TDT iH16 iHn High Voltage Interface

TDT iH16 iHn High Voltage Interface Instructions

Contents

TDT iH16 iHn High Voltage Interface

Product Information

Specifications:

- Model: iHn High Voltage Interface
- Interface Ports: 16 or 8 bidirectional ports
- Voltage: 28 V signal
- Compatible with cage elements from Med Associates, Lafayette, and Coulbourn
- Manifold Types: iHm Manifold, iH8-RJ25PLA/B Manifold

Product Usage Instructions

iHn High Voltage Interface Overview:

The iHn High Voltage Interface features 16 or 8 bidirectional interface ports for controlling high-voltage cage elements. It connects to manifolds for closer proximity to behavioral apparatus.

Manifolds:

The iHn comes with one or two manifolds that interface with cage elements. There are two types of manifolds:

1. iHm Manifold: Features eight 3-pin Molex connectors
2. iH8-RJ25PLA/B Manifold: Features eight 6-pin RJ25 connectors

iHm Manifold Molex Pinout:

Pin	Name	Description
G	Ground	Ground connection
S	Signal	Input or output signal (+28 V up to 1 A, 3 A max per iCon)
V+	+28 V	+28 V power supply

iH8-RJ25PLA/B Manifold:

The iH8-RJ25PLA/B manifolds feature 8 telephone-style 6-pin RJ25 ports for direct control of high-voltage cage elements.

Typical Configurations:

Device Type: Up to 8 input-only devices

Configuration: Connect each device to an RJ25 connector and configure all 8 as inputs in Synapse.

Frequently Asked Questions

Q: Can I connect multiple iHn modules together?

A: No, each iHn module functions independently and cannot be connected to other modules.

Q: What is the maximum voltage supported by the iHn High Voltage Interface?

A: The iHn High Voltage Interface supports a maximum voltage of 28 V signal.

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iHn High Voltage Interface

The iH16 and iH8 modules feature 16 or eight bidirectional interface ports to directly control high-voltage (e.g. 28 V signal) cage elements including Med Associates, Lafayette, and Coulbourn. The iH8 and iH16 modules connect to an iHm, iH8-RJ25PLA/B, or iH8-RJ25A/B manifold via a DB15 cable. The manifold can be placed closer to the behavioral apparatus.

- Each interface port is configurable in Synapse as either inputs or outputs
- Manual trigger buttons on the front panel are used for testing / debugging connected behavioral components
- Status lights make it easy to monitor component activity during sessions

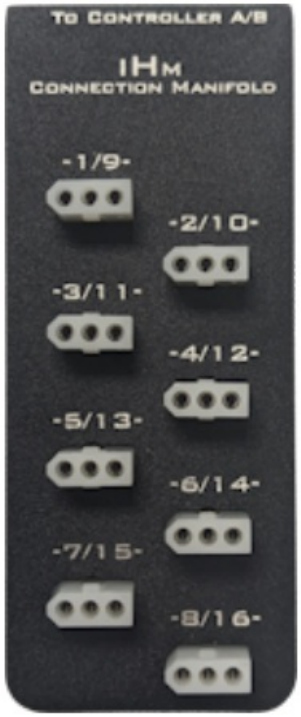
The ‘O’ LED lights when the port is driven by Synapse, and the ‘I’ LED lights when the port is driven by Synapse, by an external device, or by the manual button press.
An output port can source up to 1 A maximum. The maximum total output per iHn module is 1 A. The maximum total output per iCon is 3 A.
A previous 10 channel model (iH10) has Molex connectors directly on the face of the device.

For information on software control of the iHn modules, see the Synapse Manual.

Manifolds

The iHn comes with one or two manifolds, which interface with cage elements closer to the subject. They connect to the iHn via provided DB15 cables. There are two types of manifolds: the iHm Manifold has eight 3-pin Molex connectors and the iH8-RJ25A/B Manifolds and iH8-RJ25PLA/B Manifolds have eight 6-pin RJ25 connectors.

iHm Manifold



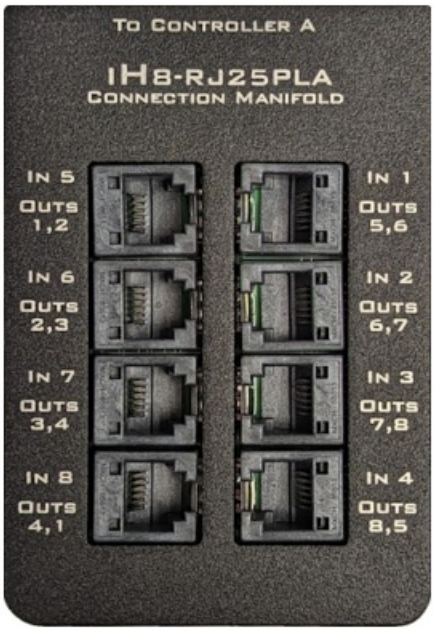
The iHM uses 1.57 mm diameter standard Molex pin and socket connectors.

iHm Manifold Molex Pinout

Pin	Name	Description
G	Ground	
S	Signal	Input or output signal
V+	+28 V	+28 V up to 1 A, 3 A max per iCon

As an Input, the Signal line floats to +28 V. Short the Signal line to ground to trigger it. As an Output, the Signal line floats by default and is shorted to 0 V when triggered.

iH8-RJ25PLA/B Manifold



The iH8-RJ25PLA/B manifolds feature 8 telephone-style 6-pin RJ25 ports to provide direct control of high-voltage (e.g. 28V signal) cage elements from Panlab.

There are a total of 8 inputs and outputs combined per manifold The ports are configurable in Synapse as either inputs or outputs Each port has one input and two outputs

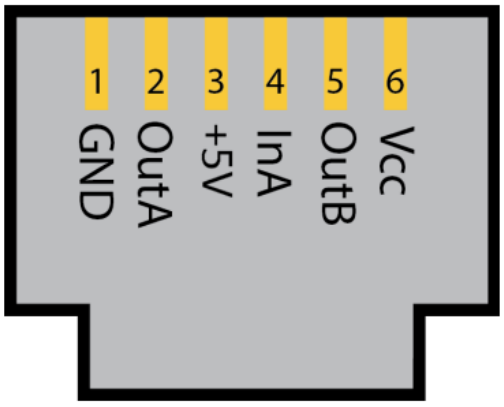
- The numbers on the faceplate indicate which input channels and output channels are available on that connector. The outputs that are shared between ports are physically shorted together inside the iH8-RJ25. For example, Out 2 on the iH8-RJ25PLA is available on the first two ports and is controlled by the same signal from Synapse.
- Similarly, inputs and outputs of the same number are shorted internally. For example, Out1 and In1 share the same signal from the iHn and you can’t use both at the same time.
- The iH8-RJ25PLA and iH8-RJ25PLB models are electrically identical, but have different channel numbering on the faceplate to match the A and B inputs on the iH16 module.

Typical Configurations

Device Type	Configuration
Up to 8 input-only devices	Connect each device to an RJ25 connector. Configure all 8 as inputs in Synapse
Up to 8 output-only devices	Connect each device to an RJ25 connector. Configure all 8 as outputs in Synapse
4 input-only and 4 output-only devices	Connect the inputs to In1, In3, In5, In7. Connect the outputs to Out2, Out4, Out6, Out8
4 devices with 1 input and 1 output each	Connect to In1 (Out5), In2 (Out6), In3 (Out7), In4 (Out8)

iH8-RJ25PLA/B Manifold Pinout

Pinout looking into the connector



Pin	Name	Description
1	GND	Ground
2	OutA	Output Signal A
3	+5V	
4	InA	Output Signal
5	OutB	Output Signal B
6	V+	+28 V up to 1 A, 3 A max per iCon

iH8-RJ25A/B Manifold

The iH8-RJ25A/B manifolds feature 8 telephone-style 6-pin RJ25 ports to provide direct control of high-voltage (e.g. 28V signal) cage elements from Coulbourn.

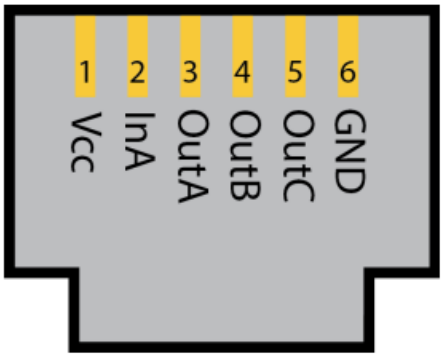
There are a total of 8 inputs and outputs combined per manifold The ports are configurable in Synapse as either inputs or outputs Each port has one input and up to three outputs

The numbers on the faceplate indicate which input channels and output channels are available on that connector. The outputs that are shared between ports are physically shorted together inside the iH8-RJ25. For example, Out 6 on the iH8-RJ25A is available on the first two ports and is controlled by the same signal from Synapse. Similarly, inputs and outputs of the same number are shorted internally. For example, Out1 and In1 share the same signal from the iHn and you can't use both at the same time.
The iH8-RJ25A and iH8-RJ25B models are electrically identical, but have different channel numbering on the faceplate to match the A and B inputs on the iH16 module.

Typical Configurations

Device Type	Configuration
Up to 8 input-only devices	Connect each device to an RJ25 connector. Configure all 8 as inputs in Synapse
Up to 8 output-only devices	Connect each device to an RJ25 connector. Configure all 8 as outputs in Synapse
4 input-only and 4 output-only devices	Connect the inputs to In1, In3, In5, In7. Connect the outputs to Out2, Out4, Out6, Out8
4 devices with 1 input and 1 output each	Connect to In1 (Out5), In2 (Out6), In3 (Out7), In4 (Out8)

iH8-RJ25A/B Manifold Pinout



Pin	Name	Description
1	GND	Ground
2	OutA	Output Signal A
3	OutB*	Output Signal B*
4	OutC**	Output Signal C**
5	InA	Input Signal
6	V+	+28 V up to 1 A, 3 A max per iCon

Note

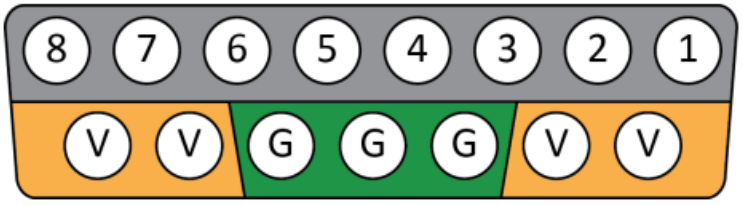
* Not available on connector 4 or 8
** Not available on connector 3, 4, 7, or 8

iHMSG

The iHMSG cable interfaces a third-party behavioral control box with the iHm manifolds. It has a DB25 on one end to connect to the third-party system, and two DB15s on the other end to connect to iHm manifolds. The DB15s are labeled “A” and “B” for the upper and lower bits.

DB15 Pinout

If you are not using a TDT manifold and are instead connecting directly to the iH8/iH16 DB15 port, here is the pinout:



iHn A pinout, looking into the connector

Pin	Name	Description	Pin	Name	Description
1	I/O 1	Input/Output 1	9	Vcc	+28 V up to 1 A, 3 A max per iCon
2	I/O 2	Input/Output 2	10	Vcc	
3	I/O 3	Input/Output 3	11	Gnd	Ground
4	I/O 4	Input/Output 4	12	Gnd	
5	I/O 5	Input/Output 5	13	Gnd	
6	I/O 6	Input/Output 6	14	Vcc	
7	I/O 7	Input/Output 7	15	Vcc	
8	I/O 8	Input/Output 8			

All Ground pins are shorted together. All Vcc pins are shorted together.
The B connector on the iH16 is identically wired, except Pins 1-8 are I/O 9-16.

Documents / Resources

	TDT iH16 iHn High Voltage Interface [pdf] Instructions iH16, iH8, iHm, iH16 iHn High Voltage Interface, iHn High Voltage Interface, High Voltage Interface, Voltage Interface, Interface

References

- Welcome - TDT Knowledge Hub
- iHn - Synapse Manual
- User Manual