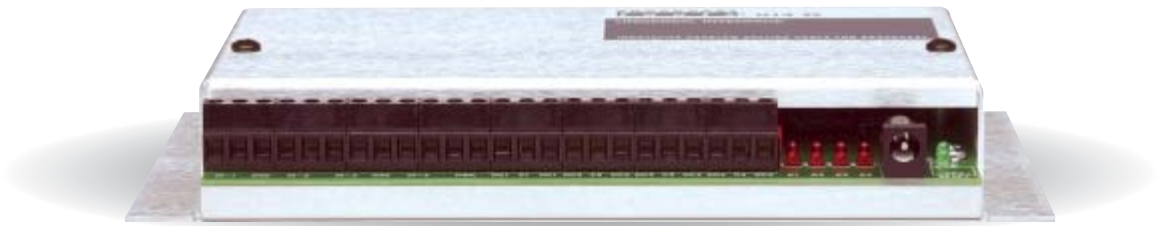




BROADCAST[®] tools INC

Installation and Operation Manual



UI-411 *Universal Interface*

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INTRODUCTION

Thank you for your purchase of a Broadcast Tools, Inc., UI-4II. We're confident that this product will give you many years of dependable service. This manual is intended to give you all the information needed to install and operate the unit.

SAFETY INFORMATION

Only qualified personnel should install Broadcast Tools® products. Incorrect or inappropriate use and/or installation could result in a hazardous condition.

WHO TO CONTACT FOR HELP

If you have any questions regarding your product or you need assistance, please contact your distributor from whom you purchased this equipment.

If you would like more information about Broadcast Tools® products, you may reach us at:

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BROADCAST TOOLS® BRAND PRODUCTS!***



CAUTION!

Broadcast Tools® Products, as with any electronic device, can fail without warning. Do not use this product in applications where a life threatening condition could result due to failure.



NOTE:

This manual should be read thoroughly before installation and operation.

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PRODUCT DESCRIPTION

The UI-4II Universal Interface facilitates interfacing Transmitters, Audio/Video equipment or any piece of equipment with differing logic levels and functions. The UI-4II is outfitted with four optically isolated/bridged 5-28 volt ac or dc inputs that operate four SPDT relays with LED indicators.

The UI-4II may be configured to operate independently or be paired for latched or momentary outputs. Inputs may be momentary or continuous. The UI-4II is configurable with two dozen combinations via on-board DIP switches. The UI-4II is compatible with TTL/CMOS logic levels, open collectors, contact closures or any voltage between 5 and 28 vdc/vac or may be configured to directly connect to most telephone lines.

The UI-4II is equipped with two sets of input jumpers. The first set of jumpers select input voltages between 5 and 28 vdc/vac, or voltages up to 150 ac, such as the ring voltage on a standard dial-up telephone line. The second set of jumpers configure the UI-4II for “WET” or “DRY” inputs. Input and output connections are via wire captive terminals.

The UI-4II is supplied in a compact (7.75” x 4.0” x 1.25”) aluminum case, with mounting holes on end flanges, the optional RM-2 or RM-3 rack mounts may be purchased, allowing the mounting of two units in a 19 inch rack space. The UI-4II operates with a supply voltage of 14 to 28 vdc or 12 to 18 vac. A 12 to 18 vac wall transformer is provided.



NOTE:

For safety, do NOT connect 120 vac circuits to these relays!

NOTE:

Installation of the UI-4II in high RF environments should be performed with care. Shielded cable is suggested for all connections. Shields should be tied to the station ground. It is recommended that all cables connected to the UI-4II be looped through ferrite cores to suppress RF. Surge protection with RF filtering such as the Tripp Lite “ISO-BAR 4” is also suggested for the wall transformer. The purchase of an inexpensive frequency stable UPS will provide back up in case of power outages.

INSTALLATION

Please examine your UI-4II for any damage that may have been sustained during shipping. If any is noted, please notify the shipper immediately and retain the packaging for inspection by the shipper. The package should contain the UI-4II, wall power transformer and this manual.

1. Mount the UI-4II where it will be visible and the rear panel accessible. Four (4) screw holes are provided for mounting. The inputs, relays and auxiliary power connections to the UI-4II are via TB-1. This type of terminal allows the installer to strip off the insulation, insert the bare wire and tighten the capture screw.
2. The next step is to determine what function is to be performed. The following explanation is for input # 1. For dry contact closures or open collector, insert a jumper on JP-1 between positions 1 & 2 and 3 & 4, and a jumper on JP-2 between the “C”ommon and “N”ormal position.
3. Connect one side of the switch (**collector on an NPN transistor**) to **terminal # 2 (+ 12 vdc) on TB-1** and the other side of the switch (**Emitter on an NPN transistor**) to **terminal # 1 (gnd) on TB-1**. For relay and input connections, follow the silk screen legends on the circuit board.

Example: IN-1 = INput ONE.
 NO1 = Normally Open contact for relay 1.
 C1 = Common contact for relay 1.
 NC1 = Normally Closed contact for relay 1.

For wet inputs 5 - 28 vdc/vac, insert a jumper on JP-1 between positions 2 & 3 ONLY and a jumper on JP-2 between the “C”ommon and “N”ormal position. Connect one side of the source to terminal # 1 on TB-1 and the other side to terminal # 2 on TB-1.

For telephone line monitoring with inputs from 70 to 150 vac / 20 - 100 hz insert a jumper on JP-1 between positions 2 & 3 ONLY and a jumper on JP-2 between the “C”ommon and the “P”hone position. Connect one side of the source to terminal # 1 on TB-1 and the other side to terminal # 2 on TB-1.



NOTE:

Sections 3 & 4 of the UI-4II may be setup to do the same functions as sections 1 & 2. Substitute the companion switch (SW-1) for each section (refer to the parts layout page).

NOTE:

The optional reset switch SW-2 is connected to INPUT # 2 and the optional S1 is connected to K1.

For independent operation:

Turn switches 2-3, 7-8 OFF. For an input to produce an output from input # 1, **turn switch 1 ON.**

For input # 2, **turn switch 4 ON.** For input # 3, **turn switch 5 ON.** For input # 4, **turn switch 6 ON.**

For independent operation with pulsed output:

Turn switches 2-3, 7-8 OFF. For an input to produce a pulsed output from input # 1, **turn switch 1 OFF.**

For input # 2, **turn switch 4 OFF.** For input # 3, **turn switch 5 OFF.** For input # 4, **turn switch 6 OFF.**

For paired alternate action latching operation with a single maintained input:

Turn switch 2 OFF and switches 1, 3, 4 ON. For a maintained input on input # 1, output # 1 will latch on, and by removing the input on input # 1, output # 2 will latch on and output # 1 will latch off.

For paired alternate action non-latching operation with a single maintained input:

Turn switches 1, 2, 4 OFF and switch 3 ON. For a maintained input on input # 1, output # 1 will produce a > 200 ms pulse, and by removing the input on input # 1, output # 2 will produce a > 200 ms pulse.

For paired flip/flop operation with set/reset inputs:

Turn switches 1, 2, 3, 4 ON. With an input on input # 1, output # 1 will latch on. An input on input # 2 will produce an output on output # 2 and will turn off output # 1. **Note: Turning switches 1 & 4 OFF** will produce the same operation except that the outputs will produce a > 200 ms pulse.



NOTE:

You may change the pulse duration by increasing or decreasing the values of C9,C10,C13,C14.

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If Broadcast Tools is notified, in writing, of a failure of any item manufactured by Broadcast Tools to conform to the foregoing Limited Warranty within one (1) year following the date of the Buyer’s acquisition of the item, and if the item is returned to Broadcast Tools in accordance with Broadcast Tools’ instructions for confirmation by inspection of the defect (which at Broadcast Tools’ election may include, without limitation, a requirement that the Buyer first obtain a Return Authorization number from Broadcast Tools, that the Buyer furnish proof of purchase in the form of an invoice and/or receipt, and that the Buyer prepay all freight charges associated with any return of the item to Broadcast Tools using such freight service as Broadcast Tools reasonably may specify), Broadcast Tools will repair or replace the defective item, or will refund the purchase price paid by the Buyer for the item. Broadcast Tools shall have the exclusive right to choose between these alternative remedies.

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