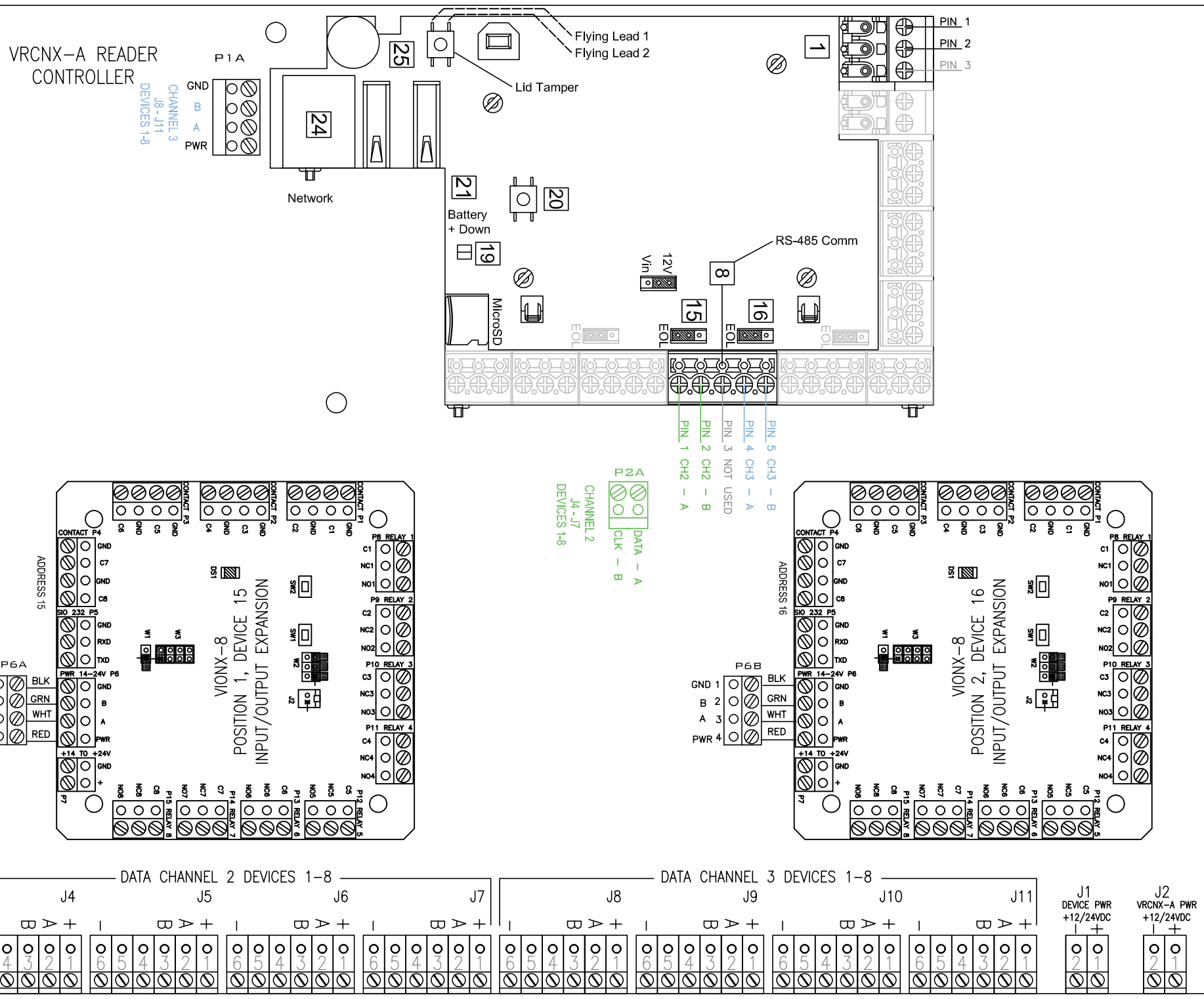
VANDERBILT VRCNX-A Installation Guide



GENERAL INFORMATION

Important notes:
Incorrect wiring to the power connector (J1 or J2 on back plane) will cause serous damage to the equipment.
Please check all wiring connections prior to turning the system on.

Default IP Address: 192.168.168.249
Default Subnet Mask: 255.255.255.0
All connected devices must be UL Listed
Use a Class 2 power Limited UL294 Listed access control power supply
Use UL Listed and/or recognized wire suitable for the application

Protocol Configuration Notes:
Data channel 2 (or data channel 3) can only support the same protocol devices.
Mixing protocols will cause conflicts with the devices.
Device Protocols:
1. SMS protocol supported
2. RSI protocol supported
3. Aperio protocol supported
4. Mercury SIO protocol supported
5. WARNING:
When VIONX-8 modules are installed on the VRCNX-A, data channel 3 can only be used for SMS protocol devices. Data channel 2 can be used for SMS, RSI, Aperio or Mercury SIO protocol devices.

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

J2 - (VRCNX-A) 12V - 24VDC

Power Requirements: 12-24VDC @ 260mA
Current Consumption: 360mA maximum (w/ 2 VIONX-8 Mounted)
When powering the VRCNX-A use connector J2:
PIN 1 - Power (+) (Connector Located on Backplane)
PIN 2 - Ground (-) (Connector Located on Backplane)
Provides power to the on-board VRCNX-A / VIONX-8
Rec Wire: 2 Cond/ 18 Awg./ Twisted/ Shielded/ Stranded (up to 2000 FT)
Required Power Supply - 12-24VDC rated, Class 2 power limited UL294 power supply capable of four hours of standby battery power in J1 power box

J1 - (VRCNX-A) 12V - 24VDC

Power Requirements: 12-24VDC
PIN 1 - Power (+) (Connector Located on Backplane)
PIN 2 - Ground (-) (Connector Located on Backplane)
Provides power to the externally connected devices on connectors J4 - J11
Rec Wire: 2 Cond/18 Awg./ Twisted/ Shielded/ Stranded (up to 2000 FT)
Required Power Supply - 12-24VDC rated, Class 2 power limited UL294 power supply capable of four hours of standby battery power in J1 power box

UL INFORMATION

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

MODEL NUMBER: VRCNX–A – VANDERBILT INDUSTRIES NETWORK READER CONTROLLER
DOCUMENT FORM: VANDERBILT INDUSTRIES VRCNX–A NETWORK READER CONTROLLER INSTALLATION GUIDE
PRODUCT REFERENCE MATERIAL:
FOR PROGRAMMING INSTRUCTIONS PLEASE REFER TO VANDERBILT SMS USER MANUAL 6.4.5 OR NEWER
FOR HARDWARE INSTRUCTIONS PLEASE REFER TO VANDERBILT SMS INSTALLATION MANUAL 6.4.5 OR NEWER
VANDERBILT INDUSTRIES SMS INSTALLATION GUIDE Rev 2.0.15 (6/22/2018)

J4 - J11 EXTERNAL DEVICE POWER

When powering external connected devices use connectors J4 - J11:
PIN 1 - Power (+)
PIN 6 - Ground (-)
Rec Wire: 2 Cond/18 Awg./ Twisted/ Shielded/ Stranded (up to 2000 FT)
Please refer to SMS installation manual for power requirements for externally connected devices

J4-J11 RS-485 COMMUNICATION TO EXTERNAL DEVICES

For SMS devices: Example: On J4,
Pin A connects to pin A of the external SMS device,
Pin B connects to pin B of the external SMS device.
For third party devices:
Please refer to SMS Installation or third party hardware manuals for further information.

VRCNX-A CHANNEL ADDRESSING

J4-J7 (Ch2 Devices 1 - 8)

J4	Channel 2	Address	1
J4	Channel 2	Address	2
J5	Channel 2	Address	3
J5	Channel 2	Address	4
J6	Channel 2	Address	5
J6	Channel 2	Address	6
J7	Channel 2	Address	7
J7	Channel 2	Address	8

J8-J11 (Ch3 Devices 1-8)

J8	Channel 3	Address	1
J8	Channel 3	Address	2
J9	Channel 3	Address	3
J9	Channel 3	Address	4
J10	Channel 3	Address	5
J10	Channel 3	Address	6
J11	Channel 3	Address	7
J11	Channel 3	Address	8

LED INDICATORS

24 - 4 States controlled by software:
Green = Communicating with host
Orange = Acknowledgements

19 - Communications between VRCNX-A and CIM
Green = Outbound communication from controller
Red = Inbound communication from CIM

ONBOARD TERMINAL WIRE CONNECTION

P1A - Ground connects to 1 Pin 1
P1A - Power connects to 1 Pin 2
P1A - B connects to 8 Pin 5 - B
P1A - A connects to 8 Pin 4 - A
P2A - CLK connects to 8 Pin 2 - B
P2A - DAT connects to 8 Pin 1 - A
Wired by Vanderbilt

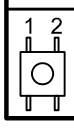
RS-485 PIN TERMINATORS (EOL)

End Of Line Resistors

15 - Jumper - Channel 2	Sets RS-485 Termination for Channel 2
16 - Jumper - Channel 3	Sets RS-485 Termination for Channel 3

All EOL jumpers shown in default position.

25 - TAMPER SWITCH ALARM



Connect provided Lid Tamper switch to flying leads on 25

VRCNX-A NETWORK CONNECTION - 24

VRCNX-A SMS controller: Ethernet
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 the VRCNX-A

DATE OF MANUFACTURE: MONTH_____YEAR_____
ASSEMBLY LOCATION: PARSIPPANY, NJ
ELECTRICAL RATING:
INPUT: 12–24VDC
MAXIMUM CURRENT DRAW: 360mA MAX WITH 2 VIONX–8 MOUNTED

VANDERBILT

VIONX-8 CONFIGURATION SETTINGS ON THE VRCNX-A

W1 - RS485 Communication Line Terminator — No Jumper (Default)
W2 - BKDG (Not Used) — No Jumper (Default)
W3 - I/O Expansion Addressing Function:

VIONX-8 Position 1, Address 15	VIONX-8 Position 2, Address 16
W3 - Jumper Placed on - PIN 1	W3 - No Jumper

VIONX-8 Contact Input:	Wiring Details:
P1: GND, C1, GND, C2	Device Type:
P2: GND, C3, GND, C4	DOD (Supervised) - Max Distance 1,000 FT
P3: GND, C5, GND, C6	DOD (Unsupervised) - Max Distance 2,000 FT
P4: GND, C7, GND, C8	Wire: 2 Cond./ 22 AWG/ Twisted/ Shielded/ Stranded

VIONX-8 Relay Output	DS1 - LED Indicator
P8 - P15	Slow Blink - Power, no data communication
PIN 1 Normally Open	Fast Blink - Power and data communication
PIN 2 Normally Closed	
PIN 3 Common	Relays Rated At 1A @ 30VDC

SOFTWARE CONTROLLED DIPSWITCHES

The board will be factory configured as a VRCNX-A0, A1 or A2 based on VIONX-8 configuration.
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
VRCNX-A0	On	On
VRCNX-A1	Off	On
VRCNX-A2/A3	On	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 VRCNX-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**