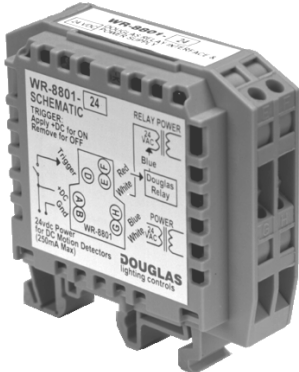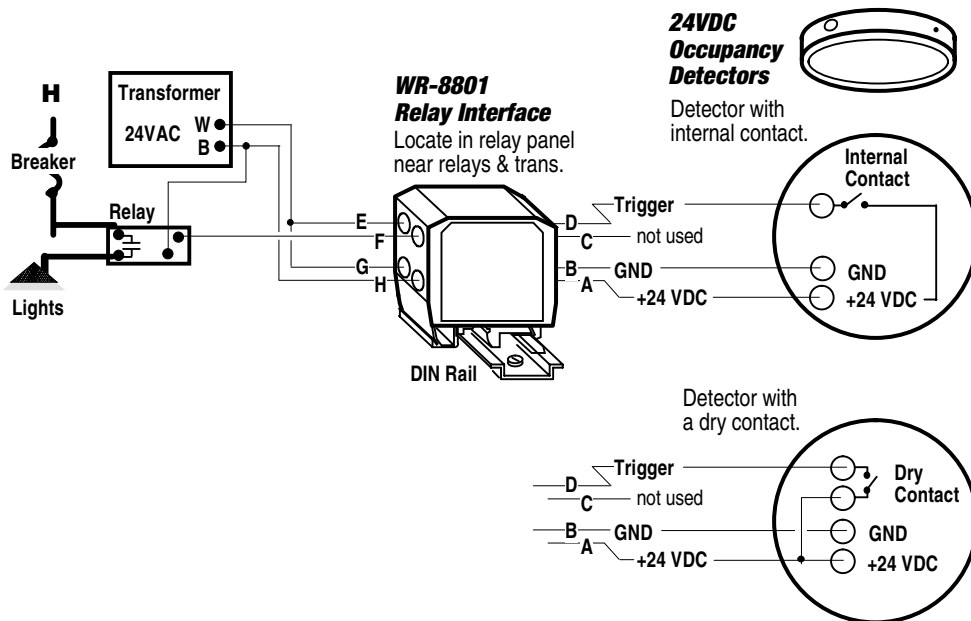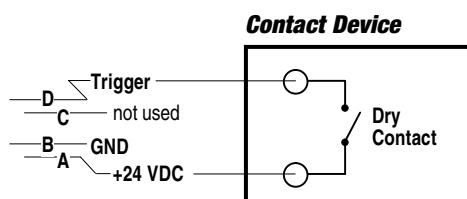| PART No.	DESCRIPTION	SPECIFICATION

WR-8801-24	▪ The WR-8801 relay interface & DC power supply is used to interface other devices to switch Douglas 2-wire relays.
	
	▪ Typical devices include:
	  1) 24VDC occupancy detectors.
	  2) Contact closures from other devices or systems.
	
	▪ The WR-8801 has a built in 24DC power supply that can be used to power 24VDC occupancy detectors.
	
	▪ Note: The Douglas WRM-5104 occupancy detector is directly compatible with Douglas relays and does not require a WR-8801 interface. However, there are specialty applications (eg: high gymnasium ceilings) that require specialized occupancy detectors. Use the WR-8801 as an interface for these applications.
		Input (AC Power)
		▪ Power: 24VAC : 50mA to 300mA (mA depends upon the DC load) Class 2 Low Voltage device.
		
		Output (DC Power)
		▪ The DC output of the unit is: Volts: 24VDC ±5%, max draw: 250mA
		
		Relay Interface
		▪ The WR-8801-24 switches a 2-wire relay when its +24V output is applied to the trigger input.
		▪ The unit's relay output sends a relay on pulse when the +24V is applied, and a relay off pulse when the +24V is removed.
		
		Environment
		▪ Indoors, stationary, non-vibrating, non-corrosive atmosphere and non-condensing humidity.
		▪ Ambient operating temperature: +15° to +120°F (-10° to +50°C)

CONNECTIONS to OCCUPANCY DETECTORS

■ To ensure that the WR-8801 is compatible with the 24VDC occupancy detector, check that the occupancy detector has a circuit the same as either of the 2 detector circuits shown.
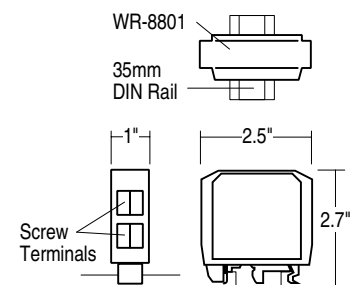
24VDC Occupancy Detectors

Detector with internal contact.

Transformer
24VAC W B

H
Breaker

WR-8801 Relay Interface
Locate in relay panel near relays & trans.

Relay
Lights

E
F
G
H

D — Trigger
C — not used
B — GND
A — +24 VDC

Internal Contact

GND
+24 VDC

DIN Rail

Detector with a dry contact.

D — Trigger
C — not used
B — GND
A — +24 VDC

Dry Contact

GND
+24 VDC

CONNECTIONS to other DEVICES & SYSTEMS

■ The WR-8801 is compatible with any device that has a dry contact that closes when the relay is to go on and opens when it is to go off.
Example: Simple timers or contacts from other systems.

Contact Device

D — Trigger
C — not used
B — GND
A — +24 VDC

Dry Contact

Compatibility with Other Manufacturer's 24VDC Detector's

▪ Manufacturers that make occupancy detector's that the WR-8801-24 is compatible with include: Watt Stopper, Unenco, LVS, MyTech.
▪ Check the occupancy detector's specifications to ensure compatibility. The detector must be a 24VDC type that closes a contact when occupancy is detected and opens the contact when there is no occupancy. The contact switches the +24V from the detector back to the trigger input of the WR-8801 interface (see connections).
▪ The WR-8801 can interface any device that has a contact that closes when on is required and opens when off is required (see connections).

DIMENSIONS & MOUNTING

▪ The WR-8801 interface is a sealed plastic package that has screw wire terminals built into it.
▪ The WR-8801 mounts onto standard 35mm DIN rail. A small 2" DIN rail piece is included for mounting.
▪ In most cases, locate the WR-8801 in the relay panel near the relay and transformer.

WR-8801
35mm DIN Rail

1"   2.5"
Screw Terminals   2.7"

DOUGLAS lighting controls

CONNECTIONS

Multiple Occupancy Detectors

- Connect multiple occupancy detectors to a common 3 wire bus. The 3-wire bus can be up to 500' (150m) in length for 18AWG wire.

- Take care that the total draw of the detectors does not exceed the supply of the WR-8801 (250mA max.). Check the detector's power specifications if numerous detectors are being connected. The typical power draw of most 24VDC detectors is 40mA. Therefore, a maximum of 6 detectors can be connected.
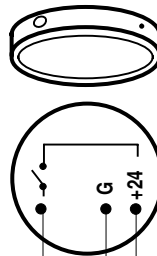
24VDC Occupancy Detectors

3 wire bus, 18AWG, 500' (150m) maximum

To additional detectors

Occupant Switch (optional)
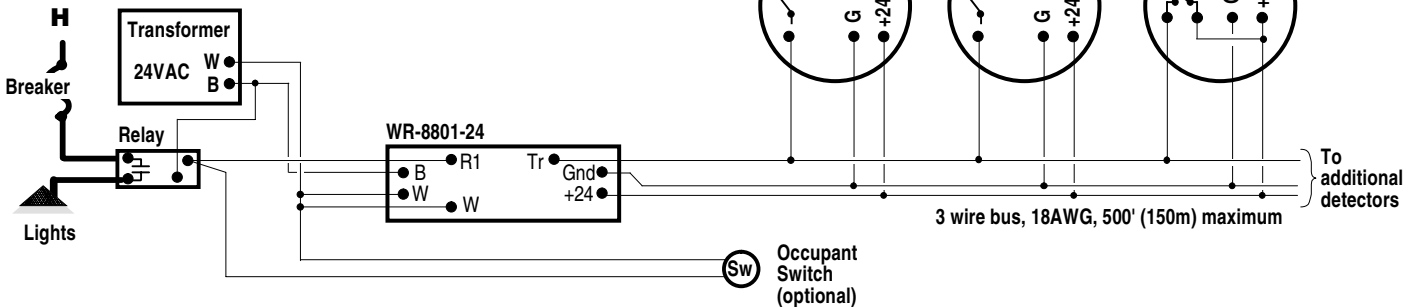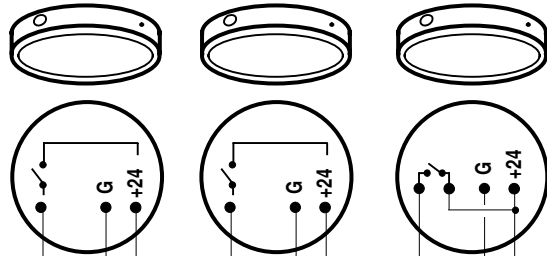
Control Options - OFF Only

- To provide the OFF only control option, connect a diode in series with the relay control wire (R1). The diode "blocks" the on signal from being passed to the relay by the WR-8801 / Occupancy detector(s).

- The correct diode sizes are:
  - Switching 1 relay : Diode rating 1A. Sample P/N: 1N4006
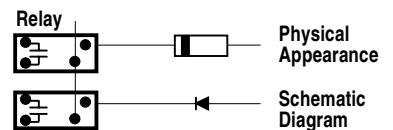 - More than 1 relay: Diode rating 3A. Sample P/N: 1N5408

24VDC Occupancy Detectors

Blocking Diode Connected for OFF only control

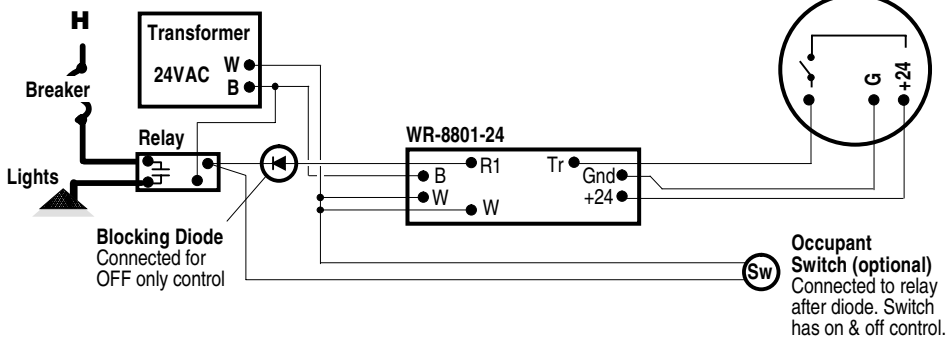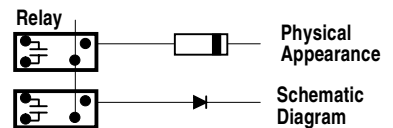**Occupant Switch (optional)** Connected to relay after diode. Switch has on & off control.

Blocking Diodes
Diodes only allow current to pass in one direction. This permits diodes to be used to block either the on or off relay signal depending upon the direction the diode is connected in.

OFF Only Diode Connection

Relay

Physical Appearance

Schematic Diagram

ON Only Diode Connection

Relay

Physical Appearance

Schematic Diagram

Controlling Multiple Circuits

- The WR-8801 relay output can control up to 4 relays. All of the relays switch together and cannot be individually switched. If relays need to be individually switched and controlled as a group by the occupancy detector(s), use WR-8802 interface unit.

- The WR-8802 has a similar function as the WR-8801. The WR-8802 has 2 interfaces A & B. Interface A has 4 individual relay outputs that switch together but are isolated to permit individual switches control each relay. Interface B is similar to A except that it has only 2 isolated relay outputs.

DOUGLAS lighting controls