

## How to Use External Connector Board

### Frequently Asked Question #2

#### Question:

I have a TSI hot wire system with IFA signal processor. The system has been working fine so far. Now I need to take some data with external triggering, using a TTL signal. How can I accomplish this?

#### Answer:

The 8 Channel BNC Connector Board (2615228) is used with the 4 or 8 Channel PCI A/D Boards and is used for internal or external triggering of the A/D Board. This manual describes the steps required to set up for internal or external triggering.

#### Board Configuration

The 8 Channel BNC Connector Board (shown in Figure 1) does not have jumpers or switches that need to be set for internal or external triggering. The two sets of jumpers on the BNC Connector Board will be used to add functionality in the future. These do not need to be used.

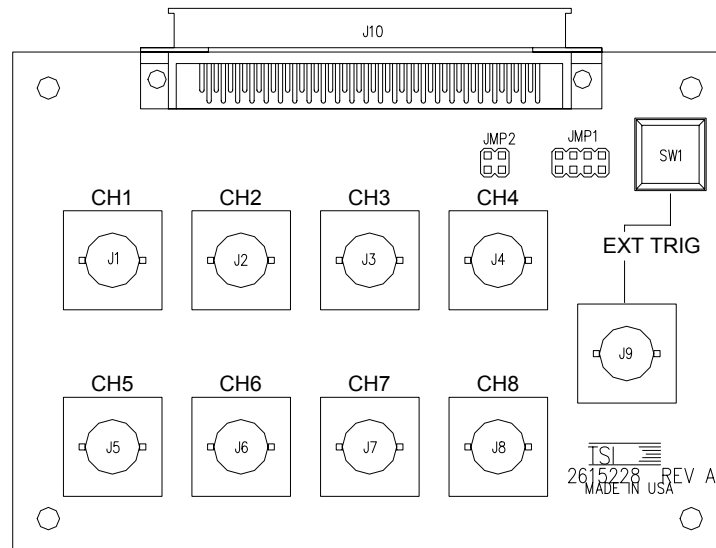


Figure 1: Sketch of BNC Connector Board (2615228) showing connectors for Probe Output Voltage signals and External Triggering.

## Probe Output Voltage Connections

The Probe Output Voltage cables should be connected from the IFA 300 to the BNC Connector Board at the connectors labeled CH1 – CH8.

## Cable Connection

The Cable supplied with the BNC Connector Board should be connected from the Connector Board (Connector J10) to the A/D Board in the computer.

## Internal (Software) Trigger

For Internal (Software) Triggering, no other connections are needed to the BNC Connector Board. The procedure for using the internal (software) trigger is described in the manual for the IFA 300, “IFA 300 Constant Temperature Anemometer System.”

## External Trigger

For External Triggering, an additional BNC Connection must be made. A BNC cable should be attached between your trigger source and the BNC Connector labeled “EXT TRIG” on the BNC Connector Board. The EXT TRIG signal should normally be high and triggering will occur at the high-to-low transition. Voltage levels are: High > 2.0V, Low < 0.8V.

The procedure for using an external trigger with ThermalPro is described below:

From the Acquisitions-Conditions Setup screen, change the Trig Source selection box to “External”

- For Mode “Graphics”, go on to the next screen (Real-time Data Acquisition) by pressing “Next Screen”
  1. The “Acquire” button on the new screen should now be labeled “Arm”. If it’s not, check that the Trigger Switch is set to “Extern” on this screen.
  2. Choose to “Discard” or “Save” the Data as desired.
  3. The “Arm” button should be pressed once before the first triggering event. Triggering events will activate the trigger provided the processing of the prior event has been completed. The “Arm” button will change to “Stop”.
  4. To stop the external trigger mode, press “Stop” once and the triggering will halt after the next trigger event.
- For Mode “Write Only” the “Acquire” button will change to “Arm”, and a new switch appears to “Stop” external triggering mode.
  1. “Arm” is pressed once before the first triggering event. Triggering events will activate the trigger provided the processing of the prior event has been completed.
  2. To stop the external trigger mode, press “Stop” once and the triggering will halt after the next trigger event.

A button is provided on the BNC Connector Board that can be used to manually produce an external triggering event. Pressing this button after the A/D Board has been “armed” (pressing “Arm” in ThermalPro, described above) will produce the event.

---

**TSI Incorporated** - 500 Cardigan Road, Shoreview, MN 55126-3996 USA  
USA Tel: +1 800 874 2811 E-mail: fluid@tsi.com Website: www.tsi.com  
UK Tel: +44 149 4 459200 E-mail: tsiuk@tsi.com Website: www.tsiinc.co.uk  
France Tel: +33 491 95 21 90 E-mail: tsifrance@tsi.com Website: www.tsiinc.fr  
Germany Tel: +49 241 523030 E-mail: tsigmbh@tsi.com Website: www.tsiinc.de  
Sweden Tel: +46 8 595 13230 E-mail: tsiab@tsi.com Website: www.tsi.se  
India Tel: +91 80 41132470 E-mail: tsi-india@tsi.com  
China Tel: +86 10 8260 1595 E-mail: tsibeijing@tsi.com

Contact your local TSI Distributor or visit our website [www.tsi.com](http://www.tsi.com) for more detailed specifications.



TRUST. SCIENCE. INNOVATION.