



**NEXSYS Series
2RU 20 Amp
UPS Backup
Power System**



legrand NEXSYS Series 2RU 20 Amp UPS Backup Power System User Manual

[Home](#) » [Legrand](#) » legrand NEXSYS Series 2RU 20 Amp UPS Backup Power System User Manual 

Contents

- [1 legrand NEXSYS Series 2RU 20 Amp UPS Backup Power System](#)
- [2 Product Information](#)
- [3 Product Usage Instructions](#)
- [4 IMPORTANT SAFETY INSTRUCTIONS](#)
- [5 Protocol Transports](#)
- [6 Regular Format](#)
- [7 Protocol Message Structure](#)
- [8 Control Commands](#)
- [9 Status Read Commands](#)
- [10 Warranty](#)
- [11 Documents / Resources](#)
 - [11.1 References](#)
- [12 Related Posts](#)



legrand NEXSYS Series 2RU 20 Amp UPS Backup Power System



Product Information

Specifications

- **Communication Protocols:** USB, SSH
- **USB Communication Parameters:**
 - **Baud Rate:** 2400
 - **Parity:** None
 - **Data Bits:** 8
 - **Stop Bits:** 1
- **SSH Communication Parameters:**
 - **Network IP Address @ Port:** 22
 - **Encryption:** Yes, default SSH
 - **SSH Version:** 2.0, Dropbear
 - **Inactivity Timeout:** 60 seconds

Product Usage Instructions

USB Communication Protocol Usage:

1. Connect the UPS to the PC using a USB cable.
2. Set the communication parameters on the PC to Baud Rate: 2400, Parity: None, Data Bits: 8, Stop Bits: 1.
3. Send commands from the PC to the UPS and ensure timely responses within the specified time frame.

SSH Communication Protocol Usage:

1. Ensure the UPS and PC are connected to the network.
2. Access the UPS using its IP Address and Port 22 with SSH encryption enabled.
3. Use website login credentials for authentication.
4. Recommended test methods include Putty and uCon for interface interaction.

Frequently Asked Questions (FAQ)

- **Q: What are the recommended test methods for SSH communication?**
A: Putty and uCon are recommended for testing SSH communication interfaces.

- **Q: What is the inactivity timeout for SSH communication?**

A: The inactivity timeout for SSH communication is set to 60 seconds.

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IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries.

For complete safety instructions, refer to either Line Interactive UPS or Online UPS User Manuals (100-00072 and 100-00092, respectively) at www.legrandav.com.

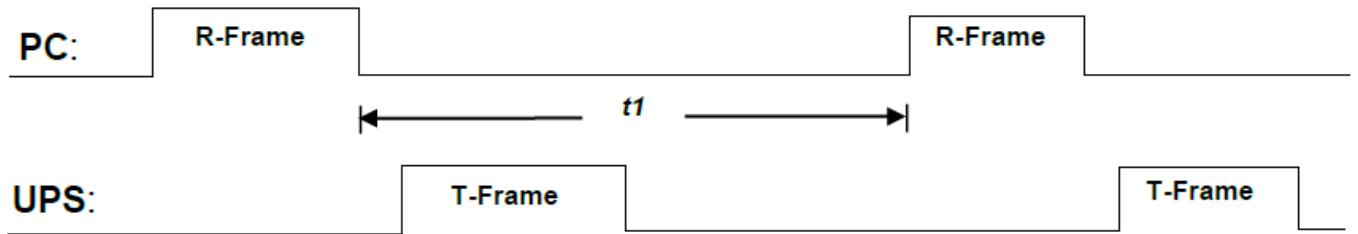
- Only use attachments and accessories specified by the manufacturer.
- Read all instructions before using the product.

Protocol Transports

Communication Parameters, USB

- Baud Rate 2400
- Parity None
- Data Bits 8
- Stop Bits 1

Acknowledgement Rule of End of Data Packet



1. On the PC side, a received time-out $t1$ is measured from the command packet sent to the UPS which equals to 1000 ms, points out that the received data package from UPS should be completed in 1 second.
2. If there are consecutive commands sent to the UPS then only the first received command is going to parse and execute, the others should be ignored. After replying, the UPS then receives the new command from the PC and parses the first received command again.

Communication Parameters, SSH

Network IP Address @ Port 22

- Encryption: Yes, default SSH
- SSH Version: 2.0, Dropbear.

NOTE

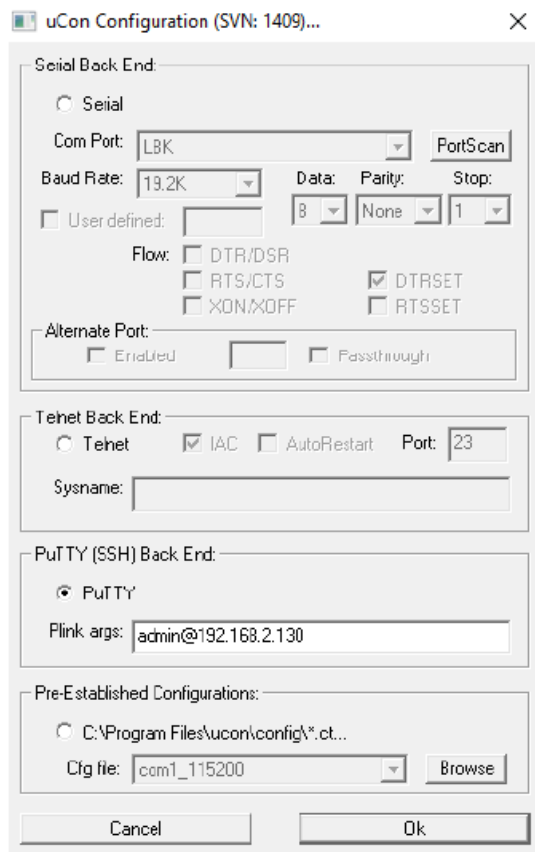
Version 1.0 interfaces not supported due to security vulnerabilities.

- Checksum: Optional on SSH from user. Responses from UPS will have checksum.
- Credentials: Use website login credentials.
- Inactivity Timeout: 60 seconds.
- Recommended Test Methods: Putty, uCon. These interfaces will prompt for user and/or password and create certificates automatically. Certificates may be saved for future sessions.

NOTE

There is also a user text-based text menu hosted on the SSH port. This text menu is described in the user manual. It can be accessed by a local user pressing <enter> twice. Thus, sending <carriage return><linefeed> twice in a script would trigger this menu, exiting the command protocol in this document.

Sample Putty and uCon logins:



Serial Back End:

☐ Serial

Com Port: L8K PortScan

Baud Rate: 19.2K Data: 8 Parity: None Stop: 1

☐ User defined:

Flow: ☐ DTR/DSR ☐ RTS/CTS ☒ DTRSET ☐ RTSSET ☐ XON/XOFF

Alternate Port: ☐ Enabled ☐ Passthrough

Telnet Back End:

☐ Telnet ☒ IAC ☐ AutoRestart Port: 23

Sysname:

PuTTY (SSH) Back End:

☒ PuTTY

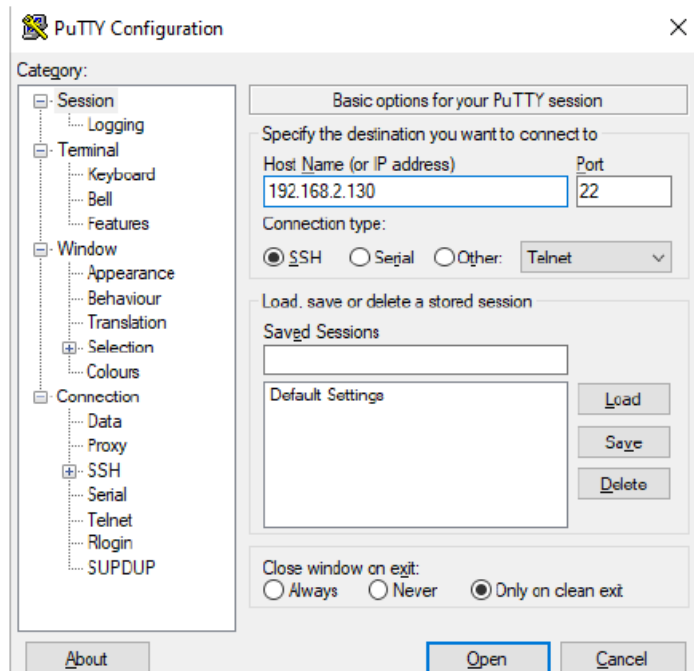
Plink args: admin@192.168.2.130

Pre-Established Configurations:

☐ C:\Program Files\ucon\config*.ct...

Cfg file: com1_115200 Browse

Cancel Ok



PuTTY Configuration

Category:

- Session
- Logging
- Terminal
 - Keyboard
 - Bell
 - Features
- Window
 - Appearance
 - Behaviour
 - Translation
 - Selection
 - Colours
- Connection
 - Data
 - Proxy
 - SSH
 - Serial
 - Telnet
 - Rlogin
 - SUPDUP

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address): 192.168.2.130 Port: 22

Connection type: ☒ SSH ☐ Serial ☐ Other: Telnet

Load, save or delete a stored session

Saved Sessions

Default Settings Load Save Delete

Close window on exit: ☐ Always ☐ Never ☒ Only on clean exit

About Open Cancel

Regular Format

Header	ID	Type	Length	Data	Checksum
1 byte	2 bytes	1 byte	3 bytes	256 bytes max	2 bytes

- **Header:** The header will be a '~' character.
- **ID:** Default value is '00'.
- **Type:** R-Rejected, A-Accepted, P-Poll, S-Set, D-Data Return
- **Length:** The size of the data (command, fields, field separators). Does not include the checksum.
- **Data:** Includes 3 characters for the command type, plus any parameters. If multiple parameters will be returned, they will be separated by a semicolon (;). There is no field separator between the 3-character command and the first parameter. If a field value is not currently available, there will be no value, just a ';' field separator indicating to skip to the next field.
- **Checksum:** The total sum from the Header to the end of the Data in a data packet. Each ASCII character is converted to an (unsigned char) hex equivalent, then summed with all-over values in the data packet. The resulting hexadecimal sum is then converted to 2 ASCII bytes. For example: If the checksum is 0x8e, the field value in the Checksum would be '8' and 'E'.

REMINDER

For customer requests, the checksum can be omitted on the latest SSH protocol.

Regular Format Example

- **Get the input information with checksum**

- PC -> UPS: ~00P003STIB1
- UPS -> PC: ~00D0323;600;2200;;;600;2200;;;600;220046
- **Get the output information with checksum**
 - PC -> UPS: ~00P003STOB7
 - UPS -> PC: ~00D0490;600;3;2200;10;220;5;2200;10;225;5;2200;10;223;5C4
- **Get the alarm status without checksum (***)**
 - PC -> UPS: ~00P003STA
 - UPS -> PC: ~00D0220;0;0;0;;0;;0;;0;;1
- **Get the battery status without checksum (***)**
 - PC -> UPS: ~00P003STB
 - UPS -> PC: ~00D0220;0;1;0;;0;414;;28;100
- **Set Relay On command without checksum**
 - PC -> UPS: ~00S007RON1;30 (this command means Relay 1 turns on after 30 seconds)
 - UPS -> PC: ~00A1F or ~00A0600.

NOTE

The second format has 2 extra bytes "06". Disregard. For future use.

(**): This is only for monitor software to support legacy UPS protocol. The command without checksum is no longer supported in the new design.

Protocol Message Structure

<Header><Address><Command Type><Length><Command ID><Data Parameters>

- **Header**
 - Value: '~'
 - Data Length: 1 Byte
- **Address**
 - Value: '00'
 - Data Length: 2 Bytes
- **Command Type**
 - **Values:**
 - 'P' – poll
 - 'S' – set
 - 'R' – read
 - Data Length: 1 Byte, ascii character
- **Length**
 - Total Length of the command plus data parameters
 - Value Example 1: "003" for "STI" command with no parameters
 - Value Example 2: "007" for "RON1;10" command with
 - Data Length: 3 Bytes
- **Data Envelope**
 - Content and Data Length: Varies. Can be empty for basic polls with no parameters.

Control Commands

RON – Outlet Relay ON

OUTLET / BANK ON		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for set
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"RON" for relay on
10	Relay Number	Relay or bank number, starting with 1
11	Field Separator	Always ';' semicolon
12,13,14 (size varies)	Time before ON	Time before relay ON executes, in seconds. Example: '001', '2', '999', '23', etc.
15,16	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00S006RON2;1
- **Description:** Turn on outlet 2 in 1 second

Response for Outlet ON (RON)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected
4,5	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00A1F

ROF – Outlet Relay OFF

OUTLET / BANK OFF		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for set
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"ROF" for relay off
10	Relay Number	Relay or bank number, starting with 1
11	Field Separator	Always ';' semicolon
12,13,14 (size varies)	Time before OFF	Time before relay OFF executes, in seconds. Example: '001', '2', '999', '23', etc.
15,16	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00S006ROF1;5
- **Description:** Turn off outlet 1 in 5 seconds

Response for Outlet OFF (ROF)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected
4,5	Checksum (optional for SSH)	The sum of all above hex values, in ASCII

- **Example:** ~00A1F

RSC – Outlet Relay Cycle

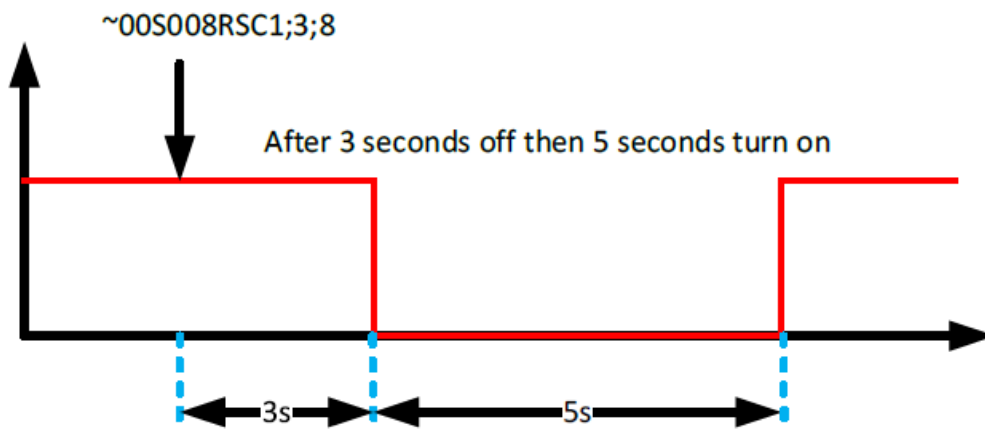
OUTLET / BANK CYCLE		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for set
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"RSC" for relay cycle

10	Relay Number	Relay or bank number, starting with 1
11	Field Separator	Always ';' semicolon
12,13,14 (size varies)	Time before OFF	Time from NOW before relay OFF executes, in seconds. Example: '001', '2', '999', '23', etc.
15	Field Separator	Always ';' semicolon
16,17,18 (size varies)	Time before OFF	Time from NOW before relay ON executes, in seconds. Example: '001', '2'
19,20	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00S010RSC3;10;15
- **Description:** Outlet 3 off in 10sec, back on 5sec later (15sec from present)

NOTE

- This command can be used to cycle an outlet ON then OFF, or OFF then ON. Make sure the turn-on time is greater than the turn off time when power cycling a live device to reset it. For example, if the desired operation is to cycle outlet 1 off for 5 seconds after a 3-second delay, the command would be ~00S008RSC1;3;8.
- The relay On/Off timer is counted at the same time as the time the command is received, so if the user sets the On/Off timer with the same value, UPS will turn on and then turn off immediately.



Response for Cycle (RSC)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected
4,5	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** `~00A1F`

OLN – SET Outlet Name

Set Outlet Name (OLN)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for set
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	OLN – Read/Set outlet name
10	Outlet Index	Index of outlet to name. 1 to 8
11	Field Separator	Always ';' semicolon
12-X	New Name	Characters in ASCII of name, in sequence
X+1, X+2	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00S012OLN1;
- **Description:** Outlet 1

Outlet Name Response (OLN)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected
4,5	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00A1F

BRD – SET Battery Replacement Dates

Set Battery Replacement Dates (BRD)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "020"
7,8,9	Command	"BRD" for battery replacement date
10-17	Last Replacement Date	8 characters, YYYYMMDD
18	Field separator	Always a semicolon ';'.
19-26	Next replacement date	8 characters, YYYYMMDD

27,28	Checksum (optional for SSH)	The sum of all above hex values, in ASCII
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Response for Battery Date Set (BRD)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected
4,5	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Example: ~00A1F

BTV – Battery Time/Voltage Test

Battery Test (BTV)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'S' for set
4,5,6	Length (ASCII)	Length of the below pieces, always "004"
7,8,9	Command	"BTV" for start self-test
10,11	Time Limit Parameter	Stop after X minutes (1 to 60 minutes)
12	Field Separator	Always a semicolon ';'
13	Voltage Parameter	Test fails if lower than this voltage threshold. 0 to 999 volts
14, 15	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Battery Test Start (BTV)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	'A' for Accepted 'R' for Rejected

4,5	Checksum (optional for SSH)	Sum of all above hex values, in ASCII
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Example: ~00A1F

Status Read Commands

STI – Input State

Read Input State (STI)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"STI" for read input states
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

STI Response Format		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7	Field 1	Number of Phases See below chart of response fields
8	Field Separator	Always ';' semicolon
9,10,11 (varies)	Field 2	Input Frequency 1 See below chart of response fields
...	Field Separator	Always ';' semicolon
...	Pattern of responses and field separators continues

UPS Input State Response Fields (STI Command)			
Name	Type	Range/Length	Note
Input Num Lines (Phases)	Integer	0 to 9	Number of input lines
Input Frequency1	Integer	0 to 999	0.1Hz
Input Voltage1	Integer	0 to 9999	0.1Volt
Input Current1	Integer	0 to 99999	0.1Amp
Input Power1	Integer	0 to 999999	Watt
Input Frequency2	Integer	0 to 999	0.1Hz
Input Voltage2	Integer	0 to 9999	0.1Volt
Input Current2	Integer	0 to 99999	0.1Amp
Input Power2	Integer	0 to 999999	Watt
Input Frequency3	Integer	0 to 999	0.1Hz
Input Voltage3	Integer	0 to 9999	0.1Volt
Input Current3	Integer	0 to 99999	0.1Amp
Input Power3	Integer	0 to 999999	Watt
Input Voltage12	Integer	0 to 9999	0.1Volt
Input Voltage23	Integer	0 to 9999	0.1Volt
Input Voltage31	Integer	0 to 9999	0.1Volt
Input Energy1	Integer	0 to 9999999	1kWh
Input Energy2	Integer	0 to 9999999	1kWh
Input Energy3	Integer	0 to 9999999	1kWh
Input Energy Total	Integer	0 to 9999999	1kWh
Input Frequency	Integer	0 to 999	0.1Hz

STO – Output State

Read Input State (STO)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"STO" for read output states
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

STO Response Format		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data

4,5,6	Length (ASCII)	Length of the below pieces
7	Field 1	Number of Phases See below chart of response fields
8	Field Separator	Always ';' semicolon
9,10,11 (varies)	Field 2	Input Frequency 1 See below chart of response fields
...	Field Separator	Always ';' semicolon
...	Pattern of responses and field separators continues

UPS Output State Response Fields (STO Command)			
Name	Type	Range/Length	Comment
Output Source	Integer	0 to 9	0 = Normal 1 = Battery 2 = Bypass-3phase Reserve Pwr Path 3 = Reducing 4 = Boosting 5 = Manual Bypass 6 = Other 7 = No output 8 = On ECO 9 = Load Transfer Break
Output Frequency	Integer	0 to 999	0.1Hz
Output Num Lines (Phase)	Integer	0 to 9	Number of output lines
Output Voltage1	Integer	0 to 9999	0.1Volt
Output Current1	Integer	0 to 99999	0.1Amp
Output Power1	Integer	0 to 999999	Watt
Output Load1	Integer	0 to 999	Percent
Output Voltage2	Integer	0 to 9999	0.1Volt
Output Current2	Integer	0 to 99999	0.1Amp
Output Power2	Integer	0 to 999999	Watt
Output Load2	Integer	0 to 999	Percent
Output Voltage3	Integer	0 to 9999	0.1Volt
Output Current3	Integer	0 to 99999	0.1Amp
Output Power3	Integer	0 to 999999	Watt
Output Load3	Integer	0 to 999	Percent
Output Voltage12	Integer	0 to 9999	0.1Volt
Output Voltage23	Integer	0 to 9999	0.1Volt

Output Voltage31	Integer	0 to 9999	0.1Volt
Total Output Power KW	Integer	0 to 99999	0.1KW
Total Output Power KVA	Integer	0 to 99999	0.1KVA
Total Output Power Factor	Integer	0 to 999	KW/KVA %
Output Energy1	Integer	0 to 9999999	1kWh
Output Energy2	Integer	0 to 9999999	1kWh
Output Energy3	Integer	0 to 9999999	1kWh
Output Energy Total	Integer	0 to 9999999	1kWh
Total Output Load	Integer	0 to 999	Percent
Output Power Factor1	Integer	0 to 999	KW/KVA %
Output Power Factor2	Integer	0 to 999	KW/KVA %
Output Power Factor3	Integer	0 to 999	KW/KVA %

STB – UPS Battery State

Read Input State (STB)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"STB" for read battery status
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

STB Response Format		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7	Field 1	Number of Phases . See below chart of response fields
8	Field Separator	Always ';' semicolon
9,10,11 (varies)	Field 2	Input Frequency 1 . See below chart of response fields

...	Field Separator	Always ';' semicolon
...	Pattern of responses and field separators continues

UPS Battery Status Response Fields (STB Command)				
Name	Type	Range/Length	Comment	
Battery Condition	Integer	0 to 2	0 = Good 1 = Weak 2 = Replace	
Battery Status	Integer	0 to 2	0 = OK 1 = Low 2 = Depleted	
Battery Charge	Integer	0 to 3	0 = (obsolete) 1 = Charging 2 = Resting 3 = Discharging	
Seconds on Battery	Integer	0 to 99999	Seconds	
Estimated Minutes Remaining	Integer	0 to 9999	Estimated time from backup to low battery shutdown.	

Estimated Charge Remaining (Not used, reserved)	Integer	0 to 999	Estimated of percent battery charge remaining.
Battery Voltage	Integer	0 to 9999	0.1Volt
Battery Current	Integer	0 to 99999	0.1Amp
UPS Internal Temperature	Integer	0 to 999	Degree Celsius
Battery Level	Integer	0 to 100	%
External Batt-Pack Number	Integer	0 to 10	Number of External Battery Pack
Negative Battery Voltage	Integer	0 to 9999	-0.1Volt
Negative Battery Current	Integer	0 to 99999	0.1Amp
not used, reserved			
Negative Battery Level	Integer	0 to 999	%
Positive Charging Current	Integer	0 to 9999	0.1Amp
Negative Charging Current	Integer	0 to 9999	0.1Amp
Battery Charge Mode	Integer	0 to 2	0 = None 1 = Boost charge 2 = Float charge
Battery Low Limit	Integer	0 to 100	%, if this field is available then the BLA command is supported

STA – UPS Alarms State

Read Alarms State (STA)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"STA" for read alarm states
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

STA Response Format		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7	Field 1	Number of Phases See below chart of response fields
8	Field Separator	Always ';' semicolon
9,10,11 (varies)	Field 2	Input Frequency 1 See below chart of response fields
...	Field Separator	Always ';' semicolon
...	Pattern of responses and field separators continues

UPS Alarms State Response Fields (STA Command)			
Name	Type	Range/Length	Comment
Alarm Over Temperature	Integer	0 or 1	0 = OK 1 = Over Temperature
Alarm Input Out of Range	Integer	0 or 1	0 = OK 1 = Input Bad
Alarm Output Bad (Obsolete, reserved)	Integer	0 or 1	0 = OK 1 = Output Bad
Alarm Overload	Integer	0 or 1	0 = OK 1 = Overload

Alarm Bypass Out of Range	Integer	0 or 1	0 = OK 1 = Bypass Bad
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Alarm Output Off	Integer	0 or 1	0 = Output On 1 = Output Off
Alarm UPS Shutdown	Integer	0 or 1	0 = OK 1 = Shutdown
Alarm Charger Fail	Integer	0 or 1	0 = OK 1 = Charger Failed
Alarm Standby	Integer	0 or 1	0 = Others 1 = Standby
Alarm Fan Fail	Integer	0 or 1	0 = OK 1 = Fan Fault
Alarm Fuse Fail	Integer	0 or 1	0 = OK 1 = Fuse Fault
Alarm Other Warning	Integer	0 or 1	0 = OK 1 = General Fault
Alarm Awaiting Power	Integer	0 or 1	0 = OK 1 = Awaiting Power
Alarm Shutdown Pending	Integer	0 or 1	0 = OK 1 = Shutdown Pending
Alarm Shutdown Imminent	Integer	0 or 1	0 = OK 1 = Shutdown Imminent
Buzzer Status	Integer	0 or 1	0 = UPS Buzzer Silence 1 = UPS Buzzer is Alarming
Economic Mode	Integer	0 or 1	0 = No 1 = Yes
Alarm Inverter Fail	Integer	0 or 1	0 = No 1 = Yes

Emergency Power Off	Integer	0 or 1	0 = Off 1 = On
Buzzer State	Integer	0 or 1	0 = UPS Buzzer Disable 1 = UPS Buzzer Enable
Battery Ground Fault	Integer	0 or 1	0: Normal 1: ground fault
Alarm Output Voltage Over Limit	Integer	0 or 1	0: Normal 1: Alarm
Alarm Output Voltage Under Limit	Integer	0 or 1	0: Normal 1: Alarm

Alarm Power Module	Integer	0 or 1	0: Normal 1: Alarm
Alarm Output Breaker Open	Integer	0 or 1	0: Close 1: Open
Alarm Phase Asynchronous	Integer	0 or 1	0: Phase Synchronous 1: Phase Asynchronous
Alarm Rectifier Abnormal	Integer	0 or 1	0: Normal 1: Alarm
Bypass Breaker Open	Integer	0 or 1	0: Close 1: Open
Main Input Breaker Open	Integer	0 or 1	0: Close 1: Open
Alarm Redundancy Loss	Integer	0 or 1	0: Normal 1: Alarm
Manual Bypass Breaker Open	Integer	0 or 1	0: Close 1: Open
Green Mode	Integer	0 or 1	0: Disable 1: Enable
Alarm Battery Fault	Integer	0 or 1	0: Normal 1: Alarm
Load Transfer Breaker Open (TSMC)	Integer	0 or 1	0: Close 1: Open
Alarm Notification	Integer	0 or 1	0: Normal 1: Alarm

Read UPS Version (VER)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"VER" for read UPS version
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

LET – Read Number of Outlets

Read Number of Outlets (LET)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	"LET" for read outlet count
10, 11	Checksum (optional for SSH)	The sum of all above hex values, in ASCII

SOL – Read the Status of the Single Outlet

Read Single Outlet State (SOL)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "004"
7,8,9	Command	"SOL" for read single outlet state
10	Outlet number	Outlet number, starting with 1 for first outlet
11, 12	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Single Outlet Read (SOL)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7	Response	0: Normal, closed, on 1: Shutdown, open, off
8, 9	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

OL8 – Read Status of All Outlets at Once

Read All Outlet States (OL8)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "003"
7,8,9	Command	"OL8" for read all outlets
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Read All Outlets (OL8)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7	Outlet 1 Status	0: Normal, closed, on 1: Shutdown, open, off
8	Field separator	Always a semicolon ';'
9	Outlet 2 Status	0: Normal, closed, on 1: Shutdown, open, off
10	Field separator	Always a semicolon ';'
11	Outlet 3 Status	0: Normal, closed, on 1: Shutdown, open, off
12	Field separator	Always a semicolon ';'
13	Outlet 4 Status	0: Normal, closed, on 1: Shutdown, open, off
14	Field separator	Always a semicolon ';'
15	Outlet 5 Status	0: Normal, closed, on 1: Shutdown, open, off
16	Field separator	Always a semicolon ';'
17	Outlet 6 Status	0: Normal, closed, on 1: Shutdown, open, off
18	Field separator	Always a semicolon ';'
19	Outlet 7 Status	0: Normal, closed, on 1: Shutdown, open, off

Response for Read All Outlets (OL8)		
Byte Index	Description	Note
20	Field separator	Always a semicolon ‘;’
21	Outlet 8 Status	0: Normal, closed, on 1: Shutdown, open, off
22	Field separator	Always a semicolon ‘;’
23,24	Checksum (optional for SSH)	The sum of all above hex values, in ASCII

OLN – Read Outlet Name

Read Outlet Name (OLN)		
Byte Index	Description	Note
0	Start Character	Always ‘~’ tilde
1	Address byte 1	Always ‘0’
2	Address byte 2	Always ‘0’
3	Command Type	Always ‘P’ for poll
4,5,6	Length (ASCII)	Length of the below pieces
7,8,9	Command	OLN – Read/Set outlet name
10	Outlet Index	Index of outlet to name. 1 to 8
11,12	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

- **Example:** ~00P004OLN1
- **Description:** Poll outlet 1 name

Outlet Name Response (OLN)		
Byte Index	Description	Note
0	Start Character	Always ‘~’ tilde
1	Address byte 1	Always ‘0’
2	Address byte 2	Always ‘0’
3	Command Type	Always ‘D’ for data
4,5,6	Length (ASCII)	Length of the below pieces
7 to N	Outlet Name	Outlet Name in ASCII

Example: ~00A1F

BRD – Read Battery Replacement Dates

Read Battery Replacement Dates (BRD)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'

2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "012"
7,8,9	Command	"BRD" for read serial number
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Battery Date Read (BRD)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces (always "017")
7-14	Last Replacement Date	8 characters, YYYYMMDD
15	Field separator	Always a semicolon ';'
16-23	Next replacement date	8 characters, YYYYMMDD
24, 25	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

EBP – Read Number of External Batteries Connected

Read Number of External Batteries (EBP)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "003"
7,8,9	Command	"EBP" for read external batteries
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Read External Batteries (EBP)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'

Response for Read External Batteries (EBP)		
Byte Index	Description	Note
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7 to N	Number of Ext Batteries	ASCII number representing the number of batteries. 0 to 100.
N+1, N+2	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

SER – Read Serial Number of UPS

Read Serial Number of UPS (SER)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "003"
7,8,9	Command	"SER" for read serial number
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Serial Number READ (SER)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces
7 to N	Serial Number	Serial Number in ASCII, up to 20 characters
N+1, N+2	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

TSR – Read Last Self-Test Results

Read Self-Test Results (TSR)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'

2	Address byte 2	Always '0'
3	Command Type	Always 'P' for poll
4,5,6	Length (ASCII)	Length of the below pieces, always "003"
7,8,9	Command	"TSR" for read test results
10, 11	Checksum (optional for SSH)	Sum of all above hex values, in ASCII

Response for Read Test Results (TSR)		
Byte Index	Description	Note
0	Start Character	Always '~' tilde
1	Address byte 1	Always '0'
2	Address byte 2	Always '0'
3	Command Type	Always 'D' for data
4,5,6	Length (ASCII)	Length of the below pieces, always "001"
7	Test Results	0 = No test performed 1 = Test passed 2 = Test in progress 3 = General test failed (Obsolete) 4 = Battery test failed 5 = Deep battery test failed (Obsolete) 6 = Test Aborted
8,9	Checksum (optional for SSH)	The sum of all above hex values, in ASCII

Warranty

For warranty information, refer to www.legrandav.com/policies/warranty_information.

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Documents / Resources

	<p>legrand NEXSYS Series 2RU 20 Amp UPS Backup Power System [pdf] User Manual NEXSYS Series 2RU 20 Amp UPS Backup Power System, NEXSYS Series, 2RU 20 Amp UPS Backup Power System, Backup Power System, Power System</p>
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References

- [User Manual](#)

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