






MiniMux

THE MIGHTY MINI MULTIPLEXER

Key Features

- 
COST EFFECTIVE
 Low-cost 16 or 32-channel expansion, supporting 2 (32 channel) or 4-wire (16 channel) switching
- 
DAISY CHAIN
 Unlimited daisy-chaining of multiple boards with only two control signals
- 
LIGHTNING PROTECTION
 Transient protection on power and control inputs. Spark gaps on all channels
- 
COMPATIBLE
 Compatible with numerous control modules
- 
EFFICIENT
 Very low operating and quiescent power and compact footprint

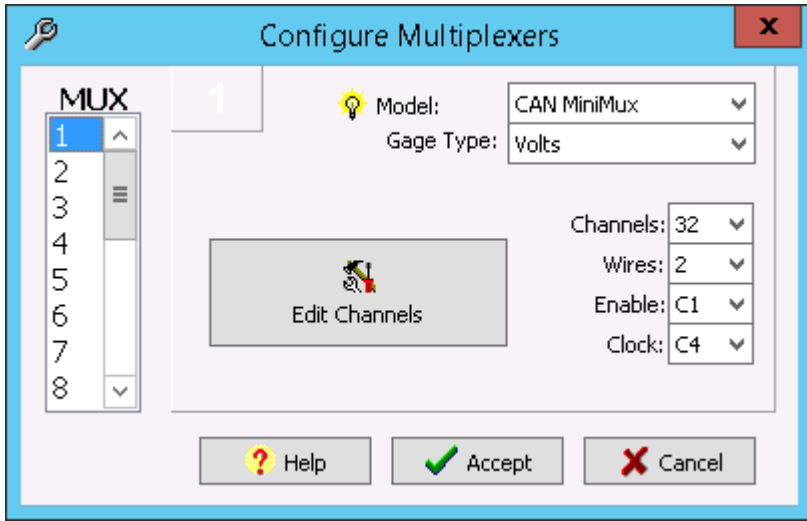
The **MiniMux Multiplexer** is designed to expand the number of instruments that can be read by a compatible Automatic Data Acquisition System (ADAS). It supports two switching modes, 16-channel by 4-wire switching, or 32-channel by 2-wire switching.

An externally accessible switch configures the switching mode. Multiple MiniMux multiplexers (of either switching configuration) can be daisy-chained to form much larger switching networks. Low contact resistance relays provide **compatibility with a wide range of instruments**, including vibrating wire, resistance strain gage, thermocouples, linear potentiometers, and 4-20 mA, among others.

Two control inputs activate the MiniMux and then advance through the channels. Logic levels for either the enable or clocking input can utilize 5 V to 12 V logic input, with a maximum input of 16 V. The control inputs are compatible with a wide variety of control modules including those manufactured by Campbell Scientific®, Sutron® and Datataker®.

Transient protection on the control inputs provides **high reliability from electrical transients**, whether ESD or lightning. The power inputs are also equipped with transient protection and reverse-polarity protection.





MiniMux configuration form as presented in Canary Systems' MultiLogger® software suite

Spark gaps protect signals on all channels from lightning damage.

The MiniMux utilizes advanced high-reliability components for its terminal blocks, relays, and microcontroller to help ensure years of reliable and trouble-free operation. All components have been selected for **ultra-high reliability** and function in demanding environments that may include high heat, humidity, and/or dust.

The MiniMux is covered by our standard Limited Warranty for a period of 2 years from the ship date. It may be packaged directly into the Automatic Data Acquisition System (ADAS) enclosure or installed in a variety of standard enclosures. Contact Canary Systems for enclosure and cable entry options.

Specifications - MiniMux Multiplexer

General

- **Power requirements:**
11-16 VDC (unregulated), nominal 12 VDC
- **Disabled current:** less than 1 μ A
- **Channel activated current (2 or 4-wire):**
~40 mA
- **Control line input impedance:**
100 kilohms
- **Control line input levels:**
TTL or CMOS (5 V logic) (Maximum Input voltage on any control line: 14 VDC)
- **Power input transient protection:**
17.1 VDC, 1500 W Transzorbs
- **Control signal input transient protection:**
5.8 VDC, 1500 W Transzorbs
- **Operating temperature:**
-40 to +70° C (-40 to +160° F)

Dimensions:

- **Overall (L x W x H):**
8.5 x 4.25 x 1" (216 x 108 x 25 mm)
- **Mounting Hole Pattern (L x W):**
8.0 x 3" (200 x 75mm)
- **Mounting Hole ID:** 0.125" (3.2 mm)

Lightning Protection

- **Sparkover Voltage @ 100 V/s +/- 20% Tolerance:** 75 VDC
- **Impulse Sparkover Voltage @ 1 kV/us:**
600 VDC
- **Impulse Discharge Current**
8x20 μ s, 10 hits (5 hits each polarity) 1 kA,
8x20 μ s, 300 hits (150 hits each polarity)
100 A
- **Impulse Withstanding Voltage**
10/700 μ s 10 hits
(5 times each polarity) 4 kV
- **Capacitance @ 1 MHz** <0.5 pF
- **Insulation Resistance @ 100 Vdc**
1000 M Ω
- **UL Rating** UL497B #E179610

Control Measurements (typical)

- **Disabled Current:** 0.1 μ A (single mux)
- **Standby Current (No channels engaged):**
4 mA (single mux)
- **Active Current (Channel 1):**
40 mA (single mux)
- **Disabled Current:**
0.15 μ A (two mux's daisy-chained)
- **Standby Current (No channels engaged):**
5 mA (two mux's daisy-chained)
- **Active Current (Channel 1):**
40 mA (two mux's daisy-chained)
- **Enable Output Voltage:** 4.75 VDC

Relays

- **Power:** 11 mA @ 12 VDC (140 mW)
- **Contact type:** Gold-clad silver alloy
- **Electrostatic capacitance:** 3 pF
- **On resistance:** 50 m Ω
- **Coil resistance:** 1,028 Ω
- **Maximum switching voltage:**
125 VAC, 110 VDC
- **Maximum switching power:**
30 W (resistive load)
- **Maximum switching current:** 2 A
- **Operate time:** ~2 milliseconds
- **Release time:** ~1 milliseconds
- **Initial contact bounce:** ~1 millisecond
- **Surge withstand (between open contacts):** 1,500 V
- **Switching life (mechanical):**
100,000,000 operations

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