

# Model 3830

## Multiplexer



### FEATURES

- ◆ Six BNC connectors for inputs and/or outputs
- ◆ Reed-relay DPST switching
- ◆ LED indicators show relays that are energized
- ◆ Complete with software for control from Windows XP/ Vista
- ◆ USB interface for power and control
- ◆ ActiveX control for use with LabVIEW, C++, Visual Basic, and VBA

### DESCRIPTION

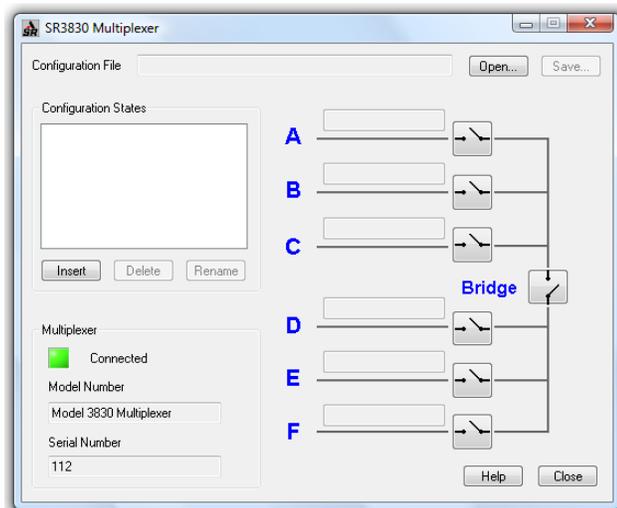
The Model 3830 Multiplexer (mux) makes it easy to implement computer-selected interconnections between different instruments. Six floating BNC connectors can be used as either inputs or outputs and are coupled to one of two common buses via DPST reed-relay switches. This ensures that both inner and outer parts of the connector are isolated when the relevant relay is not energized. The two buses can also be connected together via a seventh "bridge" reed relay, allowing operation either as two, two-input, one-output muxes or as a five-input, one-output mux. Other configurations are of course possible.

The unit is powered and controlled directly from the PC's USB port, so requires no additional power source. Operation is entirely via software, with no manual switches or settings on the module.

The supplied instrument control software consists of two layers. At the upper level, a simple Windows dialog application, "SR3830 Multiplexer", offers a convenient panel that allows switching patterns, known as "states", to be set up graphically and combined into "configuration" files.

### APPLICATIONS

- ◆ Input and output signal multiplexing
- ◆ Computerized test systems



Easy to use SR3830 Multiplexer applications software

## Multiplexer

Configuration files can be saved to and recalled from disk. Using these files makes replication of experiments very straightforward.

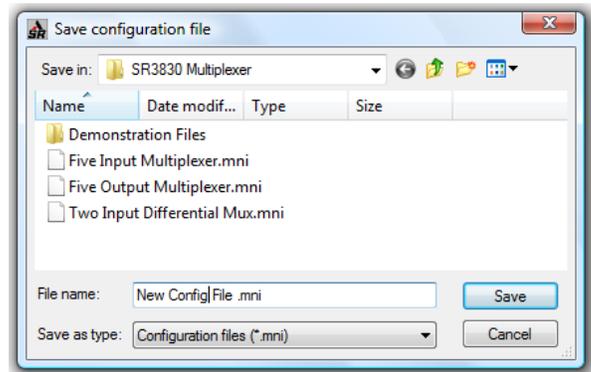
Two main modes of operation are therefore possible. Users who simply want to operate the multiplexer "out of the box" need do no more than plug it in, install the driver and software, and then use the SR3830 Multiplexer software to control it.

Alternatively, when the multiplexer is to be used as part of a computer controlled test system, then the user can develop software to control it via the SR3830Comms ActiveX control. The control eliminates the need for users to write the low-level code needed to send commands to and receive responses from the multiplexer, allowing them to concentrate on developing the higher level program to run their experiments. Typical applications include:

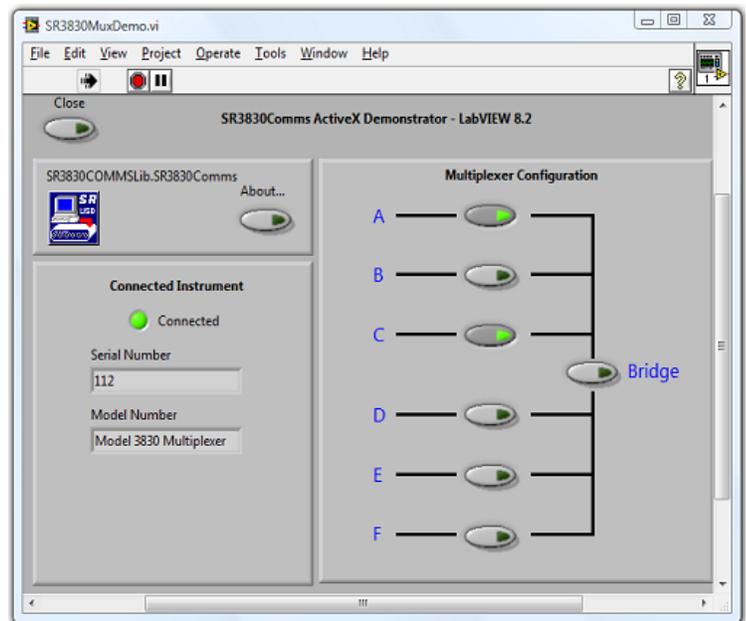
- Switching one of several sensor outputs to the input of a measuring instrument, such as a voltmeter or oscilloscope
- Connecting a signal source, such as an oscillator, to one of several actuators or drive coils
- Test and measurement systems implement in LabVIEW where a **SIGNAL RECOVERY** multiplexer needs to be controlled at the same time as instruments from different suppliers.
- Measurement system using scripted web pages (HTML files) operated via Internet Explorer.

The SR3830Comms control can of course also be used at the same time as other **SIGNAL RECOVERY** software ActiveX controls, such as SRInstComms, allowing sophisticated systems to be assembled. For example, a group of five photodiodes could be connected to the current preamplifier input of a model 7270 DSP lock-in amplifier via the model 3830 and then, using both controls a user-developed application program could sequentially measure the signal on each photodiode.

Both the top level SR3830 Multiplexer software and the lower-level SR3830Comms ActiveX control include comprehensive on-screen help files, while examples of how to use the control in LabVIEW, Visual Basic, VBScript, Visual C++, and Excel are also supplied. Also included is an instruction manual in both printed and PDF formats.



Save and Recall Switch Configurations



Sample LabVIEW Application Program

## Specifications

### General

Six way input/output multiplexer offering isolated switching via reed relays. Power and control via USB and supplied software. ActiveX control included.

### Inputs/Outputs

Connectors	BNC, no internal load
Switches	Reed relay, DPST
Max Voltage	50 V between BNC inners and outers and from BNC to ground
Max Current	200 mA
Contact Resistance	< 0.15 Ω

### Switching

Six DPST relays connect A, B, C to bus 1 and D, E, F to bus 2. Seventh "bridge" relay connects bus 1 to bus 2

### Indicators

LED indicates when corresponding relay is energized

### USB Connector

Rear-panel, female USB connector for connection to the PC or a USB hub.

### General

Power Requirements	
Voltage	<500 mA @ +5 V DC, supplied via USB
Dimensions	
Width	5½" (134 mm)
Depth	4½" (114 mm)
Height	1¼" (32 mm)
Weight	9.9 oz (280 g)

### Software

A full applications package for Windows XP/Vista (32-bit versions) allowing any switching combination to be set up graphically is provided. Patterns can be saved and recalled from disk. ActiveX control also included for use with compatible programming languages. Both top-level and ActiveX software include on-screen help. Instruction manual supplied in both printed and PDF formats.