Quick Start Guide

for Brainboxes NeuronEdge Controller

This guide will help you set up your BB-400. Out of the box your BB-400 comes with sensible defaults to help you get started fast.

For more detailed information, the product manual, and a host of resources for programming and software integration visit our website:

www.brainboxes.com

⚠ WARNING Risk of injury from energy stored in capacitors.

Wait at least 5 minutes after shutdown of device before opening case.

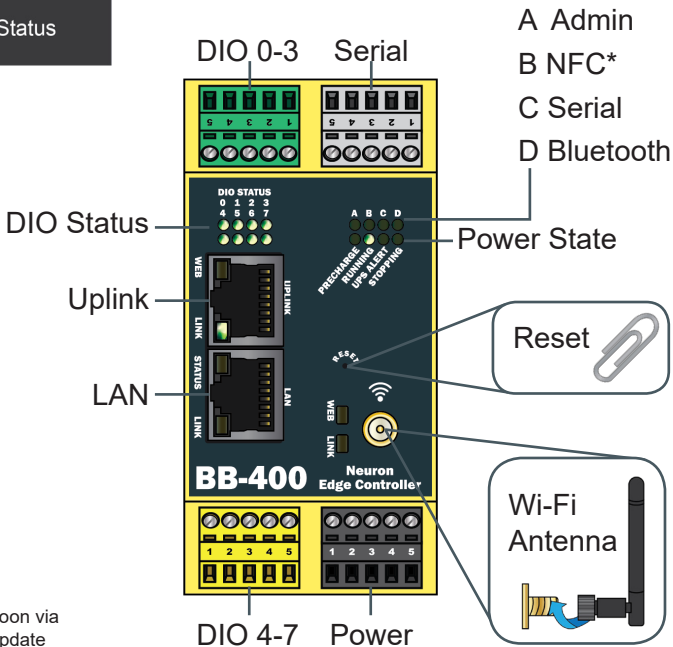**? Help** This product comes with Brainboxes' Lifetime Warranty and Support

For full terms and conditions, as well as information on accreditations, and correct disposal of this product can be found on our website:
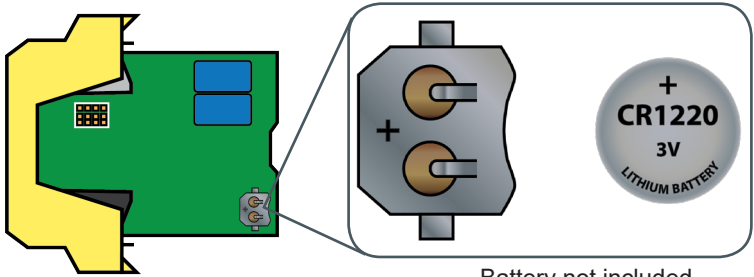
www.brainboxes.com

Status

DIO 0-3　　Serial

A　Admin
B　NFC*
C　Serial
D　Bluetooth

DIO STATUS

DIO Status

A B C D

Power State

PRECHARGE
RUNNING
UPS ALERT
STOPPING

WEB

Uplink ──── UPLINK

Reset

STATUS

LAN ──── LAN

WEB

LINK

BB-400　Neuron
Edge Controller

Wi-Fi
Antenna
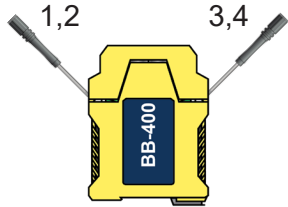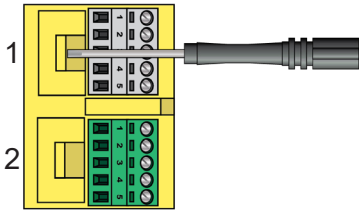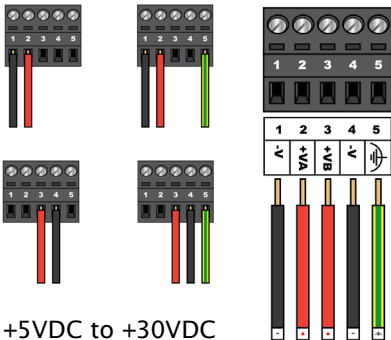
*Coming soon via
software update

DIO 4-7　　Power

Battery not included

To set the clock:

Terminal

```
bb@bb400-XXXX:~ $ sudo bb config.system.rtc true
```

+5VDC to +30VDC
15W Max Typical

1	2	3	4	5
-V	+VA	+VB	-V	⏚

Optional Accessory Item
Power Supply

PW-400 (UK/EU/US/AUS)
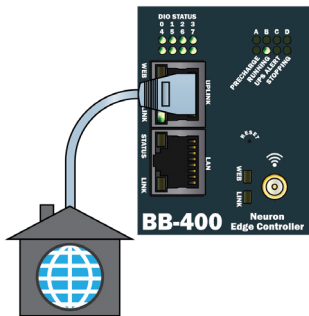- Suitable for use with BB-400

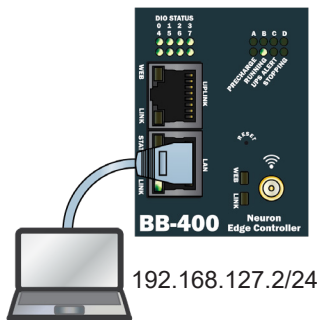PRECHARGE RUNNING UPS ALERT STOPPING 🕐
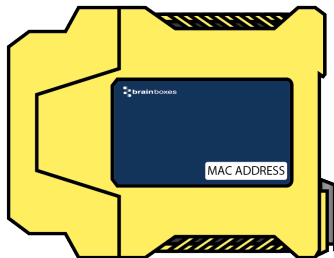
PRECHARGE RUNNING UPS ALERT STOPPING ✔

UPLINK

LAN

192.168.127.2/24

Wi-Fi Hot Spot

SSID: BB-400-XXXX

MAC ADDRESS

Login

MAC: 00:0A:4F:40:XX:XX

https://bb400-xxxx:9090

https://bb400-xxxx.local:9090

https://bb400-xxxx:9090

Secure webpages require an SSL certificate.

This can only be applied for once an IP address or name has been assigned. This is the case for all IoT devices.

The connection however is encrypted and secure

ADVANCED

| User name | bb |
| Password | XXXX |

Log in

DIO 0-3

5		DIO 3
4		DIO 2
3		DIO 1
2		DIO 0
1		-V

DIO 4-7

5		DIO 7
4		DIO 6
3		DIO 5
2		DIO 4
1		-V
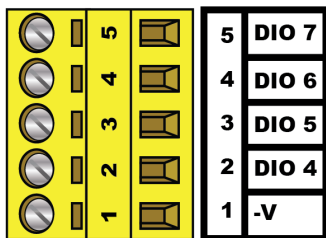
Jumpers for NPN/PNP
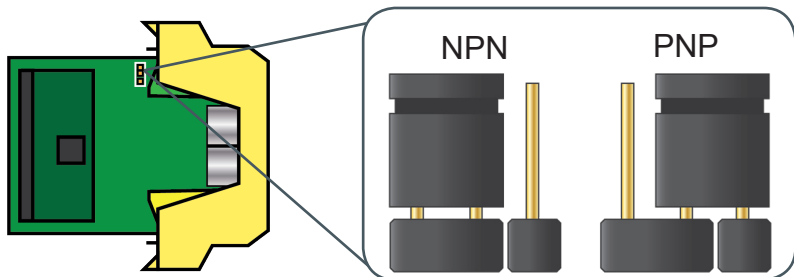
NPN   PNP

DIO Values

Digital Inputs	NPN/PNP	Jumper selectable pull up for NPN, active low, type sensors and pull down for PNP, active high, type sensors
	Logic Level 0:	0V to +1V maximum
	Logic Level 1:	+2.0V to +30V maximum
	Latched Inputs:	Triggered by user programmable positive or negative edges, stays true until acknowledged
	Counter Inputs:	User programmable – counts positive or negative transitions, up to 250Hz count rate. 16-bit (65335 count) or 32-bit (4.2 billion count) counters. Counter values persist over power-off periods
Digital Outputs	Max output current	Sinks up to 0.85 Amp per pin, 30V max load Max combined load 4 Amps per BB device
	Max output load Voltage	30V
	ESD Protection	Protection to 16kV

Terminal

ASCII		
Command	Response	Description
@01	>(Data)	Reads the Digital I/O Status
@01(Data)	>	Sets the state of all the digital outputs
#01N	!01(Data)	Reads the Digital Input Counter of channel N (0-7)

```
@01
>00FF
```

REST		
Request	REST Verb	Response

http://bb400-xxxx:9000/io	GET	{
		"inputs": [1, 1, 1, 1, 1, 1, 1, 1],
		"outputs": [0, 0, 0, 0, 0, 0, 0, 0]
		}

http://bb400-xxxx:9000/io/inputs	GET	[1, 1, 1, 1, 1, 1, 1, 1]
http://bb400-xxxx:9000/io/inputs/0	GET	1
http://bb400-xxxx:9000/io/outputs	GET	[0, 0, 0, 0, 0, 0, 0, 0]
http://bb400-xxxx:9000/io/outputs body: [1, 1, 1, 1, 0, 0, 0, 0]	POST	header: 200 OK
http://bb400-xxxx:9000/io/outputs	GET	[1, 1, 1, 1, 0, 0, 0, 0]

Other Connections and Updates

Bluetooth   **Make Discoverable**   **Refresh**

Software Updates   **Install All Updates**

It is recommended to install all updates when you first use the device. This will ensure you are running the latest version of the operating system and software.
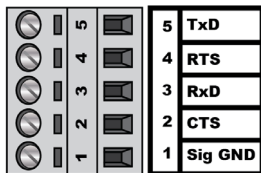
Coming soon via software update:

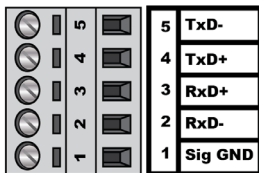NFC - Tap your smartphone or NFC enabled device to get device status information and IP address.
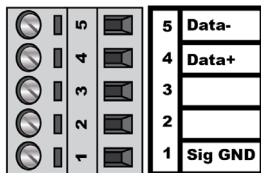
Modbus - Coming soon support for Modbus TCP

RS232

5	TxD
4	RTS
3	RxD
2	CTS
1	Sig GND

A B C D

RS422-485 FD

5	TxD-
4	TxD+
3	RxD+
2	RxD-
1	Sig GND

C

Open

RS485 HD

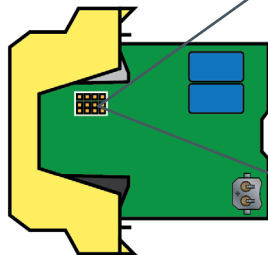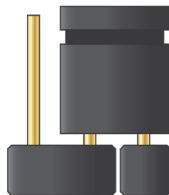|	
5	Data-
4	Data+
3	
2	
1	Sig GND

C

Closed

Jumpers for RS422/485

Default

FT

HT

B-

B+
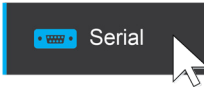
PARK

▪▪▪ Serial

Port Type:

✓ RS422/485
RS422 Full Duplex Mode
RS485 Half Duplex Mode

Baud Rate	Any custom Baud rate between 300 - 921,600Baud
Data Bits	5,6,7 or 8 (1 stop bit)
Parity	Odd, Even, None
Stop Bits	1, 1.5 or 2
Flow Control	RTS/CTS, XON/XOFF

Raspbian Lite
- based on Debian Linux

www.brainboxes.com/bb-400 provides a range of resources and example code to get you started with some common machine monitoring scenarios.

Sample code is available in the following languages;
· .NET C# & VB
· Python
· Node.js
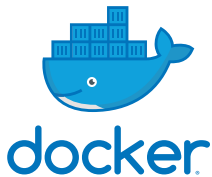· Node-RED (visual coding interface)

{ REST }

REST	http://bb400-xxxx:9000/io
WebSocket	ws://bb400-xxx:8989
ASCII TCP	bb400-xxxx:9500

Docker is an online repository for secure/isolated apps that can run on your BB-400.

To get started search for Brainboxes and find prebuilt containers.

⊕ Get new image

🔍 *brainboxes*|

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