TAMS 1813A 13 Channel Multiplexer

Contents

Introduction

The TAMS 1813A is a 13 channel multiplexer switch. See Figure 1.

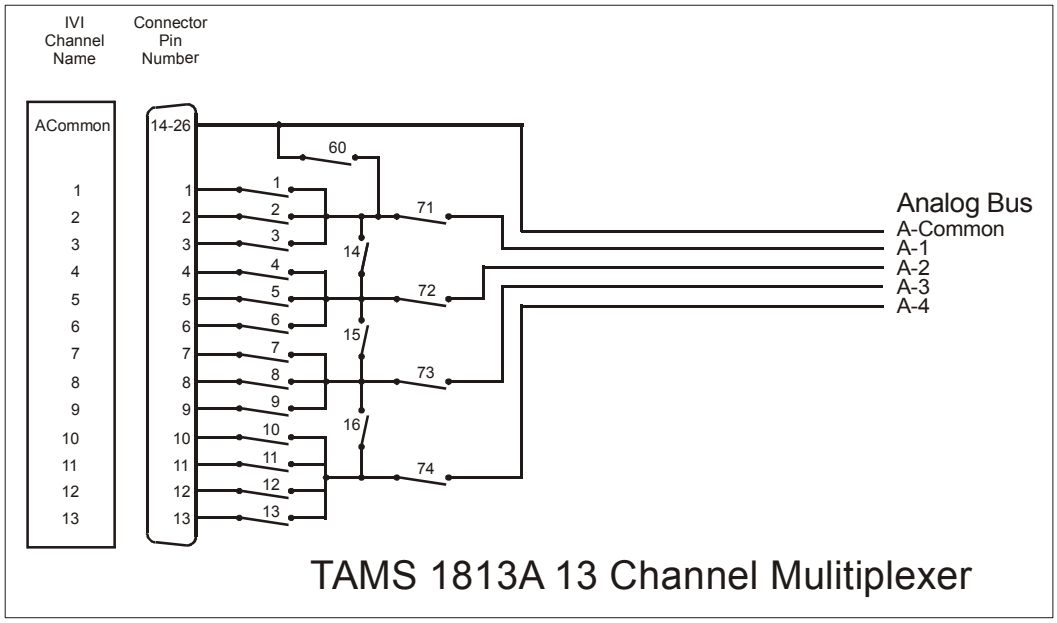

Figure 1 -- TAMS 1813A 13 channel multiplexer

The multiplexer allows consolidation of 13 signals down to a 4 wire Analog Bus. The mulitplexer itself is composed of four smaller multiplexers. These smaller multiplexers can be used in isolation or combination through the configuration relays 14, 15, and 16.

For example, to multiplex terminals 1 through 13 to A-1, send the following command:

```
CLOSE (@14:16,71)
```

This command closes relays 14, 15, 16, and 71. The relays 71 through 74 allow the multiplexer to be disconnected from the Analog Bus in order to reduce the stray capacitance of a large switching network. See the Installation and Operation Manual, and the Application Note 1801.

Note that closing a relay does NOT open any other relays. To automatically scan through a series of relays, see the Scanning Overview in the Direct IO manual at Help / Documentation / DirectIO.pdf.

The TAMS 1813A can only close a maximum of 30 relays at any given time.

Please observe all safety precautions listed in the Installation and Operation Manual.

Relays types

All relays are reed relays.

Relay Operation

Direct IO

Direct IO commands open and close the relays as follows:

```
CLOSE (@1,71)  -- close relays 1 and 71, which
               -- connects terminal "1" to "A-1"
               -- see figure 1

OPEN (@1, 71)  -- open relays, disconnect terminals

CLOSE (@71:74) -- close relays 71, 72, 73, and 74
OPEN (@71:74)  -- open relays 71, 72, 73, and 74
```

IVI driver and NI Switch Manager

These drivers all use a "connect pin to pin" model. Instead of referencing the relay number, they reference the terminal or pin name, here called a "channel name".

Consider this example:

```
ts1848a_Connect (h, "1", "A1");
```

This call connects channel "1" with Analog Bus channel "A1". (The IVI standard does not let us use A-1, so we use A1 instead). In other words, it closes relays 1 and 71. This call opens those relays:

```
ts1848a_Disconnect (h, "1", "A1");
```

This call closes relays 60 and 71, connecting the Analog Bus Common to channel "A1":

```
ts1848a_Connect (h, "A1", "ACommon");
```

The channels for the IVI driver and NI Switch Manager are shown in Figure 1.

The channels for the IVI driver and NI Switch Manager are shown in Figure 1. This is the list of all IVI channels:

```
"1",  "2",  "3",  "4",  "5", "6", "7", "8", "9", "10",
"11", "12", "13"
"A1", "A2", "A3", "A4", "ACommon"
```

Channels 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13 are the pins of the front connector.

Channels A1, A2, A3, A4, and ACommon are the Analog Bus channels and the Analog Common.

Example commands:

```
ts1805a_Connect (h, "6", "A2")
      -- close relay 6 and 72

ts1805a_Connect (h, "4", "9")
      -- close relays 4, 9, and 15

ts1805a_Disconnect (h, "6", "A2")
      -- open relays 6 and 72
```

Connectors

The TAMS 1848A uses standard "High Density D-subminiature" connectors. Mating cables are available from L-Com and other suppliers. See www.l-com.com.

Appendix A: Specifications

Supported Configurations

Operating systems: Windows 2000 and Windows XP

Microsoft Internet Explorer version 5.01 or later is required

USB versions: 2.0 and 1.1 Full speed

Electrical

USB connection: USB "B" type connector

USB current consumption: 350mA maximum

Switched voltage and current:
100VAC maximum
100VDC maximum
0.5 Amps maximum

Carrying current: 1.5A maximum

Switched power: 10W maximum

Total Channel Resistance: 0.3 Ohms initial, typical
(Measured from the front panel connector to the rear panel Analog Bus)

General

Operating Temperature: 0C to 40C

Storage Temperature: -40C to 70C

Transportation Temperature: -40C to 70C

Operating Altitude: 3000 meters maximum

Operating Humidity: 10 – 80% RH, non-condensing

Note: all specifications are subject to change without notice.