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Model No. SW2X1
-GPI SWITCHER
-RS422 SWITCHER

USER MANUAL

Rev. 1.2

For Use with Rev 2.0 Hardware

Table of Contents

REVISION HISTORY

072707	Rev. 1.00	Original manual
081707	Rev. 1.01	Added GPI wet-dry jumper description.
102411	Rev. 1.1	Added 1x2 mode for SW2X1-RS422
082312	Rev 1.2	Added polarity indicators to RS422 pin outs
061113	Rev 1.3	Revised wet and dry jumper configuration for SW2x1 GPI

1. STANDARD FEATURES

- The SW2X1, Electronic A / B switch has 2 buffered inputs and one buffered output for easy interfacing. There are no mechanical multi-pole switches to wear out or fail.
- Front panel control and remote control provide flexible operation to fit your specific application.
- Quickly and easily switch from primary system to backup system at the press of a button.
- In the event of power failure, on-board bypass relays switches "A" input to output.

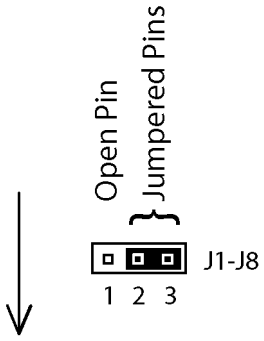
2. INSTALLATION SW2X1-GPI

a. Chose whether the GPI will be self powered or have power supplied by the source equipment. Each GPI is independently settable.

JUMPERS: J1 – J8 Revision 08/16/07

DRY: External circuit powers INPUT opto-isolator

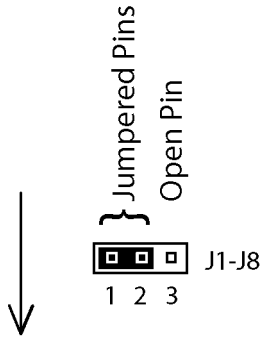
INPUT is isolated from other inputs



Place jumper over pins 2 and 3

WET: SW2X1 powers INPUT opto-isolator

External circuit provides path to ground



Place jumper over pins 1 and 2

b. Connect primary GPO source to the **A input** connector, use male D9 cable connector.

c. connect secondary GPO source to the **B input** connector, use male D9 cable connector**.**

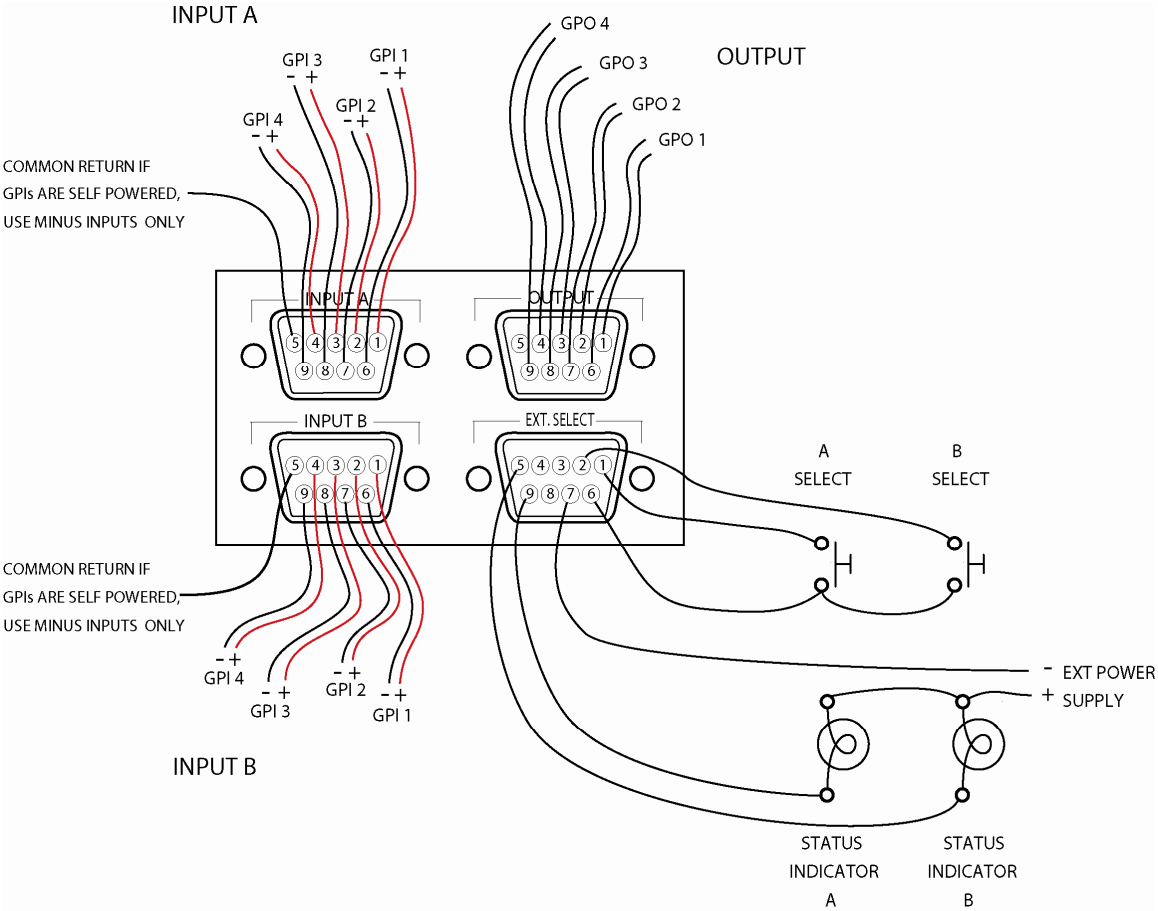
d. Connect the destination GPI connections to the **Output** connector.

e. Connect the **power supply**'s connector (9-pin female D) into the housing's **POWER** connector (male 9-pin D). The **PWR** LED on front panel will light. Power supply is +5VDC. 2A.

f. **NOTE**: The Power-up state defaults to input A and its status indicator will light.

Installation is complete.

3. CONNECTION DIAGRAM SW2X1-GPI



4. INSTALLATION SW2X1-RS422

a. Connect one end of an RS422 cable (9-pin D-type, male to male, 1 to 1) into the rear panel connector (9-pin D-type) labeled **INPUT A**. Connect the other end to an RS422 serial source (controller #1).

b. Connect a second RS422 serial source (controller #2) in the same manner to **INPUT B.**

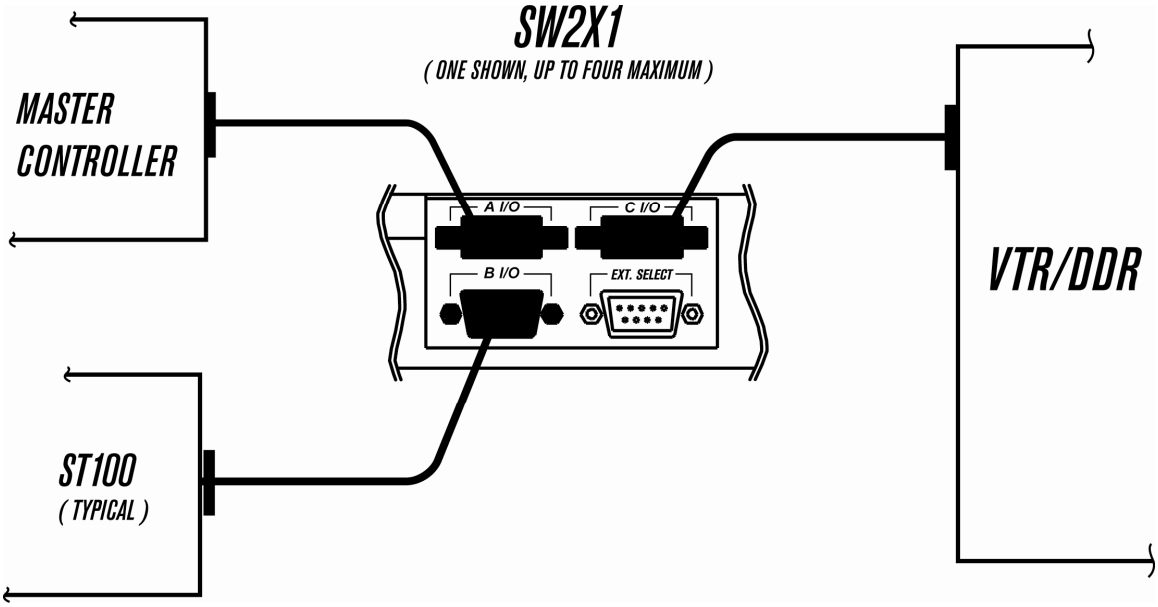
c. Connect an RS422 serially controlled VTR, (using an RS422, 9-pin D-type male to male cable) into the 9-pin female connector labeled **OUTPUT**.

d. Connect the **power supply**'s connector (9-pin female D) into the housing's **POWER** connector (male 9-pin D). The **PWR** LED on front panel will light. Power supply is +5VDC. 2A.

e. **NOTE**: The Power-up state defaults to input A and its status indicator will light.

Installation is complete.

5. CONNECTION DIAGRAM SW2X1-RS422



6. MODE SELECTION SW2X1-GPI

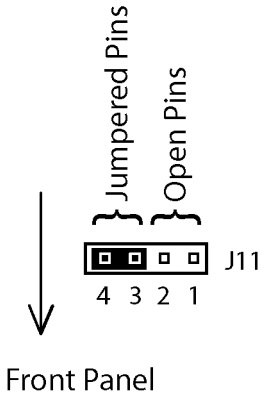
The SW2X1-GPI supports two modes of operation.

a. MODE 1

Remote and local control is possible.
Active A input or A switch = Select A input.
Active B input or B switch = Select B input.

This is the default mode. The jumper is installed over pins 3 and 4 on header J11 on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



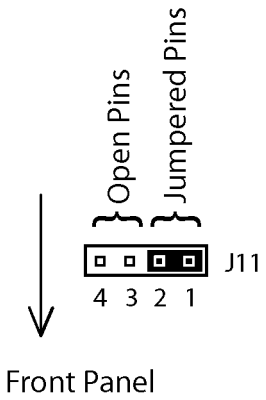
Jumper Diagram for Mode 1.

b. MODE 2

Remote control **ONLY** is possible. Local control is disabled.
The LOCKOUT LED is turned on.
Remote B input inactive = Select A input.
Remote B input active = Select B input.

The jumper is installed over pins 1 and 2 on header J11 on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



Jumper Diagram for Mode 2.

7. MODE SELECTION SW2X1-RS422 (LOCAL / REMOTE CONTROL)

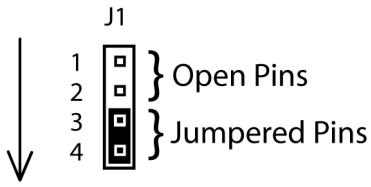
The SW2X1-RS422 supports two modes of control.

a. MODE 1

Remote and local control is possible.
Active A input or A switch = Select A input.
Active B input or B switch = Select B input.

This is the default mode. A jumper is installed over pins 3 and 4 on the J1 header on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



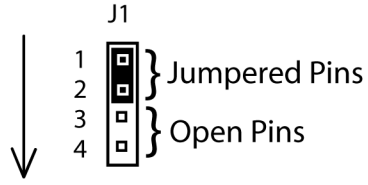
Jumper Diagram for Mode 1.

b. MODE 2

Remote control **ONLY** is possible. Local control is disabled.
The LOCKOUT LED is turned on.
Remote B input inactive = Select A input.
Remote B input active = Select B input.

A jumper is installed over pins 1 and 2 on the J1 header on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



Jumper Diagram for Mode 2.

8. MODE SELECTION SW2X1-RS422 (2X1 / 1X2 MODE)

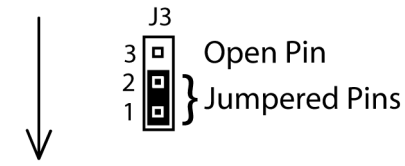
The SW2X1-RS422 supports two modes of operation.

a. MODE 1

The unit operates in 2 in / 1 out mode.

This is the default mode. A jumper is installed over pins 1 and 2 on the J3 header on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



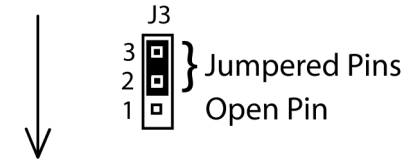
Jumper Diagram for Mode 1

b. MODE 2

The unit operates in 1 in / 2 out mode.

A jumper is installed over pins 2 and 3 on the J3 header on the PCB.

The mode of operation is determined ONLY at POWER UP. Changing the jumper after power up will have no effect. Power MUST be turned off then on to change the SW2X1's MODE.



Jumper Diagram for Mode 2

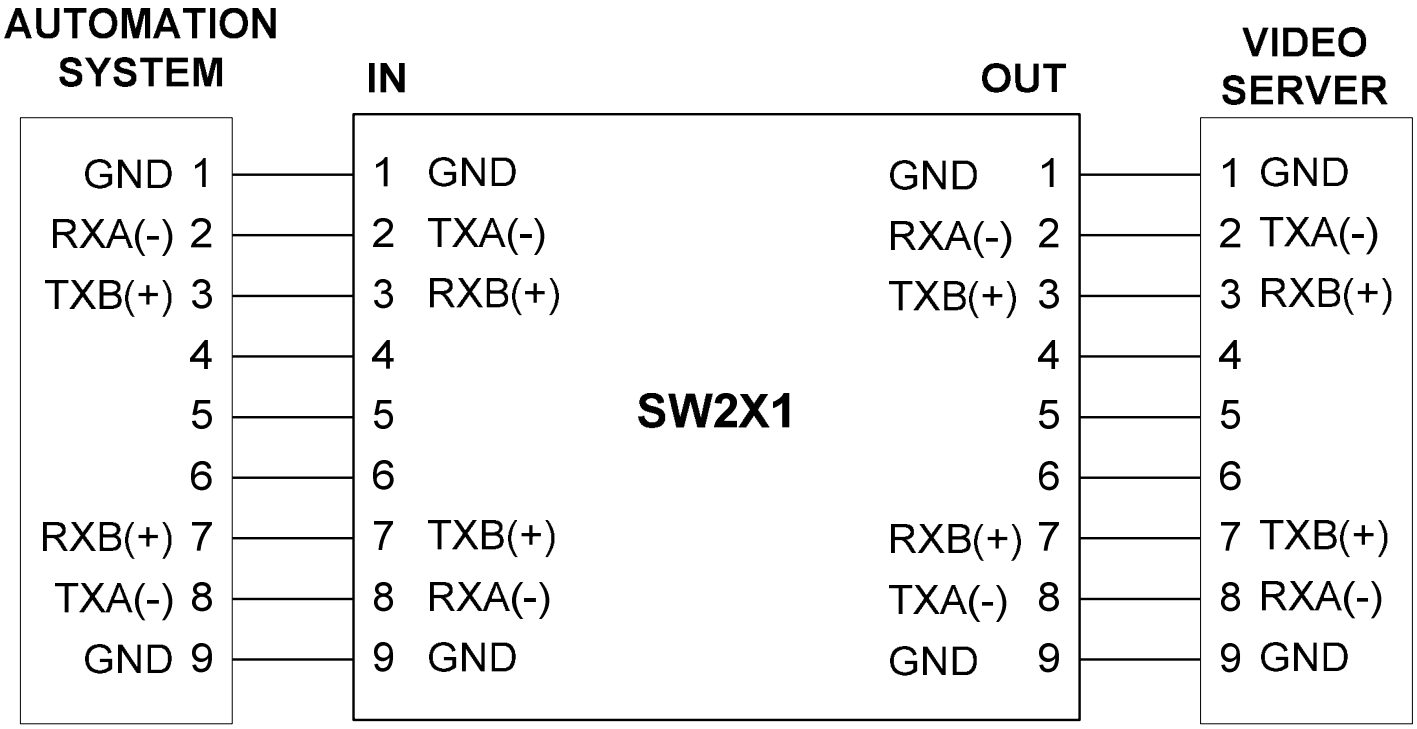
OPERATION

a. To use the front panel controls, ensure that **LOCKOUT** switch on front panel is set to the right side. **LOCKOUT LED** will not illuminate.

b. To select a source, press the **red ENABLE** switch simultaneously with a **black SELECT** switch, **A** or **B**. The selected input's status indicator will light.

c. Setting the **LOCKOUT** switch to **ON** (to the left side) will disable the front panel ENABLE and SELECT switches. The **LOCKOUT LED** will illuminate. In **LOCKOUT,** the SW2X1 can only be controlled via the **EXTERNAL SELECT** connector on the rear panel.

9. WIRING EXAMPLE



10. SPECIFICATIONS

A. OVERALL

Power:	90 VAC to 265 VAC adapter supplied with IEC connector	
Size:	(H" x W" x D") 1.75" x 19" x 4.25"	
Weight:	6 lbs.	
Rear Panel Connectors:	INPUT A, INPUT B	(D9F)
	OUTPUT, EXT. SELECT	(D9F)
	Power	(D9M)
	Ground	#6-32 threaded stud
Front Panel Controls:	Enable, Select A, Select B	(All pushbutton switches).
	Lockout ON/OFF	(Recessed slide switch).
Front Panel Indicators:	Power, Lockout On, A, B. All red LEDs.	

EXTERNAL SELECT CONNECTOR

9-Pin D-Type Female (D9F)

Pin #	Description
1	External select A (Active low, opto-isolated internally)
2	External select B (Active low, opto-isolated internally)
3	n/c
4	n/c
5	LED B (external) drive, B input status indicator
6	GROUND
7	GROUND
8	n/c
9	LED A (external) drive, A input status indicator

NOTE:

There are no internal current limiting resistors for the open collector status indicator drives. A 470 ohm resistor in series with a + 5 Vdc power supply is recommended.

Limit lamp current to 50mA MAXIMUM.

POWER CONNECTOR

9-Pin D-Type Male, (D9M)

PIN#	Description	PIN#	Description
1	+5 Vdc	6	+5 Vdc
2	+5 Vdc	7	Ground
3	Ground	8	Ground
4	n/c	9	Ground
5	n/c		

MODULE: P1 (2 PIN MOLEX)

Pin#	Description
1	+5VDC (left on P1, near card edge)
2	GND (right on P1)

B. SW2X1-GPI

GPI INPUT CONNECTOR
9-Pin D-Type Female (D9F)

Pin#	Description	Pin#	Description
1.	GPI 1 + (A) or internal pull-up	6.	GPI 1 - (K)
2.	GPI 2 + (A) or internal pull-up	7.	GPI 2 - (K)
3.	GPI 3 + (A) or internal pull-up	8.	GPI 3 - (K)
4.	GPI 4 + (A) or internal pull-up	9.	GPI 4 - (K)
5.	Ground		

Note: Internal pull-up is jumper selectable for each GPI, then only a connection from the 'K' pin to ground is required for GPI activation.

GPI OUTPUT CONNECTOR
9-Pin D-Type Female (D9F)

Pin#	Description	Pin#	Description
1.	GPO 1 N.O.	6.	GPO 1 COM
2.	GPO 2 N.O.	7.	GPO 2 COM
3.	GPO 3 N.O.	8.	GPO 3 COM
4.	GPO 4 N.O.	9.	GPO 4 COM
5.	Ground		

C. SW2X1-RS422

RS422 SERIAL INPUT (Device Configuration)
9-Pin D-Type Female (D9F)

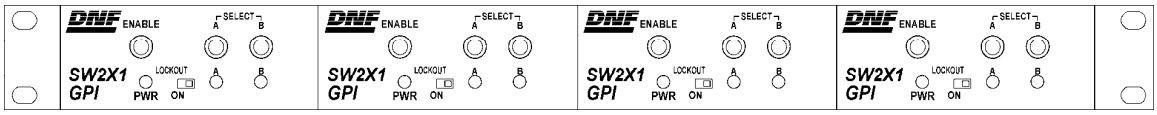
Pin#	Description
1	Frame Ground
2	Transmit A(-)➔
3	Receive B(+)➔
4	Transmit common
5	Spare
6	Receive common
7	Transmit B(+)➔
8	Receive A(-)➔
9	Frame Ground

RS422 SERIAL OUTPUT (Controller Configuration)
9-Pin D-Type Female (D9F)

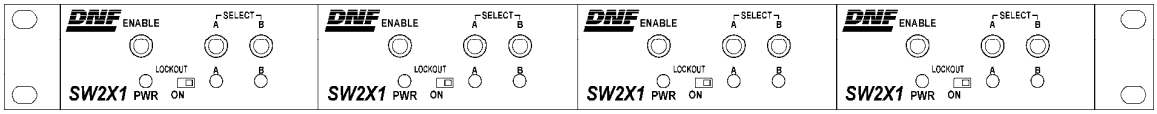
Pin#	Description
1	Frame Ground
2	Receive A(-) ➔
3	Transmit B(+)➔
4	Transmit common
5	Spare
6	Receive common
7	Receive B(+)➔
8	Transmit A(-) ➔
9	Frame Ground

11. FRONT / REAR VIEW

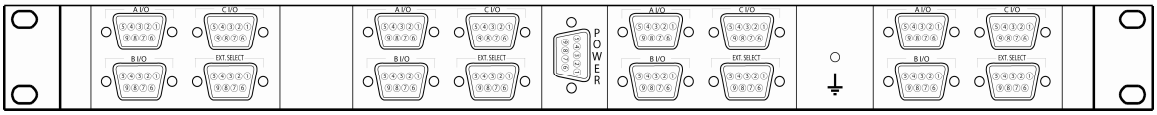
a. FRONT VIEW: SW2X1-GPI



b. FRONT VIEW: SW2X1-RS422



c. REAR VIEW: SW2X1



DNF CONTROLS LIMITED WARRANTY

DNF Controls warrants its product to be free from defects in material and workmanship for a period of one (1) year from the date of sale to the original purchaser from DNF Controls.

In order to enforce the rights under this warranty, the customer must first contact DNF's Customer Support Department to afford the opportunity of identifying and fixing the problem without sending the unit in for repair. If DNF's Customer Support Department cannot fix the problem, the customer will be issued a Returned Merchandise Authorization number (RMA). The customer will then ship the defective product prepaid to DNF Controls with the RMA number clearly indicated on the customer's shipping document. The merchandise is to be shipped to:

DNF Controls
12843 Foothill Blvd., Suite C
Sylmar, CA 91342
USA

Failure to obtain a proper RMA number prior to returning the product may result in the return not being accepted, or in a charge for the required repair.

DNF Controls, at its option, will repair or replace the defective unit. DNF Controls will return the unit prepaid to the customer. The method of shipment is at the discretion of DNF Controls, principally UPS Ground for shipments within the United States of America. Shipments to international customers will be sent via air. Should a customer require the product to be returned in a more expeditious manner, the return shipment will be billed to their freight account.

This warranty will be considered null and void if accident, misuse, abuse, improper line voltage, fire, water, lightning, or other acts of God damaged the product. All repair parts are to be supplied by DNF Controls, either directly or through its authorized dealer network. Similarly, any repair work not performed by either DNF Controls or its authorized dealer may void the warranty.

After the warranty period has expired, DNF Controls offers repair services. Equipment is evaluated and repair price quoted prior to any work performed. DNF Controls reserves the right to refuse repair of any unit outside the warranty period that is deemed non-repairable.

DNF Controls shall not be liable for direct, indirect, incidental, consequential or other types of damage resulting from the use of the product.

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