Fast Facts

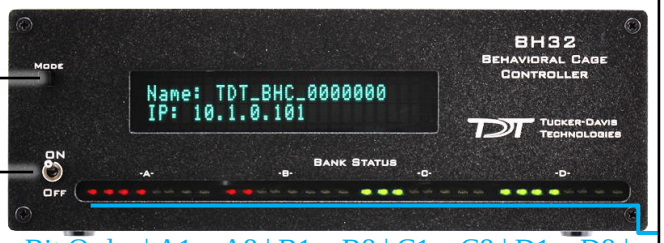
The BH32 Behavioral Controller

This fast fact sheet provides basic information for the BH32. See the System 3 Manual for more information.

Press Mode button to cycle through display status

Note: Holding Mode button while turning on BH32 will reset BH32 to factory defaults after 5 seconds

Power switch



Bit Order | A1... A8 | B1... B8 | C1... C8 | D1... D8 |

The BH32 includes 32 bits of programmable I/O grouped in four 8-bit banks. LEDs indicate on/off state for all 32 bits of behavioral state information. Outputs are RED, inputs are GREEN

25-pin connectors for +5V logic Digital I/O

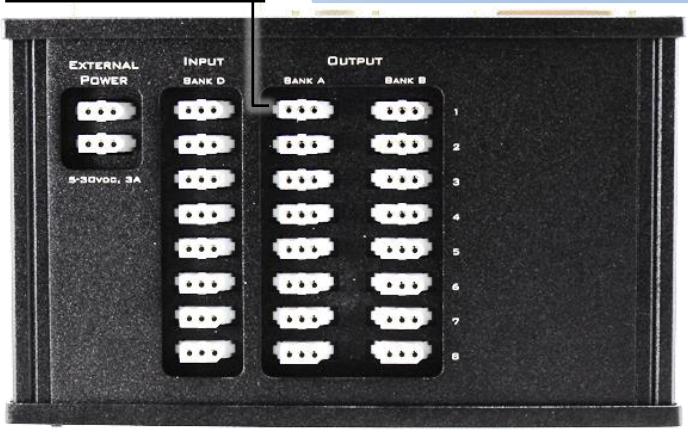
Very Important! Before you switch to 5V, **make sure nothing is connected to the External Power connectors on the top panel**

Connect to same network as RZ UDP interface to read/write state changes in Synapse

Powered by a 6-9V tip negative adapter

Drive outputs with either the internal 5V power source (up to 200mA) or use an external power source (up to 30V, 3A) connected through the top panel

1.57 mm diameter Molex connectors



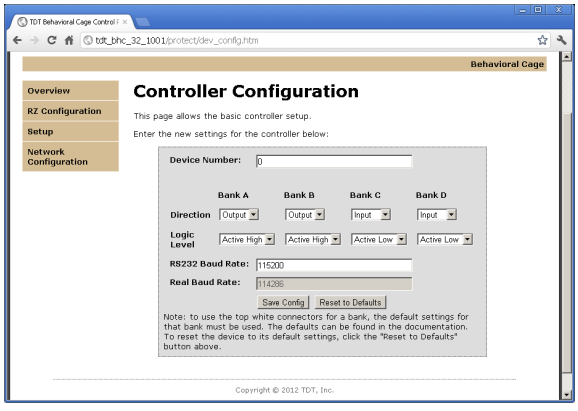
EXTERNAL POWER

V+ Positive Voltage
NC No Connection
G Ground

Important! The external power connectors are shorted together, so you can jumper a second BH32 to the same power source. Do not connect a second external power source to the same BH32.

Software Configuration

The BH32 can be controlled in directly in Synapse, through a Web Interface, or via the SynapseAPI.



I/O CONNECTORS

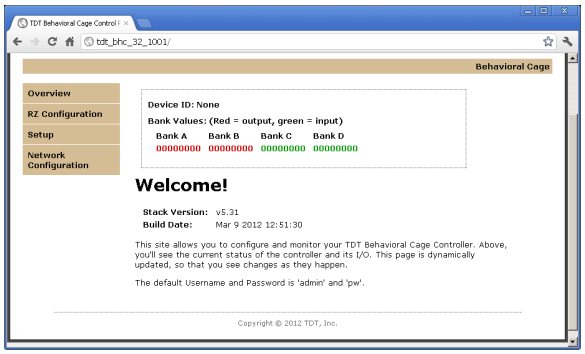
V+ Positive Voltage
S Signal
G Ground

Communicating via Web Interface

1. Enter the BH32 NetBIOS name (name on front of device) or IP address (http://IPAddress) into your Browser.

2. Follow the configuration steps in the BH32 Behavioral Cage Controller section of System3 manual to establish device communication.

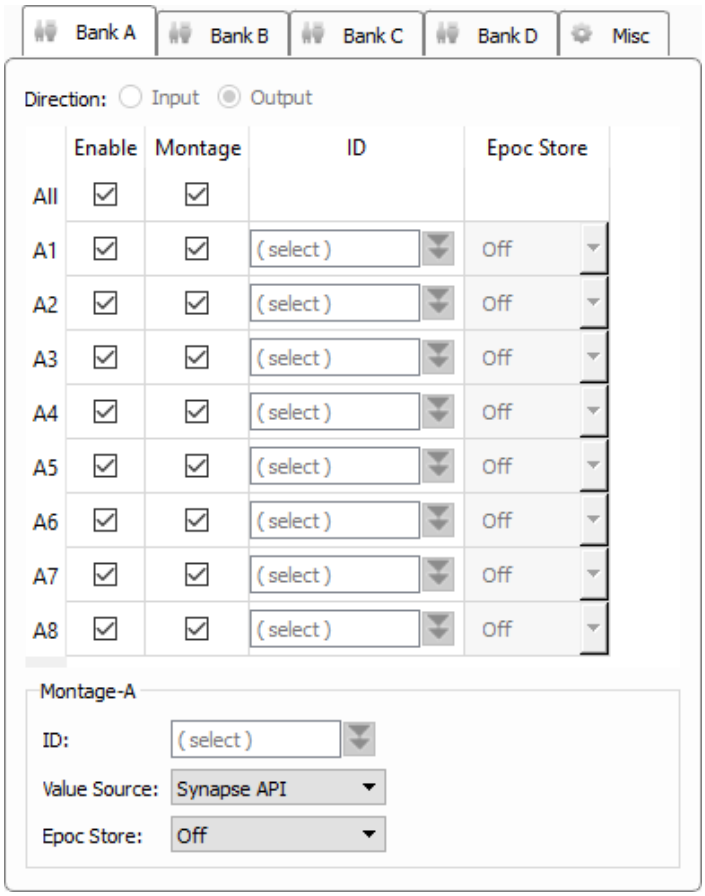
Note: Synapse assumes a default Web configuration of Banks A/B as outputs and Banks C/D as inputs. TDT recommends against changing this configuration.



Helpful Tip:
The status of individual bits is displayed for each bank. Clicking bits on an Output bank (red 0 or 1) will toggle that output bit and the corresponding LED on the front panel of the BH32. This can be used to manually control the output of the BH32 or read input bits for testing a device connected to that output.

Communicating via SynapseAPI controls

Enable Banks A and B as 'Montage' and set their source in the Synapse API

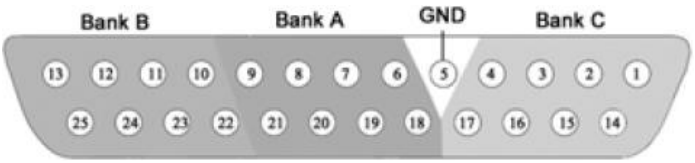


Client libraries for the SynapseAPI with BH32 read/write examples can be found on the TDT website:

[Matlab SDK]
[Python SDK]

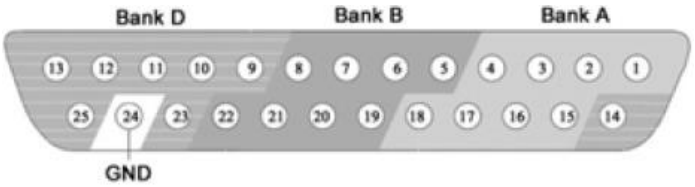
The Python SDK also includes an example of communicating with the BH32 directly from Python across the network.

Pinout for Digital I/O – 1



Pin	Name	Description	Pin	Name	Description
1	C1	Bank C Bits 1, 3, 5, and 7	14	C2	Bank C Bits 2, 4, 6, and 8
2	C3		15	C4	
3	C5		16	C6	
4	C7		17	C8	
5	GND	Digital I/O Ground	18	A1	Bank A Bits 1, 3, 5, and 7
6	A2	Bank A Bits 2, 4, 6, and 8	19	A3	
7	A4		20	A5	
8	A6		21	A7	
9	A8		22	B1	Bank B Bits 1, 3, 5, and 7
10	B2	Bank B Bits 2, 4, 6, and 8	23	B3	
11	B4		24	B5	
12	B6		25	B7	
13	B8				

Pinout for Digital I/O – 2



Pin	Name	Description	Pin	Name	Description
1	A1	Bank A Bits 1, 3, 5, and 7	14	D7	Bank D Bit 7
2	A3		15	A2	Bank A Bits 2, 4, 6, and 8
3	A5		16	A4	
4	A7		17	A6	
5	B1	Bank B Bits 1, 3, 5, and 7	18	A8	
6	B3		19	B2	Bank B Bits 2, 4, 6, and 8
7	B5		20	B4	
8	B7		21	B6	
9	D1	Bank D Bits 1, 2, 3, 4, and 6	22	B8	
10	D2		23	D8	Bank D Bit 8
11	D3		24	GND	Ground
12	D4		25	D5	Bank D Bit 5
13	D6				

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