

SIGNAL ISOLATORS



Analog signal isolators INISOA (left) and OUTISOA (center) and trigger isolation adapter INISO-TRIGA (upper right) connect to AMI100D and HLT100C modules (lower right).

SIGNAL ISOLATION

Analog signal isolators are used to connect mains powered external laboratory equipment to the MP System when it also connects to electrodes attached to humans. Each signal isolator comes with an RJ11 cable for connection to the AMI100D or HLT100C High Level Transducer modules.

- For digital (TTL compatible) isolation to the MP digital I/O ports, use the STP100C optical interface.
- If the MP System does not electrically connect to human subjects, signal connections to external equipment can be made through the AMI100D/HLT100C module and the respective analog or digital connection cable.

**INISOA** Use to connect external equipment outputs to MP analog input channels. The INISO plugs directly into any of the 16 input channels on the AMI100D/HLT100C module and incorporates a 3.5 mm phone jack for signal input connections. Select the appropriate analog connection cable to connect to the external equipment’s output.

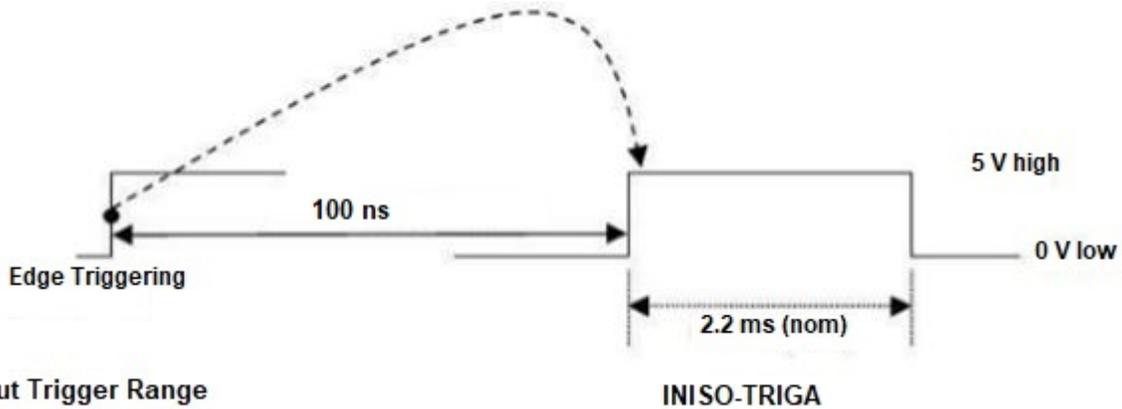
**OUTISOA** Use to connect MP analog signal outputs (amplifier and D/A) to external equipment inputs. The OUTISOA plugs directly into any of the 16 signal output channels, plus the two D/A outputs, on the AMI100D/HLT100C module and incorporates a 3.5 mm phone jack for signal output connections. The OUTISOA is very useful when the biopotential amplifier output signal requires routing to external equipment while being sampled by the MP System. Select the appropriate analog connection cable to connect to the external equipment’s input.

INISOA AND OUTISOA SPECIFICATIONS

Isolator Type:	Analog	Isolation Voltage:	1500 VDC
Bandwidth:	DC to 50 kHz	Isolation Capacitance:	30 pF
Input/Output Range:	±10 V	Connector:	3.5 mm mono phone jack
Input Resistance:	200K Ω	Weight:	50 g
Output Resistance:	120 Ω	Dimensions:	2.6 cm (high) x 2.6 cm (wide) x 7.6 cm (long)
Output Current:	±5 mA	Included Cable:	2.1 m (straight through, M/M, 6 pin, RJ11)
Offset Voltage:	±20 mV (nominal)	Interface:	AMI100D or HLT100C
Temperature Drift:	200 μV/°C (nominal)		
Noise:	2.5 mV (rms)		

**See also:** Setup notes for external devices and channel contention issues.

TTL TRIGGER ISOLATION



Input Trigger Range

Fig. 1

The TTL Trigger Isolation Adapter is ideal for recording trigger signals produced by MRI scanners (triggers on rising edge). Short duration TTL pulses have their pulse width elongated by the adapter, and this pulse width elongation allows short trigger pulses to be recorded using lower sampling rates.

This isolation adapter connects a TTL level source to the AMI100D/HLT100C module in the Control room (do not place INISO-TRIGA in Chamber room).

INISO-TRIGA SPECIFICATIONS

- Input trigger: pulse profile: Any TTL-type pulse  
 pulse width: 500 ns minimum (no max)  
 triggering: Rising (positive) edge of input pulse
- Output pulse: profile: Positive pulse  
 pulse width: 2.2 ms (nominal)  
 pulse voltage range: 0-5 V (TTL)
- Propagation delay: ~ 100 ns from rising edge of input trigger to rising edge of output signal
- Input Voltage: High 4-10 V; Low 0-1 V
- Input Current: High 5-15 ma; Low 0-0.25 ma
- Isolation: 1500 VDC
- Connectors: BNC female (Input) and phone plug (Output)
- Cable: 2 m; phone plug connectors
- Interface: AMI100D or HLT100C module (plugs directly into any of the 16 input channels)

**NOTE:** INISO, OUTISO, and INISO-TRIG were discontinued in February of 2019. Current offerings are INISOA, OUTISOA, and INISO-TRIGA to support AMI100D compatibility in addition to HLT100C.

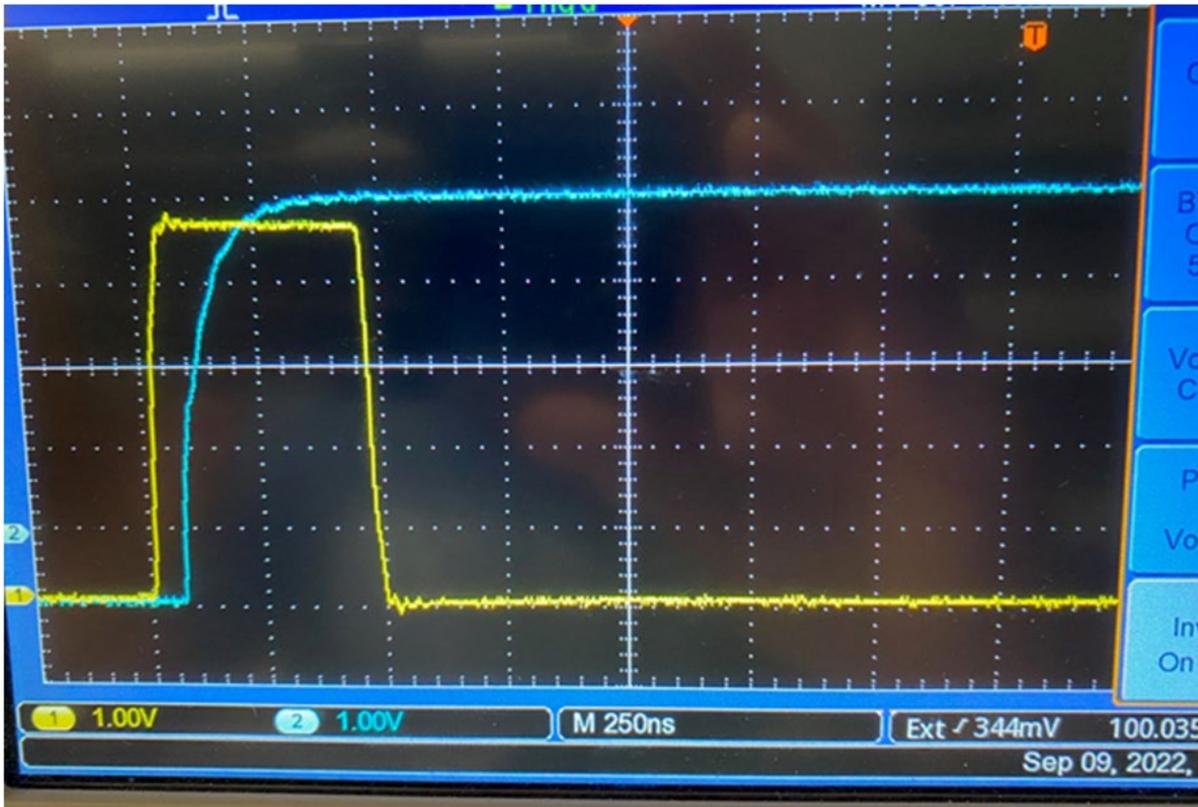


Fig. 1: Image of input 500 ns TTL positive-going pulse (yellow) to the INISO-TRIGA unit (blue).

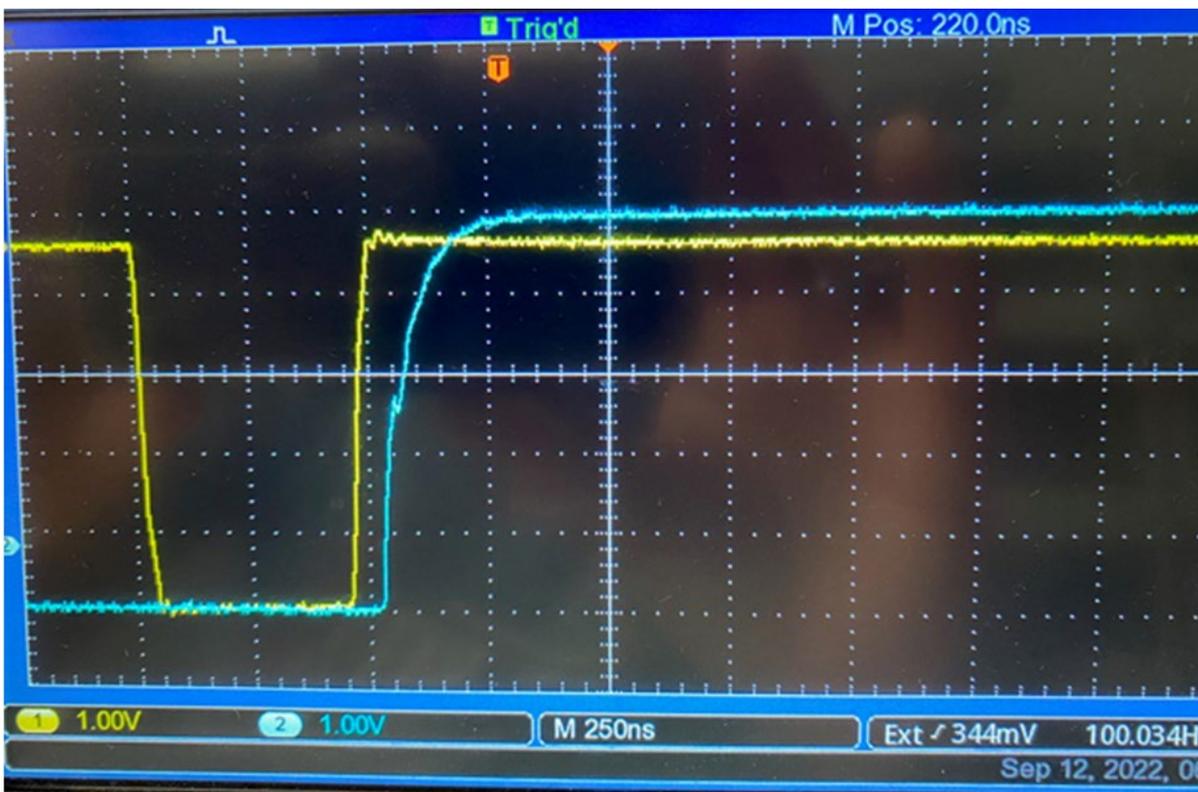


Fig. 2: Image of input 500 ns TTL low-going pulse (yellow) to the INISO-TRIGA unit (blue).