PART No.	DESCRIPTION
WR-8812 12 Relay Scanner **WR-8824** 24 Relay Scanner	▪ Relay scanners have wide application in low voltage lighting controls. Relay scanners permit a large group of relays to be switched together. Relay scanners also permit each relay in the group to be individually controlled. ▪ WR-8812 and WR-8824 relay scanners have 12 and 24 outputs that switch Douglas relays. ▪ Standard Douglas relay switches can be used to actuate relay scanners. Automatic devices such as time clocks are also easily connected to relay scanners. ▪ Several scanners can be controlled by one switch or timer contact. Simply wire the inputs of the scanner's in parallel and connect to same switch and/or timer.

SPECIFICATION

- Power:
  24VAC / 50mA
  Class 2 Low Voltage device.
  Power rating does not include power used to switch relays.
- Master switch inputs:
  Douglas 2-wire relay switches (WR-8001, WR-8501, WR-8503).
  Usage: Master switch override.
- Auxiliary 24 VAC inputs:
  Contact closure of a timer, photocell or other device can signal the scanner.
- The sw. and aux. inputs are isolated from the rest of the scanner's circuit.

Outputs

- WR-8812: 12 Douglas relay outputs.
- WR-8824: 24 Douglas relay outputs.
- All outputs send a switching signal when the input is activated.
- Outputs fire in sequence (<2 sec for 12 relays, <4 sec for 24 relays)
- Connect a maximum of 4 relays to each output. Max wire length is 500' (150m).
- Relay outputs are isolated from each other. The pulse of a local switch connected to a relay on an output will not pass through the scanner to a relay connected on another output.

Environment

- Indoors, stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity.
- Ambient operating temperature: +15° to +120°F (-10° to +50°C)

WR-8812 & WR-8824 Relay Scanners

Use scanner to switch a group of relays with a master switch.
Each relay in the group can also be controlled by an individual switch.

Relay Outputs

Relay outputs to switch Douglas 2-wire relays.

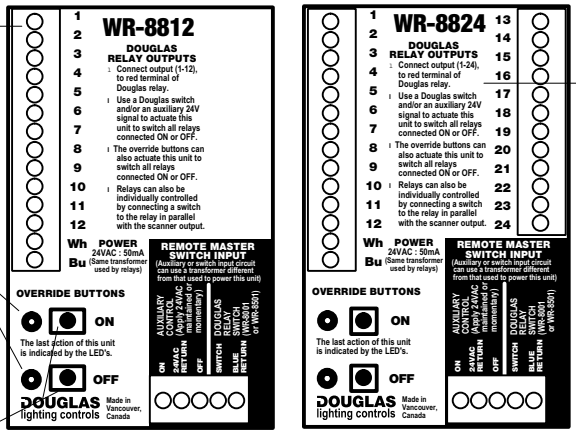
Relay outputs fire in sequence when switching.

Indicator LEDs

Indicator LEDs show the last switching operation done by the relay scanner.

Override Buttons

Use override buttons for convenient switching at the relay scanner.



Directions

Directions are printed on the front of the scanner for convenient reference.

Auxiliary Input

Connect auxiliary contacts to provide a master control.

Use a momentary or maintained 24VAC signal.

Time clock control is a typical application for the auxiliary input.

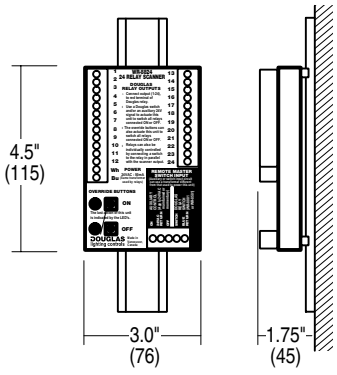
2-Wire Switch Input

Connect standard Douglas 2-wire relay switches to provide a master control.

Connect the switch and connect blue return to the transformer supplying the switch.

DIMENSIONS & MOUNTING

- Relay scanners mount to 35mm DIN rail installed in relay panels.
  Scanner supplied with DIN rail.

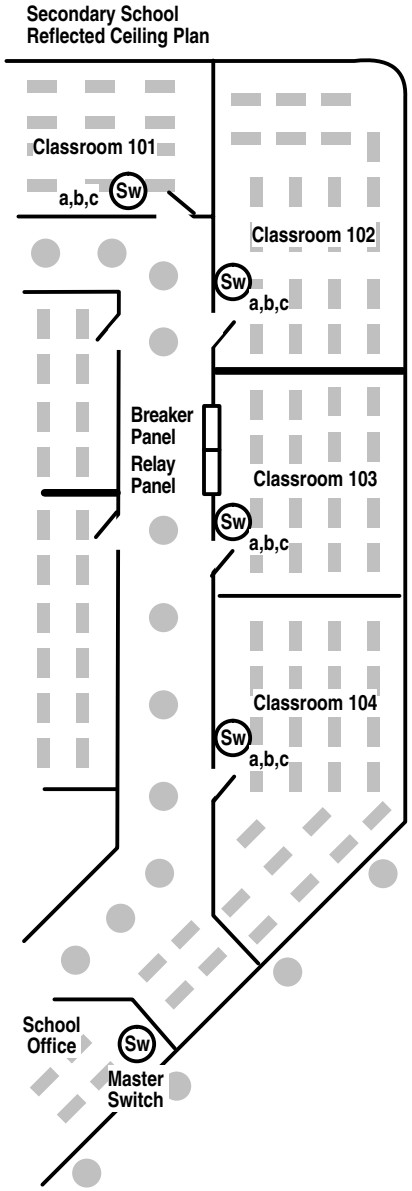


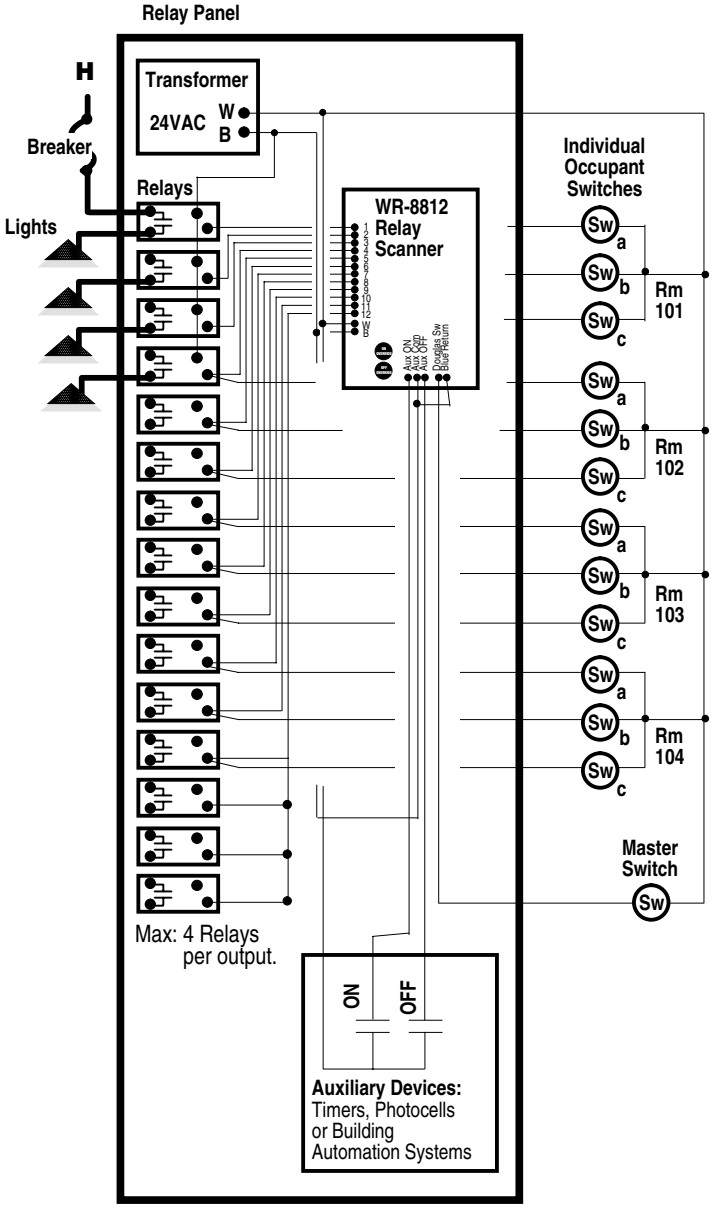
WR-8824 scanner shown
WR-8812 is of identical size

CONNECTIONS

Simple Stand Alone Panels

- Relay scanners permit a large group of relays to be controlled with a single master switch.
- Relay scanners permit the individual relays of the relay group to be individually switched. The switch installed in the area operates the lighting load of that area only (usually 1 relay).
- Automatic devices such as timers can be installed to automatically switch lights OFF. Individual switches permit occupants to switch lights back ON (If flick warn or time out feature is desired, use WRS-2224 Programmable Relay Scanners).

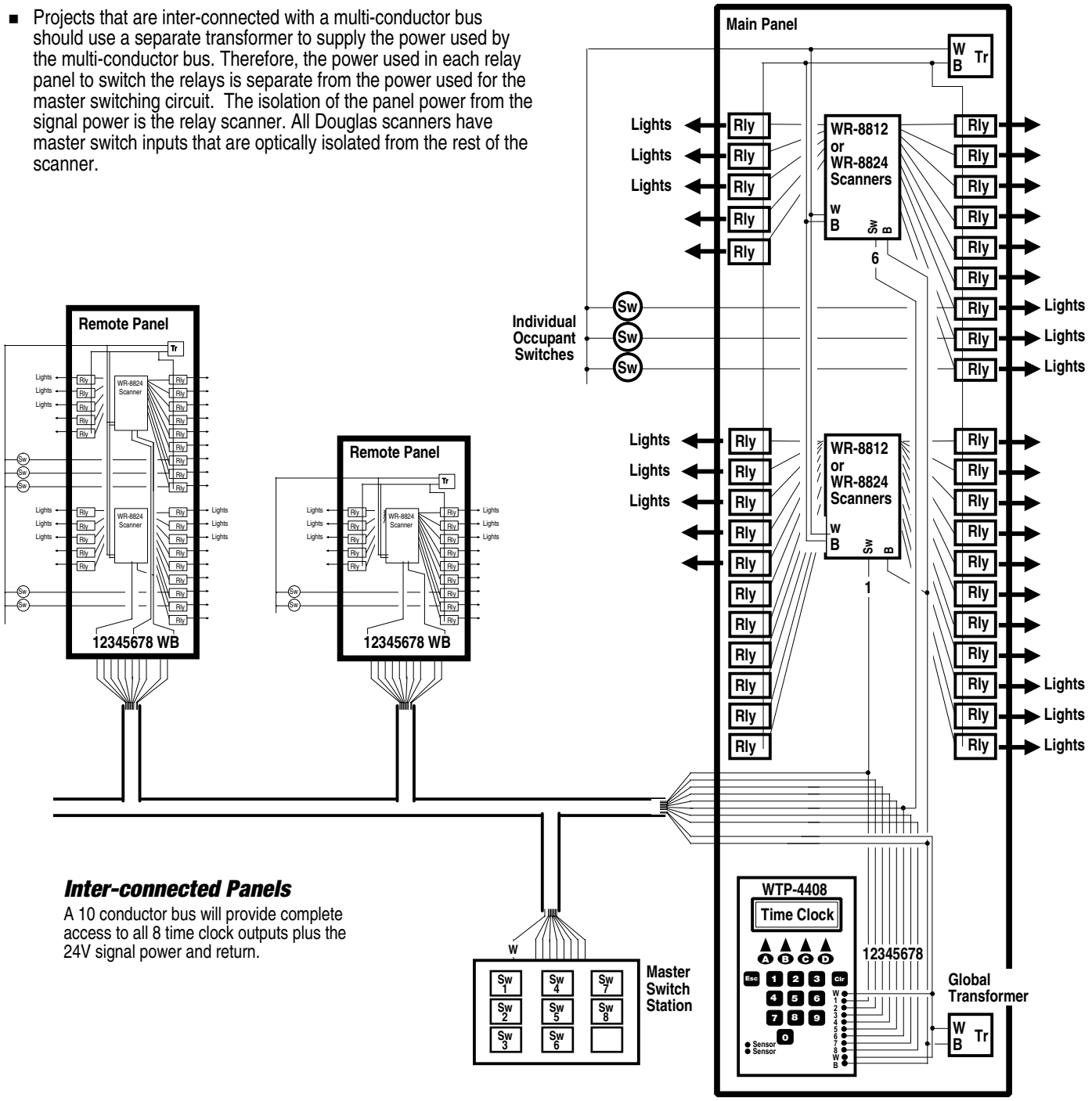




CONNECTIONS

Multiple Relay Panels

- In larger buildings, there are often several load centers that need to be controlled from one location.
- A simple wiring strategy is to inter-connect the relay panels with a multi-conductor bus. This method permits several master switches and/or time controls to exist at each relay panel. Provide enough conductors to run between panels to accommodate the necessary controls. Connect the scanners in the relay panel to the appropriate control wire of the bus.
- Projects that are inter-connected with a multi-conductor bus should use a separate transformer to supply the power used by the multi-conductor bus. Therefore, the power used in each relay panel to switch the relays is separate from the power used for the master switching circuit. The isolation of the panel power from the signal power is the relay scanner. All Douglas scanners have master switch inputs that are optically isolated from the rest of the scanner.



Inter-connected Panels

A 10 conductor bus will provide complete access to all 8 time clock outputs plus the 24V signal power and return.

INSTALLATION

- Installation of relay scanners is usually as follows:
  1) After the relays of a panel have been assigned to lighting loads, determine which relays are to be switched together.
  2) Size the relay scanner accordingly (WR-8812 or WR-8824) and install it in the panel.
  3) Connect the relays to be controlled as a group to the scanner's outputs.
  4) The master switch is connected to the relay scanner.
  5) Switches controlling an individual relay are connected in parallel with the scanner output.

Larger Projects

- In larger buildings there will be several relay panels. Often relay groups in different panels will have similar function. For example:
  - all of the classrooms in a school,
  - all of the office rooms on a floor,
  - all of the overhead flood lights in a store,
  - all of the corridor lights in an institution, etc...

  See the circuit described in "CONNECTIONS" for a simple method to inter-connect all of the relay panels of a building so that similar groups can be controlled together.

Changing Relay Groups

- The WR-8812 and WR-8824 Relay Scanners switch all of the relays connected to the scanners. To remove a relay from the scanner's control, disconnect it from the scanner's output. To add a relay to the group controlled by the scanner, connect it to an output on the relay scanner.

Panels with Many Relay Groups

- In many applications there are only 1 or 2 groups of relays present in each relay panel. For these applications WR-8812 and WR-8824 relay scanners are the most cost effective and simple.
- Applications that have 2 or more relay groups present in a relay panel may find advantage in using programmable relay scanners. Connect all of the relays to the scanner and then use the key pad built in to the scanner to select which relays are to be in each group. Programmable scanners also support other features such as flick-warn and digital control which may be necessary in more complex applications.

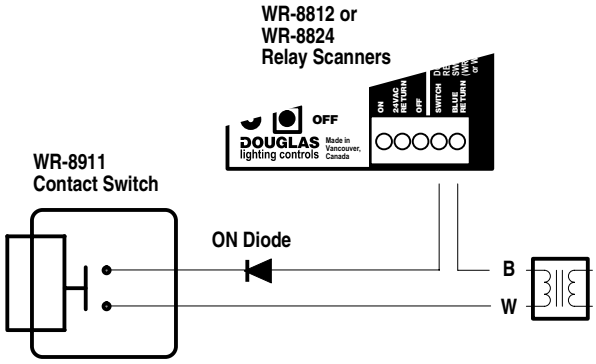
MASTER SWITCH INPUTS

ON & OFF Switches and Relay Scanner Status

- The Douglas switch input of the relay scanner is compatible with all models of Douglas relay switches. Douglas timers that have relay outputs (eg: WTC-4328) are also compatible.
- The Douglas switch input of the relay scanner provides a status signal to light the LED's of LED switches. LED's display what the last sweep was of the relay scanner.
- Take care when using WR-8501 LED Switches. The WR-8501 push button switch is will always send a signal that is opposite to its current state. If repeat off or on control is desired, use the WR-8001 rocker switch which is able to select an on or off signal.

ON Only Switching

- ON ONLY switches generally are only used in parallel with a timer that can provide an OFF signal. ON ONLY switches are typically used to prevent unauthorized or accidental OFF switching.
- Office Floor Example: Timer provides automatic OFF during the evening and night hours. The wall switches only turn ON the lights. During the day when the office is occupied, pressing the switch has no effect -as the lights are already ON.



OFF Only Switching

- OFF ONLY or "Kill Switches" often find application in residences. Larger rooms tend to have several circuits. Designating the switch in a lower corner of the switch station as a "kill switch" can provide a convenient exit switch.