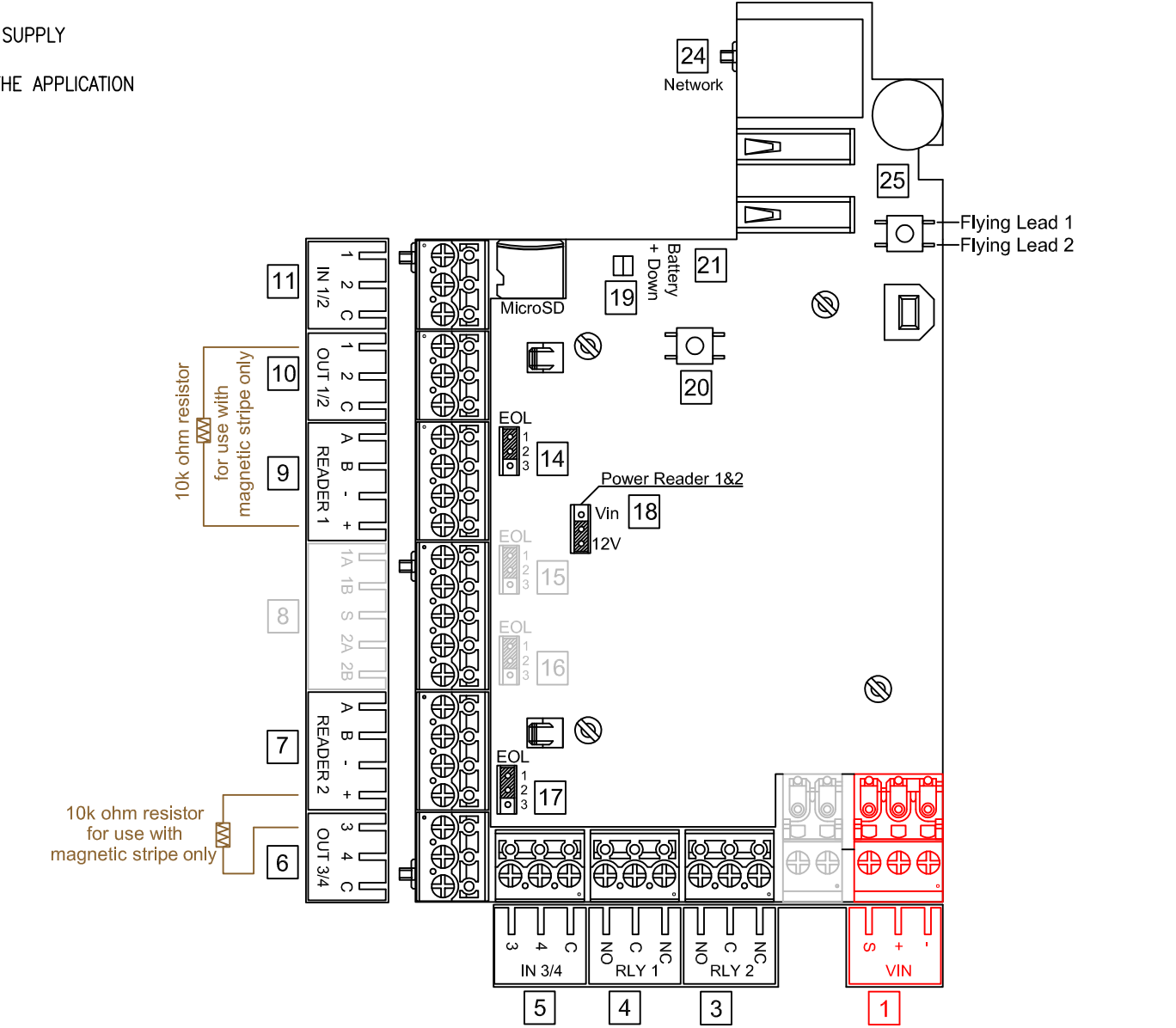
ONBOARD READER PREDEFINED CONNECTIONS
11 - READER 1 CONTACT INPUTS

IN 1/2	1	REQUEST TO EXIT
IN 1/2	2	DOOR POSITION SWITCH
IN 1/2	C	GROUND

5 - READER 2 CONTACT INPUTS

IN 3/4	3	REQUEST TO EXIT
IN 3/4	4	DOOR POSITION SWITCH
IN 3/4	C	GROUND

Wire Specifications:
Maximum distance: 2,000 FT
2 Cond. / 22 Awg. / Twisted / Shielded / Stranded

4 - RELAY OUTPUT (UNLOCK RELAY)

RLY1	NC	READER 1 NORMALLY CLOSED
RLY1	C	READER 1 COMMON
RLY1	NO	READER 1 NORMALLY OPEN

3 - RELAY OUTPUT (UNLOCK RELAY)

RLY2	NC	READER 2 NORMALLY CLOSED
RLY2	C	READER 2 COMMON
RLY2	NO	READER 2 NORMALLY OPEN

Relay output max 30VDC @ 2A

LED INDICATORS

[24] - 2 Network states controlled by software:
Green = Communicating with host
Orange = Acknowledgements

[19] - Communications between VSRC-A and CIM
Green = Outbound
Red = Inbound
Green flash = VSRC-A

25 - TAMPER SWITCH ALARM

To receive alarms, use provided flying leads connected to inputs 1 & 2 on switch [25].

SOFTWARE CONTROLLED DIPSWITCHES

The board will be factory configured as a VSRC-A.

To access the SMS Configuration Graphical User Interface, use a supported web browser to enter the following URL: https://192.168.168.249

Please note that the example above is the factory default IP address assigned to the board.
To access the GUI, enter the board's IP address. (May not be as listed)
The browser will likely display an invalid certificate warning.
This is normal, proceed to the login page.
Enter the login credentials:
Username: SMSAdmin
Password: Please refer to SMS Installation Manual.
Once logged in, navigate to the "Options" tab on the top of the page.
Dipswitch settings will now be displayed.

Switch 1 - Enables on-board web server, Configuration GUI, Auto Discovery and Ping.
Enabled - Switch 1 ON (Default)
Disabled - Switch 1 OFF
Switch 2 - Reserved for future use.

Type	Switch 3	Switch 4	
VSRC-A	Off	Off	Refer to SMS Installation Manual for further information in regards to Switch 3 & 4

Note: After installation, Vanderbilt recommends disabling Switch 1.
Leaving switch 1 enabled could allow unauthorized access.
Physical Access to the VSRC-A is required to re-enable the Configuration GUI.
Press and Hold the Tamper Switch [25] AND Press and Release the Reset Button [20] three (3) times in succession. Release the Tamper Switch [25]. A one (1) second beep will be heard on the 2nd and 3rd Reset Button activations. Releasing the Tamper Switch will generate a two (2) second beep.
Access and log into the Configuration GUI within ten (10) minutes, select Options, and reset Dipswitch 1 = ON and click "Save Options".

HARDWARE REBOOT & DEFAULT IP ADDRESS - 25 & 20

The button marked [20] is multipurpose. The functions of this button are accessed by holding it down for specific intervals identified by beeps. When held, the board will produce 3 long beeps followed by short beeps at a faster rate. The following functions are accessed by releasing the button after it's specified interval.
Release at:
1) 3 long beeps or less: No operational change (board remains online)
2) 9 short beeps or less: Board will automatically shutdown and restart.
Normal operations will be resumed
3) After the 10th short beep, continue to hold button [20] for 2 long beeps to force shutdown of the board. To turn on the board, disconnect and reconnect the power.

Default IP Address:
If functions 2 or 3 are used while holding [25] at the same time, when the board comes back online it will have it's default IP address reinstated: **192.168.168.249**

21 - BATTERY

Lithium Battery CR2032: Must replace every year by a trained technician.

UL INFORMATION

VSRC-A has been evaluated to the following performance levels per UL 294 6th Edition :
Attack - I / Endurance - IV / Standby Power - I / Line Security - I

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Vanderbilt VSRC–A DUAL READER
DIODE INSTALLATION GUIDE

A DIODE IS SUPPLIED WITH THE VSRC–A DUAL READER WHICH SHOULD BE INSTALLED ACROSS 24V AND COM TO PROTECT THE RELAY CONTACTS.

RED

BLACK

CLASS 2 UL LISTED
POWER LIMITED
LOCK POWER SUPPLY
24VDC

ELECTRIC DOOR LOCK

120VAC
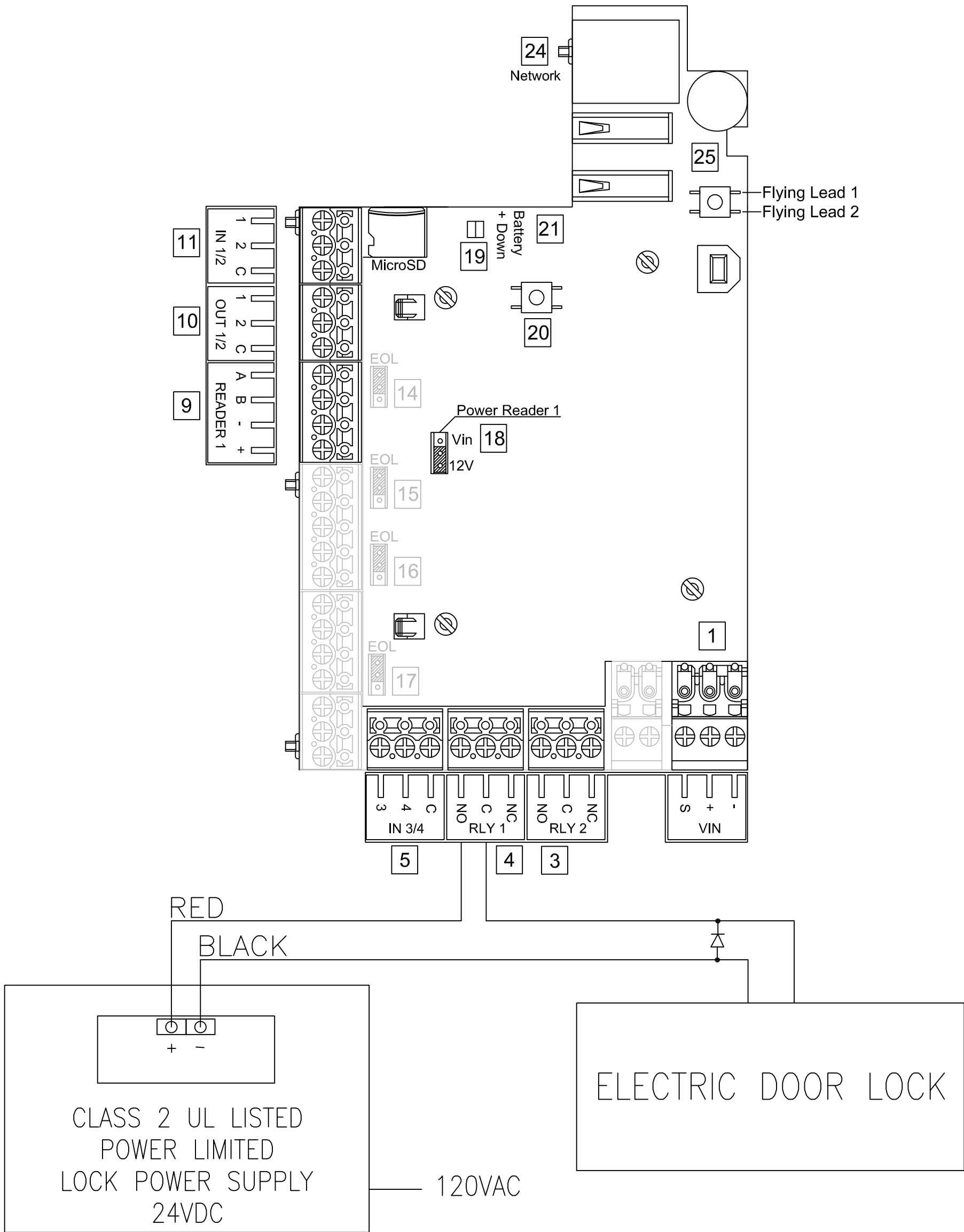
THE LOCK IS WIRED ACROSS 24V AND COM. A 0V LINK TO COM IS THEN REQUIRED TO COMPLETE THE CIRCUIT. THIS WILL BE WIRED TO NO OR NC DEPENDING ON THE LOCK TYPE: FAIL OPEN / FAIL CLOSED. (ABOVE DIAGRAM IS OF FAIL OPEN).

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