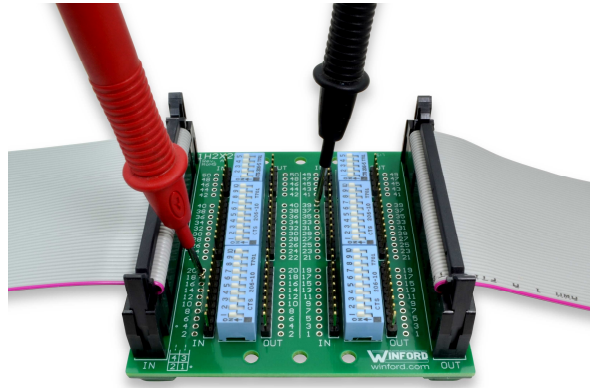


## Breakout Board Test Interface with Switches/Jumpers

### Functional Overview

Use this Breakout Board Test Interface to conveniently access any cable signal for testing, signal re-routing, or signal injection. This compact design is meant to be inserted into the cabling of a functioning system. Normal system operation can continue while signal probing and manipulation is conducted. This can be useful for re-routing signals within a cable or for fault tolerance analysis.



### Application

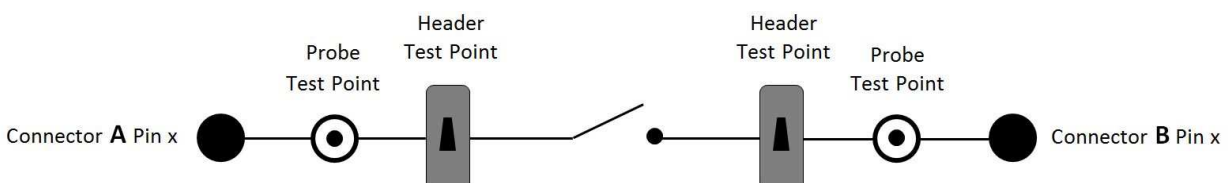
- In-circuit testing
- Debugging / troubleshooting
- Signal injection
- Fault testing and analysis (open circuits, shorts, cross-wiring, etc.)
- Rewiring selected connector signals

### Product Features

- Flexible test point layout supports both probes and header connections
- Panel mountable or DIN rail mountable
- Available with various connector types
- Every connector signal can be switched/jumpered and is accessible for testing and manipulation
- Clearly labeled with connector pin numbers for easy access

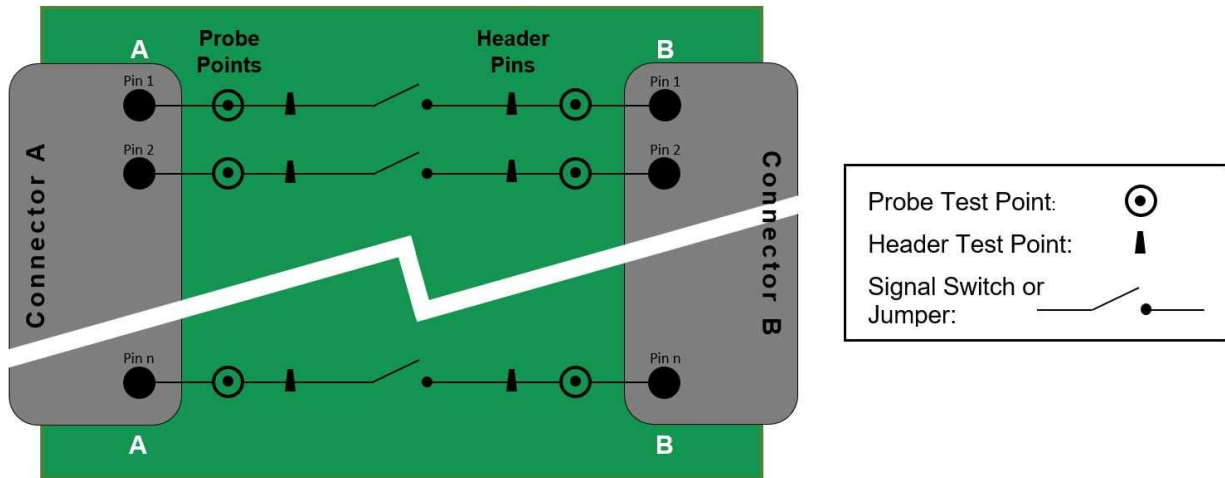
### Board Layout

The diagram below illustrates the functional layout for each connector signal. Test points are available for both connectors, which allows probing or signal injection on either side of the switch/jumper. Note that the header test points are standard 0.1" spaced single-row headers. Mating connectors are readily available.

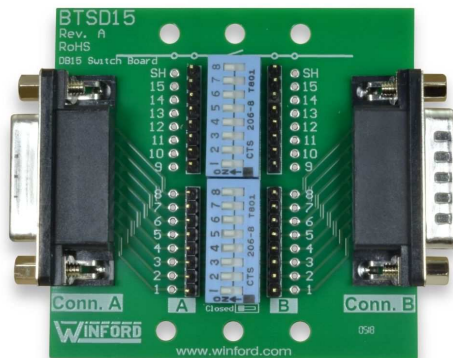


*Note: On the BTS1H2X25, Conn. A is labeled as 'IN', and Conn. B as 'OUT'.*

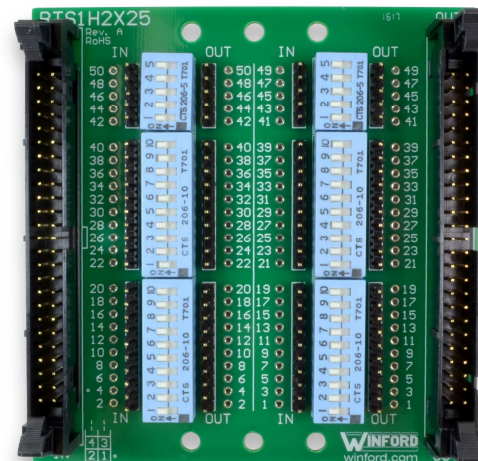
The test point layout is repeated for each connector signal, as shown in the diagram below. The 'A' and 'B' labels are used to distinguish between the two connectors and their associated test points. Note that the electrical signals may flow in either direction through the board.



The breakout board is laid out in either a 1-column or 2-column format, depending on the pin count involved. See illustrations below.



1-Column Format



Pins 2-50  
(even)

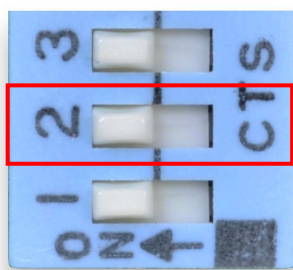
Pins 1-49  
(odd)

2-Column Format

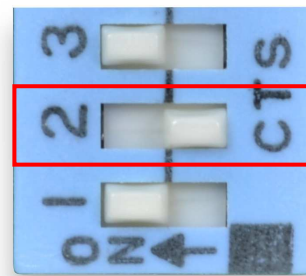
## Operation

The signals on each diagnostic board may be interrupted with either DIP switches or jumpers, depending on the model.

On diagnostic boards where DIP switches are used, each switch is a closed circuit when in the 'ON' position. With the switches closed, all connector signals simply pass through the board to the other connector. If desired, any switch can be opened to interrupt a signal, and another signal can then be injected into the system using the probe or header test points.



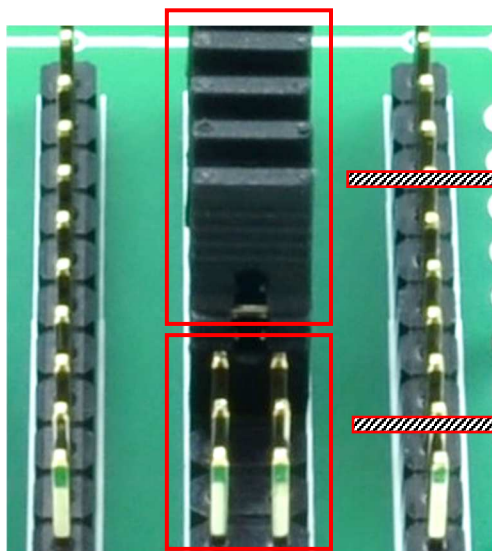
Closed Switch



Open Switch

Note that the numbers printed on the switch cases are irrelevant to the rest of the board. The numbers printed on the circuit board correctly correspond to the connector pins.

On diagnostic board models where jumpers are used, simply remove the jumper to open the circuit for a particular signal. Note that jumpers are used in some designs to provide increased current carrying capability relative to a DIP switch.

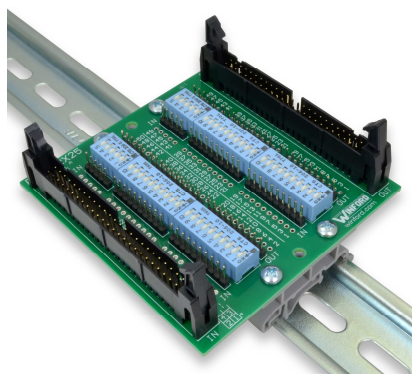


Jumper installed = closed circuit

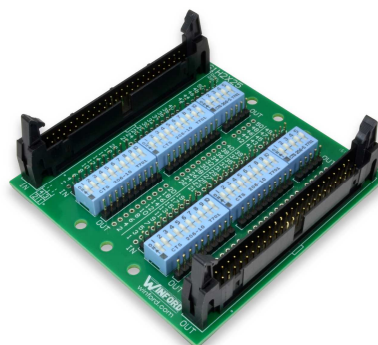
Jumper removed = open circuit

## Mounting Options

These products are available in two different mounting options. Product numbers ending with 'DIN' come with DIN clips already installed and ready to snap onto 35mm or 32mm DIN rail. Product numbers ending with -FT have stick-on rubber feet installed on the bottom side, allowing for benchtop use or panel mounting. For panel mounting, we suggest 1/4" nylon standoffs under the mounting holes, and #6 screws.



DIN Rail Mount  
(BTS1H2X25-DIN shown)



Panel Mount/Benchtop Use  
(BTS1H2X25-FT shown)

## Available Connectors

Breakout Switch Boards are available with a variety of connector types. The following types are stocked:

Connector Type	Part # With DIN Clips	Part # With Rubber Feet
2x5 Header	BTS1H2X5-DIN	BTS1H2X5-FT
2x7 Header	BTS1H2X7-DIN	BTS1H2X7-FT
2x10 Header	BTS1H2X10-DIN	BTS1H2X10-FT
2x17 Header	BTS1H2X17-DIN	BTS1H2X17-FT
2x20 Header	BTS1H2X20-DIN	BTS1H2X20-FT
2x25 Header	BTS1H2X25-DIN	BTS1H2X25-FT
DB9	BTSD9-R-DIN	BTSD9-R-FT
DB15	BTSD15-R-DIN	BTSD15-R-FT
DB15HD	BTSD15HD-R-DIN	BTSD15HD-R-FT
DB25	BTSD25-R-DIN	BTSD25-R-FT
DB37	BTSD37-R-DIN	BTSD37-R-FT
DB44HD	BTSD44HD-R-DIN	BTSD44HD-R-FT
DB50	BTSD50-R-DIN	BTSD50-R-FT
DB62HD	BTSD62HD-R-DIN	BTSD62HD-R-FT
DB78HD	BTSD78HD-R-DIN	BTSD78HD-R-FT
RJ12 (6P6C)	BTS6P6CSJ-R-DIN	BTS6P6CSJ-R-FT
RJ45 (8P8C)	BTS8P8CSJ-R-DIN	BTS8P8CSJ-R-FT

Connector Type	Part #	Part #
	With DIN Clips	With Rubber Feet
RJ50 (10P10C)	BTS10P10CSJ-R-DIN	BTS10P10CSJ-R-FT
IX Industrial (Key B)	BTSIX-BB-R-DIN	BTSIX-BB-R-FT
USB (A and B)	BTSUBFAF-R-DIN	BTSUBFAF-R-FT
VHDCI 68 (SCSI-5)	BTSVH68-DIN	BTSVH68-FT

## Notices

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