VANDERBILT VSRC-M INSTALLATION GUIDE

VSRC-M DUAL READER CONTROLLER

VSRC-M ENCLOSURE

POWER ON INDICATOR LED - THE LED ON THE FRONT COVER IS TO INDICATE POWER ON AND NEEDS TO BE CONNECTED TO A POWER LIMITED UL LISTED ACCESS CONTROL POWER SUPPLY

MEMORY AND REAL TIME CLOCK BACKUP BATTERY

The static RAM and the real time clock are backed up by a lithium battery when input power is removed.
This battery should be replaced annually.
If data in the static RAM is determined to be corrupt after power up, all data, including flash memory, is considered invalid and is erased.
All configuration data must be re-downloaded.
Remove the insulator from the battery holder after installation.
Battery types: BR2325, BR2330, or CR2330

TB1 (POWER & TAMPER)

TB1-1	GND	POWER FAULT INPUT
TB1-2	FLT	
TB1-3	GND	CABINET TAMPER INPUT
TB1-4	TMP	
TB1-5	GND	GROUND
TB1-6	VIN	VOLTAGE IN 12-24VDC

Required Power Supply - 12-24VDC rated, UL294 power limited power supply capable of four hours of standby battery power

Onboard Reader Power Requirements:
If the input voltage to the VSRC-M is 12VDC, jumper J7 **MUST** be in the PASS position.
The input power (VIN) must be 20VDC minimum if the 12V selection on J7 is to be used.

Connect power with minimum of 18 AWG wire. **Connect the GND signal to earth ground in ONE LOCATION within the system! Multiple earth ground connections may cause ground loop problems and is not advised.**

Cabinet Tamper Switch - Flying leads connected to TB1, GND & TMP (Pin 3 & 4): Used for SMS alarming and can be used to trigger a UL listed alarm system or a local siren / annunciator. Can be used for both SMS and external device alarming.

Power Fault Input - Flying leads connected to TB1, GND & FLT (Pin 1 & 2):
Can be used for both monitoring and alarming on an external uninterruptible power supply.

TB2 (RS-485-1 COMMUNICATION)

TB2-3	TR+	PORT (2-WIRE RS-485)
TB2-2	TR-	
TB2-1	GND	GROUND

TR+ CONNECTS TO TR+ ON DOWNSTREAM RS-485 DEVICES
TR- CONNECTS TO TR- ON DOWNSTREAM RS-485 DEVICES

MODE	J9 (RS-485 END OF LINE TERMINATOR SELECT)
ON	Port 2 RS-485 EOL Terminator is On
OFF	Port 2 RS-485 EOL Terminator is Off

J9 is not applicable while this board is acting as a controller.

TB3 (RS-485-2 COMMUNICATION)

TB3-3	TR+	PORT (2-WIRE RS-485)
TB3-2	TR-	
TB3-1	GND	GROUND

RESERVED FOR FUTURE USE

MODE	J5 (RS-485 END OF LINE TERMINATOR SELECT)

TB4 & TB5 (ONBOARD READER 1 INPUTS)

TB4-4	IN1	INPUT 1 (REX)
TB4-3	IN1	REQUEST TO EXIT
TB4-2	IN2	INPUT 2 (DOD)
TB4-1	IN2	DOOR OPEN DETECT
TB5-4	IN3	INPUT 3 (PBO)
TB5-3	IN3	PUSH BUTTON OVERRIDE
TB5-2	IN4	INPUT 4 (AUX)
TB5-1	IN4	AUXILIARY INPUT

INPUTS FOR CONTACTS & PUSH BUTTONS

TB6 & TB7 (ONBOARD READER 2 INPUTS)

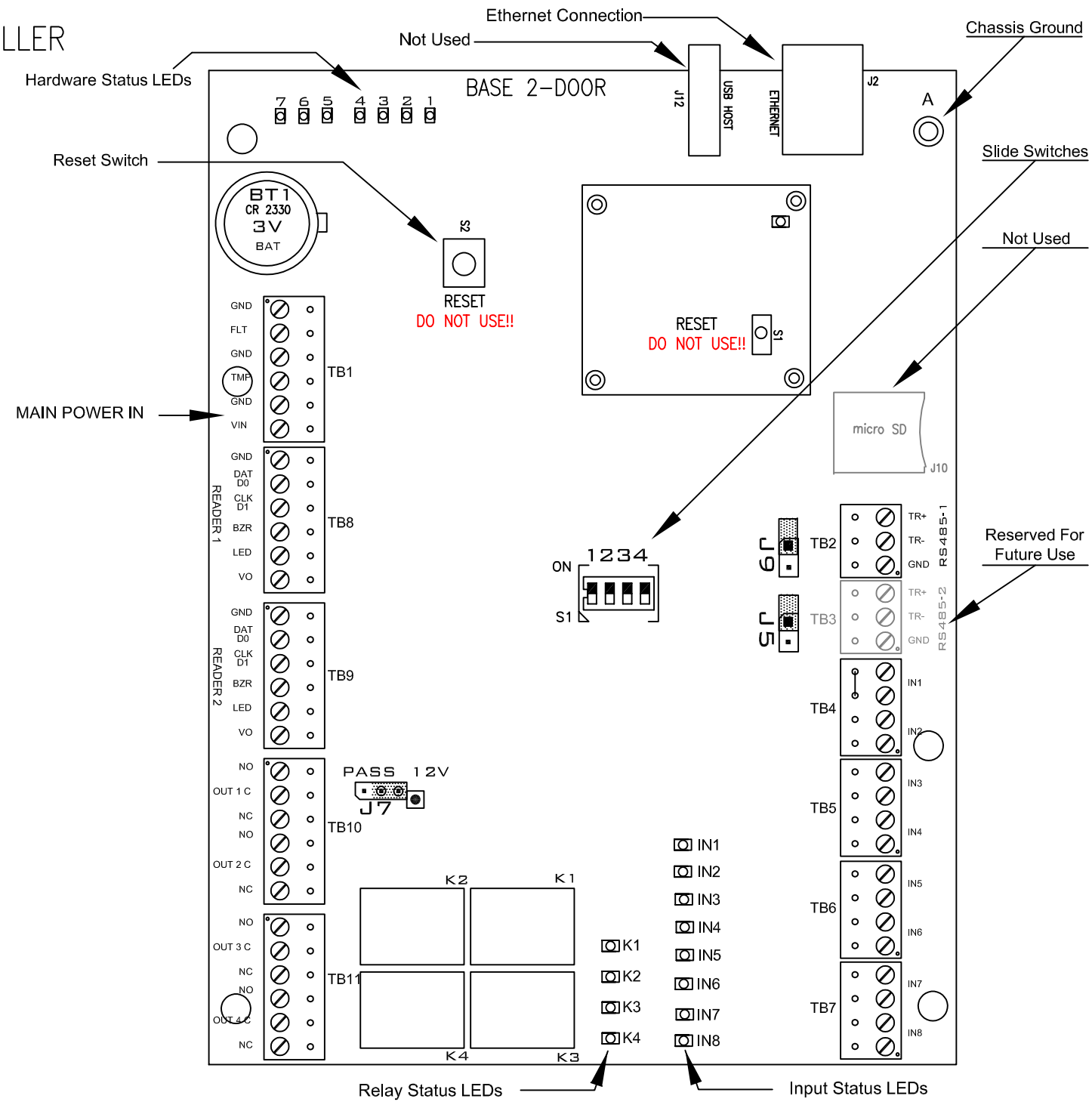
TB6-4	IN5	INPUT 5 (REX)
TB6-3	IN5	REQUEST TO EXIT
TB6-2	IN6	INPUT 6 (DOD)
TB6-1	IN6	DOOR OPEN DETECT
TB7-4	IN7	INPUT 7 (PBO)
TB7-3	IN7	PUSH BUTTON OVERRIDE
TB7-2	IN8	INPUT 8 (AUX)
TB7-1	IN8	AUXILIARY INPUT

INPUTS FOR CONTACTS & PUSH BUTTONS

Factory Default Communication Parameters

Network: Static IP Address	192.168.169.249
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
Primary Host Port	IP Server, No Encryption, Port 3001
	Communication Address 0

J2 10-Base-T/100Base-Tx Ethernet Connection (Port 0)



TB8 (READER 1 CONNECTIONS)

TB8-1	GND	GROUND
TB8-2	DAT/D0	DATA / DATA 0
TB8-3	CLK/D1	CLOCK / DATA 1
TB8-4	BZR	READER BUZZER
TB8-5	LED	READER LED
TB8-6	VO	READER POWER

Reader Head connections to the board.

TB9 (READER 2 CONNECTIONS)

TB9-1	GND	GROUND
TB9-2	DAT/D0	DATA / DATA 0
TB9-3	CLK/D1	CLOCK / DATA 1
TB9-4	BZR	READER BUZZER
TB9-5	LED	READER LED
TB9-6	VO	READER POWER

Reader Head connections to the board.

12V PASS	J7 (READER1 / READER 2 POWER SELECT)
	12 VDC is available on reader ports (VIN Should be greater than 20 VDC)
	VIN power is "PASSED THROUGH" to reader ports

Jumper J7 will be shipped with the jumper defaulted to the 12VDC position.

TB10 (READER 1 RELAY OUTPUTS)

TB10-1	NO	K1: NORMALLY OPEN
TB10-2	C	K1: COMMON
TB10-3	NC	K1: NORMALLY CLOSED
TB10-4	NO	K2: NORMALLY OPEN
TB10-5	C	K2: COMMON
TB10-6	NC	K2: NORMALLY CLOSED

K1 is the unlock relay, K2 is the door held / door forced relay

TB11 (READER 2 RELAY OUTPUTS)

TB11-1	NO	K3: NORMALLY OPEN
TB11-2	C	K3: COMMON
TB11-3	NC	K3: NORMALLY CLOSED
TB11-4	NO	K4: NORMALLY OPEN
TB11-5	C	K4: COMMON
TB11-6	NC	K4: NORMALLY CLOSED

K3 is the unlock relay, K4 is the door held / door forced relay

1	2	3	4	S1 (DIP SWITCHES)
OFF	OFF	OFF	OFF	Normal Operating Mode
ON	OFF	OFF	OFF	After initialization, enable default User Name (admin) and password (password). The switch is read in real time, reboot is not required. See Vanderbilt Installation Manual for additional information.
OFF	ON	OFF	OFF	Use factory default communication parameters.
ON	ON	OFF	OFF	Use OEM default communication parameters. Contact System manufacture for details. See Bulk Erase.
ON	ON	OFF	OFF	Bulk Erase prompt mode at power up. See Bulk Erase.

The four switches on S1 DIP switch configure the operating mode of the VSRC-M processor.
DIP switches are read on power-up except where noted.

LED	HARDWARE STATUS LEDs
1	Off-Line / On-Line and Battery Status Off-Line = 20% ON, On-Line = 80% ON Double Flash if Battery is Low
2	Host Communication Activity (Ethernet)
3	Internal Communication Activity
4	External Communication Activity (Port 1)
5	External Communication Activity (Port 2) - NOT USED
6	Reader 1 Clock/Data or D1/D0 Mode: Flashes when Data is Received, Either Input F/2F Mode: Flashes when Data/Acknowledgment is Received RS-485 Mode: Flashes when Transmitting Data
7	Reader 2 Clock/Data or D1/D0 Mode: Flashes when Data is Received, Either Input F/2F Mode: Flashes when Data/Acknowledgment is Received RS-485 Mode: Flashes when Transmitting Data

	INPUT STATUS LEDs
IN1	Input IN1 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN2	Input IN2 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN3	Input IN3 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN4	Input IN4 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN5	Input IN5 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN6	Input IN6 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN7	Input IN7 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1
IN8	Input IN8 Status: OFF = Inactive, ON = Active, Flash = Trouble. See Note 1

Note 1: If this input is defined, every three seconds the LED is pulsed to its opposite state for 0.1 seconds, otherwise, the LED is off.

	RELAY STATUS LEDs
K1	Relay K1: ON = Energized
K2	Relay K2: ON = Energized
K3	Relay K3: ON = Energized
K4	Relay K4: ON = Energized

ASSEMBLY LOCATION: PARSIPPANY, NJ
ELECTRICAL RATING:
INPUT: 12VDC OR 24VDC
OUTPUT: 12VDC ATTACHED READER HEAD
CURRENT DRAW: 170mA
LITHIUM BATTERY CR2330: MUST REPLACE EVERY YEAR
BATTERY: CR2330, UL EVALUATED MERCURY EP4502
BATTERY MUST BE REPLACED BY A TRAINED TECHNICIAN.

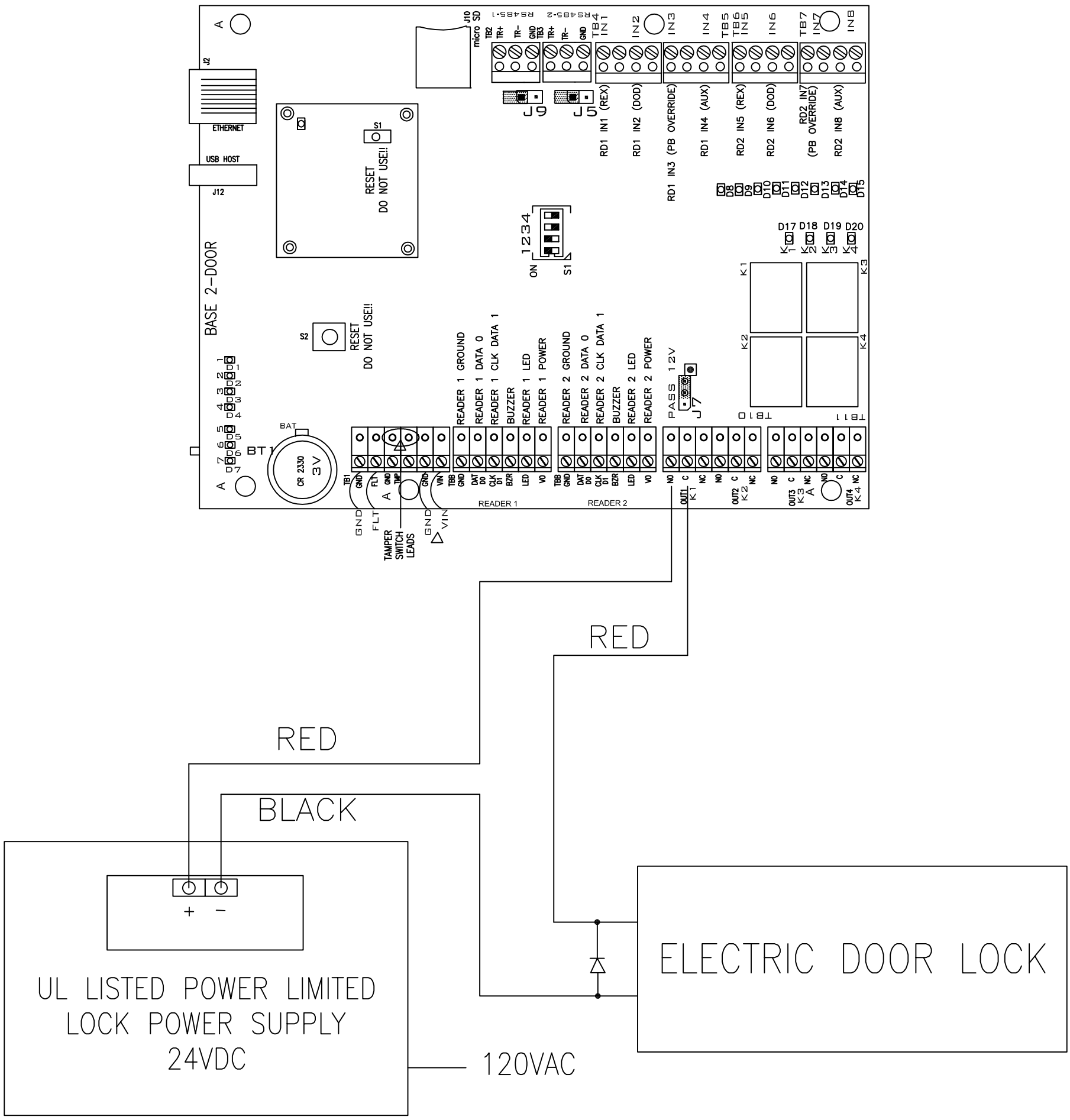
-USE POWER LIMITED UL LISTED ACCESS CONTROL POWER SUPPLIES
-ALL INTERCONNECTED DEVICES MUST BE UL LISTED
-USE ALL UL LISTED AND/OR RECOGNIZED WIRE SUITABLE FOR THE APPLICATION

BOARD REVISION: VSRC-M – DUAL READER CONTROLLER
PRODUCT REFERENCE MATERIAL:
-FOR PROGRAMMING INSTRUCTIONS PLEASE REFER TO VANDERBILT SMS USER MANUAL
-FOR HARDWARE INSTRUCTIONS PLEASE REFER TO VANDERBILT SMS INSTALLATION MANUAL
DOCUMENT FORM:
VANDERBILT INDUSTRIES VSRC-M INSTALLATION GUIDE 2.0.1 (9/21/18)

VANDERBILT

Vanderbilt Industries VSRC-M Onboard Reader
DIODE INSTALLATION GUIDE

A DIODE IS SUPPLIED WITH VSRC-M CONTROLLER WHICH SHOULD BE INSTALLED ACROSS 24V AND COM TO PROTECT THE RELAY CONTACTS.



A DIODE IS USED TO ELIMINATE THE VOLTAGE SPIKE SEEN ACROSS AN INDUCTIVE LOAD WHEN ITS SUPPLY VOLTAGE IS SUDDENLY REMOVED.

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