med associates inc

instrumentation and software for research

28V DC TO TTL ADAPTER

SG-231

USER'S MANUAL

DOC-203
Rev. 1.6

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CHAPTER 1 | INTRODUCTION

The SG-231 is a 28V DC to TTL adapter allows the user to send TTL signals from Med Associates devices such as response levers, head entry detectors, nose pokes, etc. (**Configuration 1**).

The SG-231 also allows the user to send TTL signals programmatically, using a Med Associates Interface and software (**Configuration 2**).

TTL signals are typically used to synchronize with a third party acquisition interface, operate a TTL device, or log event markers in a data acquisition system.

Our latest model includes 2 TTL outputs; 1 BNC TTL output and 1 Screw Terminal TTL output. The user can use either one individually or both simultaneously to trigger 2 TTL devices at the same time.

Specs:

17mA @ Idle

21mA @ Operation

Figure 1.1 – SG-231 28V DC to TTL Adapter

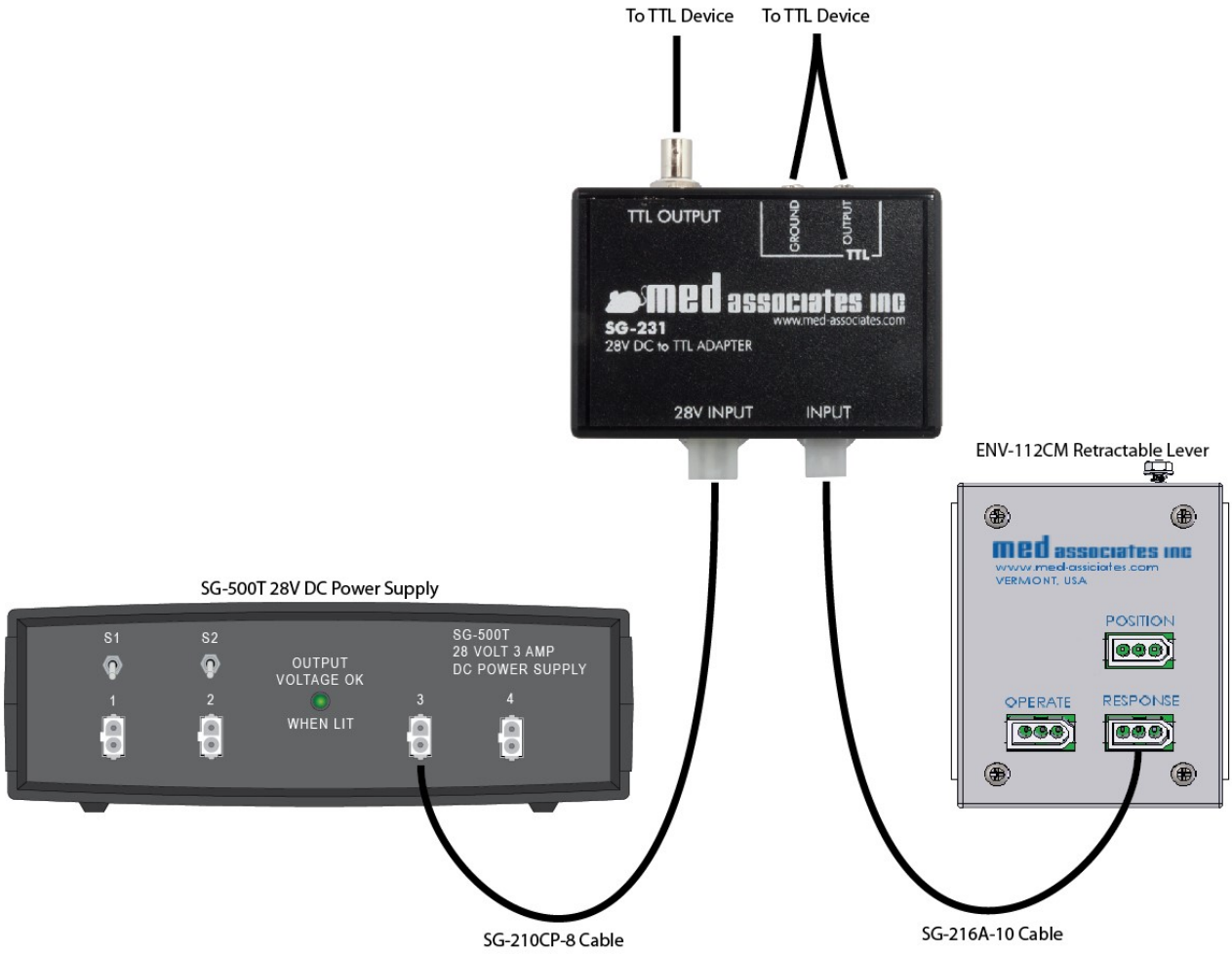
CHAPTER 2 | HARDWARE

Configuration 1

This configuration allows the user to send TTL signals from a Med Associates device in a standalone or custom application.

In this configuration the SG-231 requires an input from a 28V DC power source and a Med Associates device, such as a retractable lever (both sold separately). See Figure below.

Figure 2.1 – SG-231 Configuration 1

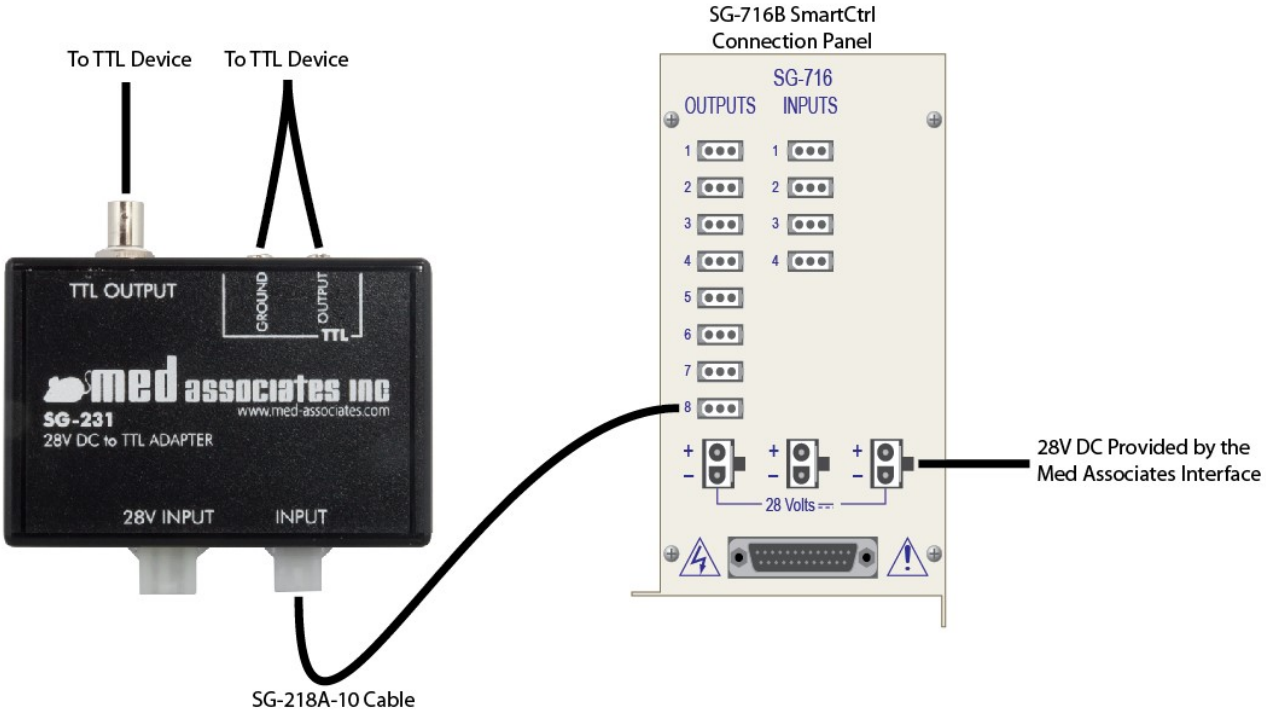


Configuration 2

This configuration allows the user to convert the 28V DC signal from an available output on a powered Med Associates Connection Panel to a TTL signal.

The SG-231 does not require a 28V DC input in this configuration; the output on the powered Connection Panel supplies 28V DC. See Figure below.

Figure 2.2 – SG-231 Configuration 2



Operate LED

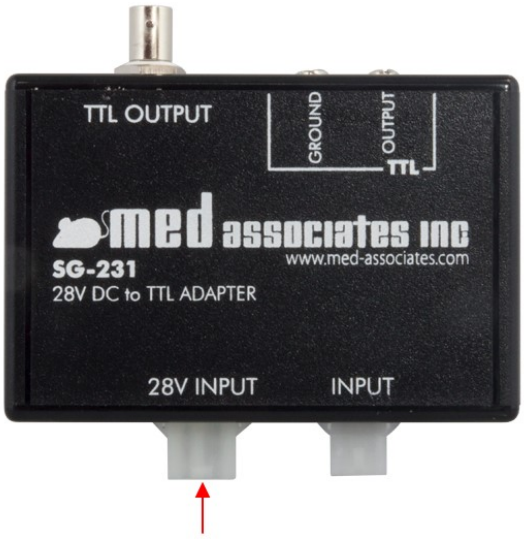
The Operate LED indicator, Figure 2.3, will illuminate when the unit receives an input signal to operate the TTL device.

Figure 2.3 - Operate LED Indicator

28V Input Connector

- **Configuration 1 -** The **28V INPUT** connector must be connected to a 28V DC power supply (e.g. SG-500T).
- **Configuration 2 -** The **28V INPUT** is not required.

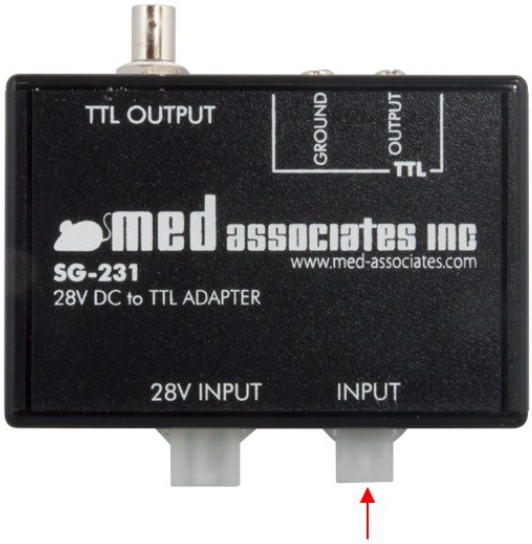
Figure 2.4 - 28V Input Connector



Med Input Connector

- **Configuration 1 -** The **INPUT** connector is connected to the output of a Med Associates lever, head entry detector, nose poke device, etc.
- **Configuration 2 - T**he **INPUT** connector is connected directly to an available output on a powered Med Associates Connection Panel.

Figure 2.5 - Input Connector



TTL Outputs

TTL OUTPUT BNC: Connect the TTL OUTPUT BNC to the TTL input device.

Figure 2.6 – TTL Output BNC Connector

TTL OUTPUT Screw Terminal: Connect the TTL Output screw terminal to the TTL input device.

TTL GROUND Screw Terminal: Connect to the TTL input device's ground.

NOTE: Do not connect the TTL Ground connection to the 28V power supply ground. These grounds must remain isolated.

NOTE: Place fork lugs between screw head and washer.

The optional Med Associates PHM-155G screw terminal to BNC cable makes for convenient connections to most TTL devices and if 2 BNC connections are desired.

Figure 2.7 - TTL Ground and Output Screw Terminals

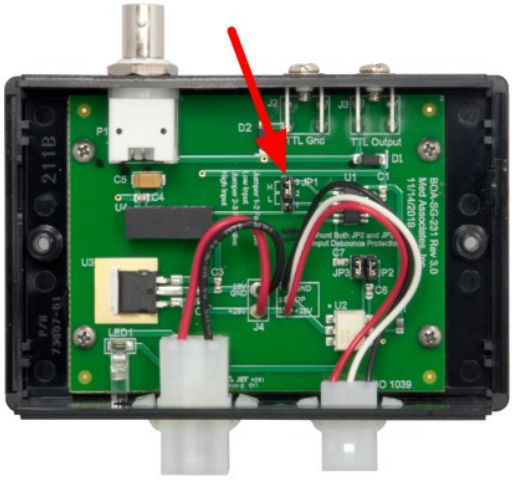
CHAPTER 3 | TTL OUTPUT SETTING

The SG-231's TTL logic jumper is factory set to the Active High (jumper connecting pins 2 and 3).

In the Active High position, the TTL signal will be LOW (~0V) when off and HIGH (~5V) when operated.

To change the TTL logic jumper to the Active Low (Jumper connecting pins 1 and 2), remove the 2 screws from the bottom of the SG-231, flip over, and lift the top cover off. Near the center of the printed circuit board is jumper location JP1, see Figure 3.1.

Figure 3.1 – TTL Logic Jumper



Remove the jumper and reposition it to cover pins 1 and 2 as shown in Figure 3.2.

In the Active Low position the TTL signal will be HIGH (~5V) when OFF and LOW (~0V) when operated.

Figure 3.2 - Active High Jumper Setting

APPENDIX A | CONTACT INFORMATION

Please contact Med Associates, Inc. for information regarding any of our products.

For Technical questions, email support@med-associates.com.

For Sales questions, email sales@med-associates.com.

Visit our website at www.med-associates.com.